

**NEW HAMPSHIRE COMPREHENSIVE UPLAND  
DREDGE MATERIAL DISPOSAL STUDY**

**TABLE OF CONTENTS**

1. EXECUTIVE SUMMARY .....	1
2. PURPOSE OF STUDY.....	1
3. PROJECT AUTHORITY .....	1
4. INTRODUCTION .....	1
5. PROJECT ASSUMPTIONS.....	4
6. METHODOLOGY .....	4
7. GIS ANALYSIS .....	19
8. RESULTS .....	24
9. REAL ESTATE .....	24
10. CONCLUSION.....	25

**LIST OF FIGURES**

Figure 1: General location map of Federal projects.....	3
Figure 2: General location of potential offloading sites .....	9
Figure 3: Potential offload site for Hampton Harbor and the Federal channel.....	10
Figure 4: Federal channel for Little Harbor (Little Harbor to use the offloading sites for Portsmouth harbor). .....	11
Figure 5: Potential offload site for Portsmouth Harbor and Piscataqua River and the Federal channel .....	12
Figure 6: Potential offload site for Rye Harbor and the Federal channel .....	13
Figure 7: Potential offload site for Bellamy River and the Federal channel .....	14
Figure 8: Existing offload site for Cocheco Harbor and the Federal channel .....	15
Figure 9: Potential offload site for Exeter River and the Federal channel.....	16
Figure 10: Potential offload site for Lamprey River and the Federal channel.....	17
Figure 11: Upland sites within 5-mile radius.....	20
Figure 12: Upland sites within 10-mile radius.....	21
Figure 13: Upland sites within 20-mile radius.....	22
Figure 14: Upland sites within 30-mile radius.....	23

## LIST OF TABLES

Table 1: Summary of quantities and acreage for various Federal projects.....	18
Table 2: Cost estimates for future dredging of Hampton harbor. ....	29
Table 3: Cost estimates for future dredging of Little Harbor. ....	30
Table 4: Cost estimates for future dredging of Piscataqua River/Portsmouth Harbor. ....	33
Table 5: Cost estimates for future dredging of Rye Harbor.....	34
Table 6: Summary of GIS Methodology .....	39

# **NEW HAMPSHIRE COMPREHENSIVE UPLAND DREDGE MATERIAL DISPOSAL STUDY**

## **1. Executive Summary**

The Corps has identified 100 possible sites for the upland disposal of dredged materials in New Hampshire. The Corps has not contacted the owners of these parcels to establish their willingness to sell or lease the land. Predictions were made for future dredging of Federal projects. Not all of the predicted dredged material can be placed in upland disposal sites, due to economic factors. Dredged material disposal sites will continue to be selected and used based on a combination of financial, regulatory, and social factors.

## **2. Purpose of Study**

The Corps was authorized to identify and evaluate upland disposal sites for dredged material from Federal navigation projects in New Hampshire.

## **3. Project Authority**

This study was authorized by Congress in the 2004 Energy and Water Development Appropriations Bill (Report 108-212).

## **4. Introduction**

The Corps maintains 8 navigation projects in New Hampshire (Figure 1) and has conducted several dredge material disposal operations in the recent past, one in 1993 and one in 1994. A review of dredging projects and disposal needs was performed by the State of New Hampshire in 1999. The “New Hampshire Dredged Material Management Study” (1993) reviewed several harbors in New Hampshire and attempted to estimate the amount of dredged material that would be produced by these harbors through the year 2042. Basically it determined that over 2 million cubic yards (CY) would be generated during that time from four water bodies (Hampton-Seabrook, Little, Portsmouth, and Rye harbors). This study also attempted to determine the location of historic disposal sites for each of these projects and assess the need for open water disposal sites.

The 1994 study, “A Dredged Material Management Study for Coastal Maine and New Hampshire” took a closer, more comprehensive look at the issue. All Federal, state, and local dredging activities were examined over the period from 1950 to 1993. It was estimated that 2.8 million CY (1.1 million Federal and 1.7 million non-Federal) of dredged material, originating in nine water bodies, would be generated in New Hampshire through the year 2044. A history of disposal actions was also included as well as a general statement as to the likely disposal options in the future. Beneficial uses (beach nourishment, tidal flat creation) and non-long haul disposal options (riverine and near shore) were stated as being the most likely for New Hampshire’s dredged material.

The report “Dredging in New Hampshire: A Review of Projects, State Permit Procedure, and Future Coastal Dredging Needs”, was prepared by the New

Hampshire Office of State Planning in 1999. This report was primarily a review of the data presented in the 1994 Corps report. Where more information was available, a validation of some of the dredging estimates was attempted. Reasons for why some of the disposal options listed in the 1994 report are not feasible in New Hampshire were discussed. The report concluded that a dredged material disposal management plan, specific to New Hampshire, needed to be conducted. This upland disposal site study is a first step toward that end.



Figure 1: General location map of Federal projects

## 5. Project Assumptions

It is assumed that the predicted dredging quantities and time periods that have been developed in the 1994 report are reasonable. This study relied on the existing data from past reports for sediment sampling and testing. Historical data on dredging was obtained from Corps records.

## 6. Methodology

The entire study was split into 5 tasks –

A. *Determine the amount of material that can be placed in the upland sites.*

A historical analysis was done to review the past dredging activities in the Federal projects and to predict future dredging needs. Following is a summary of the review.

1. Hampton Harbor –  
For maintenance projects, average amount per dredge event= 19,943 CY and average amount per year = 11,785 CY. Thirteen maintenance dredging events were done from 1965 through 1987, for a total of 259,263 CY.
2. Little Harbor –  
For maintenance projects, average amount per dredge event = 22,930 CY and average per year = 468 CY. Two maintenance dredging events were done from 1994 through 2001, for a total of 45,860 CY.
3. Piscataqua River/Portsmouth harbor -  
For maintenance projects, average amount per dredge = 23,861 CY and average per year = 6,316 CY. Nine maintenance dredging events were done from 1965 through 2000, for a total of 214,745 CY.
4. Rye Harbor -  
For maintenance projects, average amount per dredge = 61,999 CY and average per year = 4,276 CY. Two maintenance dredging events were done from 1962 through 1991, for a total of 123,998 CY.
5. Bellamy River  
None.
6. Cocheco River

For maintenance projects, average amount per dredge = 23,958 CY and average per year = 819 CY. Four maintenance dredging events were done from 1888 through 2004-05, for a total of 95,831 CY.

The above estimates includes the maintenance dredging that is currently underway (beginning fall 2004) and that has an estimated quantity of 75,000 CY.

7. Exeter River  
No estimates available. One maintenance dredging event was done in the fall of 1991 for 6,792 CY.
8. Lamprey River  
Based on a 1997 field survey, the quantity to be dredged is estimated to be 40,000 CY. One prior maintenance dredging was done in 1903 for 7,675 CY.

Details of the dredging history for the above projects can be found in the Appendix A.

***B. Review regulatory laws for upland disposal***

Following are the regulations for upland disposal of dredged material in the State of New Hampshire -

Upland disposal of dredge material is regulated as solid wastes (RSA 149-M) or hazardous wastes (RSA 147-A). Regulations for upland disposal of contaminated soils and media are found in the New Hampshire Code of Administrative Rules Solid Waste Management, Section Env-Wm 2603. Table 2600-1 of this code lists the maximum contaminant concentrations for solid waste otherwise the material is classified as hazardous waste (see Appendix D-1). Prior to transfer of waste off site, the applicant needs to comply with determination requirements in Env-Wm 502 (hazardous waste determination) and Env-Ws 412 (surface waters - reporting and remediation of oil discharges) as applicable.

Federal municipal solid waste (MSW) landfill requirements are not applicable because there is no household component of the waste. Env-Wm 2603.05 lists the authorized upland reuse requirements and limitations. These are summarized below:

- a.) The material may be used as daily landfill cover if it meets the landfill use quality criteria of Table 2600-1.
- b.) The material may be used as unspecified fill material to achieve final grades prior to closure at unlined landfills provided it meets the off-site quality requirements of Table 2600-1.

- c.) The material meets the off-site use and siting restrictions of Env-Wm 2603.05.
- 1.) Soil cannot be distributed or used in any residential or playground applications.
  - 2.) No fill in a 100-year floodplain, wetland or land used for crops with direct human consumption.
  - 3.) No use within a recharge area of a sole aquifer or within 100 feet from any surface water body.
  - 4.) Meets heavy metal limits of the State Sludge Rules, Env-Ws 800.
  - 5.) Concentrations of total petroleum hydrocarbons (TPHs) in the soil shall be less than 100 ppm.

The Universal siting requirements (Part Env-Wm 2703) from the New Hampshire Code of Administrative Rules provides for the protection of groundwater and surface waters (ENV-Wm 2703.04), wetlands (Env-Wm 2703.05), shorelines (Env-Wm- 2703.06), and designated rivers (Env-Wm 2703.07). The State of New Hampshire Revised Statutes Annotated (RSA) that are involved include RSA 482-A, RSA 483, RSA 483-BRSA 485, RSA 485-A, and RSA 485-B. The sections of these RSAs that involve solid waste storage or treatment facilities are included in Appendix D-2. For water protection all new solid waste storage or treatment facility shall be set back a minimum of 250 feet from the normal high tide water mark of a designated natural river or segment (exceptions can be found in Appendix D), and 250 feet from the reference line of public waters. Establishment or expansion of solid and hazardous waste facilities are prohibited within protected shorelines and within any wellhead protection area classified as GAA (future use as drinking water supply for public water systems).

#### Dewatering of dredged material

The quality of effluent discharge is regulated under Section 404 of the Clean Water Act. Discharge of effluent from a Confined Disposal Facility (CDF) is defined as dredged material and is defined in 33CFR323.2(d). Return water from upland disposal is regulated by 33CFR330, appendix A, part B(16). Therefore, one needs to comply with the State Water Quality Certification or the sponsor might need to apply for a wetlands permit from the New Hampshire Department of Environmental Services Wetlands Bureau depending on the location of the dewatering site.

#### Compliance

All federal projects need to be in compliance with all federal laws, regulations, Executive Orders, and Executive Memorandum See Appendix D-3 for list.

**C. Evaluate offloading and dewatering site potential at each Federal project site**

The State of New Hampshire's chief Harbormaster was contacted to develop a list of potential offloading and dewatering sites. This list for all the Federal projects is shown below. Figure 2 shows these sites on a map.

1. Hampton Harbor

Two existing facilities with steel bulkheads that a barge and a shore side crane could operate from could be used. Existing piers are heavy-duty piers. Potentially, the state pier on the Hampton side could be used.

2. Little Harbor

No existing piers. Could use Portsmouth harbor's offloading sites.

3. Portsmouth Harbor/Piscataqua River

Site #0 – State of New Hampshire's existing terminal (at Market Street) is an ideal site as it is centrally located in the harbor, has deepwater access and highway access.

Site #1 – Is an existing boat ramp that is owned by the City of Portsmouth which can be used for off-loading. This site has been used in the past for off-loading.

Site #2 – Is Fish & Game's boat ramp made of dirt grade. This site is owned by the State of New Hampshire and has a smaller area than the site #1. Could be used for limited offloading.

4. Rye Harbor

Site # 1 – Is made of wooden pier and is owned by State of New Hampshire. It is currently being used as a commercial fish pier.

Site # 2 – Is a paved land ramp and is owned by the State of New Hampshire.

Site # 3 – Is a private ramp near a restaurant.

5. Bellamy River

Site #1 – Is a parking area that can be used for offloading, provided hydraulic dredging is used.

6. Cocheco River

Will probably use the existing offloading site at Dover, which is owned by the City of Dover.

7. Exeter River

Site # 1 – Is a parking area, can be used as a staging area/launch area. Philips Exeter has built a temporary ramp for their dredging activity nearby.

8. Lamprey River

Existing piers at upper Narrow, SW side of the Lamprey River. Possibly build temporary structures at Mrs. Valerie Shelton's property at 124 Cushing Rd, Newmarket, NH. Town has a launch ramp on a rocky area. There are no height constraints in this stretch of the Lamprey River (as to transportation restrictions during low tides).



Figure 2: General location of potential offloading sites

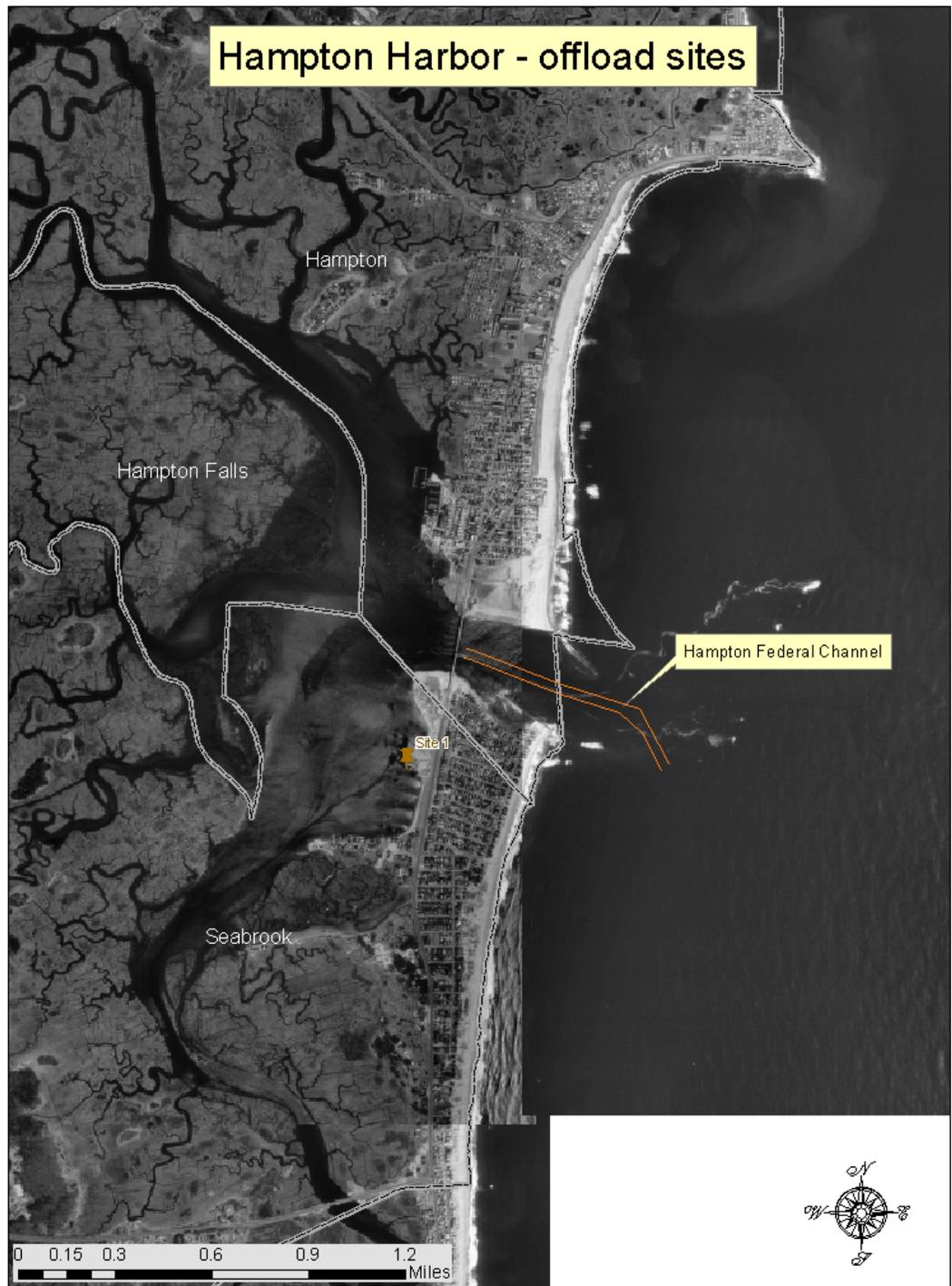


Figure 3: Potential offload site for Hampton Harbor and the Federal channel



Figure 4: Federal channel for Little Harbor (Little Harbor to use the offloading sites for Portsmouth harbor).

