235-A-1

2000-0176

Congress St.
Municipal Snow Dump
City of Portland

on Spreadsheet

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Caron and Members of the Portland Planning Board

FROM: William B. Needelman Planner

DATE: September 26, 2000

RE: Municipal Snow Dump; Outer Congress Street

Introduction

The City of Portland Public Works Department requests a workshop to discuss the development of a City snow dump on the southerly side of outer Congress Street at the South Portland and Westbrook municipal boundaries. Bounded by WH Nichols on the north, Maine Turnpike Authority and the City boundary with South Portland on the east and south, and the city boundary with Westbrook on the west, the subject parcel contains 88.26 acres. The site is zoned I-M and was developed to be a Portland Water District sludge composting facility in the 1970's. Currently used as an aggregate storage facility, the site has a 79,000 sq ft shed/garage structure and exterior material storage piles in the existing condition.

The site contains over 8 acres of impervious and/or disturbed area currently and will have 6 acres of impervious area after development, according to the proposed plan.

Planning staff has contacted the Department of Environmental Protection to ascertain if the project can be reviewed under delegated authority for Site Location of Development.

The planning staff has had very little time to review this application, and will therefore be providing very little in the way of analysis in this memo. Deluca Hoffman Engineers has produced the site plan and stormwater report and will be available at the workshop to describe the facility and to answer any questions. Jeff Prebble, from Dufresne-Henry Engineers, has been retained to provide peer review of the project.

Site Description:

The site is 88.26 acres and generally drains from north to south. The existing shed structure is a massive steel industrial building with open bays. The sludge composting use of the site has been discontinued for some time, and Public Works uses, and will continue to use, the building for storage regardless of the snow dump use.

A portion of the site is located within the City of South Portland and the proposed stormwater treatment/detention pond will be sited in South Portland. Deluca Hoffman will be permitting the pond design with the City of South Portland.

Much of the land is undeveloped field and brush, with the southerly section of the parcel containing the headwaters of Long Creek; part of the Clark Pond watershed. While wetlands exist on site, the proposed

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

September 12, 2000

Mr. Alexander Jaegerman
City of Portland
389 Congress Street
Portland, ME 04101

Subject: Submission of Major Site Plan Application
and
MeDEP Site Location of Development Permit Application
for the
Snow Dump on Outer Congress Street, Portland, ME

Dear Mr. Jaegerman:

Enclosed please find nine (9) copies of the Major Site Plan Application submission and MeDEP Site Location of Development Permit Application submission for the proposed Snow Dump Facility on Outer Congress Street for City Planning Board review and review by the City under delegated review authority from the Maine Department of Environmental Protection (MeDEP). The City of Portland has delegated review authority from MeDEP for Site Location of Development projects including less than seven (7) acres of impervious area. As this application has been prepared for the City, the application fee has not been included.

Location of written statements within Application Submission:

1. Description of proposed use – Section 1.
2. Total land area of parcel 88.26 acres.
   Total floor area of existing building 79,300 s.f.
3. Existing easements – Section 2.
4. Types and estimated quantities of solid waste – Section 5.
5. Evidence of off-site facilities – Not Applicable.
6. Stormwater Report – Section 22.
7. Sequence of construction – Sections 1 and 24.
8. State and Federal regulatory approvals – A Site Location of Development Permit is currently being sought from the City under delegated review authority from the MeDEP.
9. Financial and technical capability – Sections 3 and 4.
10. Title, Right, and Interest – Section 2.
11. Unusual areas, wildlife and fisheries, or archaeological sites – Sections 19, 20, and 21.

Please contact our office with any questions or concerns regarding this submission.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.
Design Engineer

DDA/ajs/JN1900.11/Jaegerman

Enclosure

c: Bill Bray, P.E., Director of Public Works (w/enclosure)
Kevin Noyes, City of Portland, (w/enclosure)

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION NATURAL RESOURCE PROTECTION ACT PERMIT APPLICATION

CITY OF PORTLAND SNOW DUMP ON OUTER CONGRESS STREET PORTLAND, MAINE

MeDEP SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION

AND

CITY OF PORTLAND MAJOR SITE PLAN APPLICATION

Prepared for:

City of Portland
55 Portland Street
Portland, Maine 04101

Prepared by:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121
Fax (207) 879-0896

September 2000

Site Review Pre-Application
Multi-Family/Attached Single Family Dwellings/Two-Family Dwelling or Commercial Structures and Additions Thereto

In the interest of processing your application in the quickest possible manner, please complete the Information below for Site Plan Review

NOTEIf you or the property owner owes real estate or personal property taxes or user charges on ANY PROPERTY within the City, payment arrangements must be made before permits of any kind are accepted.**

Applicant: City of Portland c/o Bill Bray

Application Date: 9/12/00

Applicant's Mailing Address: 55 Portland Street, Portland, ME 04101

Project Name/Description: Municipal Snow Dump

Consultant/Agent: Deluca-Hoffman Assoc., Inc. c/o Dwight Anderson

Address Of Proposed Site: Outer Congress Street

Applicant/Agent Daytime telephone and FAX: Phone 874-8800 Fax 874-8816

Assessor's Reference, Chart#, Block. Lot#: 235-A-1

Proposed Development (Check all that apply) ____New Building ____Building Addition ____Change of Use ____Residential ____Office ____Retail ____Manufacturing ____Warehouse/Distribution ✓ Other(Specify) SNOW DUMP FACILITY

Proposed Building Square Footage and /or # of Units	Acreage of Site	Zoning
NA	88.26	I-M

You must Include the following with you application:

1) A Copy of Your Deed or Purchase and Sale Agreement

2) 7 sets of Site Plan packages containing the information found in the attached sample plans and checklist.

(Section 14-522 of the Zoning Ordinance outlines the process, copies are available for review at the counter, photocopies are S 0.25 per page)

I hereby certify that I am the Owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if an approval for the proposed project or use described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this approval at any reasonable hour to enforce the provisions of the codes applicable to this approval.

Signature of ~~applicant~~: Agent :	Date: 9/12/00

Site Review Fee: Major $500.00 Minor 400.00

This application is for site review ONLY, a Building Permit application and associated fees will be required prior to construction.

Department of Environmental Protection | FOR DEP USE | FORM A PAGE 1
7/97
Bureau of Land & Water Quality | ATS # _____
17 State House Station | L-_____
Augusta, Maine 04333 | Total Fees: _____
Telephone: 207-287-2111 | Date: Received _____

****

PERMIT APPLICATION
SITE LOCATION OF DEVELOPMENT LAW, 38 M.R.S.A. §§ 481-490

Please type or print:

This application is for (check the one that applies):

20 acre development		Structure	X
Planning Permit		Subdivision	
Metallic Mining		Amendment	
Marine Oil Terminal			

Name of Applicant: City of Portland

Address: 55 Portland St., Portland, ME 04101 Telephone/Fax: (207)874-8800/(207) 874-8816

Name of local contact or agent: DeLuca-Hoffman Associates, Inc.

Address: 778 Main Street, Suite 8, South Portland, ME 04106 Telephone/Fax: (207) 775-1121/286-3220 e-mail address: dhai@maine.rr.com

Name of development: City of Portland Snow Dump on Outer Congress Street

Location of development including road, street, or nearest route number: Off State Route 22 (Congress Street) and abutting the Maine Turnpike south of Exit 7A

City/Town/Plantation: Cities of Portland & South Portland, County: Cumberland, Tax Map # (see attached), Lot # (see attached)

Type of development: Existing Former Solid Waste Composting Facility/New Municipal Snow Dump

Was this development started prior to obtaining a license? Yes Is this development or any portion of the site currently subject to enforcement action? No

Will a Natural Resources Protection Act (NRPA) permit be required for this project? No Has the NRPA permit application (PBR, Tier, full NRPA) been submitted as part of this application? N/A

Will a Traffic Permit be required for this project? No Has the traffic permit application been submitted as part of this application? N/A

Is the development located in the watershed of a body of water most at risk or in a sensitive or threatened region or watershed? No If yes, which one? N/A

Existing DEP permit number (if applicable): N/A

Name(s) of department staff person(s) present at the pre-application meeting:
N/A

Name(s) of department staff person(s) otherwise contacted concerning this application:
N/A

Department of Environmental Protection | FOR DEP USE | FORM A PAGE 1
7/97
Bureau of Land & Water Quality | ATS # _____
17 State House Station | L-_____
Augusta, Maine 04333 | Total Fees: _____
Telephone: 207-287-2111 | Date: Received _____

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N/A

Name(s) of department staff person(s) otherwise contacted concerning this application:
N/A

7/97

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Dwight D. Anderson, P.E.

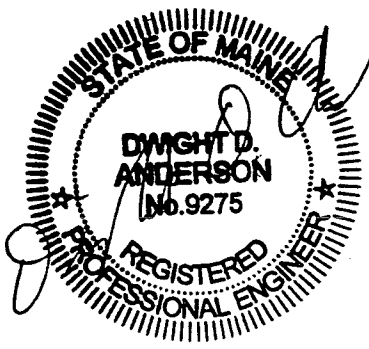
Date: 9/12/00

Re/Cert/Lic No.: 9275
Engineer X
Geologist
Soil Scientist
Land Surveyor
Site Evaluator
Active Member of the Maine Bar
Professional Landscape Architect
Other

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ 9/12/00
Signature of Agent Date



PARCEL MAP AND LOT NUMBERS

Tax Map	Block	Lot	Owner
235	A	1	City of Portland 389 Congress Street Portland, ME 04101
235	B	1	
235	B	2	
234	A	1	
234	A	2	
233	A	2	
233	A	6	
233	A	9	

Executive Department

Robert B. Ganley
City Manager

CITY OF PORTLAND

Agent Authorization

The City of Portland authorizes DeLuca-Hoffman to serve as its agent for the submittal of plans and materials for Site Plan and Site Location of Development review for a Public Works facility on outer Congress Street.

signed:

William Bray, Director
Public Works

9-12-00
date

FORM B

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

1.0 — 1. Objectives and details

1.1 — 2. Existing facilities (with dates of construction)

B. Topographic map

Fig. 2 — 1. Location of development boundaries

Fig. 2 — 2. Quadrangle name

C. Construction plan

1.4 — 1. Outline of construction sequence (major aspects)

1.4 — 2. Dates

D. Drawings

1-6* — 1. Development facilities

2 — a. Location, function and ground area

6 — b. Length/cross-sections for roads

1-6 — 2. Site work (nature and extent)

1 — 3. Existing facilities (location, function ground area and floor area)

4. Topography

1 & 2 — a. Pre- and post-development (contours 2 ft or less)

1 — b. Previous construction, facilities and lot lines

2.0 **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

3.0 — A. Estimated costs

B. Financing

N/A — 1. Letter of commitment to fund

2. Self-financing

N/A — a. Annual report

N/A — b. Bank statement

3. Other

N/A — a. Cash equity commitment

N/A — b. Financial plan

N/A — c. Letter

N/A — 4. Affordable housing information

Section 4. Technical ability (description)

4.1 — A. Prior experience (statement)

Att. B — B. Personnel (documents)

5.0 **Section 5. Solid waste** (list: type, quantity, method of collection and location)

N/A — A. Commercial solid waste facility (final disposal location)

5.0 — B. Off-site disposal of construction/demolition debris (final disposal location)

C. On-site disposal of woodwaste/land clearing debris

N/A — 1. Applicability of rules (evidence re: applicability of rules)

2. Burning of wood wastes

N/A — a. Delineation on site plan

5.0 — b. Plans for handling unburned woodwaste and woodash

N/A — c. Evidence of capacity to accept waste (approved facility)

*Numbers without decimals refer to plan sheets.

5.0 d. Usage of materials
N/A e. Data on mixing ratios and application rates
N/A D. Special or Hazardous Waste

Section 6. Odors
6.0 A. Identification of nature/source
6.0 B. Estimate of areas affected
N/A C. Methods of control)

N/A **Section 7. Water vapor** (narrative)

8.0 **Section 8. Sunlight** (statement and drawing, if required)

9.0 **Section 9. Maintenance of common facilities or property** (documents)
9.0 A. Description of facilities and transfer information
9.0 B. Specify rights and responsibilities
N/A C. Incorporation
N/A D. Membership
N/A E. Fees
N/A F. Lien
N/A G. Renewability
N/A H. Amendment subject to approval
N/A I. Restrictions in homeowners documents; future transactions

Section 10. Air emissions (narrative and summary)
10.0 A. Point and non-point sources identified
10.0 B. Emission components (point sources)

Section 11. Noise
11.0 A. Developments producing a minor noise impact (statement)
N/A 1. Residential developments
N/A 2. Certain non-residential subdivisions
N/A 3. Schools and hospitals
11.0 4. Other developments
11.0 a. Type, source and location of noise
11.0 b. Uses, zoning and plans
11.0 c. Protected locations
11.0 d. Minor nature of impact
11.0 e. Demonstration
N/A B. Developments producing a major noise impact (full noise study)
N/A 1. Baseline
N/A a. Uses, zoning and plans
N/A b. Protected locations
N/A c. Quiet area
N/A 2. Noise generated by the development
N/A a. Type, source and location of noise
N/A b. Sound levels
N/A c. Control measures
N/A d. Comparison with regulatory limits
N/A e. Comparison with local limits

Section 12. Soils
Fig. 8 A. Soil survey map and report
N/A 1. Class A (High intensity) Soil Survey

N/A 2. Class B (High intensity) Soil Survey
N/A 3. Class C (Medium High-Intensity) Soil Survey
Fig. 8 4. Class D (Medium Intensity) Soil Survey
N/A B. Limitations report
N/A C. Site engineering report
Sec. 20 D. Wetlands investigation report
N/A E. Geotechnical Investigation

Section 13. Water supply

13.0 A. Water supply method
N/A 1. Individual wells (evidence of sufficient/healthful supply)
N/A a. Support of findings by well drillers
N/A b. Support of findings by geologist
N/A 2. Common well(s) (report)
N/A a. Effect on off-site wells and protected natural resources
N/A b. Water system designs (plans and detail sheets)
N/A c. Provision for water supply maintenance
N/A d. Public water supply
N/A i. Wellhead protection zone delineation
N/A ii. Wellhead protection plan
N/A iii. Long-term safe yield determination
N/A aa. Predicted operating levels
N/A bb. Cone of influence
N/A cc. Zone of capture
N/A iv. Water quality analysis
N/A 3. Well construction in shallow-to-bedrock areas
N/A 4. Additional information
N/A 5. Off-site utility company or public agency
N/A 6. Other sources
N/A B. Subsurface wastewater disposal systems (locations of systems and wells)
N/A C. Total usage (statement re: total anticipated water usage)

Section 14. Wastewater disposal

N/A A. On-site subsurface wastewater disposal systems (investigation results)
N/A 1. Site plan
2. Soil conditions summary table
N/A 3. Test pit profile logs
4. Additional test pits, borings or probes
N/A a. Soil conditions A
N/A b. Soils with Profiles 8 and 9 parent material
N/A c. Disposal fields longer than 60 feet
N/A 5. 3-bedroom design
N/A 6. Common subsurface wastewater disposal systems (plans)
a. System design flow details
N/A b. Plan view
N/A c. Cross sections
N/A d. Test pit data
N/A e. Mounding analysis
N/A B. Nitrate-nitrogen impact assessment
1. When required
N/A a. Not required for disposal of <270 gpd in soil condition A more than 300 feet upgradient of property line
N/A b. Not required for disposal of <270 gpd in soil profiles 4, 5, and 6 more than 300 feet upgradient of property line

N/A c. Not required for disposal of <270 gpd in other soil profiles and conditions more than 200 feet upgradient of property line

N/A 2. Assumptions

N/A a. Initial concentration

N/A b. Background concentration

N/A c. NO_3-N from development

N/A d. Mixing and dilution

N/A e. Severe-drought scenario

N/A f. Wastewater flow to subsurface wastewater disposal areas

3. Assessment report minimum requirements

N/A a. Narrative and calculations

N/A b. Site plan

N/A i. Well locations

N/A ii. 10 mg/l and 8 mg/l isocons

N/A iii. Groundwater contours and groundwater flow divides

N/A c. References

4. Denitrification systems

N/A a. Design plans and specifications

N/A b. Installation information

N/A c. Monitoring plan

N/A d. Maintentance

N/A e. Backup system

N/A D. Municipal facility or utility company letter

N/A E. Wastewater discharge information

Section 15. Groundwater

15.0 1. Location and maps

Fig. 9 2. Quantity

N/A 3. Sources

N/A 4. Measures to prevent degradation

N/A B. Groundwater protection plan

N/A C. Monitoring plan

N/A 1. Monitoring points

N/A 2. Monitoring frequency

N/A 3. Background conditions

N/A 4. Monitoring parameters

N/A 5. Personnel qualifications

N/A 6. Proof of training

N/A 7. Equipment and methods

N/A 8. Quality assurance/quality control

N/A 9. Reporting requirements

N/A 10. Remedial action plan

N/A D. Monitoring well installation report

N/A 1. Well location map

N/A 2. Elevation data

N/A 3. Well installation data

N/A 4. Well construction details

N/A 5. Borehole logs

N/A 6. Summary of depth measurements

N/A 7. Characteristics of subsurface strata

N/A 8. Well installation contract

N/A 9. Schematic cross-sections

N/A 10. Monitoring point summary table

N/A 11. Protective casing
N/A 12. On-site well identification

Section 16. Blasting
N/A A. Assessment
N/A B. Blasting plan

17.0 **Section 17. Visual quality** (narrative, description, visual impact analysis)

Section 18. Buffers
18.0 A. Site plan and narrative

19.0 **Section 19. Unusual natural areas** (narrative)

20.0 **Section 20. Wildlife and fisheries** (narrative)

21.0 **Section 21. Historic sites** (narrative)

Section 22. Stormwater management
22.0 A. Narrative
22.0 1. Development location
22.0 2. Surface water on or abutting the site
22.0 3. Downstream ponds and lakes
22.0 4. General topography
23.0 5. Flooding
N/A 6. Alterations to natural drainage ways
22.0 7. Alterations to land cover
22.1 8. Modeling assumptions
22.7 9. Water quantity control
22.9 10. Water quality treatment
N/A 11. Off-site credits
N/A 12. Compensation fees
N/A 13. Development impacts

Sec. 1 B. Maps
Fig. 2 1. U.S.G.S. map with site boundaries
Fig. 8 2. S.C.S. soils map with site boundaries

Att. A C. Pre-development drainage plan
Att. A 1. Scale and contours
Att. A 2. Plan elements
Att. A 3. Land cover types and boundaries
Fig. 8 4. Soil group boundaries
Att. A 5. Stormwater quantity subwatershed boundaries
Att. A 6. Stormwater quality subwatershed boundaries
Att. A 7. Watershed analysis points
Att. A 8. Hydrologic flow lines
Att. A 9. Runoff storage areas
Att. A 10. Existing roads and drives
Att. A 11. Existing facilities
Att. A 12. Existing drainage systems
Att. A 13. Natural and man-made drainage ways
Att. A 14. Wetlands
Att. A 15. Flooded areas

1	16. Benchmark
Att. B	D. Post-development drainage plan
Att. B	1. Scale and contours
Att. B	2. Plan elements
Att. B	3. Land cover types and boundaries
Fig. 8	4. Soil group boundaries
Att. B	5. Stormwater quaintly subwatershed boundaries
Att. B	6. Stormwater quality subwatershed boundaries
Att. B	7. Watershed analysis points
Att. B	8. Hydrologic flow lines
Att. B	9. Runoff storage areas
Att. B	10. Roads and drives
Att. B	11. Facilities
Att. B	12. Drainage systems
Att. B	13. Natural and man-made drainage ways
Att. B	14. Wetlands
Att. B	15. Flooded areas
Att. B	16. Benchmark
Att. B	17. Stormwater detention, retention, and infiltration facilities
Att. B	18. Stormwater quality treatment facilities
N/A	19. Drainage easements
Att. C & D	E. Runoff analysis (pre-development and post development)
Att. C & D	1. Curve number computations
Att. C & D	2. Time of concentration calculations
Att. C & D	3. Travel time calculations
Att. C & D	4. Peak discharge calculations
Att. C & D	5. Reservoir routing calculations
22.7	F. Stormwater quantity control plan
N/A	1. Variance submissions (if applicable)
N/A	a. Submissions for discharge to the ocean, great pond, or major river segment
N/A	i. Map
N/A	ii. Drainage plan
N/A	iii. Drainage system design
N/A	iv. Outfall design
N/A	v. Easements
N/A	b. Submissions discharge to a buffer
N/A	i. Road and buffer plan
N/A	ii Ditch turn-out designs and calculations
N/A	iii. Easements
N/A	iv. Preservation
N/A	c. Submissions for discharge to a public stormwater system
N/A	i. Letter of permission
N/A	ii. Proof of capacity
Att. D	2. Drainage system sizing
Att. D	3. Stormwater detention and retention system submissions
Att. D	a. Basin sizing calculations
Att. D	b. Inlet calculations
Att. D	c. Outlet calculations
Att. D	d. Emergency spillway calculations
N/A	e. Subsurface investigation report
3	f. Embankment specifications

3	g. Embankment seepage controls
3	h. Outlet seepage controls
3	i. Detail sheet
3	j. Basin cross sections
3	k. Basin plan sheet
Sec. 9	l. Maintenance plan
N/A	4. Infiltration system submissions
Att. A & B	a. Maps
N/A	i. Well locations
Fig. 9	ii. Sand and gravel aquifer map
N/A	b. Designs
N/A	i. Subsurface investigation report with test pit or boring logs
N/A	ii. Measurements of permeability
N/A	iii. Structure details
N/A	iv. Pollutant generation and transport analysis
Sec. 9	d. Maintenance and operations plan
Sec. 9	i. Maintenance plan
N/A	ii. Contaminant storage locations
N/A	iii. Observation wells and groundwater elevations monitoring plan
N/A	iv. Groundwater quality monitoring plan
N/A	5. Easement declarations.
22.9	G. Stormwater quality treatment plan peak discharge calculations
1-6	1. Basic stabilization plan
1-6	a. Ditches, swales, and other open channel stabilization
1-6	b. Culvert and storm-drain outfall stabilization
1-6	c. Earthen slope and embankment stabilization
1-6	d. Disturbed area stabilization
1-6	e. Gravel road and drive stabilization
Sec. 9	f. Maintenance
N/A	2. 80% TSS removal plan
N/A	a. BMP design drawings and specifications
N/A	b. BMP design calculations
N/A	c. BMP maintenance plans
N/A	d. Removal efficiency determinations
N/A	e. Treatment calculations for site subwatersheds
N/A	f. TSS credit determinations
N/A	i. Location map
N/A	ii. Scaled plan of off-site area
N/A	iii. Title and right
N/A	iv. Demolition plan
N/A	v. Vegetation plan
N/A	vi. Off-set credit calculation
N/A	vii. Treatment level calculation
22.9	3. Sliding scale TSS removal plan
1-6	a. BMP design drawings, specifications and calculations
Fig. 1	b. Impervious area calculation
22.9	c. TSS removal determination
Fig. 1	d. BMP design calculations
Sec. 9	e. BMP maintenance plans
22.9	f. Removal efficiency determinations
N/A	g. Treatment calculations for site subwatersheds
22.9	h. TSS credit determinations
Fig. 1	i. Location map

N/A ii. Scaled plan of off-site area
Sec. 2 iii. Title and right
1 iv. Demolition plan
2 v. Vegetation plan
N/A vi. Off-set credit calculation
22.9 vii. Treatment level calculation
N/A 4. Phosphorus control plan
N/A a. Phosphorus export calculations
N/A b. Soil survey
N/A c. Buffer strip submissions
N/A i. Cutting options
N/A ii. Deed restrictions
N/A d. Wetpond submissions
N/A i. Statement of wetland impact
N/A ii. Plan view of pond
N/A iii. Profile view of pond
N/A iv. Calculations for phosphorus control
N/A v. Stabilization plan
N/A vi. Construction dates
N/A vii. Inlet and outlet details
N/A viii. Maintenance provisions
N/A e. Submissions for other BMPs
N/A i. Design drawings and specifications
N/A ii. Design calculations
N/A iii. Maintenance plan
N/A iv. Removal efficiency determinations
N/A f. Phosphorus credit determination
N/A i. Location map
N/A ii. Scaled plan
N/A iii. Title and right
N/A iv. Demolition plan
N/A v. Vegetation plan
N/A vi. Offset credit calculation
N/A vii. Calculation for new allowable export
N/A 5. Control plan for thermal impacts
N/A 6. Control plan for other pollutants

Section 23. Flooding

23.0 A. Explanation of flooding impact
1 B. Site plan showing 100-year flood elevation
22.0 C. Hydrology analysis
Fig. 7 D. FEMA flood zone map with site boundaries

Section 24. Erosion and Sedimentation Control

24.0 A. Narrative
24.1 1. Soil types
24.1 2. Existing erosion problems
24.1 3. Critical areas
24.3 4. Protected natural resources
24.4 5. Erosion control measures
24.5 6. Site stabilization

24.8 B. Implementation schedule

2 C. Erosion and sediment control plan
2 1. Pre-development and post-development contours
2 2. Plan scale and elements
2 3. Land cover types and boundaries
2 4. Existing erosion problems
2 5. Critical areas
2 6. Protected natural resources
2 7. Locations (general)
2 8. Locations of controls
2 9. Disturbed areas

5 D. Details and specifications (for both temporary and permanent measures)

Att. B E. Design calculations

Att. A F. Stabilization plan
Att. A 1. Temporary seeding
Att. A 2. Permanent seeding
N/A 3. Sodding
Att. A 4. Temporary mulching
Att. A 5. Permanent mulching

24.5 G. Winter construction plan
24.5 1. Dormant seeding
24.5 2. Winter mulching

N/A H. Third-party inspections
N/A 1. Inspector's name, address, and telephone number
N/A 2. Inspector's qualifications
N/A 3. Inspection schedule
N/A 4. Contractor contact
N/A 5. Reporting protocol

Section 25. Notices

25.0 A. Evidence that notice sent
Att. A B. List of abutters for purposes of notice

SECTION 1

DEVELOPMENT DESCRIPTION

SECTION 1

DEVELOPMENT DESCRIPTION

1.0 Introduction

The City of Portland is proposing to construct a municipal snow dump at the location of the former wastewater treatment plant compost facility on Outer Congress Street in Portland. Figure 1 attached to this section is a location map including the parcel boundary. The existing facility has not been used for sludge composting since the late 1980's and is currently used as a storage building for aggregate materials, etc. by the Portland Water District and the City of Portland Public Works Department.

The overall objective of this project is to construct a large municipal snow dumping site on an 88.26 acre parcel owned by the City of Portland off Congress Street. The City has recently lost rights to other snow dumping sites in the City; therefore, a new snow dumping site is required. A USGS topographic map is attached to this section as Figure 2.

1.1 Existing Conditions and Development History

The existing site contains a 79,300 sq. ft. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 sq.ft. (not including the gravel yard areas noted below). This facility was constructed by the Portland Water District in 1979 to serve as a composting facility for sludge produced from the wastewater treatment plant in Portland. This facility is currently used as a storage building for aggregate materials, etc. by the Portland Water District and City of Portland Public Works Department.

In the recent past, the City has developed a gravel yard area, on the west side of the former compost facility, for the storage of aggregate stockpiles, appurtenance structures, pipe, and granite curb. This area of non-revegetated surface is 1.44 acres in size.

In addition, a gravel lay down area was also recently constructed on the south side of the former compost facility which was used by White Brothers during the construction of the Portland International Jetport access roads. This yard area is no longer being used and has been leveled off in preparation of revegetation. The gravel lay down area is approximately 700' long by 200' wide (3.33 acres) and is proposed to be used as a new municipal snow dump area by the City of Portland.

The total non-revegetated area of the existing site is 8.15 acres.

1.2 Site Location Permit Requirement and Elements of Review

Based upon discussions with the MeDEP, City of Portland, and Portland Water District, it is our understanding the current site has not been permitted through the MeDEP Site Location of Development Process. The two major permit thresholds are:

1. Creation of over 3 acres of non-revegetated surface (rooftop, pavement, gravel, etc.) since 1970.
2. Development of over 20 acres of land area since 1970.

The current site does not exceed the 20 acre threshold; however, the original compost facility constructed in 1979 exceeded the creation of 3 acres of non-revegetated surface and therefore, should have been permitted through the Site Location Process. Subsequently, the total non-revegetated area at the site is 4.82 acres excluding the White Brothers lay down area which is to be revegetated. Therefore, the current site is required to obtain an after-the-fact permit through the MeDEP Site Location Process.

The City of Portland has delegated review authority from the MeDEP to review Site Location of Development permit applications for projects under 7 acres of non-revegetated surface. Therefore, this Site location Permit Application has been submitted to the City of Portland to be reviewed under delegated review authority.

1.3 Proposed Conditions

The proposed conditions will include the existing 79,300 sq.ft. building, a total of 2.26 acres of existing and proposed pavement, the 1.44 acre gravel yard area to the west side of the former compost facility and an additional 0.45 acres of gravel shoulders and denuded area associated with the proposed snow dump. The total non-revegetated area of the proposed site will be 6.05 acres, which is 2.1 acres less than what currently exists on the site.

A water quality retention facility will be constructed down gradient of the proposed snow dump area. Riprap ditches, catch basins and new storm drains will be installed to convey stormwater runoff to the proposed water quality retention facility. A 24 foot wide paved access drive with 6 foot gravel shoulders will be installed to circulate snow dumping equipment through the site. A siltation barrier will also be installed along the down gradient edge of the snow dump as required by the Maine Department of Environmental Protection in Chapter 573 "Snow Dumps."

1.4 Construction Plan

Upon receiving the necessary permit approvals, it is anticipated that the City of Portland would start construction of the snow dump facility in the Fall of 2000.

It will be necessary to schedule certain portions of the site work to ensure erosion and sedimentation control measures are sequenced for optimum effectiveness. The water quality retention facility construction will commence at the start of the project and be concurrent with several elements of the site work. The following schedule reflects this construction:

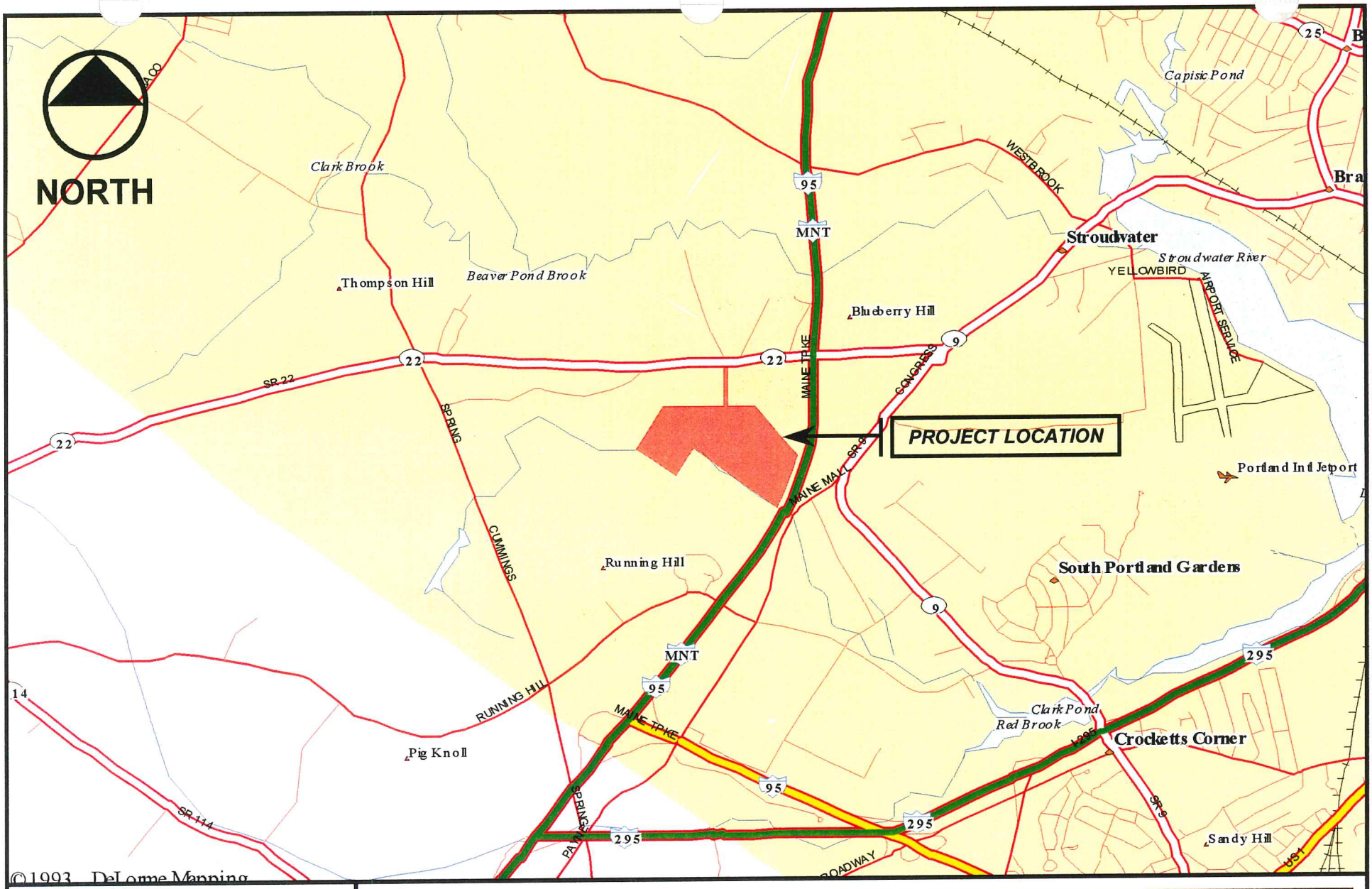
1. Install stabilized construction entrance off existing paved drive.
2. Install perimeter silt fence.

3. Clear trees, cut underbrush, remove stumps, and grub retention facility portion of the site.
4. Begin excavation operations for retention facility construction.
5. Once the retention facility area is shaped to retain stormwater and a stabilized outlet is constructed, install riprap ditches and storm drains to direct stormwater runoff to the retention facility.
6. Upon completion of the storm drain system installation, install inlet protection at catch basins.
7. Install riprap protection as specified on plans.
8. Complete installation of subbase and base materials for the paved areas associated with the access drive.
9. Bring non-paved areas to final grade.
10. Install base and surface coarse paving for all paved areas.
11. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
12. Remove accumulated sediment form ahead of any sediment barriers in accordance with the Erosion and Sedimentation Control Report.
13. Once the site is stabilized and a 75% catch of vegetation has been obtained, remove all temporary erosion control measures except silt fence barrier as necessary for snow dump operations.
14. Touch up loam and seed.

Note: All denuded areas not subject to final paving, riprap or gravel, shall be revegetated with loam and seed.

1.5 Attachments

Figure 1	DeLorme Location Map
Figure 2	USGS
Figure 3	Property Tax Map
Figure 4	Zoning Map
Figure 5	Aerial
Figure 6	DeLorme Abutting Land Use Map
Figure 7	Flood Map
Figure 8	USDA Soils Map
Figure 9	MGS Sand and Gravel Aquifer Map
Figure 10	MGS Surficial Geology Map
Figure 11	NWI Map
Figure 12	Fresh-water Wetlands Map
Figure 13	Maine Inland Fisheries and Wildlife Map
Figure 14	Site Photos



DeLORME LOCATION MAP
Outer Congress Street
Snow Dump Project
Portland, Maine
SOURCE: DeLORME MAPEXPERT

DeLUCA-HOFFMAN ASSOCIATES, INC.
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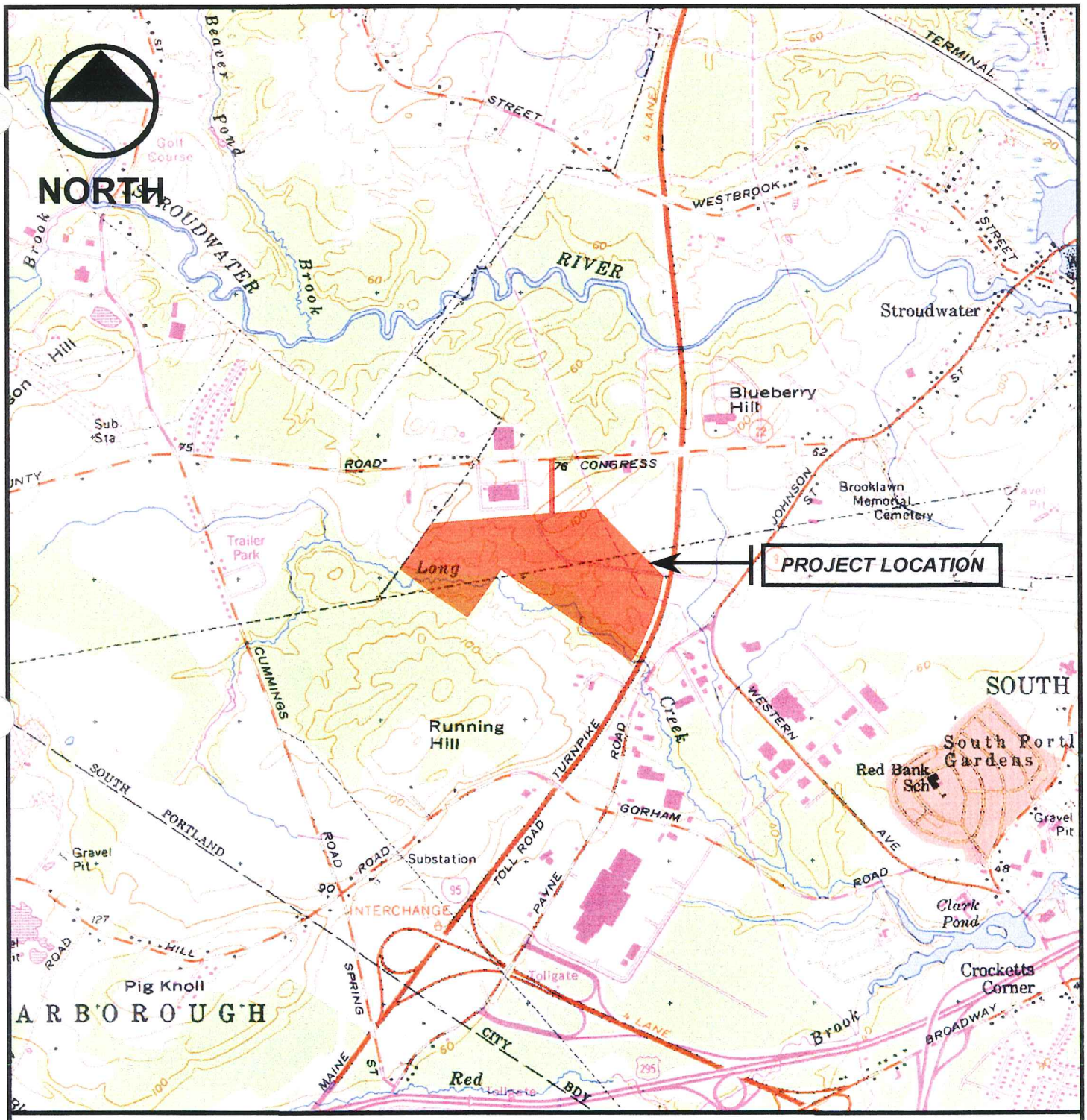
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX 207-879-0896

DESIGNED	DDA	DATE	AUGUST 2000
DRAWN	JDL	SCALE	N.T.S.
CHECKED	DDA	JOB NO.	1900.11

FIGURE
1



USGS TOPOGRAPHIC MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: TOPOSCOUT; Coastal Maine CD-ROM, USGS Portland West Quadrangle, 7.5 Minute Series (Topographic)

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DESIGNED	DDA	DATE	AUGUST 2000	FIGURE
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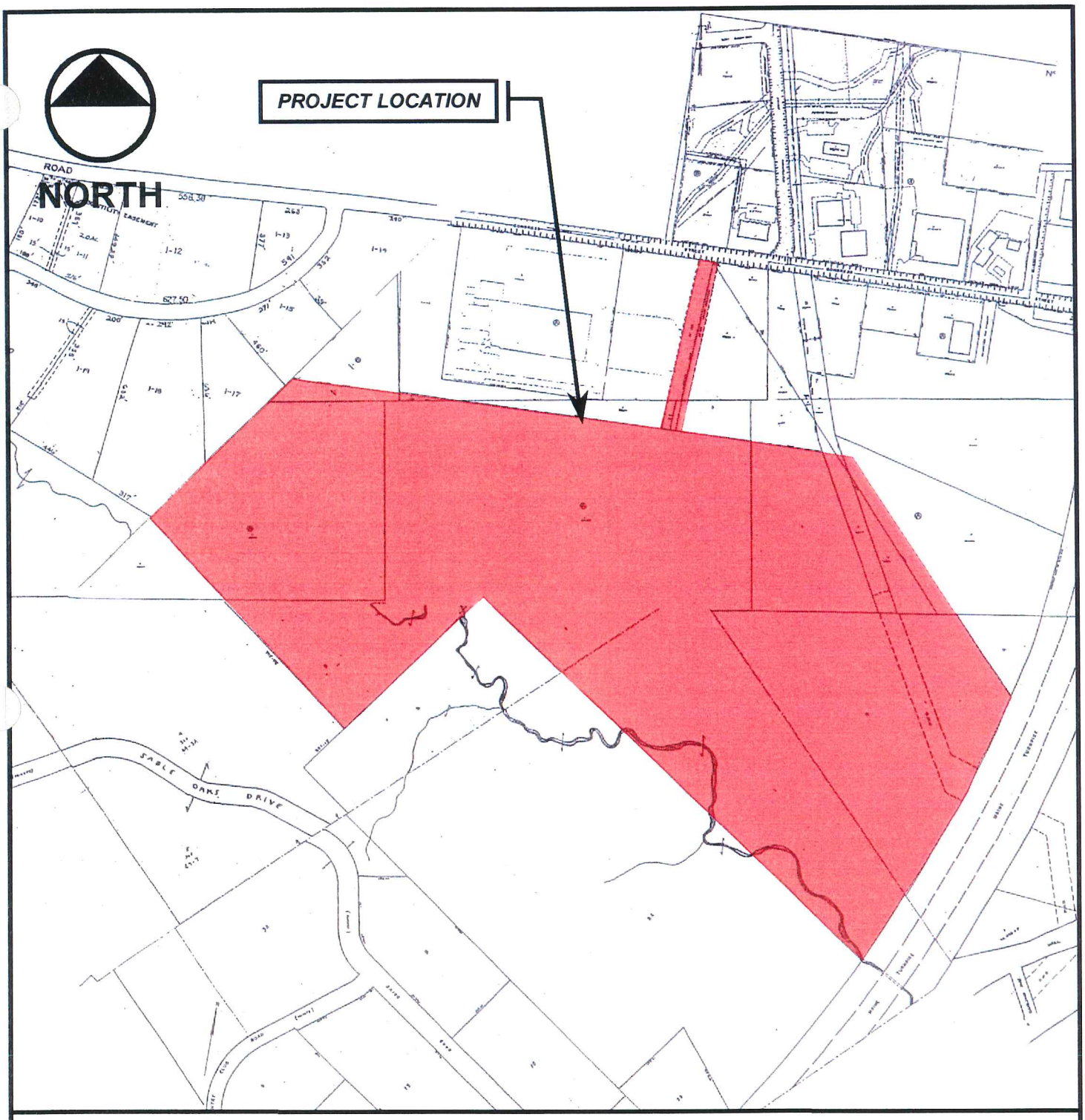

PROPERTY TAX MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: CITY OF PORTLAND ASSESSORS PLAN; **MAP NUMBERS:** 233, 234, 235, 236, 237, 238A, 239A; PROPERTY MAP, CITY OF SOUTH PORTLAND CUMBERLAND COUNTY, MAINE; **MAP NUMBERS:** 47, 69, 70, 72; AND PROPERTY MAP, CITY OF WESTBROOK CUMBERLAND COUNTY, MAINE; **MAP NUMBER:** 3

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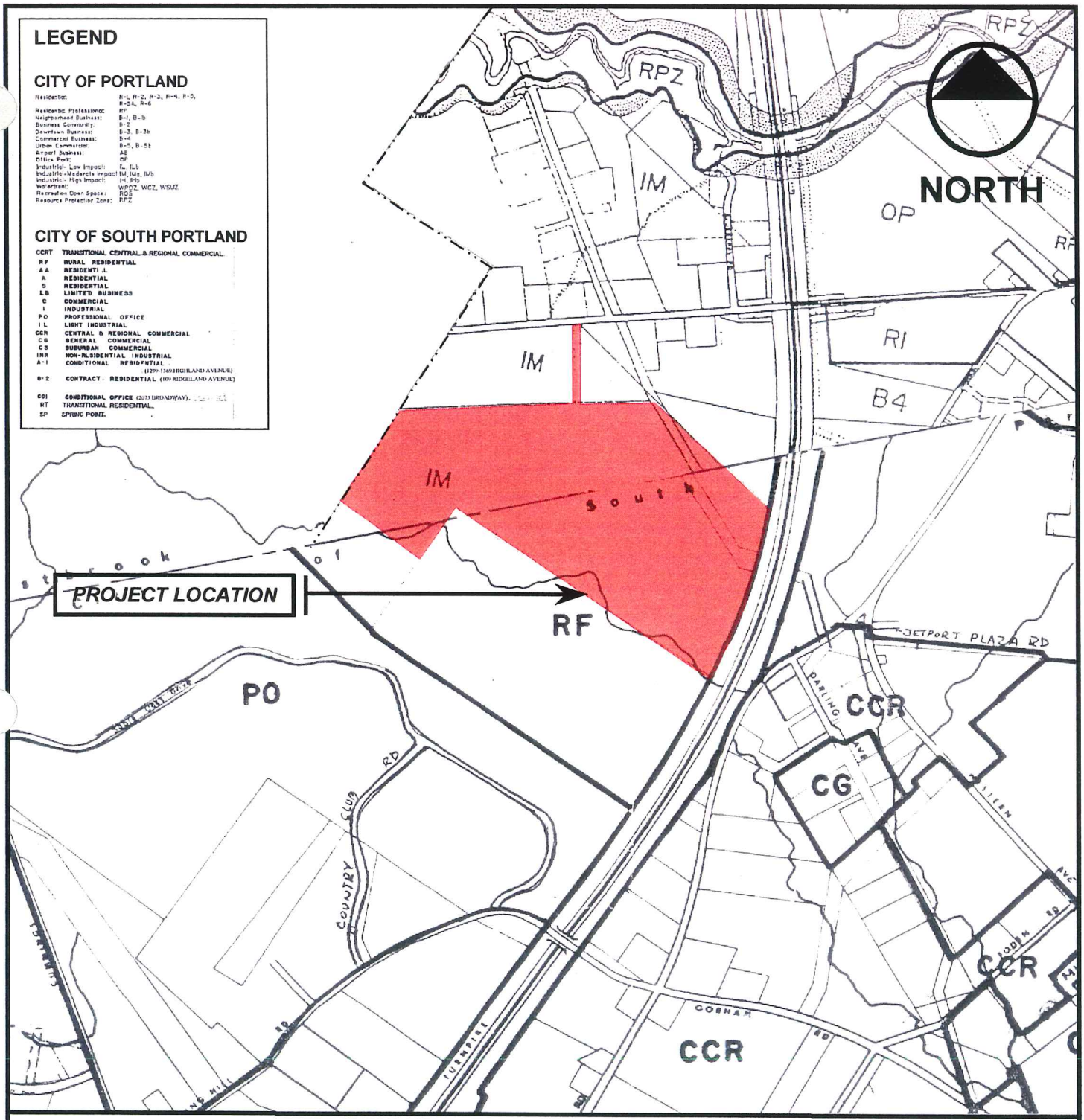
CHECKED	DDA	JOB NO.	1900.11	



ZONING MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: ZONING MAP, CITY OF PORTLAND (Southern Section); **DATED:** 1991; **REVISED:** March 1997; ZONING MAP, CITY OF SOUTH PORTLAND, MAINE; **DATED:** Amended July 1999

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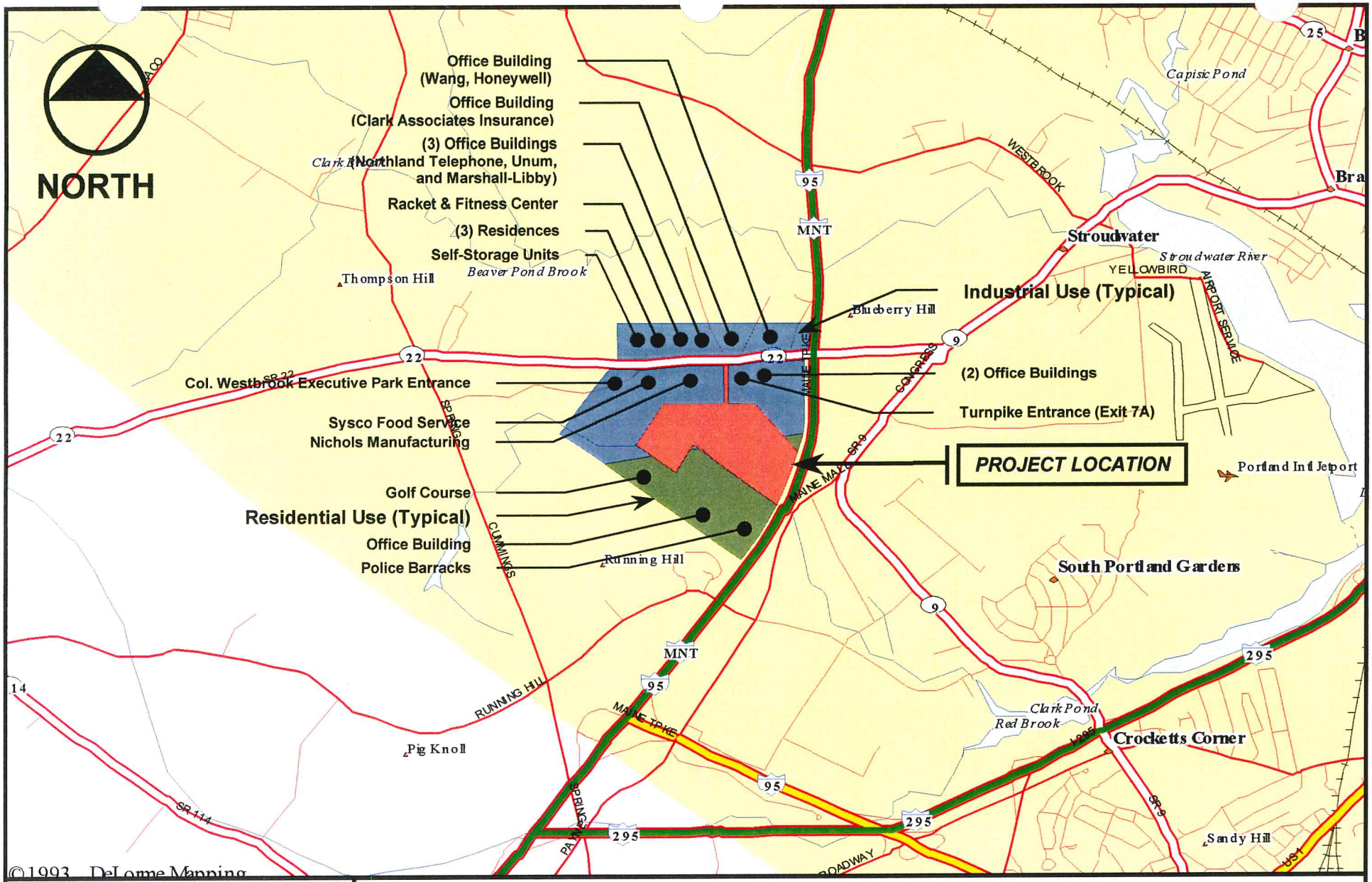
DRAWN	JDL	SCALE	1" = 1000'+-	4
CHECKED	DDA	JOB NO.	1900.11	

DH

AERIAL PHOTOGRAPH – FIGURE 5

Outer Congress Street Snow Dump Project – Portland, Maine



DeLORME ABUTTING LAND USE MAP
Outer Congress Street
Snow Dump Project
Portland, Maine
SOURCE: DeLORME MAPEXPERT

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DESIGNED	DDA	DATE	AUGUST 2000
DRAWN	JDL	SCALE	N.T.S.
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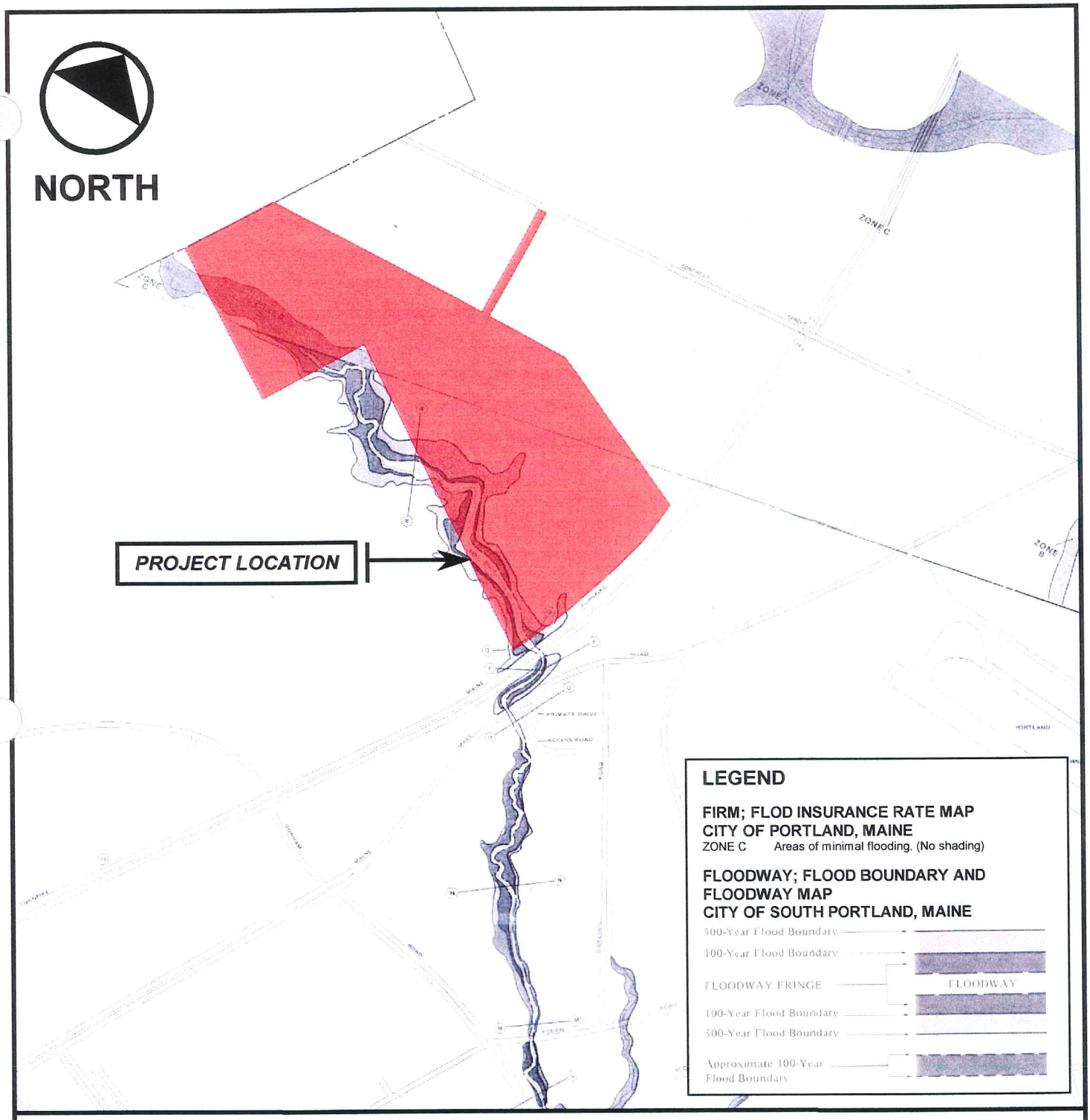
FIGURE
6



FLOOD MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: FIRM; FLOD INSURANCE RATE MAP, CITY OF PORTLAND, MAINE CUMBERLAND COUNTY; **COMMUNITY-PANEL NUMBER:** 230051 0012 B; **EFFECTIVE DATE:** JULY 17, 1986; AND FLOODWAY; FLOOD BOUNDARY AND FLOODWAY MAP, CITY OF SOUTH PORTLAND, MAINE CUMBERLAND COUNTY; **COMMUNITY-PANEL NUMBER:** 230053 0004; **EFFECTIVE DATE:** AUGUST 17, 1981

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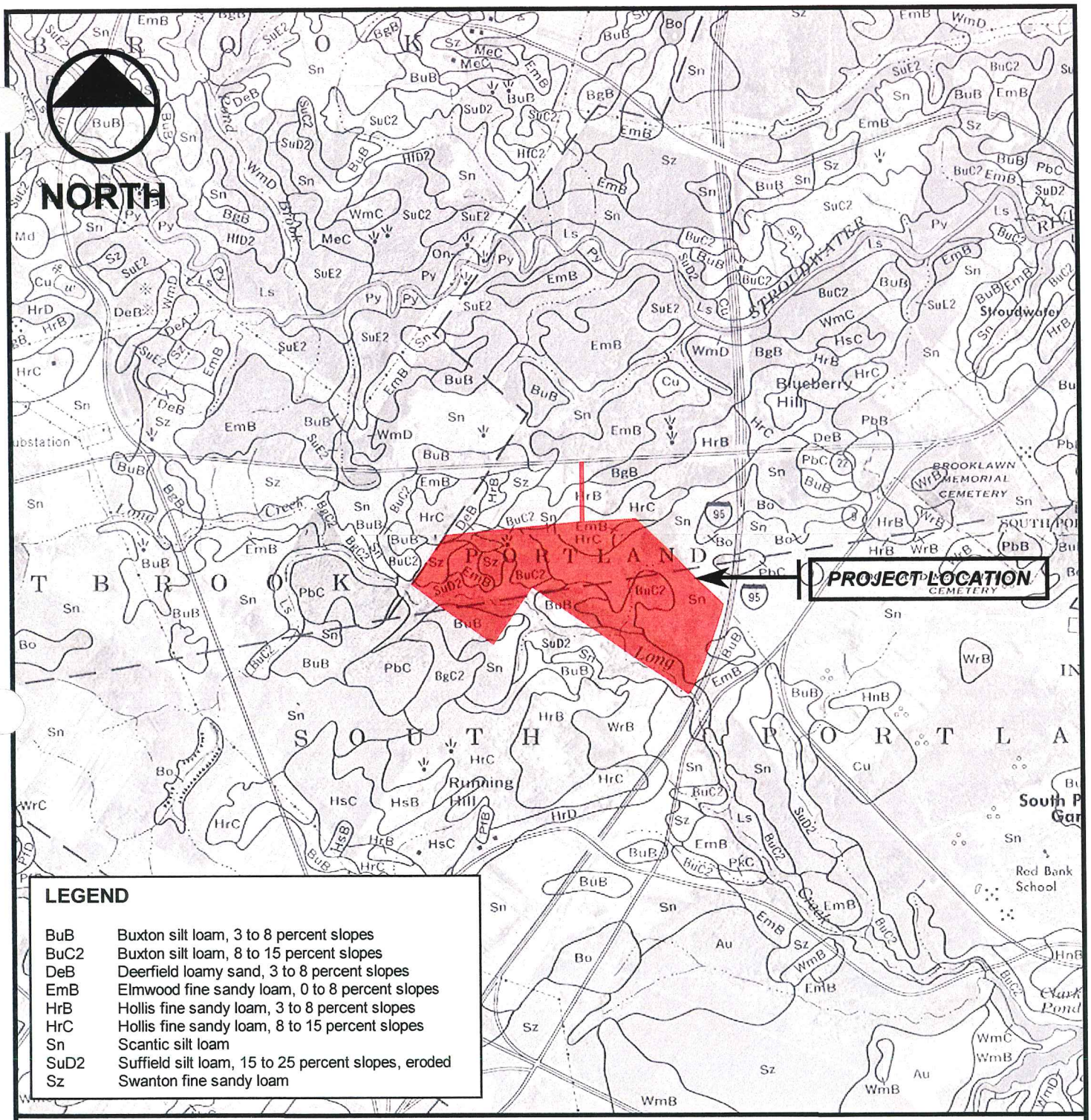

USDA SOILS MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: SOIL SURVEY; Cumberland County, Maine; **SHEET NUMBERS:** 81 & 85

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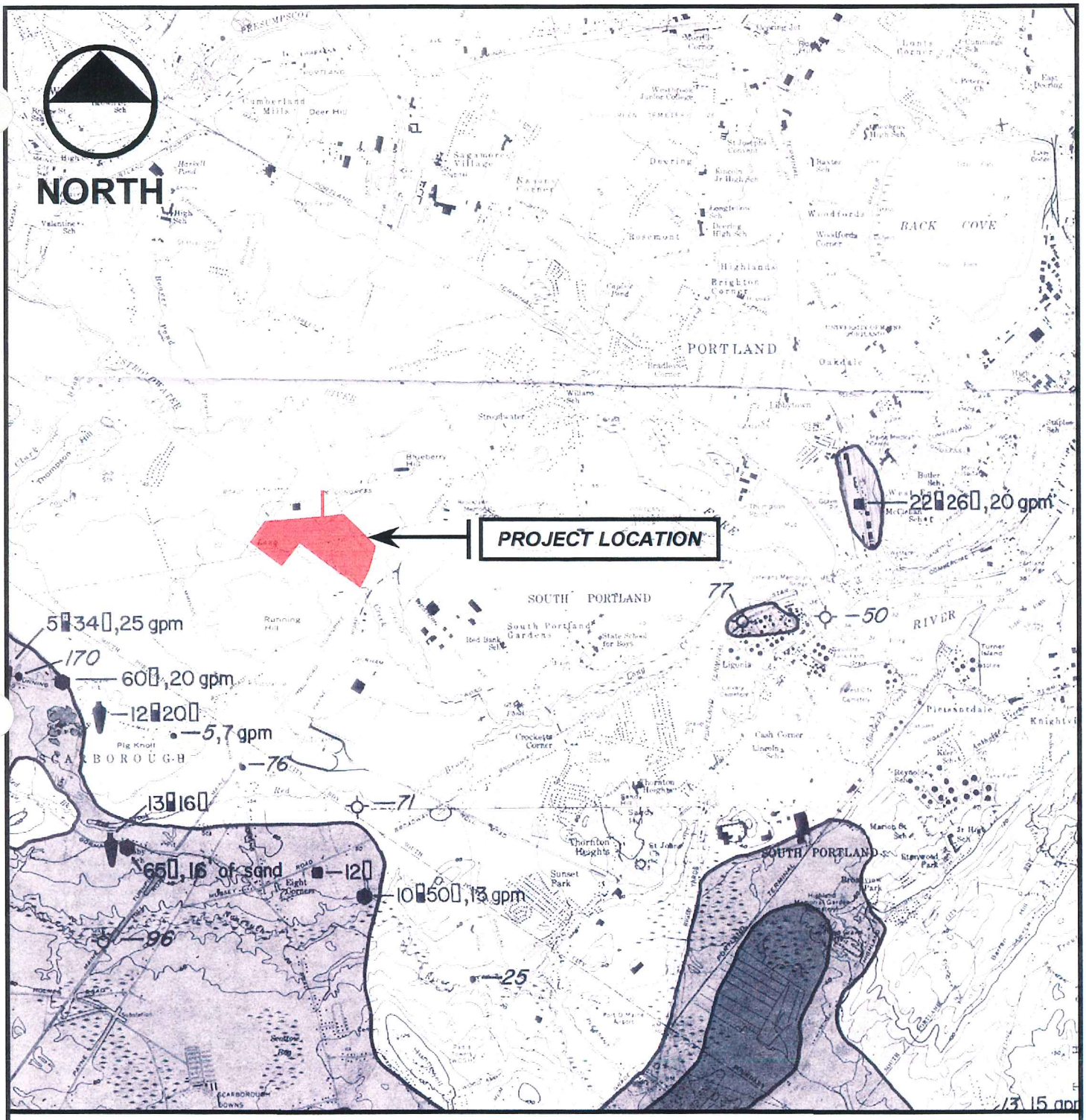

MGS SAND AND GRAVEL AQUIFER MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: SAND AND GRAVEL AQUIFERS, CUMBERLAND AND YORK COUNTIES;
OPEN-FILE NO. 79-6; **MAP NUMBER:** 5; **DATED:** 1979

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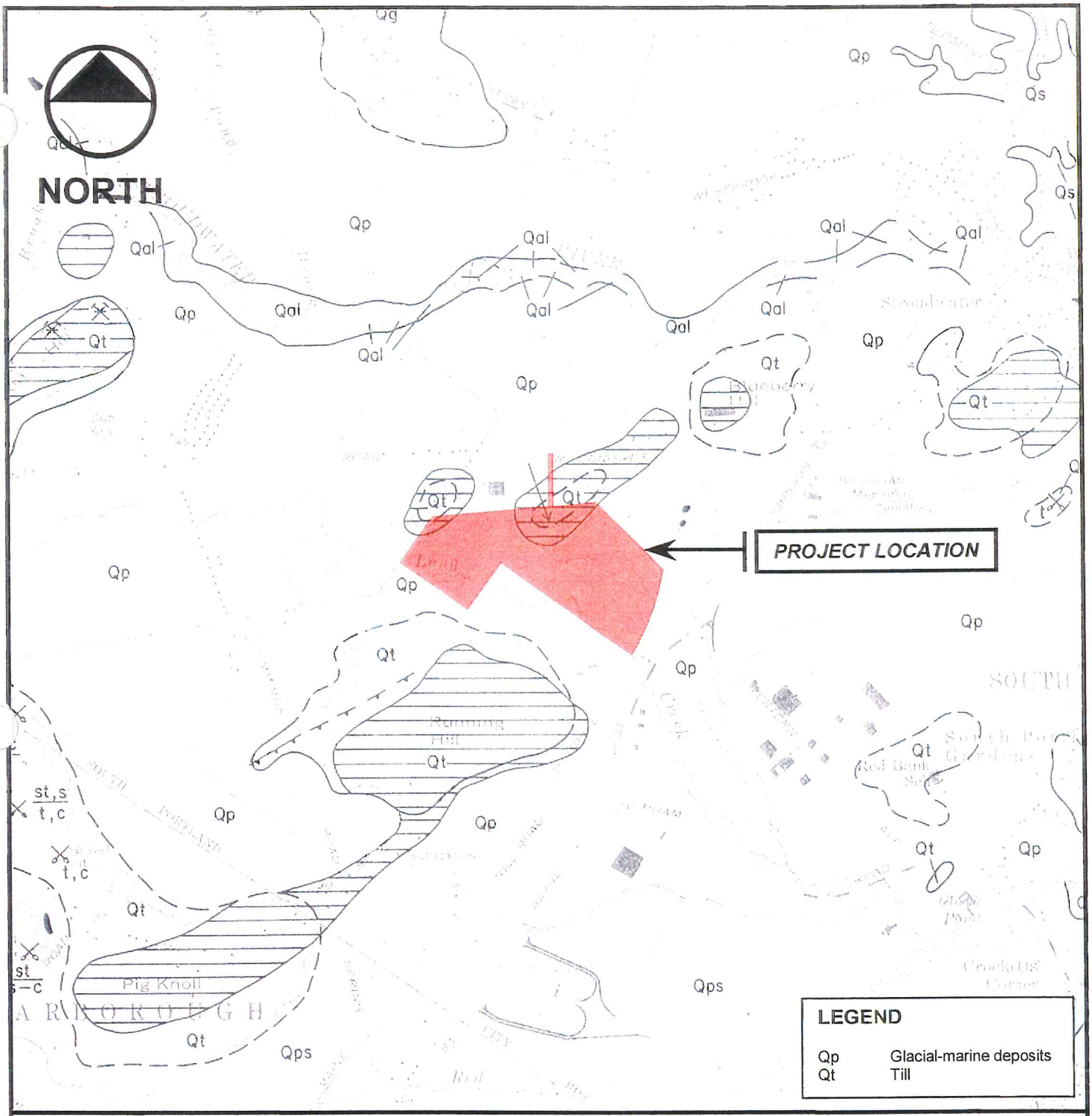

MGS SURFICIAL GEOLOGY MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: RECONNAISSANCE SURFICIAL GEOLOGY OF THE PORTLAND WEST QUADRANGLE, MAINE;
OPEN-FILE NO. 76-47; **DATED:** 76-47

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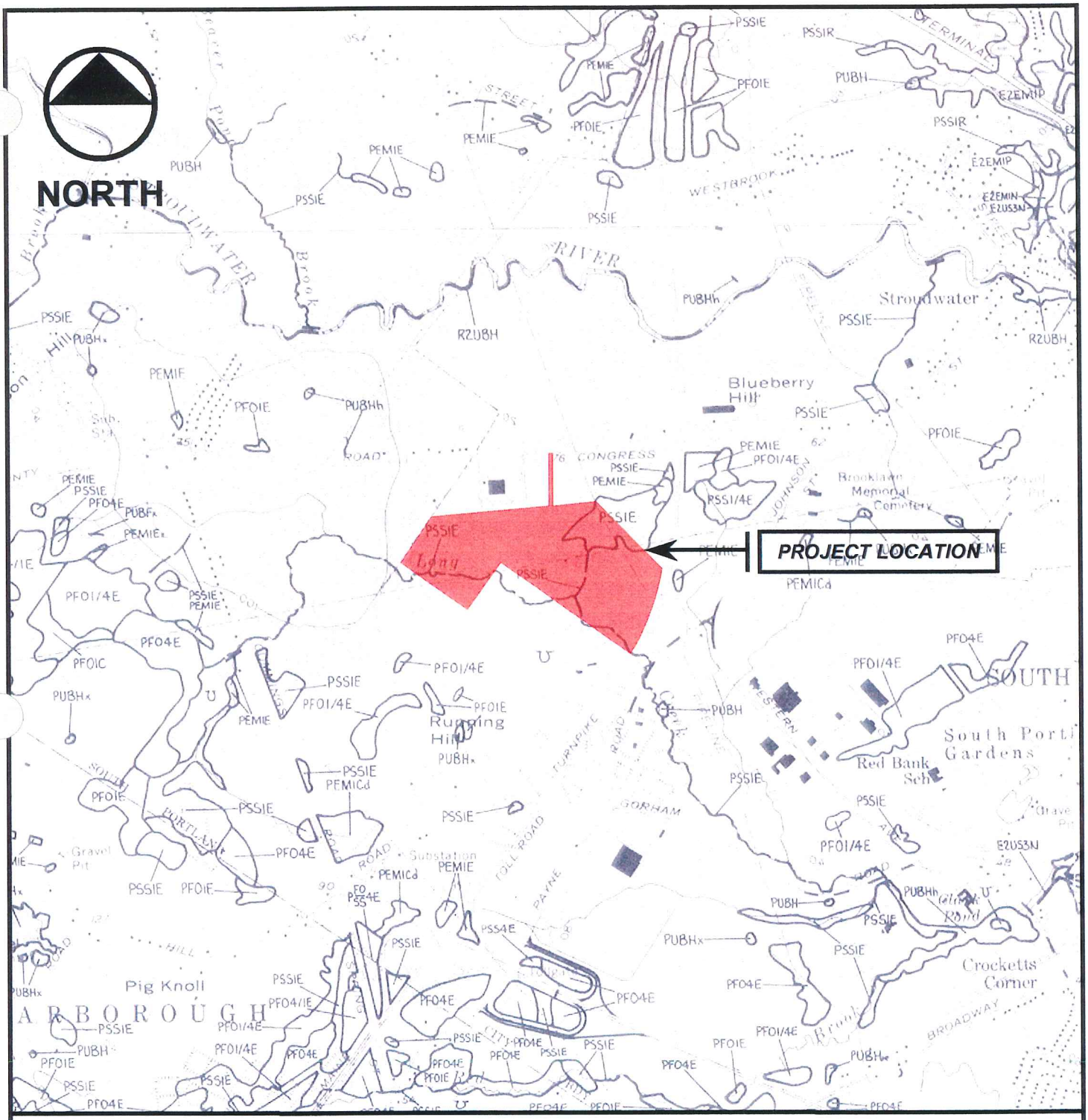

NATIONAL WETLANDS INVENTORY MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: NATIONAL WETLANDS INVENTORY, UNITED STATES DEPARTMENT OF THE INTERIOR, PORTLAND, WEST QUADRANGLE; **DATED:** 1992

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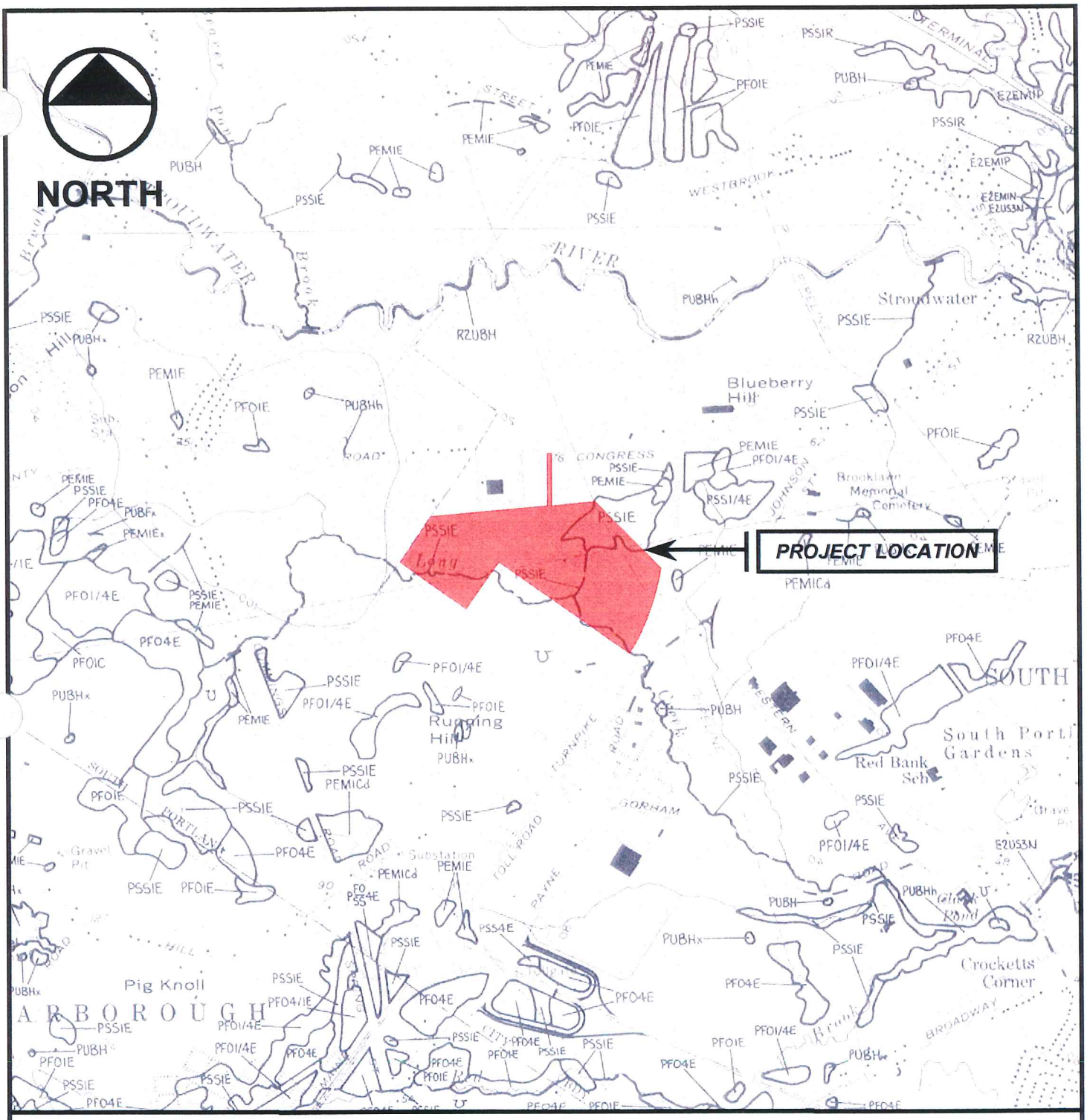

NATIONAL WETLANDS INVENTORY MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: NATIONAL WETLANDS INVENTORY, UNITED STATES DEPARTMENT OF THE INTERIOR, PORTLAND, WEST QUADRANGLE; **DATED:** 1992

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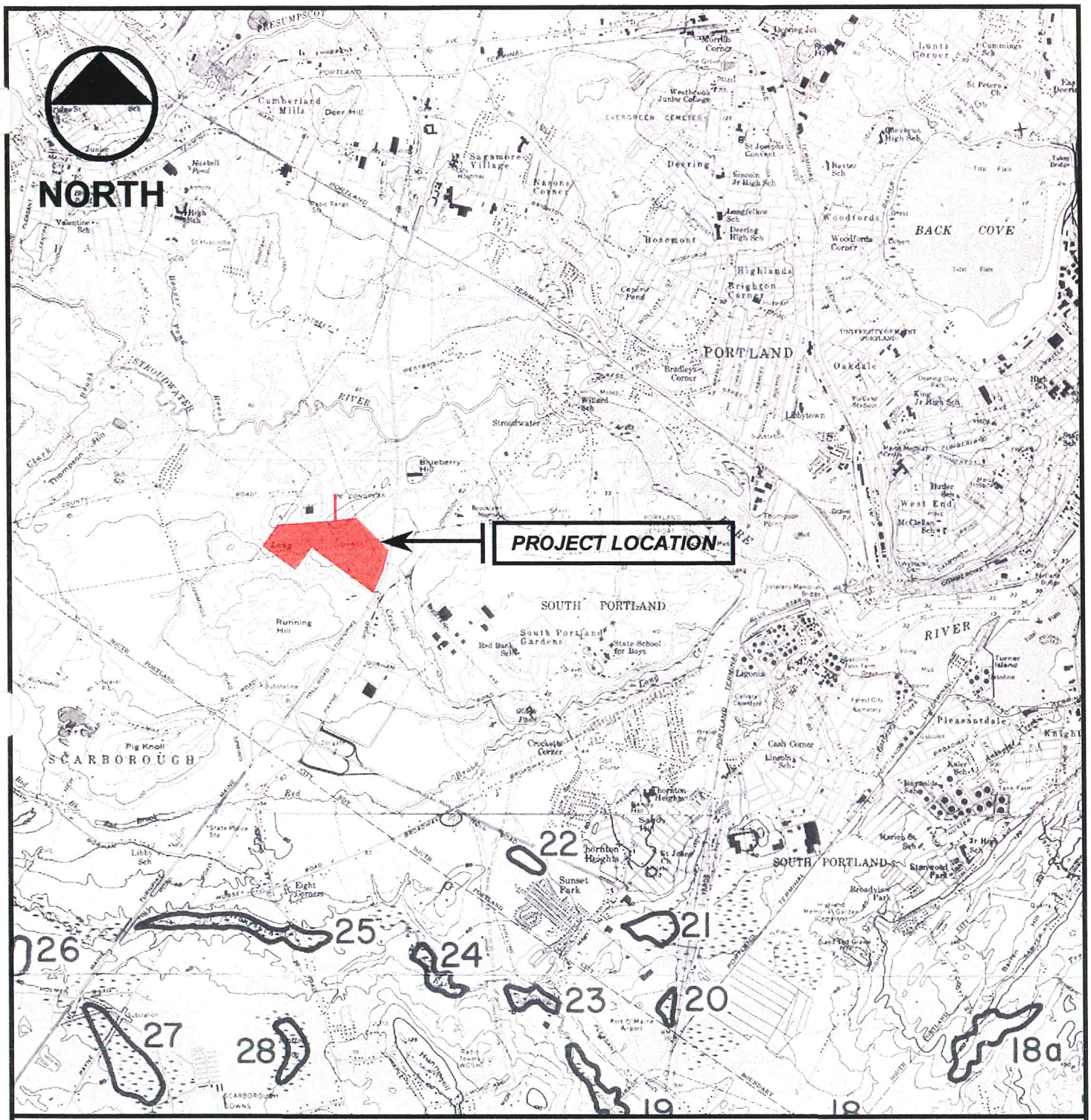

FRESH-WATER WETLANDS MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: FRESH-WATER WETLANDS; **MAP NUMBER:** 5; **DATED:** 1983

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DESIGNED	DDA	DATE	AUGUST 2000	FIGURE
DRAWN	JDL	SCALE	1" = 4167'+-	12
CHECKED	DDA	JOB NO.	1900.11	

IF&W Report - Portland Snow Disposal

Request for Information - Jennifer West

/2000

FIGURE 13

Department of Inland Fisheries and Wildlife

(207) 547-5318

1 0 1 2 Miles

Biologist Notes

No identified wildlife habitats associated with this site.

PHOTO LOOKING SOUTH AT AREA OF PROPOSED POND.

PHOTO LOOKING NORTHWEST AT WEST END OF EXISTING BUILDING.

Photos taken on 9/10/00 by Dwight Anderson

Snow Dump Project JN 1900.11

PHOTO LOOKING SOUTH AT AREA OF PROPOSED DITCH.

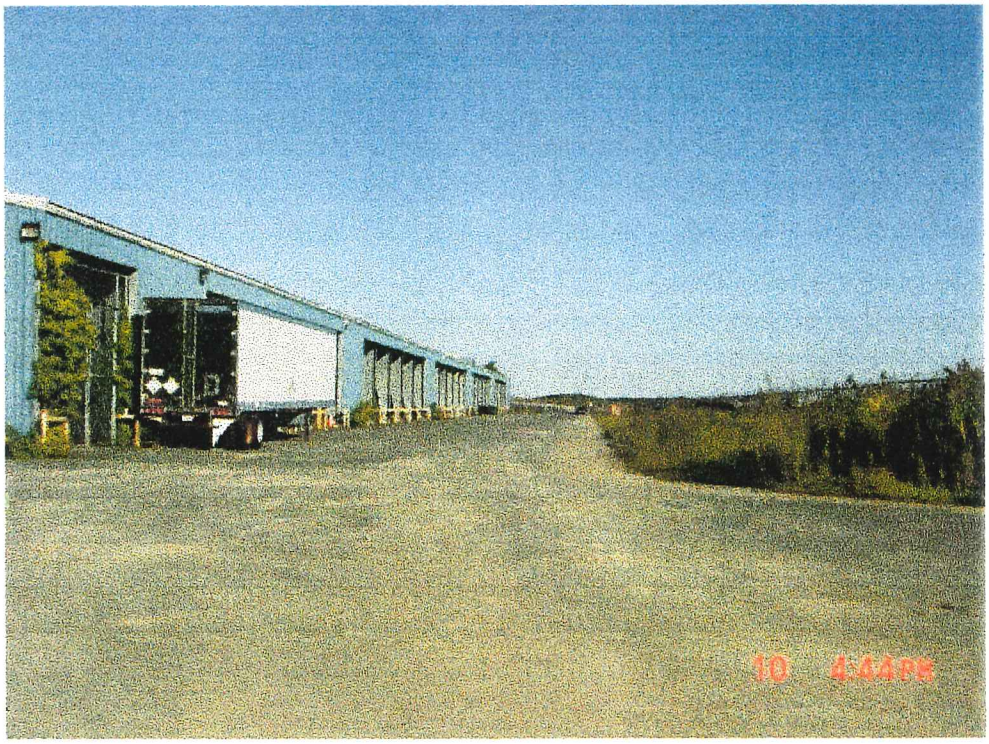

PHOTO LOOKING EAST ALONG SOUTH SIDE OF EXISTING BUILDING AT AREA OF PROPOSED PAVEMENT WIDENING.

Photos taken on 9/10/00 by Dwight Anderson

Snow Dump Project JN 1900.11

SECTION 2

TITLE, RIGHT OR INTEREST

SECTION 2

TITLE, RIGHT OR INTEREST

2.0 Overview

The subject parcel is located to the west of the Maine Turnpike off the west end of the Portland Jetport. A portion of the 88.26 parcel is located in Portland and the remaining portion of the parcel is located in South Portland as recorded at the Registry of Deeds in Book 2457 Page 262.

2.1 Attachment

Standard Boundary Survey for the parcel prepared by Dufresne-Henry, Inc. on October 30, 1997.

STANDARD BOUNDARY SURVEY FOR THE PARCEL

Prepared by Dufresne-Henry, Inc. on
October 30, 1997

SECTION 3

FINANCIAL CAPACITY

SECTION 3

FINANCIAL CAPACITY

3.0 Overview

The Portland Snow Dump project has a total budget of $150,000 provided in the City's Year 2000 Capital Improvement Program. Site work including construction of the water quality retention facility, paved access drive, storm drain system, installation of erosion control measures, grading operations, loaming and seeding will be performed by City of Portland Public Works crews.

SECTION 4

TECHNICAL ABILITY

SECTION 4

TECHNICAL ABILITY

4.0 Overview

The City of Portland has retained DeLuca-Hoffman Associates, Inc. to prepare plans and permit applications for the Portland Snow Dump project. DeLuca-Hoffman Associates, Inc. is the lead consultant for the Snow Dump project. Responsibilities of the various consultants on this project include:

Consultant	Responsibility
Aerial Survey and Photo Norridgewock, Maine	Aerial Topography
Dufresne-Henry, Inc. Portland, Maine	Standard Boundary Survey
Normandeau Associates, Inc. Yarmouth, Maine	Wetland Identification and Location
DeLuca-Hoffman Associates, Inc. South Portland, Maine	Application Preparation, Civil Engineering Site Design and Stormwater Management

4.1 Experience of Project Team

The team consultants retained by the City of Portland have expertise and experience in the design of large facilities, which require a Site Location of Development Act Permit. Wherein DeLuca-Hoffman Associates, Inc. has prepared the permit application, a list of relevant experience on projects which required Site Location of Development Act Permits are attached.

Resumes of key personnel who have been responsible for this permit application are also enclosed. The select subconsultants retained for the project also have experience in permitting in the State of Maine. Resumes of individuals working for the subconsultants can be provided upon request.

4.2 Ability of the Applicant

The City of Portland's experience is apparent in the operation and maintenance of the City's infrastructure system. Special operations and maintenance provisions for the stormwater quality retention facility is provided in Section 9 of this application.

4.3 Attachments

Attachment A – Permit Experience of DeLuca-Hoffman Associates, Inc.
Attachment B – Resumes of Key Personnel

ATTACHMENT A

Permit Experience of DeLuca-Hoffman Associates, Inc.

DeLuca-Hoffman Associates, Inc.

Permit Experience in Maine

DeLuca-Hoffman Associates, Inc. has prepared numerous Site Location of Development Permits for projects throughout the State of Maine. In addition to the permit experience listed below DeLuca-Hoffman Associates, Inc. was retained by the Maine Department of Environmental Project to prepare a Master Site Location of Development Permit for 200 acres of multi-use development in Topsham, Maine in the area of the Topsham Fair Mall and near the new Bath Brunswick bypass.

- ***Shopping Center Projects with Wal*Mart Anchor Stores.***

  The following shopping centers were permitted for Wal*Mart Stores in the State of Maine:

Location	Permit Number	Development Size	Description
Rockland	L-17640-26-A-N	93,000 ± s.f	Wal*Mart Store and outparcel
Houlton	L-18000-26-A-N	150,000 ± s.f.	Wal*Mart Store, Grocery Store, and outparcel
Waterville	L-18148-26-A-N	93,000 ± s.f	Wal*Mart Store
Skowhegan	L-18409-23-A-N	190,000 ± s.f	Retail strip center with Wal*Mart and Grocery Store
Calais	L-18408-23-A-N	170,000 ± s.f	Retail strip center with Wal*Mart and Grocery Store
Farmington	L-17771-26-A-N	76,000 ± s.f	Wal*Mart Store and outparcel
Lincoln	L-17849-26-A-N	50,000 ± s.f	Wal*Mart Store
Ellsworth	L-18070-26-A-N	93,000 ± s.f	Wal*Mart Store
Biddeford	L-18464-26-A-N	116,000 ± s.f	Wal*Mart Store with outparcel
Oxford	L-18508-26-A-N	102,000 ± s.f	Wal*Mart Store with outparcel
Windham	L-18560-26-A-N	102,000 ± s.f	Wal*Mart Store with outparcel

- ***Shopping Center Properties, South Portland, Maine***

  The project includes an approximate 23,500 in-line building expansion and addition of a freestanding restaurant to an existing 96,000 s.f. retail facility. The project demanded unique design for relocating an existing stream and providing stormwater management facilities. Mary Beth Richardson was the staff analyst for the Site Location and NRPA permitting aspects of the project.

- ***Shaw's Merrymeeting Plaza, Brunswick, Maine***

  The project includes 150,000 square feet of retail space with 735 parking spaces, utility improvements, a major upgrade of Route 24, and railroad crossing, and best management practices for the storm water discharge, Linda Kokemuller was the Staff Analyst.

- ***Biddeford Primary School, Biddeford, Maine***

  The project consisted of a 750 student, 75,000 square foot building, parking, roadways, a softball and other playfields, utilities, and related improvements. An Army Corps of Engineers and a Natural Resource Permit for three crossings of an intermittent stream were required in addition to the Site Location of Development Permit. Tim Wright was the MeDEP Staff Analyst.

- ***Winslow Common On The Lake, Falmouth, Maine***

  This project consisted of the 29-lot subdivision of 64 acres of property within the Highland Lake Watershed. A road system 4,400 feet in length, water mains, phosphorus control ponds, a dry detention pond constructed across a perennial stream, jogging trails, and a lakefront park was included in this project. Stacey Beyer Ramsay was the Staff Analyst for the MeDEP.

- ***Crescent Heights Subdivision, Casco, Maine***

  This project consisted of the residential subdivision of 27 acres into 17 lots under the affordable housing provision of the Town of Casco. The project included 2,600 feet of roadway and two phosphorous/detention/fire ponds. A Natural Resource Permit was also issued for this project. Linda Kokemuller was the Staff Analyst for the MeDEP.

- ***Madison Heights Subdivision, Naples, Maine***

  This project included the residential subdivision of an 180-acre site into eight neighborhood clusters for a total of 87 lots. The project included 12,600 feet of roadway, two dry detention basins, and three phosphorous/fire/retention basins.

  Special consideration of the thermal impacts to a trout stream which bisected the lower portion of the property was included in the design. Dave Studer was the Staff Analyst for the MeDEP.

- ***Ambleside Subdivision, Cumberland, Maine***

  This project consisted of the residential subdivision of 48 acres of land into 13 home sites, 2100 feet of roadway, a major detention facility, wet pond, and road crossing across a stream valley. A Natural Resource permit was obtained in addition to the Site Location permit. Tim Wright was the Staff Analyst for the MeDEP.

- ***Stillwater Center At The Mall, Bangor, Maine***

  This project is a large 200,000 square foot retail shopping center in Bangor, Maine. The project provides for over 1200 parking spaces and major utility improvements. The permit application included a Corps of Engineers and a Natural Resource Permit. Andrew Cobb was the Staff Analyst for the MeDEP.

- ***Burnham Woods, Phase II Subdivision, Naples, Maine***

  This project is in the Brandy Pond Watershed which is tributary to Sebago Lake. Control of phosphorus and water quality protection levels are the highest in the State. The project includes 15 lots, roadways, and phosphorus controls. Linda Kokemuller was the MeDEP Staff Analyst.

- ***Long Lake Estates, Naples, Maine***

  This project is the complete restructuring of a 72-unit condominium project to a high-income exclusive residential subdivision in Naples, Maine with frontage of Long Lake. The current owners purchased the failed project at a bankruptcy auction and immediately implemented the following steps:

  - Demolition of the 18 condominiums erected by the time of bankruptcy.

  - Implementation of an emergency restoration program to prevent continued environmental damage.

  The project includes as Natural Resource Permit and a Corps of Engineers Permit to "post permit" approximately 3 acres of wetlands disturbed by the prior owners. John James was the MeDEP Staff Analyst.

- ***Freeport Elementary School And Recreation Fields, Freeport, Maine***

  This project includes the construction of a new elementary school and a Town recreation complex on about 27 acres of land in Freeport, Maine. The project includes filling of about 2 acres of wetlands and stream alteration requiring an Army Corps of Engineers and Natural Resource Permit Applications. Andrea Lapointe was the MeDEP Staff Analyst.

- ***P & K Gravel Pit, Naples, Maine***

  This project is a major gravel pit in Naples, Maine with borrow extraction estimated at over 750,000 cubic yards of material.

- ***Quaker Ridge Estates, Durham, Maine***

  This project is an expansion of a 7-lot subdivision to 21 lots which required post permitting of the original seven lots. The project included fills in Class II and Class III with a Natural Resource Protection Act Permit. Matt Hight was the Project Analyst for the DEP Office in Portland, Maine.

- ***Stillwater Center At The Mall, Bangor, Maine***

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- ***Municipal Facilities, Buxton, Maine***

  This project includes a new municipal building, salt storage shed, and recreation fields on a 200-acre parcel of land owned by the municipality. Because of funding deadlines, MeDEP worked with DeLuca-Hoffman Associates, Inc. and the Town of Buxton to issue a permit in 2 weeks.

- ***Lee Dodge Auto Dealership, Westbrook, Maine***

  DeLuca-Hoffman Associates, Inc. prepared a post permit for activities which exceeded Site Location Law thresholds and permitted the long range expansion for a 5 year expansion program for this 20 acre facility in Westbrook, Maine.

- ***Thornton Academy, Saco, Maine***

  DeLuca-Hoffman Associates, Inc. prepared civil drawings and the MeDEP Permit Applications for work to include additional building space, reconfigured parking and access around the school.

- ***Scarborough Middle School, Scarborough, Maine***

  This project involves construction of a new school, parking lots with 318 spaces, 2 stormwater quality management ponds, and athletic fields. DeLuca-Hoffman Associates, Inc. prepared civil drawings and MeDEP Permit Application in coordination with Stephen Blatt Architects.

- ***Oxford Hills High School Expansion, Norway and Paris, Maine***

  The project involved a 22 million-dollar high school expansion. The upgrade required state and federal permits and has a separate athletic field complex.

- ***University of Maine Systems, University of Southern Maine, Gorham Campus***

  DeLuca-Hoffman Associates, Inc. prepared the Site Location of Development Permit Application for the Gorham Campus. The applications permitted post 1970 activity as well as the new Ice Arena and Fieldhouse. A detailed campus parking and traffic study was prepared as part of the permitting activity.

- ***Poland Middle and High School, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the Site Location Permits and completed the site design as a subconsultant to PDT Architects for a new middle and high school complex on 100 acres of land in Poland. The site contains a former borrow pit and is within a lake watershed requiring special water quality measures.

- ***Piper Shores, Scarborough, Maine***

  DeLuca-Hoffman Associates, Inc. prepared the civil/site design for the Maine Life Care Retirement Community in Scarborough, Maine. The project required a local contract zoning. The community will set a new standard and is anticipated to become Maine's premier and most desirable retirement community.

- ***Topsham Demonstration Project and Business Park, Topsham, Maine***

  DeLuca-Hoffman Associates, Inc. was retained by the Town of Topsham and MeDEP to conduct a pilot project to examine the viability of the Master Plan approach to Site Location permitting. Subsequently, DeLuca-Hoffman Associates, Inc. permitted the 25-acre Topsham Business Park which was within the pilot study area.

- ***Saco Industrial Park, Saco, Maine***

  DeLuca-Hoffman Associates, Inc prepared the Site Location of Development Permit, Tier 3 NRPA Wetlands Permit, and local Subdivision Permit Application for the Saco Industrial Park Expansion. The project includes the extension of infrastructure including rail lines to expand the City's Industrial Park to Route 1 and development of 24 industrial lots on a 120 acre parcel of land. Natural resource impacts require wetland fill permits for 1.81 acres of wetland.

- ***York Commercial Park, York, Maine***

  The project includes a five lot commercial subdivision with a Hannaford store in York, Maine.

- ***Westbrook Power Plant, Westbrook, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the Federal and State Site Permit Applications for the proposed 528mw gas fired generation facility in Westbrook, Maine. The permits for the project have been received. Construction of this $250,000,000 facility is scheduled to commence in February 1999.

- ***Shop 'n Save Grocery Store, Waterboro, Maine***

  This project includes an onsite wastewater disposal system with pretreatment, two lined water quality ponds and a Shop 'n Save grocery store.

- ***Interstate Bakeries***

  DeLuca-Hoffman Associates, Inc. was retained by Florida Crown to amend the State and Federal site permits for the relocation of the former Nissen Bakery of Portland.

- ***Lake Region Middle and High Schools, Naples, Maine***

  DeLuca-Hoffman Associates, Inc. prepared the permit applications and site designs for the MSAD #61 athletic field upgrades at the high and middle school complex in Naples, Maine.

- ***West Falmouth Crossing, Falmouth, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the civil/site designs and permit applications for a large mixed use commercial development in Falmouth, Maine. Complex phasing is required to construct the project due to unstable clay soils.

- ***Scarborough School – Wentworth Campus, Scarborough, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared permit applications to implement a master plan (permit pending) for the Wentworth School in Scarborough.

- ***Biddeford Business Park, Biddeford, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the permit applications for a 15-lot business park. The design includes all utilities, water quality measures, and extensive rock removal. (Permit pending.)

- ***Lake Region School District; Bridgton Elementary School, Bridgton, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared site location permit applications for the Bridgton Elementary School. This project requires phosphorus controls, a new wastewater disposal field, and a new campus site design. (Permit pending.)

- ***Bowdoin College – Office Building, Brunswick, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the technical documents to support the College's Site Location of Development Permit for the office building at the Main Street Station Site. (Permit pending.)

- ***Maine Criminal Justice Academy, Vassalboro, Maine***

  DeLuca-Hoffman Associates, Inc. is completing permit applications for the Maine Criminal Justice Academy in Vassalboro.

- ***Village School, Gorham, Maine***

  DeLuca-Hoffman Associates, Inc. is completing feasibility studies for the upgrade of the Village School campus to enhance circulation, provide adequate areas for bus queuing, and reconstruct recreation fields. Permit applications are scheduled to be prepared in early 1999.

ATTACHMENT B

Resumes of Key Personnel

DeLuca-Hoffman Associates, Inc. Since 1988

University of Southern Maine, Gorham, Maine:

Design, permitting, and construction administration services for the construction of new access roads and parking facilities to support the new athletic fieldhouse and ice hockey arena. The new access road services as a secondary connector road through the campus site from Route 25 to School Street. This was a requirement of the Town of Gorham to improve emergency access for the University Campus. The overall project included the construction of 4,500 l.f. of access roads, vehicular parking areas (423 spaces) water quality retention pond, and site improvements associated with the new athletic facilities.

Saco Industrial Park Expansion, Saco, Maine:

Design, permitting, and construction administration services for the development of a 124 acre expansion to the Saco Industrial Park. The industrial park expansion consists of the creation of 24 industrial lots with the construction of 6,600 l.f. of access road with two water quality retention ponds. The new access road will eventually provide a direct connection between the existing Industrial Park Road and U.S. Route 1. The initial phase of the project is currently under construction.

Sweetser School Secondary Access Route, Saco, Maine:

Evaluation of potential routes for providing a second means of vehicle access into the Sweetser Children's School site in Saco, Maine. The project includes development of an overall constraints map to assess potential access routes which provide a secondary access road and potentially open additional land areas for development/expansion. Design and permitting services will be provided based upon the selection of the most feasible and practicable access route. The construction of the secondary access road is anticipated to occur during the year 2000.

Route 1 Sewer Improvement Project, Saco, Maine:

Design and construction administration of an 8.5 million dollar sewer improvement project. Included within this project were over 5,900 linear feet of force main, 19,800 linear feet of gravity sewer main, 5,500 linear feet of sewer and storm drain service leads, and 7,600 linear feet of storm drain.

Bear Brook, Goosefare Brook and Mill Brook Sewage Pump Stations, Saco, Maine:

Design and construction administration for three sewage pump stations with a maximum pump capacity ranging from 1,000 to 3,000 gpm. Included within this project were odor control systems, emergency standby generator, and instrumentation system containing a SCADA system.

Colonial Road Sewage Pump Station, Westbrook, Maine:

Design and construction administration for a duplex self-priming sewage pump station with a maximum pump capacity of 600 gpm. This project included the upgrade of an existing pump station to include new equipment, instrumentation, odor control system, and permanent emergency standby generator.

SENIOR ENGINEER

Mr. Laverriere is a Senior Engineer with DeLuca-Hoffman Associates, Inc.'s Land Design and Engineering Services Group and Environmental and Water Resources Group. He directs the preparation and review of preliminary and final design as well as permit applications for a variety of civil/site and environmental engineering projects. Mr. Laverriere's expertise includes civil/site design, hydraulic and hydrologic analysis.

Thornton and Storer Streets, Saco, Maine:

Design and construction administration for sanitary sewer replacement and storm drain separation along two urban streets. Included within this project were complete utility infrastructure and full depth road reconstruction.

Lower Route 1 Infrastructure Improvements, Falmouth, Maine:

Design and construction phase services for the replacement of sanitary sewer main and service leads along eight residential streets in Falmouth. The project also included the installation of a new storm drain system designed with service leads to receive illicit inflows from residential home foundation drains and sump pumps. The primary purpose of the project was to reduce the amount of infiltration and ground water inflow into the sanitary sewer system. The first three phases of the project were constructed from 1995 through 1997 with the final phase scheduled for the spring of 1998. The total cost of construction is 1.5 million dollars.

Wastewater Treatment Plant Secondary Clarifier, Saco, Maine:

Design and construction administration for a new 75' diameter secondary clarifier and flow split structure to replace existing clarifier tankage damaged during the October 1996 flood event. A key element in the design included maintaining of plant flows and treatment capacity throughout the construction process. The total cost of construction is 1.2 million dollars which involved federal money through the FEMA Disaster Relief Program and SRF money through the Maine Bond Bank.

Combined Sewer Overflow, 5-Year Plan, Portland, Maine:

Participation in the preparation of the City's initial 5-year plan for abating CSOs throughout the City. The preparation of the 5-year plan required development of a ranking system for all CSO abatement projects in order to implement the most cost-effective projects during the initial years of the program. Re-evaluation of the financial requirements for the 5 year plan was performed in order that the City could assess the impacts on the sewer user rate necessary to fund the program.

EDUCATION:	BSCE - University of Maine, Orono, Maine (1986)
REGISTRATION:	Registered Professional Engineer, Maine
AFFILIATIONS:	Member, American Society of Civil Engineers Member, Water Environment Federation
EXPERIENCE IN FIELD:	Active in Private Practice Since 1986

DeLuca-Hoffman Associates, Inc. Since 1997 **Dwight D. Anderson, P.E.**

MBNA Operations Facility Phase III Expansion, Belfast, Maine:

Performed surface water quantity and quality analyses in order to prepare the Stormwater Management Report for MBNA's Phase III Operations Facility Expansion including development of an additional 30 acres on MBNA's 334 acre parcel. Development of the stormwater management plan included analysis for a 111 acre watershed within the parcel; review of the water quality impacts to Belfast Reservoir No. 2 as well as streams conveying stormwater from the site; and the design of four water quality retention facility's for phosphorus removal and stormwater detention.

University of Southern Maine, Lewiston, Maine:

Design, permitting and construction administration services for the construction of a 30,000 square foot vehicular parking area within the Lewiston-Auburn Campus. The overall project included the construction of a 115 space paved parking area, restriping of an existing 270 space parking area, site lighting system, landscaping, and surface restoration within other areas of the campus.

Spring Street Trunk Storm Drain Project, Saco, Maine:

Design, permitting and construction administration services for the construction of a 2,400 linear foot trunk storm drain along Spring Street, to convey the upper reaches of the 350-acre Sawyer Brook watershed directly to the Saco River. The trunk storm drain is comprised of 185 linear feet of 5 foot by 10 foot precast concrete box storm drain, 665 linear feet of twin 72 inch diameter reinforced concrete pipe, 1,210 linear feet of 96 inch diameter reinforced concrete pipe and 340 linear feet of 84 inch diameter reinforced concrete pipe. The project also included reconstruction of the majority of the 45 foot wide Spring Street roadway, water main relocation and sewer main relocation. The $2.6 million project was part of a joint effort by the City of Saco and the Federal Emergency Management Agency.

Sweetser Children's Services Crisis Center, Saco, Maine:

Design and permitting for the construction of a 4,900 square foot Crisis Center building and associated site improvements. The project included sewer force main and affluent pump analysis, stormwater analysis involving hydrologic modeling (TR-20 HYDROCAD Software), and design of a dry detention basin to detain stormwater to mitigate increases in peak runoff associated with the development. The overall project will include disturbance of approximately one acre of land to construct the 4,900 square foot building, paved access drive and 30 space parking area.

George E. Jack Elementary School Improvements, Standish, Maine:

Design and permitting for the construction of a 96 vehicular space parking area, site lighting, site landscaping, stormwater detention facility and 180 foot by 330 foot soccer field.

Jewett/Hanson Schools Campus Improvements, Buxton, Maine:

Participation in the design, permitting and construction administration services for the construction of campus improvements including 97 vehicular parking spaces, new access drives, sidewalks, site landscaping and site lighting.

Lower Route 1 Infrastructure Improvements, Whitney Road, Falmouth, Maine:

Design and construction phase services for the replacement of sanitary sewer main and service leads along Whitney Road in Falmouth. The project also included the installation of a new storm drain system designed with service leads to receive illicit inflows form residential home foundation drains and sump pumps. The primary purpose of the project was to reduce the amount of infiltration and ground water inflow into the sanitary sewer system. The total cost of construction for the project was $250,000.

Wayside Road and Woodfield Road Sewer Separation Project, Portland, Maine:

Design of infrastructure improvements which includes 3,500 feet of roadway and sidewalk reconstruction, approximately 2,400 linear feet of sanitary sewer and separate storm drains. This project included the hydrologic evaluation of a 13 acre urban watershed and hydraulic analysis of proposed sanitary sewers and storm sewers within the watershed. The Rational Method was used for analyzing stormwater runoff volumes and Manning's Equation was used for analyzing minor losses in the formal drainage systems. The total estimated construction cost for the project is $1,000,000.

Education:	BSCE – University of Maine, Orono, Maine (1994)
Registration:	Registered Professional Engineer, Maine
Experience in Field:	Active in Private Practice Since 1999

SECTION 5

SOLID WASTE

SECTION 5

SOLID WASTE

5.0 Overview

The City of Portland has existing provisions for handling solid wastes which will be utilized for this project. The only solid wastes anticipated form this development include stumps and grubbing debris quantified as follows:

- Clearing:
  Approximately 0.1 acres @ 400 cy/acre = 40 c.y
- Other vegetated area:
  Approximately 2.1 acres @ 100 cy/acre = 210 c.y
  Total = 250 c.y

Stumps will be chipped and used for erosion control mix or landscape mulch.

5.1 Construction and Demolition Debris

The proposed project does not require any demolition or construction work which will require special disposal. Demolition work is anticipated to include only inert materials (soil, rock, concrete, etc.)

SECTION 6

ODORS

SECTION 6

ODORS

6.0 Summary

Odors will be generated during the construction phase of the development and during operation of the facilities.

Short-term odors or odors generated during construction include the following:

1. Organic odors from earth moving during construction.
2. Petroleum odors form construction equipment and vehicles used during construction for the project.

These odors will emanate from the site and may be detectable in the immediate vicinity of this development but will dissipate through the air into the atmosphere into negligible amounts. However, the generation of these odors will occur only during the construction phase of the project; therefore, the impact of these odors is considered negligible.

Long-term odors or odors generated during day-to-day operation of a facility such as the snow dump and material storage building include:

1. Petroleum odors from vehicles traveling to and from the facility.
2. Organic odors from stored materials.

These odors are not likely to be considered offensive, as they are of low intensity and the site is well within the property line of the City's parcel. Therefore, no provisions for odor control are planned.

SECTION 7

WATER VAPOR EMISSIONS

(Not Applicable to this Project)

Large scale water vapor emissions are not anticipated as part of this project.

SECTION 8

SUNLIGHT

SECTION 8

SUNLIGHT

8.0 Overview

The proposed snow dump is not anticipated to cast any shadows on neighboring properties or block access to direct sunlight for structure utilizing solar energy. The maximum building height within the industrial zone (I-M) is 75 feet. The existing material storage building on the parcel is 30 feet high. The layout plan shows existing and planned lot development and their relationship to property lines.

8.1 Conclusions

Based upon a review of the existing conditions and proposed development with the snow dump project parcel, it is not anticipated that the snow dump area and materials storage building will cause any significant shadow impact on the surrounding properties.

8.2 References

Site Layout Plan
Grading, Drainage and Erosion Control Plan

SECTION 9

MAINTENANCE OF COMMON FACILITIES OR PROPERTY

SECTION 9

MAINTENANCE OF COMMON FACILITIES OR PROPERTY

9.0 Overview

Maintenance of roadway, utility infrastructure systems, sedimentation control devices and the water quality retention facility will be provided by the City of Portland.

The stormwater quality retention facility includes certain features and requires maintenance which the City of Portland may not be typically accustomed to; however, the Public Works Department has the equipment and expertise to perform the operation and maintenance requirements. An inspection and maintenance program for the water quality retention facility has been prepared and is enclosed as Attachment A.

9.1 Attachment

Attachment A - Stormwater Management Systems Inspection and Maintenance Program

STORMWATER MANAGEMENT SYSTEM
INSPECTION AND MAINTENANCE MANUAL FOR
WETPOND AND RELATED STORMWATER FACILITIES

Prepared by:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121

September 2000

TABLE OF CONTENTS

APPENDICES

I. Introduction

Relatively complex stormwater management facilities are commonly installed in large development projects. The complexity and goals of these systems vary with the nature of the receiving water, as well as the type of development. Runoff from developed areas, contain a number of contaminants especially those emanating from rooftops, paved or lawn areas. This runoff can contain a significant amount of non point contaminants which can have an adverse impact on the receiving waters. The installation of wet ponds, many times combined with vegetated buffer strips and other measures can significantly reduce the non point pollution discharge from the developed area. These measures are particularly important to projects in sensitive lake watersheds.

The effectiveness of ponds and other components of the system is dependent on their upkeep and maintenance to assure they meet their design function over an extended period of years. It is critical that the stormwater management facilities are inspected on a regularly scheduled basis, and that maintenance is performed on an as needed basis. It must also be recognized that the effectiveness of these facilities, and their maintenance requirements, are related to the stormwater drainage facilities that transport the flow to the ponds or treatment measures. Thus, maintenance should be directed to the total system, not just the pond itself.

The purpose of this document is to define in detail the inspection and maintenance requirements deemed necessary to assure that the stormwater management facilities function as intended on a long-term basis. Subsequent sections identify individual maintenance items, give a brief commentary of the function and need of the item, a description of the work required, and a suggested frequency of accomplishment. While the suggested programs and schedules must be adapted to specific projects, the material presented should provide guidance for a successful long-term program.

A. Guidelines Overview

A summary of the individual components of stormwater management facilities has been prepared. The format used in the summary is as follows:

Preface: A general description of what function/benefit the element is intended to provide. This is a short summary and not intended to provide the design basis which can be found in other sources.

Inspection: This section provides the inspection requirements for the individual component.

Maintenance: The section provides general information on the routine maintenance requirements of this element.

Frequency: This section outlines the best judgment of the designer of the system to the frequency of maintenance.

Comments: This section provides any particular comment on the site specific features of this element. This is a summary only. The owner/operator should review the design drawings and documents carefully to understand the particular elements of the project. The end of this section should allow for the owner/operator to make notes on the specific program. This may include the selected maintenance procedure, cross references to applicable design drawings, etc.

A list of the individual inspection/maintenance elements is provided in the table of contents.

II. Project Overview

Key permits issued (or applied for) on the project include:

- MeDEP Site Location of Development Permit

A copy of these permits should be appended to this manual as Appendix C. The Owner/operator of the stormwater management system should review these permits for a general description and background of the project, as well as any specific permit conditions or requirements of the project

The Owner of the project has retained the following firm to prepare the design for the stormwater management facilities:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
So. Portland, Maine 04106
(207) 775-1121

It is recommended the preparer of the plan be contacted with any particular questions on the design intent or similar issues.

The applicable plans/design documents which apply to the project are:

Plans for the City of Portland
Portland Snow Dump Project
Prepared by DeLuca-Hoffman Associates, Inc.

Copies of these documents should be retained with the manual.

The key receiving waters for this project are Long Creek and Clark Pond.

The manual is intended for general guidance. However, any substituted deviations from the manual should be reviewed with respect to provisions of Appendix C.

A summary of the stormwater management facilities for this project is as follows:

- Street Flow/Open Channel Conveyance Systems
- Wet Retention Pond Facilities
- Outlet Control Structures
- Riprap and Vegetated Spillways and Channels
- Culverts
- Closed Storm Drain System

III. Standard Inspection/Maintenance Descriptions

A. Pond Overflow Channel

Preface: The stormwater pond is designed for a permanent pond condition. When storm events occur, the water in the pond is displaced by the entering flow. Flow from the pond is discharged to a spillway channel. This channel is riprapped to convey flow down the berm or embankment.

Inspection: The channel will operate frequently, it is important to assure that it is operable as intended. The channel must be inspected to assure the surface is stable and has not been removed or displaced by vandals. The area should be inspected to note any larger brush or trees which could become established in the spillway channel and outlet pad.

Maintenance: Requirements for the spillway should be limited. Any brush or trees which become established should be cut and kept in a cropped condition. Any debris which may accumulate in the channel should be removed.

Frequency: The spillway should be inspected on an annual basis, and after a high intensity rainfall event (in excess of 3 inches in a 24-hour period). Maintenance should be conducted on an as needed basis.

B. Control Structures

Preface: An outlet control structure will be installed in the berm of the proposed pond. This outlet structure will be installed to regulate the hydraulics of the inlet to control peak release rates from the watershed.

Inspection: The outlet control structure and associated storm drains must be inspected to assure they maintain their intended hydraulic characteristics. The inspection would note any debris or sediment which may accumulate in the structure and in the incoming and outlet pipes. It is noted that it does not take much debris or silt to alter the hydraulic characteristics of the discharge. The culvert inlet should be inspected to assure it is not corroded or the perimeter damaged to the extent that its flow characteristics may be altered.

Maintenance: Maintenance of the control structure will consist primarily of removing debris which may accumulate.

Frequency: The control structure should be inspected semi-annually, after a high intensity rainfall event (in excess of 3 inches in a 24-hour period), or when abnormal levels are observed in the pond. Debris and silt should be removed during each inspection.

Comments: None

C. Pond Berms

Preface: Many times pond construction will include installation of an earthen berm or dike to contain the water. The retention pond is formed with both excavated slopes and constructed berms. The maintenance and monitoring discussed here applies to both the side slopes of excavated pond areas and the constructed pond berms. All excavated slopes and constructed berms must maintain their integrity to contain water without catastrophic leakage. Erosion or piping could cause pond failure. It is critical that the integrity of the berm be maintained.

Inspection: The berm must be periodically inspected to note any sags, slope sloughing, erosion, cracking, or undesirable tree growth. Inspection can be best accomplished at low pond level in the late summer to allow observation of normally submerged slopes. Any defects in the berm must be noted and documented. It is noted that on larger ponds muskrats can burrow into the sidewall to the extent that the wall's structural integrity can be diminished. Dry ponds may have occasional problems with burrowing animals.

Any noted sags, or slope sloughing should be corrected after the causative factor has been identified and mitigated. If muskrat burrows become a problem the muskrats should be trapped and removed from the site. This should be accomplished in cooperation with wildlife officials. Some situations have occurred where burrowing animals cause a significant problem with pond integrity. While this situation is generally rare, in certain instances it may warrant placement of a barrier. Chain link fence with shallow cover has been a successful deterrent in some cases.

Frequency: Berm inspections should be done annually during a low water regime. Grassed areas along the top of the berm should be mowed monthly during the growing season. Repair of any berm defects should be accomplished in a timely manner to limit further deterioration.

Comments: None

D. Vegetation in Pond

Preface: Typically, ponds constructed for stormwater management will have an earthen bottom. Aquatic vegetation will often become established in such ponds. It will be more prevalent in ponds with silty soils and less prevalent in granular soils. This vegetation is beneficial as it assists in nutrient removal, provides wildlife habitat, and assists in side slope stability through its root structure.

Proper maintenance is important because, if the vegetation proliferates beyond acceptable levels, it can become a detriment to the pond function. Dying vegetation may also accumulate on the pond bottom where it will release nutrients back in the water, and may lower oxygen levels. If allowed to accumulate, it will lessen pond volumes over time.

Inspection/Monitoring: The extent of aquatic vegetation associated with the retention pond should be monitored. A photographic record of growth is beneficial.

Maintenance: Judgment must be used to determine a proper balance between desirable growth levels and excessive growth. This will be gained by experience. If excessive growth is observed it should be cut back and removed on an annual basis.

Removal of excessive growth should be accomplished in the late fall or early winter. When ice forms sufficiently to walk on, the vegetation extending above the ice level should be cut and removed from the pond. The material should be disposed of in accordance with applicable ordinances. The material can sometimes be composted particularly if the municipality operates such a facility.

Frequency: Inspect and document aquatic vegetation growth and wildlife use annually in late summer or early fall at the end of the growing season. Cutting and removal of growth will depend on its density. Removal on a 1 to 3 year frequency will be typical.

Removal of Cutting: Cuttings of undesirable excessive vegetation should be removed from the pond areas and composted or otherwise disposed.

Comments: The Owner desires to encourage and promulgate vegetation in the retention/detention pond. Removal and or cutting of vegetation shall be limited to the circumstances above and shall be done solely to maintain proper function of the overall stormwater management system.

E. Pond Dewatering

Preface: Dewatering retention/detention ponds periodically is desirable in order to check sediment accumulations, side slope conditions and debris accumulation. Dewatering of the detention facilities may be accomplished by pumping or by a pond drain if one has been installed.

Inspection: The purpose of pond dewatering is to allow observation of sediment buildup and the accumulation of debris on the pond bottom. It also allows inspection of the lower slopes of the sidewalls for stability. Pond dewatering is a preferred method of inspection and cleaning. Inspection and maintenance of wet ponds is possible, but is generally more expensive. A separate section discusses wet pond inspections.

Dewatering of the detention pond should be accomplished only in the summer months when normal pond level is minimal. Pump suction should be kept above the sediment level to minimize silt transfer. Filter fabric over the suction may be required to prevent excessive silt from being discharged. The pumping rate should be designed by a professional engineer, and the effluent should be transferred to an upland area for discharge through a perforated pipe distribution system to achieve sheet flow. The distribution/sheet flow area should be inspected for silt buildup.

Upon draining the pond the sediment level should be measured at multiple locations in the pond to determine a representative depth. Sidewalls should be observed for sloughing.

Maintenance: If the volume of sediment recorded exceeds 15% of the normal operating volume of the wetpond (i.e., for retention), the sediment should be removed. Prior to removal the material should be sampled and analyzed in accordance with current practice as promulgated by appropriate regulatory agencies. Upon documentation of its chemical characteristics, the material should be removed by appropriate means for trucking from the site. Disposal of removed material must be in compliance with all regulatory requirements which will vary with the documented characteristics with material. Guidance should be sought from appropriate regulatory agencies.

Frequency: An initial retention/detention pond draining and inspection should be made after the first 5 years of operation. The rate of recorded sediment buildup will then be utilized to schedule subsequent drainings. Sediment removal will be accomplished when the sediment occupies 15% of the normal pond operating volume. Sediment removal once every 15 to 20 years may be expected in most instances. Upon completion of sediment a topographic survey should be accomplished to document pond shape and elevation. The City could contract with a local surveyor for this work.

Comments: None.

F. Sediment Monitoring/Wet Ponds

Preface: Some large ponds may have a permanent pool which could support various wildlife species where full dewatering may be difficult and undesirable except in critical circumstances. It is, however, still important to monitor sediment build-up in such ponds to assure that capacity remains to accomplish its intended water quality function.

Inspection: Measuring sediment build-up in a pond with a permanent pool which cannot be readily dewatered must rely on recorded differential elevation. In such an installation, it is important to have accurate "As Built" elevations on the pond bottom prior to its being placed in operation. This should be a requirement of the construction contract.

The build-up of sediment requires establishing the elevation of the top of the sediment layer for comparison with original bottom elevations. To accomplish this, a permanent benchmark should be established at the site that is not subject to frost action. The elevation of the water surface at the time of survey can thus be established. Measurement should then be taken from the water surface to the top of the sediment layer. This should be done at sufficient locations to cover the total pond area. It is noted that sediment build-up will be more rapid near the inlet of the pond.

The depth measurements can be taken in the Summer utilizing a small boat, or in the Winter through the ice. The depth measuring staff should have a flat plate attached to the bottom so it will not sink substantially into the sediment layer.

By comparing the measured elevations with the as-built elevations of the pond bottom it will be possible to compute sediment build-up levels.

Maintenance: If sediment build-up in the pond becomes sufficient to diminish its treatment function it will have to be removed. This may be accomplished in a similar manner to that described previously for smaller ponds by dewatering and removal. If the pond cannot be dewatered, hydraulic dredging should be utilized. When pond sediment removal is planned, record drawings should be reviewed for special linings or other special features which may influence removal techniques, or may have to be concurrently maintained.

Frequency: The sediment buildup measurements should be accomplished at 5-year intervals. Removal of sediment should be accomplished when it occupies 15% of the effective pond volume.

Options to sediment removal will vary on each project, but could include eniargement of the pond, or qualitative sampling to examine pond performance. If such options are considered, existing permit conditions, as well as current regulations, should be examined where necessary, and permit amendments should be obtained.

Comments: It is recommended the monitoring of sediment for these ponds occur during the summer if at all possible. If it is necessary to monitor the sediment during winter, extreme caution should be exercised to insure an adequate thickness of ice exists to support inspection personnel and equipment.

G. Sediment in Forebay

Preface: The wet pond will be constructed with a small forebay sump at the entrance. The purpose of this sump is to collect and detain larger particles in the sediment which may enter the pond through the inlet pipe. A secondary benefit of the forebay sump is to achieve better hydraulic flow distribution in the main segment of the pond.

Inspection: During periods of lowest water surface in the pond it should be possible to inspect the forebay sump and to measure the sediment accumulation.

Maintenance: If a significant accumulation of sediment is recorded in the sump, it should be removed. Depending on the size of the sump, the amount of sediment collected, and its location, the sediment may be removed manually, by a vacuum truck or other methods. The material removed from the sump should be disposed of in accordance with local practice for disposing of catchbasin cleanings.

Frequency: The forebay sump should be inspected semi-annually if possible, preferably in the early summer after spring runoff, and in the fall. The frequency of sump cleaning will depend on the rate of sediment buildup. Cleaning on a 1 to 2 year basis is likely. It is noted that cleaning of the forebay sump will lengthen the time between pond cleanings.

The rate of sediment buildup will depend on the tributary drainage facilities, i.e., faster buildup with open ditch transport systems than buildup from pipe systems with sumped catchbasins. Maintenance practices for the tributary drainage system will also impact sediment buildups.

Comments: None.

H. Stormwater Inlets

Preface: The success of any stormwater facility relies on the ability to intercept stormwater runoff at the design locations. Stormwater inlets may include catch basins, open culverts, culverts with bar screens, and field inlets. Inlets exist throughout the system at the points of collection as well as at the outlet of many ponds. Bar racks are common on many inlet locations which intercept an open channel. This section is directed at maintenance of the actual inlet point. A later section addresses more substantive maintenance of the structures and conveyance facilities.

Inspection: The inspection of inlet points will need to be coordinated with other maintenance items, these include:

- Field Inlets
- Culvert Inlets
- Catch Basin Inlets

The key elements of the inspection is to assure the inlet entry point is clear of debris, and will allow the intended water entry.

Maintenance: The key maintenance is the removal of any blockage which restricts the entry of stormwater to the inlet. The removed material should be taken out of the area of the inlet and placed where it will not reenter the runoff collection system. Snow should be removed from inlets in parking lots/roadway areas.

Frequency: All inlets should be inspected on a monthly basis, and after/during significant storm events. A site walkover is suitable for most inlets but concealed inlets and pond structures require more rigorous inspection.

Comments: Maintenance of inlets is critical on this project.

I. Tributary Drainage System

Preface: Stormwater from portions of the snow dump site is directed to a conveyance system which transports the flow to the retention pond. This conveyance system can consist of open swales and ditches, a piped drain system, or a combination of the two. Sediment which accumulates in the pond is carried by the drainage system. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the pond system.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to assure the rims are set at the proper elevation to optimize flow entry and are not clogged with leaves or other debris. (See prior section for inlet location data). The inlet basins are normally equipped with sumps which will remove large sediment particles from the flow stream.

The level of sediment in the sumps should be checked to assure their effectiveness. Pipelines connecting the inlets should be checked to determine if siltation is occurring. This will be most critical on drain lines laid at minimal slopes. This can usually be accomplished by a light and mirror procedure.

In some projects most of the stormwater is carried in open swales, channels or ditches. These conveyance channels may be riprapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be noted. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be noted.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long term basis, and that its operation does not transport excessive sedimentation to any downstream detention pond, or the receiving waters. Elevations on the rim of catchbasins should be adjusted as needed to assure optimal water entry. Depending on the frost susceptibility of the soil, the rims may become elevated over time causing flow to circumvent the inlet. When the sump in an inlet reaches two thirds of its volume the sediment should be removed. This will typically be every 1 to 3 years depending on the tributary drainage area and the amount of sand utilized for winter ice control. Catchbasin cleaning would normally be accomplished with vacuum trucks under contract. The removed material must be disposed of at an approved site for such materials.

If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general a sump or sediment trap should be used where it can be flushed into the detention pond, since it will reduce pond volume and hasten the time when it must be cleaned.

Vegetated ditches or swales should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any vegetation cut in the ditch area should be removed from the site. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Any riprap that becomes displaced should be replaced and chinked to assure its stability.

Frequency: The piped drainage system should be inspected on an annual basis. Adjustment of inlet rim elevations should be on an as needed basis. Cleaning catchbasin sumps and pipelines will depend on the rate of accumulation. Typically, catchbasin sumps should be cleaned on a 1 to 3 year cycle. Pipeline cleaning schedules will be more variable. Open, vegetated swales should be mowed at least monthly during the growing season. Debris should be removed as required to maintain hydraulic capacity.

Comments: Maintenance of inlets is critical on this project.

J. Summary Checklist

The above described inspection and maintenance items have been summarized on a checklist attached hereto as Appendix A.

IV. Program Administration

A. General

A reliable administrative and institutional structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must have legal title to the property, or must be legally responsible for long term operation and maintenance of the facilities.
2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.
3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.
4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.
5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

Generally the above criteria are anticipated to be City of Portland inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. It is therefore necessary to clearly establish the assigned administrative body in a responsible and sustainable manner.

B. Record Keeping

Records of all inspections and maintenance work accomplished should be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions. Typical inspection and maintenance record forms are attached hereto as Appendix B.

APPENDIX A

Summary Checklist
Inspection and Maintenance

Stormwater Management System Maintenance Program Summary Checklist					
		Frequency			
Item	Commentary	Month	Semi-Annual	Annual	Long-Term
Emergency Overflow Channel	Observe emergency overflow weir & outlet channel for debris accumulation, riprap stability, remove debris, repair as required.			X	
Outlet Culvert	Inspect for debris or silt accumulation, remove as required. Check elevation of weir if applicable. Check orifice and opening.		X		
Berms	Inspect berms for sags, sloughing, or erosion and undesirable tree growth. Mow berm slopes to control vegetation repair structure flaws upon identification.	Mow X Summer		X	
Vegetation in Ponds	Observe extent of vegetation in fall. Cut above ice level in winter - remove.			X	
Pond Sediment Removal	Remove sediment when it occupies 15% of volume.				X 10-15 Yrs
Sediment Monitor Wet Ponds	In larger ponds with permanent water body the sediment can be measured by measuring bottom surface elevations and comparing with record elevations of initial construction.				X 5 Years
Sediment in Forebay Sumps	Observe sediment accumulation in forebay sumps. Remove sediment from sump.		X	X	
Stormwater Inlets in Series	Stormwater inlets allow flow entry from a surface swale to a piped system. Entry may or may not be equipped with a bar back. Inspect entry for debris accumulation. Remove debris to allow unimpeded entry.	X			
Catchbasins	Catchbasins serve as the points of entry on a piped conveyance system. Sumps in the basins retain heavier sediment particles. Inspect to assure optimum water entry and accumulation of sediment in sumps. Clean sumps are required.			X	
Pipelines	Pipelines carry flow from inlet structures to point of discharge. Inspect for sediment buildup in pipe. Clean as required.			X	
Open Swales	Swales or ditches are also used for stormwater conveyance. Inspect for debris accumulation, erosion and excessive vegetation. Mow monthly, remove debris, repair and vegetate any areas of erosion.	Mow X		X	

APPENDIX B

Sample Inspection Logs

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:		**YEAR:**	
LOCATION:		**CONTRACTOR:**	
FUNCTION:		**INSPECTOR:**	
DATE OF INSPECTION:			
ITEM IDENTIFICATION	**DESCRIPTION OF CONDITIONS**	**MAINTENANCE ACCOMPLISHED**	**DATE OF MAINTENANCE**
VEGETATION			
BERMS			
EMERGENCY OVERFLOW			
GENERAL COMMENTS:			

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:			YEAR:			
LOCATION:			CONTRACTOR:			
FUNCTION:						
				OVERFLOW WEIR		
MONTH	DAY	INSPECTOR	WATER DEPTH	CLEAR	DEBRIS	WEIR CONDITION
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						
LIST SPECIAL MAINTENANCE UNDERTAKEN:						

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

SEMI-ANNUAL INSPECT 1.2	FACILITY:
DATE:	LOCATION:
INSPECTOR:	FUNCTION:
WEIR CONDITION:	
OUTLET CONDITION	

FORE BAY SUMP	EST. DEPTH SED.	REMOVED? Y/N	EST. VOL. CY	WHERE DISPOSED OF	STRUCTURAL CONDITION

CONTROL STRUCTURE:
DESCRIBE CONDITIONS FOUND & MAINTENANCE ACCOMPLISHED:

APPENDIX C

Permits for Project

SECTION 10

AIR EMISSIONS

SECTION 10

AIR EMISSIONS

10.0 Overview

The project consists of construction of a paved access drive, water quality retention facility and other associated site work as described in Section 1 of this application. Air emissions expected to occur as a result of or within the project area, are as follows:

1. Emissions associated with construction vehicles during construction of the project.
2. Emissions associated with the vehicular travel of trucks, personnel and equipment to and from the facility.

Although the application requests a summary of emissions compounds from both point and non-point sources, it appears this is generally required for "certain types of commercial and industrial developments and solid waste disposal facilities and non-point source emissions deriving from industrial, commercial and governmental developments."

No estimate of emissions for this project has been compiled since no unusual air emissions or high point sources are anticipated.

SECTION 11

NOISE

SECTION 11

NOISE

11.0 Overview

The proposed project does not fully fall into the four categories of development classified as producing minor noise impacts; however, the applicant seeks to have the development classified as one creating minor sound impact. The following is provided to support the classification as a minor sound impact.

The potential sources of noise at the project site will consist of noise generated during construction and noise generated during operation of the facilities.

- Construction Noise:

  Noise generated during construction of the project generally will be limited to normal working hours, typically 7 AM to 7 PM.

- Facility Operation:

  The noise associated with the facility will be limited to noise generated by vehicles, snow disposal equipment and personnel.

The noise generation will be typical in comparison to the surrounding area and is considered insignificant since the site is located in an area zoned for this type of development and is bordered by Congress Street and the Maine Turnpike and is located just off the runway for the Portland International Jetport.

No known noise protected location exists in the immediate project vicinity.

SECTION 12

SOILS

SECTION 12

SOILS

12.0 Overview

The project consists of the construction of a stormwater quality retention facility, paved access drive, associated storm drain system, loaming and seeding. No modifications are proposed to the existing 79,300 square foot materials storage building.

The entire project site was reviewed by Jennifer West of Normandeau Associates, Inc. for the presence of wetland vegetation or other significant wildlife/natural resource areas. A copy of Normandeau Associates' Wetland Delineation Report is contained in Attachment A.

The applicant requests a waiver for the requirement of a limitations report prepared by a certified soil scientist.

12.1 Overview of Mapped Soils

The USDA Medium Intensity Soils Map for Cumberland County identifies the soils in the area of the development to be mostly Buxton and Scantic soils with a finger of Suffield soil included as shown on Figure 8 contained in Section 1. The typical description and location of these soil series are as follows:

Buxton Soils

The Buxton series found on the western portion of this site consist of deep, moderately well drained to somewhat poorly drained, gently sloping to moderately sloping, medium textured soils. These soils formed in silty and clayey marine lacustrine sediment in the central lowland and coastal areas of the county. They are found on terraces and plains.

A representative profile of a Buxton soil in a cultivated area has a layer of dark-brown silt loam, 9 inches thick, that overlies a layer of yellowish-brown, friable silt loam. The next 4 inches is light olive-gray, friable silty clay loam. Below this is 22 inches of olive-gray to gray, firm silty clay that has gray, olive, olive-brown, and light olive-brown mottles. The underlying material, at a depth of 38 inches, is olive-gray silty clay that has a few light olive-brown mottles.

The water table is at a depth of 1 to 2 ½ feet in spring and during periods of heavy precipitation. Depth to bedrock is 5 feet or more. These soils have high available water capacity. Permeability is moderately slow to slow above the fine-textured layer and slow to very slow within it.

Scantic Soils

The Scantic series found on the eastern portion of this site consist of deep, nearly level, poorly drained, medium-textured soils that are underlain by fine-textured material. These soils formed in marine and lacustrine sediment. They are in old marine estuaries in the eastern and central parts of the county and in depressions around a few inland lakes.

A representative profile of Scantic soil in a cultivated area has a surface layer of dark grayish-brown silt loam 8 inches thick that is underlain by 5 inches of olive-gray, friable heavy silt loam that has light olive-brown mottles. The upper 7 inches of the subsoil is olive-gray, firm heavy silt loam that has light olive-brown mottles, and the next 8 inches is olive-gray, firm heavy silty clay loam that has yellowish-brown mottles. The lower 4 inches of the subsoil is olive-gray, firm silty clay that has a few olive mottles. The substratum, at a depth of 32 inches, is olive-gray, firm clay that has a few dark-gray mottles.

A water table is at a depth of 1 foot during most of the year, and depth to bedrock is 5 feet or more.

Suffield Soils

The Suffield series extends from the area of Long Creek toward the development site and consist of deep, well-drained, moderately sloping to steep, medium-textured soils. These soils formed in marine and lacustrine sediment on terraces in the central lowland and eastern parts of the county.

A representative profile of a Suffield soil in a cultivated area has a surface layer of dark grayish-brown silt loam 6 inches thick. The upper 3 inches of the subsoil is dark yellowish-brown, friable silt loam, and the next layer is 14 inches of grayish-brown, friable silt loam. The lower 10 inches of the subsoil is olive-gray, firm silty clay. The substratum, at a depth of 33 inches, is light olive-gray, firm silty clay.

Permeability is moderate in the silty layers and slow in the clayey layers. Available water capacity is high. Depth to bedrock is 5 feet or more.

12.2 General Limitations and Methods Used to Overcome the Limitations

The geotechnical limitations of the site will be addressed by the following practices:

- Planning of the project layout.
- Engineering solutions.

The following engineering solutions will be utilized to deal with the geotechnical limitations:

Limitations of Slope: The snow dump access road has been designed to provide gradual longitudinal grades along the access road to accommodate semi-trailer type vehicle movements. The access roadway embankments will contain stable earth slopes and riprap to contain fill and excavation.

Bedrock Constraints: Four (4) test pits were excavated in the area of the proposed water quality retention facility which indicate no bedrock to a minimum depth of 8 feet as noted on the existing conditions plan.

Wetness and Potential Frost Action: These imitations will be overcome by a properly designed pavement section. The onsite soils are susceptible to frost action. Positive drainage away from areas of construction will be provided during and after construction.

Materials for Pavement Subbase and Base Aggregates: Onsite spoils are suitable for general embankment fills and access drive area subgrade, given proper moisture conditions, compaction and limited disturbance. Aggregate material used for the subbase and base gravels of the pavement section will be imported from offsite.

12.3 Wetlands

A wetland assessment of the specific site affected by this project has been conducted by Normandeau Associates. It was determined that a portion of a large wetland associated with Long Creek extends along the southern portion of the site which is regulated by the MeDEP and U.S. Army Corps of Engineers under the Natural Resource Protection Act. The wetland areas were GPS located in the field by Normandeau Associates. A letter stating Normandeau Associates' findings has been appended in Section 20.

SECTION 13

WATER SUPPLY

SECTION 13

WATER SUPPLY

13.0 Overview

No additional water supply is proposed as a part of this project.

SECTION 14

WASTEWATER DISPOSAL

SECTION 14

WASTEWATER DISPOSAL

(Not Applicable to this Project)

Wastewater disposal is not anticipated as part of this project.

SECTION 15

GROUNDWATER

SECTION 15

GROUNDWATER

15.0 Overview

The proposed snow dump facility is located to the south of State Route 22 (Congress Street) and to the west of the Maine Turnpike. The site is not located on a sand and gravel aquifer as mapped by the Maine Geological Survey Department of Conservation Sand and Gravel Aquifer Map 5. An excerpt of the Sand and Gravel Aquifer Map with the project site superimposed is contained as Figure 9 in Section 1 of this application.

The proposed snow dump facility will not require the use of groundwater as a source of water supply. The proposed snow dump facility will not require on-site wastewater disposal.

15.1 Cross References

Section 13 - Water Supply
Section 14 - Municipal Wastewater Disposal

SECTION 16

BLASTING

SECTION 16

BLASTING

16.0 Overview

No blasting of rock for the snow dump project, including construction of the stormwater quality retention facility, is anticipated. Four (4) test pits have been excavated in the area of the proposed stormwater quality retention facility, indicating no rock to the proximate elevation of the pond bottom.

SECTION 17

VISUAL QUALITY

SECTION 17

VISUAL QUALITY

17.0 Existing Conditions

The project is located to the south of State Route 22 (Congress Street) and to the west of the Maine Turnpike. The project site parcel consists of approximately 88.26 acres, of which a portion is in the Industrial-Moderate Impact Zone in Portland, and the remaining portion is in the Rural Residential Zone in South Portland. The only proposed development on the South Portland side of the property is the construction of the water quality retention facility.

The existing site is approximately 25% undeveloped forest land, 66% undeveloped meadowland, and 9% impervious area associated with the existing 79,300 square foot building, pavement and gravel areas. Additional information on the existing project site conditions, including figures, is included in Section 1.