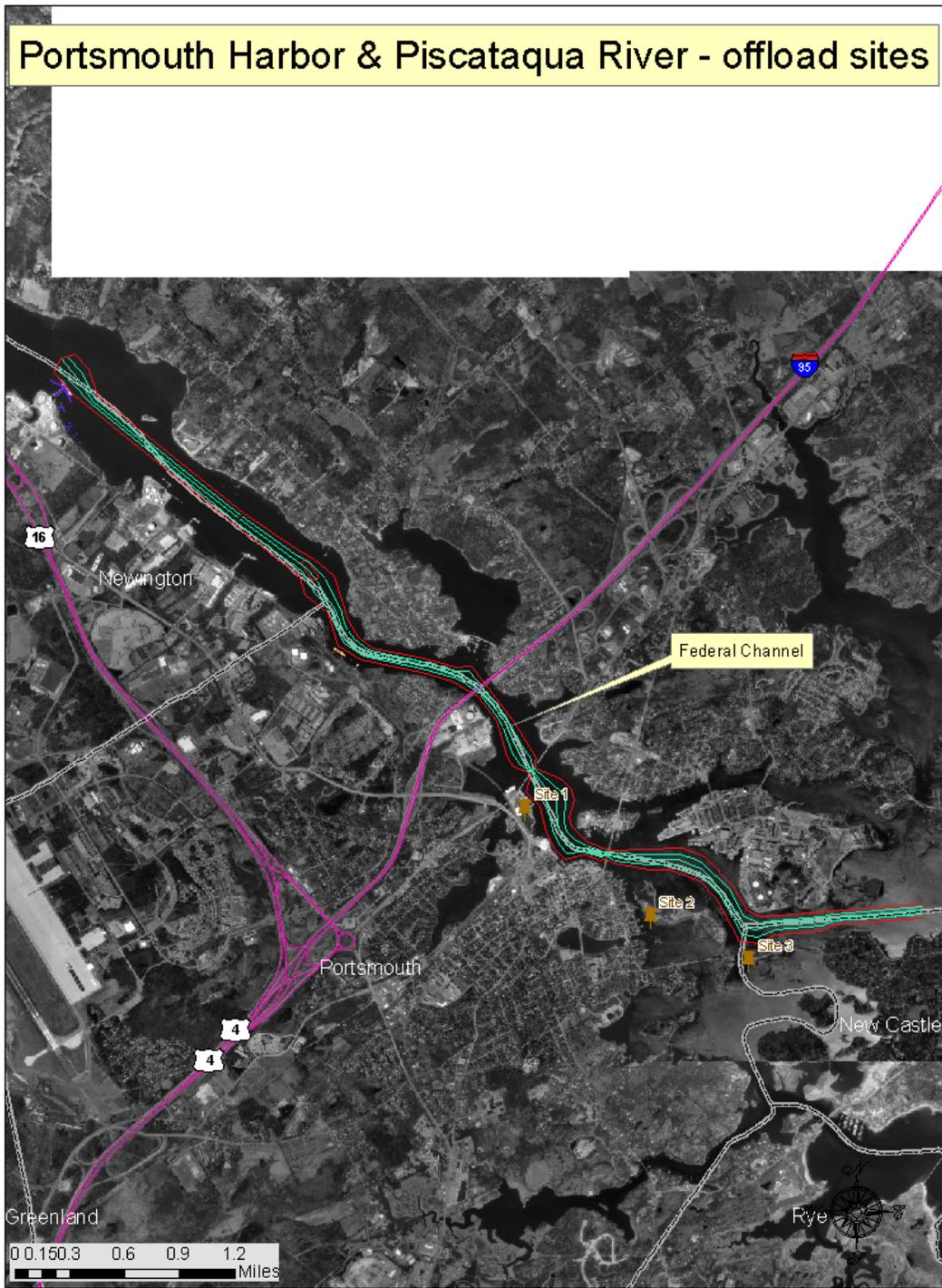


Figure 5: Potential offload site for Portsmouth Harbor and Piscataqua River and the Federal channel



Figure 6: Potential offload site for Rye Harbor and the Federal channel



Figure 7: Potential offload site for Bellamy River and the Federal channel

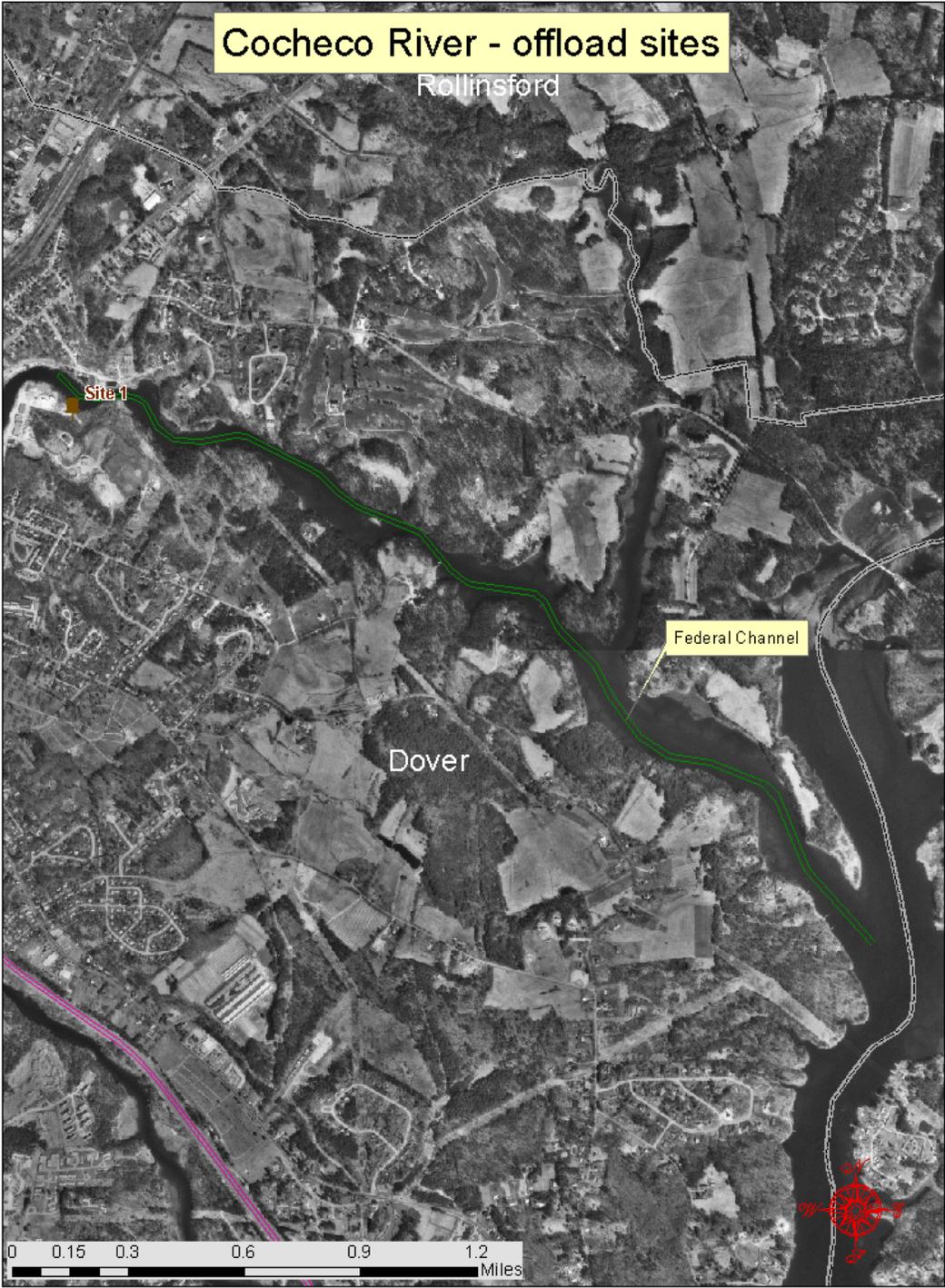


Figure 8: Existing offload site for Cocheco Harbor and the Federal channel



Figure 9: Potential offload site for Exeter River and the Federal channel



Figure 10: Potential offload site for Lamprey River and the Federal channel

**D. Analysis to determine potential upland sites**

Based on recent dredging at Cocheco River, we have tried to determine the acreage needed for offloading/de-watering and upland disposal for all Federal projects as shown in Table 1, based on recent dredging at the Cocheco River. Linear interpolation was done based on the estimated quantity per dredging event. To determine possible upland sites for disposing dredged materials, using GIS we analyzed the existing landfill sites to identify lined landfills in the state of New Hampshire that were still open landfills. Next using existing landuse data for Rockingham and Strafford counties, the open land and industrial areas were identified. The soils data was used to check the nature of soils and slopes of the identified open land and industrial areas. We then used various criterias such as proximity to rivers, water bodies, private and public wells, flood plain boundaries etc. in GIS to narrow our list of potential upland sites, as described in Section 7.

Table 1: Summary of quantities and acreage for various Federal projects

<b>Project</b>	<b>Estimated Qty per dredge</b>	<b>Material Type</b>	<b>Contamination</b>	<b>Acreage – Offloading/ de-watering</b>	<b>Acreage-Upland site</b>
Hampton Harbor	19,943	Coarse-grained sediment. Clean material w/less than 1% silt.	None	0.5 – 1 acre	2 acres
Little Harbor	22,930	Clean fine sand w/minor silt and clay	Low levels of Zn	0.5 – 1 acre	2 acres
Piscataqua River/Ports mouth Harbor	23,861	Fine silt	Low levels of PCB, pesticide, PAH, TOC	0.5 – 1 acre	2 acres
Rye Harbor	61,999	Fine grained sediment	Moderate levels of volatile solids, mercury and cadmium.	1.5 – 3 acres	4 acres
Bellamy River	None	Data not available	Data not available		
Cocheco River	23,958	Lower reaches have sandy-silt sediments, and upper reaches have silty-sand sediments.	Moderate to high concentrations of arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), zinc (Zn), and	0.5 - 1 acres	2 acres

			PAHs were found in the navigation channel sediments. Additionally, high levels of Cr, Hg, Zn, and PAHs were found in various reaches.		
Exeter River	6,792	Data not available	Data not available	0.5 acres	0.5 acres
Lamprey River	40,000	Data not available	Data not available	1.5 – 3 acres	3 acres

## 7. GIS Analysis

GIS software (ArcGIS 9) was used for the analysis to identify potential upland sites. Various spatial data was collected from different agencies for this purpose – such as National Hydrography Dataset (NHD) from United States Geological Survey (USGS), landuse data for Strafford and Rockingham counties from New Hampshire GRANIT web site, existing landfills, public water supplies and wells from New Hampshire Department of Environmental Services (NHDES), soil data from National Resources Conservation Services (NRCS), and the draft 500 –year flood plain from University of New Hampshire (UNH). Some of the criteria used to do the GIS analysis were – the sites should be 250 feet away from any surface water body, including streams, wetlands, water bodies, public water supply and residential wells. In addition, the sites needed to be 100 feet away from the 500-year flood boundaries. The sites were then further screened to remove sites with slopes greater than 8%. The analysis was further refined to identify areas within a 5, 10, 20 and 30 –mile radius of all the Federal projects, with at least 6 acres for sites within 5 and 10-mile radius and at least 10 acres for sites within 20 and 30-mile radius. For landfills, criteria of at least 3 acres for 5 and 10-mile radius and at least 6 acres for 20 and 30-mile radius were used. Size criterion were developed based on recent dredging in the Cocheco River. For a 20 and 30-mile radius, it was assumed that if the dredged material has to be hauled to a farther location it would be economical and practical to have a larger disposal area. Details of the GIS Analysis can be found in Appendix B.