17.1 Adjacent and Nearby Land Use

The proposed snow dump site is abutted by the following land uses:

Portland:

- Turnpike Entrance (Exit 7A)
- (2) Office Buildings by Exit 7A
- Office Building (Wang, Honeywell)
- Office Building (Clark Associates Insurance)
- Nichols Manufacturing

Westbrook:

- Sysco Food Service
- Col. Westbrook Executive Park
- Self Storage Units
- (3) Residences
- Racket & Fitness Center
- (3) Office Buildings (Northland Telephone, Unum, and Marshall-Libby)

South Portland:

- Police Barracks
- (1) Office Building
- Golf Course

17.2 Summary

The proposed project will include the construction of a 35,000 s.f. paved area expansion and storm water quality retention facility and associated drainage improvements, installation of snow height marking poles and re-arrangement of chain link fencing. The proposed snow dump fits well with abutting land uses and can be considered as a similar land use.

Naturally vegetated buffers will be preserved along the drainage courses traversing the site which will protect the wetland vegetation, mitigate slope impacts, protect water quality, and provide wildlife corridors across the site.

SECTION 18

BUFFERS

SECTION 18

BUFFERS

18.0 Overview

The existing development is well buffered from abutting properties, Congress Street and the Maine Turnpike due to a topographic ridge, existing wooded areas and it's distance from each. Existing buffering will be protected during construction activity at the snow dump project site.

SECTION 19

UNUSUAL NATURAL AREAS

SECTION 19

UNUSUAL NATURAL AREAS

19.0 Summary

No unusual areas are known to exist on the project site.

The Maine Natural Areas Program was contacted and informed of the proposed snow dump. Normandeau Associates sought to obtain information on locations of rare, endangered or registered critical areas which the project may impact. A letter dated June 22, 2000 was received from the Maine Department of Conservation which states that they are not aware of any potential unusual areas that may be impacted. A list of rare plants in the Portland area was provided, although none are known to exist on the site. This letter is attached at the end of this section.

A representative from Normandeau Associates has walked the site of the proposed snow dump and delineated areas of wetlands which are regulated by the MeDEP and USACOE. The letter stating these findings is attached to Section 20.

19.1 Attachment

- Letter of response from Maine Natural Areas Program to Normandeau Associates dated June 22, 2000.

19.2 Related Sections

- Section 12 – Soils
- Section 20 – Wildlife and Fisheries

STATE OF MAINE
DEPARTMENT OF CONSERVATION
159 HOSPITAL STREET
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0093

ANGUS S. KING, JR.
GOVERNOR

RONALD B. LOVAGLIO
COMMISSIONER

June 22, 2000

Jennifer West
Normandeau Associates
251 Main Street
Yarmouth, ME 04096

Re: Rare and exemplary botanical features, Snow Disposal Site, Portland

Dear Ms. West:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of June 21, 2000 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in the town of Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features

NATURAL RESOURCES INFORMATION AND MAPPING CENTER
ROBERT G. MARVINNEY, DIRECTOR AND STATE GEOLOGIST

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $75.00 for our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Emily C. Pinkham

Emily C. Pinkham
Information Specialist

Enclosures

Rare o `xemplary Botanical Features in the Proje 'icinity

Documented within a four mile radius of the Snow Disposal Site, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
PRUNUS MARITIMA BEACH PLUM	1933	S1	G4	E		Sandy soil along or near the coast.
RANUNCULUS AMBIGENS WATER-PLANTAIN SPEARWORT	1862	SH	G4	PE		Sloughs, ditches, and muddy swamps.
SELAGINELLA APODA CREEPING SPIKE-MOSS	1924	S1	G5	E		Meadows, lawns, and streambanks.

Rare o xemplary Botanical Features in the Proje 'icinity

Documented within a four mile radius of the Snow Disposal Site, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
ADLUMIA FUNGOSA ALLEGHENY VINE	1860	S1	G4	T		Wet or recently burned woods, rocky wooded slopes.
ALLIUM TRICOCCUM WILD LEEK	1988	S2	G5	SC		Rich hardwood forests, usually alluvial.
ARABIS MISSOURIENSIS MISSOURI ROCKCRESS	1905	S1	G4?Q	T		Circumneutral bluffs, ledges or rocky woods.
ASPLENIUM PLATYNEURON EBONY SPLEENWORT	1910	S2	G5	SC		Rich partly forested slopes, rocky ledges, and dry, circumneutral outcrops.
CAREX POLYMORPHA VARIABLE SEDGE	1911	S1	G3	E		In Maine, habitat is between downslope seeps (with horsetails and wetland sedges) and upslope mixed oak/huckleberry forest. Preferred soil type is Deerfield Loamy Sand. All Maine occurrences are from coastal towns where climate is moderated by the ocean.
CAREX STERILIS DIOECIOUS SEDGE	1936	S1	G4	T		Wet calcareous soils.
CASTANEA DENTATA AMERICAN CHESTNUT	1907	S2S3	G4	SC		Dry gravelly or rocky, mostly acidic soil.
PHEGOPTERIS HEXAGONOPTERA BROAD BEECH FERN	1872	S2	G5	SC		Rich, often rocky, hardwood forests.
POTAMOGETON VASEYI VASEY'S PONDWEED	1901	S1	G4	T		Quiet muddy or calcareous waters.

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (on the order of 20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SH Occurred historically in Maine, and could be rediscovered; not known to have been extirpated.

SU Possibly in peril in Maine, but status uncertain; need more information.

SX Apparently extirpated in Maine (historically occurring species for which habitat no longer exists in Maine).

Note: **State Ranks** determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (on the order of 20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

Note: **Global Ranks** are determined by The Nature Conservancy.
T indicates subspecies rank, **Q** indicates questionable rank, **HYB** indicates hybrid species.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE POSSIBLY EXTIRPATED; Not known to currently exist in Maine; not field-verified (or documented) in Maine over the past 20 years.

FEDERAL STATUS

LE Listed as Endangered at the national level.

LT Listed as Threatened at the national level.

Please note that species names follow Flora of Maine: A Manual for Identification of Native and Naturalized Vascular Plants of Maine, Arthur Haines and Thomas F. Vining, 1998, V.F. Thomas Co., P.O. Box 281, Bar Harbor, Maine 04069-0281.

Where entries appear as binomials, all representatives (subspecies and varieties) of the species are rare in Maine; where names appear as trinomials, only that particular variety or subspecies is rare in Maine, not the species as a whole.

Visit our web site for more information on rare, threatened and endangered species!
http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm

SECTION 20

WILDLIFE AND FISHERIES HABITAT

SECTION 20

WILDLIFE AND FISHERIES HABITAT

20.0 Summary

Normandeau Associates was retained to perform the wetland review for the area affected by the snow dump project. The letter reporting their findings is attached to this section. In general, a large wetland associated with Long Creek extends along the southern portion of the site. These wetlands and Long Creek are regulated by the MeDEP and USACOE.

The Maine Department of Inland Fisheries and Wildlife indicated that there are no known significant wildlife habitats in the area and that Long Creek contains no significant cold water or warm water fisheries. The Maine Department of Inland Fisheries and Wildlife indicated that a 100-foot natural buffer should be adopted between the proposed development and Long Creek. The proposed development is located approximately 500 feet from Long Creed; therefore, the 100-foot natural buffer requirement is met.

The U.S. Department of the Interior responded that there were no federally listed or proposed threatened and endangered species known to occur in the area. The Natural Areas Program database indicated there were no known rare, threatened, or endangered plant species but provided a file of features known to exist in Portland. None were observed during field work on the site.

20.1 Attachments

Attached to this section are the following:

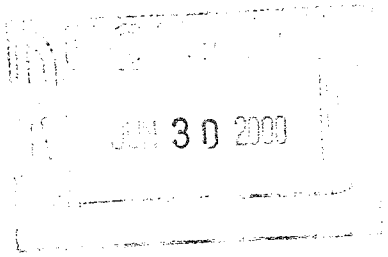
- Letter of Normandeau Associates findings to DeLuca-Hoffman Associates, Inc. dated June 29, 2000.
- Letters of response from Maine Department of Inland Fisheries and Wildlife, dated June 27, 2000 and June 27, 2000.
- Letter of response from the U.S. Department of the Interior, dated July 27, 2000.

19.2 Related Sections

- Section 12 – Soils
- Section 19 – Unusual Natural Areas

NORMANDEAU ASSOCIATES, INC.
251 Main Street
Yarmouth, ME 04096
(207) 846-3598
(207) 846-6527 (Fax)

June 29, 2000



Dwight Anderson
DeLuca Hoffman Associates Inc.
778 Main Street, Suite 8
South Portland, ME 04106

RE: Portland Snow Disposal Site, Portland, ME
NAI Project #18752.000

Dear Dwight:

Normandeau Associates, Inc. (NAI) has completed a review for the presence of wetlands of the area proposed for snow disposal for the City of Portland. The following is a summary of the extent of wetlands and agency jurisdiction of wetlands at the site.

WETLAND DELINEATION

NAI conducted a review of a ±22 acre site adjacent to the former compost facility located south of Outer Congress Street. The site review included a 300-foot wide area from either the edge of pavement or existing work areas adjacent to the building. The review did not include the area north of the building.

Wetland boundaries were delineated according to the three parameter (soils, vegetation, and hydrology) approach of the *1987 Corps of Engineers Wetlands Delineation Manual.* The Maine Department of Environmental Protection and US Army Corps of Engineers both accept this methodology. Site-specific information about each parameter observed at the site is discussed in further detail below for the wetland areas identified within the project limits. A copy of data collected at paired data plots is also provided. The wetland boundary was delineated with consecutively numbered flags and located by GPS. The GPS file was post-processed to provide sub-meter accuracy. An electronic file of the wetland data points was provided to DeLuca Hoffman for insertion onto the project base map. The following is an overview of the delineated wetlands.

Wetland 1

A large wetland associated with Long Creek extends along the southern portion of the project site. The wetland includes areas classified according to the US Fish and Wildlife Service (USFWS) classification system[1] as Palustrine Emergent Persistent (PEM1); Palustrine Scrub-Shrub Deciduous (PSS1); and Palustrine Forested Deciduous (PFO1) wetland. The southwestern portion of the site includes narrow wetland swales, extending north from Long Creek to wet

[1] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS–79/31, US Fish and Wildlife Service, Washington, DC.

meadows associated with perched hydrology due to fine textured soils. The swales and meadows are dominated by shrubs with scattered emergents (PSS1/PEM1) including: speckled alder (*Alnus incana*), American elm (*Ulmus americana*), willow (*Salix* sp.), meadow sweet (*Spirea latifolia*), pointed broom sedge (*Carex scoparia*), woolgrass (*Scirpus cyperinus)*, sensitive fern (*Onoclea sensibilis*) and northern bayberry (*Myrica pensylvanica*). The vegetation within the southeastern half of the site has recently been cut over as it is within the runway approach of the Portland Jetport. The wetland vegetation within this area includes: red maple (*Acer rubrum*), soft rush (*Juncus effusus*), meadow sweet, wool grass, rough-stemmed goldenrod (*Solidago rugosa*), fox sedge (*Carex vulpinoide*a), pointed broom sedge, and shallow sedge (*Carex lurida*).

The USFWS classifies the water regime within the site as saturated, "the substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present."[2] Hydrologic evidence included water-stained areas and ponded water. It is anticipated that the water table is perched over firm silt loam soils.

The Soil Conservation Service's *Cumberland County Soil Survey* mapped several inclusions of poorly drained Swanton fine sandy loam in the southwestern half of the site within moderately well-drained and well-drained map units. Poorly drained Scantic silt loam is the principal map unit in the southeastern half of the site. Field observations confirmed the hydric soil mapping as well as identified additional areas of poorly drained soils not identified by the Soil Survey due to limitations of scale.

Wetland 2

Wetland 2 is located east of the building in an area of vegetation management within the runway approach zone. The wetland is classified as Palustrine Scrub-Shrub Deciduous (PSS1). The vegetation within the wetland includes: willow, alder, reed canary grass (*Phalaris arundinacea*), redtop (*Agrostis alba*), meadow sweet, wild raisin (*Viburnum cassinoides*), soft rush, and pointed broom sedge. The wetland extends beyond the site limits to the east.

The water regime is saturated, with saturation at or near the surface early in the year. Evidence of hydrology included wetland drainage patterns.

The soils are mapped by the *Cumberland County Soil Survey* as poorly drained Scantic silt loam. Field observations confirmed the soil series.

REGULATORY ASSESSMENT

Wetlands at the site are regulated by the Maine Department of Environmental Protection

[2] See note 1 above.

(MDEP) under the provisions of the Natural Resources Protection Act (NRPA–38 M.R.S.A. § 480A–Z) and associated Wetland Protection Rules (Chapter 310, amended September 1, 1996). Various wetland characteristics, as well as the areal extent of any impacts, are taken into account in determining the level or "Tier" of permitting required under the NRPA. Projects impacting less than 4,300 sq. ft. of wetland are exempt from the NRPA, provided impacts do not occur within a municipal shoreland zone or another protected natural resource and the project complies with the Erosion and Sedimentation Control law (38 M.R.S.A. § 420–C).

Alterations to wetlands with characteristics exemplifying "freshwater wetlands of special significance" (Chapter 310, Sec 4(A)) are usually not eligible for the exemption or Tier 1 or Tier 2 permitting and require an individual permit (Tier 3, Chapter 310, Sec. 4(B)). Below is a summary of wetland characteristics at the site with respect to a determination as to whether the wetland is considered "freshwater wetlands of special significance."

The wetlands are not one of the critically imperiled (S1) or imperiled (S2) wetland communities as identified by the Natural Areas Program (Chapter 310, Sec. 3 (F,L)). The wetlands also:

- are not a peatland (Chapter 310, Sec. 3(P)),
- are not within 250 feet of a coastal wetland (38 M.R.S.A §480–B2),
- are not within 250 feet of a great pond (38 M.R.S.A §480–B5), and
- do not contain 20,000 square feet of open water or aquatic or emergent vegetation (Chapter 310 Sec. 3(G)).

Wetlands within 25 feet of Long Creek are considered "wetlands of special significance."

MDIFW reviewed their files for "significant wildlife habitat" (38 M.R.S.A § 480–B10) in the project area and found "no identified wildlife habitats associated with this site" (response attached). In addition, NAI reviewed site conditions and available references that indicate the wetlands at the site do not contain "significant wildlife habitat" based on the vegetation management within the runway approach zone and lack of standing water for waterfowl and wading bird habitat. A review of available resource information found no essential wildlife habitats have been identified within the project area.[3]

The southern edge of the site borders the 100-year floodplain according to the August 17, 1981 Flood Insurance Rate Map (South Portland Community Panel #230053 0004C). Wetlands within the floodplain would be considered "Wetlands of Special Significance."

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[3] MDIFW, 1988. The Identification and Management of Significant Fish and Wildlife Resources in Southern Coastal Maine, Augusta, ME; and MDIFW, 2000. Atlas of Essential Wildlife Habitats for Maine's Endangered and Threatened Species, Augusta, ME

Based on the characteristics summarized above, the wetlands within the site do not have characteristics of "Wetlands of Special Significance," although "wetlands of special significance" associated with Long Creek border the site. Therefore, proposed impacts of 4,300 to 15,000 sq. ft. of fill are eligible for a Tier 1 permit; impacts between 15,000 sq. ft. and one acre are eligible for Tier 2; and impacts exceeding one acre would require an individual, Tier 3, permit.

Wetlands at the site are also regulated by the US Army Corps of Engineers (ACOE) under the provisions of Section 404 of the Clean Water Act. Impacts to wetlands resulting from placement of fill are addressed by the ACOE with a Programmatic General Permit for the State of Maine. Fill impacts to inland wetlands are broken down into three permit categories based on the following areal thresholds: Category I – less than 15,000 sq. ft.; Category II – 15,000 sq. ft. to 3 acres, and Category III – either greater than three acres of impact or conditions of Category II and III cannot by met.

Fill impacts to wetlands at the site totaling less than one acre in extent by a proposed project would be eligible for submittal for a joint application to the MDEP and the ACOE. Impacts exceeding this threshold would require separate permit applications.

If you have questions or comments regarding the above information please contact me at your earliest convenience. We can provide a cost estimate for permitting assistance, if requested.

Sincerely,

NORMANDEAU ASSOCIATES, INC.

Jennifer West
Certified Soil Scientist ME #215
Professional Wetland Scientist, SWS# 1103

Enclosure

DELINEATOR(S): J West DATE: 6.20.00 PROJECT TITLE Portland Snow Disposal TRANSECT: 1 PLOT: Wet

VEGETATION	Stratum and Species (Dominants Only)	Dominance Ratio	Percent Dominance	NWI STATUS
	No Trees, saplings, shrubs - recently cut area			
Herbaceous				
Car vul	- Carex vulpinodea	20 /100	20	OBL
Car sco	- Carex scoparia	20	20	FacW
Spi lat	- Spirea latifolia	10	10	
Jun eff		10	10	
Potentilla simplex	(FacU-)	10	10	
Agrostis alba		20	20	FacW
Juncus tenuis	(Fac-)	10	10	
Festuca rubra	FacU	10	10	

NOTE 1: Use asterisk * to indicate plants with observed adaptations to wetland hydrology. Plants recorded with asterisks should be considered as "other hydrophytes" in the tally below.
2: Species with NA or NI status are reported, but are not calculated in the tally below.

OBL	FACW	FAC	* OTHER HYDROPHYTES	FAC*	FACU	UPL
1	2					

Hydrophytes SUBTOTAL: 3 NON-hydrophytes SUBTOTAL: 0

100 x Subtotal Hydrophytes / Subtotal Hydrophytes + Subtotal Non-hydrophytes = PERCENT HYDROPHYTES = 100 %

HYDROLOGY

1. Hydrology is often the most difficult feature to observe.
2. Interpretation must consider the validity of the observation in light of the season, recent weather conditions, watershed alterations, etc.
3. Interpretation of hydrology may require repeated observations over more than one season.

RECORDED DATA

Stream, lake or tidal gage
Aerial Photograph
Other

NO RECORDED DATA ✓

OBSERVATIONS:

Depth to Free Water >16" - The rainfall has been low the last month.
Depth to Saturation (incl. capillary fringe): >16"
Describe Altered Hydrology: None

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☒ Drainage Patterns w/in Wetland ☐ OTHER (explain)

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES Color, Abundance, Size, Contrast	USDA Texture; and nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.
0-10	A	10YR3/1	mottling begins at 8".	Silt loam
10-	Bg	5YR3/1	10YR R 3/6, 20% fine	Silt loam to silty clay loam.
EOE 16"				

HYDRIC SOIL INDICATOR(S) III. I. REFERENCE: FIHSNE. 1998

Hydric morphology present including dark A horizon and low chroma B horizon with redoximorphic features (mottles).

OPTIONAL SOIL DATA: REFERENCES:

TAXONOMIC SUBGROUP:

SOIL DRAINAGE CLASS: poorly

DEPTH TO ACTIVE WATER TABLE: 6 to 8"

NTCHS HYDRIC SOIL CRITERION:

CONCLUSIONS	Yes	No
Greater than 50% Hydrophytes?	☑	☐
Hydric Soils Criterion Met?	☑	☐
Wetland Hydrology Met?	☑	☐

	Yes	No
IS THIS DATAPOINT WITHIN A WETLAND?	☑	☐

REMARKS: Fine textured soils with slow percolation rates create perched wetland conditions particularly in the spring.

PROJECT TITLE Portland Snow Disposal TRANSECT: 1 PLOT: Wet

DELINEATOR(S): √West DATE: 6·20·00 PROJECT TITLE: Portland Snow Disposal TRANSECT: 1 PLOT: UP

VEGETATION	Stratum and Species (Dominants Only)	Dominance Ratio	Percent Dominance	NWI STATUS
Trees/Saplings - none recently cutover				
Shrubs				
Pru. vir	Prunus virginiana	10/10	100	FacU
Herbaceous				
	Solidago rugosa	10/130		
	Carex scoparia	20	16	
	Spirea latifolia	20	16	
	Euthamyia graminifolia	25	19	Fac
	Poa pratensis	45	34	FacU
	Solidago sp.	10		

NOTE 1: Use asterisk * to indicate plants with observed adaptations to wetland hydrology. Plants recorded with asterisks should be considered as "other hydrophytes" in the tally below.
NOTE 2: Species with NA or NI status are reported, but are not calculated in the tally below.

OBL	FACW	FAC	* OTHER HYDROPHYTES	FAC*	FACU	UPL
		1			2	

Hydrophytes SUBTOTAL: 1 NON-hydrophytes SUBTOTAL: 2

100 x Subtotal Hydrophytes / Subtotal Hydrophytes + Subtotal Non-hydrophytes = PERCENT HYDROPHYTES = 33 %

HYDROLOGY

1. Hydrology is often the most difficult feature to observe.
2. Interpretation must consider the validity of the observation in light of the season, recent weather conditions, watershed alterations, etc.
3. Interpretation of hydrology may require repeated observations over more than one season.

RECORDED DATA

Stream, lake or tidal gage
Aerial Photograph
Other

NO RECORDED DATA √

OBSERVATIONS:

Depth to Free Water: >16"
Depth to Saturation (incl. capillary fringe): >16"
Describe Altered Hydrology: None

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns w/in Wetland ☐ OTHER (explain)

None

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES Color, Abundance, Size, Contrast	USDA Texture; and nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.
0-8	A	10YR 3/3		Silt loam ↓
8-12	Bw	10YR 3/4		
12-		10YR 4/4	10YR 3/6 5%	
EOB 16"				

HYDRIC SOIL INDICATOR(S)

Lacks, hydric morphology.

REFERENCE:

OPTIONAL SOIL DATA:

REFERENCES:

TAXONOMIC SUBGROUP:

SOIL DRAINAGE CLASS: SWP

DEPTH TO ACTIVE WATER TABLE: 12"

NTCHS HYDRIC SOIL CRITERION:

CONCLUSIONS	Yes	No
Greater than 50% Hydrophytes?	☐	☑
ric Soils Criterion Met?	☐	☑
Wetland Hydrology Met?	☐	☑

IS THIS DATAPOINT WITHIN A WETLAND? Yes ☐ No ☑

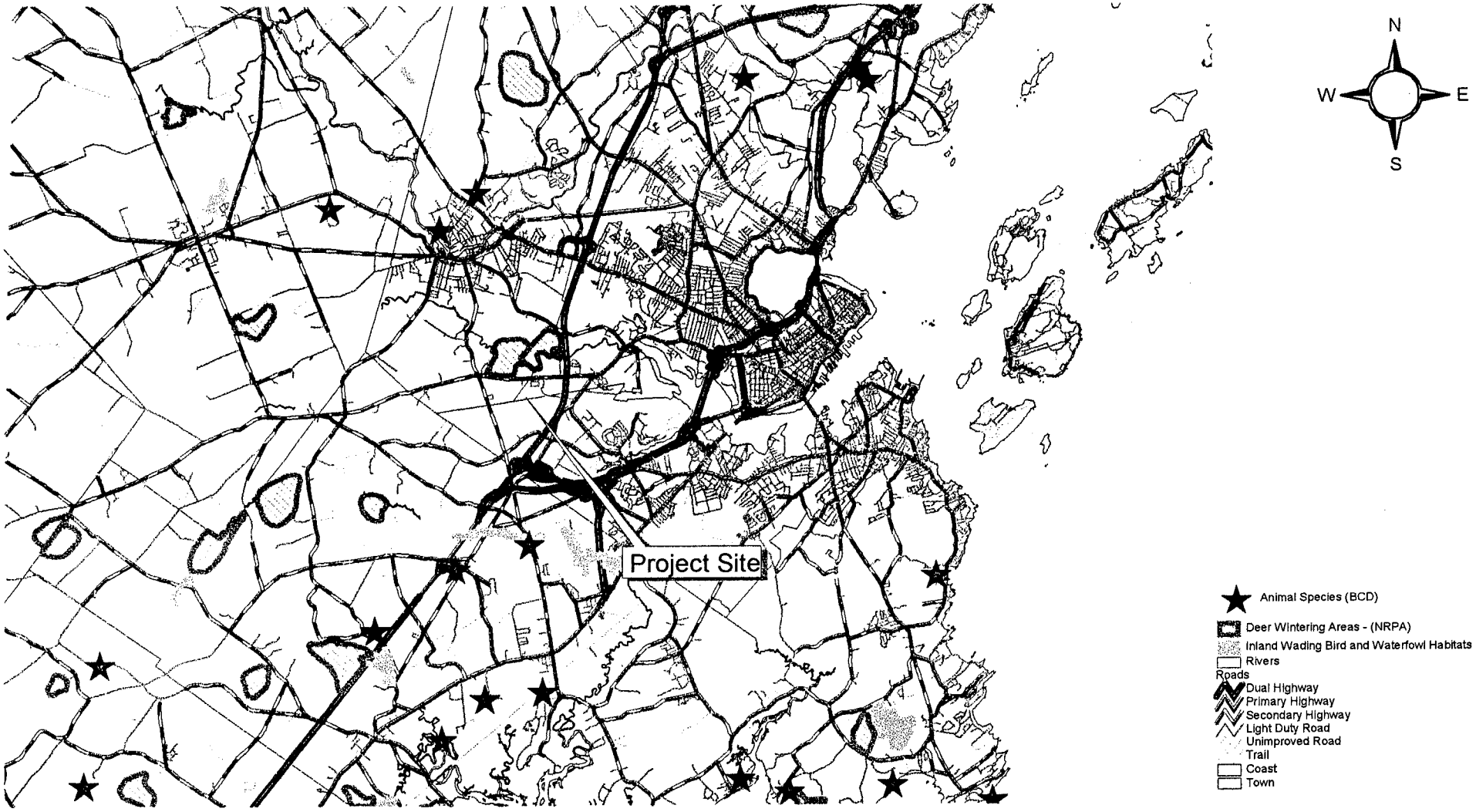
REMARKS:

PROJECT TITLE Portland Snow Disposal site TRANSECT: 1 PLOT: Up

IF&W Report - Portland Snow Disposal

Request for Information - Jennifer West

06/27/2000



Department of Inland Fisheries and Wildlife

(207) 547-5318

1 0 1 2 Miles

Biologist Notes

No identified wildlife habitats associated with this site.

MDIFW

MDIFW
358 Shaker Rd.
Gray, Maine
04038

Phone: 657-2345 ext.111
FAX: 207-657-2960
email: james.pellerin@state.me.us

Tuesday, June 27, 2000

Jennifer West
Normandeau Associates, Inc.
251 Main Street
Yarmouth, Maine 04096

RE: Portland Snow Disposal
NAI Project #18752.000

Dear Jennifer West,

This letter is in response to your request for fishery resource information for the proposed project. The Long Creek watershed has been heavily impacted by existing development and there are no significant coldwater or warmwater fisheries; however, it does support several species of nongame fish. Keep in mind, MDIFW typically requests a 100 foot undisturbed buffer along any stream. If you have any additional questions or concerns then feel free to contact us.

Sincerely,

James Pellerin
Fishery Biologist

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
1033 South Main Street
Old Town, ME 04468-2023
(207) 827-5938

To: Jennifer West
Soil Scientist
Normandeau Associates, Inc.
251 Main Street
Yarmouth, ME 04096

July 27, 2000

Thank you for your letter requesting information or recommendations from the U.S. Fish and Wildlife Service. This form provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Re: Portland Snow Disposal/ Portland/ Cumberland
Project Name/Location/County

June 21, 2000
Date of Incoming Letter

00-0174
Log Number

Based on the information currently available to us, no federally-listed species under the jurisdiction of the Service are known to occur in the project area, with the exception of occasional, transient bald eagles (*Haliaeetus leucocephalus*). Accordingly, no further action is required under Section 7 of the ESA, unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

A list of federally-listed species in Maine is enclosed for your information. Please contact the Maine Department of Inland Fisheries and Wildlife and Maine Natural Areas Program for an up to date account of state-listed species in the project area.

If you have any questions, please call Kim Tripp at (207) 827-5938.

Kim Tripp 7-27-00
Biologist Date

FEDERALLY LISTED, PROPOSED, AND SPECIES OF FEDERAL CONCERN IN MAINE (revised May 22, 2000)

Common Name	Scientific Name	Status
FISHES:		
Atlantic salmon	Salmo salar	P
Shortnose Sturgeon	Acipenser brevirostrum	E
REPTILES:		
Atlantic ridley turtle*	Lepidochelys kempii	E
Leatherback turtle*	Dermochelys coriacea	E
Loggerhead turtle*	Caretta caretta	T
Blanding's turtle	Emydoidea blandingii	FSC
BIRDS:		
American Peregrine Falcon	Falco peregrinus anatum	D
Bald Eagle	Haliaeetus leucocephalus	T
Bicknell's Thrush	Catharus minimus bicknelli	FSC
Black Tern	Chlidonias niger	FSC
Harlequin Duck	Histrionicus histrionicus	FSC
Loggerhead Shrike	Lanius ludovicianus	FSC
Northern Goshawk	Accipter gentilis	FSC
Piping Plover	Charadrius melodus	T
Roseate Tern	Sterna dougallii dougallii	E
MAMMALS:		
Gray Wolf	Canis lupus	E
Eastern Cougar	Felis concolor couguar	E
Blue Whale*	Balaenoptera musculus	E
Finback Whale*	Balaenoptera physalus	E
Humpback Whale*	Megaptera novaeangliae	E
Right Whale*	Eubalaena spp. (All species)	E
Sei Whale*	Balaenoptera borealis	E
Sperm Whale*	Physeter catodon	E
Eastern Small-Footed Bat	Myotis leibii	FSC
New England Cottontail Rabbit	Sylvilagus transitionalis	FSC
Penobscot Meadow Vole	Microtus pennsylbanicus shattaucki	FSC
Northern Bog Lemming	Synaptomys borealis	FSC
Canadian Lynx	Felis lynx canadensis	T
INVERTEBRATES:		
Brook Floater	Alasmidonta varicosa	FSC
Yellow Lampmussel	Lampsilis cariosa	FSC
Tomah Mayfly	Siphlonisca aerodromia	FSC

Common Name	Scientific Name	Status
Midget Snaketail Dragonfly	Ophiogomphus howei	FSC
Clayton's Copper Butterfly	Lycaena dorcas claytoni	FSC
Ceromatic Noctuid Moth	Pyreffera ceromatica	FSC
Regal Fritillary Butterfly	Speyeria idalia	FSC
Chestnut Clearwing Moth	Synanthedon castancae	FSC
Lateral Bluet Damselfly	Enallagma laterale	FSC
PLANTS:		
Small Whorled Pogonia	Isotria medeoloides	T
Furbish's Lousewort	Pedicularis furbishiae	E
Eastern Prairie Fringed Orchid	Plantanthera leucopehaea	T
Orono Sedge	Carex oronensis	FSC
Variable Sedge	Carex polymorpha	FSC
Hawkweed	Hieracium robinsonii	FSC
Blazingstar	Liatris borealis	FSC
Square-stemmed Monkeyflower	Mimulus rigens colpophilus	FSC
Pondweed	Potamogeton confervoides	FSC
Boott's Rattlesnake Root	Prenanthes boottii	FSC
Long's Bulrush	Scirpus longii	FSC
Gaspe Peninsula Arrow-grass	Triglochin gaspense	FSC

Key:

Status	Definition
E	Endangered: A taxon "in danger of extinction throughout all or a significant portion of its range".
T	Threatened: A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
P	Proposed: A taxon proposed for official listing as endangered or threatened.
FSC	Federal species of concern: Species which may or may not be listed in the future (formerly C2 candidate species, or species under consideration for listing for which there is insufficient information to support listing).
D	Delisted species, requiring 5 years of population monitoring.
*	Principal responsibility for these species is vested with the National Marine Fisheries Service

SECTION 21

HISTORIC SITES

SECTION 21

HISTORIC SITES

21.0 Overview

The Maine Historic Preservation Commission was contacted by Normandeau Associates and asked to determine if any properties of historic, architectural or archaeological significance, as defined by the Natural Historic Preservation Act of 1966, are at the proposed site. The Maine Historic Preservation Commission stated that there are no properties in the project area of any archaeological significance.

20.1 Attachment

- Response letter from the Maine Historic Preservation Commission dated June 29, 2000.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

ANGUS S. KING, JR.
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

June 29, 2000

Jennifer West
Normandeau Associates, Inc.
251 Main Street
Yarmouth, Maine 04096

Project: MHPC #975 - Portland Snow Disposal (NAI#18752.000)
Location: Portland, Maine

Dear Ms. West:

In response to your recent request, I have reviewed the information received June 22, 2000 to initiate consultation on the above referenced project.

Based upon the proposed scope of work for this project and the project location, no additional identification efforts are warranted at this time as there is adequate documentation for a finding on historic properties. There are no known historic properties within the area of potential effects. Therefore, I find no historic properties [historic, architectural or archaeological] affected by this project.

Please contact Dana R. Vaillancourt of my staff if you require further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

EGS/drv

PHONE: (207) 287-2132

FAX: (207) 287-2335

SECTION 22

STORMWATER MANAGEMENT

SECTION 22

STORMWATER MANAGEMENT

22.0 Introduction

The City of Portland is proposing to construct a municipal snow dump at the location of the former wastewater treatment plant compost facility on Outer Congress Street in Portland. Figure 1 attached to Section 1 is a location map including the parcel boundary. The existing facility has not been used for sludge composting since the late 1980's and is currently used as a storage building for aggregate materials, etc. by the Portland Water District and the City of Portland Public Works Department.

The overall objective of this project is to construct a large municipal snow dumping site on an 88.26-acre parcel owned by the City of Portland off Congress Street. The City has recently lost rights to other snow dumping sites in the City; therefore, a new snow dumping site is required. A USGS topographic map is attached to Section 1 as Figure 2.

Existing Conditions and Development History

The existing site contains a 79,300 sq. ft. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 sq. ft. (not including the gravel yard areas noted below). This facility was constructed by the Portland Water District in 1979 to serve as a composting facility for sludge produced from the wastewater treatment plant in Portland. This facility is currently used as a storage building for aggregate materials, etc. by the Portland Water District and City of Portland Public Works Department

In the recent past, the City has developed a gravel yard area on the west side of the former compost facility for the storage of aggregate stockpiles, appurtenance structures, pipe, and granite curb. This area of non-revegetated surface is 1.44 acres in size.

In addition, a gravel lay down area was also recently constructed on the south side of the former compost facility, which was used by White Brothers during the construction of the Portland International Jetport access roads. This yard area is no longer being used and has been leveled off in preparation of revegetation. The gravel lay down area is approximately 700' long by 200' wide (3.33 acres) and is proposed to be used as a new municipal snow dump area by the City of Portland.

The existing conditions of the site have been considered as they were in 1970, i.e., without the compost facility development. The existing snow dump development site is therefore characterized by woodland, wetland and areas of field. The site drains southerly from a topographic ridge to the southerly portion of the property to Long Creek which is tributary to Clark Pond and the Fore River. Highest elevations on the site (elevation 120) are found along the ridge to the north and lowest elevations on the site (elevation 40) are found to the southeast at Long Creek. The site slopes southerly with slopes ranging from 8 to 15 percent along the ridge and 2 to 5 percent along wetland areas.

22.1 Methodology

The following methodologies were incorporated into the pre and postdevelopment drainage analysis:

- SCS TR-20 via the HydroCAD Stormwater Modeling System software package
- Rational Method for culvert and storm drain sizing

These methodologies are accepted by MeDEP and have been used extensively as part of stormwater management reports prepared by DeLuca-Hoffman Associates, Inc. for other Site Location of Development projects in the State of Maine.

22.2 Resources

The following resources have been utilized as part of the pre and postdevelopment drainage analysis:

- USGS Topographic Map, Portland, ME, Portland West Quadrangle
- 2-foot contour maps of the project site based on aerial survey by Aerial Survey
- Wetland Delineation information by Normandeau Associates
- Medium Intensity Soil Survey conducted by the SCS
- Rainfall data by USDA SCS

22.3 Predevelopment Watershed Analysis

The existing condition of the snow dump development site prior to construction of the compost facility has been considered as the predevelopment condition for the stormwater analysis. Predevelopment stormwater analysis has been completed only for areas where site development is proposed to be undertaken as part of the snow dump project. Attachment A includes the Predevelopment Watershed Plan for the snow dump project.

The medium intensity soil survey revealed a variety of soils in the Hydrologic Soils Groups B, C and D. The 25-year storm, 24-hour precipitation for the Portland (Cumberland County) area is 5.5 inches, and the 2-year storm is 3.0 inches. Ten different runoff curve numbers were used for these calculations: 98 for impervious areas; 86, 91 and 94 for gravel areas Hydrologic Soil Groups (HSG) B, C and D; 58, 71 and 78 for field areas HSG B, C and D; and 55, 70 and 77 for forest areas HSG B, C and D. Runoff curve numbers were obtained from the 1995 version of Stormwater Management of Maine: Best Management Practices – Appendix D-13.

Using SCS TR-20 methodologies and the respective sources of information, hydrologic parameters (i.e., times of concentration, runoff curve number, etc.) have been developed for the various subcatchments of the project area. Hydrologic parameters for each subcatchment are summarized in the following table.

Area tributary to Long Creek:

Subcatchment	Location/Description	Area (acres)	CN	Tc (min)
1	Project Site	33.80	72	47.6

22.4 Predevelopment Flows

One (1) point of analysis has been established within the watershed for comparison of the routed predevelopment and postdevelopment flows. This point of analysis is located along Long Creek approximately 900 feet south of the existing storage building.

Formal stormwater routing has been performed for predevelopment conditions based upon the above-mentioned methodologies.

Predevelopment peak flows have been calculated based on storm events for the 2 and 25-year storm event return frequencies and are presented as follows:

Storm Return Frequency	Rainfall (inches)	Predevelopment Conditions Peak Flows (cfs) - POA 1
2 year	3.0	12.98
25 year	5.5	45.77

A copy of the detailed hydrologic analysis and calculations including a schematic diagram of the watershed subcatchment for the predevelopment conditions is included within Attachment C.

22.5 Postdevelopment Watershed Analysis

The postdevelopment condition for the stormwater analysis has been considered for the development conditions of the proposed snow dump project including the existing former sludge compost facility building and associated paving and the proposed 0.80 acres of paving and construction of a stormwater quality retention facility associated with construction of the snow dump facility. Attachment B includes the Postdevelopment Watershed Plan for the snow dump project. Based upon information previously presented in Section 22.3 – Predevelopment Watershed Analysis, SCS TR-20 methodologies and the respective sources of information, hydrologic parameters (i.e., times of concentration, runoff curve number, etc.) have been developed for the various subcatchments of the project area. Hydrologic parameters for each subcatchment are summarized in the following tables:

Upper Watershed Area Tributary to Long Creek:

Subcatchment	Location/Description	Areas (acres)	CN	Tc (min)
1	Northwest Portion of Property	17.47	71	47.6

Area of Development Tributary to Proposed Water Quality Retention Facility:

Subcatchment	Location/Description	Areas (acres)	CN	Tc (min)
2	Area to Pond	16.33	81	18.2

22.6 Postdevelopment Flows

Based upon the previously described methodologies, formal stormwater routing has been performed for the snow dump postdevelopment watershed conditions. The point of analysis established as part of the predevelopment analysis has been maintained for comparison of peak flows. The following table presents undetained postdevelopment peak flows at the point of analysis for the 2 and 25-year storm event return frequencies.

Storm Return Frequency	Rainfall (inches)	Predevelopment Conditions Peak Flows (cfs) - POA 1
2 year	3.0	19.83
25 year	5.5	57.70

As outlined below, the point of analysis shows increased postdevelopment peak flows requiring stormwater management as described below. A copy of the detailed hydrologic analysis and calculations including a schematic diagram of the watershed subcatchment for the postdevelopment conditions is included in Attachment D.

22.7 Stormwater Management

Peak Flows

Comparison of pre and postdevelopment conditions indicates that peak flows at the point of analysis increase for the 2 and 25-year storm events. The following table presents the predevelopment and undetained postdevelopment peak flows at the point of analysis:

Storm Return Frequency	Predevelopment Conditions – Peak Flows (cfs) – POA 1	Postdevelopment Conditions – Peak Flows (cfs) – POA 1
2 year	12.98	19.83
25 year	45.77	57.70

The City of Portland proposes to construct one (1) water quality detention/retention facility to regulate stormwater flows leaving the snow dump development areas. The pond has been designed to retain postdevelopment stormwater flows adequately to offset increased flows from areas which will not receive stormwater treatment and maintain postdevelopment stormwater flow at the point of analysis at or below predevelopment stormwater flows for the 2 and 25-year storm events.

The following table presents the predevelopment and detained postdevelopment peak flows at the point of analysis with the stormwater quality retention pond in place:

Storm Return Frequency	Predevelopment Conditions – Peak Flows (cfs) – POA 1	Postdevelopment Conditions – Peak Flows (cfs) – POA 1
2 year	12.98	12.98
25 year	45.77	45.71

22.8 Water Quality

The snow dump project is not located in an area tributary to a sensitive lake or pond or watershed most at risk from development and is therefore only required to meet the Total Suspended Solids (TSS) sliding scale removal efficiency required by MeDEP based upon the postdevelopment impervious percentage of the property. The subject parcel acreage is 88.26 acres, of which 6.05 acres or 6.85% will remain impervious.

As shown in Figure 5.1 of the Stormwater Management for Maine: Best Management Practices manual dated November 1995, the removal efficiency required for a 6.85% impervious site is 40%.

As shown on Figure 1 attached to this section as Attachment E, the water quality retention facility proposed for the snow dump facility provides a mean depth of 2.5 feet, 0.85 volumes and a length-to-width ratio of 4 to 1. The corresponding removal treatment efficiency for this facility is 88.2%, which treats 83% of the impervious area of the site. The remaining 17% of the impervious area of the site is untreated; therefore, the treatment efficiency for the entire site is 72.6% or 32.6% higher than the 40% required.

22.9 Conclusions

This report represents the stormwater management plan for the proposed snow dump project in Portland, Maine. Based upon the analysis presented in this report, peak postdevelopment stormwater flows for the 2 and 25-year storm events have been maintained at or below peak predevelopment stormwater flows at the point of analysis in Long Creek and water quality treatment above required levels has been provided.

22.10 Attachments

Attachment A	Predevelopment Watershed Plan W1
Attachment B	Postdevelopment Watershed Plan W2
Attachment C	Predevelopment Stormwater Computations
Attachment D	Postdevelopment Stormwater Computations
Attachment E	Figure 1 – Pond Data Sheet

APPENDIX A

PREDEVELOPMENT WATERSHED PLAN W1

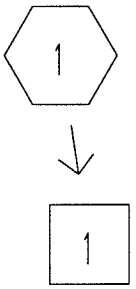
APPENDIX B

POSTDEVELOPMENT WATERSHED PLAN W2

APPENDIX C

PREDEVELOPMENT STORMWATER COMPUTATIONS

WATERSHED ROUTING ==========



SUBCATCHMENT REACH POND LINK

SUBCATCHMENT 1 = AREA TRIBUTARY TO LONG CREEK -> REACH 1

REACH 1 = LONG CREEK ->

SUBCATCHMENT 1 **AREA TRIBUTARY TO LONG CREEK**

PEAK= 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF

ACRES	CN	
1.30	55	WOODS HSG B
4.71	70	WOODS HSG C
1.57	77	WOODS HSG D
2.30	58	FIELD HSG B
14.46	71	FIELD HSG C
9.46	78	FIELD HSG D
33.80	72	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

REACH 1 **LONG CREEK**

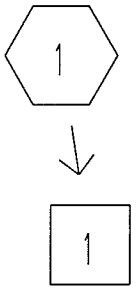
Qin = 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF
Qout= 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 1.3 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

WATERSHED ROUTING ==========

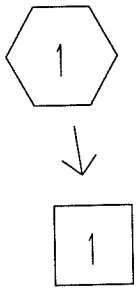


SUBCATCHMENT 1 = AREA TRIBUTARY TO LONG CREEK -> REACH 1

REACH 1 = LONG CREEK ->

Data for **SNOWDUMP PRE**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00

WATERSHED ROUTING ==========



SUBCATCHMENT REACH POND LINK

SUBCATCHMENT 1 = AREA TRIBUTARY TO LONG CREEK -> REACH 1

REACH 1 = LONG CREEK ->

Data for **SNOWDUMP PRE**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00

SUBCATCHMENT 1 **AREA TRIBUTARY TO LONG CREEK**

PEAK= 45.77 CFS @ 12.64 HRS, VOLUME= 5.10 AF

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

ACRES	CN	
1.30	55	WOODS HSG B
4.71	70	WOODS HSG C
1.57	77	WOODS HSG D
2.30	58	FIELD HSG B
14.46	71	FIELD HSG C
9.46	78	FIELD HSG D
33.80	72	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

Data for **SNOWDUMP PRE**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

REACH 1 **LONG CREEK**

Qin = 45.77 CFS @ 12.64 HRS, VOLUME= 5.10 AF
Qout= 45.75 CFS @ 12.65 HRS, VOLUME= 5.09 AF, ATTEN= 0%, LAG= .6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

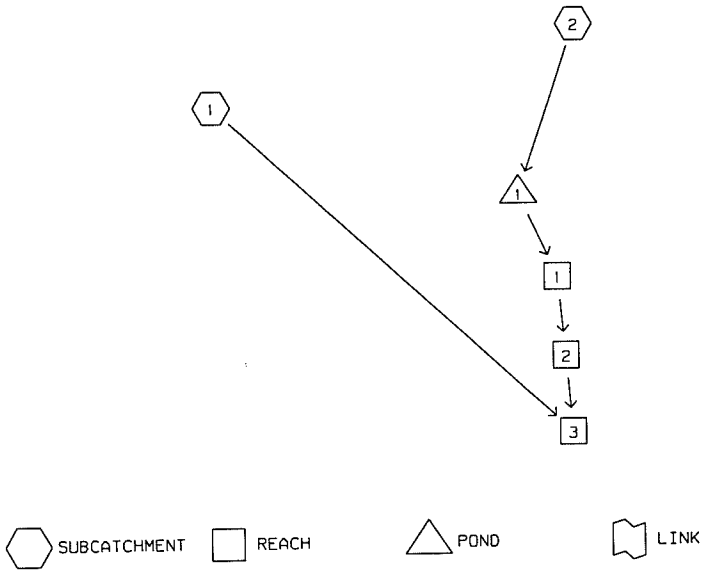
STOR-IND+TRANS METHOD
PEAK DEPTH= 2.36 FT
PEAK VELOCITY= 1.7 FPS
TRAVEL TIME = .2 MIN
SPAN= 11-15 HRS, dt=.01 HRS

APPENDIX D

POSTDEVELOPMENT STORMWATER COMPUTATIONS

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 3.00 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00

WATERSHED ROUTING ==========



SUBCATCHMENT 1	= UPPER AREA TO LONG CREEK	-> REACH 3
SUBCATCHMENT 2	= AREA TO POND	-> POND 1
REACH 1	= POND OUTLET	-> REACH 2
REACH 2	= CHANNEL BELOW POND OUTLET	-> REACH 3
REACH 3	= LONG CREEK	->
POND 1	= RETENTION POND	-> REACH 1
POND 1 secondary	= RETENTION POND	-> REACH 1

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 3.00 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

SUBCATCHMENT 1 **UPPER AREA TO LONG CREEK**

PEAK= 6.21 CFS @ 12.74 HRS, VOLUME= .69 AF

ACRES	CN	
1.25	55	WOODS HSG B
4.27	70	WOODS HSG C
1.57	77	WOODS HSG D
1.57	58	FIELD HSG B
4.50	71	FIELD HSG C
3.28	78	FIELD HSG D
.08	98	PAVED
.95	88	WEIGHTED GRAVELS B,C&D
17.47	71	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 3.00 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

SUBCATCHMENT 2 **AREA TO POND**

PEAK= 17.36 CFS @ 12.25 HRS, VOLUME= 1.29 AF

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

ACRES	CN	
4.60	98	BUILDING/PAVED.52POND
.12	58	FIELD HSG B
.94	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
6.60	71	FIELD HSG C
3.66	78	FIELD HSG D
16.33	81	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps L=30' Capacity=94.3 cfs		
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps L=330' Capacity=8.1 cfs		
CHANNEL FLOW	**FG**	3.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps L=700' Capacity=7.5 cfs		
	Total Length= 1845 ft Total Tc=	18.2

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 3.00 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC.
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

8 Sep 00

REACH 1 **POND OUTLET**

Qin = 6.77 CFS @ 12.68 HRS, VOLUME= 1.00 AF
Qout= 6.77 CFS @ 12.69 HRS, VOLUME= .99 AF, ATTEN= 0%, LAG= .7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.05	.51	.47
.10	1.03	1.48
.15	1.57	2.93
.22	2.29	5.38
.30	3.27	9.45
.40	4.48	15.43
.50	5.76	22.63

10' x .5' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 70 FT
SLOPE= .0428 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .24 FT
PEAK VELOCITY= 2.6 FPS
TRAVEL TIME = .5 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 2 **CHANNEL BELOW POND OUTLET**

Qin = 6.77 CFS @ 12.69 HRS, VOLUME= .99 AF
Qout= 6.77 CFS @ 12.73 HRS, VOLUME= .98 AF, ATTEN= 0%, LAG= 2.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.03	1.66
.20	2.12	5.33
.30	3.27	10.59
.43	4.86	19.58
.60	7.09	34.79
.80	9.94	57.59
1.00	13.03	85.68

10' x 1' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 260 FT
SLOPE= .0538 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .23 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = 1.6 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 3 **LONG CREEK**

Qin = 12.98 CFS @ 12.74 HRS, VOLUME= 1.67 AF
Qout= 12.97 CFS @ 12.74 HRS, VOLUME= 1.67 AF, ATTEN= 0%, LAG= .3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 1.3 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 3.00 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00
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POND 1 **RETENTION POND**

Qin = 17.36 CFS @ 12.25 HRS, VOLUME= 1.29 AF
Qout= 6.77 CFS @ 12.68 HRS, VOLUME= 1.00 AF, ATTEN= 61%, LAG= 25.5 MIN

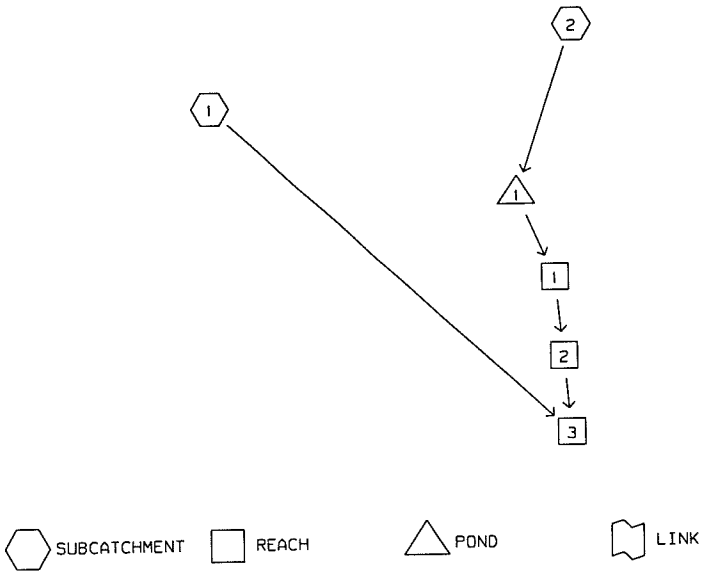
ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
54.0	20707	0	0
55.0	22743	21725	21725
56.0	24837	23790	45515
57.0	26986	25912	71427
58.0	29193	28090	99516

STOR-IND METHOD
PEAK STORAGE = 25602 CF
PEAK ELEVATION= 55.2 FT
FLOOD ELEVATION= 58.0 FT
START ELEVATION= 54.0 FT
SPAN= 11-15 HRS, dt=.01 HRS
Tdet= 59 MIN (1 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	54.0'	**1.7' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0
2	P	55.9'	**.5' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00

WATERSHED ROUTING ==========



SUBCATCHMENT 1	= UPPER AREA TO LONG CREEK	-> REACH 3
SUBCATCHMENT 2	= AREA TO POND	-> POND 1
REACH 1	= POND OUTLET	-> REACH 2
REACH 2	= CHANNEL BELOW POND OUTLET	-> REACH 3
REACH 3	= LONG CREEK	->
POND 1	= RETENTION POND	-> REACH 1
POND 1 secondary	= RETENTION POND	-> REACH 1

SUBCATCHMENT 1 **UPPER AREA TO LONG CREEK**

PEAK= 22.78 CFS @ 12.64 HRS, VOLUME= 2.54 AF

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

ACRES	CN	
1.25	55	WOODS HSG B
4.27	70	WOODS HSG C
1.57	77	WOODS HSG D
1.57	58	FIELD HSG B
4.50	71	FIELD HSG C
3.28	78	FIELD HSG D
.08	98	PAVED
.95	88	WEIGHTED GRAVELS B,C&D
17.47	71	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

SUBCATCHMENT 2 **AREA TO POND**

PEAK= 45.95 CFS @ 12.24 HRS, VOLUME= 3.36 AF

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

ACRES	CN	
4.60	98	BUILDING/PAVED.52POND
.12	58	FIELD HSG B
.94	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
6.60	71	FIELD HSG C
3.66	78	FIELD HSG D
16.33	81	

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps L=30' Capacity=94.3 cfs		
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps L=330' Capacity=8.1 cfs		
CHANNEL FLOW	**FG**	3.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps L=700' Capacity=7.5 cfs		
	Total Length= 1845 ft Total Tc=	18.2

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 8 Sep 00
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REACH 1 **POND OUTLET**

Qin = 23.05 CFS @ 12.57 HRS, VOLUME= 2.90 AF
Qout= 23.04 CFS @ 12.58 HRS, VOLUME= 2.90 AF, ATTEN= 0%, LAG= .5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.05	.51	.47
.10	1.03	1.48
.15	1.57	2.93
.22	2.29	5.38
.30	3.27	9.45
.40	4.48	15.43
.50	5.76	22.63

10' x .5' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 70 FT
SLOPE= .0428 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .51 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 2 **CHANNEL BELOW POND OUTLET**

Qin = 23.04 CFS @ 12.58 HRS, VOLUME= 2.90 AF
Qout= 23.03 CFS @ 12.60 HRS, VOLUME= 2.88 AF, ATTEN= 0%, LAG= 1.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.03	1.66
.20	2.12	5.33
.30	3.27	10.59
.43	4.86	19.58
.60	7.09	34.79
.80	9.94	57.59
1.00	13.03	85.68

10' x 1' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 260 FT
SLOPE= .0538 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .47 FT
PEAK VELOCITY= 4.3 FPS
TRAVEL TIME = 1.0 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 3 **LONG CREEK**

Qin = 45.71 CFS @ 12.64 HRS, VOLUME= 5.42 AF
Qout= 45.70 CFS @ 12.64 HRS, VOLUME= 5.41 AF, ATTEN= 0%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.36 FT
PEAK VELOCITY= 1.7 FPS
TRAVEL TIME = .2 MIN
SPAN= 11-15 HRS, dt=.01 HRS

Data for **SNOWDUMP POST**
TYPE III 24-HOUR RAINFALL= 5.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC.
8 Sep 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

POND 1 **RETENTION POND**

Qin = 45.95 CFS @ 12.24 HRS, VOLUME= 3.36 AF
Qout= 23.05 CFS @ 12.57 HRS, VOLUME= 2.90 AF, ATTEN= 50%, LAG= 19.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
54.0	20707	0	0
55.0	22743	21725	21725
56.0	24837	23790	45515
57.0	26986	25912	71427
58.0	29193	28090	99516

STOR-IND METHOD
PEAK STORAGE = 58660 CF
PEAK ELEVATION= 56.5 FT
FLOOD ELEVATION= 58.0 FT
START ELEVATION= 54.0 FT
SPAN= 11-15 HRS, dt=.01 HRS
Tdet= 46.4 MIN (2.9 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	54.0'	**1.7' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0
2	P	55.9'	**.5' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0

APPENDIX E

FIGURE 1 – POND DATA SHEET

FIGURE 1

FILE NAME: SACO-ENG\PORTLAND\JN1900.11\POND-CN.XLS
PROJECT: SNOW DUMP
LOCATION: PORTLAND, MAINE
DATE: 8-Sep-00

POND 1

TOTAL AREA = 16.33 ACRES
CN VALUE = 81.06
C VALUE = 0.50

POST DEVELOPMENT CONDITION

DESCRIPTION	A SOILS AREA (AC)	TR - 55 METHOD CN VALUE	TR - 55 METHOD CN * AREA	RATIONAL METHOD COEF. C	RATIONAL METHOD C * A	B SOILS AREA (AC)	TR - 55 METHOD CN VALUE	TR - 55 METHOD CN * AREA	RATIONAL METHOD COEF. C	RATIONAL METHOD C * A
PAVEMENT	0.00	98.00	0.00	0.90	0.00	0.00	98.00	0.00	0.90	0.00
POND	0.52	98.00	50.96	0.95	0.49	0.00	98.00	0.00	0.95	0.00
GRAVEL	0.00	76.00	0.00	0.70	0.00	0.00	85.00	0.00	0.70	0.00
FOREST	0.00	30.00	0.00	0.15	0.00	0.06	55.00	3.30	0.15	0.01
FIELD	0.00	30.00	0.00	0.15	0.00	0.12	58.00	6.96	0.15	0.02
LAWN	0.00	39.00	0.00	0.15	0.00	0.00	61.00	0.00	0.15	0.00
SUBTOTAL	0.52		50.96		0.49	0.18		10.26		0.03

DESCRIPTION	C SOILS AREA (AC)	TR - 55 METHOD CN VALUE	TR - 55 METHOD CN * AREA	RATIONAL METHOD COEF. C	RATIONAL METHOD C * A	D SOILS AREA (AC)	TR - 55 METHOD CN VALUE	TR - 55 METHOD CN * AREA	RATIONAL METHOD COEF. C	RATIONAL METHOD C * A
PAVEMENT	2.26	98.00	221.48	0.90	2.03	0.00	98.00	0.00	0.90	0.00
ROOF	1.82	98.00	178.36	0.95	1.73	0.00	98.00	0.00	0.95	0.00
GRAVEL	0.94	89.00	83.66	0.70	0.66	0.00	91.00	0.00	0.70	0.00
FOREST	0.29	70.00	20.30	0.30	0.09	0.06	77.00	4.62	0.30	0.02
FIELD	6.60	71.00	468.60	0.30	1.98	3.66	78.00	285.48	0.30	1.10
LAWN	0.00	74.00	0.00	0.30	0.00	0.00	80.00	0.00	0.30	0.00
SUBTOTAL	11.91		972.40		6.49	3.72		290.10		1.12

RUNOFF COMPUTATION

	water quality
STORM FREQUENCY (YR)	2 (approx.)
CN VALUE	81.06
S VALUE	2.34
RAINFALL AMOUNT (IN)	2.50
RUNOFF (IN)	0.95
INITIAL ABSTRACTION	0.47
Ia/P	0.19
Am*Q	0.02

WATER QUALITY POND SIZING:

ONE MEAN VOLUME =	56,059	CF
NUMBER OF MEAN VOLUMES =	0.85	
WETPOND VOLUME PROVIDED WITHIN POND =	47,650	CF
TOTAL WETPOND VOLUME =	47,650	CF
MEAN DEPTH =	2.50	FT
WATER QUALITY SURFACE AREA =	19,060	SF
LENGTH-TO-WIDTH RATIO =	4.00	:1
LENGTH =	276	FT
AVERAGE WIDTH =	69	FT

DDA 9/8/00

SECTION 23

FLOODING

SECTION 23

FLOODING

23.0 Overview

The Federal Emergency Management Agency (FEMA) Flood Zone Map indicates a portion of the project parcel exists within the 100-year flood plain associated with Long Creek as shown on Figure 7 in Section 1; however, no development is proposed within this flood plain.

A stormwater management study has been prepared for this project which indicates the development will not cause or increase flooding, nor cause unreasonable flood hazard to any structure.

23.1 Cross Reference

Section 1 – Development Description
Section 22 – Stormwater Management

SECTION 24

EROSION AND SEDIMENTATION CONTROL REPORT

SECTION 24

EROSION AND SEDIMENTATION CONTROL REPORT

24.0 Introduction

The City of Portland is proposing to construct a new snow dump facility on its 88-acre parcel off Congress Street by the Maine Turnpike Exit 7A. The additional paved area and water quality retention facility will be located to the south of the existing storage building.

The location of the proposed development area is characterized by Buxton, Scantic and Suffield soils with slopes ranging from 2% to 15%.

This report addresses the erosion and sedimentation control measures to be implemented during construction and as permanent features of the project.

24.1 Overview of Soil Erosion and Sedimentation Control Concerns

The susceptibility of soils to erosion is indicated on a relative scale of "K" values over a range of 0.05 to 0.69. The higher values are indicative of the most erodible soils. The Cumberland County Soil Conservation Service's Medium Intensity Soil Survey indicates that the type of soils in the project area are Buxton, Scantic, and Suffield. The soils and respective K value in the 10-20" depth are identified below:

Soil Type	K Value (10-20")
Buxton	0.49
Scantic	0.49
Suffield	0.49

Based on previous review, the onsite soil in the proposed development area is moderately to highly susceptible to erosion. Care will be exercised to avoid over-exposure of the soil during construction.

The primary emphasis of the Erosion and Sedimentation Control Plan for this project is as follows:

1. Establishment of a construction sequence.
2. Rapid vegetation of denuded areas to minimize the period of soil exposure.
3. Rapid stabilization of drainage paths to avoid rill and gully erosion.
4. Utilization of BMP measures to capture sediment prior to discharge from the project area or into adjacent waterways.

24.2 Description of Proposed Earth Movements

Within the project area, the following is planned for the site:

1. Construction of a paved area with a foot print of approximately 35,000 s.f.

2. Construction of drainage ditches and storm drain installation.

3. Construction of a water quality retention pond including inlet and outlet channels.

The area to be disturbed during construction will be approximately 3.20 acres of woods, field and denuded area. The following will replace the disturbed area:

Impervious Area: 0.94 acres
Grassed Area: 2.26 acres

24.3 Existing and Proposed Drainage Features

The project site is located on the south side of the existing 79,300 s.f. building. The entire development area is tributary to a drainage course which discharges to the south to Long Creek before crossing beneath the Maine Turnpike en route to Clark Pond.

The existing site contains a 79,300 s.f. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 s.f. as discussed in more detail in Section 1 of this application. Drainage from the existing site follows drainage ditches and culverts from the north of the existing building to each side and then travels south through wetlands before entering Long Creek.

A detailed discussion of the existing and proposed drainage features is provided in Section 22 of this application.

24.4 Erosion/Sedimentation Control Devices

The following erosion/sedimentation control devices are planned for this site during the construction period. These devices shall be installed as indicated on the plans or as described within this report.

1. Siltation fence will be installed downgradient of disturbed areas to trap runoff borne sediments until the site is revegetated. Installation details are provided in the plan set.

2. Hay bales are intended to trap sediments and reduce runoff velocities. Installation details are provided within the plan set.

3. Straw and hay mulch is intended to provide cover for denuded areas until revegetation is established. Mulch placed on slopes of less than 3:1 shall be anchored by applying water; mulch placed on slopes steeper than 3:1 shall be covered with netting and anchored with staples in accordance with the manufacturers recommendations. Mulch application rates are provided in the appendix of this section.

4. Construction entrances will be installed at the access points into the work areas to prevent tracking of soil onto existing streets. Anticipated locations of the construction entrances for the project are shown on the construction plans. The final locations of the construction entrances may vary depending upon the contractor's planned progress of work.

5. Seed and mulch is intended to serve as the primary revegetation measure for all denuded areas not provided with other erosion control measures, such as riprap. A seeding plan is contained in Attachment A.

6. Riprap slopes and culvert outlet aprons are intended to reduce runoff velocities and protect denuded soil surfaces from concentrated flows. Installation details and stone sizes are provided in the construction plan set.

7. Stone check dams will be provided in temporary ditch sections to reduce the velocity of stormwater flows which will reduce erosion in the ditch. The spacing of the check dams will be as provided in the BMP Manual.

24.5 Temporary Erosion/Sedimentation Control Measures

The following are planned as temporary erosion/sedimentation control measures during construction of the development:

1. Siltation fence shall be installed along the downgradient side of the fill embankments. The siltation fence will remain in place until the site is revegetated.

2. Hay bales will be installed at key locations to supplement the siltation fence.

3. Temporary stockpiles of stumps, grubbings, or common excavation will be protected as follows:

   a. Soil stockpile side slopes shall not exceed 2:1.

   b. Temporary stockpiles shall not be located within 100 feet of the wetlands and shall be located away from drainage swales.

   c. The stockpile shall be stabilized within 15 days by either temporarily seeding the stockpile with a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch.

4. Stabilized construction entrances will be installed consisting of an apron 20 feet wide by 50 feet long by 6 inches deep of 2" crushed stone. During construction, this entrance will be monitored and the crushed stone removed and replaced as it becomes contaminated with mud, dirt or debris from the contractor's operations.

5. All denuded areas which have been rough graded and are not located within the pavement subbase area, shall receive mulch within 30 days of initial disturbance of soil or within 15 days of completing the rough grading operations. Any area within 100 feet of wetland shall be temporarily stabilized within 7 days after completing the rough grading operation.

6. If work is conducted between October 15 and April 15 of any calendar year, all denuded areas are to be covered with hay mulch, applied twice the normal application rate, and anchored with fabric netting. The period between initial disturbance and mulching shall be 15 days or prior to any rain event, whichever is less.

7. The existing access drive and public road near the site shall be swept or washed to control mud and dust as necessary.

8. During rough grading operations, stone check dams will be installed at any evident concentrated flow discharge points.

9. Temporary erosion control measures shall be removed once the site has been stabilized or in areas where permanent erosion control measures have been installed.

24.6 Sedimentation Basin

The proposed water quality/stormwater management facility will serve as a temporary sediment basin during construction. The sediment basin and drainage system shall be installed early in the construction process to permit runoff to enter the basin.

A perforated riser on the drain line outlet pipe will control outflow from the pond and allow extended detention for a 10 year, Type III storm event. Calculations for the sediment pond are provided in Attachment B.

24.7 Permanent Erosion Control Measures

The following permanent control measures have been designed as part of the Erosion Sedimentation Control Plan:

1. All storm drain pipes that outlet to any areas other than water quality retention ponds, shall have riprap aprons or plunge pools at their outlet to protect the outlet and receiving channel from scour and erosion. The aprons and plunge pools shall be installed and stabilized prior to directing runoff to the tributary area.

2. The permanent water quality wetpond will serve as a temporary sediment basin during construction. The permanent pool volume has been sized to provide long-term removal of 88.2% total suspended solids from the stormwater runoff entering the pond. The pond has been designed to achieve "plug flow" conditions to the extent allowed by the geometrics of the site.

3. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized and seeded. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.

4. A riprap spillway channel will be installed to convey stormwater exiting the water quality pond.

5. Slopes greater than 2:1 will receive riprap.

B. Dust and wind erosion shall be controlled throughout the life of the project. Dust control shall include, but is not limited to, sprinkling of water on exposed soils and haul roads.

C. If excavation is interrupted by heavy rains, additional mulching or gravel work mats may be required on areas of exposed soils. Soils which may have become unsuitable for use due to exposure to heavy rains shall be removed from the work area and dried or disposed of off site in a manner consistent with this plan.

1. The above construction sequence should generally be completed in the specified order; however, several separate items may be completed simultaneously.

2. Work must also be scheduled or phased to prevent the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and have structural measures, such as silt fence and construction entrances, in place before large areas of land are denuded.

3. The work shall be conducted in phases or segments which will:

   a. Limit the amount of exposed areas in which work is expected to be undertaken during the proceeding 30 days.
   b. Revegetate disturbed areas as rapidly as possible, backslopes and fill slopes.
   c. Incorporate planned drainage systems as early as possible into the construction phase.

The schedule will be subject to the approval of the Owner and his authorized representatives.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

The Contractor shall note that no area shall remain denuded for a period of over 30 days before being temporarily stabilized. If work is conducted after October 15, the period shall be reduced to 15 days. Temporary stabilization shall be the installation of gravel or mulching.

Special Provisions for Winter Construction

For work which is conducted between November 1 and April 15 (winter construction) of any calendar year, the Contractor shall submit a schedule that will satisfy the following criteria:

1. Limit the amount of exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days.
2. During the construction process, all disturbed areas shall be covered with mulch within 7 days of final grading.
3. Once final grade has been established, the contractor may choose to dormant seed the disturbed areas prior to placement of mulch and placement of fabric netting anchored with staples.

a. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5#/1000 s.f. All areas seeded during the winter months will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) shall be revegetated by replacing loam, seed and mulch.

b. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

4. The area of denuded non-stabilized construction shall be limited to the minimum area practicable. An area shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. The mulch rate shall be twice the rate specified in the seeding plan. (For example, 115#/1000 s.f. x 2 = 230#/s.f.)

5. The schedule shall be subject to the approval of the Owner.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

Temporary stabilization shall be the installation of gravel or mulching for construction between November 1 and April 15 of any calendar year, all areas shall be temporarily stabilized within 7 days or prior to a forecasted rainfall event.

24.9 Provisions for Maintenance of the Erosion/Sedimentation Control Features

Inspect the project work site on a weekly basis and after each significant rainfall event (0.5 inches or more within any consecutive 24 hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized. Inspection of the project work site shall include:

- Identification of proper erosion control measures and installation in accordance with the erosion control detail sheet or as specified in this section.
- Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
- Identify areas, which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
- Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 75 percent is required prior to removal of erosion control measures

Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.