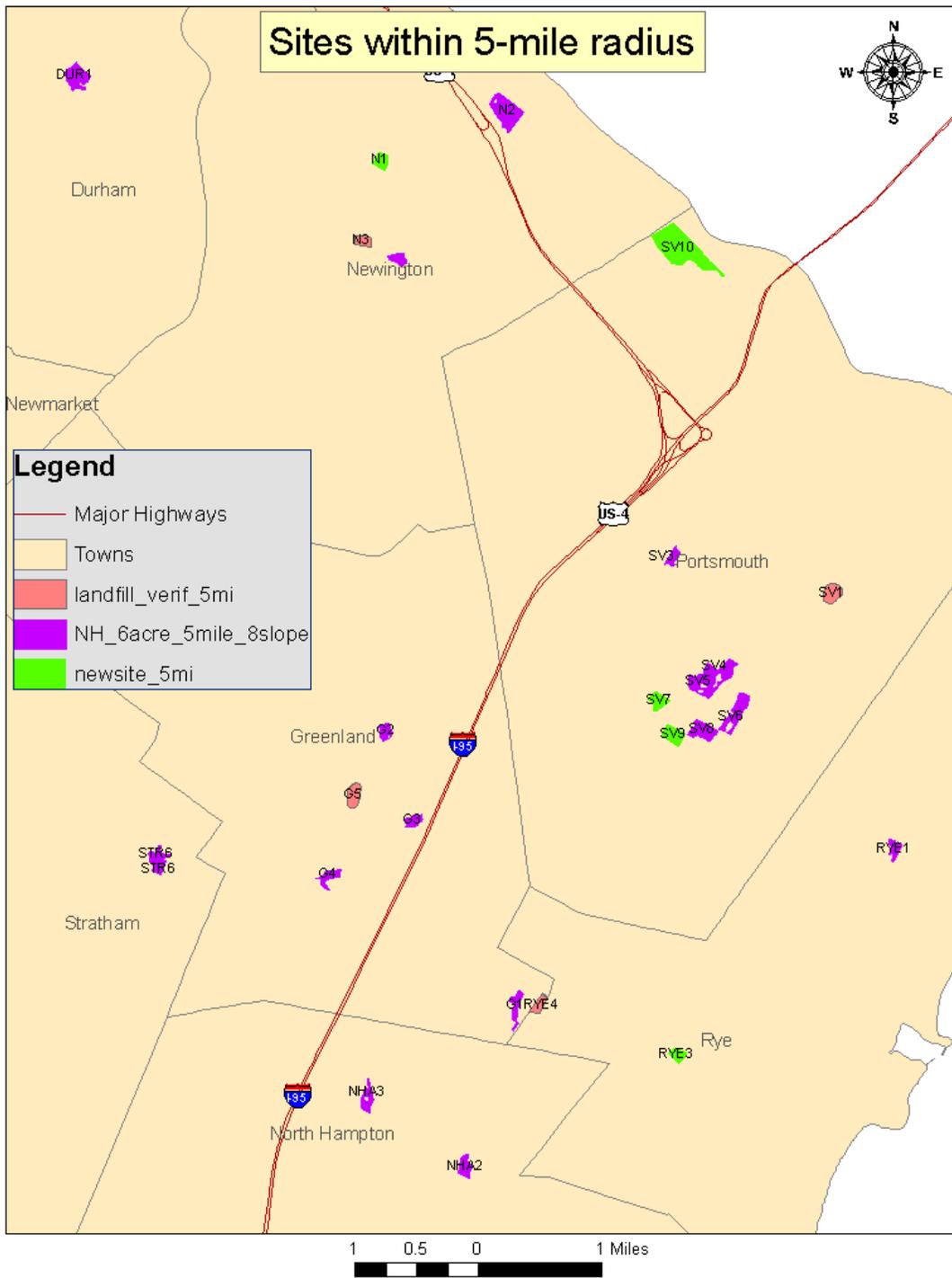


Figure 11: Upland sites within 5-mile radius.

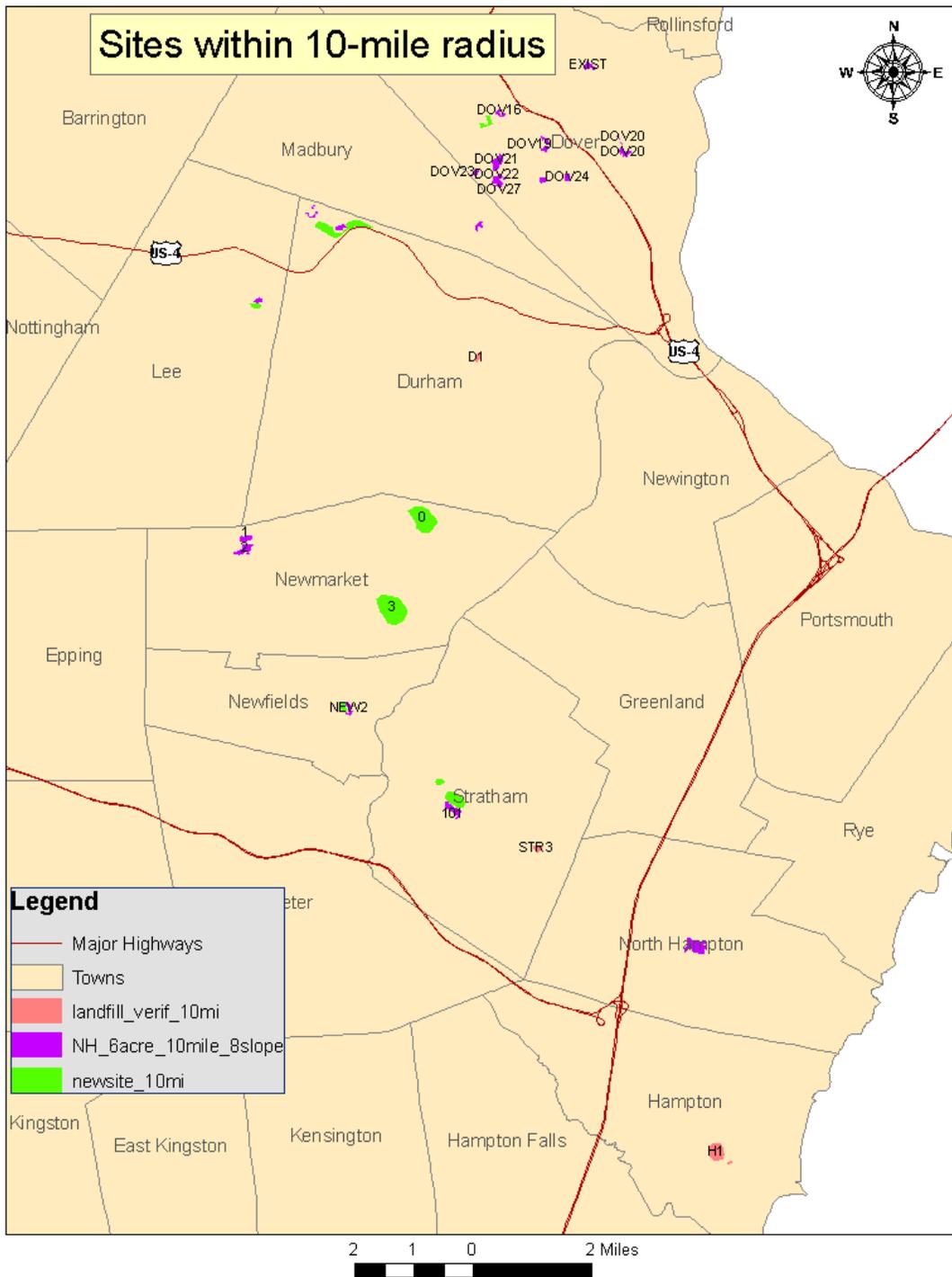


Figure 12: Upland sites within 10-mile radius.

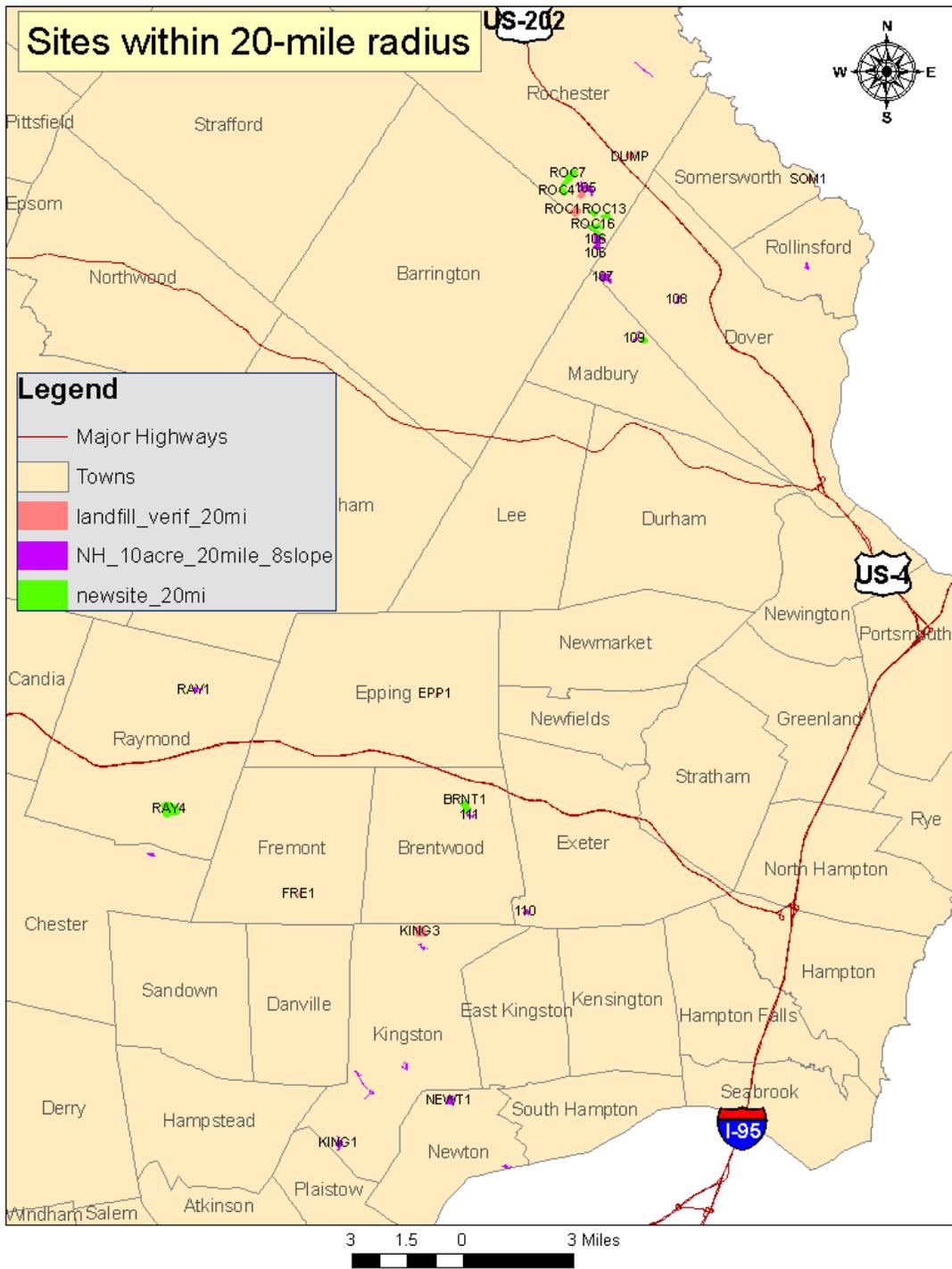


Figure 13: Upland sites within 20-mile radius.



Figure 14: Upland sites within 30-mile radius.

## 8. Results

The results were classified according to the distance from the project sites. A total of 100 upland sites and 35 landfills were identified. Within a 5-mile radius, there were 23 potential upland sites and 4 landfill sites (Figure 11). Within a 5 to 10-mile radius there were 32 potential upland sites and 5 landfill sites (Figure 12). Within a 10 to 20-mile radius there were 33 potential upland sites and 13 landfill sites (Figure 13). Within a 20 to 30-mile radius there were 12 potential upland sites and 13 landfill sites (Figure 14).

## 9. Real Estate

Real estate verification was done to validate our findings. Every effort was made to identify the owner(s) of the land, its current use, the address, and the current market value by visiting the Town halls and reviewing the property report cards and in most cases having discussions with the Town planner. In quite a few cases the sites identified using GIS were found to be obsolete, due to the older GIS data sets being used for analysis and in few instances the Town planner suggested new sites based on his/her knowledge of the properties in their Towns. Details of the Real Estate verification can be found in Appendix C. The owners of the parcels identified were not contacted to verify their interest in selling/leasing land to store dredge materials. Most of the existing landfills short-listed were either found to be in the process of being capped or already capped. Following are the sites that the Town planner/Town showed an interest in as offloading sites or upland sites.

*Town of Stratham* – ID STR1 (73 R College Road) and STR2 (85 College Road) to be used as offloading sites.

*Town of Madbury* – ID S02 (Stage Road), which is an old excavation pit for upland disposal.

*Town of Newmarket* – ID NOFF1 (5 Young’s Lane), NOFF2 (end of Creighton St) and NOFF3 (11 Creighton St) as potential offloading sites and NOFF6 (16 Great Cove Dr) and NOFF4 (24 Great Cove Dr) for upland disposal.

*Town of Exeter* – ID 110 (149 Kingston Rd), which is a former sand and gravel pit. The Town is looking for clean material to be put there.

*Town of Epping* – ID EPP1 and EPP2 (Old Hedding Rd), which are gravel pits. The Town is looking for clean material to be put there.

*Town of Plaistow*- Developer looking for fill material (onetime use) to develop a piece of property.

## **10. Conclusion**

36 towns/cities were part of the upland disposal site analysis. Of the 100 upland sites and 35 existing landfills identified, none of the property owners were contacted for their interest in leasing or selling land for placing dredged materials. The next phase of this project would be to shortlist the above sites based on property owner's interest, proximity to dredging sites, cost of land and verification of compliance with zoning. A real estate appraisal would then be conducted on the selected site(s).

**APPENDIX A**  
**DREDGING HISTORY**

## NH Dredged Material Upland Disposal Site Study

Unless stated otherwise, the source of the historical analysis are Corps records. Among some of the acronyms used are,

1993 report – New Hampshire Dredged Material Management Study, US Army Corps of Engineers, 1993.

1994 report - A dredged material management study for coastal Maine and New Hampshire, US Army Corps of Engineers, 1994.