24.10 Related Sections

Section 12 – Soils
Section 22 – Stormwater Management

a. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5#/1000 s.f. All areas seeded during the winter months will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) shall be revegetated by replacing loam, seed and mulch.

b. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

4. The area of denuded non-stabilized construction shall be limited to the minimum area practicable. An area shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. The mulch rate shall be twice the rate specified in the seeding plan. (For example, 115#/1000 s.f. x 2 = 230#/s.f.)

5. The schedule shall be subject to the approval of the Owner.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

Temporary stabilization shall be the installation of gravel or mulching for construction between November 1 and April 15 of any calendar year, all areas shall be temporarily stabilized within 7 days or prior to a forecasted rainfall event.

24.9 Provisions for Maintenance of the Erosion/Sedimentation Control Features

Inspect the project work site on a weekly basis and after each significant rainfall event (0.5 inches or more within any consecutive 24 hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized. Inspection of the project work site shall include:

- Identification of proper erosion control measures and installation in accordance with the erosion control detail sheet or as specified in this section.
- Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
- Identify areas, which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
- Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 75 percent is required prior to removal of erosion control measures

Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.

24.10 Related Sections

Section 12 – Soils
Section 22 – Stormwater Management

24.11 Attachments

Attachment A – Seeding Plan
Attachment B – Temporary Sediment Basin Calculations

ATTACHMENT A

SEEDING PLAN

SEEDING PLAN NON-WETLAND AREAS

Project Snow Dump Project

Site Location Portland, Maine

X Permanent Seeding (Lawn)

1. Area to be seeded: 2.26 acres, OR _____ M Sq. Ft.

2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.

3. Apply lime as follows: _____ #/acres, OR 138 #/M Sq. Ft.

4. Fertilize with _____ pounds of __ - __ - __ N-P-K/ac. OR
   18.4 pounds of 10 - 10 - 10 N-P-K/ M Sq. Ft.

5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.

6. Seed with the following mixture:

   40% SR 3000 Fineleaf Fescue
   30% A-34 Kentucky Bluegrass
   20% Pennant Perennial Rye Grass
   10% Baron Kentucky Blue Grass

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of _____ tons per acre. OR 115 pounds per M Sq. Ft.

	Amount	Unit #, Tons, Etc.
8. TOTAL LIME	138	#/1000 sq. ft.
9. TOTAL FERTILIZER	18.4	#/1000 sq. ft.
10. TOTAL SEED	2.30	#/1000 sq. ft.
11. TOTAL MULCH	115	#/1000 sq. ft.
12. TOTAL other materials, seeds, etc		

13. REMARKS:

SEEDING PLAN NON-WETLAND AREAS

Project Snow Dump Project

Site Location Portland, Maine

_____ Permanent Seeding (Conservation Mix) __X__ Temporary Seeding

1. Area to be seeded: <1 acre, OR _____ M Sq. Ft.

2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.

3. Apply lime as follows: _____ #/acres, OR 138 #/M Sq. Ft.

4. Fertilize with _____ pounds of __ - __ - __ N-P-K/ac. OR
   18.4 pounds of 10 - 10 - 10 N-P-K/ M Sq. Ft.

5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.

6. Seed with the following mixture:

   100% Winter Rye (Fall)
   100% Oats (Spring)

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of _____ tons per acre. OR 115 pounds per M Sq. Ft.

	Amount	Unit #, Tons, Etc.
8. TOTAL LIME	138	#/1000 sq. ft.
9. TOTAL FERTILIZER	13.8	#/1000 sq. ft.
10. TOTAL SEED	2.6 Rye, 1.8 Oats	#/1000 sq. ft.
11. TOTAL MULCH	115	#/1000 sq. ft.
12. TOTAL other materials, seeds, etc		

13. REMARKS:

ATTACHMENT B

TEMPORARY SEDIMENT BASIN CALCULATIONS

TASK: COMPUTE SEDIMENT BASIN STORAGE VOLUME REQUIREMENTS FOR WATER QUALITY POND.

REFERENCES:

1. MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES
2. USDA TR-20 DRAINAGE METHOD
3. EPA, STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES, DEVELOPING POLLUTION PREVENTION PLANS AND BMP'S, EPA 832-R-92-005, DATED SEPT. '93

COMPUTATIONS:

REF. 1 - CH. 47.0 SEDIMENT BASIN
BASED UPON MEDIUM INTENSITY SOIL SURVEY, WHICH IDENTIFIED DEVELOPMENT AREA AS CONSISTING OF PRIMARILY LOAM/CLAY SOILS, COMPUTE SEDIMENT BASIN STORAGE VOLUME BASED UPON 10 HOUR DELAY TIME FIG. 47-4

DRAINAGE SUBAREAS TRIBUTARY TO SEDIMENT BASIN

TOTAL DRAINAGE AREA (DA) =	16.33	ACRES
DESIGN STORM =	10 YR./24HR/TYPE III STORM	
RAINFALL AMOUNT =	4.7	
RATE OF RUNOFF (R) =	2.84	AC-FT
	2.09	INCHES
PEAK RUNOFF RATE (Qi) =	38.9	CFS
(Qi/DA) =	2.38	

REF. 1 FIG. 47-2

WITH (Qi/DA) = 2.38, R = 2.84 THEN Qo/Qi =	0.075	
MAX. PRINCIPAL SPILLWAY DISCHARGE Qo =	2.92	CFS
Vs/Vr =	0.583	
VOLUME OF RUNOFF Vr =	2.84	AC-FT
THEREFORE, VOLUME OF STORAGE Vs =	1.66	AC-FT
	72,123	CF

FROM STAGE-STORAGE CURVE

STORAGE VOLUME (Vs) AVAILABLE AT ELEV. =	54.5
MAXIMUM STAGE ELEV. =	54.50
BOTTOM OF POND ELEV. =	50.00
TOP OF BERM ELEV. =	58.00
FREE BOARD (FT) =	3.50

RISER DESCRIPTION:

NOTE: ORIFICE FLOW (CFS) = (NO. OF ORIFICES)*(0.0267*D^2*H^0.5)

1. DEWATERING HOLE

ORIFICE DIAMETER (INCHES) =	1.5
NUMBER OF ORIFICES =	3
ORIFICE CENTER ELEV. =	49.75
AVAILABLE HEAD AT MAX. STAGE (FT) =	4.75
PEAK OUTFLOW (CFS) =	0.39

2. PERFORATIONS

	1ST ROW	2ND ROW
ORIFICE DIAMETER (INCHES) =	1.5	1.5
NUMBER OF ORIFICES =	12	12
ORIFICE CENTER ELEV. =	51	52
AVAILABLE HEAD AT MAX. STAGE (FT) =	3.50	2.50
PEAK OUTFLOW (CFS) =	1.35	1.14

THEREFORE, RISER PEAK OUTFLOW (CFS) = 2.88

SECTION 25

NOTICES

SECTION 25

NOTICES

25.0 Introduction

The abutters to the project were identified based upon tax maps and assessors' records. The project site and abutters which were notified of the project are shown on Sheet 1 of the plan set and a list of abutters is enclosed as Attachment A.

A public informational meeting was held on September 7, 2000. Abutters were notified of this meeting via certified mail. These notices were sent on August 24, 2000. The notice of this informational meeting was published in the Portland Press Herald on August 28, 2000. Copies of the notices sent to the abutters and the copy of the published notice is contained in Attachment B.

25.1 Chapter 2 Requirements

The Site Location of Development Act Permit application is subject to Chapter 2 of the MeDEP Site Location of Development Permit Rules for processing the application. Specific requirements and the action of the applicant are as follows:

- **Public Informational Meeting:** A public informational meeting was conducted on September 7, 2000. Minutes of this meeting are enclosed as Attachment C.

Abutters and Town Officials were notified ten days prior to the public informational meeting. The notice was published in the Portland Press Herald the requisite seven days prior to the meeting. A copy of the notice is enclosed in Attachment B.

25.2 Copies of Notices

Copies of the notices sent to abutters and the published advertisement are appended to this section in Attachment B. Also appended in Attachment B is a copy of all the certified mail receipts for the notices sent to the abutters.

25.3 Attachments

Attachment A - List of Abutters
Attachment B - Published Advertisement for Public Informational Meeting
Copies of the Notices Sent to Abutters
Copies of Certified Mail Receipts for Mailed Notices
Attachment C - Public Informational Meeting Minutes
Attachment D - Form D of MeDEP Application

ATTACHMENT A

LIST OF ABUTTERS

PORTLAND SNOW DUMP PROJECT
ABUTTER LIST

City	Tax Map	Block	Lot	Owner
Portland	235	A	2	Hutchins, George M.
	239A	A	2	75 Dartmouth Street
	239A	A	4	South Portland, ME 04106
	238A	B	1	
South Portland	47	00	4	
Westbrook	6	N/A	17	
Portland	236	A	2	Maine Turnpike Authority
	236	A	5	430 Riverside Street
	234	A	3	Portland, ME 04103
	233	A	8	
	233	A	4	
South Portland	69	00	2A	
	70	00	2	
Portland	*235	A	1	City of Portland
	*235	B	1	389 Congress Street
	*235	B	2	Portland, ME 04101
	*234	A	1	
	*234	A	2	
	*233	A	2	
	*233	A	6	
	233	A	9	
South Portland	*70	00	3	
	*70	00	1	
	*47	00	5	
	47	00	2	
Portland	233	A	5	Portland Water District
	*233	A	7	225 Douglass Street
				Portland, ME 04102

Abutters List (Continued)

City	Tax Map	Block	Lot	Owner
Portland	239A	A	1	Racket & Fitness Center Inc. 2445 Congress Street Portland, ME 04102
Portland	238A	B	2	Strohn, Wilbur J. Jr. & Barbara R. Trustees P.O. Box 472 New Harbor, ME 04554
Portland	236	A	3	WH Nichols Company 6035 Parkland Blvd. Cleveland, OH 44124
South Portland	47	00	1	Starr, Mary Rose P.O. Box 8588 Portland, ME 04104
South Portland	70	00	4	Sable Development LLC 505 Country Club Road South Portland, ME 04106
Westbrook	3 3	N/A N/A	1-14 1-15	Sysco Food Services of Northern New England 55 Thomas Drive Westbrook, ME 04092
Westbrook	3	N/A	1-18	Silvex, Inc. 45 Thomas Drive Westbrook, ME 04092
Westbrook	3	N/A	1-17	Allied Westbrook 47 Thomas Drive Westbrook, ME 04092
Westbrook	6	N/A	15	Sturchio, Anton E. & Susan E. 15 County Road Westbrook, ME 04092

* Indicates parcels included with project area lot

ATTACHMENT B

PUBLISHED ADVERTISEMENT FOR PUBLIC INFORMATIONAL MEETING

COPIES OF THE NOTICES SENT TO ABUTTERS

COPIES OF CERTIFIED MAIL RECEIPTS FOR MAILED NOTICES

CLASSIFIED AD

100
ine 1-800-894-0041)

essherald.com

1
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04104

PORTLAND Press Herald

Classified N

www.maineclassified.com

LEGAL ADVERTISEMENT

FOR PROPOSALS
ll PROJECT -
JNICIPAL BUILDING

ton is soliciting proposals of a new sheet metal roof- own of Bridgton Municipal ase Common, Bridgton, nuals can be obtained at 's office from within the Building or from Criterium s, 22 Monument Square, d, Maine 207-775-1969, en.

-through will be held on r 5, 2000 at 4:00 p.m. at ng and will commence in m adjacent to the Town ealed bids clearly marked ed at the Bridgton Town Common, Bridgton, Maine , September 12, 2000 at lace and time they will be oud. Reroofing will begin mber 29, 2000, and be e by November 1, 2000.

reserves the right to l all bids and, at its ormalities.

427147

LEGAL ADVERTISEMENT
NOTICE OF PUBLIC INFORMATIONAL MEETING

The City of Portland is preparing plans and permit applications for construction of a municipal snow dump at the location of the former wastewater treatment plant compost facility off Outer Congress Street. The City intends to file an application with the City of Portland under delegated review from the Maine Department of Environmental Protection for a Site Location of Development Act (38 MRSA §§481-490) for the proposed municipal snow dump on or about September 12, 2000.

Construction of the municipal snow dump will consist of the following:

- Addition of approximately 35,000 square feet of paving.
- Construction of a water quality retention facility.
- Installation of storm drains, ditches and miscellaneous site grading.

The City of Portland will conduct a PUBLIC INFORMATIONAL MEETING on Thursday, September 7, 2000 at 6:00 PM at the office of Regional Waste Systems located at 64 Blueberry Road off Congress Street in Portland, Maine. A copy of the notice of intent to file the permit application is also being provided to abutters. Written comments or inquiries concerning this project are encouraged and can be directed to:

Dwight D. Anderson, P.E.
DeLuca-Hoffman Associates
778 Main Street, Suite 8
South Portland, Maine 04106
Phone: (207)775-1121
Fax: (207)879-0896

427023

LEGAL ADVERTISEMENT
REQUEST FOR PROPOSALS

The Maine Department of Education is seeking grant proposals from Local School Districts for the Reading Excellence Act: Tutorial Assistance Grants (TAG) Program, authorized under the Improving America's Schools Act (IASA) of 1994, to operate tutorial assistance programs before or after school, on weekends, or during the summer. To request a copy of the detailed Request for Proposals (RFP), interested parties can call 287-5306, or e-mail lorraine.cote@state.me.us. For program information or questions, interested parties can call Patrick O'Shea, 287-5306, IASA Clearinghouse, 19 State House Station, Augusta, ME 04333-0019. One original and two copies of the proposal must be clearly marked "Proposal: Reading Excellence Act: Tutorial Assistance Grants (TAG)" and delivered to the Division of Purchases, 161 Capitol Street, 9 State House Station, Augusta, ME 04333-0009 no later than 2:00 p.m. local time on February 28, 2001, at which time and place they will be opened. Proposals received after the 2:00 p.m. deadline will be rejected.

427450

LEGAL ADVERTISEMENT

The Lyman Board of Selectmen will hold a Public Hearing on Monday, September 4, 2000 at 6:30 p.m. at the Lyman Town Hall to discuss extending the Moratorium Ordinance Regarding Development of Mobile Home Parks.

Steven A. Curtis, Chairman
August 25, 2000
Shirley A. Harrison, Town Clerk
Attest

424[illegible]

LEGAL ADVERTISEMENT
CITY OF SOUTH PORTLAND MAINE
Notice to Bidders

Sealed bids will be received by the City Purchasing Agent, Room 102, City Hall, 25 Cottage Road for:

Bid #201005 Latham Barberry Creek Drive, Cole Street Separation, 2:00 P.M., Sept. 11
Bid #201013 Recycling Facility Equipment Building, 2:00 P.M., Sept. 12
Bid #201014 Pickup Truck (1) One Ton Dump Truck, 2:00 P.M., Sept. 13
Bid #201015 Sale of Surplus Equipment 2:00 P.M. Sept. 01
Bid #201016 Painting of High School Gym 2:30 P.M. Sept. 11
Bid #201017 Sand & Refinish High School Gym Floor 3:00 P.M. Sept. 11

Bid forms may be obtained at the office of the Purchasing Agent, 767-7608.

Robert D. Coombs
Senior Accountant

427540

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NOTICE OF PUBLIC INFORMATIONAL MEETING

The City of Portland is preparing plans and permit applications for construction of a municipal snow dump at the location of the former wastewater treatment plant compost facility off Outer Congress Street. The City intends to file an application with the City of Portland under delegated review from the Maine Department of Environmental Protection for a Site Location of Development Act (38 MRSA §§ 481-490) for the proposed municipal snow dump on or about September 12, 2000.

Construction of the municipal snow dump will consist of the following:

- Addition of approximately 35,000 square feet of paving.
- Construction of a water quality retention facility.
- Installation of storm drains, ditches and miscellaneous site grading.

The City of Portland will conduct a PUBLIC INFORMATIONAL MEETING on Thursday, September 7, 2000 at 6:00 PM at the office of Regional Waste Systems located at 64 Blueberry Road off Congress Street in Portland, Maine. A copy of the notice of intent to file the permit application is also being provided to abutters.

Written comments or inquiries concerning this project are encouraged and can be directed to:

Dwight D. Anderson, P.E.
DeLuca-Hoffman Associates
778 Main Street, Suite 8
South Portland, Maine 04106
Phone: (207) 775-1121
Fax: (207) 879-0896

FORM C 7/97

NOTICE OF INTENT TO FILE

Please take notice that the City of Portland, 55 Portland Street, Portland, Maine 04101
(Name, Address and Phone of Applicant)

Attn: William Bray (207) 874-8800

is intending to file a Site Location of Development permit application with the City of Portland under delegated review from the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481-490 on or about September 12, 2000
(anticipated filing date)

The application is for construction of a municipal snow dump at the location of the former
(summary of project)

wastewater treatment plant compost facility off Outer Congress Street. The project includes approximately 35,000 square feet of bituminous paving, storm drain installation and construction of a water quality retention facility.

at the following location: off Outer Congress Street at the location of the former wastewater
(project location)
treatment plant compost facility near the new Turnpike Exit 7A and abutting the Maine Turnpike.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office at Portland during normal working hours. A copy of the application may also be seen at the municipal offices in

Portland, Maine.
(city)

Written public comments may be sent to the Department of Environmental Protection, Bureau of Land & Water Quality, 17 State House Station, Augusta, Maine 04333.

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9766

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Sable Development LLC
Street, Apt. No.; or PO Box No.
505 Country Club Road
City, State, ZIP+4
South Portland, ME 04106

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9889

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Racket & Fitness Center Inc.
Street, Apt. No.; or PO Box No.
2445 Congress Street
City, State, ZIP+4
Portland, ME 04102

PS Form 3800, July 1999 See Reverse for Instruc

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9797

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Sysco Food Service of Northern New England
Street, Apt. No.; or PO Box No.
55 Thomas Drive
City, State, ZIP+4
Westbrook, ME 04092

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9858

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Wilbur J. Strohn Jr. & Barbara R. Trustees
Street, Apt. No.; or PO Box No.
P.O. Box 472
City, State, ZIP+4
New Harbor, ME 04554

PS Form 3800, July 1999 See Reverse for Instruc

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9735

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
Silvex, Inc.
Street, Apt. No.; or PO Box No.
45 Thomas Drive
City, State, ZIP+4
Westbrook, ME 04092

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9827

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (to be completed by mailer)
WH Nichols Company
Street, Apt. No.; or PO Box No.
6035 Parkland Blvd
City, State, ZIP+4
Cleveland, OH 44124

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9971

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Maine Turnpike Authority
430 Riverside Street
Portland, ME 04103

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9674

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Mr. Anton & Susan E. Sturchio
15 County Road
Westbrook, ME 04092

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9940

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

City of Portland
389 Congress Street
Portland, ME 04101

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9643

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Ms. Mary Rose Starr
P.O. Box 8588
Portland, ME 04104

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9919

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Portland Water District
225 Douglass Street
Portland, ME 04102

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1594 0007

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Mr. George M. Hutchins
75 Dartmouth Street
South Portland, ME 04106

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No., or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instruc

7099 3400 0004 1593 9704

U.S. Postal Service

CERTIFIED MAIL RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To:

Allied Westbrook

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Name (Please Print Clearly) (To be completed by mailer)

47 Thomas Drive

Street, Apt. No., or PO Box No.

Westbrook, ME 04092

City, State, ZIP+4

PS Form 3800, July 1999

See Reverse for Instructions

ATTACHMENT C

PUBLIC INFORMATIONAL MEETING MINUTES

PUBLIC INFORMATIONAL MEETING NOTES

DATE: Thursday, September 7, 2000

TIME: 6:00 PM

LOCATION: Regional Waste Systems
64 Blueberry Road
Portland, ME

ATTENDEES: Kevin Noyes, City of Portland
Dwight D. Anderson, DeLuca-Hoffman Associates, Inc.

No members of the public attended the public informational meeting. Kevin and Dwight reviewed the project from 6:00 PM to 7:00 PM.

Prepared by: Dwight D. Anderson, P.E.

ATTACHMENT D

FORM D OF MeDEP APPLICATION

FORM D 8/94

NOTICE CERTIFICATION

By signing below, the applicant (or authorized agent) certifies that he or she has

1. Published a Notice of Intent to File once in a newspaper circulated in the area where the project site is located within thirty days prior to the filing of the application;

2. Sent by certified mail a completed copy of the Notice of Intent to File to the owners of the property abutting the land upon which the project site is located within thirty days prior to the filing of the application;

3. Sent by certified mail a completed copy of the Notice of Intent to File and filed a duplicate of this application with the town clerk or city clerk of the municipality(ies) where the project is located; and

4. Provided notice of and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 8, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town clerk or city clerk of the municipality(ies) where the project is located at least 10 days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least 7 days prior to the meeting. (NOTE: A Public Informational Meeting is not required for residential subdivisions with 20 or fewer developable lots.)

Approximately 0 members of the public attended the Public Informational Meeting.

Signature of Authorized Agent

9/12/00
Date

Dwight D. Anderson, P.E., DeLuca-Hoffman Associates, Inc.
Print name and title of Applicant

If signature is other than that of the applicant, attach letter of agent authorization signed by applicant.

Executive Department

Robert B. Gunley
City Manager

CITY OF PORTLAND

Agent Authorization

The City of Portland authorizes DeLuca-Hoffman to serve as its agent for the submittal of plans and materials for Site Plan and Site Location of Development review for a Public Works facility on outer Congress Street.

signed:

William Bray, Director
Public Works

9-12-00
date

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

September 12, 2000

Mr. Alexander Jaegerman
City of Portland
389 Congress Street
Portland, ME 04101

Subject: Submission of Major Site Plan Application
and
MeDEP Site Location of Development Permit Application
for the
Snow Dump on Outer Congress Street, Portland, ME

Dear Mr. Jaegerman:

Enclosed please find nine (9) copies of the Major Site Plan Application submission and MeDEP Site Location of Development Permit Application submission for the proposed Snow Dump Facility on Outer Congress Street for City Planning Board review and review by the City under delegated review authority from the Maine Department of Environmental Protection (MeDEP). The City of Portland has delegated review authority from MeDEP for Site Location of Development projects including less than seven (7) acres of impervious area. As this application has been prepared for the City, the application fee has not been included.

Location of written statements within Application Submission:

1. Description of proposed use – Section 1.
2. Total land area of parcel 88.26 acres.

   Total floor area of existing building 79,300 s.f.
3. Existing easements – Section 2.
4. Types and estimated quantities of solid waste – Section 5.
5. Evidence of off-site facilities – Not Applicable.
6. Stormwater Report – Section 22.
7. Sequence of construction – Sections 1 and 24.
8. State and Federal regulatory approvals – A Site Location of Development Permit is currently being sought from the City under delegated review authority from the MeDEP.
9. Financial and technical capability – Sections 3 and 4.
10. Title, Right, and Interest – Section 2.
11. Unusual areas, wildlife and fisheries, or archaeological sites – Sections 19, 20, and 21.

Please contact our office with any questions or concerns regarding this submission.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.
Design Engineer

DDA/ajs/JN1900.11/Jaegerman

Enclosure

c: Bill Bray, P.E., Director of Public Works (w/enclosure)
Kevin Noyes, City of Portland, (w/enclosure)

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION NATURAL RESOURCE PROTECTION ACT PERMIT APPLICATION

CITY OF PORTLAND SNOW DUMP ON OUTER CONGRESS STREET PORTLAND, MAINE

MeDEP SITE LOCATION OF DEVELOPMENT PERMIT APPLICATION

AND

CITY OF PORTLAND MAJOR SITE PLAN APPLICATION

Prepared for:

City of Portland
55 Portland Street
Portland, Maine 04101

Prepared by:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121
Fax (207) 879-0896

September 2000

Site Review Pre-Application
Multi-Family/Attached Single Family Dwellings/Two-Family Dwelling or Commercial Structures and Additions Thereto

In the interest of processing your application in the quickest possible manner, please complete the Information below for Site Plan Review

NOTEIf you or the property owner owes real estate or personal property taxes or user charges on ANY PROPERTY within the City, payment arrangements must be made before permits of any kind are accepted.**

Applicant: City of Portland c/o Bill Bray

Application Date: 9/12/00

Applicant's Mailing Address: 55 Portland Street, Portland, ME 04101

Project Name/Description: Municipal Snow Dump

Consultant/Agent: Deluca-Hoffman Assoc., Inc. c/o Dwight Anderson

Address Of Proposed Site: Outer Congress Street

Applicant/Agent Daytime telephone and FAX: Phone 874-8800 Fax 874-8816

Assessor's Reference, Chart#, Block. Lot#: 235-A-1

Proposed Development (Check all that apply) ____New Building ____Building Addition ____Change of Use ____Residential ____Office ____Retail ____Manufacturing ____Warehouse/Distribution ✓ Other(Specify) SNOW DUMP FACILITY

NA	88.26	I-M
Proposed Building Square Footage and /or # of Units	Acreage of Site	Zoning

You must Include the following with you application:

1) A Copy of Your Deed or Purchase and Sale Agreement

2) 7 sets of Site Plan packages containing the information found in the attached sample plans and checklist.

(Section 14-522 of the Zoning Ordinance outlines the process, copies are available for review at the counter, photocopies are S 0.25 per page)

I hereby certify that I am the Owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if an approval for the proposed project or use described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this approval at any reasonable hour to enforce the provisions of the codes applicable to this approval.

Signature of ~~applicant~~: Agent: D/H A	Date: 9/12/00

Site Review Fee: Major $500.00 Minor 400.00

This application is for site review ONLY, a Building Permit application and associated fees will be required prior to construction.

Department of Environmental Protection | FOR DEP USE | FORM A PAGE 1
7/97
Bureau of Land & Water Quality | ATS # _____
17 State House Station | L-_____
Augusta, Maine 04333 | Total Fees: _____
Telephone: 207-287-2111 | Date: Received _____

****

PERMIT APPLICATION
SITE LOCATION OF DEVELOPMENT LAW, 38 M.R.S.A. §§ 481-490

Please type or print:

This application is for (check the one that applies):

20 acre development		Structure	X
Planning Permit		Subdivision	
Metallic Mining		Amendment	
Marine Oil Terminal			

Name of Applicant: City of Portland

Address: 55 Portland St., Portland, ME 04101 Telephone/Fax: (207)874-8800/(207) 874-8816

Name of local contact or agent: DeLuca-Hoffman Associates, Inc.

Address: 778 Main Street, Suite 8, South Portland, ME 04106 Telephone/Fax: (207) 775-1121/286-3220 e-mail address: dhai@maine.rr.com

Name of development: City of Portland Snow Dump on Outer Congress Street

Location of development including road, street, or nearest route number: Off State Route 22 (Congress Street) and abutting the Maine Turnpike south of Exit 7A

City/Town/Plantation: Cities of Portland & South Portland, County: Cumberland, Tax Map # (see attached), Lot # (see attached)

Type of development: Existing Former Solid Waste Composting Facility/New Municipal Snow Dump

Was this development started prior to obtaining a license? Yes Is this development or any portion of the site currently subject to enforcement action? No

Will a Natural Resources Protection Act (NRPA) permit be required for this project? No Has the NRPA permit application (PBR, Tier, full NRPA) been submitted as part of this application? N/A

Will a Traffic Permit be required for this project? No Has the traffic permit application been submitted as part of this application? N/A

Is the development located in the watershed of a body of water most at risk or in a sensitive or threatened region or watershed? No If yes, which one? N/A

Existing DEP permit number (if applicable): N/A

Name(s) of department staff person(s) present at the pre-application meeting:
N/A

Name(s) of department staff person(s) otherwise contacted concerning this application:
N/A

7/97

CERTIFICATION

The person responsible for preparing this application and/or attaching pertinent site and design information hereto, by signing below, certifies that the application for development approval is complete and accurate to the best of his/her knowledge.

Signature: _____

Name (print): Dwight D. Anderson, P.E.

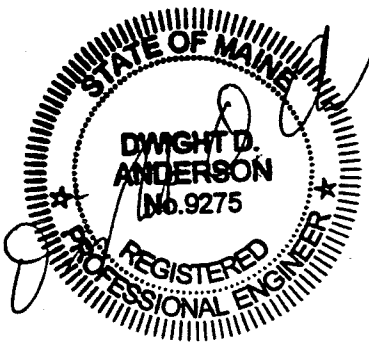
Date: 9/12/00

Re/Cert/Lic No.: 9275
Engineer X
Geologist
Soil Scientist
Land Surveyor
Site Evaluator
Active Member of the Maine Bar
Professional Landscape Architect
Other

If the signature below is not the applicant's signature, attach letter of agent authorization signed by applicant.

"I certify under penalty of law that I have personally examined the information submitted in this document and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I authorize the Department to enter the property that is the subject of this application, at reasonable hours, including buildings, structures or conveyances on the property, to determine the accuracy of any information provided herein. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

_____ 9/12/00
Signature of Agent Date



PARCEL MAP AND LOT NUMBERS

Tax Map	Block	Lot	Owner
235	A	1	City of Portland 389 Congress Street Portland, ME 04101
235	B	1	
235	B	2	
234	A	1	
234	A	2	
233	A	2	
233	A	6	
233	A	9	

Executive Department

Robert B. Ganley
City Manager

CITY OF PORTLAND

Agent Authorization

The City of Portland authorizes DeLuca-Hoffman to serve as its agent for the submittal of plans and materials for Site Plan and Site Location of Development review for a Public Works facility on outer Congress Street.

signed:

William Bray, Director
Public Works

9-12-00
date

FORM B

SUBMISSIONS CHECKLIST

If a provision is not applicable, put "NA"

Section 1. Development description

A. Narrative

1.0 — 1. Objectives and details

1.1 — 2. Existing facilities (with dates of construction)

B. Topographic map

Fig. 2 — 1. Location of development boundaries

Fig. 2 — 2. Quadrangle name

C. Construction plan

1.4 — 1. Outline of construction sequence (major aspects)

1.4 — 2. Dates

D. Drawings

1-6* — 1. Development facilities

2 — a. Location, function and ground area

6 — b. Length/cross-sections for roads

1-6 — 2. Site work (nature and extent)

1 — 3. Existing facilities (location, function ground area and floor area)

4. Topography

1 & 2 — a. Pre- and post-development (contours 2 ft or less)

1 — b. Previous construction, facilities and lot lines

2.0 **Section 2. Title, right or interest** (copy of document)

Section 3. Financial capacity

3.0 — A. Estimated costs

B. Financing

N/A — 1. Letter of commitment to fund

2. Self-financing

N/A — a. Annual report

N/A — b. Bank statement

3. Other

N/A — a. Cash equity commitment

N/A — b. Financial plan

N/A — c. Letter

N/A — 4. Affordable housing information

Section 4. Technical ability (description)

4.1 — A. Prior experience (statement)

Att. B — B. Personnel (documents)

5.0 **Section 5. Solid waste** (list: type, quantity, method of collection and location)

N/A — A. Commercial solid waste facility (final disposal location)

5.0 — B. Off-site disposal of construction/demolition debris (final disposal location)

C. On-site disposal of woodwaste/land clearing debris

N/A — 1. Applicability of rules (evidence re: applicability of rules)

2. Burning of wood wastes

N/A — a. Delineation on site plan

5.0 — b. Plans for handling unburned woodwaste and woodash

N/A — c. Evidence of capacity to accept waste (approved facility)

*Numbers without decimals refer to plan sheets.

5.0 d. Usage of materials
N/A e. Data on mixing ratios and application rates
N/A D. Special or Hazardous Waste

Section 6. Odors
6.0 A. Identification of nature/source
6.0 B. Estimate of areas affected
N/A C. Methods of control)

N/A **Section 7. Water vapor** (narrative)

8.0 **Section 8. Sunlight** (statement and drawing, if required)

9.0 **Section 9. Maintenance of common facilities or property** (documents)
9.0 A. Description of facilities and transfer information
9.0 B. Specify rights and responsibilities
N/A C. Incorporation
N/A D. Membership
N/A E. Fees
N/A F. Lien
N/A G. Renewability
N/A H. Amendment subject to approval
N/A I. Restrictions in homeowners documents; future transactions

Section 10. Air emissions (narrative and summary)
10.0 A. Point and non-point sources identified
10.0 B. Emission components (point sources)

Section 11. Noise
11.0 A. Developments producing a minor noise impact (statement)
N/A 1. Residential developments
N/A 2. Certain non-residential subdivisions
N/A 3. Schools and hospitals
11.0 4. Other developments
11.0 a. Type, source and location of noise
11.0 b. Uses, zoning and plans
11.0 c. Protected locations
11.0 d. Minor nature of impact
11.0 e. Demonstration
N/A B. Developments producing a major noise impact (full noise study)
N/A 1. Baseline
N/A a. Uses, zoning and plans
N/A b. Protected locations
N/A c. Quiet area
N/A 2. Noise generated by the development
N/A a. Type, source and location of noise
N/A b. Sound levels
N/A c. Control measures
N/A d. Comparison with regulatory limits
N/A e. Comparison with local limits

Section 12. Soils
Fig. 8 A. Soil survey map and report
N/A 1. Class A (High intensity) Soil Survey

N/A 2. Class B (High intensity) Soil Survey
N/A 3. Class C (Medium High-Intensity) Soil Survey
Fig. 8 4. Class D (Medium Intensity) Soil Survey
N/A B. Limitations report
N/A C. Site engineering report
Sec. 20 D. Wetlands investigation report
N/A E. Geotechnical Investigation

Section 13. Water supply

13.0 A. Water supply method
N/A 1. Individual wells (evidence of sufficient/healthful supply)
N/A a. Support of findings by well drillers
N/A b. Support of findings by geologist
N/A 2. Common well(s) (report)
N/A a. Effect on off-site wells and protected natural resources
N/A b. Water system designs (plans and detail sheets)
N/A c. Provision for water supply maintenance
N/A d. Public water supply
N/A i. Wellhead protection zone delineation
N/A ii. Wellhead protection plan
N/A iii. Long-term safe yield determination
N/A aa. Predicted operating levels
N/A bb. Cone of influence
N/A cc. Zone of capture
N/A iv. Water quality analysis
N/A 3. Well construction in shallow-to-bedrock areas
N/A 4. Additional information
N/A 5. Off-site utility company or public agency
N/A 6. Other sources
N/A B. Subsurface wastewater disposal systems (locations of systems and wells)
N/A C. Total usage (statement re: total anticipated water usage)

Section 14. Wastewater disposal

N/A A. On-site subsurface wastewater disposal systems (investigation results)
N/A 1. Site plan
2. Soil conditions summary table
N/A 3. Test pit profile logs
4. Additional test pits, borings or probes
N/A a. Soil conditions A
N/A b. Soils with Profiles 8 and 9 parent material
N/A c. Disposal fields longer than 60 feet
N/A 5. 3-bedroom design
N/A 6. Common subsurface wastewater disposal systems (plans)
a. System design flow details
N/A b. Plan view
N/A c. Cross sections
N/A d. Test pit data
N/A e. Mounding analysis
N/A B. Nitrate-nitrogen impact assessment
1. When required
N/A a. Not required for disposal of <270 gpd in soil condition A more than 300 feet upgradient of property line
N/A b. Not required for disposal of <270 gpd in soil profiles 4, 5, and 6 more than 300 feet upgradient of property line

N/A c. Not required for disposal of <270 gpd in other soil profiles and conditions more than 200 feet upgradient of property line

N/A 2. Assumptions

N/A a. Initial concentration

N/A b. Background concentration

N/A c. NO_3-N from development

N/A d. Mixing and dilution

N/A e. Severe-drought scenario

N/A f. Wastewater flow to subsurface wastewater disposal areas

3. Assessment report minimum requirements

N/A a. Narrative and calculations

N/A b. Site plan

N/A i. Well locations

N/A ii. 10 mg/l and 8 mg/l isocons

N/A iii. Groundwater contours and groundwater flow divides

N/A c. References

4. Denitrification systems

N/A a. Design plans and specifications

N/A b. Installation information

N/A c. Monitoring plan

N/A d. Maintentance

N/A e. Backup system

N/A D. Municipal facility or utility company letter

N/A E. Wastewater discharge information

Section 15. Groundwater

15.0 1. Location and maps

Fig. 9 2. Quantity

N/A 3. Sources

N/A 4. Measures to prevent degradation

N/A B. Groundwater protection plan

N/A C. Monitoring plan

N/A 1. Monitoring points

N/A 2. Monitoring frequency

N/A 3. Background conditions

N/A 4. Monitoring parameters

N/A 5. Personnel qualifications

N/A 6. Proof of training

N/A 7. Equipment and methods

N/A 8. Quality assurance/quality control

N/A 9. Reporting requirements

N/A 10. Remedial action plan

N/A D. Monitoring well installation report

N/A 1. Well location map

N/A 2. Elevation data

N/A 3. Well installation data

N/A 4. Well construction details

N/A 5. Borehole logs

N/A 6. Summary of depth measurements

N/A 7. Characteristics of subsurface strata

N/A 8. Well installation contract

N/A 9. Schematic cross-sections

N/A 10. Monitoring point summary table

N/A 11. Protective casing
N/A 12. On-site well identification

Section 16. Blasting
N/A A. Assessment
N/A B. Blasting plan

17.0 **Section 17. Visual quality** (narrative, description, visual impact analysis)

Section 18. Buffers
18.0 A. Site plan and narrative

19.0 **Section 19. Unusual natural areas** (narrative)

20.0 **Section 20. Wildlife and fisheries** (narrative)

21.0 **Section 21. Historic sites** (narrative)

Section 22. Stormwater management
22.0 A. Narrative
22.0 1. Development location
22.0 2. Surface water on or abutting the site
22.0 3. Downstream ponds and lakes
22.0 4. General topography
23.0 5. Flooding
N/A 6. Alterations to natural drainage ways
22.0 7. Alterations to land cover
22.1 8. Modeling assumptions
22.7 9. Water quantity control
22.9 10. Water quality treatment
N/A 11. Off-site credits
N/A 12. Compensation fees
N/A 13. Development impacts

Sec. 1 B. Maps
Fig. 2 1. U.S.G.S. map with site boundaries
Fig. 8 2. S.C.S. soils map with site boundaries

Att. A C. Pre-development drainage plan
Att. A 1. Scale and contours
Att. A 2. Plan elements
Att. A 3. Land cover types and boundaries
Fig. 8 4. Soil group boundaries
Att. A 5. Stormwater quantity subwatershed boundaries
Att. A 6. Stormwater quality subwatershed boundaries
Att. A 7. Watershed analysis points
Att. A 8. Hydrologic flow lines
Att. A 9. Runoff storage areas
Att. A 10. Existing roads and drives
Att. A 11. Existing facilities
Att. A 12. Existing drainage systems
Att. A 13. Natural and man-made drainage ways
Att. A 14. Wetlands
Att. A 15. Flooded areas

1	16. Benchmark
Att. B	D. Post-development drainage plan
Att. B	1. Scale and contours
Att. B	2. Plan elements
Att. B	3. Land cover types and boundaries
Fig. 8	4. Soil group boundaries
Att. B	5. Stormwater quaintly subwatershed boundaries
Att. B	6. Stormwater quality subwatershed boundaries
Att. B	7. Watershed analysis points
Att. B	8. Hydrologic flow lines
Att. B	9. Runoff storage areas
Att. B	10. Roads and drives
Att. B	11. Facilities
Att. B	12. Drainage systems
Att. B	13. Natural and man-made drainage ways
Att. B	14. Wetlands
Att. B	15. Flooded areas
Att. B	16. Benchmark
Att. B	17. Stormwater detention, retention, and infiltration facilities
Att. B	18. Stormwater quality treatment facilities
N/A	19. Drainage easements
Att. C & D	E. Runoff analysis (pre-development and post development)
Att. C & D	1. Curve number computations
Att. C & D	2. Time of concentration calculations
Att. C & D	3. Travel time calculations
Att. C & D	4. Peak discharge calculations
Att. C & D	5. Reservoir routing calculations
22.7	F. Stormwater quantity control plan
N/A	1. Variance submissions (if applicable)
N/A	a. Submissions for discharge to the ocean, great pond, or major river segment
N/A	i. Map
N/A	ii. Drainage plan
N/A	iii. Drainage system design
N/A	iv. Outfall design
N/A	v. Easements
N/A	b. Submissions discharge to a buffer
N/A	i. Road and buffer plan
N/A	ii Ditch turn-out designs and calculations
N/A	iii. Easements
N/A	iv. Preservation
N/A	c. Submissions for discharge to a public stormwater system
N/A	i. Letter of permission
N/A	ii. Proof of capacity
Att. D	2. Drainage system sizing
Att. D	3. Stormwater detention and retention system submissions
Att. D	a. Basin sizing calculations
Att. D	b. Inlet calculations
Att. D	c. Outlet calculations
Att. D	d. Emergency spillway calculations
N/A	e. Subsurface investigation report
3	f. Embankment specifications

3	g. Embankment seepage controls
3	h. Outlet seepage controls
3	i. Detail sheet
3	j. Basin cross sections
3	k. Basin plan sheet
Sec. 9	l. Maintenance plan
N/A	4. Infiltration system submissions
Att. A & B	a. Maps
N/A	i. Well locations
Fig. 9	ii. Sand and gravel aquifer map
N/A	b. Designs
N/A	i. Subsurface investigation report with test pit or boring logs
N/A	ii. Measurements of permeability
N/A	iii. Structure details
N/A	iv. Pollutant generation and transport analysis
Sec. 9	d. Maintenance and operations plan
Sec. 9	i. Maintenance plan
N/A	ii. Contaminant storage locations
N/A	iii. Observation wells and groundwater elevations monitoring plan
N/A	iv. Groundwater quality monitoring plan
N/A	5. Easement declarations.
22.9	G. Stormwater quality treatment plan peak discharge calculations
1-6	1. Basic stabilization plan
1-6	a. Ditches, swales, and other open channel stabilization
1-6	b. Culvert and storm-drain outfall stabilization
1-6	c. Earthen slope and embankment stabilization
1-6	d. Disturbed area stabilization
1-6	e. Gravel road and drive stabilization
Sec. 9	f. Maintenance
N/A	2. 80% TSS removal plan
N/A	a. BMP design drawings and specifications
N/A	b. BMP design calculations
N/A	c. BMP maintenance plans
N/A	d. Removal efficiency determinations
N/A	e. Treatment calculations for site subwatersheds
N/A	f. TSS credit determinations
N/A	i. Location map
N/A	ii. Scaled plan of off-site area
N/A	iii. Title and right
N/A	iv. Demolition plan
N/A	v. Vegetation plan
N/A	vi. Off-set credit calculation
N/A	vii. Treatment level calculation
22.9	3. Sliding scale TSS removal plan
1-6	a. BMP design drawings, specifications and calculations
Fig. 1	b. Impervious area calculation
22.9	c. TSS removal determination
Fig. 1	d. BMP design calculations
Sec. 9	e. BMP maintenance plans
22.9	f. Removal efficiency determinations
N/A	g. Treatment calculations for site subwatersheds
22.9	h. TSS credit determinations
Fig. 1	i. Location map

N/A ii. Scaled plan of off-site area
Sec. 2 iii. Title and right
1 iv. Demolition plan
2 v. Vegetation plan
N/A vi. Off-set credit calculation
22.9 vii. Treatment level calculation
N/A 4. Phosphorus control plan
N/A a. Phosphorus export calculations
N/A b. Soil survey
N/A c. Buffer strip submissions
N/A i. Cutting options
N/A ii. Deed restrictions
N/A d. Wetpond submissions
N/A i. Statement of wetland impact
N/A ii. Plan view of pond
N/A iii. Profile view of pond
N/A iv. Calculations for phosphorus control
N/A v. Stabilization plan
N/A vi. Construction dates
N/A vii. Inlet and outlet details
N/A viii. Maintenance provisions
N/A e. Submissions for other BMPs
N/A i. Design drawings and specifications
N/A ii. Design calculations
N/A iii. Maintenance plan
N/A iv. Removal efficiency determinations
N/A f. Phosphorus credit determination
N/A i. Location map
N/A ii. Scaled plan
N/A iii. Title and right
N/A iv. Demolition plan
N/A v. Vegetation plan
N/A vi. Offset credit calculation
N/A vii. Calculation for new allowable export
N/A 5. Control plan for thermal impacts
N/A 6. Control plan for other pollutants

Section 23. Flooding

23.0 A. Explanation of flooding impact
1 B. Site plan showing 100-year flood elevation
22.0 C. Hydrology analysis
Fig. 7 D. FEMA flood zone map with site boundaries

Section 24. Erosion and Sedimentation Control

24.0 A. Narrative
24.1 1. Soil types
24.1 2. Existing erosion problems
24.1 3. Critical areas
24.3 4. Protected natural resources
24.4 5. Erosion control measures
24.5 6. Site stabilization

24.8 B. Implementation schedule

2 C. Erosion and sediment control plan
2 1. Pre-development and post-development contours
2 2. Plan scale and elements
2 3. Land cover types and boundaries
2 4. Existing erosion problems
2 5. Critical areas
2 6. Protected natural resources
2 7. Locations (general)
2 8. Locations of controls
2 9. Disturbed areas

5 D. Details and specifications (for both temporary and permanent measures)

Att. B E. Design calculations

Att. A F. Stabilization plan
Att. A 1. Temporary seeding
Att. A 2. Permanent seeding
N/A 3. Sodding
Att. A 4. Temporary mulching
Att. A 5. Permanent mulching

24.5 G. Winter construction plan
24.5 1. Dormant seeding
24.5 2. Winter mulching

N/A H. Third-party inspections
N/A 1. Inspector's name, address, and telephone number
N/A 2. Inspector's qualifications
N/A 3. Inspection schedule
N/A 4. Contractor contact
N/A 5. Reporting protocol

Section 25. Notices

25.0 A. Evidence that notice sent
Att. A B. List of abutters for purposes of notice

SECTION 1

DEVELOPMENT DESCRIPTION

SECTION 1

DEVELOPMENT DESCRIPTION

1.0 Introduction

The City of Portland is proposing to construct a municipal snow dump at the location of the former wastewater treatment plant compost facility on Outer Congress Street in Portland. Figure 1 attached to this section is a location map including the parcel boundary. The existing facility has not been used for sludge composting since the late 1980's and is currently used as a storage building for aggregate materials, etc. by the Portland Water District and the City of Portland Public Works Department.

The overall objective of this project is to construct a large municipal snow dumping site on an 88.26 acre parcel owned by the City of Portland off Congress Street. The City has recently lost rights to other snow dumping sites in the City; therefore, a new snow dumping site is required. A USGS topographic map is attached to this section as Figure 2.

1.1 Existing Conditions and Development History

The existing site contains a 79,300 sq. ft. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 sq.ft. (not including the gravel yard areas noted below). This facility was constructed by the Portland Water District in 1979 to serve as a composting facility for sludge produced from the wastewater treatment plant in Portland. This facility is currently used as a storage building for aggregate materials, etc. by the Portland Water District and City of Portland Public Works Department.

In the recent past, the City has developed a gravel yard area, on the west side of the former compost facility, for the storage of aggregate stockpiles, appurtenance structures, pipe, and granite curb. This area of non-revegetated surface is 1.44 acres in size.

In addition, a gravel lay down area was also recently constructed on the south side of the former compost facility which was used by White Brothers during the construction of the Portland International Jetport access roads. This yard area is no longer being used and has been leveled off in preparation of revegetation. The gravel lay down area is approximately 700' long by 200' wide (3.33 acres) and is proposed to be used as a new municipal snow dump area by the City of Portland.

The total non-revegetated area of the existing site is 8.15 acres.

1.2 Site Location Permit Requirement and Elements of Review

Based upon discussions with the MeDEP, City of Portland, and Portland Water District, it is our understanding the current site has not been permitted through the MeDEP Site Location of Development Process. The two major permit thresholds are:

1. Creation of over 3 acres of non-revegetated surface (rooftop, pavement, gravel, etc.) since 1970.
2. Development of over 20 acres of land area since 1970.

The current site does not exceed the 20 acre threshold; however, the original compost facility constructed in 1979 exceeded the creation of 3 acres of non-revegetated surface and therefore, should have been permitted through the Site Location Process. Subsequently, the total non-revegetated area at the site is 4.82 acres excluding the White Brothers lay down area which is to be revegetated. Therefore, the current site is required to obtain an after-the-fact permit through the MeDEP Site Location Process.

The City of Portland has delegated review authority from the MeDEP to review Site Location of Development permit applications for projects under 7 acres of non-revegetated surface. Therefore, this Site location Permit Application has been submitted to the City of Portland to be reviewed under delegated review authority.

1.3 Proposed Conditions

The proposed conditions will include the existing 79,300 sq.ft. building, a total of 2.26 acres of existing and proposed pavement, the 1.44 acre gravel yard area to the west side of the former compost facility and an additional 0.45 acres of gravel shoulders and denuded area associated with the proposed snow dump. The total non-revegetated area of the proposed site will be 6.05 acres, which is 2.1 acres less than what currently exists on the site.

A water quality retention facility will be constructed down gradient of the proposed snow dump area. Riprap ditches, catch basins and new storm drains will be installed to convey stormwater runoff to the proposed water quality retention facility. A 24 foot wide paved access drive with 6 foot gravel shoulders will be installed to circulate snow dumping equipment through the site. A siltation barrier will also be installed along the down gradient edge of the snow dump as required by the Maine Department of Environmental Protection in Chapter 573 "Snow Dumps."

1.4 Construction Plan

Upon receiving the necessary permit approvals, it is anticipated that the City of Portland would start construction of the snow dump facility in the Fall of 2000.

It will be necessary to schedule certain portions of the site work to ensure erosion and sedimentation control measures are sequenced for optimum effectiveness. The water quality retention facility construction will commence at the start of the project and be concurrent with several elements of the site work. The following schedule reflects this construction:

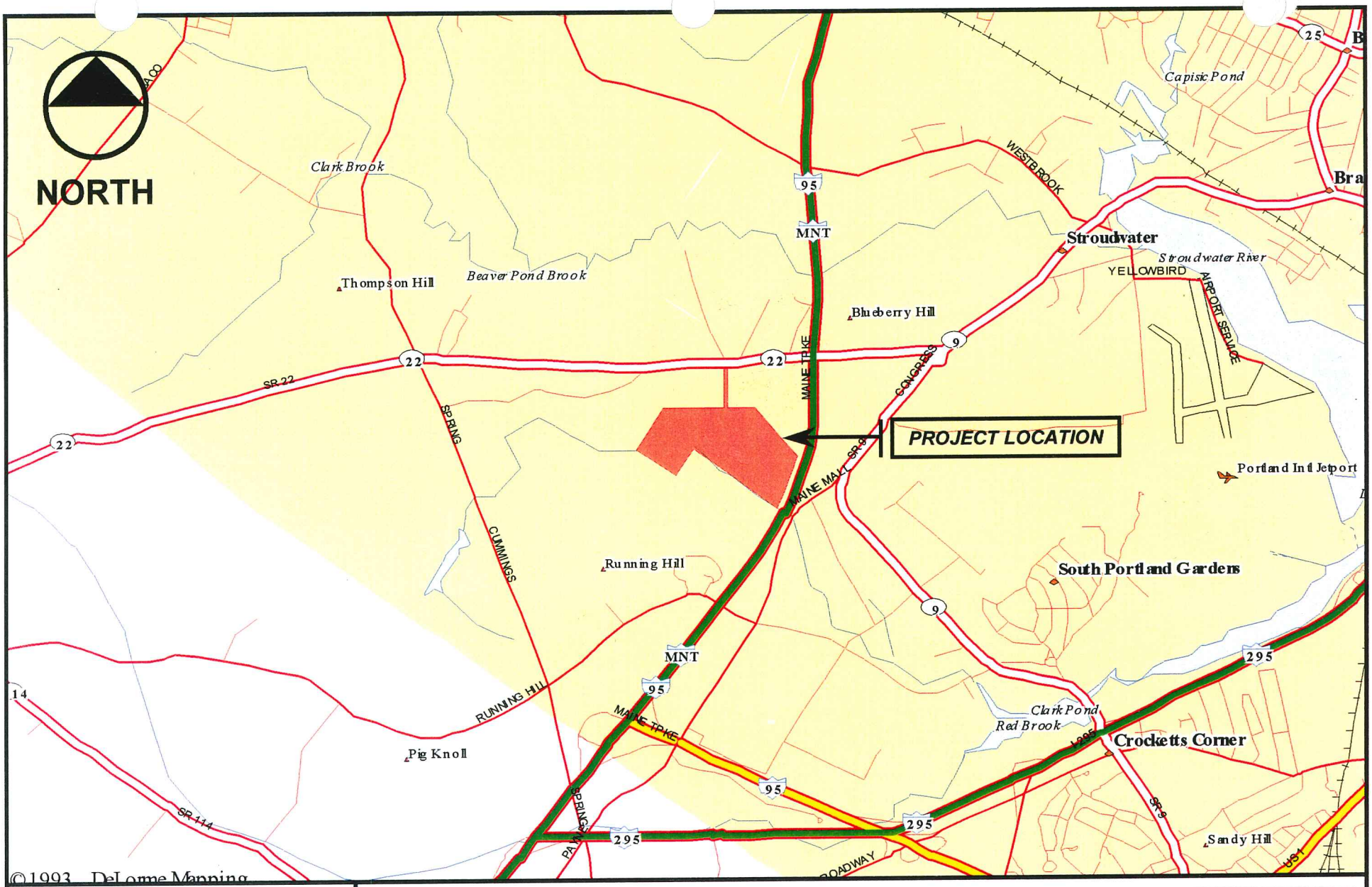
1. Install stabilized construction entrance off existing paved drive.
2. Install perimeter silt fence.

3. Clear trees, cut underbrush, remove stumps, and grub retention facility portion of the site.
4. Begin excavation operations for retention facility construction.
5. Once the retention facility area is shaped to retain stormwater and a stabilized outlet is constructed, install riprap ditches and storm drains to direct stormwater runoff to the retention facility.
6. Upon completion of the storm drain system installation, install inlet protection at catch basins.
7. Install riprap protection as specified on plans.
8. Complete installation of subbase and base materials for the paved areas associated with the access drive.
9. Bring non-paved areas to final grade.
10. Install base and surface coarse paving for all paved areas.
11. Loam, lime, fertilize, seed and mulch disturbed areas and complete all landscaping.
12. Remove accumulated sediment form ahead of any sediment barriers in accordance with the Erosion and Sedimentation Control Report.
13. Once the site is stabilized and a 75% catch of vegetation has been obtained, remove all temporary erosion control measures except silt fence barrier as necessary for snow dump operations.
14. Touch up loam and seed.

Note: All denuded areas not subject to final paving, riprap or gravel, shall be revegetated with loam and seed.

1.5 Attachments

Figure 1	DeLorme Location Map
Figure 2	USGS
Figure 3	Property Tax Map
Figure 4	Zoning Map
Figure 5	Aerial
Figure 6	DeLorme Abutting Land Use Map
Figure 7	Flood Map
Figure 8	USDA Soils Map
Figure 9	MGS Sand and Gravel Aquifer Map
Figure 10	MGS Surficial Geology Map
Figure 11	NWI Map
Figure 12	Fresh-water Wetlands Map
Figure 13	Maine Inland Fisheries and Wildlife Map
Figure 14	Site Photos



DeLORME LOCATION MAP
Outer Congress Street
Snow Dump Project
Portland, Maine
SOURCE: DeLORME MAPEXPERT

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS
778 MAIN STREET, SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207-775-1121
FAX 207-879-0896

DESIGNED	DDA	DATE	AUGUST 2000	FIGURE
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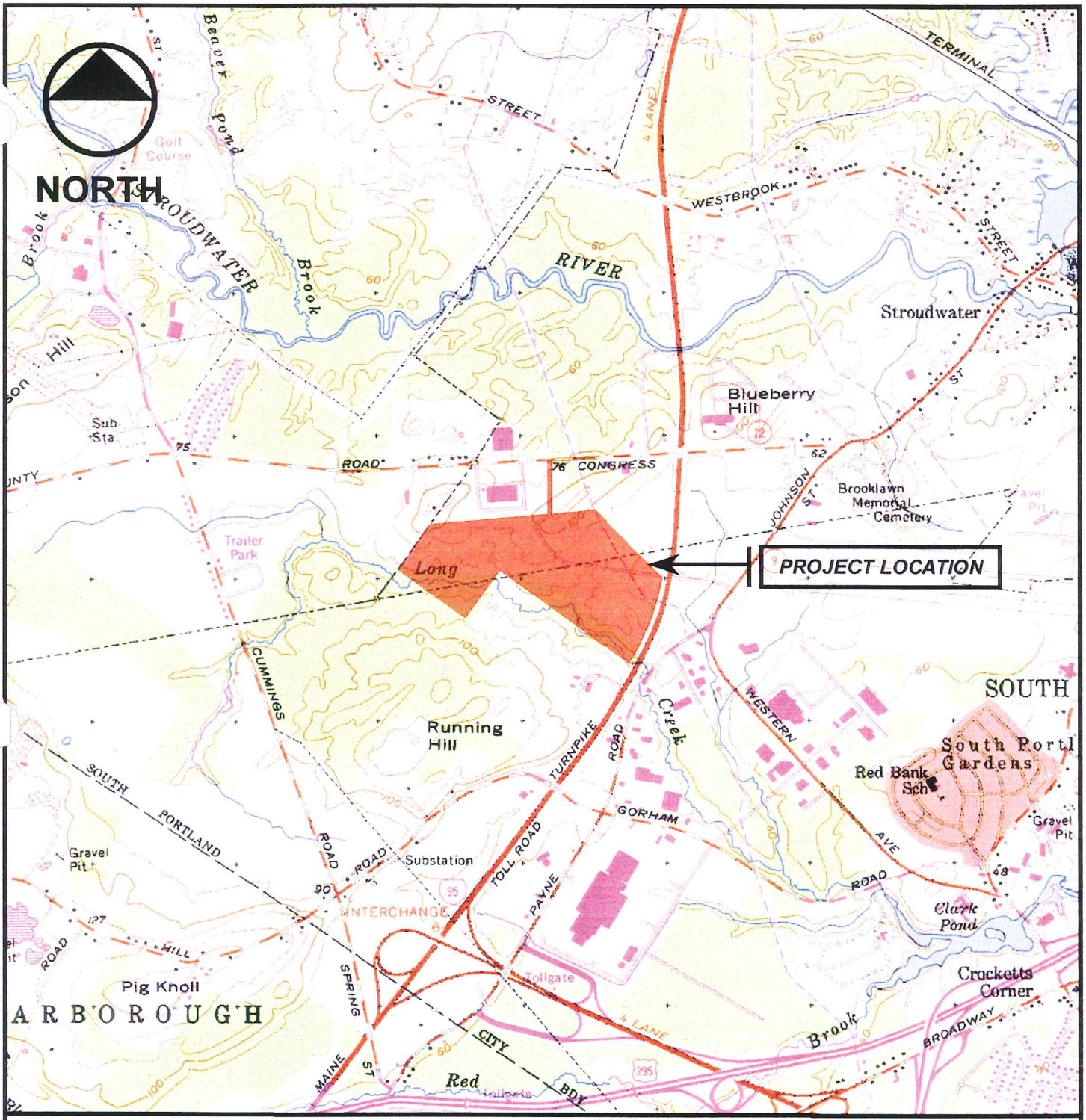
CHECKED	DDA	JOB NO.	1900.11	



USGS TOPOGRAPHIC MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: TOPOSCOUT; Coastal Maine CD-ROM, USGS Portland West Quadrangle, 7.5 Minute Series (Topographic)

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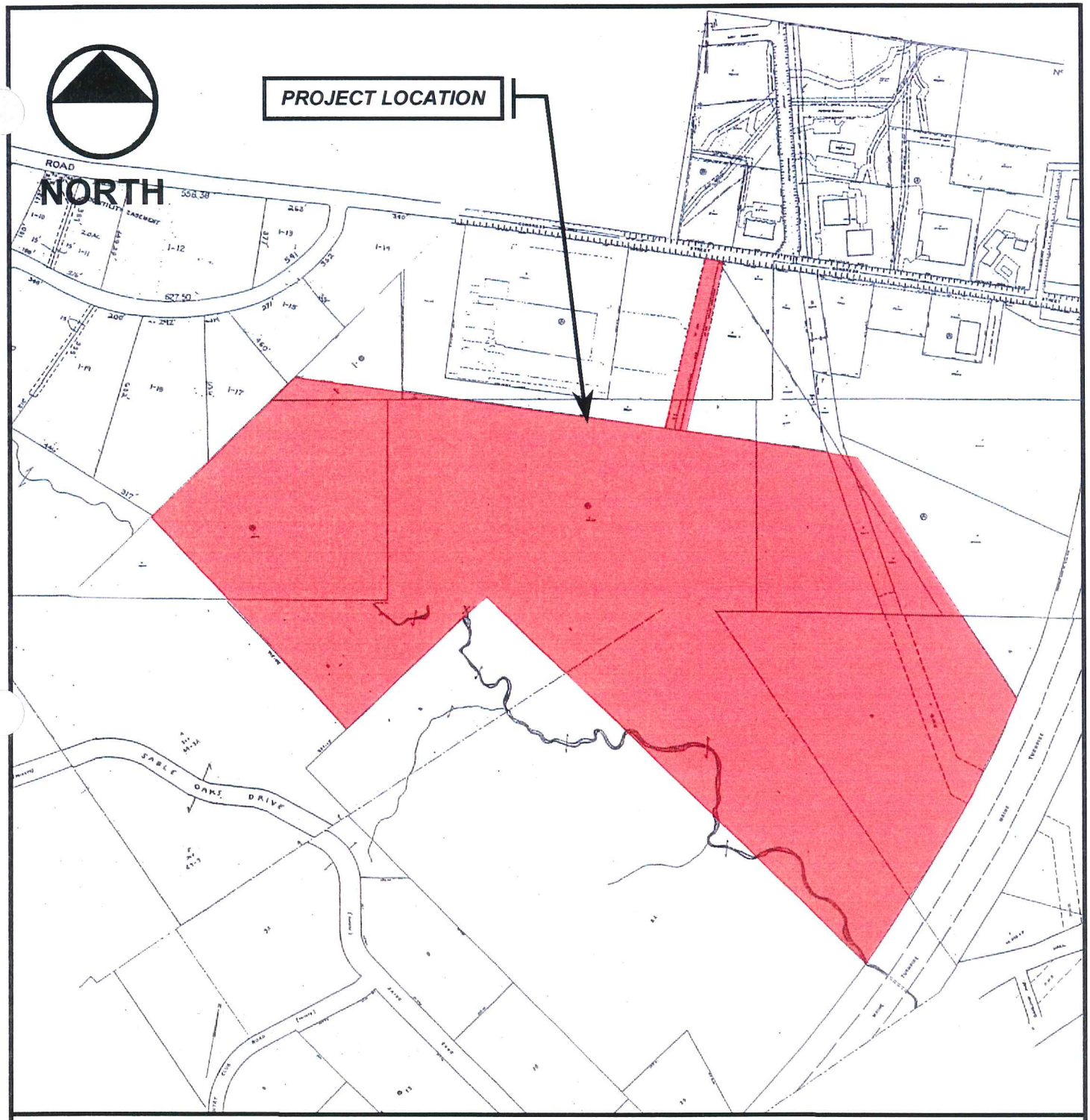

PROPERTY TAX MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: CITY OF PORTLAND ASSESSORS PLAN; **MAP NUMBERS:** 233, 234, 235, 236, 237, 238A, 239A; PROPERTY MAP, CITY OF SOUTH PORTLAND CUMBERLAND COUNTY, MAINE; **MAP NUMBERS:** 47, 69, 70, 72; AND PROPERTY MAP, CITY OF WESTBROOK CUMBERLAND COUNTY, MAINE; **MAP NUMBER:** 3

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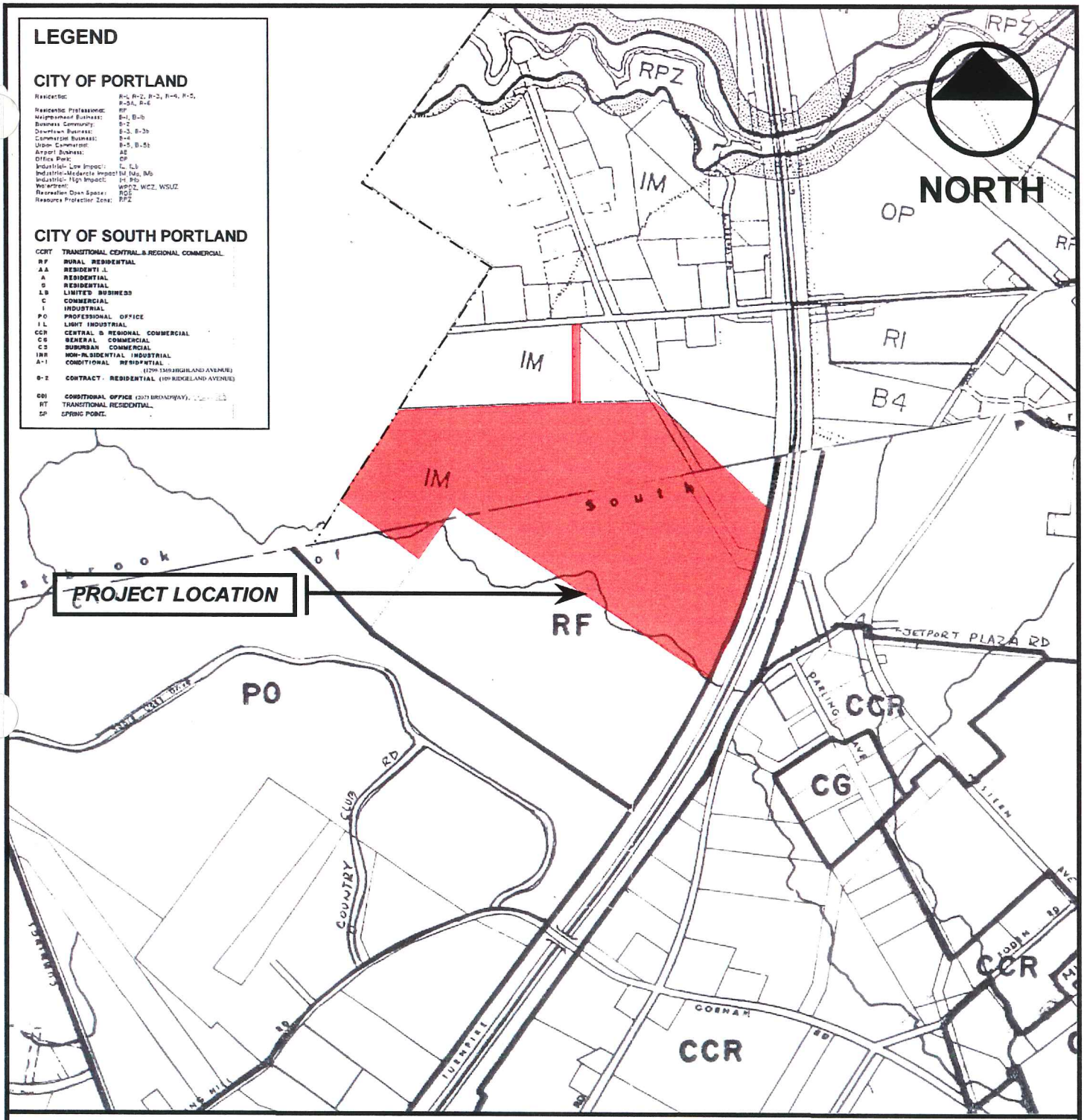

ZONING MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: ZONING MAP, CITY OF PORTLAND (Southern Section); **DATED:** 1991; **REVISED:** March 1997; ZONING MAP, CITY OF SOUTH PORTLAND, MAINE; **DATED:** Amended July 1999

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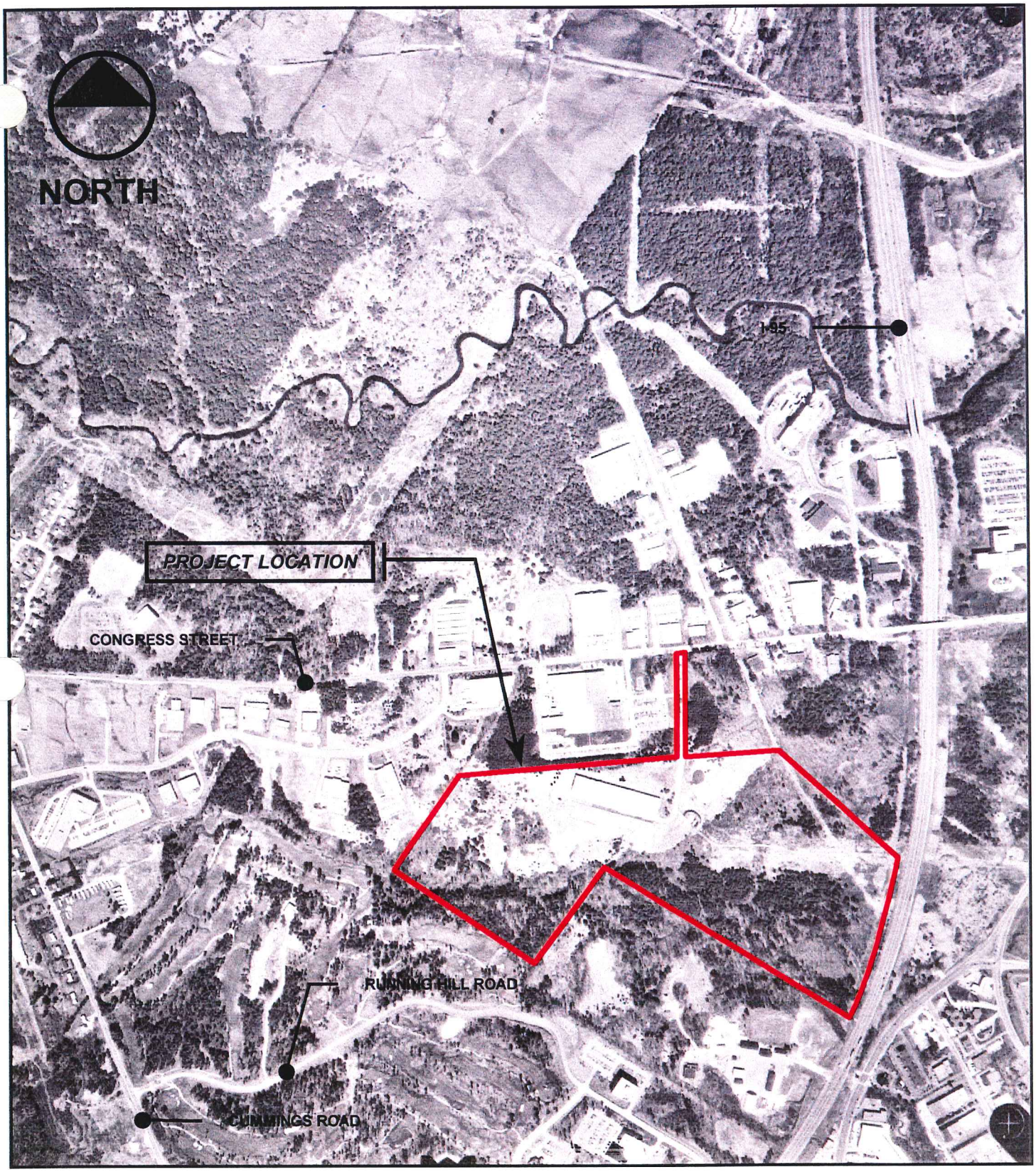
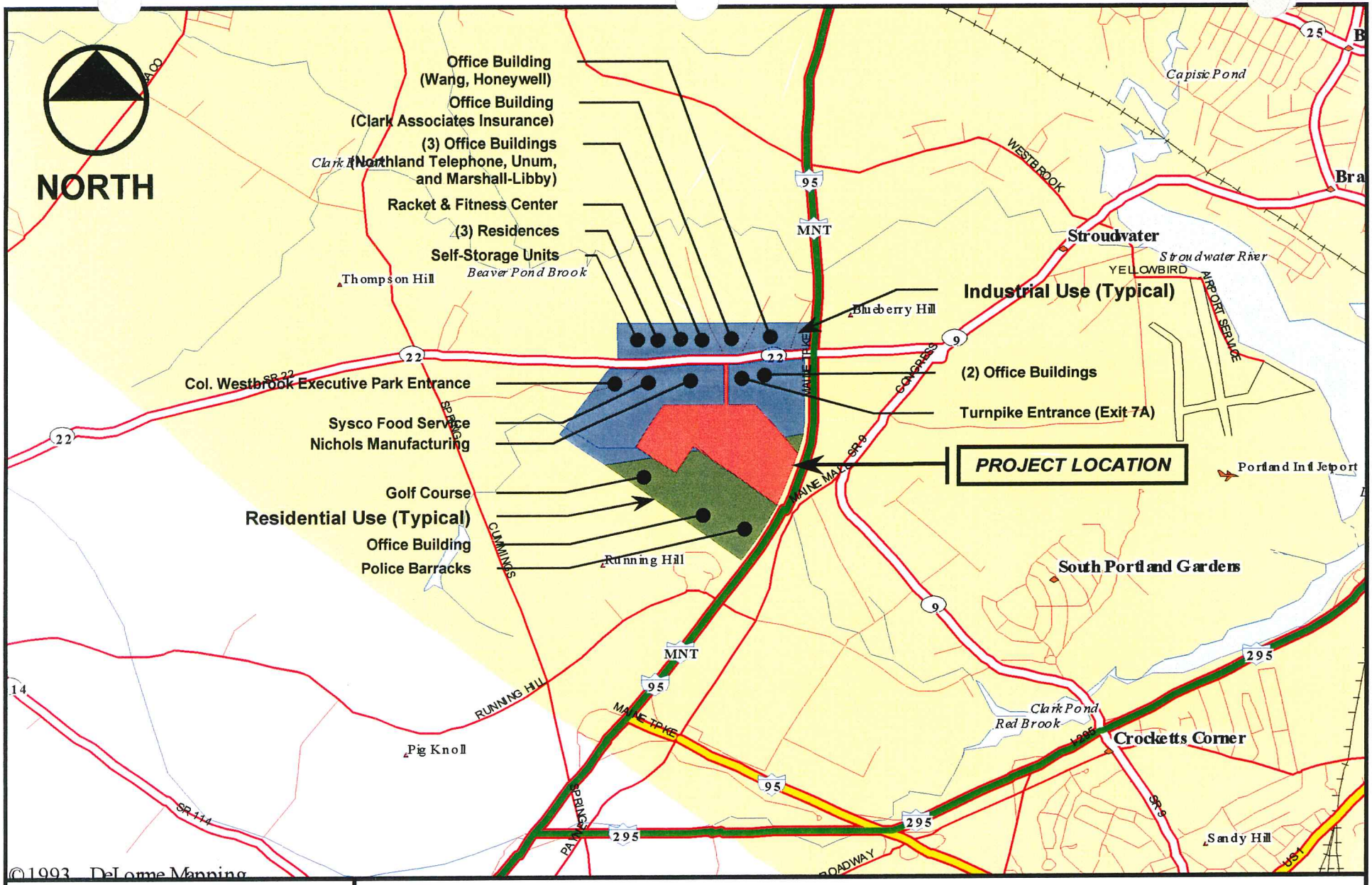


DH

AERIAL PHOTOGRAPH – FIGURE 5

Outer Congress Street Snow Dump Project – Portland, Maine



DeLORME ABUTTING LAND USE MAP
Outer Congress Street
Snow Dump Project
Portland, Maine
SOURCE: DeLORME MAPEXPERT

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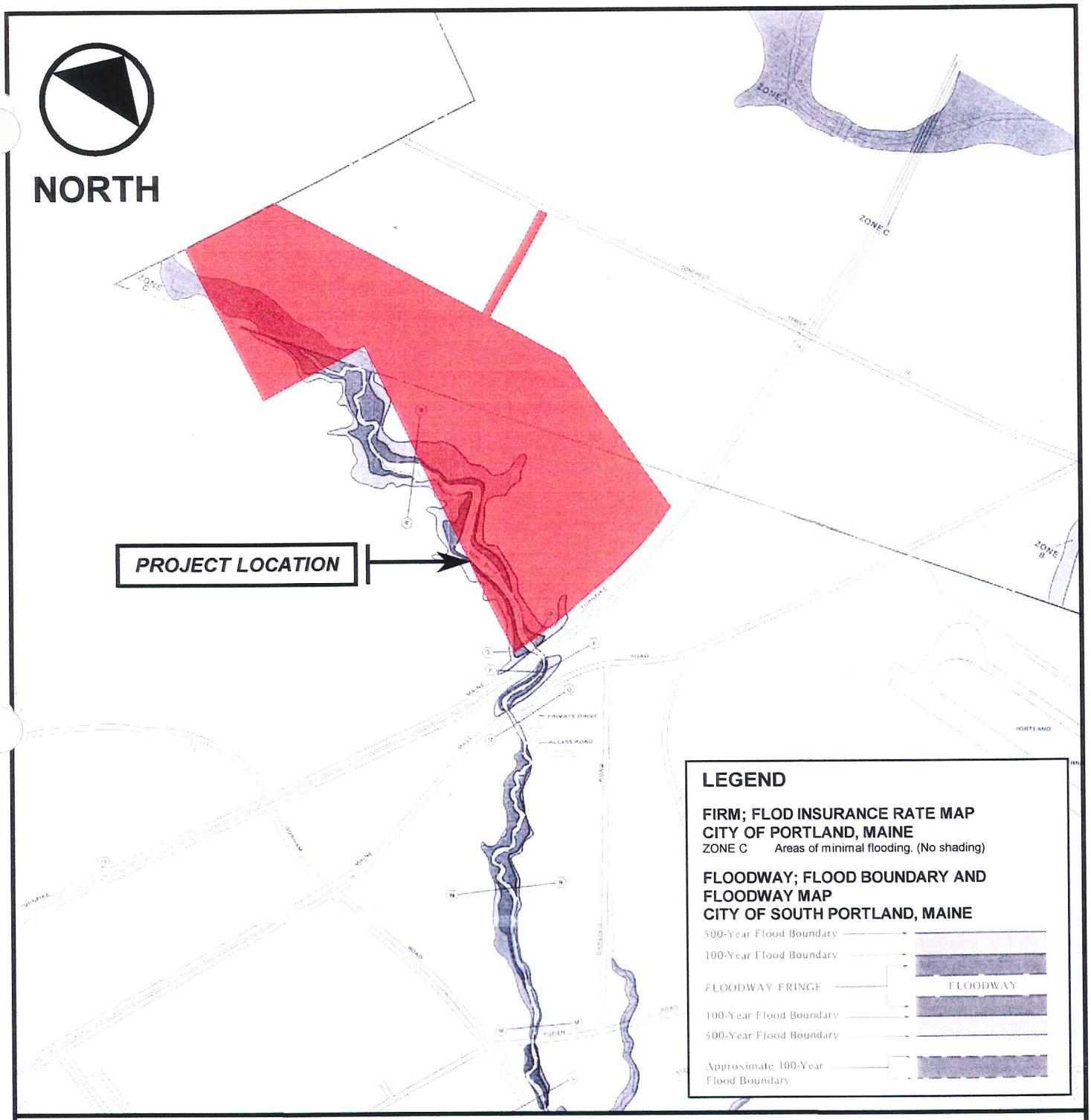

FLOOD MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: FIRM; FLOD INSURANCE RATE MAP, CITY OF PORTLAND, MAINE CUMBERLAND COUNTY; **COMMUNITY-PANEL NUMBER:** 230051 0012 B; **EFFECTIVE DATE:** JULY 17, 1986; AND FLOODWAY; FLOOD BOUNDARY AND FLOODWAY MAP, CITY OF SOUTH PORTLAND, MAINE CUMBERLAND COUNTY; **COMMUNITY-PANEL NUMBER:** 230053 0004; **EFFECTIVE DATE:** AUGUST 17, 1981

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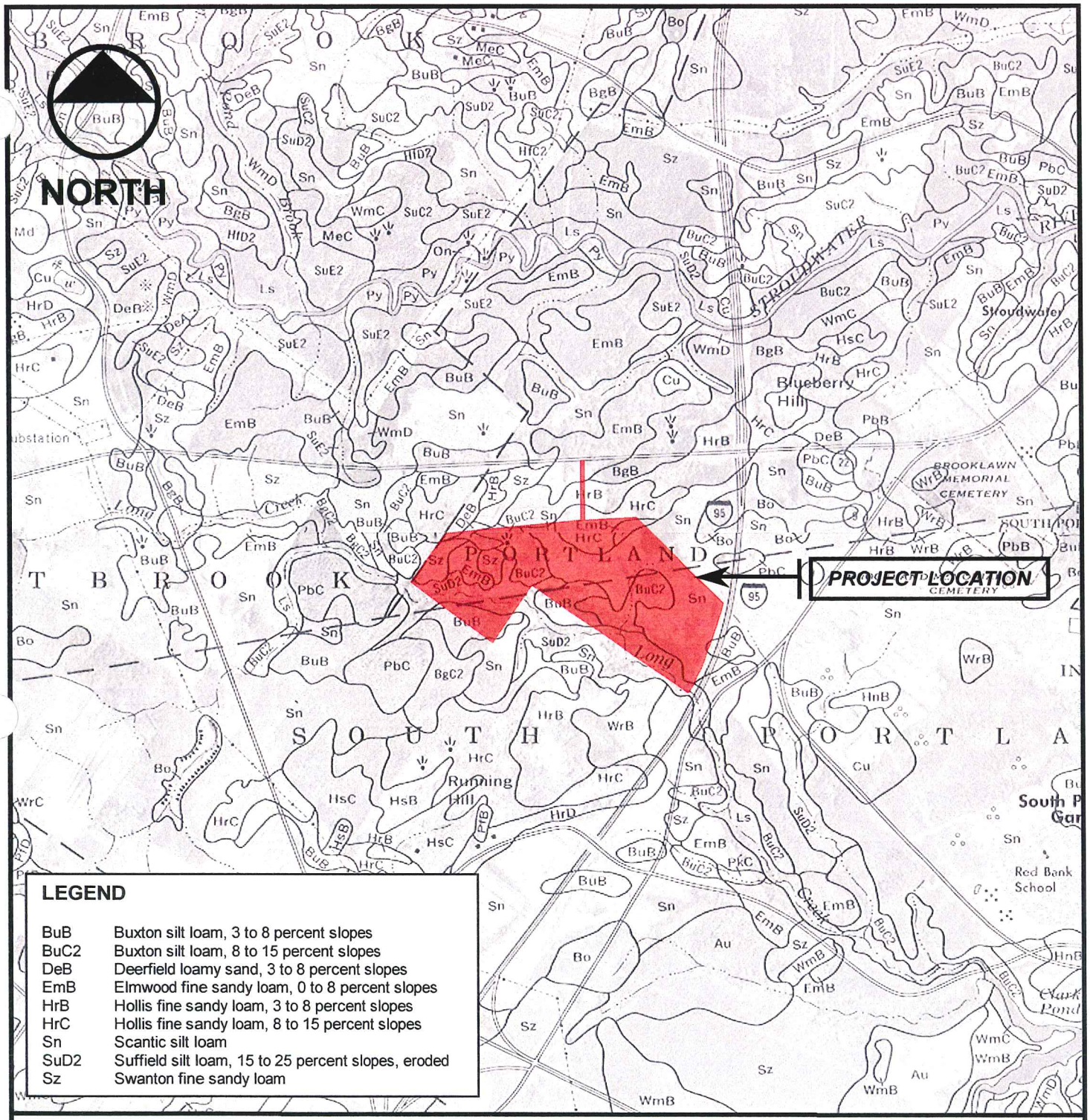
FIGURE

7



USDA SOILS MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: SOIL SURVEY; Cumberland County, Maine; **SHEET NUMBERS:** 81 & 85

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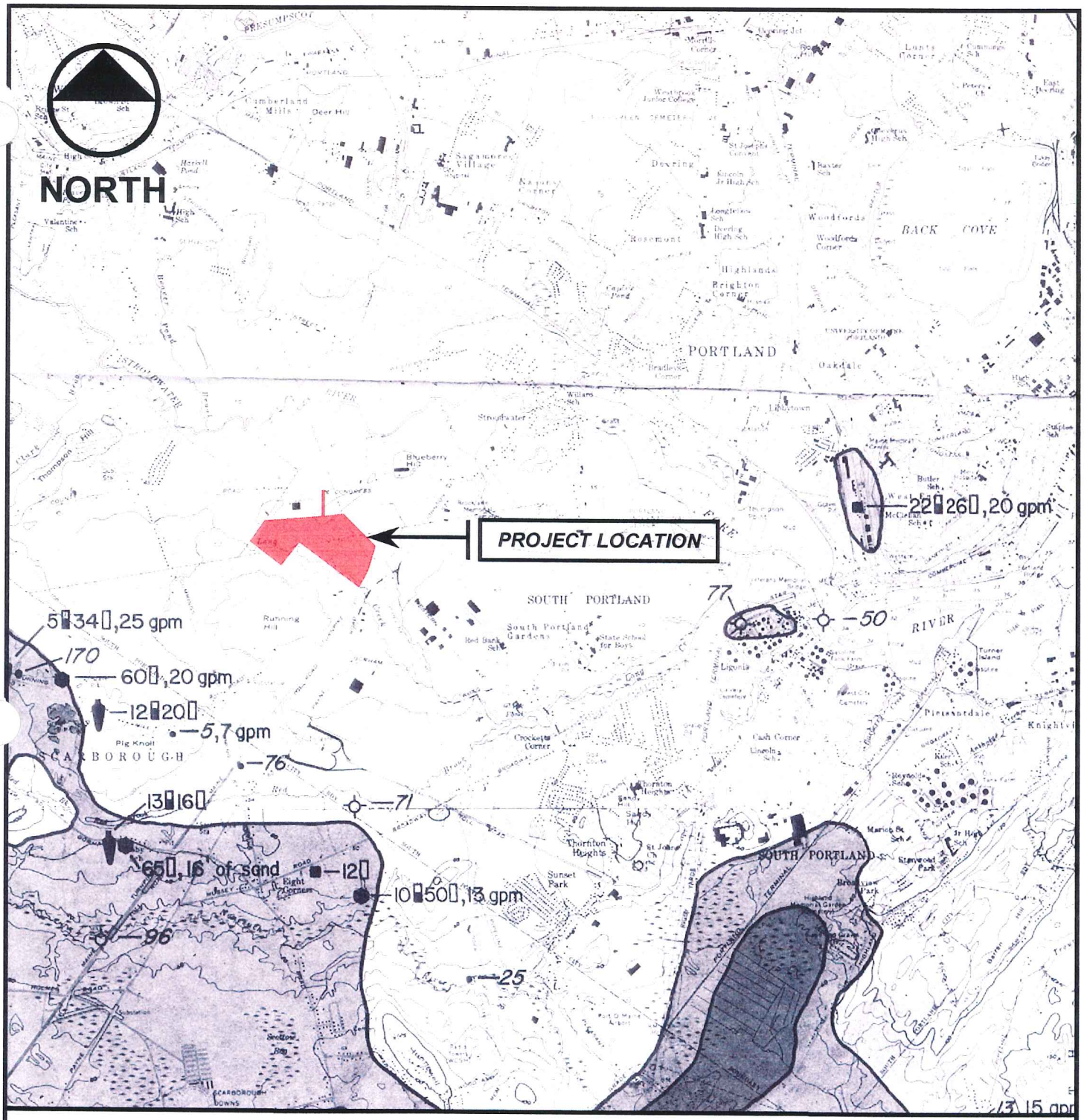

MGS SAND AND GRAVEL AQUIFER MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: SAND AND GRAVEL AQUIFERS, CUMBERLAND AND YORK COUNTIES;
OPEN-FILE NO. 79-6; **MAP NUMBER:** 5; **DATED:** 1979

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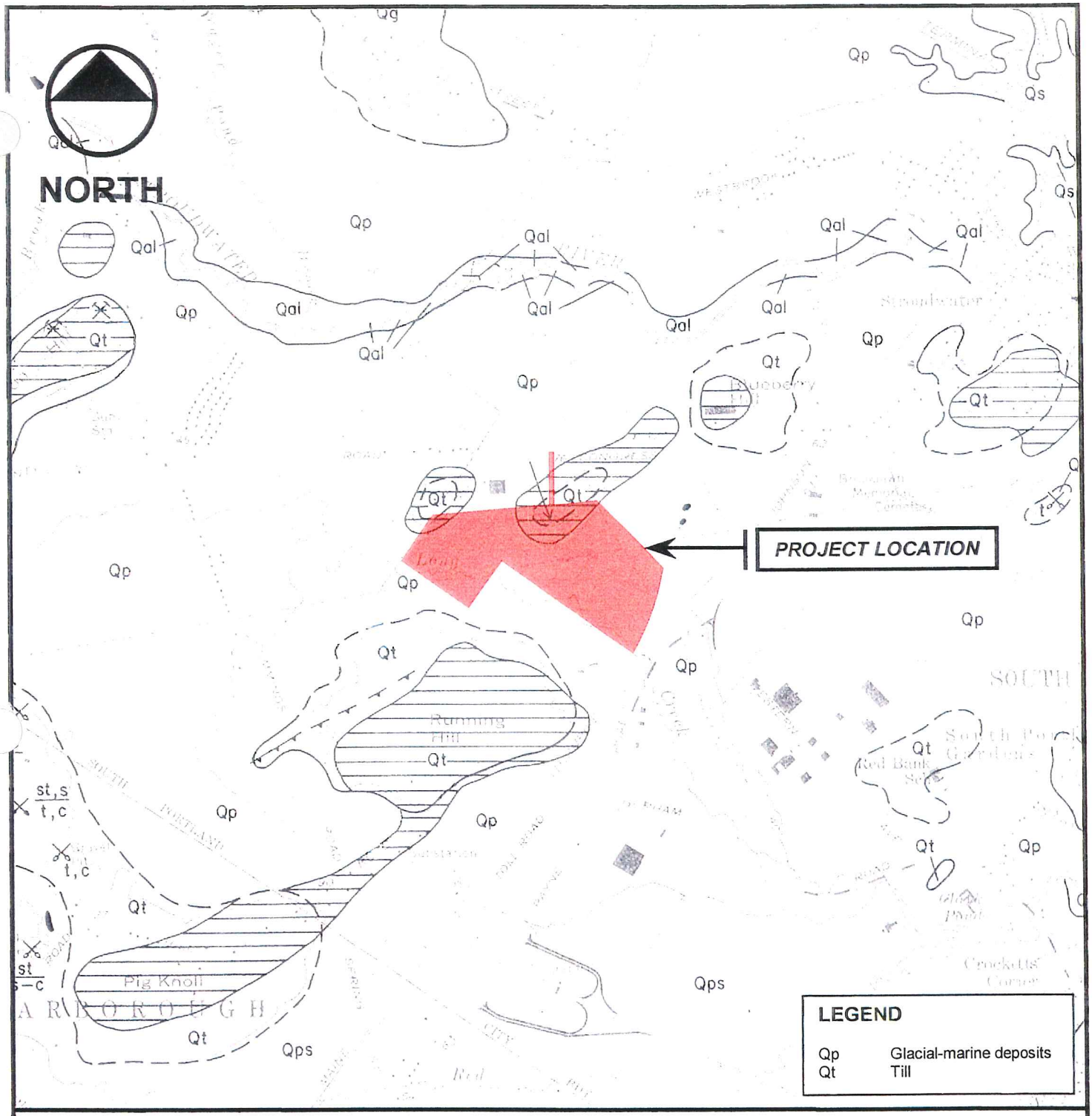

MGS SURFICIAL GEOLOGY MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: RECONNAISSANCE SURFICIAL GEOLOGY OF THE PORTLAND WEST QUADRANGLE, MAINE;
OPEN-FILE NO. 76-47; **DATED:** 76-47

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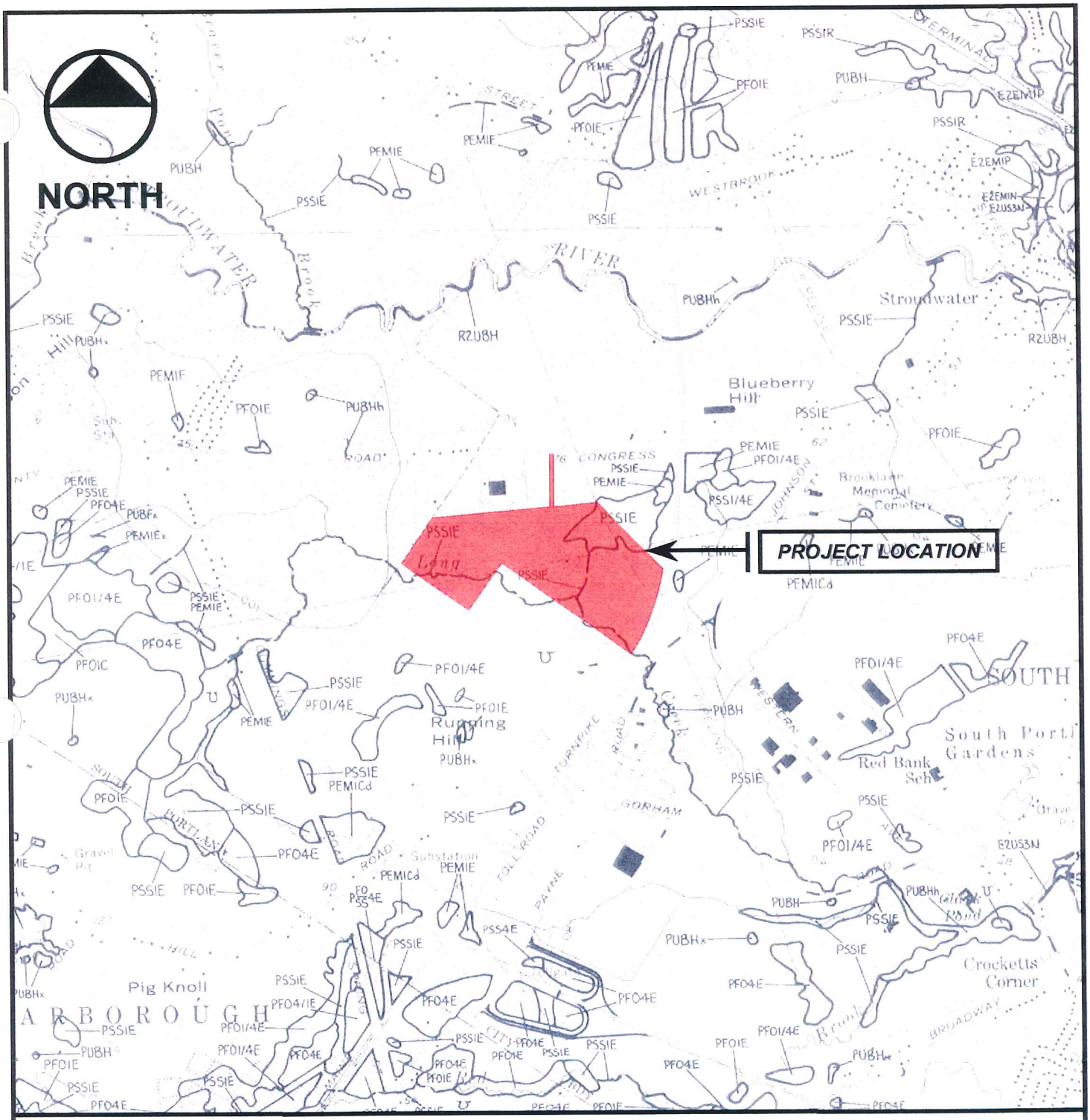

NATIONAL WETLANDS INVENTORY MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: NATIONAL WETLANDS INVENTORY, UNITED STATES DEPARTMENT OF THE INTERIOR, PORTLAND, WEST QUADRANGLE; **DATED:** 1992

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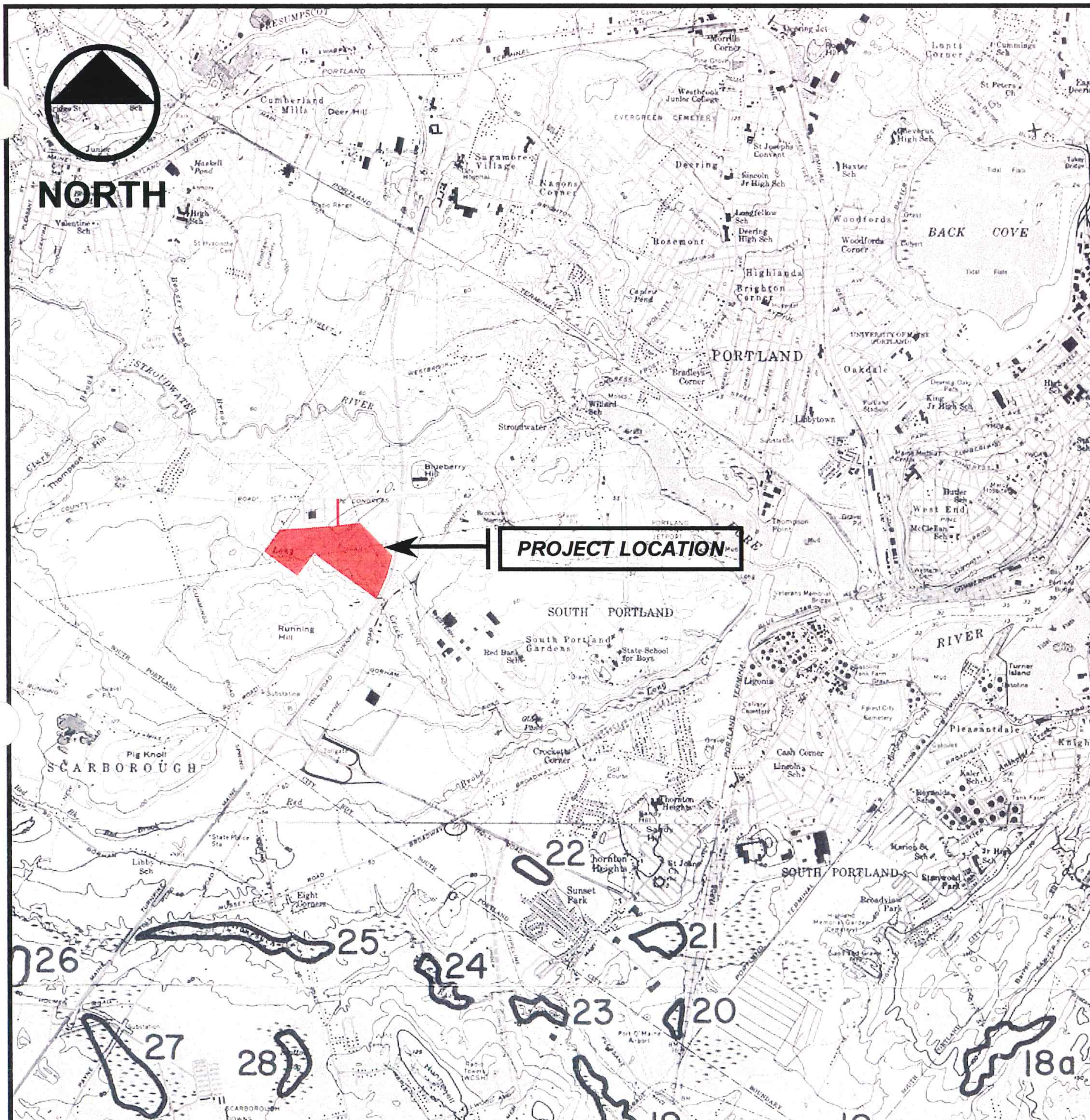

FRESH-WATER WETLANDS MAP

Outer Congress Street Snow Dump Project – Portland, Maine

SOURCE: FRESH-WATER WETLANDS; **MAP NUMBER:** 5; **DATED:** 1983

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DESIGNED	DDA	DATE	AUGUST 2000	FIGURE
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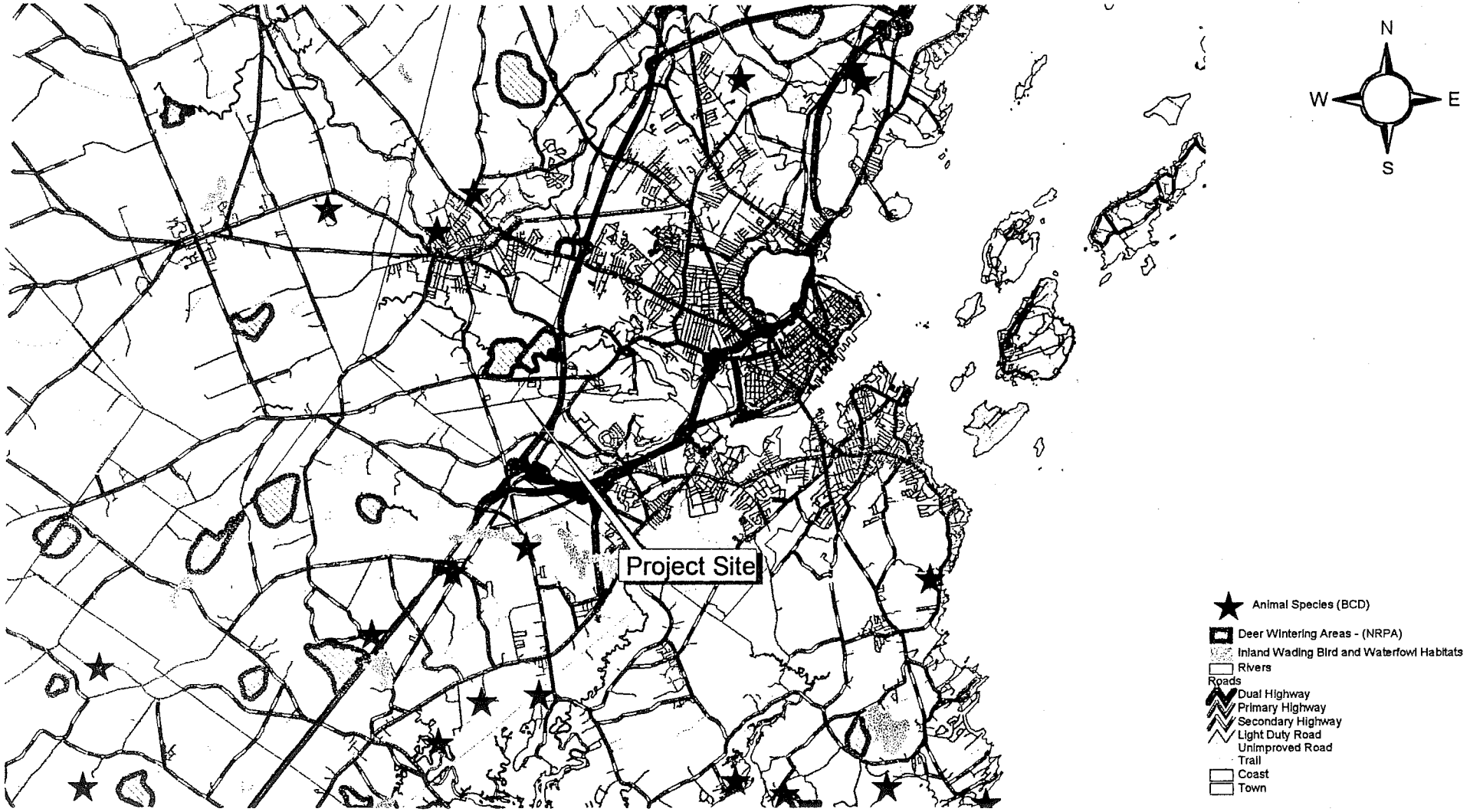
IF&W [illegible]port - Portland Snow Disposal

/2000

Request for Information - Jennifer West

FIGURE 13



Department of Inland Fisheries and Wildlife

(207) 547-5318

1 0 1 2 Miles

Biologist Notes

No identified wildlife habitats associated with this site.

PHOTO LOOKING SOUTH AT AREA OF PROPOSED POND.

PHOTO LOOKING NORTHWEST AT WEST END OF EXISTING BUILDING.

Photos taken on 9/10/00 by Dwight Anderson

Snow Dump Project JN 1900.11

PHOTO LOOKING SOUTH AT AREA OF PROPOSED DITCH.

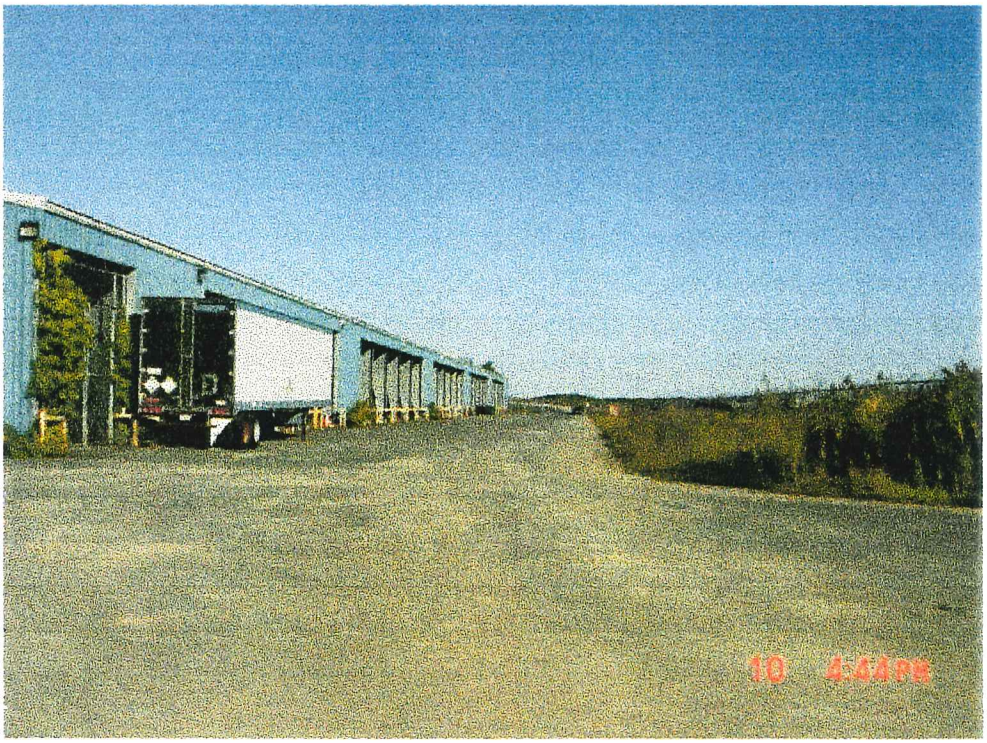


PHOTO LOOKING EAST ALONG SOUTH SIDE OF EXISTING BUILDING AT AREA OF PROPOSED PAVEMENT WIDENING.

Photos taken on 9/10/00 by Dwight Anderson

Snow Dump Project JN 1900.11

SECTION 2

TITLE, RIGHT OR INTEREST

SECTION 2

TITLE, RIGHT OR INTEREST

2.0 Overview

The subject parcel is located to the west of the Maine Turnpike off the west end of the Portland Jetport. A portion of the 88.26 parcel is located in Portland and the remaining portion of the parcel is located in South Portland as recorded at the Registry of Deeds in Book 2457 Page 262.

2.1 Attachment

Standard Boundary Survey for the parcel prepared by Dufresne-Henry, Inc. on October 30, 1997.

STANDARD BOUNDARY SURVEY FOR THE PARCEL

Prepared by Dufresne-Henry, Inc. on
October 30, 1997

SECTION 3

FINANCIAL CAPACITY

SECTION 3

FINANCIAL CAPACITY

3.0 Overview

The Portland Snow Dump project has a total budget of $150,000 provided in the City's Year 2000 Capital Improvement Program. Site work including construction of the water quality retention facility, paved access drive, storm drain system, installation of erosion control measures, grading operations, loaming and seeding will be performed by City of Portland Public Works crews.

SECTION 4

TECHNICAL ABILITY

SECTION 4

TECHNICAL ABILITY

4.0 Overview

The City of Portland has retained DeLuca-Hoffman Associates, Inc. to prepare plans and permit applications for the Portland Snow Dump project. DeLuca-Hoffman Associates, Inc. is the lead consultant for the Snow Dump project. Responsibilities of the various consultants on this project include:

Consultant	Responsibility
Aerial Survey and Photo Norridgewock, Maine	Aerial Topography
Dufresne-Henry, Inc. Portland, Maine	Standard Boundary Survey
Normandeau Associates, Inc. Yarmouth, Maine	Wetland Identification and Location
DeLuca-Hoffman Associates, Inc. South Portland, Maine	Application Preparation, Civil Engineering Site Design and Stormwater Management

4.1 Experience of Project Team

The team consultants retained by the City of Portland have expertise and experience in the design of large facilities, which require a Site Location of Development Act Permit. Wherein DeLuca-Hoffman Associates, Inc. has prepared the permit application, a list of relevant experience on projects which required Site Location of Development Act Permits are attached.

Resumes of key personnel who have been responsible for this permit application are also enclosed. The select subconsultants retained for the project also have experience in permitting in the State of Maine. Resumes of individuals working for the subconsultants can be provided upon request.

4.2 Ability of the Applicant

The City of Portland's experience is apparent in the operation and maintenance of the City's infrastructure system. Special operations and maintenance provisions for the stormwater quality retention facility is provided in Section 9 of this application.

4.3 Attachments

Attachment A – Permit Experience of DeLuca-Hoffman Associates, Inc.
Attachment B – Resumes of Key Personnel

ATTACHMENT A

Permit Experience of DeLuca-Hoffman Associates, Inc.

DeLuca-Hoffman Associates, Inc.

Permit Experience in Maine

DeLuca-Hoffman Associates, Inc. has prepared numerous Site Location of Development Permits for projects throughout the State of Maine. In addition to the permit experience listed below DeLuca-Hoffman Associates, Inc. was retained by the Maine Department of Environmental Project to prepare a Master Site Location of Development Permit for 200 acres of multi-use development in Topsham, Maine in the area of the Topsham Fair Mall and near the new Bath Brunswick bypass.

- ***Shopping Center Projects with Wal*Mart Anchor Stores.***

  The following shopping centers were permitted for Wal*Mart Stores in the State of Maine:

Location	Permit Number	Development Size	Description
Rockland	L-17640-26-A-N	93,000 ± s.f	Wal*Mart Store and outparcel
Houlton	L-18000-26-A-N	150,000 ± s.f.	Wal*Mart Store, Grocery Store, and outparcel
Waterville	L-18148-26-A-N	93,000 ± s.f	Wal*Mart Store
Skowhegan	L-18409-23-A-N	190,000 ± s.f	Retail strip center with Wal*Mart and Grocery Store
Calais	L-18408-23-A-N	170,000 ± s.f	Retail strip center with Wal*Mart and Grocery Store
Farmington	L-17771-26-A-N	76,000 ± s.f	Wal*Mart Store and outparcel
Lincoln	L-17849-26-A-N	50,000 ± s.f	Wal*Mart Store
Ellsworth	L-18070-26-A-N	93,000 ± s.f	Wal*Mart Store
Biddeford	L-18464-26-A-N	116,000 ± s.f	Wal*Mart Store with outparcel
Oxford	L-18508-26-A-N	102,000 ± s.f	Wal*Mart Store with outparcel
Windham	L-18560-26-A-N	102,000 ± s.f	Wal*Mart Store with outparcel

- ***Shopping Center Properties, South Portland, Maine***

  The project includes an approximate 23,500 in-line building expansion and addition of a freestanding restaurant to an existing 96,000 s.f. retail facility. The project demanded unique design for relocating an existing stream and providing stormwater management facilities. Mary Beth Richardson was the staff analyst for the Site Location and NRPA permitting aspects of the project.

- ***Shaw's Merrymeeting Plaza, Brunswick, Maine***

  The project includes 150,000 square feet of retail space with 735 parking spaces, utility improvements, a major upgrade of Route 24, and railroad crossing, and best management practices for the storm water discharge, Linda Kokemuller was the Staff Analyst.

- ***Biddeford Primary School, Biddeford, Maine***

  The project consisted of a 750 student, 75,000 square foot building, parking, roadways, a softball and other playfields, utilities, and related improvements. An Army Corps of Engineers and a Natural Resource Permit for three crossings of an intermittent stream were required in addition to the Site Location of Development Permit. Tim Wright was the MeDEP Staff Analyst.

- ***Winslow Common On The Lake, Falmouth, Maine***

  This project consisted of the 29-lot subdivision of 64 acres of property within the Highland Lake Watershed. A road system 4,400 feet in length, water mains, phosphorus control ponds, a dry detention pond constructed across a perennial stream, jogging trails, and a lakefront park was included in this project. Stacey Beyer Ramsay was the Staff Analyst for the MeDEP.

- ***Crescent Heights Subdivision, Casco, Maine***

  This project consisted of the residential subdivision of 27 acres into 17 lots under the affordable housing provision of the Town of Casco. The project included 2,600 feet of roadway and two phosphorous/detention/fire ponds. A Natural Resource Permit was also issued for this project. Linda Kokemuller was the Staff Analyst for the MeDEP.

- ***Madison Heights Subdivision, Naples, Maine***

  This project included the residential subdivision of an 180-acre site into eight neighborhood clusters for a total of 87 lots. The project included 12,600 feet of roadway, two dry detention basins, and three phosphorous/fire/retention basins.

  Special consideration of the thermal impacts to a trout stream which bisected the lower portion of the property was included in the design. Dave Studer was the Staff Analyst for the MeDEP.

- ***Ambleside Subdivision, Cumberland, Maine***

  This project consisted of the residential subdivision of 48 acres of land into 13 home sites, 2100 feet of roadway, a major detention facility, wet pond, and road crossing across a stream valley. A Natural Resource permit was obtained in addition to the Site Location permit. Tim Wright was the Staff Analyst for the MeDEP.

- ***Stillwater Center At The Mall, Bangor, Maine***

  This project is a large 200,000 square foot retail shopping center in Bangor, Maine. The project provides for over 1200 parking spaces and major utility improvements. The permit application included a Corps of Engineers and a Natural Resource Permit. Andrew Cobb was the Staff Analyst for the MeDEP.

- ***Burnham Woods, Phase II Subdivision, Naples, Maine***

  This project is in the Brandy Pond Watershed which is tributary to Sebago Lake. Control of phosphorus and water quality protection levels are the highest in the State. The project includes 15 lots, roadways, and phosphorus controls. Linda Kokemuller was the MeDEP Staff Analyst.

- ***Long Lake Estates, Naples, Maine***

  This project is the complete restructuring of a 72-unit condominium project to a high-income exclusive residential subdivision in Naples, Maine with frontage of Long Lake. The current owners purchased the failed project at a bankruptcy auction and immediately implemented the following steps:

  - Demolition of the 18 condominiums erected by the time of bankruptcy.

  - Implementation of an emergency restoration program to prevent continued environmental damage.

  The project includes as Natural Resource Permit and a Corps of Engineers Permit to "post permit" approximately 3 acres of wetlands disturbed by the prior owners. John James was the MeDEP Staff Analyst.

- ***Freeport Elementary School And Recreation Fields, Freeport, Maine***

  This project includes the construction of a new elementary school and a Town recreation complex on about 27 acres of land in Freeport, Maine. The project includes filling of about 2 acres of wetlands and stream alteration requiring an Army Corps of Engineers and Natural Resource Permit Applications. Andrea Lapointe was the MeDEP Staff Analyst.

- ***P & K Gravel Pit, Naples, Maine***

  This project is a major gravel pit in Naples, Maine with borrow extraction estimated at over 750,000 cubic yards of material.

- ***Quaker Ridge Estates, Durham, Maine***

  This project is an expansion of a 7-lot subdivision to 21 lots which required post permitting of the original seven lots. The project included fills in Class II and Class III with a Natural Resource Protection Act Permit. Matt Hight was the Project Analyst for the DEP Office in Portland, Maine.

- ***Municipal Facilities, Buxton, Maine***

  This project includes a new municipal building, salt storage shed, and recreation fields on a 200-acre parcel of land owned by the municipality. Because of funding deadlines, MeDEP worked with DeLuca-Hoffman Associates, Inc. and the Town of Buxton to issue a permit in 2 weeks.

- ***Lee Dodge Auto Dealership, Westbrook, Maine***

  DeLuca-Hoffman Associates, Inc. prepared a post permit for activities which exceeded Site Location Law thresholds and permitted the long range expansion for a 5 year expansion program for this 20 acre facility in Westbrook, Maine.

- ***Thornton Academy, Saco, Maine***

  DeLuca-Hoffman Associates, Inc. prepared civil drawings and the MeDEP Permit Applications for work to include additional building space, reconfigured parking and access around the school.

- ***Scarborough Middle School, Scarborough, Maine***

  This project involves construction of a new school, parking lots with 318 spaces, 2 stormwater quality management ponds, and athletic fields. DeLuca-Hoffman Associates, Inc. prepared civil drawings and MeDEP Permit Application in coordination with Stephen Blatt Architects.

- ***Oxford Hills High School Expansion, Norway and Paris, Maine***

  The project involved a 22 million-dollar high school expansion. The upgrade required state and federal permits and has a separate athletic field complex.

- ***University of Maine Systems, University of Southern Maine, Gorham Campus***

  DeLuca-Hoffman Associates, Inc. prepared the Site Location of Development Permit Application for the Gorham Campus. The applications permitted post 1970 activity as well as the new Ice Arena and Fieldhouse. A detailed campus parking and traffic study was prepared as part of the permitting activity.

- ***Poland Middle and High School, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the Site Location Permits and completed the site design as a subconsultant to PDT Architects for a new middle and high school complex on 100 acres of land in Poland. The site contains a former borrow pit and is within a lake watershed requiring special water quality measures.

- ***Piper Shores, Scarborough, Maine***

  DeLuca-Hoffman Associates, Inc. prepared the civil/site design for the Maine Life Care Retirement Community in Scarborough, Maine. The project required a local contract zoning. The community will set a new standard and is anticipated to become Maine's premier and most desirable retirement community.

- ***Topsham Demonstration Project and Business Park, Topsham, Maine***

  DeLuca-Hoffman Associates, Inc. was retained by the Town of Topsham and MeDEP to conduct a pilot project to examine the viability of the Master Plan approach to Site Location permitting. Subsequently, DeLuca-Hoffman Associates, Inc. permitted the 25-acre Topsham Business Park which was within the pilot study area.

- ***Saco Industrial Park, Saco, Maine***

  DeLuca-Hoffman Associates, Inc prepared the Site Location of Development Permit, Tier 3 NRPA Wetlands Permit, and local Subdivision Permit Application for the Saco Industrial Park Expansion. The project includes the extension of infrastructure including rail lines to expand the City's Industrial Park to Route 1 and development of 24 industrial lots on a 120 acre parcel of land. Natural resource impacts require wetland fill permits for 1.81 acres of wetland.

- ***York Commercial Park, York, Maine***

  The project includes a five lot commercial subdivision with a Hannaford store in York, Maine.

- ***Westbrook Power Plant, Westbrook, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the Federal and State Site Permit Applications for the proposed 528mw gas fired generation facility in Westbrook, Maine. The permits for the project have been received. Construction of this $250,000,000 facility is scheduled to commence in February 1999.

- ***Shop 'n Save Grocery Store, Waterboro, Maine***

  This project includes an onsite wastewater disposal system with pretreatment, two lined water quality ponds and a Shop 'n Save grocery store.

- ***Interstate Bakeries***

  DeLuca-Hoffman Associates, Inc. was retained by Florida Crown to amend the State and Federal site permits for the relocation of the former Nissen Bakery of Portland.

- ***Lake Region Middle and High Schools, Naples, Maine***

  DeLuca-Hoffman Associates, Inc. prepared the permit applications and site designs for the MSAD #61 athletic field upgrades at the high and middle school complex in Naples, Maine.

- ***West Falmouth Crossing, Falmouth, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the civil/site designs and permit applications for a large mixed use commercial development in Falmouth, Maine. Complex phasing is required to construct the project due to unstable clay soils.

- ***Scarborough School – Wentworth Campus, Scarborough, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared permit applications to implement a master plan (permit pending) for the Wentworth School in Scarborough.

- ***Biddeford Business Park, Biddeford, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the permit applications for a 15-lot business park. The design includes all utilities, water quality measures, and extensive rock removal. (Permit pending.)

- ***Lake Region School District; Bridgton Elementary School, Bridgton, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared site location permit applications for the Bridgton Elementary School. This project requires phosphorus controls, a new wastewater disposal field, and a new campus site design. (Permit pending.)

- ***Bowdoin College – Office Building, Brunswick, Maine***

  DeLuca-Hoffman Associates, Inc. has prepared the technical documents to support the College's Site Location of Development Permit for the office building at the Main Street Station Site. (Permit pending.)

- ***Maine Criminal Justice Academy, Vassalboro, Maine***

  DeLuca-Hoffman Associates, Inc. is completing permit applications for the Maine Criminal Justice Academy in Vassalboro.

- ***Village School, Gorham, Maine***

  DeLuca-Hoffman Associates, Inc. is completing feasibility studies for the upgrade of the Village School campus to enhance circulation, provide adequate areas for bus queuing, and reconstruct recreation fields. Permit applications are scheduled to be prepared in early 1999.

ATTACHMENT B

Resumes of Key Personnel

DeLuca-Hoffman Associates, Inc. Since 1988

University of Southern Maine, Gorham, Maine:

Design, permitting, and construction administration services for the construction of new access roads and parking facilities to support the new athletic fieldhouse and ice hockey arena. The new access road services as a secondary connector road through the campus site from Route 25 to School Street. This was a requirement of the Town of Gorham to improve emergency access for the University Campus. The overall project included the construction of 4,500 l.f. of access roads, vehicular parking areas (423 spaces) water quality retention pond, and site improvements associated with the new athletic facilities.

Saco Industrial Park Expansion, Saco, Maine:

Design, permitting, and construction administration services for the development of a 124 acre expansion to the Saco Industrial Park. The industrial park expansion consists of the creation of 24 industrial lots with the construction of 6,600 l.f. of access road with two water quality retention ponds. The new access road will eventually provide a direct connection between the existing Industrial Park Road and U.S. Route 1. The initial phase of the project is currently under construction.

Sweetser School Secondary Access Route, Saco, Maine:

Evaluation of potential routes for providing a second means of vehicle access into the Sweetser Children's School site in Saco, Maine. The project includes development of an overall constraints map to assess potential access routes which provide a secondary access road and potentially open additional land areas for development/expansion. Design and permitting services will be provided based upon the selection of the most feasible and practicable access route. The construction of the secondary access road is anticipated to occur during the year 2000.

Route 1 Sewer Improvement Project, Saco, Maine:

Design and construction administration of an 8.5 million dollar sewer improvement project. Included within this project were over 5,900 linear feet of force main, 19,800 linear feet of gravity sewer main, 5,500 linear feet of sewer and storm drain service leads, and 7,600 linear feet of storm drain.

Bear Brook, Goosefare Brook and Mill Brook Sewage Pump Stations, Saco, Maine:

Design and construction administration for three sewage pump stations with a maximum pump capacity ranging from 1,000 to 3,000 gpm. Included within this project were odor control systems, emergency standby generator, and instrumentation system containing a SCADA system.

Colonial Road Sewage Pump Station, Westbrook, Maine:

Design and construction administration for a duplex self-priming sewage pump station with a maximum pump capacity of 600 gpm. This project included the upgrade of an existing pump station to include new equipment, instrumentation, odor control system, and permanent emergency standby generator.

SENIOR ENGINEER

Mr. Laverriere is a Senior Engineer with DeLuca-Hoffman Associates, Inc.'s Land Design and Engineering Services Group and Environmental and Water Resources Group. He directs the preparation and review of preliminary and final design as well as permit applications for a variety of civil/site and environmental engineering projects. Mr. Laverriere's expertise includes civil/site design, hydraulic and hydrologic analysis.

Thornton and Storer Streets, Saco, Maine:

Design and construction administration for sanitary sewer replacement and storm drain separation along two urban streets. Included within this project were complete utility infrastructure and full depth road reconstruction.

Lower Route 1 Infrastructure Improvements, Falmouth, Maine:

Design and construction phase services for the replacement of sanitary sewer main and service leads along eight residential streets in Falmouth. The project also included the installation of a new storm drain system designed with service leads to receive illicit inflows from residential home foundation drains and sump pumps. The primary purpose of the project was to reduce the amount of infiltration and ground water inflow into the sanitary sewer system. The first three phases of the project were constructed from 1995 through 1997 with the final phase scheduled for the spring of 1998. The total cost of construction is 1.5 million dollars.

Wastewater Treatment Plant Secondary Clarifier, Saco, Maine:

Design and construction administration for a new 75' diameter secondary clarifier and flow split structure to replace existing clarifier tankage damaged during the October 1996 flood event. A key element in the design included maintaining of plant flows and treatment capacity throughout the construction process. The total cost of construction is 1.2 million dollars which involved federal money through the FEMA Disaster Relief Program and SRF money through the Maine Bond Bank.

Combined Sewer Overflow, 5-Year Plan, Portland, Maine:

Participation in the preparation of the City's initial 5-year plan for abating CSOs throughout the City. The preparation of the 5-year plan required development of a ranking system for all CSO abatement projects in order to implement the most cost-effective projects during the initial years of the program. Re-evaluation of the financial requirements for the 5 year plan was performed in order that the City could assess the impacts on the sewer user rate necessary to fund the program.

EDUCATION:	BSCE - University of Maine, Orono, Maine (1986)
REGISTRATION:	Registered Professional Engineer, Maine
AFFILIATIONS:	Member, American Society of Civil Engineers Member, Water Environment Federation
EXPERIENCE IN FIELD:	Active in Private Practice Since 1986

DeLuca-Hoffman Associates, Inc. Since 1997 **Dwight D. Anderson, P.E.**

MBNA Operations Facility Phase III Expansion, Belfast, Maine:

Performed surface water quantity and quality analyses in order to prepare the Stormwater Management Report for MBNA's Phase III Operations Facility Expansion including development of an additional 30 acres on MBNA's 334 acre parcel. Development of the stormwater management plan included analysis for a 111 acre watershed within the parcel; review of the water quality impacts to Belfast Reservoir No. 2 as well as streams conveying stormwater from the site; and the design of four water quality retention facility's for phosphorus removal and stormwater detention.

University of Southern Maine, Lewiston, Maine:

Design, permitting and construction administration services for the construction of a 30,000 square foot vehicular parking area within the Lewiston-Auburn Campus. The overall project included the construction of a 115 space paved parking area, restriping of an existing 270 space parking area, site lighting system, landscaping, and surface restoration within other areas of the campus.

Spring Street Trunk Storm Drain Project, Saco, Maine:

Design, permitting and construction administration services for the construction of a 2,400 linear foot trunk storm drain along Spring Street, to convey the upper reaches of the 350-acre Sawyer Brook watershed directly to the Saco River. The trunk storm drain is comprised of 185 linear feet of 5 foot by 10 foot precast concrete box storm drain, 665 linear feet of twin 72 inch diameter reinforced concrete pipe, 1,210 linear feet of 96 inch diameter reinforced concrete pipe and 340 linear feet of 84 inch diameter reinforced concrete pipe. The project also included reconstruction of the majority of the 45 foot wide Spring Street roadway, water main relocation and sewer main relocation. The $2.6 million project was part of a joint effort by the City of Saco and the Federal Emergency Management Agency.

Sweetser Children's Services Crisis Center, Saco, Maine:

Design and permitting for the construction of a 4,900 square foot Crisis Center building and associated site improvements. The project included sewer force main and affluent pump analysis, stormwater analysis involving hydrologic modeling (TR-20 HYDROCAD Software), and design of a dry detention basin to detain stormwater to mitigate increases in peak runoff associated with the development. The overall project will include disturbance of approximately one acre of land to construct the 4,900 square foot building, paved access drive and 30 space parking area.

George E. Jack Elementary School Improvements, Standish, Maine:

Design and permitting for the construction of a 96 vehicular space parking area, site lighting, site landscaping, stormwater detention facility and 180 foot by 330 foot soccer field.

Jewett/Hanson Schools Campus Improvements, Buxton, Maine:

Participation in the design, permitting and construction administration services for the construction of campus improvements including 97 vehicular parking spaces, new access drives, sidewalks, site landscaping and site lighting.

Lower Route 1 Infrastructure Improvements, Whitney Road, Falmouth, Maine:

Design and construction phase services for the replacement of sanitary sewer main and service leads along Whitney Road in Falmouth. The project also included the installation of a new storm drain system designed with service leads to receive illicit inflows form residential home foundation drains and sump pumps. The primary purpose of the project was to reduce the amount of infiltration and ground water inflow into the sanitary sewer system. The total cost of construction for the project was $250,000.

Wayside Road and Woodfield Road Sewer Separation Project, Portland, Maine:

Design of infrastructure improvements which includes 3,500 feet of roadway and sidewalk reconstruction, approximately 2,400 linear feet of sanitary sewer and separate storm drains. This project included the hydrologic evaluation of a 13 acre urban watershed and hydraulic analysis of proposed sanitary sewers and storm sewers within the watershed. The Rational Method was used for analyzing stormwater runoff volumes and Manning's Equation was used for analyzing minor losses in the formal drainage systems. The total estimated construction cost for the project is $1,000,000.

Education:	BSCE – University of Maine, Orono, Maine (1994)
Registration:	Registered Professional Engineer, Maine
Experience in Field:	Active in Private Practice Since 1999

SECTION 5

SOLID WASTE

SECTION 5

SOLID WASTE

5.0 Overview

The City of Portland has existing provisions for handling solid wastes which will be utilized for this project. The only solid wastes anticipated form this development include stumps and grubbing debris quantified as follows:

- Clearing:
  Approximately 0.1 acres @ 400 cy/acre = 40 c.y
- Other vegetated area:
  Approximately 2.1 acres @ 100 cy/acre = 210 c.y
  Total = 250 c.y

Stumps will be chipped and used for erosion control mix or landscape mulch.

5.1 Construction and Demolition Debris

The proposed project does not require any demolition or construction work which will require special disposal. Demolition work is anticipated to include only inert materials (soil, rock, concrete, etc.)

SECTION 6

ODORS

SECTION 6

ODORS

6.0 Summary

Odors will be generated during the construction phase of the development and during operation of the facilities.

Short-term odors or odors generated during construction include the following:

1. Organic odors from earth moving during construction.
2. Petroleum odors form construction equipment and vehicles used during construction for the project.

These odors will emanate from the site and may be detectable in the immediate vicinity of this development but will dissipate through the air into the atmosphere into negligible amounts. However, the generation of these odors will occur only during the construction phase of the project; therefore, the impact of these odors is considered negligible.

Long-term odors or odors generated during day-to-day operation of a facility such as the snow dump and material storage building include:

1. Petroleum odors from vehicles traveling to and from the facility.
2. Organic odors from stored materials.

These odors are not likely to be considered offensive, as they are of low intensity and the site is well within the property line of the City's parcel. Therefore, no provisions for odor control are planned.

SECTION 7

WATER VAPOR EMISSIONS

(Not Applicable to this Project)

Large scale water vapor emissions are not anticipated as part of this project.

SECTION 8

SUNLIGHT

SECTION 8

SUNLIGHT

8.0 Overview

The proposed snow dump is not anticipated to cast any shadows on neighboring properties or block access to direct sunlight for structure utilizing solar energy. The maximum building height within the industrial zone (I-M) is 75 feet. The existing material storage building on the parcel is 30 feet high. The layout plan shows existing and planned lot development and their relationship to property lines.

8.1 Conclusions

Based upon a review of the existing conditions and proposed development with the snow dump project parcel, it is not anticipated that the snow dump area and materials storage building will cause any significant shadow impact on the surrounding properties.

8.2 References

Site Layout Plan
Grading, Drainage and Erosion Control Plan

SECTION 9

MAINTENANCE OF COMMON FACILITIES OR PROPERTY

SECTION 9

MAINTENANCE OF COMMON FACILITIES OR PROPERTY

9.0 Overview

Maintenance of roadway, utility infrastructure systems, sedimentation control devices and the water quality retention facility will be provided by the City of Portland.

The stormwater quality retention facility includes certain features and requires maintenance which the City of Portland may not be typically accustomed to; however, the Public Works Department has the equipment and expertise to perform the operation and maintenance requirements. An inspection and maintenance program for the water quality retention facility has been prepared and is enclosed as Attachment A.

9.1 Attachment

Attachment A - Stormwater Management Systems Inspection and Maintenance Program

STORMWATER MANAGEMENT SYSTEM
INSPECTION AND MAINTENANCE MANUAL FOR
WETPOND AND RELATED STORMWATER FACILITIES

Prepared by:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
South Portland, Maine 04106
(207) 775-1121

September 2000

TABLE OF CONTENTS

APPENDICES

I. Introduction

Relatively complex stormwater management facilities are commonly installed in large development projects. The complexity and goals of these systems vary with the nature of the receiving water, as well as the type of development. Runoff from developed areas, contain a number of contaminants especially those emanating from rooftops, paved or lawn areas. This runoff can contain a significant amount of non point contaminants which can have an adverse impact on the receiving waters. The installation of wet ponds, many times combined with vegetated buffer strips and other measures can significantly reduce the non point pollution discharge from the developed area. These measures are particularly important to projects in sensitive lake watersheds.

The effectiveness of ponds and other components of the system is dependent on their upkeep and maintenance to assure they meet their design function over an extended period of years. It is critical that the stormwater management facilities are inspected on a regularly scheduled basis, and that maintenance is performed on an as needed basis. It must also be recognized that the effectiveness of these facilities, and their maintenance requirements, are related to the stormwater drainage facilities that transport the flow to the ponds or treatment measures. Thus, maintenance should be directed to the total system, not just the pond itself.

The purpose of this document is to define in detail the inspection and maintenance requirements deemed necessary to assure that the stormwater management facilities function as intended on a long-term basis. Subsequent sections identify individual maintenance items, give a brief commentary of the function and need of the item, a description of the work required, and a suggested frequency of accomplishment. While the suggested programs and schedules must be adapted to specific projects, the material presented should provide guidance for a successful long-term program.

A. Guidelines Overview

A summary of the individual components of stormwater management facilities has been prepared. The format used in the summary is as follows:

Preface: A general description of what function/benefit the element is intended to provide. This is a short summary and not intended to provide the design basis which can be found in other sources.

Inspection: This section provides the inspection requirements for the individual component.

Maintenance: The section provides general information on the routine maintenance requirements of this element.

Frequency: This section outlines the best judgment of the designer of the system to the frequency of maintenance.

Comments: This section provides any particular comment on the site specific features of this element. This is a summary only. The owner/operator should review the design drawings and documents carefully to understand the particular elements of the project. The end of this section should allow for the owner/operator to make notes on the specific program. This may include the selected maintenance procedure, cross references to applicable design drawings, etc.

A list of the individual inspection/maintenance elements is provided in the table of contents.

II. Project Overview

Key permits issued (or applied for) on the project include:

- MeDEP Site Location of Development Permit

A copy of these permits should be appended to this manual as Appendix C. The Owner/operator of the stormwater management system should review these permits for a general description and background of the project, as well as any specific permit conditions or requirements of the project

The Owner of the project has retained the following firm to prepare the design for the stormwater management facilities:

DeLuca-Hoffman Associates, Inc.
778 Main Street, Suite 8
So. Portland, Maine 04106
(207) 775-1121

It is recommended the preparer of the plan be contacted with any particular questions on the design intent or similar issues.

The applicable plans/design documents which apply to the project are:

Plans for the City of Portland
Portland Snow Dump Project
Prepared by DeLuca-Hoffman Associates, Inc.

Copies of these documents should be retained with the manual.

The key receiving waters for this project are Long Creek and Clark Pond.

The manual is intended for general guidance. However, any substituted deviations from the manual should be reviewed with respect to provisions of Appendix C.

A summary of the stormwater management facilities for this project is as follows:

- Street Flow/Open Channel Conveyance Systems
- Wet Retention Pond Facilities
- Outlet Control Structures
- Riprap and Vegetated Spillways and Channels
- Culverts
- Closed Storm Drain System

III. Standard Inspection/Maintenance Descriptions

A. Pond Overflow Channel

Preface: The stormwater pond is designed for a permanent pond condition. When storm events occur, the water in the pond is displaced by the entering flow. Flow from the pond is discharged to a spillway channel. This channel is riprapped to convey flow down the berm or embankment.

Inspection: The channel will operate frequently, it is important to assure that it is operable as intended. The channel must be inspected to assure the surface is stable and has not been removed or displaced by vandals. The area should be inspected to note any larger brush or trees which could become established in the spillway channel and outlet pad.

Maintenance: Requirements for the spillway should be limited. Any brush or trees which become established should be cut and kept in a cropped condition. Any debris which may accumulate in the channel should be removed.

Frequency: The spillway should be inspected on an annual basis, and after a high intensity rainfall event (in excess of 3 inches in a 24-hour period). Maintenance should be conducted on an as needed basis.

B. Control Structures

Preface: An outlet control structure will be installed in the berm of the proposed pond. This outlet structure will be installed to regulate the hydraulics of the inlet to control peak release rates from the watershed.

Inspection: The outlet control structure and associated storm drains must be inspected to assure they maintain their intended hydraulic characteristics. The inspection would note any debris or sediment which may accumulate in the structure and in the incoming and outlet pipes. It is noted that it does not take much debris or silt to alter the hydraulic characteristics of the discharge. The culvert inlet should be inspected to assure it is not corroded or the perimeter damaged to the extent that its flow characteristics may be altered.

Maintenance: Maintenance of the control structure will consist primarily of removing debris which may accumulate.

Frequency: The control structure should be inspected semi-annually, after a high intensity rainfall event (in excess of 3 inches in a 24-hour period), or when abnormal levels are observed in the pond. Debris and silt should be removed during each inspection.

Comments: None

C. Pond Berms

Preface: Many times pond construction will include installation of an earthen berm or dike to contain the water. The retention pond is formed with both excavated slopes and constructed berms. The maintenance and monitoring discussed here applies to both the side slopes of excavated pond areas and the constructed pond berms. All excavated slopes and constructed berms must maintain their integrity to contain water without catastrophic leakage. Erosion or piping could cause pond failure. It is critical that the integrity of the berm be maintained.

Inspection: The berm must be periodically inspected to note any sags, slope sloughing, erosion, cracking, or undesirable tree growth. Inspection can be best accomplished at low pond level in the late summer to allow observation of normally submerged slopes. Any defects in the berm must be noted and documented. It is noted that on larger ponds muskrats can burrow into the sidewall to the extent that the wall's structural integrity can be diminished. Dry ponds may have occasional problems with burrowing animals.

Any noted sags, or slope sloughing should be corrected after the causative factor has been identified and mitigated. If muskrat burrows become a problem the muskrats should be trapped and removed from the site. This should be accomplished in cooperation with wildlife officials. Some situations have occurred where burrowing animals cause a significant problem with pond integrity. While this situation is generally rare, in certain instances it may warrant placement of a barrier. Chain link fence with shallow cover has been a successful deterrent in some cases.