1999 report – Dredging in New Hampshire: A Review of Projects, State Permit Procedure, and Future Coastal Dredging Needs, New Hampshire Coastal Program, 1999.

### 1. Hampton Harbor –

Existing project was completed in November 1965.

Maintenance of this Federal project has taken place 13 times since 1965. The most recent maintenance dredging project occurred in 1987

Actuals CY

1965	23,767 tons stone	Construction of North jetty
1965	30,934	Improvement dredging of 8-Foot entrance channel  source: 1993 report. Maintenance project. Disposal – near shore.
1969	17,400	Maintenance of 8-Foot entrance channel  source: 1993 report. Mechanical dredging was used, maintenance project, open water disposal.
1971	15,530	Maintenance of 8-Foot entrance channel  source: 1993 report. Mechanical dredging, maintenance project, open water disposal.
1973	15,000	Sidecast maintenance dredging of 8-Foot entrance channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.
1973/74	8,377 tons stone	Repairs to south jetty extension.
1974	17,430	Sidecast maintenance dredging of 8-Foot entrance channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.
1975	21,070	Sidecast maintenance dredging of 8-Foot entrance channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.
1976	14,065	Sidecast maintenance dredging of 8-Foot entrance channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.
1977	7,400	Sidecast maintenance dredging of 8-Foot entrance channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.

1981	1,293 tons stone	Repairs to north jetty extension.
1981	23,800	source: 1993 report. Suction dredging, maintenance project, open water disposal.
1981	50,000	Maintenance of 8-Foot entrance channel.
1982	26,200	source: 1993 report. Mechanical dredging, maintenance project, open water disposal.
1984	27,900	Maintenance of 8-Foot entrance channel  source: 1993 report. Hydraulic dredging, maintenance project, upland disposal.
1987	23,468	Maintenance of 8-Foot entrance channel   source: 1993 report. Hydraulic dredging, maintenance project, open water disposal.

Maintenance total 259,263 CY; total dredges- 13| average/dredge = 19,943 CY/dredge  
Average/yr = 259,263CY/22yrs = 11,785 CY/yr

Prediction (source: 1999 report – “Dredging in New Hampshire”)

1994-2004	75,000 CY – Corps/200,000 CY – non-Corps (0-10 yrs)
2005-2019	115,000 CY – Corps/300,000 CY – non-Corps (11-25 yrs)
2020-2044	190,000 CY – Corps/500,000 CY – non-Corps (26-50 yrs)

Based on above numbers, we have predicted dredging for 7,600 CY/dredge/yr; 15,200 CY/dredge every other year; 22,800 CY/dredge/3yrs

Dredged materials were deposited off Seabrook beach, off Great Boar’s head. Dredge methods were clamshell and sidecast.

Information on materials (1999 report) –

Clean materials with less than 1% silt. Generally coarse-grained sediments.

Historic disposal includes beach nourishment (Hampton Beach), open water near shore disposal and upland disposal. Near shore beach nourishment at south of the existing state jetty was deposited at mean high water. Open water disposal near-shore at south of Great Boar’s Head. And upland disposal behind repaired bulkhead associated with marina reconstruction.

WQ around Hampton Harbor is classified as B, which means “acceptable for swimming and recreation”.

Table 2: Cost estimates for future dredging of Hampton harbor.

<b>Name</b>	<b>Depth (ft)</b>	<b>Volume (CY)</b>	<b>Disposal Site</b>	<b>Haul Distance (mi)</b>	<b>Unit cost (\$/CY)</b>	<b>Total Cost (\$)</b>
Hampton Harbor	8	150,000	N Hampton	2	8.2	1,230,000
		125,000			8.6	1,075,000
		100,000			9.7	970,000
		25,000			22.8	570,000

(source: A dredged material management study for coastal Maine and New Hampshire, 1994)

## 2. Little Harbor

This project completed in 1903.

Actuals	CY for	
1994	5,360	Maintenance dredging of 12-Foot channel.
2000/01	40,500	Maintenance dredging of 12-Foot entrance channel.

Maintenance total – 45,860 CY, dredges – 2| average/dredge – 22,930 CY/dredge  
 Average/yr = 45,860 CY/98 yrs = 468 CY/yr.

Predictions (source: 1999 report – “Dredging in New Hampshire”)

1994-2004	325,000 CY Corps/20,000 CY non-Corps
2005-2019	50,000 CY Corps/15,000 CY non-Corps
2020-2044	50,000 CY Corps/25,000 CY non-Corps

Based on above numbers, we have predicted dredging for 2,000 CY/dredge/yr; 4,000 CY/dredge/every other yr; 6,000 CY/dredge/3yrs; 25,000 CY/dredge/12yrs.

### Information on Materials (1999 report) –

Last undated testing shows material is mostly clean fine sand with minor silt and clay. Tests reveal low levels of contamination – such as zinc.

### Disposal Areas –

Past dredged materials were disposed at the Cape Arundel Disposal site.

Table 3: Cost estimates for future dredging of Little Harbor.

Name	Depth (ft)	Volume (CY)	Disposal Site	Haul Distance (mi)	Unit cost (\$/CY)	Total Cost (\$)
Little Harbor	12	300,000	Wallis Sands	3	8.5	2,550,000
		300,000	Jenness Beach	7	9.3	2,790,000
		50,000	Wallis Sands	3	14.3	715,000
		50,000	Jenness Beach	7	15.7	785,000

(source: A dredged material management study for coastal Maine and New Hampshire, 1994)

### 3. Piscataqua River/Portsmouth Harbor

Construction of the main project was completed in 1966.

Actuals	CY	
1956	33,500 rock	ledge removal for 35-Foot channel.
1964/1966	548,321CY+114,067CY	rock improvement – ledge removal for 35-Foot channel widening.
1965	453,200 rock	source: 1993 report, mechanical dredging, improvement project.
1966	209,098 rock	source: 1993 report, mechanical dredging, improvement project.
1969	500	maintenance dredging of 35-Foot channel.   source: 1999 report – 23,447 CY.
1970	23,447	maintenance dredging of 35-Foot channel.   source: 1993 report. Maintenance project.
1971	30,000	source: 1993 report: suction dredging, new, upland disposal
1971	39,160	maintenance dredging of 35-Foot channel  source: 1993 report. Suction dredging, maintenance project, open water disposal.
1973	45,560	source: 1993 report. Maintenance project.
1979	30,000	maintenance dredging of 35-Foot channel   source: 1993 report. Mechanical dredging, maintenance project, upland disposal.
1980	5,000	maintenance dredging of 35-Foot channel.   source: 1993 report. Mechanical dredging, maintenance project, upland disposal.
1984		source: “Dredging in NH, 1999” – 43,078 CY   source: 1993 report. Suction dredging, maintenance project, riverine disposal.
1989	310,000+145,000 rock	improvement widening of 35-Foot channel at Bridges & Badgers Island.
1990	496,008	source: 1993 report. Mechanical dredging, improvement project, open water disposal.
91/92	25,000 + 15,000 rock	improvement project. widening of 35-Foot channel at Bridges & Badgers Island.
1991	20,100	maintenance dredging of 35-Foot channel.  source: 1993 report. Suction dredging, maintenance project, riverine disposal. 20,083 CY
1992	51,139	source: 1993 report. Mechanical dredging, improvement project, open water disposal.
2000	7,900	maintenance dredging of 35-Foot channel.

Maintenance Total – 214,745 CY for 9 dredges| average CY/dredge - 23,861 CY/dredge.  
Average/yr = 214,745 CY/34 yrs = 6,316 CY/yr.

In 1984 the Portsmouth Submarine Memorial Association dredged 6,000, 7,000 and 6,000 CY towards constructing a submarine memorial park.

Prediction (source: 1999 report – “Dredging in New Hampshire”) –

1994-2004	48,000 CY Corps/295,000 CY non-Corps  Back channels 10,000 CY non-Corps
2005-2019	72,000 CY Corps/60,000 CY non-Corps  Back channels 15,000 CY non-Corps
2020-2044	120,000 CY Corps/120,000 CY non-Corps

Based on above numbers, we have predicted dredging for 4,800 CY/dredge/yr; 9600 CY/dredge/every other yr; 14,400 CY/dredge/every 3 yrs; 19,200 CY/dredge/4yr; 24,000 CY/dredge/5yr

Portsmouth Back channels and Sagamore creek

1971 58,000 CY + 3,400 CY ledge and hard material

Simplex Point

1971-1982	78,660 CY	source: “Dredging in NH, 1999” – 39,200 CY for 1971 (disposed at Isles of Shoals); 35,000 CY for 1979-1980 (disposed upland at Fuel storage area); 6,000 CY for 1981; 43,100 CY for 1984 (disposed 6000 ft downstream);
1991	72,375 CY	source: “Dredging in NH, 1999” – 20,100 CY (disposed at 3000 ft d/s)

Fort Point (this is outside the Federal channel)

1957	31,684 CY
1966	662,298 CY
1980	5,000 CY
1984	43,078 CY for Ports harbor

Henderson Point & Goat Island

1992 51,139 CY

Seavey Island

1982 110,000 CY for Maintenance by Dept of Navy, for Maintenance project and upland disposal. Source: A dredged material management study for coastal Maine and NH, 1994.

Information on Materials (1999 report) –

1989	Chemical analyses on the silt samples (fine) for Portsmouth Harbor contained low or below detention limits of PCBs, pesticides, PAHs and total organic carbon. The levels of metals were low to moderate.
------	---

Disposal Areas included the open water site at Isles of Shoals, upland areas, Cape Arundel Disposal site and river basins downstream of the project.

Water Quality around the harbor area is classified as B (waters suitable for bathing and other recreational purposes).

Table 4: Cost estimates for future dredging of Piscataqua River/Portsmouth Harbor.

<b>Name</b>	<b>Depth (ft)</b>	<b>Volume (CY)</b>	<b>Disposal Site</b>	<b>Haul Distance (mi)</b>	<b>Unit cost (\$/CY)</b>	<b>Total Cost (\$)</b>
Portsmouth Harbor/Piscataqua River	35	24,000	Cape Arundel	26	45.5	1,092,000
			Portland	51	73.4	1,762,000
			Isles of Shoals	13	34.7	833,000
			Mass bay	47	68.90	1,654,000
			Isles of Shoals - North	12	34.7	833,000
	120,000	Cape Arundel	26	14.7	1,764,000	
		Portland	51	25.2	3,024,000	
		Isles of Shoals	13	14.3	1,716,000	
		Mass bay	47	23.5	2,820,000	
		Isles of Shoals - North	12	14.3	1,716,000	

(source: A dredged material management study for coastal Maine and New Hampshire, 1994)

#### 4. Rye Harbor

Existing project completed in October 1962.

Year	CY	
1962	138,400	Improvement dredging of 10 and 8-Foot MKW and 8 and 6-Foot MLW anchorage areas   source: 1993 report. New project, upland disposal.
1990	68,623	source :1993 report. Mechanical dredging, maintenance project, open water disposal.
1991	55,375	Maintenance dredging of channels and anchorage areas.

Maintenance Total – 123,998 CY; dredges – 2| average/dredge – 61,999 CY/dredge  
 Average/yr = 123,998 CY/29 yrs = 4,276 CY/yr.

Prediction (source: 1999 report – “Dredging in New Hampshire”)

1994 – 2004	0
2005 – 2019	80,000 CY
2020 – 2044	80,000 CY

Based on above numbers, we have predicted dredging for 3,200 CY/dredge/yr; 6,400 CY/dredge/2yr; 9,600 CY/dredge/3yr; 40,000 CY/dredge/12yr

Material Information –

1985	sediment test data shows that fine grained sediments from the harbor area contained moderate levels of volatile solids, mercury and cadmium. PCB’s in the range of 0.3 to 0.6 ppm were found. Total Phosphorous was also detected.
1989	sediment metal concentrations were less than or equal to that found in 1974 or 1975. PCB’s were not detected. Levels of contaminants found were typical of coastal marine sediments.

Past disposal sites – Cape Arundel site and upland areas.

Table 5: Cost estimates for future dredging of Rye Harbor.

Name	Depth (ft)	Volume (CY)	Disposal Site	Haul Distance (mi)	Unit cost (\$/CY)	Total Cost (\$)
Rye Harbor	10	50,000	Cape Arundel	25	26.9	1,345,000
			Mass Bay	39	37.4	1,870,000
			Portland	49	45	2,250,000

			Isles of Shoals, east	13	18.9	945,000
			Isles of Shoals, north	12	18	900,000

(source: A dredged material management study for coastal Maine and New Hampshire, 1994)

### 5. Bellamy River

This project was completed in 1896. The 1999 report “Dredging in NH” reported as no shipping activity on this river, due to the low clearance of the Scammel Bridge. The Corps’ 1997 Annual report recommended for its abandonment. The Corps do not have any present plans to dredge this river. The report classifies this as a low priority.

Year	Quantity
May 1889 – Aug 1889	44,350 CY. Improvement dredging of 5-ft channel.
June 1892 – Aug 1892	35,997 CY. Improvement dredging of 5-ft channel.
June 1896 – Sept 1896	58,810 CY. Improvement dredging of 5-ft channel.

### 6. Cocheco River

This project was completed in 1906. This project has been dredged in the past. Dredging is currently underway for this project, which began in Fall 05. Unless there is an increase in the river usage (boat usage) there is at present a low priority to dredge this river.

Year	Quantity
July 1874 – Nov 1874	483 CY. Dredging the 4-ft channel at upper narrows.
June 1877 – Nov 1877	12,371 CY. Dredging the 4-ft channel & basin.
Fall 1888	672 CY. Maintenance of 5-ft channel thru Averys Point Cut-off.
July 1906 – Dec 1906	12,434 CY. Maintenance of 7-ft Basin at Dover.
July 1906 – Dec 1906	7,725 CY. Maintenance of 7-ft of Shoals at Mouth.
Fall 2004/2005	75,000 CY. Maintenance dredging underway as this report was prepared.

Maintenance dredging – 20,831 CY. Average/dredge =  $95,831/4 = 23,958$  CY/dredge.  
Average/yr =  $95,831/117 = 819$  CY

#### Material Information –

- 2004 Sediments in the Cocheco River varied in composition. Sediments in the lower reaches of the river were composed of mainly sandy-silt sediments with an average of approximately 60- 70% sands and the rest fine-grained

sediment. The upper reaches were mainly silty-sand sediments with an average of 40% sand with the balance being fine grained material.

Based upon New Hampshire sediment quality criteria, moderate to high concentrations of arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), zinc (Zn), and PAHs were found in the navigation channel sediments. Additionally, high levels of Cr, Hg, Zn, and PAHs were found in various reaches.

The New Hampshire Department of Environmental Services (NHDES) designated the waters of the Cocheco River as Class B. Objectives for Class B waters are to achieve and maintain a high level of quality that consistently exhibit good aesthetic value and provide high quality habitat for aquatic biota, fish, and wildlife. Class B waters should be usable for fishing, swimming, and other recreational purposes and, after adequate treatment, for use as public water supplies.

### **7. Exeter River**

This project was completed in 1911. No current plans to dredge this river. There is a condition survey planned for this fall.

Year

July 1911 – Sept 1911            6,792 CY. Maintenance of 12-ft and 11-ft projects.

### **8. Lamprey River**

This project was completed in 1883. No current plans to dredge this river. Corps completed a condition survey of the 5-ft Lamprey channel in 1997. Based on a visual study of the survey, the channel is more than 5 foot deep for the most part.

Year

Apr 1903 – May 1903            7,675 CY. Maintenance dredging of 5-ft channel.

### **9. Great Bay**

Pease Air Force Base dredged 15,000 CY (between Thomas Point and Woodman Point) in 1962 for Maintenance and disposed it upland.

### **10. Isles of Shoals Harbor of Refuge**

Existing project completed in 1913

Actuals	Quantity	
1929	3,600 tons of stone	Repairs to Cedar Island – Star Island breakwater.
1955	3,077 tons of stone	Repairs to Cedar Island – Star Island breakwater.

1974            8,100 tons of stone    Repairs to Cedar Island – Star Island breakwater.

**APPENDIX B**  
**GIS ANALYSIS**

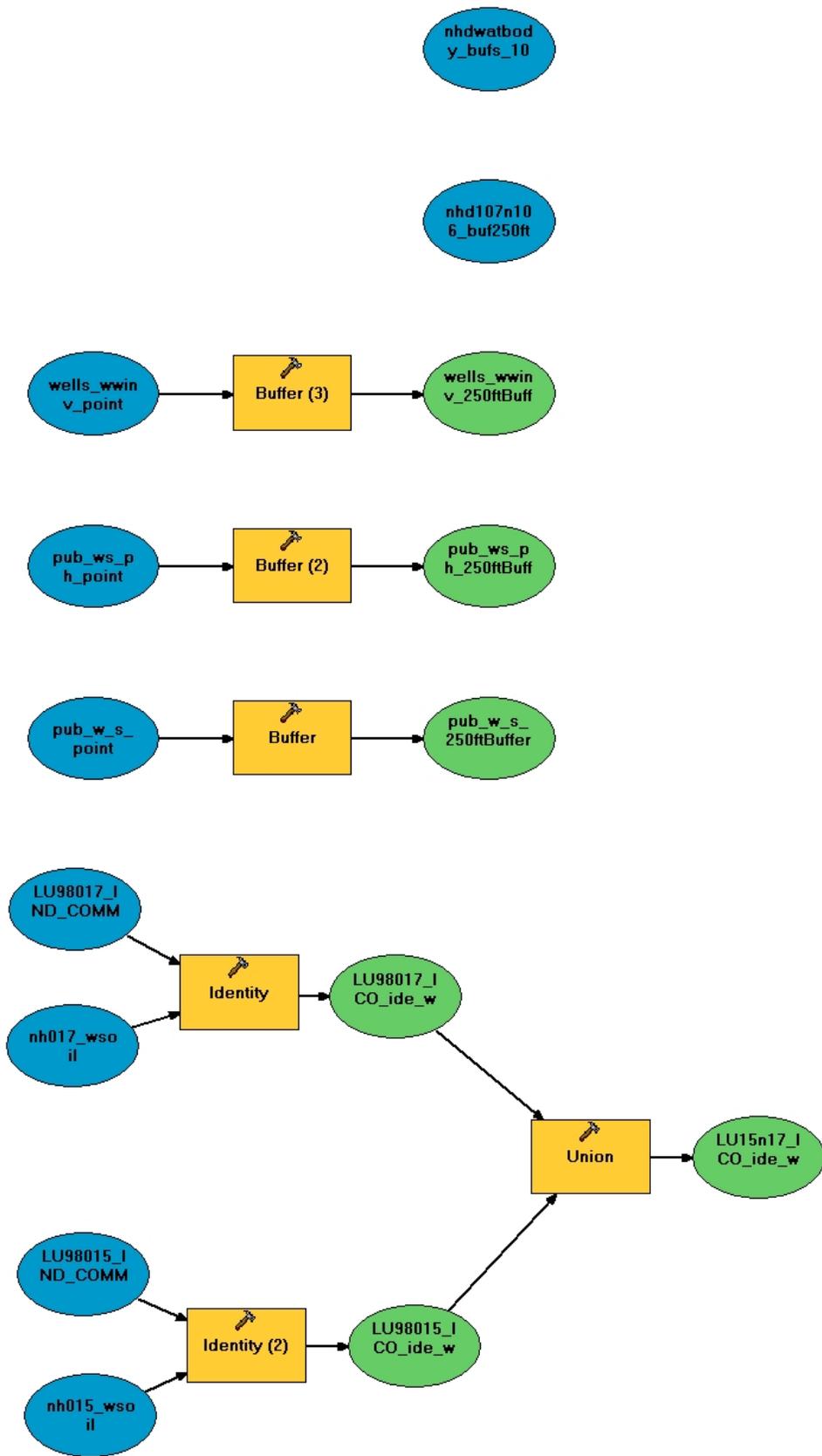
## New Hampshire Comprehensive Upland Dredged Material Disposal Site Evaluation Study: GIS Methodology

Methodology to identify potential upland sites for the disposal of dredge material removed from the Federal projects of New Hampshire are shown below -

Table 6: Summary of GIS Methodology

Spatial Data	Landuse coverages for Rockingham and Strafford counties LU98015 and LU98017
Query	Query above coverages for “other open” and “Ind/Comm” classification. Results are LU98015_IND_COMM_Other and LU98017_IND_COMM_Other
Spatial Data/Query	Soil data from NRCS was queried for the above 2 counties. Results are NH015_wsoil and NH017_wsoil
Spatial Data/Query	NHD data was queried for watersheds 106 and 107 to create waterbodies and NHD flowlines coverages.
ArcGIS: Buffer command	Create a 250 ft buffer for the waterbodies and flowlines. Results NHD106_buf250ft, NHD107_buf250ft, NHDwatbody106_buf250ft and NHDwatbody107_buf250ft
ArcGIS: Union command	Merge buffers of waterbodies and flowlines. Results nhd107n106_buf205ft and nhdwatbody_bufs_107n106_250ft
ArcGIS: Identity command	Run the ArcGIS Identity command to append the attributes of the soils shapefile (nh015_wsoil) to the land use shapefile (LU98015_IND_COMM_Other) to produce the output layer LU98015_I_C_O_wsoil for Rockingham County
ArcGIS: Identity command	Run the ArcGIS Identity command to append the attributes of the soils shapefile (nh017_wsoil) to the land use shapefile (LU98017_IND_COMM_Other) to produce the output layer LU98017_I_C_O_wsoil for Strafford County
ArcGIS: Union command	Run the ArcGIS Union command to combine the Rockingham County land use/soils layer (LU98015_I_C_O_wsoil) with the Strafford County land use/soils layer (LU98017_I_C_O_wsoil) to produce the output layer LU98015n17_I_C_O_wsoil
ArcGIS: Buffer command	Using the ArcGIS Buffer command, create a 250ft. buffer of the New Hampshire public water supply sources shapefiles (pub_w_s and pub_ws_ph) to create the output shapefiles (pub_w_s_250ftBuffer and pub_ws_ph_250ftBuffer)
ArcGIS: Buffer command	Using the ArcGIS Buffer command, create a 250ft. buffer of the New Hampshire personal household wells shapefile (wells_wwinv) to create the output shapefile (wells_wwinv_250ftBuffer)
ArcGIS: Select by Location	Using all of the above mentioned buffers in addition to 100ft buffers of FEMA 100 year floodplain shapefiles and 250ft buffers of NHD streams and waterbodies, all sites that fell within these buffers were deselected

	from the potential site list of 18,384 leaving 10,814 sites at the end of this stage.
ArcGIS: Select by Attribute	From the list of 10,814 sites, the list was further reduced by deselecting all sites less than 6 acres leaving 554 sites at the end of this stage that were 6 acres or larger.
Standard Distance tool	The mean center of all harbors shapefile (center_point) was calculated using the Standard Distance tool
ArcGIS: Buffer command	Using the center_point shapefile, buffers of 5, 10, 20 and 30 miles were created from the mean center point.
ArcGIS: Select by Location	Using the five mile from the mean center point buffer, all potential sites that fell within five miles of the mean center point were selected. From these sites, all sites that had a percent slope greater than 8 were deselected as well as sites that had buildings or structures on the property.
ArcGIS: Select by Location	Using the ten mile from the mean center point buffer, all potential sites that fell within the 10-5 mile ring from the mean center point were selected. From these sites, all sites that had a percent slope greater than 8 were deselected as well as sites that had buildings or structures on the property.
ArcGIS: Select by Location	Using the twenty mile from the mean center point buffer, all potential sites that fell within the 20-10 mile ring of the mean center point were selected. From these sites, all sites that had a percent slope greater than 8 were deselected as well as sites that had buildings or structures on the property. (Note: only sites that were 10 acres or larger were selected at the 20-10 mile interval)
ArcGIS: Select by Location	Using the thirty mile from the mean center point buffer, all potential sites that fell within the 30-20 mile ring of the mean center point were selected. From these sites, all sites that had a percent slope greater than 8 were deselected as well as sites that had buildings or structures on the property. (Note: only sites that were 10 acres or larger were selected at the 20-10 mile interval)



**APPENDIX C**  
**REAL ESTATE VERIFICATION**

## **REAL ESTATE VERIFICATION FOR UPLAND DISPOSAL SITES IN NEW HAMPSHIRE**

Following are the sites that were verified with the Town Planner's office for the Towns listed below. Land values are based on assessed values that are about 80% of market value.

### **1. PORTSMOUTH**

#### Off-loading Site(s):

ID: Site 2

Pierce Island:

Location: 99 Pierce Island Road, Pierce Island (Map 0208, Lot 0001, Suf. 0000)

Owner: City of Portsmouth, PO Box 628, Portsmouth, NH 03802

Use: Pierce Island park

Land Area: 38 acres Land Value: \$10,876,400 or \$286,221 per acre

ID: Site 1

Existing Bulkhead:

Location: 555 Market Street (Map 0119, Lot 0005, Suf. 0000)

Owner: NH State Port Authority, PO Box 506, Portsmouth, NH 03802

Use: Truck scale house

Land Area: 12.03 acres Land Value: \$9,058,600 or \$753,000 per acre

#### Upland Disposal Sites:

##### 5-Miles:

ID: SV1

Location: Jones Avenue (Map 0227-8, Lot 0001, Suf. 0000)

Owner: City of Portsmouth, DPW, PO Box 628, Portsmouth, NH 03802

Use: Tennis court & open land

Land Area: 66.64 acres Land Value: \$1,497,000 or \$22,464 per acre

Location: 400 Gosling Road (Map 0214, Lot 0001, Suf. 0000)

Owner: Public Service Co. of NH, PO Box 330, Manchester, NH 03105-0330

Land Area: 28.3 acres Land Value: \$1,856,800 or \$65,611

ID: SV2

Location: Greenland Road (Map 0241-0016-0000)

Owner: City of Portsmouth, Water Dept., 1 Junkins Ave., Portsmouth, NH 03801

Land Area: 14.86 acres Land Value: \$292,900 or \$19,710 per acre

Note: Access on Harvard Street (Map 259)

ID: SV3

Location: Greenland Rd. (Map 0259-0027-0000)

Owner: City of Portsmouth, Water Dept., PO Box 628, Portsmouth, NH 03802  
Land Area: 16 acres Land Value: 463,100 or \$28,943 per acre  
Note: Limited access

ID: SV4

Location: Banfield Rd. (Map 0254-0007-0000)

Owner: Pike Industries Inc.

3 Eastgate Park Rd., Belmont, NH

Use: Asphalt Production & Operations

Land Area: 26.38 acres Land Value: 1,390,900 or \$52,725 per acre

ID: SV5

Also on Map 254:

Location: 680 Peverly Hill Rd., (Map 0254, 0008-0000)

Owner: City of Portsmouth, 1 Junkins Ave., Portsmouth, NH 03801

Use: Public Works Department

Land Area: 8 acres Land Value: \$528,000 or \$66,000 per acre

ID: SV6

Location: Lafayette Rd. (Map 0252-0001-0007)

Owner: Iafolla, Michael R., PO Box 121, N. Hampton, NH 03862

Use: Vacant Land

Land Area: 6.5 acres Land Value: \$510,000 or \$78,461 per acre

ID: SV7

Location: Campus Dr. (Map 0266-0004-0000)

Owner: Foundation for Seacoast health, City of Portsmouth, 1 Junkins Ave. Port.