Frequency: Berm inspections should be done annually during a low water regime. Grassed areas along the top of the berm should be mowed monthly during the growing season. Repair of any berm defects should be accomplished in a timely manner to limit further deterioration.

Comments: None

D. Vegetation in Pond

Preface: Typically, ponds constructed for stormwater management will have an earthen bottom. Aquatic vegetation will often become established in such ponds. It will be more prevalent in ponds with silty soils and less prevalent in granular soils. This vegetation is beneficial as it assists in nutrient removal, provides wildlife habitat, and assists in side slope stability through its root structure.

Proper maintenance is important because, if the vegetation proliferates beyond acceptable levels, it can become a detriment to the pond function. Dying vegetation may also accumulate on the pond bottom where it will release nutrients back in the water, and may lower oxygen levels. If allowed to accumulate, it will lessen pond volumes over time.

Inspection/Monitoring: The extent of aquatic vegetation associated with the retention pond should be monitored. A photographic record of growth is beneficial.

Maintenance: Judgment must be used to determine a proper balance between desirable growth levels and excessive growth. This will be gained by experience. If excessive growth is observed it should be cut back and removed on an annual basis.

Removal of excessive growth should be accomplished in the late fall or early winter. When ice forms sufficiently to walk on, the vegetation extending above the ice level should be cut and removed from the pond. The material should be disposed of in accordance with applicable ordinances. The material can sometimes be composted particularly if the municipality operates such a facility.

Frequency: Inspect and document aquatic vegetation growth and wildlife use annually in late summer or early fall at the end of the growing season. Cutting and removal of growth will depend on its density. Removal on a 1 to 3 year frequency will be typical.

Removal of Cutting: Cuttings of undesirable excessive vegetation should be removed from the pond areas and composted or otherwise disposed.

Comments: The Owner desires to encourage and promulgate vegetation in the retention/detention pond. Removal and or cutting of vegetation shall be limited to the circumstances above and shall be done solely to maintain proper function of the overall stormwater management system.

E. Pond Dewatering

Preface: Dewatering retention/detention ponds periodically is desirable in order to check sediment accumulations, side slope conditions and debris accumulation. Dewatering of the detention facilities may be accomplished by pumping or by a pond drain if one has been installed.

Inspection: The purpose of pond dewatering is to allow observation of sediment buildup and the accumulation of debris on the pond bottom. It also allows inspection of the lower slopes of the sidewalls for stability. Pond dewatering is a preferred method of inspection and cleaning. Inspection and maintenance of wet ponds is possible, but is generally more expensive. A separate section discusses wet pond inspections.

Dewatering of the detention pond should be accomplished only in the summer months when normal pond level is minimal. Pump suction should be kept above the sediment level to minimize silt transfer. Filter fabric over the suction may be required to prevent excessive silt from being discharged. The pumping rate should be designed by a professional engineer, and the effluent should be transferred to an upland area for discharge through a perforated pipe distribution system to achieve sheet flow. The distribution/sheet flow area should be inspected for silt buildup.

Upon draining the pond the sediment level should be measured at multiple locations in the pond to determine a representative depth. Sidewalls should be observed for sloughing.

Maintenance: If the volume of sediment recorded exceeds 15% of the normal operating volume of the wetpond (i.e., for retention), the sediment should be removed. Prior to removal the material should be sampled and analyzed in accordance with current practice as promulgated by appropriate regulatory agencies. Upon documentation of its chemical characteristics, the material should be removed by appropriate means for trucking from the site. Disposal of removed material must be in compliance with all regulatory requirements which will vary with the documented characteristics with material. Guidance should be sought from appropriate regulatory agencies.

Frequency: An initial retention/detention pond draining and inspection should be made after the first 5 years of operation. The rate of recorded sediment buildup will then be utilized to schedule subsequent drainings. Sediment removal will be accomplished when the sediment occupies 15% of the normal pond operating volume. Sediment removal once every 15 to 20 years may be expected in most instances. Upon completion of sediment a topographic survey should be accomplished to document pond shape and elevation. The City could contract with a local surveyor for this work.

Comments: None.

F. Sediment Monitoring/Wet Ponds

Preface: Some large ponds may have a permanent pool which could support various wildlife species where full dewatering may be difficult and undesirable except in critical circumstances. It is, however, still important to monitor sediment build-up in such ponds to assure that capacity remains to accomplish its intended water quality function.

Inspection: Measuring sediment build-up in a pond with a permanent pool which cannot be readily dewatered must rely on recorded differential elevation. In such an installation, it is important to have accurate "As Built" elevations on the pond bottom prior to its being placed in operation. This should be a requirement of the construction contract.

The build-up of sediment requires establishing the elevation of the top of the sediment layer for comparison with original bottom elevations. To accomplish this, a permanent benchmark should be established at the site that is not subject to frost action. The elevation of the water surface at the time of survey can thus be established. Measurement should then be taken from the water surface to the top of the sediment layer. This should be done at sufficient locations to cover the total pond area. It is noted that sediment build-up will be more rapid near the inlet of the pond.

The depth measurements can be taken in the Summer utilizing a small boat, or in the Winter through the ice. The depth measuring staff should have a flat plate attached to the bottom so it will not sink substantially into the sediment layer.

By comparing the measured elevations with the as-built elevations of the pond bottom it will be possible to compute sediment build-up levels.

Maintenance: If sediment build-up in the pond becomes sufficient to diminish its treatment function it will have to be removed. This may be accomplished in a similar manner to that described previously for smaller ponds by dewatering and removal. If the pond cannot be dewatered, hydraulic dredging should be utilized. When pond sediment removal is planned, record drawings should be reviewed for special linings or other special features which may influence removal techniques, or may have to be concurrently maintained.

Frequency: The sediment buildup measurements should be accomplished at 5-year intervals. Removal of sediment should be accomplished when it occupies 15% of the effective pond volume.

Options to sediment removal will vary on each project, but could include enlargement of the pond, or qualitative sampling to examine pond performance. If such options are considered, existing permit conditions, as well as current regulations, should be examined where necessary, and permit amendments should be obtained.

Comments: It is recommended the monitoring of sediment for these ponds occur during the summer if at all possible. If it is necessary to monitor the sediment during winter, extreme caution should be exercised to insure an adequate thickness of ice exists to support inspection personnel and equipment.

G. Sediment in Forebay

Preface: The wet pond will be constructed with a small forebay sump at the entrance. The purpose of this sump is to collect and detain larger particles in the sediment which may enter the pond through the inlet pipe. A secondary benefit of the forebay sump is to achieve better hydraulic flow distribution in the main segment of the pond.

Inspection: During periods of lowest water surface in the pond it should be possible to inspect the forebay sump and to measure the sediment accumulation.

Maintenance: If a significant accumulation of sediment is recorded in the sump, it should be removed. Depending on the size of the sump, the amount of sediment collected, and its location, the sediment may be removed manually, by a vacuum truck or other methods. The material removed from the sump should be disposed of in accordance with local practice for disposing of catchbasin cleanings.

Frequency: The forebay sump should be inspected semi-annually if possible, preferably in the early summer after spring runoff, and in the fall. The frequency of sump cleaning will depend on the rate of sediment buildup. Cleaning on a 1 to 2 year basis is likely. It is noted that cleaning of the forebay sump will lengthen the time between pond cleanings.

The rate of sediment buildup will depend on the tributary drainage facilities, i.e., faster buildup with open ditch transport systems than buildup from pipe systems with sumped catchbasins. Maintenance practices for the tributary drainage system will also impact sediment buildups.

Comments: None.

H. Stormwater Inlets

Preface: The success of any stormwater facility relies on the ability to intercept stormwater runoff at the design locations. Stormwater inlets may include catch basins, open culverts, culverts with bar screens, and field inlets. Inlets exist throughout the system at the points of collection as well as at the outlet of many ponds. Bar racks are common on many inlet locations which intercept an open channel. This section is directed at maintenance of the actual inlet point. A later section addresses more substantive maintenance of the structures and conveyance facilities.

Inspection: The inspection of inlet points will need to be coordinated with other maintenance items, these include:

- Field Inlets
- Culvert Inlets
- Catch Basin Inlets

The key elements of the inspection is to assure the inlet entry point is clear of debris, and will allow the intended water entry.

Maintenance: The key maintenance is the removal of any blockage which restricts the entry of stormwater to the inlet. The removed material should be taken out of the area of the inlet and placed where it will not reenter the runoff collection system. Snow should be removed from inlets in parking lots/roadway areas.

Frequency: All inlets should be inspected on a monthly basis, and after/during significant storm events. A site walkover is suitable for most inlets but concealed inlets and pond structures require more rigorous inspection.

Comments: Maintenance of inlets is critical on this project.

I. Tributary Drainage System

Preface: Stormwater from portions of the snow dump site is directed to a conveyance system which transports the flow to the retention pond. This conveyance system can consist of open swales and ditches, a piped drain system, or a combination of the two. Sediment which accumulates in the pond is carried by the drainage system. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the pond system.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to assure the rims are set at the proper elevation to optimize flow entry and are not clogged with leaves or other debris. (See prior section for inlet location data). The inlet basins are normally equipped with sumps which will remove large sediment particles from the flow stream.

The level of sediment in the sumps should be checked to assure their effectiveness. Pipelines connecting the inlets should be checked to determine if siltation is occurring. This will be most critical on drain lines laid at minimal slopes. This can usually be accomplished by a light and mirror procedure.

In some projects most of the stormwater is carried in open swales, channels or ditches. These conveyance channels may be riprapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be noted. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be noted.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long term basis, and that its operation does not transport excessive sedimentation to any downstream detention pond, or the receiving waters. Elevations on the rim of catchbasins should be adjusted as needed to assure optimal water entry. Depending on the frost susceptibility of the soil, the rims may become elevated over time causing flow to circumvent the inlet. When the sump in an inlet reaches two thirds of its volume the sediment should be removed. This will typically be every 1 to 3 years depending on the tributary drainage area and the amount of sand utilized for winter ice control. Catchbasin cleaning would normally be accomplished with vacuum trucks under contract. The removed material must be disposed of at an approved site for such materials.

If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general a sump or sediment trap should be used where it can be flushed into the detention pond, since it will reduce pond volume and hasten the time when it must be cleaned.

Vegetated ditches or swales should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any vegetation cut in the ditch area should be removed from the site. Any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Any riprap that becomes displaced should be replaced and chinked to assure its stability.

Frequency: The piped drainage system should be inspected on an annual basis. Adjustment of inlet rim elevations should be on an as needed basis. Cleaning catchbasin sumps and pipelines will depend on the rate of accumulation. Typically, catchbasin sumps should be cleaned on a 1 to 3 year cycle. Pipeline cleaning schedules will be more variable. Open, vegetated swales should be mowed at least monthly during the growing season. Debris should be removed as required to maintain hydraulic capacity.

Comments: Maintenance of inlets is critical on this project.

J. Summary Checklist

The above described inspection and maintenance items have been summarized on a checklist attached hereto as Appendix A.

IV. Program Administration

A. General

A reliable administrative and institutional structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must have legal title to the property, or must be legally responsible for long term operation and maintenance of the facilities.
2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.
3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.
4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.
5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

Generally the above criteria are anticipated to be City of Portland inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. It is therefore necessary to clearly establish the assigned administrative body in a responsible and sustainable manner.

B. Record Keeping

Records of all inspections and maintenance work accomplished should be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions. Typical inspection and maintenance record forms are attached hereto as Appendix B.

APPENDIX A

Summary Checklist
Inspection and Maintenance

Stormwater Management System Maintenance Program Summary Checklist					
		Frequency			
Item	Commentary	Month	Semi-Annual	Annual	Long-Term
Emergency Overflow Channel	Observe emergency overflow weir & outlet channel for debris accumulation, riprap stability, remove debris, repair as required.			X	
Outlet Culvert	Inspect for debris or silt accumulation, remove as required. Check elevation of weir if applicable. Check orifice and opening.		X		
Berms	Inspect berms for sags, sloughing, or erosion and undesirable tree growth. Mow berm slopes to control vegetation repair structure flaws upon identification.	Mow X Summer		X	
Vegetation in Ponds	Observe extent of vegetation in fall. Cut above ice level in winter - remove.			X	
Pond Sediment Removal	Remove sediment when it occupies 15% of volume.				X 10-15 Yrs
Sediment Monitor Wet Ponds	In larger ponds with permanent water body the sediment can be measured by measuring bottom surface elevations and comparing with record elevations of initial construction.				X 5 Years
Sediment in Forebay Sumps	Observe sediment accumulation in forebay sumps. Remove sediment from sump.		X	 X	
Stormwater Inlets in Series	Stormwater inlets allow flow entry from a surface swale to a piped system. Entry may or may not be equipped with a bar back. Inspect entry for debris accumulation. Remove debris to allow unimpeded entry.	X			
Catchbasins	Catchbasins serve as the points of entry on a piped conveyance system. Sumps in the basins retain heavier sediment particles. Inspect to assure optimum water entry and accumulation of sediment in sumps. Clean sumps are required.			X	
Pipelines	Pipelines carry flow from inlet structures to point of discharge. Inspect for sediment buildup in pipe. Clean as required.			X	
Open Swales	Swales or ditches are also used for stormwater conveyance. Inspect for debris accumulation, erosion and excessive vegetation. Mow monthly, remove debris, repair and vegetate any areas of erosion.	Mow X		X	

APPENDIX B

Sample Inspection Logs

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:		**YEAR:**	
LOCATION:		**CONTRACTOR:**	
FUNCTION:		**INSPECTOR:**	
DATE OF INSPECTION:			
ITEM IDENTIFICATION	**DESCRIPTION OF CONDITIONS**	**MAINTENANCE ACCOMPLISHED**	**DATE OF MAINTENANCE**
VEGETATION			
BERMS			
EMERGENCY OVERFLOW			
GENERAL COMMENTS:			

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

FACILITY:			YEAR:			
LOCATION:			CONTRACTOR:			
FUNCTION:						
				OVERFLOW WEIR		
MONTH	DAY	INSPECTOR	WATER DEPTH	CLEAR	DEBRIS	WEIR CONDITION
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
JULY						
AUGUST						
SEPTEMBER						
OCTOBER						
NOVEMBER						
DECEMBER						
LIST SPECIAL MAINTENANCE UNDERTAKEN:						

CITY OF PORTLAND
SNOW DUMP ON OUTER CONGRESS STREET
PORTLAND, MAINE

STORMWATER MANAGEMENT
WATER QUALITY RETENTION FACILITY
ANNUAL INSPECTION & MAINTENANCE LOG

SEMI-ANNUAL INSPECT 1.2	FACILITY:
DATE:	LOCATION:
INSPECTOR:	FUNCTION:
WEIR CONDITION:	
OUTLET CONDITION	

FORE BAY SUMP	EST. DEPTH SED.	REMOVED? Y/N	EST. VOL. CY	WHERE DISPOSED OF	STRUCTURAL CONDITION

CONTROL STRUCTURE:
DESCRIBE CONDITIONS FOUND & MAINTENANCE ACCOMPLISHED:

APPENDIX C

Permits for Project

SECTION 10

AIR EMISSIONS

SECTION 10

AIR EMISSIONS

10.0 Overview

The project consists of construction of a paved access drive, water quality retention facility and other associated site work as described in Section 1 of this application. Air emissions expected to occur as a result of or within the project area, are as follows:

1. Emissions associated with construction vehicles during construction of the project.
2. Emissions associated with the vehicular travel of trucks, personnel and equipment to and from the facility.

Although the application requests a summary of emissions compounds from both point and non-point sources, it appears this is generally required for "certain types of commercial and industrial developments and solid waste disposal facilities and non-point source emissions deriving from industrial, commercial and governmental developments."

No estimate of emissions for this project has been compiled since no unusual air emissions or high point sources are anticipated.

SECTION 11

NOISE

SECTION 11

NOISE

11.0 Overview

The proposed project does not fully fall into the four categories of development classified as producing minor noise impacts; however, the applicant seeks to have the development classified as one creating minor sound impact. The following is provided to support the classification as a minor sound impact.

The potential sources of noise at the project site will consist of noise generated during construction and noise generated during operation of the facilities.

- Construction Noise:

  Noise generated during construction of the project generally will be limited to normal working hours, typically 7 AM to 7 PM.

- Facility Operation:

  The noise associated with the facility will be limited to noise generated by vehicles, snow disposal equipment and personnel.

The noise generation will be typical in comparison to the surrounding area and is considered insignificant since the site is located in an area zoned for this type of development and is bordered by Congress Street and the Maine Turnpike and is located just off the runway for the Portland International Jetport.

No known noise protected location exists in the immediate project vicinity.

SECTION 12

SOILS

SECTION 12

SOILS

12.0 Overview

The project consists of the construction of a stormwater quality retention facility, paved access drive, associated storm drain system, loaming and seeding. No modifications are proposed to the existing 79,300 square foot materials storage building.

The entire project site was reviewed by Jennifer West of Normandeau Associates, Inc. for the presence of wetland vegetation or other significant wildlife/natural resource areas. A copy of Normandeau Associates' Wetland Delineation Report is contained in Attachment A.

The applicant requests a waiver for the requirement of a limitations report prepared by a certified soil scientist.

12.1 Overview of Mapped Soils

The USDA Medium Intensity Soils Map for Cumberland County identifies the soils in the area of the development to be mostly Buxton and Scantic soils with a finger of Suffield soil included as shown on Figure 8 contained in Section 1. The typical description and location of these soil series are as follows:

Buxton Soils

The Buxton series found on the western portion of this site consist of deep, moderately well drained to somewhat poorly drained, gently sloping to moderately sloping, medium textured soils. These soils formed in silty and clayey marine lacustrine sediment in the central lowland and coastal areas of the county. They are found on terraces and plains.

A representative profile of a Buxton soil in a cultivated area has a layer of dark-brown silt loam, 9 inches thick, that overlies a layer of yellowish-brown, friable silt loam. The next 4 inches is light olive-gray, friable silty clay loam. Below this is 22 inches of olive-gray to gray, firm silty clay that has gray, olive, olive-brown, and light olive-brown mottles. The underlying material, at a depth of 38 inches, is olive-gray silty clay that has a few light olive-brown mottles.

The water table is at a depth of 1 to 2 ½ feet in spring and during periods of heavy precipitation. Depth to bedrock is 5 feet or more. These soils have high available water capacity. Permeability is moderately slow to slow above the fine-textured layer and slow to very slow within it.

Scantic Soils

The Scantic series found on the eastern portion of this site consist of deep, nearly level, poorly drained, medium-textured soils that are underlain by fine-textured material. These soils formed in marine and lacustrine sediment. They are in old marine estuaries in the eastern and central parts of the county and in depressions around a few inland lakes.

A representative profile of Scantic soil in a cultivated area has a surface layer of dark grayish-brown silt loam 8 inches thick that is underlain by 5 inches of olive-gray, friable heavy silt loam that has light olive-brown mottles. The upper 7 inches of the subsoil is olive-gray, firm heavy silt loam that has light olive-brown mottles, and the next 8 inches is olive-gray, firm heavy silty clay loam that has yellowish-brown mottles. The lower 4 inches of the subsoil is olive-gray, firm silty clay that has a few olive mottles. The substratum, at a depth of 32 inches, is olive-gray, firm clay that has a few dark-gray mottles.

A water table is at a depth of 1 foot during most of the year, and depth to bedrock is 5 feet or more.

Suffield Soils

The Suffield series extends from the area of Long Creek toward the development site and consist of deep, well-drained, moderately sloping to steep, medium-textured soils. These soils formed in marine and lacustrine sediment on terraces in the central lowland and eastern parts of the county.

A representative profile of a Suffield soil in a cultivated area has a surface layer of dark grayish-brown silt loam 6 inches thick. The upper 3 inches of the subsoil is dark yellowish-brown, friable silt loam, and the next layer is 14 inches of grayish-brown, friable silt loam. The lower 10 inches of the subsoil is olive-gray, firm silty clay. The substratum, at a depth of 33 inches, is light olive-gray, firm silty clay.

Permeability is moderate in the silty layers and slow in the clayey layers. Available water capacity is high. Depth to bedrock is 5 feet or more.

12.2 General Limitations and Methods Used to Overcome the Limitations

The geotechnical limitations of the site will be addressed by the following practices:

- Planning of the project layout.
- Engineering solutions.

The following engineering solutions will be utilized to deal with the geotechnical limitations:

Limitations of Slope: The snow dump access road has been designed to provide gradual longitudinal grades along the access road to accommodate semi-trailer type vehicle movements. The access roadway embankments will contain stable earth slopes and riprap to contain fill and excavation.

Bedrock Constraints: Four (4) test pits were excavated in the area of the proposed water quality retention facility which indicate no bedrock to a minimum depth of 8 feet as noted on the existing conditions plan.

Wetness and Potential Frost Action: These imitations will be overcome by a properly designed pavement section. The onsite soils are susceptible to frost action. Positive drainage away from areas of construction will be provided during and after construction.

Materials for Pavement Subbase and Base Aggregates: Onsite spoils are suitable for general embankment fills and access drive area subgrade, given proper moisture conditions, compaction and limited disturbance. Aggregate material used for the subbase and base gravels of the pavement section will be imported from offsite.

12.3 Wetlands

A wetland assessment of the specific site affected by this project has been conducted by Normandeau Associates. It was determined that a portion of a large wetland associated with Long Creek extends along the southern portion of the site which is regulated by the MeDEP and U.S. Army Corps of Engineers under the Natural Resource Protection Act. The wetland areas were GPS located in the field by Normandeau Associates. A letter stating Normandeau Associates' findings has been appended in Section 20.

SECTION 13

WATER SUPPLY

13.0 Overview

No additional water supply is proposed as a part of this project.

SECTION 14

WASTEWATER DISPOSAL

SECTION 14

WASTEWATER DISPOSAL

(Not Applicable to this Project)

Wastewater disposal is not anticipated as part of this project.

SECTION 15

GROUNDWATER

SECTION 15

GROUNDWATER

15.0 Overview

The proposed snow dump facility is located to the south of State Route 22 (Congress Street) and to the west of the Maine Turnpike. The site is not located on a sand and gravel aquifer as mapped by the Maine Geological Survey Department of Conservation Sand and Gravel Aquifer Map 5. An excerpt of the Sand and Gravel Aquifer Map with the project site superimposed is contained as Figure 9 in Section 1 of this application.

The proposed snow dump facility will not require the use of groundwater as a source of water supply. The proposed snow dump facility will not require on-site wastewater disposal.

15.1 Cross References

Section 13 - Water Supply
Section 14 - Municipal Wastewater Disposal

SECTION 16

BLASTING

SECTION 16

BLASTING

16.0 Overview

No blasting of rock for the snow dump project, including construction of the stormwater quality retention facility, is anticipated. Four (4) test pits have been excavated in the area of the proposed stormwater quality retention facility, indicating no rock to the proximate elevation of the pond bottom.

SECTION 17

VISUAL QUALITY

SECTION 17

VISUAL QUALITY

17.0 Existing Conditions

The project is located to the south of State Route 22 (Congress Street) and to the west of the Maine Turnpike. The project site parcel consists of approximately 88.26 acres, of which a portion is in the Industrial-Moderate Impact Zone in Portland, and the remaining portion is in the Rural Residential Zone in South Portland. The only proposed development on the South Portland side of the property is the construction of the water quality retention facility.

The existing site is approximately 25% undeveloped forest land, 66% undeveloped meadowland, and 9% impervious area associated with the existing 79,300 square foot building, pavement and gravel areas. Additional information on the existing project site conditions, including figures, is included in Section 1.

17.1 Adjacent and Nearby Land Use

The proposed snow dump site is abutted by the following land uses:

Portland:

- Turnpike Entrance (Exit 7A)
- (2) Office Buildings by Exit 7A
- Office Building (Wang, Honeywell)
- Office Building (Clark Associates Insurance)
- Nichols Manufacturing

Westbrook:

- Sysco Food Service
- Col. Westbrook Executive Park
- Self Storage Units
- (3) Residences
- Racket & Fitness Center
- (3) Office Buildings (Northland Telephone, Unum, and Marshall-Libby)

South Portland:

- Police Barracks
- (1) Office Building
- Golf Course

17.2 Summary

The proposed project will include the construction of a 35,000 s.f. paved area expansion and storm water quality retention facility and associated drainage improvements, installation of snow height marking poles and re-arrangement of chain link fencing. The proposed snow dump fits well with abutting land uses and can be considered as a similar land use.

Naturally vegetated buffers will be preserved along the drainage courses traversing the site which will protect the wetland vegetation, mitigate slope impacts, protect water quality, and provide wildlife corridors across the site.

SECTION 18

BUFFERS

SECTION 18

BUFFERS

18.0 Overview

The existing development is well buffered from abutting properties, Congress Street and the Maine Turnpike due to a topographic ridge, existing wooded areas and it's distance from each. Existing buffering will be protected during construction activity at the snow dump project site.

SECTION 19

UNUSUAL NATURAL AREAS

SECTION 19

UNUSUAL NATURAL AREAS

19.0 Summary

No unusual areas are known to exist on the project site.

The Maine Natural Areas Program was contacted and informed of the proposed snow dump. Normandeau Associates sought to obtain information on locations of rare, endangered or registered critical areas which the project may impact. A letter dated June 22, 2000 was received from the Maine Department of Conservation which states that they are not aware of any potential unusual areas that may be impacted. A list of rare plants in the Portland area was provided, although none are known to exist on the site. This letter is attached at the end of this section.

A representative from Normandeau Associates has walked the site of the proposed snow dump and delineated areas of wetlands which are regulated by the MeDEP and USACOE. The letter stating these findings is attached to Section 20.

19.1 Attachment

- Letter of response from Maine Natural Areas Program to Normandeau Associates dated June 22, 2000.

19.2 Related Sections

- Section 12 – Soils
- Section 20 – Wildlife and Fisheries

STATE OF MAINE
DEPARTMENT OF CONSERVATION
159 HOSPITAL STREET
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0093

ANGUS S. KING, JR.
GOVERNOR

RONALD B. LOVAGLIO
COMMISSIONER

June 22, 2000

Jennifer West
Normandeau Associates
251 Main Street
Yarmouth, ME 04096

Re: Rare and exemplary botanical features, Snow Disposal Site, Portland

Dear Ms. West:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request of June 21, 2000 for information on the presence of rare or unique botanical features documented from the vicinity of the project site in the town of Portland, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features

NATURAL RESOURCES INFORMATION AND MAPPING CENTER
ROBERT G. MARVINNEY, DIRECTOR AND STATE GEOLOGIST

PHONE: (207) 287-8044
FAX: (207) 287-8040
TTY: (207) 287-2213

with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of $75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for $75.00 for our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

Emily C. Pinkham

Emily C. Pinkham
Information Specialist

Enclosures

Rare o' 'xemplary Botanical Features in the Proje('icinity

Documented within a four mile radius of the Snow Disposal Site, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
PRUNUS MARITIMA BEACH PLUM	1933	S1	G4	E		Sandy soil along or near the coast.
RANUNCULUS AMBIGENS WATER-PLANTAIN SPEARWORT	1862	SH	G4	PE		Sloughs, ditches, and muddy swamps.
SELAGINELLA APODA CREEPING SPIKE-MOSS	1924	S1	G5	E		Meadows, lawns, and streambanks.

Rare o· xemplary Botanical Features in the Proje· icinity

Documented within a four mile radius of the Snow Disposal Site, Portland.

Scientific Name Common Name	Last Seen	State Rarity	Global Rarity	State Legal Status	Federal Legal Status	Habitat Description
ADLUMIA FUNGOSA ALLEGHENY VINE	1860	S1	G4	T		Wet or recently burned woods, rocky wooded slopes.
ALLIUM TRICOCCUM WILD LEEK	1988	S2	G5	SC		Rich hardwood forests, usually alluvial.
ARABIS MISSOURIENSIS MISSOURI ROCKCRESS	1905	S1	G4?Q	T		Circumneutral bluffs, ledges or rocky woods.
ASPLENIUM PLATYNEURON EBONY SPLEENWORT	1910	S2	G5	SC		Rich partly forested slopes, rocky ledges, and dry, circumneutral outcrops.
CAREX POLYMORPHA VARIABLE SEDGE	1911	S1	G3	E		In Maine, habitat is between downslope seeps (with horsetails and wetland sedges) and upslope mixed oak/huckleberry forest. Preferred soil type is Deerfield Loamy Sand. All Maine occurrences are from coastal towns where climate is moderated by the ocean.
CAREX STERILIS DIOECIOUS SEDGE	1936	S1	G4	T		Wet calcareous soils.
CASTANEA DENTATA AMERICAN CHESTNUT	1907	S2S3	G4	SC		Dry gravelly or rocky, mostly acidic soil.
PHEGOPTERIS HEXAGONOPTERA BROAD BEECH FERN	1872	S2	G5	SC		Rich, often rocky, hardwood forests.
POTAMOGETON VASEYI VASEY'S PONDWEED	1901	S1	G4	T		Quiet muddy or calcareous waters.

STATE RARITY RANKS

S1 Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 Rare in Maine (on the order of 20-100 occurrences).

S4 Apparently secure in Maine.

S5 Demonstrably secure in Maine.

SH Occurred historically in Maine, and could be rediscovered; not known to have been extirpated.

SU Possibly in peril in Maine, but status uncertain; need more information.

SX Apparently extirpated in Maine (historically occurring species for which habitat no longer exists in Maine).

Note: **State Ranks** determined by the Maine Natural Areas Program.

GLOBAL RARITY RANKS

G1 Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

G2 Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

G3 Globally rare (on the order of 20-100 occurrences).

G4 Apparently secure globally.

G5 Demonstrably secure globally.

Note: **Global Ranks** are determined by The Nature Conservancy.
T indicates subspecies rank, **Q** indicates questionable rank, **HYB** indicates hybrid species.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's endangered and threatened plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

E ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future, or federally listed as Endangered.

T THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

SC SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.

PE POSSIBLY EXTIRPATED; Not known to currently exist in Maine; not field-verified (or documented) in Maine over the past 20 years.

FEDERAL STATUS

LE Listed as Endangered at the national level.

LT Listed as Threatened at the national level.

Please note that species names follow Flora of Maine: A Manual for Identification of Native and Naturalized Vascular Plants of Maine, Arthur Haines and Thomas F. Vining, 1998, V.F. Thomas Co., P.O. Box 281, Bar Harbor, Maine 04069-0281.

Where entries appear as binomials, all representatives (subspecies and varieties) of the species are rare in Maine; where names appear as trinomials, only that particular variety or subspecies is rare in Maine, not the species as a whole.

Visit our web site for more information on rare, threatened and endangered species!
http://www.state.me.us/doc/nrimc/mnap/factsheets/mnapfact.htm

SECTION 20

WILDLIFE AND FISHERIES HABITAT

SECTION 20

WILDLIFE AND FISHERIES HABITAT

20.0 Summary

Normandeau Associates was retained to perform the wetland review for the area affected by the snow dump project. The letter reporting their findings is attached to this section. In general, a large wetland associated with Long Creek extends along the southern portion of the site. These wetlands and Long Creek are regulated by the MeDEP and USACOE.

The Maine Department of Inland Fisheries and Wildlife indicated that there are no known significant wildlife habitats in the area and that Long Creek contains no significant cold water or warm water fisheries. The Maine Department of Inland Fisheries and Wildlife indicated that a 100-foot natural buffer should be adopted between the proposed development and Long Creek. The proposed development is located approximately 500 feet from Long Creed; therefore, the 100-foot natural buffer requirement is met.

The U.S. Department of the Interior responded that there were no federally listed or proposed threatened and endangered species known to occur in the area. The Natural Areas Program database indicated there were no known rare, threatened, or endangered plant species but provided a file of features known to exist in Portland. None were observed during field work on the site.

20.1 Attachments

Attached to this section are the following:

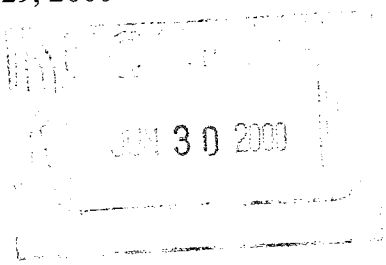
- Letter of Normandeau Associates findings to DeLuca-Hoffman Associates, Inc. dated June 29, 2000.
- Letters of response from Maine Department of Inland Fisheries and Wildlife, dated June 27, 2000 and June 27, 2000.
- Letter of response from the U.S. Department of the Interior, dated July 27, 2000.

19.2 Related Sections

- Section 12 – Soils
- Section 19 – Unusual Natural Areas

NORMANDEAU ASSOCIATES, INC.
251 Main Street
Yarmouth, ME 04096
(207) 846-3598
(207) 846-6527 (Fax)

June 29, 2000



Dwight Anderson
DeLuca Hoffman Associates Inc.
778 Main Street, Suite 8
South Portland, ME 04106

RE: Portland Snow Disposal Site, Portland, ME
NAI Project #18752.000

Dear Dwight:

Normandeau Associates, Inc. (NAI) has completed a review for the presence of wetlands of the area proposed for snow disposal for the City of Portland. The following is a summary of the extent of wetlands and agency jurisdiction of wetlands at the site.

WETLAND DELINEATION

NAI conducted a review of a ±22 acre site adjacent to the former compost facility located south of Outer Congress Street. The site review included a 300-foot wide area from either the edge of pavement or existing work areas adjacent to the building. The review did not include the area north of the building.

Wetland boundaries were delineated according to the three parameter (soils, vegetation, and hydrology) approach of the *1987 Corps of Engineers Wetlands Delineation Manual*. The Maine Department of Environmental Protection and US Army Corps of Engineers both accept this methodology. Site-specific information about each parameter observed at the site is discussed in further detail below for the wetland areas identified within the project limits. A copy of data collected at paired data plots is also provided. The wetland boundary was delineated with consecutively numbered flags and located by GPS. The GPS file was post-processed to provide sub-meter accuracy. An electronic file of the wetland data points was provided to DeLuca Hoffman for insertion onto the project base map. The following is an overview of the delineated wetlands.

Wetland 1

A large wetland associated with Long Creek extends along the southern portion of the project site. The wetland includes areas classified according to the US Fish and Wildlife Service (USFWS) classification system[1] as Palustrine Emergent Persistent (PEM1); Palustrine Scrub-Shrub Deciduous (PSS1); and Palustrine Forested Deciduous (PFO1) wetland. The southwestern portion of the site includes narrow wetland swales, extending north from Long Creek to wet

[1] Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS–79/31, US Fish and Wildlife Service, Washington, DC.

meadows associated with perched hydrology due to fine textured soils. The swales and meadows are dominated by shrubs with scattered emergents (PSS1/PEM1) including: speckled alder (*Alnus incana*), American elm (*Ulmus americana*), willow (*Salix* sp.), meadow sweet (*Spirea latifolia*), pointed broom sedge (*Carex scoparia*), woolgrass (*Scirpus cyperinus)*, sensitive fern (*Onoclea sensibilis*) and northern bayberry (*Myrica pensylvanica*). The vegetation within the southeastern half of the site has recently been cut over as it is within the runway approach of the Portland Jetport. The wetland vegetation within this area includes: red maple (*Acer rubrum*), soft rush (*Juncus effusus*), meadow sweet, wool grass, rough-stemmed goldenrod (*Solidago rugosa*), fox sedge (*Carex vulpinoide*a), pointed broom sedge, and shallow sedge (*Carex lurida*).

The USFWS classifies the water regime within the site as saturated, "the substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present."[2] Hydrologic evidence included water-stained areas and ponded water. It is anticipated that the water table is perched over firm silt loam soils.

The Soil Conservation Service's *Cumberland County Soil Survey* mapped several inclusions of poorly drained Swanton fine sandy loam in the southwestern half of the site within moderately well-drained and well-drained map units. Poorly drained Scantic silt loam is the principal map unit in the southeastern half of the site. Field observations confirmed the hydric soil mapping as well as identified additional areas of poorly drained soils not identified by the Soil Survey due to limitations of scale.

Wetland 2

Wetland 2 is located east of the building in an area of vegetation management within the runway approach zone. The wetland is classified as Palustrine Scrub-Shrub Deciduous (PSS1). The vegetation within the wetland includes: willow, alder, reed canary grass (*Phalaris arundinacea*), redtop (*Agrostis alba*), meadow sweet, wild raisin (*Viburnum cassinoides*), soft rush, and pointed broom sedge. The wetland extends beyond the site limits to the east.

The water regime is saturated, with saturation at or near the surface early in the year. Evidence of hydrology included wetland drainage patterns.

The soils are mapped by the *Cumberland County Soil Survey* as poorly drained Scantic silt loam. Field observations confirmed the soil series.

REGULATORY ASSESSMENT

Wetlands at the site are regulated by the Maine Department of Environmental Protection

[2] See note 1 above.

(MDEP) under the provisions of the Natural Resources Protection Act (NRPA–38 M.R.S.A. § 480A–Z) and associated Wetland Protection Rules (Chapter 310, amended September 1, 1996). Various wetland characteristics, as well as the areal extent of any impacts, are taken into account in determining the level or "Tier" of permitting required under the NRPA. Projects impacting less than 4,300 sq. ft. of wetland are exempt from the NRPA, provided impacts do not occur within a municipal shoreland zone or another protected natural resource and the project complies with the Erosion and Sedimentation Control law (38 M.R.S.A. § 420–C).

Alterations to wetlands with characteristics exemplifying "freshwater wetlands of special significance" (Chapter 310, Sec 4(A)) are usually not eligible for the exemption or Tier 1 or Tier 2 permitting and require an individual permit (Tier 3, Chapter 310, Sec. 4(B)). Below is a summary of wetland characteristics at the site with respect to a determination as to whether the wetland is considered "freshwater wetlands of special significance."

The wetlands are not one of the critically imperiled (S1) or imperiled (S2) wetland communities as identified by the Natural Areas Program (Chapter 310, Sec. 3 (F,L)). The wetlands also:

- are not a peatland (Chapter 310, Sec. 3(P)),
- are not within 250 feet of a coastal wetland (38 M.R.S.A §480–B2),
- are not within 250 feet of a great pond (38 M.R.S.A §480–B5), and
- do not contain 20,000 square feet of open water or aquatic or emergent vegetation (Chapter 310 Sec. 3(G)).

Wetlands within 25 feet of Long Creek are considered "wetlands of special significance."

MDIFW reviewed their files for "significant wildlife habitat" (38 M.R.S.A § 480–B10) in the project area and found "no identified wildlife habitats associated with this site" (response attached). In addition, NAI reviewed site conditions and available references that indicate the wetlands at the site do not contain "significant wildlife habitat" based on the vegetation management within the runway approach zone and lack of standing water for waterfowl and wading bird habitat. A review of available resource information found no essential wildlife habitats have been identified within the project area.[3]

The southern edge of the site borders the 100-year floodplain according to the August 17, 1981 Flood Insurance Rate Map (South Portland Community Panel #230053 0004C). Wetlands within the floodplain would be considered "Wetlands of Special Significance."

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[3] MDIFW, 1988. The Identification and Management of Significant Fish and Wildlife Resources in Southern Coastal Maine, Augusta, ME; and MDIFW, 2000. Atlas of Essential Wildlife Habitats for Maine's Endangered and Threatened Species, Augusta, ME

Based on the characteristics summarized above, the wetlands within the site do not have characteristics of "Wetlands of Special Significance," although "wetlands of special significance" associated with Long Creek border the site. Therefore, proposed impacts of 4,300 to 15,000 sq. ft. of fill are eligible for a Tier 1 permit; impacts between 15,000 sq. ft. and one acre are eligible for Tier 2; and impacts exceeding one acre would require an individual, Tier 3, permit.

Wetlands at the site are also regulated by the US Army Corps of Engineers (ACOE) under the provisions of Section 404 of the Clean Water Act. Impacts to wetlands resulting from placement of fill are addressed by the ACOE with a Programmatic General Permit for the State of Maine. Fill impacts to inland wetlands are broken down into three permit categories based on the following areal thresholds: Category I – less than 15,000 sq. ft.; Category II – 15,000 sq. ft. to 3 acres, and Category III – either greater than three acres of impact or conditions of Category II and III cannot by met.

Fill impacts to wetlands at the site totaling less than one acre in extent by a proposed project would be eligible for submittal for a joint application to the MDEP and the ACOE. Impacts exceeding this threshold would require separate permit applications.

If you have questions or comments regarding the above information please contact me at your earliest convenience. We can provide a cost estimate for permitting assistance, if requested.

Sincerely,

NORMANDEAU ASSOCIATES, INC.

Jennifer West
Certified Soil Scientist ME #215
Professional Wetland Scientist, SWS# 1103

Enclosure

DELINEATOR(S): J West DATE: 6.20.00 PROJECT TITLE Portland Snow Disposal TRANSECT: 1 PLOT: Wet

VEGETATION	Stratum and Species (Dominants Only)	Dominance Ratio	Percent Dominance	NWI STATUS
	0. Trees, saplings, shrubs - recently cut area			
	Herbaceous			
	Car vul - Carex vulpinodea	20 /100	20	Obl
	Car sco - Carex scoparia	20	20	FacW
	Spi lat - Spirea latifolia	10	10	
	Jun eff	10	10	
	Potentilla complex (FacU-)	10	10	
	Agrostis alba	20	20	FacW
	Juncus tenuis (Fac-)	10	10	
	Festuca rubra FacU	10	10	

NOTE 1: Use asterisk * to indicate plants with observed adaptations to wetland hydrology. Plants recorded with asterisks should be considered as "other hydrophytes" in the tally below.
2: Species with NA or NI status are reported, but are not calculated in the tally below.

OBL	FACW	FAC	* OTHER HYDROPHYTES	FAC*	FACU	UPL
1	2					

Hydrophytes SUBTOTAL: 3 NON-hydrophytes SUBTOTAL: 0

100 x Subtotal Hydrophytes / Subtotal Hydrophytes + Subtotal Non-hydrophytes = PERCENT HYDROPHYTES = 100 %

HYDROLOGY

1. Hydrology is often the most difficult feature to observe.
2. Interpretation must consider the validity of the observation in light of the season, recent weather conditions, watershed alterations, etc.
3. Interpretation of hydrology may require repeated observations over more than one season.

RECORDED DATA

Stream, lake or tidal gage
Aerial Photograph
Other

NO RECORDED DATA ✓

OBSERVATIONS:

Depth to Free Water >16" - The rainfall has been low the last month.
Depth to Saturation (incl. capillary fringe): >16"
Describe Altered Hydrology: None

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☒ Drainage Patterns w/in Wetland ☐ OTHER (explain)

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES Color, Abundance, Size, Contrast	USDA Texture; and nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.
0–10	A	10YR3/1	mottling begins at 8".	Silt loam
10 –	Bg	5YR3/1	10YR R 3/6, 20% fine	Silt loam to silty clay loam.
EOE 16"				

HYDRIC SOIL INDICATOR(S) III. I. REFERENCE: FIHSNE. 1998

Hydric morphology present including dark A horizon and low chroma B horizon with redoximorphic features (mottles).

OPTIONAL SOIL DATA: REFERENCES:

TAXONOMIC SUBGROUP:

SOIL DRAINAGE CLASS: poorly

DEPTH TO ACTIVE WATER TABLE: 6 to 8"

NTCHS HYDRIC SOIL CRITERION:

CONCLUSIONS	Yes	No
Greater than 50% Hydrophytes?	☑	☐
Hydric Soils Criterion Met?	☑	☐
Wetland Hydrology Met?	☑	☐

IS THIS DATAPOINT WITHIN A WETLAND?	Yes	No
	☑	☐

REMARKS: Fine textured soils with slow percolation rates create perched wetland conditions particularly in the spring.

PROJECT TITLE Portland Snow Disposal TRANSECT: 1 PLOT: Wet

DELINEATOR(S): JVest DATE: 6·20·00 PROJECT TITLE Portland Snow Disposal TRANSECT: 1 PLOT: Up

VEGETATION	Stratum and Species (Dominants Only)	Dominance Ratio	Percent Dominance	NWI STATUS
Trees/Saplings - None recently cutover				
Shrubs				
Pru. VIR	Prunus virginiana	10/10	100	FacU
Herbaceous				
Solidago rugosa		10 /130		
Carex scoparia		20	16	
Spirea latifolia		20	16	
Euthamyia graminifolia		25	19	Fac
Poa pratensis		45	34	FacU
Solidago sp.		10		

NOTE 1: Use asterisk * to indicate plants with observed adaptations to wetland hydrology. Plants recorded with asterisks should be considered as "other hydrophytes" in the tally below.
2: Species with NA or NI status are reported, but are not calculated in the tally below.

OBL	FACW	FAC	* OTHER HYDROPHYTES	FAC*	FACU	UPL
		1			2	

Hydrophytes SUBTOTAL: 1 NON-hydrophytes SUBTOTAL: 2

$$\frac{100 \times \text{Subtotal Hydrophytes}}{\text{Subtotal Hydrophytes + Subtotal Non-hydrophytes}} = \text{PERCENT HYDROPHYTES} = 33\%$$

HYDROLOGY

1. Hydrology is often the most difficult feature to observe.
2. Interpretation must consider the validity of the observation in light of the season, recent weather conditions, watershed alterations, etc.
3. Interpretation of hydrology may require repeated observations over more than one season.

RECORDED DATA

Stream, lake or tidal gage ________

Aerial Photograph ________

Other ________

NO RECORDED DATA ✓

OBSERVATIONS:

Depth to Free Water: >16"

Depth to Saturation (incl. capillary fringe): >16"

Describe Altered Hydrology: None

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns w/in Wetland ☐ OTHER (explain)

None

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES Color, Abundance, Size, Contrast	USDA Texture; and nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.
0-8	A	10YR 3/3		Silt loam ↓
8-12	Bw	10YR 3/4		
12-		10YR 4/4	10YR 3/6 5%	
EOB 16"				

HYDRIC SOIL INDICATOR(S): Lacks, hydric morphology.

REFERENCE:

OPTIONAL SOIL DATA:

REFERENCES:

TAXONOMIC SUBGROUP:

SOIL DRAINAGE CLASS: SWP

DEPTH TO ACTIVE WATER TABLE: 12"

NTCHS HYDRIC SOIL CRITERION:

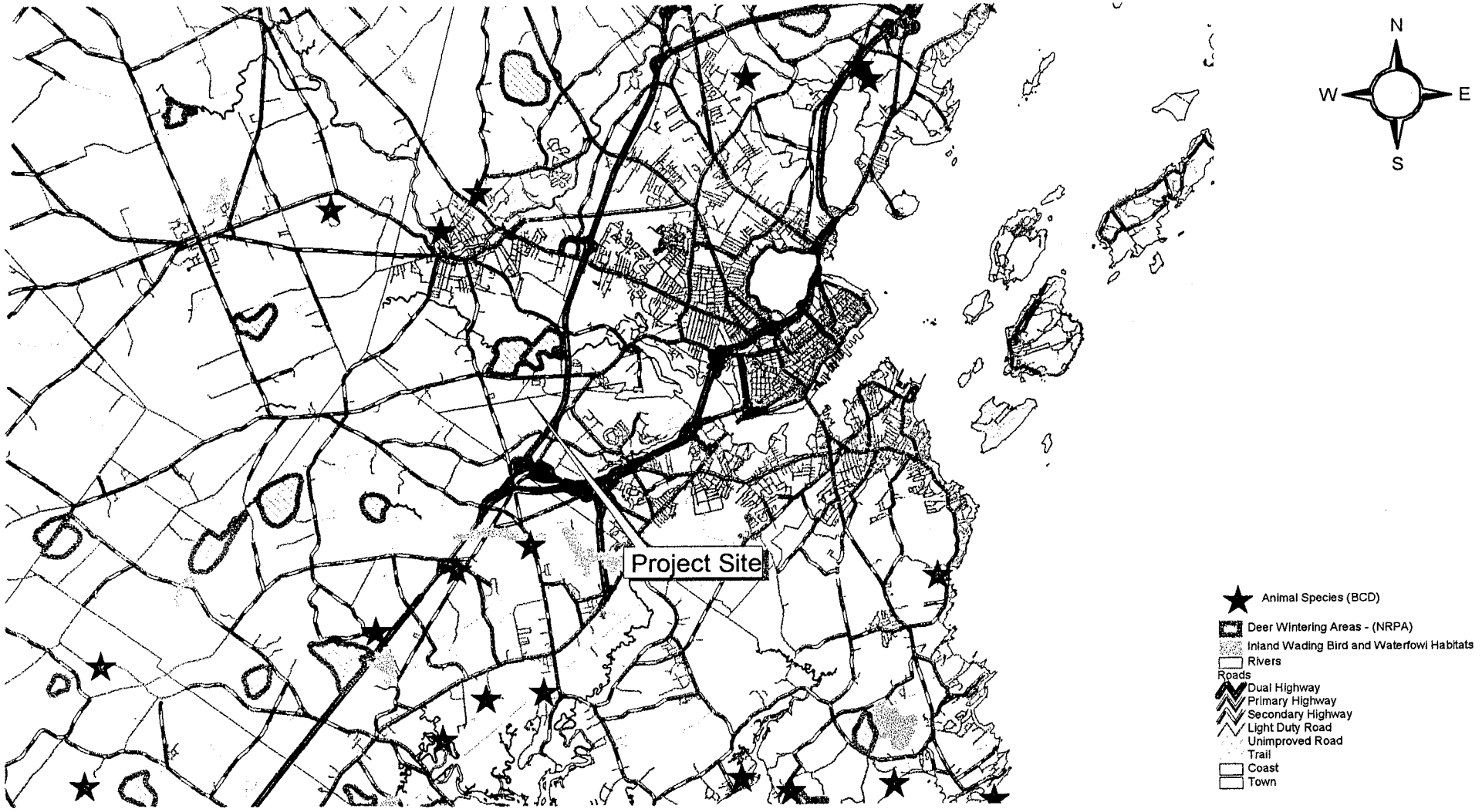
CONCLUSIONS	Yes	No		Yes	No
Greater than 50% Hydrophytes?	☐	☑	IS THIS DATAPOINT WITHIN A WETLAND?	☐	☑
ric Soils Criterion Met?	☐	☑	REMARKS:		
vvetland Hydrology Met?	☐	☑			

PROJECT TITLE: Portland Snow Disposal site TRANSECT: 1 PLOT: Up

IF&W Report - Portland Snow Disposal

Request for Information - Jennifer West

06/27/2000



Department of Inland Fisheries and Wildlife

(207) 547-5318

1 0 1 2 Miles

Biologist Notes

No identified wildlife habitats associated with this site.

MDIFW

MDIFW
358 Shaker Rd.
Gray, Maine
04038

Phone: 657-2345 ext.111
FAX: 207-657-2960
email: james.pellerin@state.me.us

Tuesday, June 27, 2000

Jennifer West
Normandeau Associates, Inc.
251 Main Street
Yarmouth, Maine 04096

RE: Portland Snow Disposal
NAI Project #18752.000

Dear Jennifer West,

This letter is in response to your request for fishery resource information for the proposed project. The Long Creek watershed has been heavily impacted by existing development and there are no significant coldwater or warmwater fisheries; however, it does support several species of nongame fish. Keep in mind, MDIFW typically requests a 100 foot undisturbed buffer along any stream. If you have any additional questions or concerns then feel free to contact us.

Sincerely,

James Pellerin
Fishery Biologist

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Maine Ecological Services Field Office
1033 South Main Street
Old Town, ME 04468-2023
(207) 827-5938

To: Jennifer West
Soil Scientist
Normandeau Associates, Inc.
251 Main Street
Yarmouth, ME 04096

July 27, 2000

Thank you for your letter requesting information or recommendations from the U.S. Fish and Wildlife Service. This form provides the Service's response pursuant to Section 7 of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1543), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667d).

Re: Portland Snow Disposal/ Portland/ Cumberland
Project Name/Location/County

June 21, 2000
Date of Incoming Letter

00-0174
Log Number

Based on the information currently available to us, no federally-listed species under the jurisdiction of the Service are known to occur in the project area, with the exception of occasional, transient bald eagles (*Haliaeetus leucocephalus*). Accordingly, no further action is required under Section 7 of the ESA, unless: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

A list of federally-listed species in Maine is enclosed for your information. Please contact the Maine Department of Inland Fisheries and Wildlife and Maine Natural Areas Program for an up to date account of state-listed species in the project area.

If you have any questions, please call Kim Tripp at (207) 827-5938.

Kim Tripp 7-27-00
Biologist Date

FEDERALLY LISTED, PROPOSED, AND SPECIES OF FEDERAL CONCERN IN MAINE (revised May 22, 2000)

Common Name	Scientific Name	Status
FISHES:		
Atlantic salmon	Salmo salar	P
Shortnose Sturgeon	Acipenser brevirostrum	E
REPTILES:		
Atlantic ridley turtle*	Lepidochelys kempii	E
Leatherback turtle*	Dermochelys coriacea	E
Loggerhead turtle*	Caretta caretta	T
Blanding's turtle	Emydoidea blandingii	FSC
BIRDS:		
American Peregrine Falcon	Falco peregrinus anatum	D
Bald Eagle	Haliaeetus leucocephalus	T
Bicknell's Thrush	Catharus minimus bicknelli	FSC
Black Tern	Chlidonias niger	FSC
Harlequin Duck	Histrionicus histrionicus	FSC
Loggerhead Shrike	Lanius ludovicianus	FSC
Northern Goshawk	Accipter gentilis	FSC
Piping Plover	Charadrius melodus	T
Roseate Tern	Sterna dougallii dougallii	E
MAMMALS:		
Gray Wolf	Canis lupus	E
Eastern Cougar	Felis concolor couguar	E
Blue Whale*	Balaenoptera musculus	E
Finback Whale*	Balaenoptera physalus	E
Humpback Whale*	Megaptera novaeangliae	E
Right Whale*	Eubalaena spp. (All species)	E
Sei Whale*	Balaenoptera borealis	E
Sperm Whale*	Physeter catodon	E
Eastern Small-Footed Bat	Myotis leibii	FSC
New England Cottontail Rabbit	Sylvilagus transitionalis	FSC
Penobscot Meadow Vole	Microtus pennsylbanicus shattaucki	FSC
Northern Bog Lemming	Synaptomys borealis	FSC
Canadian Lynx	Felis lynx canadensis	T
INVERTEBRATES:		
Brook Floater	Alasmidonta varicosa	FSC
Yellow Lampmussel	Lampsilis cariosa	FSC
Tomah Mayfly	Siphlonisca aerodromia	FSC

Common Name	Scientific Name	Status
Midget Snaketail Dragonfly	Ophiogomphus howei	FSC
Clayton's Copper Butterfly	Lycaena dorcas claytoni	FSC
Ceromatic Noctuid Moth	Pyreffera ceromatica	FSC
Regal Fritillary Butterfly	Speyeria idalia	FSC
Chestnut Clearwing Moth	Synanthedon castancae	FSC
Lateral Bluet Damselfly	Enallagma laterale	FSC
PLANTS:		
Small Whorled Pogonia	Isotria medeoloides	T
Furbish's Lousewort	Pedicularis furbishiae	E
Eastern Prairie Fringed Orchid	Plantanthera leucopehaea	T
Orono Sedge	Carex oronensis	FSC
Variable Sedge	Carex polymorpha	FSC
Hawkweed	Hieracium robinsonii	FSC
Blazingstar	Liatris borealis	FSC
Square-stemmed Monkeyflower	Mimulus rigens colpophilus	FSC
Pondweed	Potamogeton confervoides	FSC
Boott's Rattlesnake Root	Prenanthes boottii	FSC
Long's Bulrush	Scirpus longii	FSC
Gaspe Peninsula Arrow-grass	Triglochin gaspense	FSC

Key:

Status	Definition
E	Endangered: A taxon "in danger of extinction throughout all or a significant portion of its range".
T	Threatened: A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
P	Proposed: A taxon proposed for official listing as endangered or threatened.
FSC	Federal species of concern: Species which may or may not be listed in the future (formerly C2 candidate species, or species under consideration for listing for which there is insufficient information to support listing).
D	Delisted species, requiring 5 years of population monitoring.
*	Principal responsibility for these species is vested with the National Marine Fisheries Service

SECTION 21

HISTORIC SITES

SECTION 21

HISTORIC SITES

21.0 Overview

The Maine Historic Preservation Commission was contacted by Normandeau Associates and asked to determine if any properties of historic, architectural or archaeological significance, as defined by the Natural Historic Preservation Act of 1966, are at the proposed site. The Maine Historic Preservation Commission stated that there are no properties in the project area of any archaeological significance.

20.1 Attachment

- Response letter from the Maine Historic Preservation Commission dated June 29, 2000.

MAINE HISTORIC PRESERVATION COMMISSION
55 CAPITOL STREET
65 STATE HOUSE STATION
AUGUSTA, MAINE
04333

ANGUS S. KING, JR.
GOVERNOR

EARLE G. SHETTLEWORTH, JR.
DIRECTOR

June 29, 2000

Jennifer West
Normandeau Associates, Inc.
251 Main Street
Yarmouth, Maine 04096

Project: MHPC #975 - Portland Snow Disposal (NAI#18752.000)
Location: Portland, Maine

Dear Ms. West:

In response to your recent request, I have reviewed the information received June 22, 2000 to initiate consultation on the above referenced project.

Based upon the proposed scope of work for this project and the project location, no additional identification efforts are warranted at this time as there is adequate documentation for a finding on historic properties. There are no known historic properties within the area of potential effects. Therefore, I find no historic properties [historic, architectural or archaeological] affected by this project.

Please contact Dana R. Vaillancourt of my staff if you require further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.
State Historic Preservation Officer

EGS/drv

PHONE: (207) 287-2132

FAX: (207) 287-2335

SECTION 22

STORMWATER MANAGEMENT

SECTION 22

STORMWATER MANAGEMENT

22.0 Introduction

The City of Portland is proposing to construct a municipal snow dump at the location of the former wastewater treatment plant compost facility on Outer Congress Street in Portland. Figure 1 attached to Section 1 is a location map including the parcel boundary. The existing facility has not been used for sludge composting since the late 1980's and is currently used as a storage building for aggregate materials, etc. by the Portland Water District and the City of Portland Public Works Department.

The overall objective of this project is to construct a large municipal snow dumping site on an 88.26-acre parcel owned by the City of Portland off Congress Street. The City has recently lost rights to other snow dumping sites in the City; therefore, a new snow dumping site is required. A USGS topographic map is attached to Section 1 as Figure 2.

Existing Conditions and Development History

The existing site contains a 79,300 sq. ft. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 sq. ft. (not including the gravel yard areas noted below). This facility was constructed by the Portland Water District in 1979 to serve as a composting facility for sludge produced from the wastewater treatment plant in Portland. This facility is currently used as a storage building for aggregate materials, etc. by the Portland Water District and City of Portland Public Works Department

In the recent past, the City has developed a gravel yard area on the west side of the former compost facility for the storage of aggregate stockpiles, appurtenance structures, pipe, and granite curb. This area of non-revegetated surface is 1.44 acres in size.

In addition, a gravel lay down area was also recently constructed on the south side of the former compost facility, which was used by White Brothers during the construction of the Portland International Jetport access roads. This yard area is no longer being used and has been leveled off in preparation of revegetation. The gravel lay down area is approximately 700' long by 200' wide (3.33 acres) and is proposed to be used as a new municipal snow dump area by the City of Portland.

The existing conditions of the site have been considered as they were in 1970, i.e., without the compost facility development. The existing snow dump development site is therefore characterized by woodland, wetland and areas of field. The site drains southerly from a topographic ridge to the southerly portion of the property to Long Creek which is tributary to Clark Pond and the Fore River. Highest elevations on the site (elevation 120) are found along the ridge to the north and lowest elevations on the site (elevation 40) are found to the southeast at Long Creek. The site slopes southerly with slopes ranging from 8 to 15 percent along the ridge and 2 to 5 percent along wetland areas.

22.1 Methodology

The following methodologies were incorporated into the pre and postdevelopment drainage analysis:

- SCS TR-20 via the HydroCAD Stormwater Modeling System software package
- Rational Method for culvert and storm drain sizing

These methodologies are accepted by MeDEP and have been used extensively as part of stormwater management reports prepared by DeLuca-Hoffman Associates, Inc. for other Site Location of Development projects in the State of Maine.

22.2 Resources

The following resources have been utilized as part of the pre and postdevelopment drainage analysis:

- USGS Topographic Map, Portland, ME, Portland West Quadrangle
- 2-foot contour maps of the project site based on aerial survey by Aerial Survey
- Wetland Delineation information by Normandeau Associates
- Medium Intensity Soil Survey conducted by the SCS
- Rainfall data by USDA SCS

22.3 Predevelopment Watershed Analysis

The existing condition of the snow dump development site prior to construction of the compost facility has been considered as the predevelopment condition for the stormwater analysis. Predevelopment stormwater analysis has been completed only for areas where site development is proposed to be undertaken as part of the snow dump project. Attachment A includes the Predevelopment Watershed Plan for the snow dump project.

The medium intensity soil survey revealed a variety of soils in the Hydrologic Soils Groups B, C and D. The 25-year storm, 24-hour precipitation for the Portland (Cumberland County) area is 5.5 inches, and the 2-year storm is 3.0 inches. Ten different runoff curve numbers were used for these calculations: 98 for impervious areas; 86, 91 and 94 for gravel areas Hydrologic Soil Groups (HSG) B, C and D; 58, 71 and 78 for field areas HSG B, C and D; and 55, 70 and 77 for forest areas HSG B, C and D. Runoff curve numbers were obtained from the 1995 version of Stormwater Management of Maine: Best Management Practices – Appendix D-13.

Using SCS TR-20 methodologies and the respective sources of information, hydrologic parameters (i.e., times of concentration, runoff curve number, etc.) have been developed for the various subcatchments of the project area. Hydrologic parameters for each subcatchment are summarized in the following table.

Area tributary to Long Creek:

Subcatchment	Location/Description	Area (acres)	CN	Tc (min)
1	Project Site	33.80	72	47.6

22.4 Predevelopment Flows

One (1) point of analysis has been established within the watershed for comparison of the routed predevelopment and postdevelopment flows. This point of analysis is located along Long Creek approximately 900 feet south of the existing storage building.

Formal stormwater routing has been performed for predevelopment conditions based upon the above-mentioned methodologies.

Predevelopment peak flows have been calculated based on storm events for the 2 and 25-year storm event return frequencies and are presented as follows:

Storm Return Frequency	Rainfall (inches)	Predevelopment Conditions Peak Flows (cfs) - POA 1
2 year	3.0	12.98
25 year	5.5	45.77

A copy of the detailed hydrologic analysis and calculations including a schematic diagram of the watershed subcatchment for the predevelopment conditions is included within Attachment C.

22.5 Postdevelopment Watershed Analysis

The postdevelopment condition for the stormwater analysis has been considered for the development conditions of the proposed snow dump project including the existing former sludge compost facility building and associated paving and the proposed 0.80 acres of paving and construction of a stormwater quality retention facility associated with construction of the snow dump facility. Attachment B includes the Postdevelopment Watershed Plan for the snow dump project. Based upon information previously presented in Section 22.3 – Predevelopment Watershed Analysis, SCS TR-20 methodologies and the respective sources of information, hydrologic parameters (i.e., times of concentration, runoff curve number, etc.) have been developed for the various subcatchments of the project area. Hydrologic parameters for each subcatchment are summarized in the following tables:

Upper Watershed Area Tributary to Long Creek:

Subcatchment	Location/Description	Areas (acres)	CN	Tc (min)
1	Northwest Portion of Property	17.47	71	47.6

Area of Development Tributary to Proposed Water Quality Retention Facility:

Subcatchment	Location/Description	Areas (acres)	CN	Tc (min)
2	Area to Pond	16.33	81	18.2

22.6 Postdevelopment Flows

Based upon the previously described methodologies, formal stormwater routing has been performed for the snow dump postdevelopment watershed conditions. The point of analysis established as part of the predevelopment analysis has been maintained for comparison of peak flows. The following table presents undetained postdevelopment peak flows at the point of analysis for the 2 and 25-year storm event return frequencies.

Storm Return Frequency	Rainfall (inches)	Predevelopment Conditions Peak Flows (cfs) - POA 1
2 year	3.0	19.83
25 year	5.5	57.70

As outlined below, the point of analysis shows increased postdevelopment peak flows requiring stormwater management as described below. A copy of the detailed hydrologic analysis and calculations including a schematic diagram of the watershed subcatchment for the postdevelopment conditions is included in Attachment D.

22.7 Stormwater Management

Peak Flows

Comparison of pre and postdevelopment conditions indicates that peak flows at the point of analysis increase for the 2 and 25-year storm events. The following table presents the predevelopment and undetained postdevelopment peak flows at the point of analysis:

Storm Return Frequency	Predevelopment Conditions – Peak Flows (cfs) – POA 1	Postdevelopment Conditions – Peak Flows (cfs) – POA 1
2 year	12.98	19.83
25 year	45.77	57.70

The City of Portland proposes to construct one (1) water quality detention/retention facility to regulate stormwater flows leaving the snow dump development areas. The pond has been designed to retain postdevelopment stormwater flows adequately to offset increased flows from areas which will not receive stormwater treatment and maintain postdevelopment stormwater flow at the point of analysis at or below predevelopment stormwater flows for the 2 and 25-year storm events.

The following table presents the predevelopment and detained postdevelopment peak flows at the point of analysis with the stormwater quality retention pond in place:

Storm Return Frequency	Predevelopment Conditions – Peak Flows (cfs) – POA 1	Postdevelopment Conditions – Peak Flows (cfs) – POA 1
2 year	12.98	12.98
25 year	45.77	45.71

22.8 Water Quality

The snow dump project is not located in an area tributary to a sensitive lake or pond or watershed most at risk from development and is therefore only required to meet the Total Suspended Solids (TSS) sliding scale removal efficiency required by MeDEP based upon the postdevelopment impervious percentage of the property. The subject parcel acreage is 88.26 acres, of which 6.05 acres or 6.85% will remain impervious.

As shown in Figure 5.1 of the Stormwater Management for Maine: Best Management Practices manual dated November 1995, the removal efficiency required for a 6.85% impervious site is 40%.

As shown on Figure 1 attached to this section as Attachment E, the water quality retention facility proposed for the snow dump facility provides a mean depth of 2.5 feet, 0.85 volumes and a length-to-width ratio of 4 to 1. The corresponding removal treatment efficiency for this facility is 88.2%, which treats 83% of the impervious area of the site. The remaining 17% of the impervious area of the site is untreated; therefore, the treatment efficiency for the entire site is 72.6% or 32.6% higher than the 40% required.

22.9 Conclusions

This report represents the stormwater management plan for the proposed snow dump project in Portland, Maine. Based upon the analysis presented in this report, peak postdevelopment stormwater flows for the 2 and 25-year storm events have been maintained at or below peak predevelopment stormwater flows at the point of analysis in Long Creek and water quality treatment above required levels has been provided.