Use: Water park, portion of site

Land Area: 96.27 acres Land Value: \$1,568,700 or \$16,295 per acre

ID: SV8

Location: 2300 Lafayette Rd. (Map 0273-0007-0000)

Owner: Bellwood Associates Ltd Partnership

C/o Property Tax Service Co., PO Box 543185, Dallas, TX 753185

Use: Water Country

Land Area: 41.47 acres Land Value: \$2,657,600 or \$64,085 per acre

ID: SV9

Also on Map 273:

Location Lafayette Rd. (Map 0273-0005-0000)

Owner: Bellwood Associates Ltd Partnership

C/o Property Tax Service Co., PO Box 543185, Dallas, TX 543185

Use: Vacant Land

Land Area: 23.1 acres Land Value: \$805,200 or \$34,857 per acre

## 2. NEW CASTLE

### Off-loading Site(s):

ID: site3

Location: Portsmouth Avenue, (Map 0000, Lot 000006, Sub: 000000)

Owner: NH Fish & Game Dept., 2 Hazen Drive, Concord, NH 03301

Use: Dirt Parking

Land Area: 0.370 acres      Land Value: \$112,300 for 0.370 acres

## 3. NEWINGTON

### 5-Mile Site(s):

ID: N1

Location: 272 Nimble Hill Rd. (Map/Lot 17-08-A)

Owner: Frink, Lydia & John, 272 Nimble Hill Road, Newington, NH 03801

Use: Older house with extra land

Land Area: 14.11 acres      Land Value: \$424,400 or \$30,077 per acre

ID: N2

Location: River Rd. , Shattuck Way, Patterson Way (Map/Lot 13-05-07\_

Owner: Public Service Company of NH, PO Box 330, Manchester, NH 03101

Use: Land

Land Area: 69.37 acres      Land Value for 45.51 acres is \$83,330 per acre

ID: N3

Location: Nimble Hill Rd. (Map/Lot 24-06)

Owner: Town of Newington, Town Office, Newington, NH 03801

Use: Old Town Hall, Land on both sides of Nimble Hill Road

Land Area: 40.41 acres      Land Value: \$648,300 or \$16,043 per acre

Location: Merrimack Rd. (Map 36, 37, 45) Comments: not suitable

Owner: Great Bay National Wildlife Refuge, Newington, NH

Use: Wildlife refuge

Land Area: 1,288 acres – THIS IS NOT SUITABLE FOR A DISPOSAL SITE, HOWEVER, IT IS ADJACENT TO LAND OWNED BY PEASE DEVELOPMENT AUTHORITY (the runway is off McIntyre Road) that might be used for a disposal site.

## 4. DURHAM

### Off-loading Site:

Off US Rt. 4, Boston Harbor Rd.

Upland Disposal Site(s):

5-Miles

ID: dur1

Location: 234 Long marsh Rd (map 16, lot 11-0)

Owner: David Langley & Donna Hamilton

Use: rural zoning.

Land area: 22 acres. Land value: \$2394 (in use), other land: \$98,000

10-Miles:

ID: D1

Location: 100 Durham Point Rd. (Map ID: 16/1/3 – Plus 16/3/2, 16/5/2)

Owner: Town of Durham, 15 Newmarket Rd., Durham, NH 03824

Use: Town transfer station. Town also owns other land adjacent to site that could be used.

Land Area: 41 acres Land Value: \$219,000 or \$5,340 per acre

ID: D2

Location: 121 Technology Drive (Map ID: 9/10/4)

Owner: Prefco XXV Ltd Partnership, c/o Pitney Bowes Credit Corp. 27 Waterview Dr., Shelton, CT 06486

Use: Portion is for performing arts

Land Area: 138.73 acres Land Value: \$3,108,600 or \$22,408 per acre

ID: 31

Location: Off Beech Hill Rd. (Map ID: 9/13/1)

Owner: Harvey and Jean Woodward, 62 Stage Rd., Nottingham, NH 03290

Use: Land, small portion is buildable

Note: Beech Hill Rd. is a 1-lane road, not maintained, no trucks can use it until it is upgraded

Land Area: 30 acres Land Value: \$67,400 or \$2,246 per acre

**5. GREENLAND**

Upland Disposal Site(s):

5-Mile Sites:

ID: G1

Location: 560 Breakfast Hill Rd. (Map ID: 0/R1/9B)

Owner: Town of Greenland, PO Box 100, Greenland, NH 03840

Use: Town land taken by town @ tax sale located at Rye town line

Land Area: 58.30 acres Land Value: \$437,300 or \$7,500 per acre

ID: G2

Location: 480 Portsmouth Ave. (Map ID: 0/U4/8)

Owner: Chisholm Mary Irrev. Trust, Sokoloff Edward A., Trustee  
896 Beach Street, Boston, MA 02215

Use: Farm, possible to utilize a portion for a disposal site

Land Area: 6.35 acres Land Value: \$171,700 or \$27,039 per acre

ID: G3

Location: 145 Post Road (Map ID: 0/U2/3)

Owner: Town of Greenland, PO Box 100, Greenland, NH 03840

Use: Vacant land, town purchased for future cemetery

Land Area: 21.85 acres Land Value: \$131,000 or \$5,995 per acre

ID: G4

Location: 00 Post Road (Off) (Map ID: 0/R6/9)

Owner: Michael E. & David M. Gill, 43 Town Hall Rd. Madbury, NH 03824

Use: Land, inactive farmland, public service easements, ROW acc.

Has subdivision approval for portion

Land Area: 70.22 acres Land Value: \$340,900 or \$4,855 per acre

ID: G5

Location: 44 Cemetery Lane (Map ID: 0/U3/19) but town also owns adjacent  
13.9 acres on Map 0/U5/13 with town offices near street and open land in  
rear

Owner: Town of Greenland, PO Box 100, Greenland, NH 03840

Use: Site of Greenland Transfer Station and Old Open burning Pit- stopped use  
9/79 when Lamprey Regional Coop. Started

Land Area: 2.90 acres Land Value: \$99,600 or \$34,345 per acre

Note: Adjacent to this land is a large tract of land, some of it a golf course and some  
open land. The golf course is the Bramber Valley Gold Course, mailing address of 75  
Bramber Valley Drive, Greenland, NH 03840.

## 6. STRATHAM

### Off-loading Site(s):

ID: Site1

Location: College Road & 88 College Road (Map 3/39/00 & 3/36/00 & 3/37/00)

Owner: State of NH, Fish & Game Dept., PO Box 483, 1 Hazen Drive,  
Concord, NH 03302-0483

Use: Lot 39, Salt Marsh; Lot 36, Former Construction Offices & Garage (removed); Lot  
37, Vacant Land (house & shed removed)

Land Areas: 7.38 acres; 1.24 acres; .770 acres – contiguous parcels

Land Value: \$326,100 for 9.39 acres total or \$34,728 per acre

ID: STR1

Location: 73R College Road (Map 3/25/01)  
Owner: Squamscott Fields LLC, 73R College Road, PO Box 176, Stratham  
NH 03885  
Use: Some Farmland, 173 acres, and some wetlands, 45 acres  
Land Value: \$56,900 or \$261 per acre

Note: According to Town Planner, Chuck Grassie, the owners of this parcel currently off-load from a portion of their land and he thinks they might be agreeable to letting us use the site also.

ID: STR2  
Location: 85 College Road (Map 3/35/00)  
Owner: Kenneth L. Kiper, 85 College Road, Stratham, NH 03885  
Use: Lot has house with frontage on Swamscott River and might be able to use some of the site for off-loading area  
Land Area: 2.19 acres      Land Value: \$203,500 or \$93,000

Upland Disposal Sites:

5-Miles:

None

10-Miles:

ID: STR3  
Location: 25 Union Road (Map 4/21/00)  
Owner: Town of Stratham, 10 Bunker Hill Ave., Stratham, NH 03885  
Use: Town transfer station  
Land Area: 22.354 acres      Land Value: \$379,100 or \$16,963 per acre

ID: STR4  
Location: 140R Portsmouth Avenue (Map 3/7/00)  
Owner: King Revocable Trust of 2001, King Kevin & Sandra, 140 R Portsmouth Avenue, PO Box 216, Stratham, NH 03885  
Use: Residential with large tract of undeveloped land  
Land Area: 70.94 acres      Land Value: \$354,096 or \$5,000 per acre

ID: STR5  
Location: Off Millbrook Drive (Map 3/7/13)  
Owner: Emanuel Co. Inc., 9 Patriots Rd., Stratham, NH 03885  
Use: Commercial undeveloped land, farm land, XMAS tree, wetlands (17 acres)  
Land Area: 55.454 acres      Land Value: \$211,330 or \$3,9811 per acre which includes 17 acres of wetland.  
Note: The adjoining parcel (Map 3/6/00) is also open land

ID: 101  
Location: Map(3/6/0)  
Owner: Emanuel Co. Inc.  
Use: Vacant land  
Land area: 21.68 ac    Land value: \$269,700

ID: STR6  
Location: 8 Whittker Dr., (Map17, lot 19-3)  
Owner: Robin Sullivan, 8 Whittker Dr., Stratham  
Use: Residential/cultural  
Land area: 14.78 acres    Land value: \$ 180,640  
Cmmnt: Residential area.

## **7. RYE**

### Off-loading Site(s):

Note: The town does not show an owner of the 3 off-loading sites. The land is probably owned by the State of NH. The State of NH does have a parcel that has a pavilion on it; this site is shown below:

Location: 1730 Ocean Boulevard (Map 13/55)  
Owner: State of New Hampshire, PO Box 606, Rye Beach, NH 03871  
Use: Rye Harbor State Park, Div. of Parks Sea Coast Headquarters  
Land Area: 6.15 acres    Land Value: \$1,795,600 or \$291,967 per acre

### Upland Site(s):

#### 5-Miles:

ID: Rye4  
Location: 253 Lafayette Road (Map 10/05)  
Owner: Henry J. Ciborowski, Elaine M. Ciborowski et al  
Use: Coakley Landfill Superfund Site, undevelopable land, 2 billboards on site  
Land Area: 7.87 acres    Land Value: \$1,200 for 7.87 acres

ID: Rye3  
Location: 0 Grove Road (Map 7/21 & 7/27)  
Owner: Rye Water District, 60 Sagamore Rd., PO Box 156, Rye, NH 03870  
Land Area: 11.94    Land Value: \$295,500 or \$24,750 per acre  
Note: Town also owns adjoining Lot 26, containing 3.6 acres of land

ID: Rye2  
Location: 309 Grove Road (Map11, Lot 134)  
Owner: Town of Rye, Highway Building, 10 Central Road, Rye, NH 03870  
Use: Rye Highway Building and ReCYcling Station & 2100 SF 5-bay garage

Land Area: 7.13 acres      Land Value: \$238,600 or \$33,464 per acre

ID: Rye1

Location: 254 Wallis Road (Map 18/08) some also on Map 17

Owner: Agnes B. Maxam Rev. Trust of 1995, 254 Wallis Rd., Rye, NH 03870

Use: Rye Meadow Farm

Land Area: 9.74 acres      Land Value: \$274,800 or \$28,213 per acre

## **8. NORTH HAMPTON**

### 5-Mile sites:

ID: NHA1

Location: 201 Atlantic Ave. (Map ID: 7/161/00)

Owner: Town of North Hampton, PO Box 710, North Hampton, NH 03862

Use: School in front and open space in rear

Land Area: 85.26 acres      Land Value: \$2,386,300 or \$27,989 per acre

ID: NHA2

Location: 22 North Rd. (Map ID: 17/108/000)

Owner: Sagamore Spring Gold Club, Inc., 101 North Rd., N. Hampton, NH 03862

Use: Driving range & pitch & putt, miniature golf

Land Area: 57.61 acres      Land Value: \$615,700 or \$10,688 per acre

ID: NHA3

Location: Lots located on Maps 17,18, and 22 consisting of 433.58 acres in total

Owner: Sagamore Hampton Gold Club Inc., 101 North Rd., N. Hampton, NH

Land Area: Total acres is 433.68      Land Value: Unknown

ID: NHA4

Location: Lots merged recently Maps 13/68 & 13/49..

Owner: Hobbs Trustee

Land area: 84.85 acres      Land value: \$431,200

Comment: Large piece of this land is wetlands.

NOTE: These 2 individuals can be contacted for information

(1) Krystina Deren Arrain, Town Planning & Zoning, tel: 603-964-8650

(2) Scott P. Marsh, Certified Appraisal Supervisor, tel: 603-279-0352 at Meredith, NH office or 603-898- 5440 at Salem, NH office or cell 603-785-5805

## **9. DOVER**

### Off-loading site(s):

The existing Cocheco River off-loading site is available (31 River St.)

ID: 12

Location: 31 River St. (Map 22-1

Owner: City of Dover, 288 Central Ave., Dover, NH 03820

Land Area: 36 acres Land Value: \$550,800 or \$15,300 per acre

10-Mile Site(s):

Location: Littleworth Rd. (Map/Lot: G0029-000000 G-2) cmnt: subdivision coming up

Owner: Kay Anna R. Trustee, Kay Anna R. 1997 Trust, 45 Littleworth Rd.,  
Dover, NH 03820

Land Area: 62.5 acres Land Value: \$595,600 or \$9,530 per acre

Location: Boston Harbor Rd. (Map/Lot: J0028-000000) cmnt: area lot lesser.

Owner: State of NH, J.D. Morton Bldg., Concord, NH 03301

Use: Undeveloped land

Land Area: 2.490 acres Land Value: \$263,500 or \$105,823 per acre

ID: D-1

Location: 99 Knox Marsh Rd (Map H0034-000000 H-2)

Owner: Sampson Supermarkets, Inc., PO Box 1000, Portland, ME 04104

Use: open land w/bldg

Land area: 20.46 ac. Land Value: \$948,400

Comment: The owner tried to get a permit to build a supermarket, but was rejected by the neighbors.

Location: 89 Knox Marsh Rd (Map H0033-E00000 H-2)

Owner: Denis and Nancy Quinlan

Use: open land w/bldg

Land area: 11.3 ac. Land value: \$175,800

Site 12/EXIST – Existing Corps upland site.

Site 13/NSUIT – Not suitable

Site 14/NSUIT – New residential sub division

Site DOV21, 22, 23 – Gravel Pit

Site DOV19 – Open field, Residential

Site DOV20 – Vacant, Residential

Site DOV25, 26, 27 – Shopping Center proposed.

Site DOV28 – Residential

Site DOV24 - Recreational

## **10. MADBURY**

### 10-Mile Upland Disposal Sites:

ID: S01

Location: Stage Road (Map 3, Lot 25)

Owner: Pike Industries Inc., 3 Eastgate Park Rd., Belmont, NH 03220

Use: This land was previously disturbed (mined). Going to do hydraulic mining to  
Create a pond (excavate 40 feet below water table).

Land Area: 90 acres Land Value: \$738,200 or \$8,202 per acre

ID: S02

Location: Stage Road (Map 3, Lot 43)

Owner: Cathy A. Towle, PO Box 1708, Dover, NH 03820

Use: Old excavation pit.

Land Area: 6.30 acres Land Value: \$85,100 or \$13,508 per acre

Note: The owner is looking for fill for this site

## **11. LEE**

### 10-Mile Upland Disposal Sites:

ID: 33

Location: Garrity Road (Map 9, Lot 3-1)

Owner: Town of Durham, Attn: Robert Dix, 15 Newmarket Rd., Durham, NH

Use: Gravel Pit and Woods

Area: 4.120 acres Land Value: \$93,200 or \$22,621 per acre

ID: Lee1

Location: Garrity Road (Map 9, Lot 3)

Owner: Town of Durham, Attn: Robert Dix, 15 Newmarket Rd., Durham, NH

Use: Sand and Gravel Operations

Area: 16.0 acres Land Value: \$2,123 for 16.0 acres

## **12. NEWMARKET**

### Off-Loading Sites:

ID: site1

Location: Waterfront Park (Map ID: U3/5)

Owner: Town of New Market, 186 Main St., Newmarket, NH 03857

Area: 0.13 acres (5,663 SF) Land Value: \$119,100 for lot

ID: NOFF1

Location: 5 Youngs Ln. (Map U3/47)  
Owner: Town of Newmarket, 186 Main St., Newmarket NH 03857  
Area: 12.00 acres                      Land Value: \$781,700 or \$65,142 per acre

ID: NOFF2  
Location: Creighton End of (Map U3/13)  
Owner: Town of Newmarket, 186 Main St., Newmarket, NH 03857  
Area: 0.23 acres                      Land Value: \$310,600 for the lot

ID: NOFF3  
Location: 11 Creighton St. (Map U3/17)  
Owner: LegaCY Properties, Inc., 76 Exeter St., Newmarket, NH 03857  
Area: 0.20 acres                      Land Value: \$168,700 for the lot

**Also, Valerie R. Shelton manages the boat moorings on the Lamprey River. She also owns 3 unimproved properties on the river that might be appropriate for off-loading purposes. She is willing to work with us (124 Cushing Rd, Newmarket, NH). The properties are as follows:**

ID: NOFF5  
Location: 13 Great Cove Dr. (Map U3/55)  
Owner: Valerie R. Shelton, 124 Cushing Rd., Newmakret, NH 03857  
Area: 1.0 acres                      Land Value: \$40,900

ID: NOFF6  
Location: 16 Great Cove Dr. (Map U3/77)  
Owner: Dy-Vol, LLC, 124 Cushing Rd., Newmarket, NH 03857  
Area: 3.0 acres                      Land Value: \$257,200 or \$85,733 per acre

ID: NOFF4  
Location: 24 Great Cove Dr. (Map U3/54)  
Owner: Valerie R. Shelton & Diane R. Morin, 124 Cushing Rd., Newmarket, NH  
Area: 2.60 acres                      Land Value: \$156,900 or \$60,346 per acre

10-Mile Upland Disposal Site(s):

ID: 3  
Location: 133 Exeter Rd. (Map R3/2)  
Owner: Labonte, Lionel R., 355 Rte 125, Brentwood, NH 03833  
Area: 196.38 acres                      Land Value: \$681,100 or \$3,468 per acre  
Use: Farmland – map has dotted line that could be possible access to rear portion of site, if chosen for disposal

ID: 1  
Location: 421 Wadleigh Falls Rd. (Map R6/2)  
Owner: Rosa, Wayne & Janice, 340 Wadleigh Falls Rd., Newmarket, NH 03857

Area: 24.45 acres                      Land Value: \$861,900 or \$35,252 per acre  
Note: This lot contains an active gravel pit, an inactive pit, and some reclaimed land.

ID: 2

Location: 411 Ash Swamp Rd. (Map R6/11/2)  
Owner: Chick Trucking, Inc., 230 Piscassic Rd., Newfield, NH 03856  
Area: 30.0 acres                      Land Value: \$968,100 or \$32,270 per acre  
Note: This is an active gravel pit with a portion that has excess ledge, etc, and  
A small portion is inactive.

ID: 0

Location: Dame Rd. Land (Map R2/13/1)  
Owner: Blackhawk Corporation, 76 Exeter St., Newmarket, NH 03857  
Area: 42.23 acres                      Land Value: \$168,900 or \$4,000 per acre  
Use: Farmland

### **13. NEWFIELDS**

#### 10-Mile Upland Disposal Site(s):

ID: NEW 1

Location: Old Lee Rd. (Map 103, Lot 5 and 2, 3, 4)  
Owner: Town of Newfields, 65 Main St., PO Box 300, Newfield, NH 03856  
Area: Lots 5-1, 2,3,4 contain 14.51 acres (Lot 5-1 has 11.0 acres)  
Land Value: 11.0 acres is \$138,000 or \$12,545 per acre

ID: NEW 2

Location: 18 Meadow Rd. (Map 103/8)  
Owner: Libby, M. Sherwood, 18 Meadow Rd., Newfields, NH 03856  
Area: 23.470 acres                      Land Value: \$6,178 per acre  
Use: This parcel has a house near the street frontage and back farmland

### **14. SOMERSWORTH**

#### 20-Mile Upland Disposal Site(s):

ID: SOM1

Location: 99 Buffumsville Rd., (Map 01, block 01, Lot 0)  
Owner: City of Somersworth, Somersworth, NH 03878  
Land Area: 150 acres Land Value: \$558,600 or \$3,724 per acre  
Use: Wastewater treatment plant on 60 acres.

### **15. ROCHESTER**

#### 20-Mile Upland Disposal Site(s):

ID: ROC1

Location: 85 Rochester Neck Rd. (Map 267, Block 4, Lot 2 &3)

Owner: Turnkey Landfill of Rochester Inc., c/o Waste Management, PO Box 1450, Chicago, IL 60690-1450

Land Area: 142 acres Land Value: \$638,015 or \$4,500 per acre

Use: This land is Industrial zoned

Waste Management of NH Inc., PO Box 1450, Chicago, IL 60690-1450 owns many parcels of land, much of it considered Excess land that might be used for upland disposal. The parcels are as follows:

Map/Block/Lot #	Area/acres	Assessed Value	ID
262/20/0	0.77	\$45,747	ROC5
262/21/0	16.0	\$60,567	ROC6
262/22/0	50.7	\$350,802	ROC7
262/23/0	12.05	\$304,897	ROC8
262/24/0	58.12	\$3,600	ROC9
262/26/0	4.13	\$1,032	ROC10
262/26/0	1.25	\$4,600	ROC11
266/3/0	0.9	\$4,600	ROC12
266/4/0	14.5	\$32,835	ROC13
266/5/0	1.33	\$6,100	ROC14
267/5/0	81.0	\$94,235	ROC2
267/2/0	508.7	\$36,301,760	ROC3
267/6/0	10.7	\$99,560	ROC4
268/7/0	48.0	\$836,460	ROC16
268/8/0	23.0	\$3,210	ROC15

30-Mile Upland Site(s):

ID: SCOT1

Location: 0 Old Dover Rd (Map0256 Bl 0068 Lot0)

Owner: City of Rochester

Use: Dump

Land area: 87 acres. Land value: \$268,308

ID: SCOT2

Location: 229 Rochester Neck Rd (Map 0268 Bl 0006 Lot 0)

Owner: Pike Industries

Use: Industry

LAND AREA: 20.14 ACRES LAND VALUE: \$56,000

## **BARRINGTON**

### 20-Mile Upland Disposal Site(s):

ID: 106

Location: Tolend Rd. (Map 222, Lot 12)

Owner: Brox Industries, 1471 Methuen St., Cracut, MA 01826

Land Area: 57 acres Land Value: \$114,000 or \$2,000 per acre

Note: Brox Industries also owns Lot 10 that contains 30 acres

## **EXETER**

### 20-Mile Upland Disposal Site(s):

ID: 110

Location: 149 Kingston Rd. (Map 100, Lot 4 and portion on Map 101)

Owner: Town of Exeter, 10 Front Street, Exeter, NH 03833

Land Area: 31.47 acres Land Value: \$129,800 or \$4,125 per acre

Note: this was a former sand and gravel pit.

## **EPPING**

### 20-Mile Upland Disposal Site(s):

ID: Epp1

Location: Old Hedding Rd. (Map 024, Block 086, Lot 0, Unit 0)

Owner: town of Epping, 157 Main St., Epping, NH 03042

Land Area: 11.0 acres Land Value: \$45,000\$4,100 per acre

Note: Town landfill and town is looking for clean fill to put here

ID: Epp2

Location: Old Hedding Rd. (Map 024, Block 001, Lot 000, Unit 0)

Owner: town of Epping, 157 Main St., epping, NH 03042

Land Area: 13.180 acres Land Value: \$24,800 or \$2,000 per acre

Note: Town landfill and town is looking for clean fill to put here

Town is looking for clean fill, contact person is:

Stephen R. Fournier

157 Main St., Epping, NH 03042

Tel: 603-679-5441

## **MILTON**

### 30-Mile Upland Disposal Site(s):

ID: milt1

Location: Middleton Rd., (Map 34/19/00)  
Owner: Alice E. Merrill, 1402 Sharon Dr., Deland, Florida 32724  
Area: 114.0 acres                      Land Value: \$8,556 for the lot

ID: 122  
Location: Middleton Rd. (Map 34/24/00)  
Owner: Helen Amazeen, Helen Amazeen Rev. Living Trust  
149 East Side Drive, PO Box 237, Concord, NH 03302  
Area: 7;1.370 acres    Land Value: \$65,857 for the lot

ID: 121  
Location: 803 White Mountain Hwy (Map 32/30/00)  
Owner: Town of Milton, PO Box 310, Milton, NH 03851  
Area: 33.990 acres                      Land Value: \$92,700 for the lot  
Note: Town landfill, Milton highway department, sheds, abuts R/R

## **FARMINGTON**

### 30-Mile Upland Disposal Site(s):

ID: Farm1  
Location: Dump Road #29 (Map R19/013)  
Owner: Town of Farmington, 356 Main St., Farmington, NH 03835  
Area: 32.7 acres                      Land Value: \$46,340 or \$1.417 per acre

ID:  
Location: Chestnut Hill Rd. (Map R15/006) cmnts: residential zoning  
Owner: Howard Ronald J., 12 Gina Drive, Rochester, NH 03867  
Area: 70.0 acres                      Land Value: \$112,200 or \$1,602 per acre  
**SEABROOK**

### 10-Mile Upland Disposal Site(s):

LOCATION: 464 NEW ZEALAND RD (MAP1/4/0)  
Owner: Peabody Raymond E Jr & Patricia  
Use:  
Land area: 41.96 ac. Land value: \$957,500

Location: 540 Rte 107 (Map 1/1)  
Owner: Town of Seabrook  
Use: Rock well pump station and town shooting range.  
Land area: 64.2 ac. Land value: \$ 1,274,800

Location: 269 Rte 107 (Map 2/98/1)  
Owner: Carney George L, 7 Chilton Rd, Brockton, MA 02301  
Use:

Land area: 27.2 ac. Land value: \$1,119,000  
part of this site (7 ac) is a wetland.  
HAMPTON-FALLS

10-Mile Upland Disposal Site(s):

ID: H-F  
Location: 25 East Rd (map 9/1/)  
Owner: Merrill Christopher & Elizabeth Swain Kenneth  
Use:  
Land area: 16 ac. Land value: \$30,000

ID: H-F  
Location: 16 Marsh Ln (map 9/6/)  
Owner: Melville Joseph A & Margery W  
Use:  
Land area: 17 ac. Land value: \$63,800

ID: H-F  
Location: Off of I-95  
Owner: Merrill Christopher  
Use:  
Land area: 5 ac. Land value: \$9,400  
KENSINGTON

10-Mile Upland Disposal Site(s):

ID: K-1  
Location: 17 Beaver Dam Rd (map 5/26/)  
Owner: Alan Lewis, 400 Beacon St, Boston, MA 02116  
Use: Old dump site  
Land area: 2.6 ac. Land value: \$80,000  
HAMPTON

10-Mile Upland Disposal Site(s):

ID: H-1  
Location: 1 Hardart's way-landfill (map 218/9/)  
Owner: Town of Hampton  
Use: landfill  
Land area: 40.26 ac. Land value: \$1,396,000  
KINGSTON

20-Mile Upland Disposal Site(s):

ID: KING2

Location: 12 Rte 125 (Map R3/18/)  
Owner: John Galloway, PO Box 809, Plaistow, NH  
Use: industrial  
Land area: 37 ac. Land value: \$364,600

ID: KING1  
Location: 7 Dorre Rd (Map R2, Lot 11)  
Owner: Henry Torromeo, 33 Old Ferry Rd, Methuen, MA  
Use:  
Land area: 84 acres                      Land value: \$464,400

ID: KING3  
Location: 271 Rte 125 (Map R40/2)  
Owner: Town of Kingston  
Use: 5 acres in current use.  
Land area: 58.92 acres (including Lot3)                      Land value: \$423,900  
Comment: Lot3 is vacant. Lot 2 by itself is 29 acres. This is a Town dump. Currently being capped.

ID: KING4  
Location: 271 Rte 125 (Map R40/7)  
Owner: Magnusson Phyllis M, Trustee  
Use:  
Land area: 17 acres.                      Land value: \$171,308. Bldg: \$33,200

ID: KING5  
Location: Off Rte 125 (Map R40/8)  
Owner: Magnusson Farms LLC  
Use: unmanaged hardwood  
Land area: 21 acres                      Land value: \$16,843

ID: KING6  
Location: Off Rte 125 (Map R40/16)  
Owner: Magnusson Farms LLC  
Use: vacant  
Land area: 29 acres                      Land value: \$1,814

ID: KING7  
Location: Off Rte 125 (Map R40/17)  
Owner: Magnusson Farms LLC  
Use: vacant  
Land area: 10 acres                      Land value: \$626  
NEWTON

20-Mile Upland Disposal Site(s):

ID: NEWT4

Location: New Boston Rd (Map3/1/3)

Owner: State of NH Fish & Game Dept.