22.10 Attachments

Attachment A	Predevelopment Watershed Plan W1
Attachment B	Postdevelopment Watershed Plan W2
Attachment C	Predevelopment Stormwater Computations
Attachment D	Postdevelopment Stormwater Computations
Attachment E	Figure 1 – Pond Data Sheet

APPENDIX A

PREDEVELOPMENT WATERSHED PLAN W1

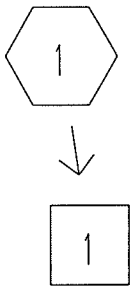
APPENDIX B

POSTDEVELOPMENT WATERSHED PLAN W2

APPENDIX C

PREDEVELOPMENT STORMWATER COMPUTATIONS

WATERSHED ROUTING ==========



SUBCATCHMENT 1 = AREA TRIBUTARY TO LONG CREEK -> REACH 1

REACH 1 = LONG CREEK ->

SUBCATCHMENT 1 **AREA TRIBUTARY TO LONG CREEK**

PEAK= 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF

ACRES	CN	
1.30	55	WOODS HSG B
4.71	70	WOODS HSG C
1.57	77	WOODS HSG D
2.30	58	FIELD HSG B
14.46	71	FIELD HSG C
9.46	78	FIELD HSG D
33.80	72	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

REACH 1 **LONG CREEK**

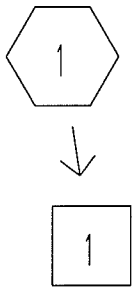
Qin = 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF
Qout= 12.98 CFS @ 12.74 HRS, VOLUME= 1.44 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 1.3 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

WATERSHED ROUTING ==========



SUBCATCHMENT 1 = AREA TRIBUTARY TO LONG CREEK -> REACH 1

REACH 1 = LONG CREEK ->

SUBCATCHMENT 1 **AREA TRIBUTARY TO LONG CREEK**

PEAK= 45.77 CFS @ 12.64 HRS, VOLUME= 5.10 AF

ACRES	CN	
1.30	55	WOODS HSG B
4.71	70	WOODS HSG C
1.57	77	WOODS HSG D
2.30	58	FIELD HSG B
14.46	71	FIELD HSG C
9.46	78	FIELD HSG D
33.80	72	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

REACH 1 **LONG CREEK**

Qin = 45.77 CFS @ 12.64 HRS, VOLUME= 5.10 AF
Qout= 45.75 CFS @ 12.65 HRS, VOLUME= 5.09 AF, ATTEN= 0%, LAG= .6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

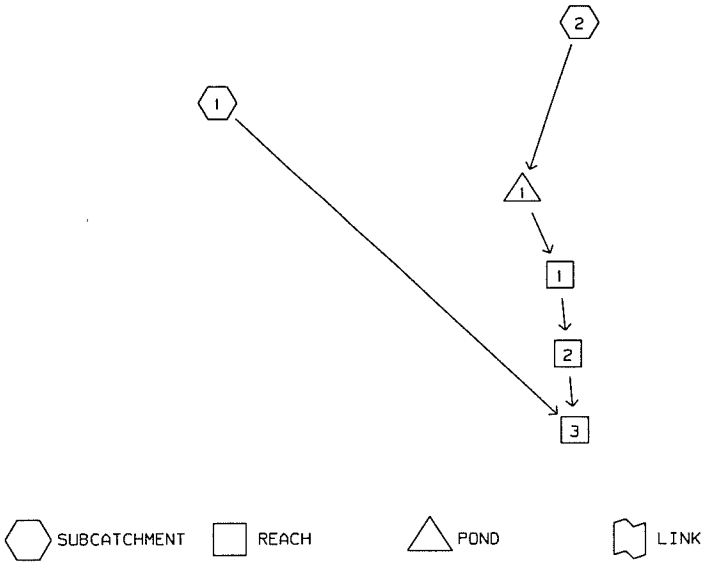
10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.36 FT
PEAK VELOCITY= 1.7 FPS
TRAVEL TIME = .2 MIN
SPAN= 11-15 HRS, dt=.01 HRS

APPENDIX D

POSTDEVELOPMENT STORMWATER COMPUTATIONS

WATERSHED ROUTING ==========



SUBCATCHMENT 1	= UPPER AREA TO LONG CREEK	->	REACH 3
SUBCATCHMENT 2	= AREA TO POND	->	POND 1
REACH 1	= POND OUTLET	->	REACH 2
REACH 2	= CHANNEL BELOW POND OUTLET	->	REACH 3
REACH 3	= LONG CREEK	->	
POND 1	= RETENTION POND	->	REACH 1
POND 1 secondary	= RETENTION POND	->	REACH 1

SUBCATCHMENT 1 **UPPER AREA TO LONG CREEK**

PEAK= 6.21 CFS @ 12.74 HRS, VOLUME= .69 AF

ACRES	CN	
1.25	55	WOODS HSG B
4.27	70	WOODS HSG C
1.57	77	WOODS HSG D
1.57	58	FIELD HSG B
4.50	71	FIELD HSG C
3.28	78	FIELD HSG D
.08	98	PAVED
.95	88	WEIGHTED GRAVELS B,C&D
17.47	71	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

SUBCATCHMENT 2 **AREA TO POND**

PEAK= 17.36 CFS @ 12.25 HRS, VOLUME= 1.29 AF

ACRES	CN	
4.60	98	BUILDING/PAVED.52POND
.12	58	FIELD HSG B
.94	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
6.60	71	FIELD HSG C
3.66	78	FIELD HSG D
16.33	81	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 3.00 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps	L=30' Capacity=94.3 cfs	
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps	L=330' Capacity=8.1 cfs	
CHANNEL FLOW	**FG**	3.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps	L=700' Capacity=7.5 cfs	
	Total Length= 1845 ft Total Tc=	18.2

REACH 1 **POND OUTLET**

Qin = 6.77 CFS @ 12.68 HRS, VOLUME= 1.00 AF
Qout= 6.77 CFS @ 12.69 HRS, VOLUME= .99 AF, ATTEN= 0%, LAG= .7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.05	.51	.47
.10	1.03	1.48
.15	1.57	2.93
.22	2.29	5.38
.30	3.27	9.45
.40	4.48	15.43
.50	5.76	22.63

10' x .5' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 70 FT
SLOPE= .0428 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .24 FT
PEAK VELOCITY= 2.6 FPS
TRAVEL TIME = .5 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 2 **CHANNEL BELOW POND OUTLET**

Qin = 6.77 CFS @ 12.69 HRS, VOLUME= .99 AF
Qout= 6.77 CFS @ 12.73 HRS, VOLUME= .98 AF, ATTEN= 0%, LAG= 2.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.03	1.66
.20	2.12	5.33
.30	3.27	10.59
.43	4.86	19.58
.60	7.09	34.79
.80	9.94	57.59
1.00	13.03	85.68

10' x 1' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 260 FT
SLOPE= .0538 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .23 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = 1.6 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 3 **LONG CREEK**

Qin = 12.98 CFS @ 12.74 HRS, VOLUME= 1.67 AF
Qout= 12.97 CFS @ 12.74 HRS, VOLUME= 1.67 AF, ATTEN= 0%, LAG= .3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 1.3 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

POND 1 **RETENTION POND**

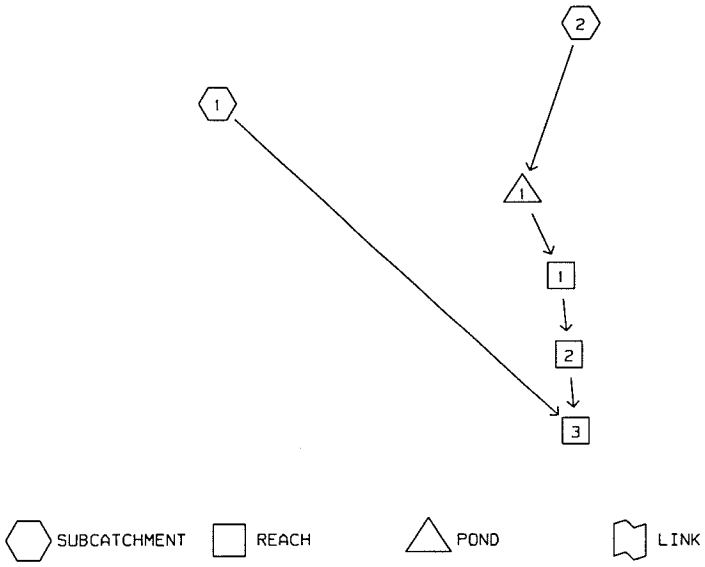
Qin = 17.36 CFS @ 12.25 HRS, VOLUME= 1.29 AF
Qout= 6.77 CFS @ 12.68 HRS, VOLUME= 1.00 AF, ATTEN= 61%, LAG= 25.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
54.0	20707	0	0
55.0	22743	21725	21725
56.0	24837	23790	45515
57.0	26986	25912	71427
58.0	29193	28090	99516

STOR-IND METHOD
PEAK STORAGE = 25602 CF
PEAK ELEVATION= 55.2 FT
FLOOD ELEVATION= 58.0 FT
START ELEVATION= 54.0 FT
SPAN= 11-15 HRS, dt=.01 HRS
Tdet= 59 MIN (1 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	54.0'	**1.7' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0
2	P	55.9'	**.5' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0

WATERSHED ROUTING ==========



SUBCATCHMENT 1	= UPPER AREA TO LONG CREEK	->	REACH 3
SUBCATCHMENT 2	= AREA TO POND	->	POND 1
REACH 1	= POND OUTLET	->	REACH 2
REACH 2	= CHANNEL BELOW POND OUTLET	->	REACH 3
REACH 3	= LONG CREEK	->	
POND 1	= RETENTION POND	->	REACH 1
POND 1 secondary	= RETENTION POND	->	REACH 1

SUBCATCHMENT 1 **UPPER AREA TO LONG CREEK**

PEAK= 22.78 CFS @ 12.64 HRS, VOLUME= 2.54 AF

ACRES	CN	
1.25	55	WOODS HSG B
4.27	70	WOODS HSG C
1.57	77	WOODS HSG D
1.57	58	FIELD HSG B
4.50	71	FIELD HSG C
3.28	78	FIELD HSG D
.08	98	PAVED
.95	88	WEIGHTED GRAVELS B,C&D
17.47	71	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	12.2
Woods: Light underbrush n=.4 L=100' P2=3 in s=.09 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.8
Short Grass Pasture Kv=7 L=130' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	1.9
Grassed Waterway Kv=15 L=360' s=.044 '/' V=3.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**DE**	.1
Grassed Waterway Kv=15 L=50' s=.144 '/' V=5.69 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**EF**	9.3
Woodland Kv=5 L=630' s=.051 '/' V=1.13 fps		
CHANNEL FLOW	**FG**	23.3
a=11 sq-ft Pw=12.8' r=.859'		
s=.002 '/' n=.045 V=1.33 fps L=1870' Capacity=14.7 cfs		
	Total Length= 3140 ft Total Tc=	47.6

SUBCATCHMENT 2 **AREA TO POND**

PEAK= 45.95 CFS @ 12.24 HRS, VOLUME= 3.36 AF

ACRES	CN	
4.60	98	BUILDING/PAVED.52POND
.12	58	FIELD HSG B
.94	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
6.60	71	FIELD HSG C
3.66	78	FIELD HSG D
16.33	81	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 5.50 IN
SPAN= 11-15 HRS, dt=.01 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps	L=30' Capacity=94.3 cfs	
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps	L=330' Capacity=8.1 cfs	
CHANNEL FLOW	**FG**	3.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps	L=700' Capacity=7.5 cfs	
	Total Length= 1845 ft Total Tc=	18.2

REACH 1 **POND OUTLET**

Qin = 23.05 CFS @ 12.57 HRS, VOLUME= 2.90 AF
Qout= 23.04 CFS @ 12.58 HRS, VOLUME= 2.90 AF, ATTEN= 0%, LAG= .5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.05	.51	.47
.10	1.03	1.48
.15	1.57	2.93
.22	2.29	5.38
.30	3.27	9.45
.40	4.48	15.43
.50	5.76	22.63

10' x .5' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 70 FT
SLOPE= .0428 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .51 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = .3 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 2 **CHANNEL BELOW POND OUTLET**

Qin = 23.04 CFS @ 12.58 HRS, VOLUME= 2.90 AF
Qout= 23.03 CFS @ 12.60 HRS, VOLUME= 2.88 AF, ATTEN= 0%, LAG= 1.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.03	1.66
.20	2.12	5.33
.30	3.27	10.59
.43	4.86	19.58
.60	7.09	34.79
.80	9.94	57.59
1.00	13.03	85.68

10' x 1' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 260 FT
SLOPE= .0538 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .47 FT
PEAK VELOCITY= 4.3 FPS
TRAVEL TIME = 1.0 MIN
SPAN= 11-15 HRS, dt=.01 HRS

REACH 3 **LONG CREEK**

Qin = 45.71 CFS @ 12.64 HRS, VOLUME= 5.42 AF
Qout= 45.70 CFS @ 12.64 HRS, VOLUME= 5.41 AF, ATTEN= 0%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.01	.32
.20	2.04	1.01
.30	3.09	1.98
.43	4.48	3.59
.60	6.36	6.26
.80	8.64	10.10
1.00	11.00	14.66

10' x 1' CHANNEL
SIDE SLOPE= 1 '/'
n= .045
LENGTH= 20 FT
SLOPE= .002 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.36 FT
PEAK VELOCITY= 1.7 FPS
TRAVEL TIME = .2 MIN
SPAN= 11-15 HRS, dt=.01 HRS

POND 1 **RETENTION POND**

Qin = 45.95 CFS @ 12.24 HRS, VOLUME= 3.36 AF
Qout= 23.05 CFS @ 12.57 HRS, VOLUME= 2.90 AF, ATTEN= 50%, LAG= 19.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
54.0	20707	0	0
55.0	22743	21725	21725
56.0	24837	23790	45515
57.0	26986	25912	71427
58.0	29193	28090	99516

STOR-IND METHOD
PEAK STORAGE = 58660 CF
PEAK ELEVATION= 56.5 FT
FLOOD ELEVATION= 58.0 FT
START ELEVATION= 54.0 FT
SPAN= 11-15 HRS, dt=.01 HRS
Tdet= 46.4 MIN (2.9 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	54.0'	**1.7' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0
2	P	55.9'	**.5' BROAD-CRESTED RECTANGULAR WEIR X 1.81**
			Q=C L H^1.5 C=1.57, 1.73, 1.8, 1.82, 1.83, 1.83, 0, 0

APPENDIX E

FIGURE 1 – POND DATA SHEET

FILE NAME: SACO-ENG\PORTLAND\JN1900.11\POND-CN.XLS
PROJECT: SNOW DUMP
LOCATION: PORTLAND, MAINE
DATE: 8-Sep-00

FIGURE 1

POND 1

TOTAL AREA = 16.33 ACRES
CN VALUE = 81.06
C VALUE = 0.50

POST DEVELOPMENT CONDITION

	A SOILS	TR - 55 METHOD		RATIONAL METHOD		B SOILS	TR - 55 METHOD		RATIONAL METHOD	
DESCRIPTION	AREA (AC)	CN VALUE	CN * AREA	COEF. C	C * A	AREA (AC)	CN VALUE	CN * AREA	COEF. C	C * A
PAVEMENT	0.00	98.00	0.00	0.90	0.00	0.00	98.00	0.00	0.90	0.00
POND	0.52	98.00	50.96	0.95	0.49	0.00	98.00	0.00	0.95	0.00
GRAVEL	0.00	76.00	0.00	0.70	0.00	0.00	85.00	0.00	0.70	0.00
FOREST	0.00	30.00	0.00	0.15	0.00	0.06	55.00	3.30	0.15	0.01
FIELD	0.00	30.00	0.00	0.15	0.00	0.12	58.00	6.96	0.15	0.02
LAWN	0.00	39.00	0.00	0.15	0.00	0.00	61.00	0.00	0.15	0.00
SUBTOTAL	0.52		50.96		0.49	0.18		10.26		0.03

	C SOILS	TR - 55 METHOD		RATIONAL METHOD		D SOILS	TR - 55 METHOD		RATIONAL METHOD	
DESCRIPTION	AREA (AC)	CN VALUE	CN * AREA	COEF. C	C * A	AREA (AC)	CN VALUE	CN * AREA	COEF. C	C * A
PAVEMENT	2.26	98.00	221.48	0.90	2.03	0.00	98.00	0.00	0.90	0.00
ROOF	1.82	98.00	178.36	0.95	1.73	0.00	98.00	0.00	0.95	0.00
GRAVEL	0.94	89.00	83.66	0.70	0.66	0.00	91.00	0.00	0.70	0.00
FOREST	0.29	70.00	20.30	0.30	0.09	0.06	77.00	4.62	0.30	0.02
FIELD	6.60	71.00	468.60	0.30	1.98	3.66	78.00	285.48	0.30	1.10
LAWN	0.00	74.00	0.00	0.30	0.00	0.00	80.00	0.00	0.30	0.00
SUBTOTAL	11.91		972.40		6.49	3.72		290.10		1.12

RUNOFF COMPUTATION

	water quality
STORM FREQUENCY (YR)	2 (approx.)
CN VALUE	81.06
S VALUE	2.34
RAINFALL AMOUNT (IN)	2.50
RUNOFF (IN)	0.95
INITIAL ABSTRACTION	0.47
Ia/P	0.19
Am*Q	0.02

WATER QUALITY POND SIZING:

ONE MEAN VOLUME =	56,059	CF
NUMBER OF MEAN VOLUMES =	0.85	
WETPOND VOLUME PROVIDED WITHIN POND =	47,650	CF
TOTAL WETPOND VOLUME =	47,650	CF
MEAN DEPTH =	2.50	FT
WATER QUALITY SURFACE AREA =	19,060	SF
LENGTH-TO-WIDTH RATIO =	4.00	:1
LENGTH =	276	FT
AVERAGE WIDTH =	69	FT

SECTION 23

FLOODING

SECTION 23

FLOODING

23.0 Overview

The Federal Emergency Management Agency (FEMA) Flood Zone Map indicates a portion of the project parcel exists within the 100-year flood plain associated with Long Creek as shown on Figure 7 in Section 1; however, no development is proposed within this flood plain.

A stormwater management study has been prepared for this project which indicates the development will not cause or increase flooding, nor cause unreasonable flood hazard to any structure.

23.1 Cross Reference

Section 1 – Development Description
Section 22 – Stormwater Management

SECTION 24

EROSION AND SEDIMENTATION CONTROL REPORT

SECTION 24

EROSION AND SEDIMENTATION CONTROL REPORT

24.0 Introduction

The City of Portland is proposing to construct a new snow dump facility on its 88-acre parcel off Congress Street by the Maine Turnpike Exit 7A. The additional paved area and water quality retention facility will be located to the south of the existing storage building.

The location of the proposed development area is characterized by Buxton, Scantic and Suffield soils with slopes ranging from 2% to 15%.

This report addresses the erosion and sedimentation control measures to be implemented during construction and as permanent features of the project.

24.1 Overview of Soil Erosion and Sedimentation Control Concerns

The susceptibility of soils to erosion is indicated on a relative scale of "K" values over a range of 0.05 to 0.69. The higher values are indicative of the most erodible soils. The Cumberland County Soil Conservation Service's Medium Intensity Soil Survey indicates that the type of soils in the project area are Buxton, Scantic, and Suffield. The soils and respective K value in the 10-20" depth are identified below:

Soil Type	K Value (10-20")
Buxton	0.49
Scantic	0.49
Suffield	0.49

Based on previous review, the onsite soil in the proposed development area is moderately to highly susceptible to erosion. Care will be exercised to avoid over-exposure of the soil during construction.

The primary emphasis of the Erosion and Sedimentation Control Plan for this project is as follows:

1. Establishment of a construction sequence.

2. Rapid vegetation of denuded areas to minimize the period of soil exposure.

3. Rapid stabilization of drainage paths to avoid rill and gully erosion.

4. Utilization of BMP measures to capture sediment prior to discharge from the project area or into adjacent waterways.

24.2 Description of Proposed Earth Movements

Within the project area, the following is planned for the site:

1. Construction of a paved area with a foot print of approximately 35,000 s.f.

2. Construction of drainage ditches and storm drain installation.

3. Construction of a water quality retention pond including inlet and outlet channels.

The area to be disturbed during construction will be approximately 3.20 acres of woods, field and denuded area. The following will replace the disturbed area:

Impervious Area: 0.94 acres
Grassed Area: 2.26 acres

24.3 Existing and Proposed Drainage Features

The project site is located on the south side of the existing 79,300 s.f. building. The entire development area is tributary to a drainage course which discharges to the south to Long Creek before crossing beneath the Maine Turnpike en route to Clark Pond.

The existing site contains a 79,300 s.f. building with an additional non-revegetated area (pavement, gravel, etc.) of 68,000 s.f. as discussed in more detail in Section 1 of this application. Drainage from the existing site follows drainage ditches and culverts from the north of the existing building to each side and then travels south through wetlands before entering Long Creek.

A detailed discussion of the existing and proposed drainage features is provided in Section 22 of this application.

24.4 Erosion/Sedimentation Control Devices

The following erosion/sedimentation control devices are planned for this site during the construction period. These devices shall be installed as indicated on the plans or as described within this report.

1. Siltation fence will be installed downgradient of disturbed areas to trap runoff borne sediments until the site is revegetated. Installation details are provided in the plan set.

2. Hay bales are intended to trap sediments and reduce runoff velocities. Installation details are provided within the plan set.

3. Straw and hay mulch is intended to provide cover for denuded areas until revegetation is established. Mulch placed on slopes of less than 3:1 shall be anchored by applying water; mulch placed on slopes steeper than 3:1 shall be covered with netting and anchored with staples in accordance with the manufacturers recommendations. Mulch application rates are provided in the appendix of this section.

4. Construction entrances will be installed at the access points into the work areas to prevent tracking of soil onto existing streets. Anticipated locations of the construction entrances for the project are shown on the construction plans. The final locations of the construction entrances may vary depending upon the contractor's planned progress of work.

5. Seed and mulch is intended to serve as the primary revegetation measure for all denuded areas not provided with other erosion control measures, such as riprap. A seeding plan is contained in Attachment A.

6. Riprap slopes and culvert outlet aprons are intended to reduce runoff velocities and protect denuded soil surfaces from concentrated flows. Installation details and stone sizes are provided in the construction plan set.

7. Stone check dams will be provided in temporary ditch sections to reduce the velocity of stormwater flows which will reduce erosion in the ditch. The spacing of the check dams will be as provided in the BMP Manual.

24.5 Temporary Erosion/Sedimentation Control Measures

The following are planned as temporary erosion/sedimentation control measures during construction of the development:

1. Siltation fence shall be installed along the downgradient side of the fill embankments. The siltation fence will remain in place until the site is revegetated.

2. Hay bales will be installed at key locations to supplement the siltation fence.

3. Temporary stockpiles of stumps, grubbings, or common excavation will be protected as follows:

   a. Soil stockpile side slopes shall not exceed 2:1.

   b. Temporary stockpiles shall not be located within 100 feet of the wetlands and shall be located away from drainage swales.

   c. The stockpile shall be stabilized within 15 days by either temporarily seeding the stockpile with a hydroseed method containing an emulsified mulch tackifier or by covering the stockpile with mulch.

4. Stabilized construction entrances will be installed consisting of an apron 20 feet wide by 50 feet long by 6 inches deep of 2" crushed stone. During construction, this entrance will be monitored and the crushed stone removed and replaced as it becomes contaminated with mud, dirt or debris from the contractor's operations.

5. All denuded areas which have been rough graded and are not located within the pavement subbase area, shall receive mulch within 30 days of initial disturbance of soil or within 15 days of completing the rough grading operations. Any area within 100 feet of wetland shall be temporarily stabilized within 7 days after completing the rough grading operation.

6. If work is conducted between October 15 and April 15 of any calendar year, all denuded areas are to be covered with hay mulch, applied twice the normal application rate, and anchored with fabric netting. The period between initial disturbance and mulching shall be 15 days or prior to any rain event, whichever is less.

7. The existing access drive and public road near the site shall be swept or washed to control mud and dust as necessary.

8. During rough grading operations, stone check dams will be installed at any evident concentrated flow discharge points.

9. Temporary erosion control measures shall be removed once the site has been stabilized or in areas where permanent erosion control measures have been installed.

24.6 Sedimentation Basin

The proposed water quality/stormwater management facility will serve as a temporary sediment basin during construction. The sediment basin and drainage system shall be installed early in the construction process to permit runoff to enter the basin.

A perforated riser on the drain line outlet pipe will control outflow from the pond and allow extended detention for a 10 year, Type III storm event. Calculations for the sediment pond are provided in Attachment B.

24.7 Permanent Erosion Control Measures

The following permanent control measures have been designed as part of the Erosion Sedimentation Control Plan:

1. All storm drain pipes that outlet to any areas other than water quality retention ponds, shall have riprap aprons or plunge pools at their outlet to protect the outlet and receiving channel from scour and erosion. The aprons and plunge pools shall be installed and stabilized prior to directing runoff to the tributary area.

2. The permanent water quality wetpond will serve as a temporary sediment basin during construction. The permanent pool volume has been sized to provide long-term removal of 88.2% total suspended solids from the stormwater runoff entering the pond. The pond has been designed to achieve "plug flow" conditions to the extent allowed by the geometrics of the site.

3. All areas disturbed during construction, but not subject to other restoration (paving, riprap, etc.) will be loamed, limed, fertilized and seeded. Native topsoil shall be stockpiled and reused for final restoration when it is of sufficient quality.

4. A riprap spillway channel will be installed to convey stormwater exiting the water quality pond.

5. Slopes greater than 2:1 will receive riprap.

24.8 Timing and Sequence of Erosion/Sedimentation Control Measures

The Contractor will be required to have the least possible practical area exposed to the elements and will be required to maintain the erosion control devices on a regular maintenance schedule. The sequence of events anticipated during construction is as follows:

- Install silt fence/hay bales and stabilized construction entrance.
- Clear and grub pond area.
- Construct water quality retention pond and install temporary sediment riser with stabilized outlet. Upon completion of the retention pond cut and fill embankments, the areas shall be stabilized within 14 days by the installation of riprap or loam, seed and mulch as indicated on the contract drawings.
- Clear and grub the work area for the construction of the drainage ditches and paved area and installation of culverts.
- Strip and stockpile topsoil and stabilize stockpile.
- Perform cut/fill operations, bring site to subgrade elevation and begin installation of the underground storm drain culvert within the work area. Upon completion of the work associated with the paved area, the disturbed areas shall be stabilized by the installation of loam, seed and mulch as indicated on the contract drawings.
- Complete fine grading of the paved areas and place base pavement to stabilize the site.
- Install fencing and complete placement of topsoil, seed, and mulch.
- Install surface pavement.

If seeding of the site is conducted after September 1, it shall be the temporary seed mix applied at double the rate with the mulch doubled. Final seeding shall be conducted in the spring.

Upon establishing vegetative cover, flush silt from all storm lines and catch basins. Remove silt from catch basins and from behind the silt fences and mix with topsoil for use in topsoiling operations.

When vegetative cover is established on 75% of the site, remove the perimeter silt fence and other temporary sedimentation control measures.

Note: All denuded areas not subject to final paving or riprap will be revegetated. Various items in the sequence may occur concurrently.

In addition to the measures listed above, the following work will be performed as required:

A. Remove accumulated sediment from ahead of any silt barriers (as necessary) and dispose off site.

B. Dust and wind erosion shall be controlled throughout the life of the project. Dust control shall include, but is not limited to, sprinkling of water on exposed soils and haul roads.

C. If excavation is interrupted by heavy rains, additional mulching or gravel work mats may be required on areas of exposed soils. Soils which may have become unsuitable for use due to exposure to heavy rains shall be removed from the work area and dried or disposed of off site in a manner consistent with this plan.

1. The above construction sequence should generally be completed in the specified order; however, several separate items may be completed simultaneously.

2. Work must also be scheduled or phased to prevent the extent of the exposed areas as specified below. The intent of this sequence is to provide for erosion control and have structural measures, such as silt fence and construction entrances, in place before large areas of land are denuded.

3. The work shall be conducted in phases or segments which will:

   a. Limit the amount of exposed areas in which work is expected to be undertaken during the proceeding 30 days.

   b. Revegetate disturbed areas as rapidly as possible, backslopes and fill slopes.

   c. Incorporate planned drainage systems as early as possible into the construction phase.

The schedule will be subject to the approval of the Owner and his authorized representatives.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

The Contractor shall note that no area shall remain denuded for a period of over 30 days before being temporarily stabilized. If work is conducted after October 15, the period shall be reduced to 15 days. Temporary stabilization shall be the installation of gravel or mulching.

Special Provisions for Winter Construction

For work which is conducted between November 1 and April 15 (winter construction) of any calendar year, the Contractor shall submit a schedule that will satisfy the following criteria:

1. Limit the amount of exposed area to those areas in which work is expected to be undertaken during the proceeding 15 days.
2. During the construction process, all disturbed areas shall be covered with mulch within 7 days of final grading.
3. Once final grade has been established, the contractor may choose to dormant seed the disturbed areas prior to placement of mulch and placement of fabric netting anchored with staples.

a. If dormant seeding is used for the site, all disturbed areas shall receive 4" of loam and seed at an application rate of 5#/1000 s.f. All areas seeded during the winter months will be inspected in the spring for adequate catch. All areas insufficiently vegetated (less than 75 percent catch) shall be revegetated by replacing loam, seed and mulch.

b. If dormant seeding is not used for the site, all disturbed areas shall be revegetated in the spring.

4. The area of denuded non-stabilized construction shall be limited to the minimum area practicable. An area shall be considered to be denuded until the subbase gravel is installed in roadway areas or the areas of future loam and seed have been loamed, seeded and mulched. The mulch rate shall be twice the rate specified in the seeding plan. (For example, 115#/1000 s.f. x 2 = 230#/s.f.)

5. The schedule shall be subject to the approval of the Owner.

The Contractor must install any added measures, which may be necessary to control erosion/sedimentation from the site dependent upon the actual site and weather conditions.

Temporary stabilization shall be the installation of gravel or mulching for construction between November 1 and April 15 of any calendar year, all areas shall be temporarily stabilized within 7 days or prior to a forecasted rainfall event.

24.9 Provisions for Maintenance of the Erosion/Sedimentation Control Features

Inspect the project work site on a weekly basis and after each significant rainfall event (0.5 inches or more within any consecutive 24 hour period) during construction until permanent erosion control measures have been properly installed and the site has been stabilized. Inspection of the project work site shall include:

- Identification of proper erosion control measures and installation in accordance with the erosion control detail sheet or as specified in this section.
- Determine whether each erosion control measure is properly operating. If not, identify damage to the control device and determine remedial measures.
- Identify areas, which appear vulnerable to erosion and determine additional erosion control measures which should be used to improve conditions.
- Inspect areas of recent seeding to determine percent catch of grass. A minimum catch of 75 percent is required prior to removal of erosion control measures

Accumulated silt/sediment should be removed when the depth of sediment reaches 50 percent of the barrier height. Accumulated silt/sediment should be removed from behind silt fencing when the depth of the sediment reaches 6 inches.

24.10 Related Sections

Section 12 – Soils
Section 22 – Stormwater Management

24.11 Attachments

Attachment A – Seeding Plan
Attachment B – Temporary Sediment Basin Calculations

ATTACHMENT A

SEEDING PLAN

SEEDING PLAN NON-WETLAND AREAS

Project Snow Dump Project

Site Location Portland, Maine

X Permanent Seeding (Lawn)

1. Area to be seeded: 2.26 acres, OR _____ M Sq. Ft.

2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.

3. Apply lime as follows: _____ #/acres, OR 138 #/M Sq. Ft.

4. Fertilize with _____ pounds of __ - __ - __ N-P-K/ac. OR
   18.4 pounds of 10 - 10 - 10 N-P-K/ M Sq. Ft.

5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.

6. Seed with the following mixture:

   40% SR 3000 Fineleaf Fescue
   30% A-34 Kentucky Bluegrass
   20% Pennant Perennial Rye Grass
   10% Baron Kentucky Blue Grass

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of _____ tons per acre. OR 115 pounds per M Sq. Ft.

	Amount	Unit #, Tons, Etc.
8. TOTAL LIME	138	#/1000 sq. ft.
9. TOTAL FERTILIZER	18.4	#/1000 sq. ft.
10. TOTAL SEED	2.30	#/1000 sq. ft.
11. TOTAL MULCH	115	#/1000 sq. ft.
12. TOTAL other materials, seeds, etc.		

13. REMARKS:

SEEDING PLAN NON-WETLAND AREAS

Project Snow Dump Project

Site Location Portland, Maine

_____ Permanent Seeding (Conservation Mix) __X__ Temporary Seeding

1. Area to be seeded: <1 acre, OR _____ M Sq. Ft.

2. Instructions on preparation of soil: Prepare a good seed bed for planting method used.

3. Apply lime as follows: _____ #/acres, OR 138 #/M Sq. Ft.

4. Fertilize with _____ pounds of __ - __ - __ N-P-K/ac. OR
   18.4 pounds of 10 - 10 - 10 N-P-K/ M Sq. Ft.

5. Method of applying lime and fertilizer: Spread and work into the soil before seeding.

6. Seed with the following mixture:

   100% Winter Rye (Fall)
   100% Oats (Spring)

When using small grain as nurse crop seed it at one-half the normal seeding rate.

7. Mulching instructions: Apply at the rate of _____ tons per acre. OR 115 pounds per M Sq. Ft.

	Amount	Unit #, Tons, Etc.
8. TOTAL LIME	138	#/1000 sq. ft.
9. TOTAL FERTILIZER	13.8	#/1000 sq. ft.
10. TOTAL SEED	2.6 Rye, 1.8 Oats	#/1000 sq. ft.
11. TOTAL MULCH	115	#/1000 sq. ft.
12. TOTAL other materials, seeds, etc.		

13. REMARKS:

ATTACHMENT B

TEMPORARY SEDIMENT BASIN CALCULATIONS

TASK: COMPUTE SEDIMENT BASIN STORAGE VOLUME REQUIREMENTS FOR WATER QUALITY POND.

REFERENCES:

1. MAINE EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES
2. USDA TR-20 DRAINAGE METHOD
3. EPA, STORMWATER MANAGEMENT FOR CONSTRUCTION ACTIVITIES, DEVELOPING POLLUTION PREVENTION PLANS AND BMP'S, EPA 832-R-92-005, DATED SEPT. '93

COMPUTATIONS:

REF. 1 - CH. 47.0 SEDIMENT BASIN
BASED UPON MEDIUM INTENSITY SOIL SURVEY, WHICH IDENTIFIED DEVELOPMENT AREA AS CONSISTING OF PRIMARILY LOAM/CLAY SOILS, COMPUTE SEDIMENT BASIN STORAGE VOLUME BASED UPON 10 HOUR DELAY TIME FIG. 47-4

DRAINAGE SUBAREAS TRIBUTARY TO SEDIMENT BASIN

TOTAL DRAINAGE AREA (DA) =	16.33	ACRES
DESIGN STORM =	10 YR./24HR/TYPE III STORM	
RAINFALL AMOUNT =	4.7	
RATE OF RUNOFF (R) =	2.84	AC-FT
	2.09	INCHES
PEAK RUNOFF RATE (Qi) =	38.9	CFS
(Qi/DA) =	2.38	

REF. 1 FIG. 47-2

WITH (Qi/DA) = 2.38, R = 2.84 THEN Qo/Qi =	0.075	
MAX. PRINCIPAL SPILLWAY DISCHARGE Qo =	2.92	CFS
Vs/Vr =	0.583	
VOLUME OF RUNOFF Vr =	2.84	AC-FT
THEREFORE, VOLUME OF STORAGE Vs =	1.66	AC-FT
	72,123	CF

FROM STAGE-STORAGE CURVE

STORAGE VOLUME (Vs) AVAILABLE AT ELEV. =	54.5
MAXIMUM STAGE ELEV. =	54.50
BOTTOM OF POND ELEV. =	50.00
TOP OF BERM ELEV. =	58.00
FREE BOARD (FT) =	3.50

RISER DESCRIPTION:

NOTE: ORIFICE FLOW (CFS) = (NO. OF ORIFICES)*(0.0267*D^2*H^0.5)

1. DEWATERING HOLE

ORIFICE DIAMETER (INCHES) =	1.5
NUMBER OF ORIFICES =	3
ORIFICE CENTER ELEV. =	49.75
AVAILABLE HEAD AT MAX. STAGE (FT) =	4.75
PEAK OUTFLOW (CFS) =	0.39

2. PERFORATIONS

	1ST ROW	2ND ROW
ORIFICE DIAMETER (INCHES) =	1.5	1.5
NUMBER OF ORIFICES =	12	12
ORIFICE CENTER ELEV. =	51	52
AVAILABLE HEAD AT MAX. STAGE (FT) =	3.50	2.50
PEAK OUTFLOW (CFS) =	1.35	1.14

THEREFORE, RISER PEAK OUTFLOW (CFS) = 2.88

SECTION 25

NOTICES

SECTION 25

NOTICES

25.0 Introduction

The abutters to the project were identified based upon tax maps and assessors' records. The project site and abutters which were notified of the project are shown on Sheet 1 of the plan set and a list of abutters is enclosed as Attachment A.

A public informational meeting was held on September 7, 2000. Abutters were notified of this meeting via certified mail. These notices were sent on August 24, 2000. The notice of this informational meeting was published in the Portland Press Herald on August 28, 2000. Copies of the notices sent to the abutters and the copy of the published notice is contained in Attachment B.

25.1 Chapter 2 Requirements

The Site Location of Development Act Permit application is subject to Chapter 2 of the MeDEP Site Location of Development Permit Rules for processing the application. Specific requirements and the action of the applicant are as follows:

- **Public Informational Meeting:** A public informational meeting was conducted on September 7, 2000. Minutes of this meeting are enclosed as Attachment C.

Abutters and Town Officials were notified ten days prior to the public informational meeting. The notice was published in the Portland Press Herald the requisite seven days prior to the meeting. A copy of the notice is enclosed in Attachment B.

25.2 Copies of Notices

Copies of the notices sent to abutters and the published advertisement are appended to this section in Attachment B. Also appended in Attachment B is a copy of all the certified mail receipts for the notices sent to the abutters.

25.3 Attachments

Attachment A - List of Abutters
Attachment B - Published Advertisement for Public Informational Meeting
Copies of the Notices Sent to Abutters
Copies of Certified Mail Receipts for Mailed Notices
Attachment C - Public Informational Meeting Minutes
Attachment D - Form D of MeDEP Application

ATTACHMENT A

LIST OF ABUTTERS

PORTLAND SNOW DUMP PROJECT
ABUTTER LIST

City	Tax Map	Block	Lot	Owner
Portland	235	A	2	Hutchins, George M.
	239A	A	2	75 Dartmouth Street
	239A	A	4	South Portland, ME 04106
	238A	B	1	
South Portland	47	00	4	
Westbrook	6	N/A	17	
Portland	236	A	2	Maine Turnpike Authority
	236	A	5	430 Riverside Street
	234	A	3	Portland, ME 04103
	233	A	8	
	233	A	4	
South Portland	69	00	2A	
	70	00	2	
Portland	*235	A	1	City of Portland
	*235	B	1	389 Congress Street
	*235	B	2	Portland, ME 04101
	*234	A	1	
	*234	A	2	
	*233	A	2	
	*233	A	6	
	233	A	9	
South Portland	*70	00	3	
	*70	00	1	
	*47	00	5	
	47	00	2	
Portland	233	A	5	Portland Water District
	*233	A	7	225 Douglass Street
				Portland, ME 04102

Abutters List (Continued)

City	Tax Map	Block	Lot	Owner
Portland	239A	A	1	Racket & Fitness Center Inc. 2445 Congress Street Portland, ME 04102
Portland	238A	B	2	Strohn, Wilbur J. Jr. & Barbara R. Trustees P.O. Box 472 New Harbor, ME 04554
Portland	236	A	3	WH Nichols Company 6035 Parkland Blvd. Cleveland, OH 44124
South Portland	47	00	1	Starr, Mary Rose P.O. Box 8588 Portland, ME 04104
South Portland	70	00	4	Sable Development LLC 505 Country Club Road South Portland, ME 04106
Westbrook	3 3	N/A N/A	1-14 1-15	Sysco Food Services of Northern New England 55 Thomas Drive Westbrook, ME 04092
Westbrook	3	N/A	1-18	Silvex, Inc. 45 Thomas Drive Westbrook, ME 04092
Westbrook	3	N/A	1-17	Allied Westbrook 47 Thomas Drive Westbrook, ME 04092
Westbrook	6	N/A	15	Sturchio, Anton E. & Susan E. 15 County Road Westbrook, ME 04092

* Indicates parcels included with project area lot

ATTACHMENT B

PUBLISHED ADVERTISEMENT FOR PUBLIC INFORMATIONAL MEETING

COPIES OF THE NOTICES SENT TO ABUTTERS

COPIES OF CERTIFIED MAIL RECEIPTS FOR MAILED NOTICES

CLASSIFIED AD

100
ine 1-800-894-0041)

essherald.com

1
)
04104

PORTLAND Press Herald

Classified N

www.maineclassified.com

LEGAL ADVERTISEMENT

FOR PROPOSALS
II PROJECT -
JNICIPAL BUILDING

ton is soliciting proposals of a new sheet metal roof- own of Bridgton Municipal ase Common, Bridgton, nuals can be obtained at 's office from within the Building or from Criterium s, 22 Monument Square, d, Maine 207-775-1969, en.

-through will be held on r 5, 2000 at 4:00 p.m. at ng and will commence in m adjacent to the Town ealed bids clearly marked ed at the Bridgton Town Common, Bridgton, Maine , September 12, 2000 at lace and time they will be oud. Reroofing will begin mber 29, 2000, and be e by November 1, 2000.

eserves the right to d all bids and, at its ormalities.

427147

LEGAL ADVERTISEMENT
NOTICE OF PUBLIC INFORMATIONAL MEETING

The City of Portland is preparing plans and permit applications for construction of a municipal snow dump at the location of the former wastewater treatment plant compost facility off Outer Congress Street. The City intends to file an application with the City of Portland under delegated review from the Maine Department of Environmental Protection for a Site Location of Development Act (38 MRSA §§481-490) for the proposed municipal snow dump on or about September 12, 2000.

Construction of the municipal snow dump will consist of the following:

- Addition of approximately 35,000 square feet of paving.
- Construction of a water quality retention facility.
- Installation of storm drains, ditches and miscellaneous site grading.

The City of Portland will conduct a PUBLIC INFORMATIONAL MEETING on Thursday, September 7, 2000 at 6:00 PM at the office of Regional Waste Systems located at 64 Blueberry Road off Congress Street in Portland, Maine. A copy of the notice of intent to file the permit application is also being provided to abutters. Written comments or inquiries concerning this project are encouraged and can be directed to:

Dwight D. Anderson, P.E.
DeLuca-Hoffman Associates
778 Main Street, Suite 8
South Portland, Maine 04106
Phone: (207)775-1121
Fax: (207)879-0896

427023

LEGAL ADVERTISEMENT
REQUEST FOR PROPOSALS

The Maine Department of Education is seeking grant proposals from Local School Districts for the Reading Excellence Act: Tutorial Assistance Grants (TAG) Program, authorized under the Improving America's Schools Act (IASA) of 1994, to operate tutorial assistance programs before or after school, on weekends, or during the summer. To request a copy of the detailed Request for Proposals (RFP), interested parties can call 287-5306, or e-mail lorraine.cote@state.me.us. For program information or questions, interested parties can call Patrick O'Shea, 287-5306, IASA Clearinghouse, 19 State House Station, Augusta, ME 04333-0019. One original and two copies of the proposal must be clearly marked "Proposal: Reading Excellence Act: Tutorial Assistance Grants (TAG)" and delivered to the Division of Purchases, 161 Capitol Street, 9 State House Station, Augusta, ME 04333-0009 no later than 2:00 p.m. local time on February 28, 2001, at which time and place they will be opened. Proposals received after the 2:00 p.m. deadline will be rejected.

427450

LEGAL ADVERTISEMENT

The Lyman Board of Selectmen will hold a Public Hearing on Monday, September 4, 2000 at 6:30 p.m. at the Lyman Town Hall to discuss extending the Moratorium Ordinance Regarding Development of Mobile Home Parks.

Steven A. Curtis, Chairman
August 25, 2000
Shirley A. Harrison, Town Clerk
Attest

424[illegible]

LEGAL ADVERTISEMENT
CITY OF SOUTH PORTLAND
MAINE
Notice to Bidders

Sealed bids will be received by the City Purchasing Agent, Room 102, City Hall, 25 Cottage Road for:

Bid #201005 Latham Barberry Creek Drive, Cole Street Separation, 2:00 P.M., Sept. 11
Bid #201013 Recycling Facility Equipment Building, 2:00 P.M., Sept. 12
Bid #201014 Pickup Truck (1) One Ton Dump Truck, 2:00 P.M., Sept. 13
Bid #201015 Sale of Surplus Equipment 2:00 P.M. Sept. 01
Bid #201016 Painting of High School Gym 2:30 P.M. Sept. 11
Bid #201017 Sand & Refinish High School Gym Floor 3:00 P.M. Sept. 11

Bid forms may be obtained at the office of the Purchasing Agent, 767-7608.

Robert D. Coombs
Senior Accountant

427540

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NOTICE OF PUBLIC INFORMATIONAL MEETING

The City of Portland is preparing plans and permit applications for construction of a municipal snow dump at the location of the former wastewater treatment plant compost facility off Outer Congress Street. The City intends to file an application with the City of Portland under delegated review from the Maine Department of Environmental Protection for a Site Location of Development Act (38 MRSA §§ 481-490) for the proposed municipal snow dump on or about September 12, 2000.

Construction of the municipal snow dump will consist of the following:

- Addition of approximately 35,000 square feet of paving.
- Construction of a water quality retention facility.
- Installation of storm drains, ditches and miscellaneous site grading.

The City of Portland will conduct a PUBLIC INFORMATIONAL MEETING on Thursday, September 7, 2000 at 6:00 PM at the office of Regional Waste Systems located at 64 Blueberry Road off Congress Street in Portland, Maine. A copy of the notice of intent to file the permit application is also being provided to abutters.

Written comments or inquiries concerning this project are encouraged and can be directed to:

Dwight D. Anderson, P.E.
DeLuca-Hoffman Associates
778 Main Street, Suite 8
South Portland, Maine 04106
Phone: (207) 775-1121
Fax: (207) 879-0896

FORM C 7/97

NOTICE OF INTENT TO FILE

Please take notice that the City of Portland, 55 Portland Street, Portland, Maine 04101
(Name, Address and Phone of Applicant)

Attn: William Bray (207) 874-8800

is intending to file a Site Location of Development permit application with the City of Portland under delegated review from the Maine Department of Environmental Protection pursuant to the provisions of 38 M.R.S.A. §§ 481-490 on or about September 12, 2000
(anticipated filing date)

The application is for construction of a municipal snow dump at the location of the former
(summary of project)

wastewater treatment plant compost facility off Outer Congress Street. The project includes approximately 35,000 square feet of bituminous paving, storm drain installation and construction of a water quality retention facility.

at the following location: off Outer Congress Street at the location of the former wastewater
(project location)
treatment plant compost facility near the new Turnpike Exit 7A and abutting the Maine Turnpike.

A request for a public hearing or a request that the Board of Environmental Protection assume jurisdiction over this application must be received by the Department, in writing, no later than 20 days after the application is found by the Department to be complete and is accepted for processing. Public comment on the application will be accepted throughout the processing of the application.

The application will be filed for public inspection at the Department of Environmental Protection's office at Portland during normal working hours. A copy of the application may also be seen at the municipal offices in

Portland, Maine.
(city)

Written public comments may be sent to the Department of Environmental Protection, Bureau of Land & Water Quality, 17 State House Station, Augusta, Maine 04333.

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9766

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Sable Development LLC
505 Country Club Road
South Portland, ME 04106

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9889

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Racket & Fitness Center Inc.
2445 Congress Street
Portland, ME 04102

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9797

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Sysco Food Service of Northern New England
55 Thomas Drive
Westbrook, ME 04092

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9858

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Wilbur J. Strohn Jr. & Barbara R. Trustees
P.O. Box 472
New Harbor, ME 04554

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9735

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Silvex, Inc.
45 Thomas Drive
Westbrook, ME 04092

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9827

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

WH Nichols Company
6035 Parkland Blvd
Cleveland, OH 44124

Name (Please Print Clearly) (to be completed by mailer)
Street, Apt. No.; or PO Box No.
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9972

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Maine Turnpike Authority
Name (Please Print Clearly) (to be completed by mailer)
430 Riverside Street
Street, Apt. No., or PO Box No.
Portland, ME 04103
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9674

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Mr. Anton & Susan E. Sturchio
Name (Please Print Clearly) (to be completed by mailer)
15 County Road
Street, Apt. No., or PO Box No.
Westbrook, ME 04092
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instru

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9940

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

City of Portland
Name (Please Print Clearly) (to be completed by mailer)
389 Congress Street
Street, Apt. No., or PO Box No.
Portland, ME 04101
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9643

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Ms. Mary Rose Starr
Name (Please Print Clearly) (to be completed by mailer)
P.O. Box 8588
Street, Apt. No., or PO Box No.
Portland, ME 04104
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instruc

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9919

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Portland Water District
Name (Please Print Clearly) (to be completed by mailer)
225 Douglass Street
Street, Apt. No., or PO Box No.
Portland, ME 04102
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1594 0007

Article Sent To:

Postage $
Certified Fee
Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total Postage & Fees $

Postmark Here

Mr. George M. Hutchins
Name (Please Print Clearly) (to be completed by mailer)
75 Dartmouth Street
Street, Apt. No., or PO Box No.
South Portland, ME 04106
City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instruc

U.S. Postal Service

CERTIFIED MAIL RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

7099 3400 0004 1593 9704

Article Sent To:

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Allied Westbrook
47 Thomas Drive
Westbrook, ME 04092

Name (Please Print Clearly) (To be completed by mailer)

Street, Apt. No., or PO Box No.

City, State, ZIP+4

PS Form 3800, July 1999

See Reverse for Instructions

ATTACHMENT C

PUBLIC INFORMATIONAL MEETING MINUTES

PUBLIC INFORMATIONAL MEETING NOTES

DATE: Thursday, September 7, 2000

TIME: 6:00 PM

LOCATION: Regional Waste Systems
64 Blueberry Road
Portland, ME

ATTENDEES: Kevin Noyes, City of Portland
Dwight D. Anderson, DeLuca-Hoffman Associates, Inc.

No members of the public attended the public informational meeting. Kevin and Dwight reviewed the project from 6:00 PM to 7:00 PM.

Prepared by: Dwight D. Anderson, P.E.

ATTACHMENT D

FORM D OF MeDEP APPLICATION

FORM D 8/94

NOTICE CERTIFICATION

By signing below, the applicant (or authorized agent) certifies that he or she has

1. Published a Notice of Intent to File once in a newspaper circulated in the area where the project site is located within thirty days prior to the filing of the application;

2. Sent by certified mail a completed copy of the Notice of Intent to File to the owners of the property abutting the land upon which the project site is located within thirty days prior to the filing of the application;

3. Sent by certified mail a completed copy of the Notice of Intent to File and filed a duplicate of this application with the town clerk or city clerk of the municipality(ies) where the project is located; and

4. Provided notice of and held a public informational meeting in accordance with Chapter 2, Rules Concerning the Processing of Applications, Section 8, prior to filing the application. Notice of the meeting was sent by certified mail to abutters and to the town clerk or city clerk of the municipality(ies) where the project is located at least 10 days prior to the meeting. Notice of the meeting was also published once in a newspaper circulated in the area where the project site is located at least 7 days prior to the meeting. (NOTE: A Public Informational Meeting is not required for residential subdivisions with 20 or fewer developable lots.)

Approximately 0 members of the public attended the Public Informational Meeting.

Dwight D. Anderson

Signature of Authorized Agent

9/12/00

Date

Dwight D. Anderson, P.E., DeLuca-Hoffman Associates, Inc.

Print name and title of Applicant

If signature is other than that of the applicant, attach letter of agent authorization signed by applicant.

Executive Department

Robert B. Gunley
City Manager

CITY OF PORTLAND

Agent Authorization

The City of Portland authorizes DeLuca-Hoffman to serve as its agent for the submittal of plans and materials for Site Plan and Site Location of Development review for a Public Works facility on outer Congress Street.

signed:

William Bray, Director
Public Works

9-12-00
date

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Caron and Members of the Portland Planning Board

FROM: William B. Needelman Planner

DATE: September 26, 2000

RE: Municipal Snow Dump; Outer Congress Street

Introduction

The City of Portland Public Works Department requests a workshop to discuss the development of a City snow dump on the southerly side of outer Congress Street at the South Portland and Westbrook municipal boundaries. Bounded by WH Nichols on the north, Maine Turnpike Authority and the City boundary with South Portland on the east and south, and the city boundary with Westbrook on the west, the subject parcel contains 88.26 acres. The site is zoned I-M and was developed to be a Portland Water District sludge composting facility in the 1970's. Currently used as an aggregate storage facility, the site has a 79,000 sq ft shed/garage structure and exterior material storage piles in the existing condition.

The site contains over 8 acres of impervious and/or disturbed area currently and will have 6 acres of impervious area after development, according to the proposed plan.

Planning staff has contacted the Department of Environmental Protection to ascertain if the project can be reviewed under delegated authority for Site Location of Development.

The planning staff has had very little time to review this application, and will therefore be providing very little in the way of analysis in this memo. Deluca Hoffman Engineers has produced the site plan and stormwater report and will be available at the workshop to describe the facility and to answer any questions. Jeff Prebble, from Dufresne-Henry Engineers, has been retained to provide peer review of the project.

Site Description:

The site is 88.26 acres and generally drains from north to south. The existing shed structure is a massive steel industrial building with open bays. The sludge composting use of the site has been discontinued for some time, and Public Works uses, and will continue to use, the building for storage regardless of the snow dump use.

A portion of the site is located within the City of South Portland and the proposed stormwater treatment/detention pond will be sited in South Portland. Deluca Hoffman will be permitting the pond design with the City of South Portland.

Much of the land is undeveloped field and brush, with the southerly section of the parcel containing the headwaters of Long Creek; part of the Clark Pond watershed. While wetlands exist on site, the proposed

impact will be small enough to avoid NRPA permitting.

Traffic/Access

Access to the site is from outer Congress Street and additional traffic information will need to be provided.

Stormwater/Erosion Control

The applicant has provided a Stormwater Management and Erosion Control report in the application package. Stormwater is intended to be collected in an extensive ditch structure along the southerly extent of the dump area, outletting into a proposed treatment pond at the south easterly portion of the property. The entire pond structure is in South Portland.

Additional information may be provided at the workshop.

Attachments:

Application Package

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Caron and Members of the Portland Planning Board

FROM: William B. Needelman Planner

DATE: September 26, 2000

RE: Municipal Snow Dump; Outer Congress Street

Introduction

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The site contains over 8 acres of impervious and/or disturbed area currently and will have 6 acres of impervious area after development, according to the proposed plan.

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A portion of the site is located within the City of South Portland and the proposed stormwater treatment/detention pond will be sited in South Portland. Deluca Hoffman will be permitting the pond design with the City of South Portland.

Much of the land is undeveloped field and brush, with the southerly section of the parcel containing the headwaters of Long Creek; part of the Clark Pond watershed. While wetlands exist on site, the proposed

impact will be small enough to avoid NRPA permitting.

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Access to the site is from outer Congress Street and additional traffic information will need to be provided.

Stormwater/Erosion Control

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Additional information may be provided at the workshop.

Attachments:

Application Package

Mtg Notes

CITY OF PORTLAND, MAINE
MEMORANDUM

TO: Chair Caron and Members of the Portland Planning Board

FROM: William B. Needelman Planner

DATE: September 26, 2000

RE: Municipal Snow Dump; Outer Congress Street

Introduction

The City of Portland Public Works Department requests a workshop to discuss the development of a City snow dump on the southerly side of outer Congress Street at the South Portland and Westbrook municipal boundaries. Bounded by WH Nichols on the north, Maine Turnpike Authority and the City boundary with South Portland on the east and south, and the city boundary with Westbrook on the west, the subject parcel contains 88.26 acres. The site is zoned I-M and was developed to be a Portland Water District sludge composting facility in the 1970's. Currently used as an aggregate storage facility, the site has a 79,000 sq ft shed/garage structure and exterior material storage piles in the existing condition.

The site contains over 8 acres of impervious and/or disturbed area currently and will have 6 acres of impervious area after development, according to the proposed plan.

Planning staff has contacted the Department of Environmental Protection to ascertain if the project can be reviewed under delegated authority for Site Location of Development.

The planning staff has had very little time to review this application, and will therefore be providing very little in the way of analysis in this memo. Deluca Hoffman Engineers has produced the site plan and stormwater report and will be available at the workshop to describe the facility and to answer any questions. Jeff Prebble, from Dufresne-Henry Engineers, has been retained to provide peer review of the project.

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A portion of the site is located within the City of South Portland and the proposed stormwater treatment/detention pond will be sited in South Portland. Deluca Hoffman will be permitting the pond design with the City of South Portland.

Much of the land is undeveloped field and brush, with the southerly section of the parcel containing the headwaters of Long Creek; part of the Clark Pond watershed. While wetlands exist on site, the proposed

impact will be small enough to avoid NRPA permitting.

Traffic/Access

Access to the site is from outer Congress Street and additional traffic information will need to be provided.

Stormwater/Erosion Control

The applicant has provided a Stormwater Management and Erosion Control report in the application package. Stormwater is intended to be collected in an extensive ditch structure along the southerly extent of the dump area, outletting into a proposed treatment pond at the south easterly portion of the property. The entire pond structure is in South Portland.

Additional information may be provided at the workshop.

Attachments:

Application Package

Dufresne-Henry

Facsimile

22 Free Street
Portland, ME 04101
(207) 775-3211
Fax: (207) 775-6434 E-Mail: portland@dufresne-henry.com

To: Bill Needelman Fax Number: 756-8258

Company: City of Portland

From: Valerie Giguere Date: 10/10/00

Subject: City of Portland - Snow Dump Facility

You should receive 4 page(s), including this cover sheet. If you do not receive all the pages, please call 207-775-3211.

Comments: Bill,

Please see our comment letter attached regarding our review of the proposed snow dump facility. If you have any questions, please contact Jeff Preble or me.

Thanx,
Valerie

Dufresne-Henry

22 Free Street . Portland, Maine 04101-3900 . Tel: 207.775.3211 . Fax: 207.775.6434 . E-mail: dhmaine@agate.net

October 10, 2000

Mr. Bill Needelman, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, Maine 04101

Re: City of Portland - Snow Dump Facility

Dear Bill:

As requested, we have completed our initial review of the proposed snow dump facility to be located on Outer Congress Street. Based on our conversations with Dwight Anderson, we understand that Deluca-Hoffman is in the process of revising the proposed water quality retention pond concept due to concerns expressed by PWM Airport personnel. In addition, as you may be aware, we were in attendance at the Planning Board workshop on September 26, 2000 during the Snow Dump Facility presentation by Deluca-Hoffman. Based on our review of the September 12, 2000 Deluca-Hoffman package and the September 12, 2000 presentation, we have the following comments:

- The stormwater calculations do not make provisions for snow melt during the design storm events. Provisions for snow melt should be included in the design or the rationale for not including them should be discussed and presented.

- It is noted that a portion of the property is located in South Portland and therefore will be subject to review by the South Portland Planning Board. The concerns of the South Portland Planning Board should be addressed and a copy of the responses provided to the Portland Planning Board.

- The project application indicates that a NRPA (Natural Resources Protection Act) permit will not be required for the project. It appears that there will be minimal impact to wetland associated with the project. The total square footage that will be impacted should be identified.

- As noted in the opening paragraph, construction of an open wet pond is discouraged as it relates to the Portland Jetport for the potential safety hazard caused by possible bird attraction. We understand Deluca-Hoffman is revising this concept.

- The project submittal indicates that a stormwater management study has been prepared for the project which indicates that the project will not cause an increase in flooding or an unreasonable flood hazard to the structure. This study or appropriate portions of the study should be included as part of the submittal.

- Silt fence should be placed around wetland areas adjacent to construction along the south east portion of the project.

- Documentation/calculations should be provided for sizing of plunge pools, rip rap outlet aprons, rip rap inlet aprons and rip rap material in general.

- Documentation/calculations should be provided for ditch/channel sizing.

- During the presentation it was noted that a snow blower will be used to pile snow. It was mentioned that the snow blower has the ability to blow snow 150 feet. A management plan should developed describing how treatment of the snow melt will be accomplished. In addition, the management plan should describe how the snow dump will be operated.

- Temporary earth/material stock pile areas should be identified and proper erosion control shown.

- The limits of the proposed snow dumping area is not clearly defined. The snow dumping management plan should describe how snow will be prevented from accumulating in the proposed ditches.

- Details of the height limit poles should be provided.

- Impacts to groundwater may occur as a result of the materials accumulated during snow removal. However, the site appears to meet the criteria set forth in Chapter 573 of the Maine Department of Environmental Protection rules for Snow Dump sites. Therefore, the snow dump appears to be an appropriate use of this property.

Because it appears that the stormwater treatment and control methodology will change significantly from the Deluca-Hoffman September 12, 2000 submittal, we look forward to reviewing the project once again with the proposed revisions. If you have any questions or require further assistance, please contact Valerie Giguere or me.

Respectfully submitted,

DUFRESNE-HENRY, INC.

Jeffrey D. Preble, P.E.
Senior Project Manager

H:\8160054\Project "N" Portland Snow Dump\Snow Dump Letter 10-5.wpd

8-12-00

Island View Apts — Mitchell Ass, Ben [illegible], [illegible] MA 1.5, Roger [illegible]

Water Dir Reluctance to accept further impacts

1974 Plan - Sets some limits

City owned land - detension basin or E [illegible] or @ Jack [illegible]

133
-18
115 / 70

Talk to Menge & Charlie Re: Zoning

Planning Board

Sept 12

DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
SUITE 8
SOUTH PORTLAND, MAINE 04106
TEL. 207 775 1121
FAX 207 879 0896

- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

October 17, 2000

Mr. Bill Needleman, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, ME 04101

Subject: **City of Portland – Snow Dump Facility**
Response to Dufresne–Henry Comments dated October 10, 2000

Dear Mr. Needleman:

Our office has reviewed the comments of Dufresne-Henry dated October 10, 2000 for the City of Portland – Snow Dump Facility and offers the following responses (three (3) copies enclosed):

Comment No. 1
The stormwater calculations do not make provisions for snow melt during the design storm events. Provisions for snow melt should be included in the design or the rationale for not including them should be discussed and presented.

Response:
The normal practice for computing peak stormwater flows is to base the computations on AMC II non-frozen conditions. This is because the historic storm events tend to occur during the late summer or early fall. The prevalence of the occurrence of the fall historic storm events was the reason SCS revised the storm distribution in the late 1980's and for coastal areas we now use the Type 3 distribution. Therefore, it is not anticipated that a historic storm event for which the design is based would occur with snow stockpiles.

However, this is a valid question since the effect of a lower intensity storm with snowpack could potentially yield higher runoff. The effect of snowmelt is not addressed by SCS methods. However, EPA has a method in the SWMM model which attempts to analyze snowmelt. This is a subroutine of which we have some knowledge. Further, unlike the peak runoff for a storm, snow melt will approach a steady state condition of uniform discharge and is not subject to the peaking factor of a hydrologic event.

Our analysis of the effect of snowmelt is as follows:

The energy exchanged between the snowpack, the atmosphere, and the earth is the controlling factor in rates of snow melt. Rain drop temperature is reduced as it enters a snowpack and an equivalent amount of heat is imparted to the snow based on the surface wet-bulb temperature. Heat available in 5.5 inches (25 year event) of rain at 50°F will melt about 0.7 inches of water from the snowpack. This would result in runoff equivalent to a 6.2 inch rainfall event or slightly higher than the 50 year storm event (6.0 inches for this area); however, this situation is true for any area with snow cover. The situation for this project is that a greater volume of snow (potential runoff) will be present at increased depths. This will affect the total volume of runoff from the site during the spring time, but not the peak runoff for any one storm event compared to any other area with snow cover as snow melt is controlled by heat available in rainwater as discussed above.

The heat exchange at the snow-air interface dominates the snow melt process, and heat exchange with the soil is secondarily important; therefore, the depth of the snowpack will only result in an increased runoff volume spread out over a longer period and will not increase peak runoff rates. As snow melt will be released from this site for an extended period into the spring due to increased runoff volume from a deeper snowpack our office has increased the design of the onsite drainage system from the 25 year event to the 50 year event. The average runoff rate over a months period for the 3.5 acre snow dump area estimated at a 30 foot height would be 0.35 cfs or 0.6% of the peak 25 year storm event release rate from this site. The design increase to the 50 year event will be more than enough to convey the additional runoff as a result of the additional snowmelt. The following reference was referred to for this response: Hydrology and Floodplain Analysis, Second Edition, Philip B. Bedient, Addison-Wesley, 1992.

In conclusion, it is the opinion of DeLuca-Hoffman Associates, Inc. that the use of the 50 year storm event will balance the snowmelt impact which could occur during a major storm.

Comment No. 2
It is noted that a portion of the property is located in South Portland and therefore will be subject to review by the South Portland Planning Board. The concerns of the South Portland Planning Board should be addressed and a copy of the responses provided to the Portland Planning Board.

Response:
The project has been submitted to the City of South Portland for review. Comments received from the City of South Portland will be addressed and forwarded to the Portland Planning Board.

Comment No. 3
The project application indicates that a NRPA (Natural Resources Protection Act) permit will not be required for this project. It appears that there will be minimal impact to wetland associated with the project. The total square footage that will be impacted should be identified.

Response:
The total square footage of wetland impact associated with this project is 800 square feet which is under the 4,300 square foot threshold wherein a NRPA permit would be required.

Comment 4:
As noted in the opening paragraph, construction of an open wet pond is discouraged as it relates to the Portland Jetport for the potential safety hazard caused by possible bird attraction. We understand Deluca-Hoffman is revising this concept.

Response:
Paragraphs 22.7 Stormwater Management, 22.8 Water Quality and 22.9 Conclusions of Section 22 – Stormwater Management have been revised and are included as Attachment A.

Comment 5:
The project submittal indicates that a stormwater management study has been prepared for the project which indicates that the project will not cause an increase in flooding or an unreasonable flood hazard to the structure. This study or appropriate portions of the study should be included as part of the submittal.

Response:
The Stormwater Management study is included in Section 22.

Comment 6:
Silt fence should be placed around wetland areas adjacent to construction along the south east portion of the project.

Response:
Silt fence has been added to the site plans in this area as shown on the attached revised site plans.

Comment 7:
Documentation/calculations should be provided for sizing of plunge pools, rip rap outlet aprons, rip rap inlet aprons and rip rap material in general.

Response:
Documentation/calculations for sizing plunge pools, rip rap outlet aprons, rip rap inlet aprons and rip rap material in general are included as Attachment B.

Comment 8:
Documentation/calculations should be provided for ditch/channel sizing.

Response:
Documentation/calculations for ditch/channel sizing are included as Attachment C.

Comment 9:
During the presentation it was noted that a snow blower will be used to pile snow. It was mentioned that the snow blower has the ability to blow snow 150 feet. A management plan should developed describing how treatment of the snow melt will be accomplished. In addition, the management plan should describe how the snow dump will be operated.

Response:
Snow melt is discussed in response to Comment No. 1 and will be treated by use of a silt fence and water quality units discussed in the response to Comment No. 4. A Snow Dump Facility Management Plan is currently being developed by the City.

Comment 10:
Temporary earth/material stock pile areas should be identified and proper erosion control shown.

Response:
Silt fence has been added around the perimeter of the temporary earth/material stock pile areas to the west of the site.

Comment 11:
The limits of the proposed snow dumping area is not clearly defined. The snow dumping management plan should describe how snow will be prevented from accumulating in the proposed ditches.

Response:
The limit of the proposed snow dumping area has been added to the revised site plans included with this letter. A Snow Dump Facility Management Plan is currently being developed by the City.

Comment 12:
Details of the height limit poles should be provided.

Response:
The height limit poles ranging from 65 feet to 80 feet have been eliminated from the project and the existing 30 foot high building will be used to monitor the piled height of the snow.

Comment 13:
Impacts to groundwater may occur as a result of the materials accumulated during snow removal. However, the site appears to meet the criteria set forth in Chapter 573 of the Maine Department of Environmental Protection rules for Snow Dump sites. Therefore, the snow dump appears to be an appropriate use of this property.

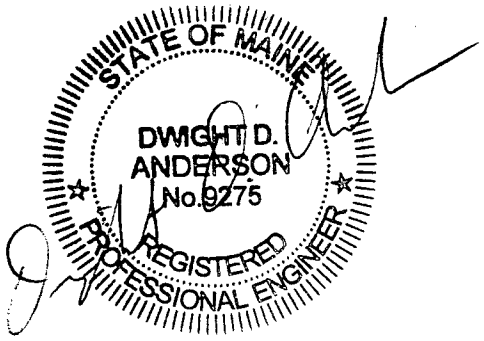
Response:
No response is required for this comment.

Please contact our office with any questions concerning this matter.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.
Design Engineer



DDA/mb/JN1900.11/Needleman10-13

Attachments

c: Bill Bray, P.E. – City of Portland, Public Works w/attachments
Kevin Noyes – City of Portland, Public Works w/attachments
Mike DeLuca, P.E. – DeLuca-Hoffman Associates, Inc. w/attachments
Pat Cloutier – City of South Portland, Pollution Abatement w/attachments
Jim Gailey – City of South Portland, Planning w/attachments
Ed Reidman, P.E. – City of South Portland, Engineering w/attachments
Jeff Preble, P.E. – Dufresne-Henry w/attachments
Artie Sewall – Portland Jetport w/ attachments

ATTACHMENT A

SECTION 22
STORMWATER MANAGEMENT
PARAGRAPHS 22.7, 22.8 AND 22.9

Revised Sections of Section 22
STORMWATER MANAGEMENT

22.7 Stormwater Management

Peak Flows

Comparison of pre and postdevelopment conditions indicates that peak flows at the point of analysis increase for the 2 and 25-year storm events. The following table presents the predevelopment and undetained postdevelopment peak flows at the point of analysis:

Storm Return Frequency	Predevelopment Conditions – Peak Flows (cfs) – POA 1	Undetained Postdevelopment Conditions – Peak Flows (cfs) – POA 1
2 year	12.98	19.83
25 year	45.77	57.70

A water quality detention/retention facility would typically be utilized to regulate stormwater flows leaving this site; however, as the Portland International Jetport is located approximately 4,000 feet from the proposed snow dump the FAA responded to the project with considerable concern when the project was originally submitted with such a facility as shown in the attached letter from the FAA dated September 25, 2000. The FAA noted that the pond would be directly under the approach to the runway, which would be in conflict with the FAA's advisory circular entitled Hazardous Wildlife Attractions Near Airport. Representatives from DeLuca-Hoffman Associates, Inc.'s office and the City of Portland met with the FAA on October 4, 2000 to discuss other options such as a dry detention basin. The FAA would have considered a dry detention basin with documentation that the facility would not attract birds. The Department of Agriculture was contacted for this documentation; however, none was available, in fact it was determined even a dry detention basin could be an attractant for birds during extended wet weather. Considering the above safety concern the project is proposed without a detention facility. The following paragraph discusses the effects of the project on the down stream drainage course without detaining post development storm water flows.

The existing site of the proposed snow dump facility was originally developed in 1979; therefore, storm water has been discharged from the site undetained for the past 21 years. The entire down stream drainage course is located in the City of South Portland who reports no existing capacity problems in route to Clark Pond. A study done by the Maine Department of Transportation in 1993, which would have included the property of the proposed snow dump site in its developed condition was used to size the culvert for the Maine Mall Road crossing at Long Creek. A recent storm in 1996 which was possibly as large as the 500 year storm event was adequately conveyed through the drainage course below the snow dump site. Due to the airport safety concerns and in

light of the above discussion, the snow dump project is proposed without stormwater detention.

22.8 Water Quality

The snow dump project is not located in an area tributary to a sensitive lake or pond or watershed most at risk from development and is therefore only required to meet the Total Suspended Solids (TSS) sliding scale removal efficiency required by Maine Department of Environmental Protection based upon the postdevelopment impervious percentage of the property. The subject parcel acreage is 88.26 acres, of which 6.05 acres or 6.85% will remain impervious.

As shown in the attached Figure 5.1 of the Stormwater Management for Maine: Best Management Practices manual dated November 1995, the removal efficiency required for a 6.85% impervious site is 40%.

Two water quality units are proposed to treat storm water discharging from the proposed snow dump. The areas tributary to the two water quality units are shown on Figure 1 attached. As of October 1, 2000 the Maine Department of Environmental Protection will require manufacturers of water quality units to provide 80% removal of U.S. silica grade F-95 foundry sand at a flow rate equivalent to the peak flow from a one year 24-hour storm in order to receive credit of a TSS removal rate of 50%. Calculations for each water quality unit and their respective drainage area are attached. An overview of water quality unit maintenance is also attached.

Worksheet 3C for Determining Net % TSS Removal for the proposed Snow Dump Facility is attached and reveals at Net TSS removal of 41.5% for the entire site which is 1.5% above the 40% required.

22.9 Conclusions

This report represents the storm water management plan for the proposed snow dump project in Portland, Maine. Based upon the analysis presented in this report, the down stream conveyance system will adequately convey storm water flows from the project site and water quality treatment has been provided above required levels.

Attachments

- Letter from the FAA dated September 25, 2000
- Stormwater Quality Standard Figure 5.1
- Tributary Areas to Water Quality Units Figure 1
- Stormwater Quality Calculations

(1900.. 43)

U.S. Department of Transportation
Federal Aviation Administration

New England Region

12 New England Executive Park
Burlington, MA 01803-5299

September 25, 2000

Mr. Michael J. DeLuca, P.E.
DeLuca-Hoffman Associates, Inc.
778 Main Street Suite 8
South Portland, Maine 04106

RE: Proposed Snow Dump

Dear Mike:

The FAA has reviewed the submittal for the proposed Public Works Snow Dump. Quite frankly, we are very concerned with this proposal. The snow dump appears to be located just to the west of Runway 11 at the Portland Jetport. The 90' x 290' permanent pool of water is likely to be an attractant for birds. Considering the fact that this pond will be directly under the approach to the runway, this is in conflict FAA's advisory circular entitled Hazardous Wildlife Attractants Near Airports.

For the last several years, the Jetport has been working very hard to clear runway approaches and provide full-length runway safety areas at both ends of runway 11-29. To construct the safety areas, there will likely be a 400' westerly shift of the runway. In turn, this puts the runway end 400' closer to the snow dump and the potential bird attractants.

The construction of the snow dump in the proposed location would serve to work against the important safety concerns that the Jetport has been struggling to improve. It is our recommendation that the City investigate other locations for the dump that would not be in direct conflict with the airport.

If you have any questions concerning this matter, please feel free to contact me.

Sincerely,

Robert J. Siris
Project Manager

cc: Dave Nelson, Maine DOT
Artie Sewall, Portland Jetport

RECEIVED
SEP 28 2000

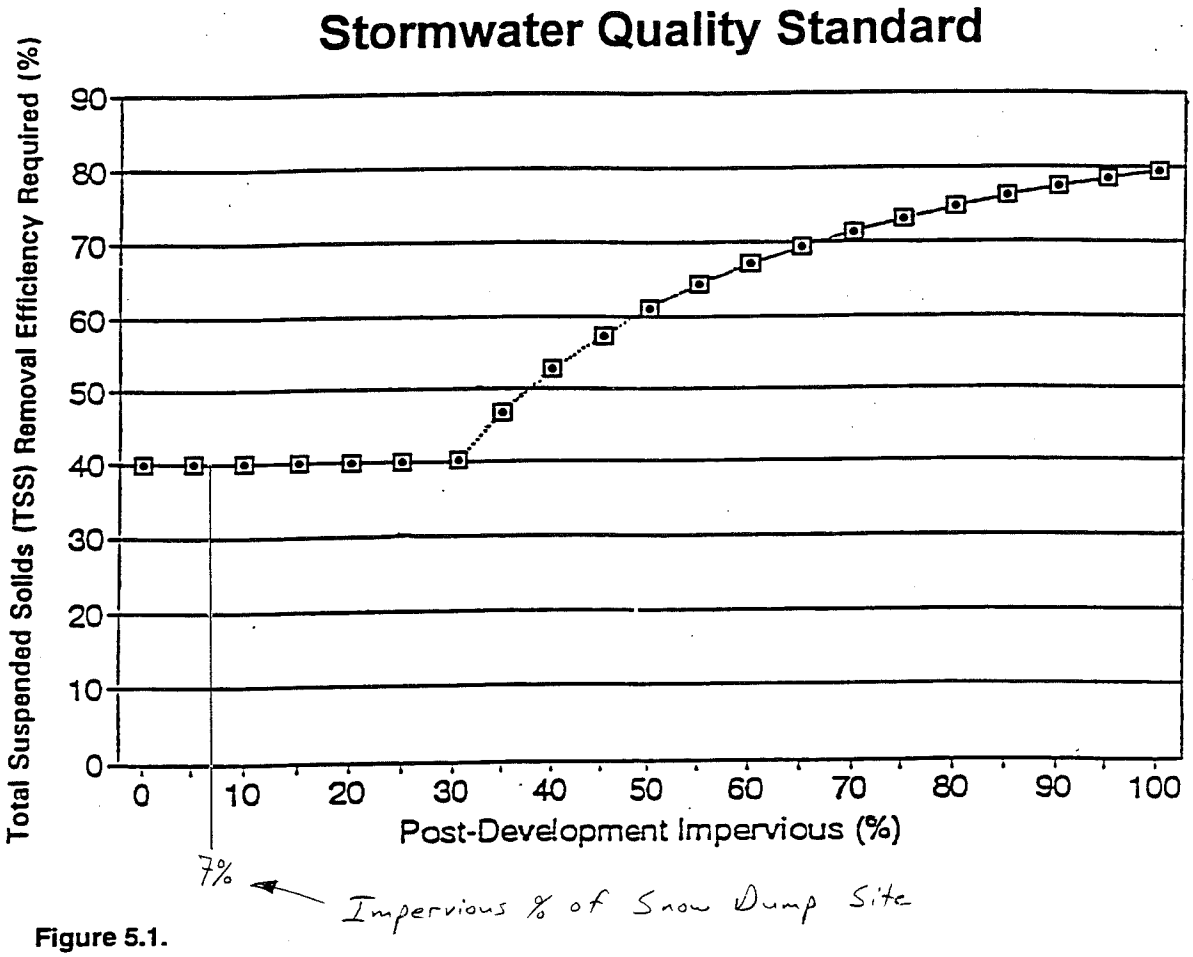


Figure 5.1.

For the purposes of this manual, ***impervious surface*** is fully defined as a hard surface area which either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development, and/or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious areas include, but are not limited to, rooftops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam, or other surfaces which similarly impede the natural infiltration of stormwater.

This BMP manual is not regulatory. However, the practices described in this manual are designed to ensure that stormwater runoff from a development site not adversely affect the physical, biological, and chemical properties of the receiving water or of associated aquatic habitats. As such, use of this manual may assist compliance with applicable statutes, regulations, and ordinances. Other equivalent techniques of stormwater treatment, of course, will also assist with compliance.

Alternatively, the criterion of reducing post development TSS loadings to predevelopment levels may be applied. This criterion is not intended to be used as an alternative to achieving adequate control where existing high sediment loadings are the result of poor management of "developed" sites such as farmlands where appropriate erosion control components of a USDA conservation management plan are not being used, or sites where land disturbed by previous development (e.g., gravel pits or log yards) was not permanently stabilized (EPA, 1993.)

Data for **SNOWDUMP POST - W/OUT POND**
TYPE III 24-HOUR RAINFALL= 2.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 13 Oct 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

SUBCATCHMENT AREA TO WQ UNIT 1

PEAK= 8.06 CFS @ 12.22 HRS, VOLUME= .82 AF

ACRES	CN	
3.24	98	BUILDING/PAVED
.12	58	FIELD HSG B
.60	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
5.00	71	FIELD HSG C
1.11	78	IELD HSG D
10.48	81	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 2.50 IN
SPAN= 10-25 HRS, dt=.05 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps	L=30' Capacity=94.3 cfs	
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps	L=330' Capacity=8.1 cfs	
CHANNEL FLOW	**FG**	2.3
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps	L=450' Capacity=7.5 cfs	

	Total Length= 1595 ft Total Tc=	16.9

Data for **SNOWDUMP POST - W/OUT POND**
TYPE III 24-HOUR RAINFALL= 2.50 IN
Prepared by DELUCA-HOFFMAN ASSOCIATES, INC. 13 Oct 00
HydroCAD 5.11 000734 (c) 1986-1999 Applied Microcomputer Systems

SUBCATCHMENT **AREA TO WQ UNIT 2**

PEAK= 3.98 CFS @ 12.11 HRS, VOLUME= .32 AF

ACRES	CN	
.84	98	BLDG/PVD
.34	89	GRAVEL
.85	71	FIELD C
1.81	78	FIELD D
3.84	82	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 2.50 IN
SPAN= 10-25 HRS, dt=.05 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	4.0
Grassed Waterway Kv=15 L=280' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	.5
42" Diameter a=9.62 sq-ft Pw=11' r=.875'		
s=.006 '/' n=.013 V=8.1 fps L=250' Capacity=77.9 cfs		
	Total Length= 695 ft Total Tc=	8.6

Vortechnics™

Engineered Products
FOR STORMWATER TREATMENT

EFFICIENCY CALCULATIONS
PORTLAND SNOW DUMP
PORTLAND, ME

WQ UNIT #1 — Model 11000 - Area 1

Vortechs System Specifications and Site Specific Information:

1-year, 24-hour Flow, Q = 8.06 cfs = 3618 gpm

Area of Vortechs Swirl Chamber, A_{sw} = 78.5 s.f.

Notation:

OR = Operating Rate, (gpm/s.f.)

Calculations:

OR = Q (gpm) / A_{sw} (s.f.)
= 3618 / 78.5
= **46.1 (gpm/s.f.)**

Conclusion:

See attached graph "Vortechs System Removal Efficiency for 100 µm Particles".

At an Operating Rate of 46.1 gpm/s.f., the removal efficiency is greater than 80%.

WQ UNIT #2 — Model 5000 - Area 2

Vortechs System Specifications and Site Specific Information:

1-year, 24-hour Flow, Q = 3.98 cfs = 1786 gpm

Area of Vortechs Swirl Chamber, A_{sw} = 38.5 s.f.

Notation:

OR = Operating Rate, (gpm/s.f.)

Calculations:

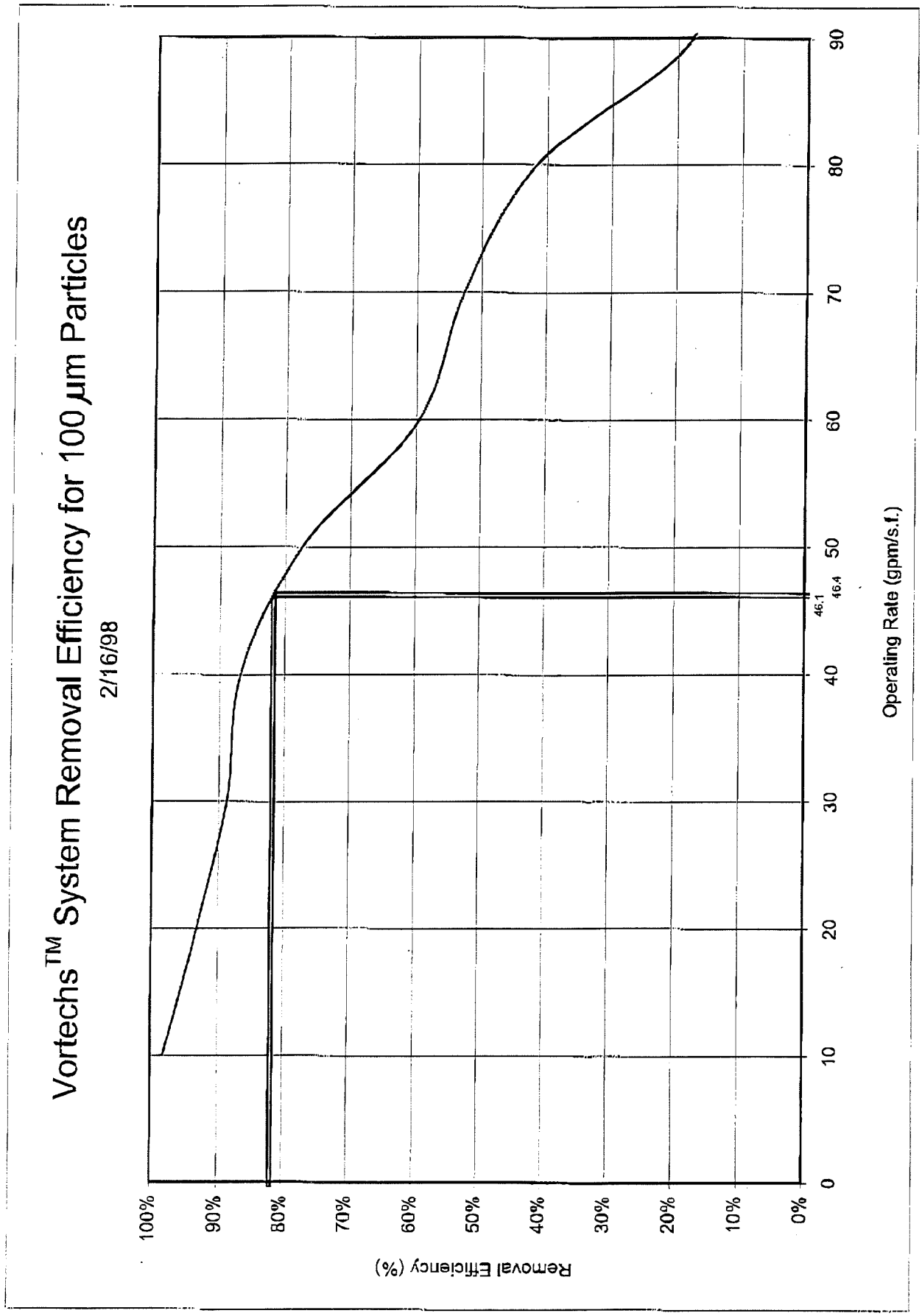
OR = Q (gpm) / A_{sw} (s.f.)
= 1786 / 38.5
= **46.4 (gpm/s.f.)**

Conclusion:

See attached graph "Vortechs System Removal Efficiency for 100 µm Particles".

At an Operating Rate of 46.4 gpm/s.f., the removal efficiency is greater than 80%.

Calculated by: AP	10/16/00	Checked by: KJM	10/16/00


Vortechs™ System Removal Efficiency for 100 µm Particles
2/16/98
Removal Efficiency (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0
10
20
30
40
46.1
46.4
50
60
70
80
90
Operating Rate (gpm/s.f.)

Worksheets for Evaluating Stormwater BMPs

Worksheet 3c. Determining Net % TSS Removal for Non-Subdivisions

Step 3a. Determine the Net Weighted % TSS Removal in each Subwatershed. Complete the following table for each subwatershed by:

- dividing the impervious area within the subwatershed into subareas to which the same BMPs are being applied
- calculating the **% of Total Impervious Area** for each subarea by dividing the subarea's impervious area by the total impervious area in the subwatershed (from **Worksheet 2**) and multiplying by 100
- multiplying the **% of Total Impervious Area** by the **Net BMP % TSS Removal Efficiency** (see note) for the BMP(s) being applied to the subarea
- adding the products to get the **Net weighted % TSS Removal** for the subwatershed.

Compare this to the prescribed % TSS removal for the subwatershed in **Worksheet 2.**

If only one BMP is applied to a subarea the **Net BMP % TSS Removal Efficiency** is equal to the % TSS removal efficiency for the BMP. If more than one BMP are applied in series, the **Net BMP % TSS Removal Efficiency** for the suite of BMPs is calculated as follows:

Net BMP % Removal Eff. $= 100[1-\{(1-r_1)x(1-r_2)x...x(1-r_n)\}]$

where r_n is the removal efficiency of each BMP expressed as a fraction.

Subwatershed ____.

Subarea ID		% Total Imperv. Area		Net BMP % TSS Removal				BMP Notes
TREATED	:	83%	X	50%	X 0.01 =	41.5 %		
UNTREATED	:	17 %	X	0 %	X 0.01 =	0 %		
	:		X		X 0.01 =			
	:		X		X 0.01 =			
	:		X		X 0.01 =			
	:		X		X 0.01 =			
	:		X		X 0.01 =			
	:		X		X 0.01 =			
	:		X		X 0.01 =			
Totals		100%		Net Weighted % TSS Removal for Subwatershed	=	41.5 %		

Vortechs™
STORMWATER TREATMENT SYSTEM

MAINTENANCE

The Vortechs System requires minimal routine maintenance. However, it is important that the system be inspected at regular intervals and cleaned when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit, e.g., heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping will slow accumulation.

Inspection

Inspection is the key to effective maintenance and it is easily performed. In the first year of operation, frequent inspections of the accumulated sediment volume within the aluminum grit chamber are necessary to establish an appropriate maintenance plan. Vortechnics recommends seasonal inspections during the first year. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. After the first year, the inspection schedule should be reviewed and modified according to experience. It is very useful to keep a record of each inspection. A simple form for doing so is provided.

The Vortechs System only needs to be cleaned when inspection reveals that it is nearly full; specifically, when sediment depth has accumulated to within six inches of the dry-weather water level. This determination can be made by taking 2 measurements with a stadia rod or similar measuring device: one measurement is the distance from the manhole opening to the top of the sediment pile and the other is the distance from the manhole opening to the water surface. If the difference between the two measurements is less than six inches the system should be cleaned out. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.

In Vortechs installations where the risk of large petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, an oil or gasoline spill should be cleaned out immediately. Oil or gas that accumulates on a more routine basis should be removed when an appreciable layer has been captured.

Cleaning

Cleanout of the Vortechs System with a vacuum truck is generally the most effective and convenient method. Cleanout should not occur within 6 hours of a rain event to allow the entire collection system to drain down. Properly maintained Vortechs Systems will only require evacuation of the grit chamber portion of the system, in which case only the manhole cover nearest to the system inlet need be opened to remove water and contaminants. However, all chambers should be checked to ensure the integrity of the system. In installations where a "clamshell" is being utilized for solids removal, prior to removing the grit, absorbent pads or

pillows can be placed in the oil chamber to remove floating contaminants. Once this is done, sediment may then be easily removed with the clamshell.

In some cases, it may be necessary to pump out all chambers. An important maintenance feature built into Vortechs Systems is that floatables remain trapped after a cleaning. A pocket of water between the grit chamber and the outlet panel keeps the bottom of the baffle submerged, so that all floatables remain trapped when the system begins to fill up again. Therefore, in the event of cleaning other chambers it is imperative that the grit chamber be drained first. Manhole covers should be securely seated following cleaning activities, to ensure that surface runoff does not leak into the unit from above.

Vortechs™

STORMWATER TREATMENT SYSTEM

Inspection & Maintenance Log

Model:			Location:		
Date	**Water Depth to Sediment[1]**	**Floatable Layer Thickness [2]** (approx)	**Maintenance Performed**	**Maintenance Personnel**	**Comments**

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement is the distance from the manhole opening to the top of the sediment pile and the other is the distance from the manhole opening to the water surface. If the difference between the two measurements is less than six inches the system should be cleaned out.

2. The system should be cleaned out if the floating layer of trapped debris is 3-6" in depth.

Vortechs™
STORMWATER TREATMENT SYSTEM

Inspection & Maintenance Log

Model: 5000			Location: Anywhere		
Date	**Water Depth to Sediment[1]**	**Floatable Layer Thickness [2] (approx)**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
4/10/96	30"	0"	N/A	B. Johnson	Installed
8/15/96	26"	sheen	None	S. Riley	
11/15/96	22"	sheen	None	B. Johnson	
1/15/97	16"	sheen	None	B. Johnson	
2/15/97	7"	1"	Clean-out scheduled	S. Riley	3 snowstorms
2/18/97	30"	0"	System cleaned w/ Vactor truck	S. Riley	Cleaned
3/15/97	28"	Sheen		S. Riley	swept parking lot
4/15/97	27"	0.5"	Placed oil-absorbent material in system	B. Johnson	
5/16/97	23"	0"	Replaced oil-absorbent material w/new	B. Johnson	

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement is the distance from the manhole opening to the top of the sediment pile and the other is the distance from the manhole opening to the water surface. If the difference between the two measurements is less than six inches the system should be cleaned out.

2. The system should be cleaned out if the floating layer of trapped debris is 3-6" in depth.

ATTACHMENT B

RIP RAP SIZING CALCULATIONS

AREA TO WQ UNIT 1

PEAK= 34.22 CFS @ 12.21 HRS, VOLUME= 3.29 AF

ACRES	CN	
3.24	98	BUILDING/PAVED
.12	58	FIELD HSG B
.60	89	GRAVELS B,C&D WEIGHTED
.06	55	WOODS HSG B
.29	70	WOODS HSG C
.06	77	WOODS HSG D
5.00	71	FIELD HSG C
1.11	78	IELD HSG D
10.48	81	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 6.00 IN
SPAN= 10-25 HRS, dt=.05 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	8.9
Grassed Waterway Kv=15 L=620' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	0.0
36" Diameter a=7.07 sq-ft Pw=9.4' r=.75'		
s=.02 '/' n=.013 V=13.34 fps	L=30' Capacity=94.3 cfs	
CHANNEL FLOW	**EF**	1.6
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0424 '/' n=.045 V=3.51 fps	L=330' Capacity=8.1 cfs	
CHANNEL FLOW	**FG**	2.3
a=2.3 sq-ft Pw=6.2' r=.371'		
s=.0114 '/' n=.025 V=3.28 fps	L=450' Capacity=7.5 cfs	
	Total Length= 1595 ft Total Tc=	16.9

AREA TO WQ UNIT 2

PEAK= 16.09 CFS @ 12.10 HRS, VOLUME= 1.23 AF

ACRES	CN	
.84	98	BLDG/PVD
.34	89	GRAVEL
.85	71	FIELD C
1.81	78	FIELD D
3.84	82	

SCS TR-20 METHOD
TYPE III 24-HOUR
RAINFALL= 6.00 IN
SPAN= 10-25 HRS, dt=.05 HRS

Method	Comment	Tc (min)
TR-55 SHEET FLOW	**AB**	3.8
Grass: Short n=.15 L=80' P2=3 in s=.148 '/'		
SHALLOW CONCENTRATED/UPLAND FLOW	**BC**	.3
Grassed Waterway Kv=15 L=85' s=.129 '/' V=5.39 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**CD**	4.0
Grassed Waterway Kv=15 L=280' s=.006 '/' V=1.16 fps		
CIRCULAR CHANNEL	**DE**	.5
42" Diameter a=9.62 sq-ft Pw=11' r=.875'		
s=.006 '/' n=.013 V=8.1 fps L=250' Capacity=77.9 cfs		
	Total Length= 695 ft Total Tc=	8.6

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name:

Comment: 42" SD

Solve For Actual Depth

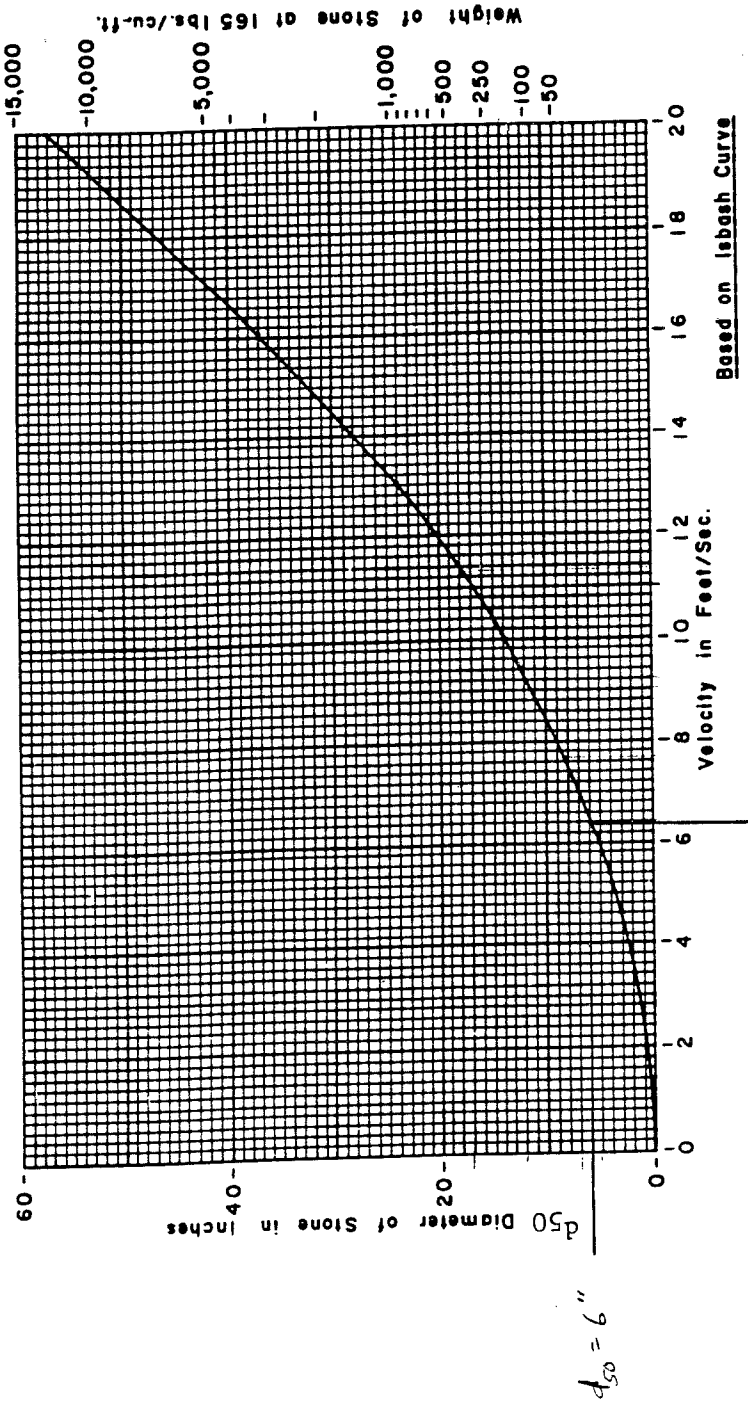
Given Input Data:

Diameter.....	3.50 ft
Slope.....	0.0060 ft/ft
Manning's n.....	0.013
Discharge.....	16.02 cfs

Computed Results:

Depth.....	1.08 ft
Velocity.....	6.37 fps
Flow Area.....	2.51 sf
Critical Depth....	1.22 ft
Percent Full.....	30.76 %
Full Capacity.....	77.93 cfs
QMAX @.94D.....	83.83 cfs
Froude Number.....	1.27 (flow is Supercritical)

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)



Rip rap Inlet and Outlet 42" ≤ D

d_{50} = 9" OK

Circular Channel Analysis & Design
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name:

Comment: 36" SD

Solve For Actual Depth

Given Input Data:

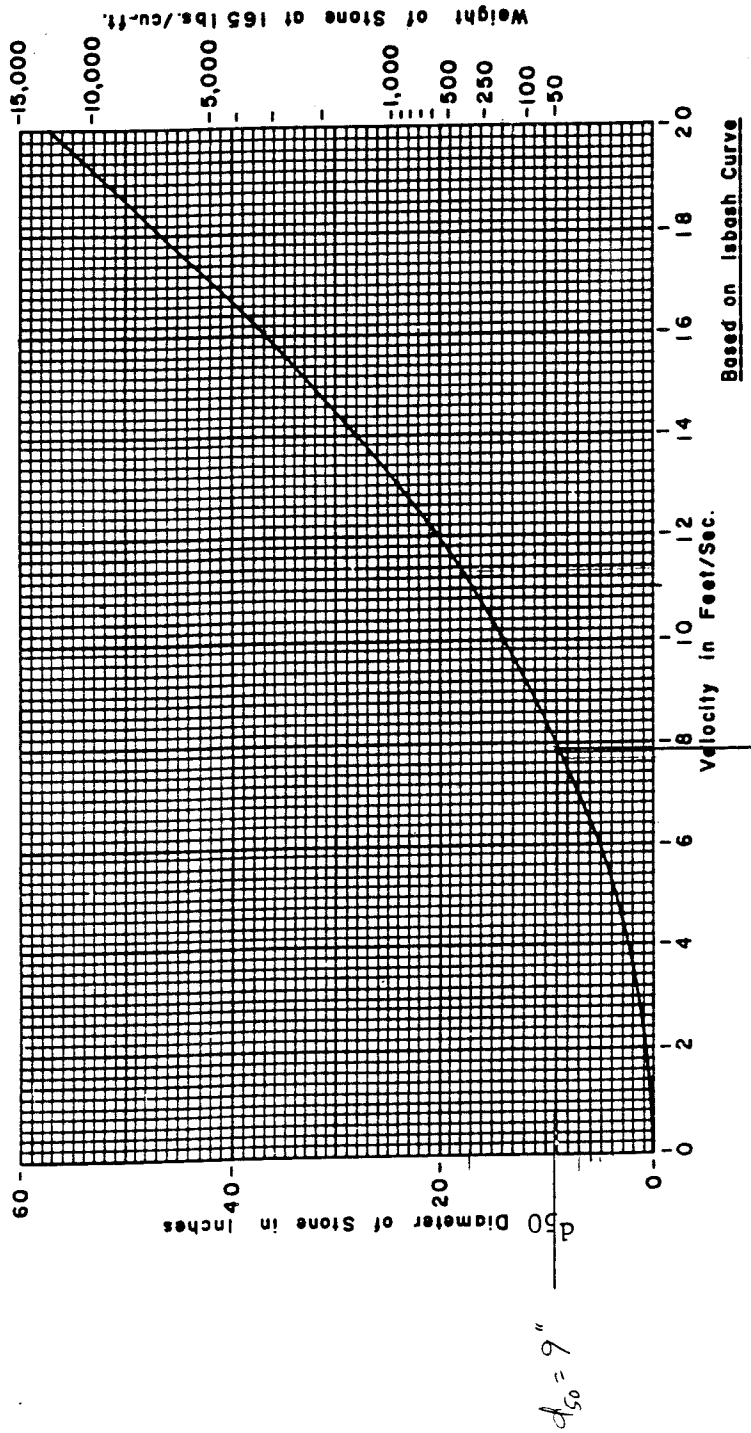
Diameter.....	3.00 ft
Slope.....	0.0100 ft/ft
Manning's n.....	0.013
Discharge.....	17.11 cfs ← (From ½ the subwatershed)

Computed Results:

Depth.....	1.04 ft
Velocity.....	7.90 fps
Flow Area.....	2.17 sf
Critical Depth....	1.32 ft
Percent Full.....	34.55 %
Full Capacity.....	66.70 cfs
QMAX @.94D.....	71.75 cfs
Froude Number.....	1.60 (flow is Supercritical)

Open Channel Flow Module, Version 2.06 (c) 1990
Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)

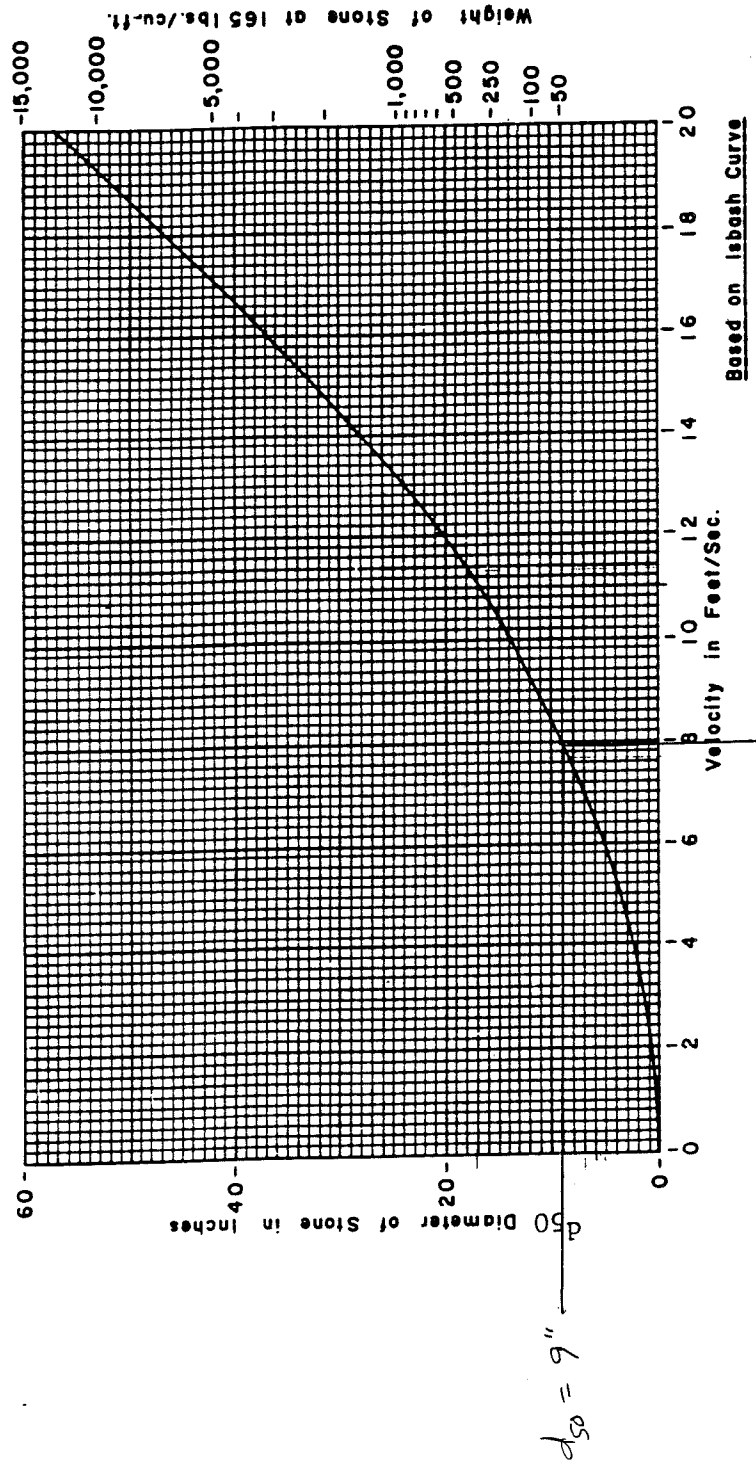


V = 7.90 Feet/sec.

Riprap Outlet from 36" SD

d_{50} = 9" OK

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)



V = 8 feet/sec.

All Plunge Pools above and Below WQ Units at or Below 8 feet/sec.

d_{50} = 9" OK

ATTACHMENT C

CHANNEL SIZING CALCULATIONS

Trapezoidal Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name:

Comment: CHANNEL TO WQ UNIT 1

Solve For Depth

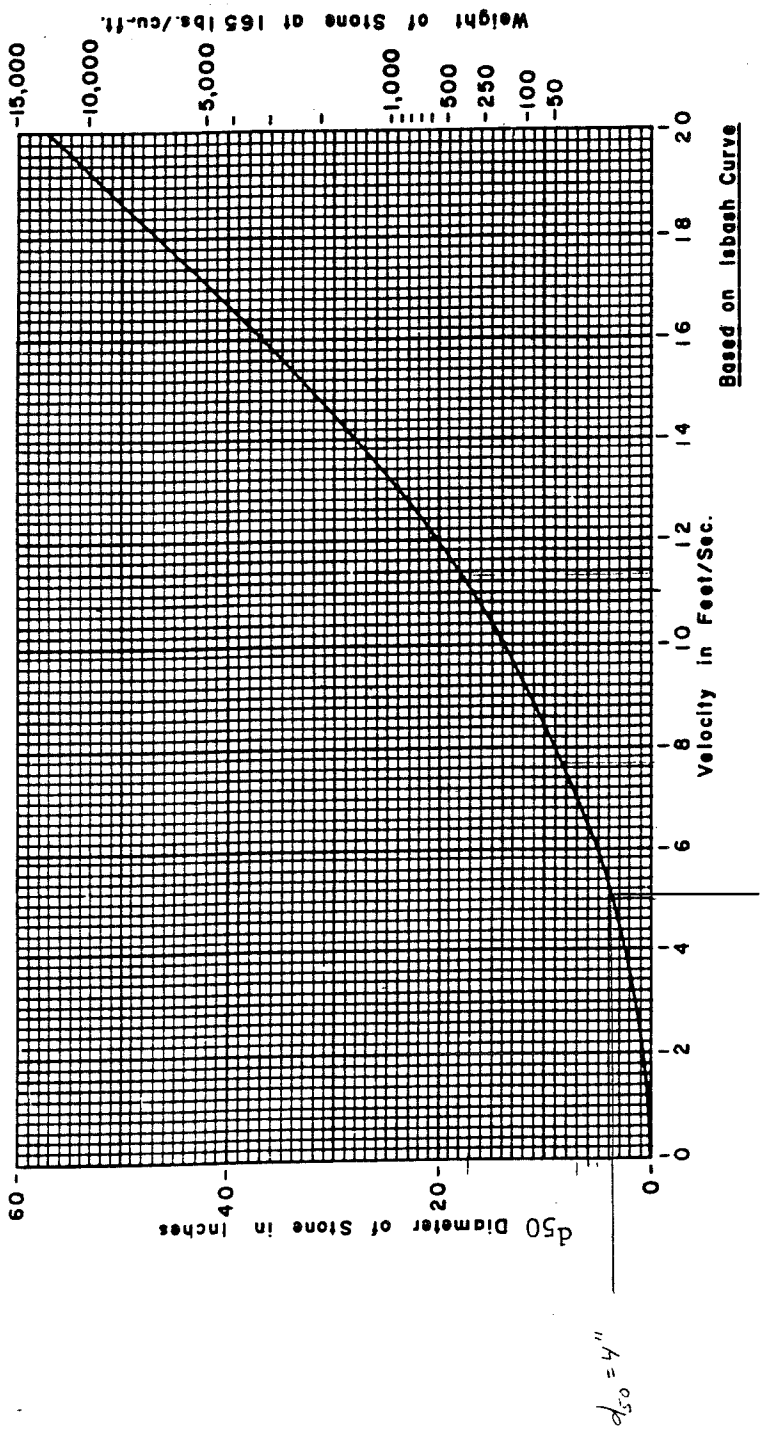
Given Input Data:

Bottom Width..... 3.00 ft
Left Side Slope.. 3.00:1 (H:V)
Right Side Slope. 3.00:1 (H:V)
Manning's n..... 0.045
Channel Slope.... 0.0400 ft/ft
Discharge..... 34.22 cfs

Computed Results:

Depth..... 1.07 ft
Velocity..... 5.12 fps
Flow Area..... 6.68 sf
Flow Top Width... 9.45 ft
Wetted Perimeter. 9.79 ft
Critical Depth... 1.11 ft
Critical Slope... 0.0344 ft/ft
Froude Number.... 1.07 (flow is Supercritical)

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)



Riprap Channel to WQ Unit #1

d_{50} = 6" OK

Trapezoidal Channel Analysis & Design
Open Channel - Uniform flow

Worksheet Name:

Comment: CHANNEL TO WQ UNIT 2

Solve For Depth

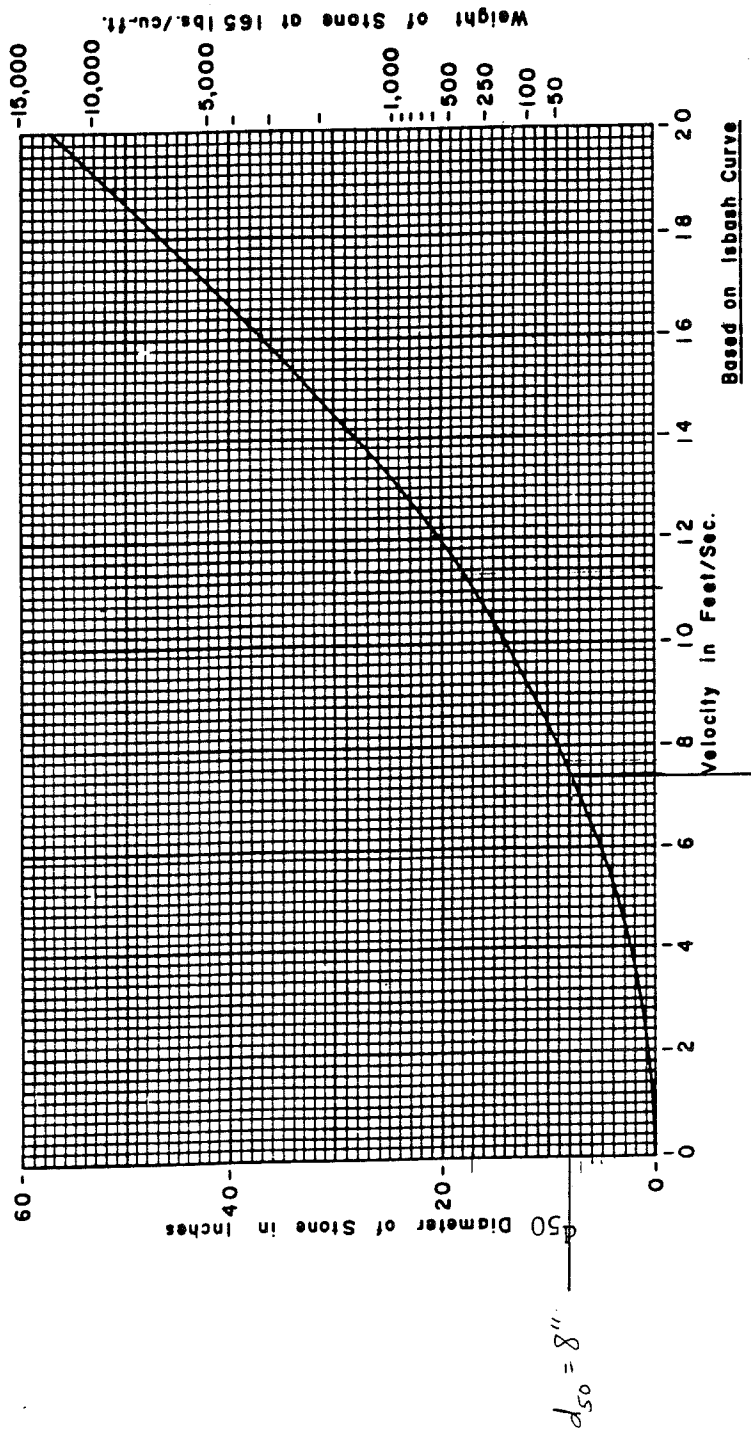
Given Input Data:

Bottom Width..... 3.00 ft
Left Side Slope.. 3.00:1 (H:V)
Right Side Slope. 3.00:1 (H:V)
Manning's n..... 0.045
Channel Slope.... 0.2000 ft/ft
Discharge..... 16.02 cfs

Computed Results:

Depth..... 0.48 ft
Velocity..... 7.42 fps
Flow Area..... 2.16 sf
Flow Top Width... 5.91 ft
Wetted Perimeter. 6.07 ft
Critical Depth... 0.75 ft
Critical Slope... 0.0383 ft/ft
Froude Number.... 2.16 (flow is Supercritical)

Figure 70.1 STONE SIZE FOR RIPRAP (USDA Soil Conservation Service)



Riprap Channel to W Q Unit #2

d_{50} = 9" OK

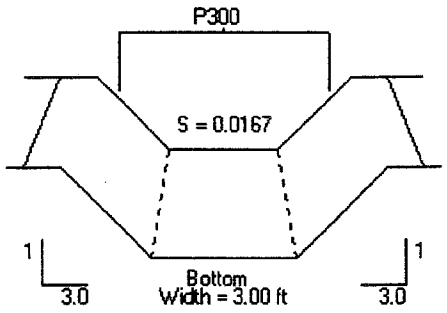
Turf Reinforcement Mat Channel
to WQ Unit 1

S = 0.0167 ft/ft

North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel	10/15/00	09:49 PM	COMPUTED BY: DA
PROJECT NAME: PORTLAND SNOW DUMP	PROJECT NUMBER: 1900.11		
FROM STATION/REACH: TO WQ	TO STATION/REACH: AHEAD WQ	DRAINAGE AREA: 1	DESIGN FREQUENCY: 50 YEAR

HYDRAULIC RESULTS

Discharge (cfs)	Peak Flow Period (hrs)	Velocity (fps)	Area (sq.ft.)	Hydraulic Radius(ft)	Normal Depth (ft)
34.2	1.0	3.48	9.81	0.84	1.38



Not to Scale

LINER RESULTS

Reach	Material Type / Staple Pattern	Phase / Class	Veg. Type / Veg. Density	Soil Type	Manning's 'n'	Permissible Shear Stress (psf)	Calculated Shear Stress (psf)	Safety Factor	Remarks
Straight	P300	3			0.049	8.00	1.43	5.58	STABLE
	Staple E	Default							

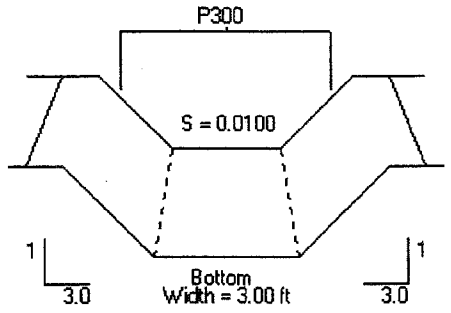
Turf Reinforcement Mat Channel
to WQ Unit 1

$S = 0.01$ ft/ft

North American Green - Erosion Control Materials Design Software Ver.4.1 - Channel	10/15/00	09:54 PM	COMPUTED BY: DA
PROJECT NAME: PORTLAND SNOW DUMP		PROJECT NUMBER: 1900.11	
FROM STATION/REACH: TO WQ	TO STATION/REACH: AHEAD WQ	DRAINAGE AREA: 1	DESIGN FREQUENCY: 50 YEAR

HYDRAULIC RESULTS

Discharge (cfs)	Peak Flow Period (hrs)	Velocity (fps)	Area (sq.ft.)	Hydraulic Radius(ft)	Normal Depth (ft)
34.2	20.0	2.88	11.87	0.93	1.55



Not to Scale

LINER RESULTS

Reach	Material Type / Staple Pattern	Phase / Class	Veg. Type / Veg. Density	Soil Type	Manning's 'n'	Permissible Shear Stress (psf)	Calculated Shear Stress (psf)	Safety Factor	Remarks
Straight	P300	3			0.049	8.00	0.97	8.27	STABLE
	Staple E	Default							

REVISED SITE PLANS

PLANNING REPORT #58-00

MUNICIPAL SNOW DUMP

OUTER CONGRESS STREET

SITE PLAN REVIEW AND SITE LOCATION OF DEVELOPMENT REVIEW

CITY OF PORTLAND PUBLIC WORKS, APPLICANT

Submitted to:

Portland Planning Board
Portland, Maine

October 24, 2000

I. INTRODUCTION

The City of Portland Public Works Department requests a Public Hearing to discuss the development of a City snow dump on the southerly side of outer Congress Street at the South Portland and Westbrook municipal boundaries. Bounded by WH Nichols on the north, Maine Turnpike Authority and the City boundary with South Portland on the east and south, and the city boundary with Westbrook on the west, the subject parcel contains 88.26 acres. The site is zoned I-M and was developed to be a Portland Water District sludge composting facility in the 1970's. Currently used as an aggregate storage facility, the site has a 79,000 sq ft shed/garage structure and exterior material storage piles in the existing condition.

The site contains over 8 acres of impervious and/or disturbed area currently and will have 6 acres of impervious area after development, according to the proposed plan.

Planning staff has contacted the Department of Environmental Protection and received affirmation that the project can be reviewed under delegated authority for Site Location of Development.

Deluca Hoffman Engineers has produced the site plan and stormwater report and will be available at the Hearing to describe the facility and to answer any questions. Jeff Preble, from Dufresne-Henry Engineers, has been retained to provide peer review of the project.

II. SUMMARY OF FINDINGS

Zoning:	IM
Lot Size:	88.26Acres
Building Size:	79,300 (existing in 1979)
Building Height:	30ft.
Additional impervious:	35,000 sq ft

Site Description:

The site is 88.26 acres and generally drains from north to south. The existing shed structure is a massive steel industrial building with open bays. The sludge composting use of the site has been discontinued for some time, and Public Works uses, and will continue to use, the building for storage regardless of the snow dump use.

A portion of the site is located within the City of South Portland and stormwater runoff will flow into South Portland. Deluca Hoffman will be coordinating review of the project with the City of South Portland.

Much of the land is undeveloped field and brush, with the southerly section of the parcel containing the headwaters of Long Creek; part of the Clark Pond watershed. While wetlands exist on site, the proposed impact will be small enough to avoid NRPA permitting.

Under 9300 sq ft

III. PROJECT DESCRIPTION

The proposed snow dump will be located south of the existing shed structure with 35,000 sq. ft. of additional paving to be installed for improved truck circulation. The snow will be blown or bulldozed into a pile in a 3.8 acre area confined by silt fence and engineered ditches. The ditches will convey storm and melt water into two vortechs type treatment tanks prior to outlettting into adjacent wetlands which are tributary to Long Creek

IV. SITE PLAN REVIEW

Representatives from the Planning, Public Works, the DRC and Fire Departments have reviewed the plans. Comments from these departments are incorporated into the Planning Board Report.

1. Traffic/Circulation

Access to the site will be provided by an existing driveway from outer Congress Street. Public Works Director, Bill Bray, estimates that the facility will generate 10 to 20 truck trips in the peak hours. Peak hours for this facility will be in the early mornings during snow events.

2. Bulk, Location, Height of Buildings

The existing shed structure is 30 ft. high and no new buildings are to be constructed.

3. Utilities, Easements, Solid Waste

Utilities for the facility currently exist on-site.

The Jetport holds an aviation easement over a portion of the property. This easement has restricted the applicant's ability to develop a wet pond for stormwater treatment.

4. Landscaping

Landscaping for the project is not proposed

5. Stormwater/Wetlands

The applicant has provided a Stormwater Management and Erosion Control report in the application package as well as an updated report included as Attachment #1. Stormwater is intended to be collected in an extensive ditch structure along the southerly extent of the dump area, outletting into two proposed treatment units at the south easterly portion of the property. Previously, the applicant had proposed a pond treatment method to provide treatment and detention where the entire pond structure was in South Portland. As stated above, the pond has been eliminated due to aviation concerns (bird attraction,) and the entire facility is now located

in Portland.

A result of the elimination of the pond, is that stormwater is now proposed to flow into Long Creek with out detention. The Long Creek watershed flows into Clark Pond before flowing into the Fore River. The design engineer, Dwight Anderson, has worked with the South Portland Planning and Engineering staff and determined that there are no downstream conditions which will be negatively effected by the increase in storm water flow. The Long Creek watershed has always received runoff from the site, and the increased flow anticipated from the new impervious area (35,000 sq ft) and the melting snow are not anticipated to stress the existing road crossings or drainage infrastructure in South Portland. A suggested condition of approval has been included which requires approval from the South Portland Planning Authority for increased stormwater flow from this facility.

South Portland Planning Staff has supplied a letter of approval

Additionally, the updated stormwater report includes an analysis of the melt addition to stormwater flows and a discussion of stormwater treatment. Briefly stated, the applicant has sized the ditch structures up from 25 year storm event to a 50 year event to accommodate the addition of melt water. Stormwater quality will be achieved through the treatment tanks at a rate consistent with Site Location of Development Standards. In a memo dated 10-20-00, the acting DRC recommends that the applicant add snow fence to the silt fence as means to provide a more durable silt containment system. In summary, the DRC agrees with the applicant's method to adhere with Site Location standards for stormwater treatment and agrees that detention is not required in this particular instance.

The Public Works staff is developing a Snow Dump Management Plan which will be critical to the long term function of the facility. Staff recommends a condition of approval that the management plan be submitted for Planning and DRC approval and that the Design engineering firm be retained to conduct annual evaluations of the facility.

or other outside firm

Ground water contamination is not anticipated due to the soils existing on site. Additionally, less than 1000 sq ft of wetlands are proposed to be disturbed.

6. Lighting

There is currently wall mounted lighting on the shed structure, and no additional lighting is proposed.

7. Fire Safety

A hydrant currently exists in front of the existing building and vehicle circulation will be improved with the additional paving.

8. Industrial Development

The large size of the parcel and the industrial nature of the area help to offset foreseeable impacts of this development. Environmental concerns are addressed in the Stormwater discussion above.

IV. MOTIONS FOR THE BOARD TO CONSIDER

On the basis of plans and information submitted by the applicant and on the basis of information contained in Planning Report #58-00, the Planning Board finds:

- That the project is in conformance with the Site Plan Ordinance of the Land Use Code: and,

- Approves the project under delegated authority for Site Location of Development.

approval is subject to the following conditions of approval:

- That the applicant submit the Snow Dump Facility Management Plan for Planning Staff and DRC review and approval; and that the Public Works Authority retain an outside engineering firm to annually inspect the facility to confirm compliance with the Management Plan: and,

- ~~That the applicant receive from the South Portland Planning Authority approval for increase stormwater discharge from the proposed project.~~

6-0

<u>Attachments:</u>

1. Updated Written Statement and Stormwter Report
2. 1-10-00 DRC letter
3. DEP correspondance
4. Standards for Local Site Location of Development Standards
5. 10-20-00 DRC letter
6. 10-20-00 DRC letter
7. Plans and Details

PRELIMINARY

OPERATION AND MAINTENANCE PROGRAM
OUTER CONGRESS STREET SNOW DUMP
October 2000

General

The Snow Dump at the former sludge compost facility off Outer Congress Street will be operated and maintained by the City of Portland Public Works Department. The Snow Dump provides a field area of approximately 3.8 acres beyond a paved area south of the existing materials storage building for disposal of City snow. The height of piled snow will be limited to the approximate height of the existing building (30 feet +/-) which is more than 30 feet below the obstruction limit set by the FAA off the end of the Portland International Jetport runway at this location.

Equipment Circulation

Trucks will enter the facility along an existing drive to the west of the Maine Turnpike ramp entrance to Exit 7A. Truck traffic will travel along the south of the existing materials storage building headed west, turn in a paved area off the end of the building and travel east along the south edge of the paved area, where the snow will then be unloaded. A snow blower will then blow the unloaded snow in a southerly direction away from the building to a maximum height of that of the existing building. Trucks will then exit the facility along the same route they entered.

Hours of Operation

During normal snowfall events the Snow Dump will generally be operated from 10:00 p.m. to 8:00 a.m. Larger snow events may require longer hours of operation. When the facility is not in use a gate along the access drive will be locked to prohibit unwanted dumping.

Silt Fence

Silt fence will be installed above ditches and channels along the down gradient slope of the entire Snow Dump area. The silt fence will be cleaned of silt and trash in the spring and inspected for repair in the fall and as necessary during operation of the Snow Dump. Trash and debris will be picked up in the spring and will be contained within the Snow Dump area with a snow fence installed along the southerly boundary of the facility. Trash will be disposed of at L.R. Higgins on Riverside Street in Portland.

Drainage System

Preface: Stormwater from portions of the Snow Dump site is directed to a conveyance system which transports the flow to the water quality units. This conveyance system consists of open swales and ditches and a piped drain system. Sediment which accumulates in the water quality

units is carried by the drainage system. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the water quality units.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to assure the entrances are not clogged with leaves or other debris.

Conveyance channels may be riprapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be removed. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be repaired.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long term basis, and that its operation does not transport excessive sedimentation to any downstream water quality units or the receiving waters. If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general a sump or sediment trap should be used.

Vegetated ditches or swales should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any vegetation cut in the ditch area should be removed from the site. any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Any riprap that becomes displaced should be replaced and chinked to assure its stability.

Frequency: The piped drainage system should be inspected on an annual basis. Cleaning pipelines will depend on the rate of sediment accumulation. Open, vegetated swales should be mowed at least monthly during the growing season. Debris should be removed as required to maintain hydraulic capacity.

Water Quality Units

Access to water quality units will be maintained at all times throughout the year by keeping gravel access routes plowed. A general discussion of Vortechs Stormwater Treatment System Maintenance recommendations is included as an attachment to this Operation and Maintenance Program.

Program Administration

A reliable administrative and institutional structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must have legal title to the property, or must be legally responsible for long term operation and maintenance of the facilities.

2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.

3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.

4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.

5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

Generally the above criteria are anticipated to be City of Portland inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. It is therefore necessary to clearly establish the assigned administrative body in a responsible and sustainable manner.

Record Keeping

Records of all inspections and maintenance work accomplished should be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions.

Vortechs™
STORMWATER TREATMENT SYSTEM

MAINTENANCE

The Vortechs System requires minimal routine maintenance. However, it is important that the system be inspected at regular intervals and cleaned when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size of the unit, e.g., heavy winter sanding will cause the grit chamber to fill more quickly but regular sweeping will slow accumulation.

Inspection

Inspection is the key to effective maintenance and it is easily performed. In the first year of operation, frequent inspections of the accumulated sediment volume within the aluminum grit chamber are necessary to establish an appropriate maintenance plan. Vortechnics recommends seasonal inspections during the first year. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. After the first year, the inspection schedule should be reviewed and modified according to experience. It is very useful to keep a record of each inspection. A simple form for doing so is provided.

The Vortechs System only needs to be cleaned when inspection reveals that it is nearly full; specifically, when sediment depth has accumulated to within six inches of the dry-weather water level. This determination can be made by taking 2 measurements with a stadia rod or similar measuring device: one measurement is the distance from the manhole opening to the top of the sediment pile and the other is the distance from the manhole opening to the water surface. If the difference between the two measurements is less than six inches the system should be cleaned out. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile.

In Vortechs installations where the risk of large petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, an oil or gasoline spill should be cleaned out immediately. Oil or gas that accumulates on a more routine basis should be removed when an appreciable layer has been captured.

Cleaning

Cleanout of the Vortechs System with a vacuum truck is generally the most effective and convenient method. Cleanout should not occur within 6 hours of a rain event to allow the entire collection system to drain down. Properly maintained Vortechs Systems will only require evacuation of the grit chamber portion of the system, in which case only the manhole cover nearest to the system inlet need be opened to remove water and contaminants. However, all chambers should be checked to ensure the integrity of the system. In installations where a "clamshell" is being utilized for solids removal, prior to removing the grit, absorbent pads or pillows can be placed in the oil chamber to remove floating contaminants. Once this is done, sediment may then be easily removed with the clamshell.

In some cases, it may be necessary to pump out all chambers. An important maintenance feature built into Vortechs Systems is that floatables remain trapped after a cleaning. A pocket of water between the grit chamber and the outlet panel keeps the bottom of the baffle submerged, so that all floatables remain trapped when the system begins to fill up again. Therefore, in the event of cleaning other chambers it is imperative that the grit chamber be drained first. Manhole covers should be securely seated following cleaning activities, to ensure that surface runoff does not leak into the unit from above.

Vortechs™
STORMWATER TREATMENT SYSTEM

Inspection & Maintenance Log

Model:			Location:		
Date	**Water Depth to Sediment[1]**	**Floatable Layer Thickness[2] (approx)**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**

1. The water depth to sediment is determined by taking two measurements with a stadia rod: one measurement is the distance from the manhole opening to the top of the sediment pile and the other is the distance from the manhole opening to the water surface. If the difference between the two measurements is less than six inches the system should be cleaned out.

2. The system should be cleaned out if the floating layer of trapped debris is 3-6" in depth.

Vortechs™
STORMWATER TREATMENT SYSTEM

Inspection & Maintenance Log

Model: 5000			Location: Anywhere		
Date	**Water Depth to Sediment[1]**	**Floatable Layer Thickness[2] (approx)**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
4/10/96	30"	0"	N/A	B. Johnson	Installed
8/15/96	26"	sheen	None	S. Riley	
11/15/96	22"	sheen	None	B. Johnson	
1/15/97	16"	sheen	None	B. Johnson	
2/15/97	7"	1"	Clean-out scheduled	S. Riley	3 snowstorms
2/18/97	30"	0"	System cleaned w/ Vactor truck	S. Riley	Cleaned
3/15/97	28"	Sheen		S. Riley	swept parking lot
4/15/97	27"	0.5"	Placed oil-absorbent material in system	B. Johnson	
5/16/97	23"	0"	Replaced oil-absorbent material w/new	B. Johnson	

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DeLUCA-HOFFMAN ASSOCIATES, INC.
CONSULTING ENGINEERS

778 MAIN STREET
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TEL. 207 775 1121
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- ROADWAY DESIGN
- ENVIRONMENTAL ENGINEERING
- TRAFFIC STUDIES AND MANAGEMENT
- PERMITTING
- AIRPORT ENGINEERING
- SITE PLANNING
- CONSTRUCTION ADMINISTRATION

November 7, 2000

Mr. Bill Needleman, Senior Planner
City of Portland
Planning and Urban Development
389 Congress Street
Portland, ME 04101

Subject: **City of Portland – Snow Dump Facility**
Revised Operation and Maintenance Program

Dear Mr. Needleman:

The attached Snow Dump Operation and Maintenance Program has been revised based upon Dufresne-Henry's comments of October 30, 2000 listed below.

- *Equipment Circulation* – This section should address how snow blowing operations will be monitored as to not allow snow to be blown beyond the silt fence and cut off ditch.

- *Maintenance of Storm drainage system (Frequency)* – Storm drainage piping should be inspected after major storms. In addition, outlets should be inspected after major storm events for signs of erosion, scouring, and accumulation of sediments. Necessary repair and maintenance should be performed when disrepair is noted.

- *Water Quality Units* – The plan should indicate that as a minimum, the inspection and maintenance recommendations provided by the Vortechs Stormwater Treatment Unit Manufacturer will be adhered to by the City of Portland.

Please contact our office with any questions concerning this matter.

Sincerely,

DeLUCA-HOFFMAN ASSOCIATES, INC.

Dwight D. Anderson, P.E.
Design Engineer

DDA/mb/JN1900.11/Needleman11-7

Attachment

c: Bill Bray, P.E. – City of Portland Public Works w/Attachments
Kevin Noyes- City of Portland Public Works w/Attachments
Valerie Giguere – Dufresne-Henry w/Attachments

OPERATION AND MAINTENANCE PROGRAM
OUTER CONGRESS STREET SNOW DUMP
October 2000
Revised November 2000

General

The Snow Dump at the former sludge compost facility off Outer Congress Street will be operated and maintained by the City of Portland Public Works Department. The Snow Dump provides a field area of approximately 3.8 acres beyond a paved area south of the existing materials storage building for disposal of City snow. The height of piled snow will be limited to the approximate height of the existing building (30 feet +/-) which is more than 30 feet below the obstruction limit set by the FAA off the end of the Portland International Jetport runway at this location.

Equipment Circulation

Trucks will enter the facility along an existing drive to the west of the Maine Turnpike ramp entrance to Exit 7A. Truck traffic will travel along the south of the existing materials storage building headed west, turn in a paved area off the end of the building and travel east along the south edge of the paved area, where the snow will then be unloaded. A snow blower will then blow the unloaded snow in a southerly direction away from the building to a maximum height of that of the existing building. Trucks will then exit the facility along the same route they entered

Snow blower operators will be instructed not to blow snow beyond the orange snow fence installed above the silt fence and ditch. Periodic inspections of the perimeter of the snow dump will be made to ensure the snow fence limit is not being encroached.

Hours of Operation

During normal snowfall events the Snow Dump will generally be operated from 10:00 p.m. to 8:00 a.m. Larger snow events may require longer hours of operation. When the facility is not in use a gate along the access drive will be locked to prohibit unwanted dumping.

Silt Fence

Silt fence will be installed above ditches and channels along the down gradient slope of the entire Snow Dump area. The silt fence will be cleaned of silt and trash in the spring and inspected for repair in the fall and as necessary during operation of the Snow Dump. Trash and debris will be picked up in the spring and will be contained within the Snow Dump area with a snow fence installed along the southerly boundary of the facility. Trash will be disposed of at L.R. Higgins on Riverside Street in Portland.

Drainage System

Preface: Stormwater from portions of the Snow Dump site is directed to a conveyance system which transports the flow to the water quality units. This conveyance system consists of open swales and ditches and a piped drain system. Sediment which accumulates in the water quality units is carried by the drainage system. Maintenance of this system can play a major role in the long-term maintenance costs and the effectiveness of the water quality units.

Inspection: The tributary drainage system should be periodically inspected to assure that it is operating as intended, and that its carrying capacity has not been diminished by accumulations of debris and sediment or other hydraulic impediments. On piped systems the inlets must be inspected to assure the entrances are not clogged with leaves or other debris.

Conveyance channels may be riprapped or vegetated, depending on the gradient and expected flow velocities. These facilities must be inspected to insure debris or sedimentation does not reduce their carrying capacity. Excess vegetative growth must also be removed. The surface protection for the channels, either stone or vegetation, must be inspected to insure its integrity. Any areas subject to erosion should be repaired.

Maintenance: Maintenance of the storm drainage system must assure that it continues to serve its design function on a long term basis, and that its operation does not transport excessive sedimentation to any downstream water quality units or the receiving waters. If sediment in the pipeline exceeds 20% of the diameter of the pipe, it should be removed. This may be accomplished by hydraulic flushing, or by mechanical means. If hydraulic flushing is used the downstream conditions should be analyzed. In general a sump or sediment trap should be used.

Vegetated ditches or swales should be mowed at least monthly during the growing season. Larger brush or trees must not be allowed to become established in the channel. Any vegetation cut in the ditch area should be removed from the site. any areas where the vegetation fails will be subject to erosion and should be repaired and revegetated. Any riprap that becomes displaced should be replaced and chinked to assure its stability.

Frequency: The piped drainage system should be inspected on an annual basis and after each significant storm event (> 1 inch of precipitation in a 24 hour period). In addition, pipe outlets and riprap aprons will be inspected after each significant storm event for signs of erosion, scouring, and accumulated sediments. Necessary inspection and maintenance will be performed as necessary to maintain the integrity and effectiveness of the drainage system. Cleaning pipelines will depend on the rate of sediment accumulation. Open, vegetated swales should be mowed at least monthly during the growing season. Debris should be removed as required to maintain hydraulic capacity.

Water Quality Units

Access to water quality units will be maintained at all times throughout the year by keeping gravel access routes plowed. The inspection and maintenance of the water quality units shall be in accordance with the manufacturer's recommendations. A summary of Vortechs Stormwater Treatment System Maintenance recommendations is included as an attachment to this Operation and Maintenance Program.

Program Administration

A reliable administrative and institutional structure must be established to assure implementation of the maintenance programs described in the foregoing section. Key factors that must be considered in establishing a responsive administrative structure include:

1. Administrative body must have legal title to the property, or must be legally responsible for long term operation and maintenance of the facilities.

2. Administrative body must have the financial resources to accomplish the inspection and maintenance program over the life of the facility.

3. The administrative body must have a responsible administrator to manage the inspection and maintenance programs.

4. The administrative body must have the staff to accomplish the inspection and maintenance programs, or must have authority to contract for the required services.

5. The administrative body must have a management information system sufficient to file, retain, and retrieve all inspection and maintenance records associated with the inspection and maintenance programs.

Generally the above criteria are anticipated to be City of Portland inspection and maintenance responsibilities, it is likely that the system will fail to meet its water quality objectives at some point during its life. It is therefore necessary to clearly establish the assigned administrative body in a responsible and sustainable manner.

Record Keeping

Records of all inspections and maintenance work accomplished should be kept and maintained to document facility operations. These records should be filed and retained for a minimum 5-year time span. The filing system should be capable of ready retrieval of data for periodic reviews by appropriate regulatory bodies. Where possible, copies of such records should also be filed with the designated primary regulatory agency for their review for compliance with permit conditions.

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CITY OF PORTLAND, MAINE

PLANNING BOARD

October 24, 2000

William Bray, Director of Public Works
55 Portland Street
Portland, Maine 04101

Re: Snow Dump facility, outer Congress Street.

Dear Mr. Bray:

On October 24, 2000, the Portland Planning Board voted 6-0 (Cole absent) to approve your application to construct a snow dump facility at outer Congress Street. The Board found that the application met the standards of the Site Plan ordinance of the Land Use code and approved the project under delegated authority for Site Location of Development.

The approval was granted for the project with the following condition:

> That the applicant submit the Snow Dump Facility Management Plan for Planning Staff and Development Review Coordinator review and approval; and that the Public Works Authority retain an outside engineering firm to annually inspect the facility to confirm compliance with the Management Plan.

The approval is based on the submitted site plan and the findings related to site plan review standards as contained in Planning Report # 58-00, which is attached.

Please note the following provisions and requirements for all site plan approvals:

1. A performance guarantee covering the site improvements as well as an inspection fee payment of 2% of the guarantee amount and 7 final sets of plans must be submitted to and approved by the Planning Division and Public Works prior to the release of the building permit. If you need to make any modifications to the approved site plan, you must submit a revised site plan for staff review and approval. (An inspection fee and performance guarantee waiver request has been forwarded to the City Manager's Office.)

If there are any questions, please contact the Planning Staff.

Sincerely,

Jaimey Caron (WBL)

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