Use:

Land area: 87 ac. Land value: \$114,900

ID: NEWT1

Location: 7 Keezer Lane (map 3/1/4-5)

Owner: Kathleen Redlund

Use:

Land area: 43.15 ac. Land value: \$58,817

ID: NEWT5

Location: 24 New Boston Rd (map 3/1/12)

Owner: Irene Payne, 424 central st., Saugus, MA 01906

Use:

Land area: 27.7 ac. Land value: \$ 119,500

ID: NEWT3

Location: Bear Hill Rd (map 17/4/9)

Owner: Town of Merrimac

Use: Water Dept

Land area: 10.2 ac. Land value: \$21,800

ID: NEWT2

Location: Bear Hill Rd (map 17/4/9-1)

Owner: Town of Merrimac

Use: Water Dept

Land area: 11.69 ac. Land value: \$65,800

FREMONT

20-Mile Upland Disposal Site(s):

ID: FRE1

Location: Danville Rd (Map /2-31)

Owner:

Use: Town hunting area. A dike is currently being built.

Land area: 26 ac. Land value:

PLAISTOW

20-Mile Upland Disposal Site(s):

Location: 214 A Plaistow Rd (Map /45/1)

Owner: Miller TR & Fred D

Use: Developer trying to develop this piece of land. He is looking for 4 feet of fill material for this 33.2 ac land to elevate it above flood zone.

Land area: 33.2 ac.                      Land value: \$300,200.

**DEERFIELD**

30-Mile Upland Disposal Site(s):

ID: DEER1  
Location: 51 Brown Rd (Map 424, Lot 27, Sub 0)  
Owner: Town of Deerfield  
Use: Sanitary Landfill  
Land area: 36.78 acres                      Land value: \$220,100

**CANDIA**

30-Mile Upland Disposal Site(s):

ID: CAND1  
Location: 119 New Boston Rd (Map ID 406/101///)  
Owner: Town of Candia  
Use: Dump  
Land area: 8.67 acres                      Land value: \$114,700

**SALEM**

30-Mile Upland Disposal Site(s):

ID: SALM1  
Location: 101 Shannon Rd (Map 35//6625//)  
Owner: Town of Salem  
Use: Recycling centre  
Land area: 79 acres                      Land value: \$222,300

**SANDOWN**

20-Mile Upland Disposal Site(s):

ID: SAND1  
Location: 24 Depot Rd (Map 11/3///)  
Owner: Town of Sandown  
Use: Town garage & landfill  
Land area: 17.9 acre                      Land value: \$142,400

**CHESTER**

20-Mile Upland Disposal Site(s):

ID: CHES1

Location: Town Dump Rd (Map 013/001/000)

Owner: Adelphi Investments Inc.

Use: vacant land

Land area: 27.5 acres                      Land value: \$24,600

ID: CHES2

Location: 50 Town Dump Rd (Map 013/005/000)

Owner: Town of Chester

Use: Cell Phone Tower

Land area: 37.23 acres                      Land value: \$88,900

ID: CHES3

Location: Raymond Rd (Map 013/004/000)

Owner: Nicholas P Chakoutis

Use: vacant land

Land area: 34.65 acres                      Land value: \$276,300

ID: CHES4

Location: 101 Town Dump Rd (Map 013/003/000)

Owner: Town of Chester

Use: Salt shed

Land area: 18.51 acres                      Land value: \$45,000

ID: CHES5

Location: Town Dump Rd (Map 013/002/000)

Owner: Jake Donigan

Use: part wetlands

Land area: 75 acres                          Land value: \$63,500

## **DERRY**

### 30-Mile Upland Disposal Site(s):

ID: TRNSFR

Location: Kendall Pond Rd (Map 02020)

Owner: Town of Derry

Use: Transfer Station

Land area: 128 acres                          Land value: \$537,600

ID: DERRY1

Location: 12 Bowers Rd (Map 02065-002)

Owner: Tuckernuck Development LLC

Use: Zoning IND 1

Land area: 59 acres                          Land value: \$674,300

Comments: Of which 7 acres are wetlands.

ID: DERRY2

Location: 79 Windham Rd

Owner: Windham Rd Holdings LLC

Use: Zoning IND 1

Land area: 130 acres                      Land value: \$701,800

Comment: Of which 50 acres are wetlands

## **BRENTWOOD**

### 20-Mile Upland Disposal Site(s):

ID: ID BRNT 1

Location: Deer Hill Rd (Map 206/58)

Owner: Brentwood Realty Trust

Use:

Land area: 36 acres                      Land value: \$7,200

ID: BRNT2

Location: RTE 101 (Map 203/36)

Owner: State of NH

Use: mostly wetlands

Land area: 330 acres                      Land value: \$1,245,100

Comment: 90% wetlands

## **RAYMOND**

### 20-Mile Upland Disposal Site(s):

ID: RAY1

Location: 61 Harriman Hill Rd (Map34/63)

Owner: Carney, William Revocable Trust

Use: Residential

Land area: 50.98 acres                      Land value: \$51,013    Bldg value: \$83,900

ID: RAY2

Location: 43 Harriman Hill Rd (Map34/65)

Owner: Town of Raymond

Use: School District

Land area: 66.3 acres                      Land value: \$613,700    Bldg value: \$8,085,700

ID: RAY3

Location: Rte 101 (Map 34/68)

Owner: Titus, Wendell F

Use: Residential

Land area: 31 acres                      Land value: \$158,400    Bldg value: \$67,600

ID: RAY4

Location: Morgan Farm Rd (Map 11/31)

Owner: Aggregate Industrial Land Company, 1715 Broadway, Saugus, MA

Use: gravel pit

Land area: 83 acres

Land value: \$ 30,686(current use) \$151,600 (rest)

**APPENDIX D**  
**ENVIRONMENTAL REGULATIONS**

## **Regulations for upland disposal of dredged material in New Hampshire**

New Hampshire State regulates dredged materials based on the level of contaminants present. Disposal below mean high water (MHW), is regulated by the Clean Water Act Section 404. Disposal above MHW is under state and Federal rules per Resource Conservation and Recovery Act (RCRA). Upland disposal of dredge material is regulated as solid wastes (RSA 149-M) or hazardous wastes (RSA 147-A).

For any dredged material that is to be disposed above MHW needs representative sampling and quantification of the nature of the material. There are records of background levels for naturally occurring contaminants in the soil for comparison, man made contaminants are now found through out the environment, but New Hampshire does not currently have any defined urban level contaminant listings. The urban level contaminants need to be accessed based on health risks not just general levels found. Upland disposal for beneficial use will ultimately be restricted based on agricultural limits (salt content) and contamination.

If contaminated material is a solid waste, it can be placed in an authorized on-site disposal facility or proper off-site facility. Federal municipal solid waste (MSW) landfill requirements are not applicable because there is no household component of the waste. Authorized upland reuse requirements and limitation are given in Env-Wm 2603.05 (also see main text of the report). All New Hampshire Revised Statutes (RSA) can be found online at <http://gencourt.state.nh.us/rsa/html/indexes/default.asp>.

**Section D-1.**

Table 2600-1 from New Hampshire Code Of Administrative Rules.

Maximum Contaminant Concentrations	
Regulated Contaminant	Standard
Acenaphthene	1,000 mg/kg
Acenaphthylene	1,000 mg/kg
Anthracene	1,000 mg/kg
Benzene	0.3 mg/kg
Benzo(a)anthracene	0.7 mg/kg
Benzo(a)pyrene	0.7 mg/kg
Benzo(b)fluoranthene	7 mg/kg
Benzo(k)fluoranthene	7 mg/kg
Cadmium	32 mg/kg
Chromium (III)	1,000 mg/kg
Chromium (VI)	170 mg/kg
Chrysene	70 mg/kg
Dibenzo(a,h)anthracene	0.7 mg/kg
Dichloroethane, 1,2-	0.09 mg/kg
Ethylbenzene	90 mg/kg
Fluoranthene	810 mg/kg
Fluorene	510 mg/kg
Indeno(1,2,3-cd)pyrene	0.7 mg/kg
Isopropylbenzene	23 mg/kg
Lead	400 mg/kg
Mercury (inorganic)	4 mg/kg
Methylnaphthalene, 2-	150 mg/kg
Methyl-t-butyl ether	3 mg/kg
Naphthalene	3 mg/kg
Nickel	1,000 mg/kg
Selenium	270 mg/kg
Silver	170 mg/kg
Toluene	100 mg/kg
Xylene	810 mg/kg
Zinc	1,000 mg/kg

Maximum Contaminant Concentrations	
Regulated Contaminant	Standard
Alkylbenzenes	Total
Butylbenzene, n-	61 mg/kg
Butylbenzene, sec-	
Butylbenzene, tert-	
Isopropyl toluene, 4-	
Propylbenzene, n-	
Trimethylbenzene, 1,2,4-	
Trimethylbenzene, 1,3,5-	
Total Petroleum Hydrocarbons	10,000 mg/kg

Source. (See Revision Note at PART Heading for Env-Wm 101) #5172, eff 7-1-91, EXPIRED: 7-1-97

New. #6619-B, eff 10-29-97

## **Section D-2**

### **Rules Pertaining to Solid Waste in the Universal Siting Requirements (Env-Wm 2703)**

Specific regulations that pertain to solid waste disposal are listed below by New Hampshire Code of Administrative Rules, and then excerpts from identified RSAs.

Env- Wm 2703.04 Groundwater and surface waters.

*a) no facility shall be located in violation of RSA 483, relative to management and protection of rivers.*

RSA 483:9 VI. Any new solid waste storage or treatment facility, as defined in RSA 149-M:4, XI shall be set back a minimum of 250 feet from the normal high water mark of a designated natural river or segment and screened with a vegetative or other natural barrier to minimize visual impact, except:

New solid waste landfills shall not be permitted within the corridor of a designated natural river or segment;

Existing, permitted and secure solid waste landfills shall not be expanded within the 500 year floodplain of a designated natural river or segment and any expansion of such a landfill located within the corridor of a designated natural river or segment shall be set back a minimum of 100 feet from the landward extent of the 500 year floodplain and screened from the river with a vegetative or other natural barrier to minimize visual impact;

Any land application within the river corridor of septage, sludge, or solid waste, as defined in RSA 149-M:4, XXII, shall be set back a minimum of 250 feet from the normal high water mark and shall be immediately incorporated into the soil. The provisions of this subparagraph shall not apply to manure, lime, or wood ash when used for agricultural purposes.

An existing solid waste facility which is located within 250 feet of the normal high water mark of a designated natural river or segment may continue to operate under an existing permit provided it does not cause degradation to an area in excess of that area under permit at the time of designation; and

The department may permit a resource recovery operation at an existing landfill located within 250 feet of the normal high water mark of a designated natural river or segment.

*b) No facility shall be located in violation of RSA 485 (Safe Drinking Water Act), RSA 485-A (Water Pollution and Waste Disposal), and RSA 485-C (Ground Water Protection Act) relative to protection of groundwater.*

Env- Wm 2703.05 Wetlands. *No facility shall be located in violation of RSA 482-A , relative to protection of wetlands*

Chapter 482-A - Fill and Dredge in Wetlands.

Env-Wm- 2703.06 Shoreline Protection. *No facility shall be located in violation of RSA 483-B, relative to protection of shorelands.*

Chapter 483-B – Comprehensive Shoreline Protection Act  
*(The following sections from 483-B:9 may apply)*

II. Within the protected shoreland the following restrictions shall apply: (a) The establishment or expansion of salt storage yards, automobile junk yards, and solid or hazardous waste facilities shall be prohibited.

IV-c. An existing solid waste facility which is located within 250 feet of the reference line of public waters under this chapter may continue to operate under an existing permit, provided it does not cause degradation to an area in excess of that area under permit.

IV-d. No solid waste facility shall place solid waste within 250 feet of the reference line of public waters under this chapter except as expressly permitted under RSA 483-B:9, IV-c. However, any solid waste facility may be allowed, subject to permitting conditions under RSA 149-M:9, to erect accessory structures and conduct other activities consistent with the operation of the facility within 250 feet of the reference line of public waters under this chapter, such as filling, grading and installing monitoring wells and other drainage structures as is consistent with its solid waste permit as issued by the department of environmental services. Under no circumstances shall the toe of any slope encroach within 150 feet of the reference line.

Env-Wm-2703.07 Designated Rivers. *No facility shall be sited in violation of RSA 483, relative to protection of designated rivers.*

Chapter 483 – Rivers Management and Protection Program  
(See section 2703.04 above)

### **Section D-3**

All federal projects need to be in compliance with all federal laws, regulations, Executive Orders, and Executive Memorandum. These are listed below.

#### Federal Statutes

Archaeological Resources Protection Act of 1979, as amended, 16USC 470 et seq.

Preservation of Historic and Archeological Data Act of 1974, as amended, 16 U.S.C. 469 et seq.

American Indian Religious Freedom Act of 1978, 42 U.S.C. 1996.

Clean Air Act, as amended, 42 U.S.C. 7401 et seq.

Clean Water Act of 1977 (Federal Water Pollution Control Act Amendments of 1972) 33 U.S.C. 1251 et seq.

Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1451 et seq.

Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq.

Federal Water Project Recreation Act, as amended, 16 U.S.C. 4601-12 et seq.

Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661 et seq.

Land and Water Conservation Fund Act of 1965, as amended, 16 U.S.C. 4601-4 et seq.

Marine Protection, Research, and Sanctuaries Act of 1971, as amended, 33 U.S.C. 1401 et seq.

National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.

Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3000-3013, 18 U.S.C. 1170

National Environmental Policy Act of 1969, as amended, 42 U.S.C 4321 et seq.

Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.

Watershed Protection and Flood Prevention Act as amended, 16 U.S.C 1001 et seq.

Wild and Scenic Rivers Act, as amended, 16 U.S.C 1271 et seq.

Magnuson-Stevens Act, as amended, 16 U.S.C. 1801 et seq.

#### Executive Orders

Executive Order 11593, Protection and Enhancement of the Cultural Environment, 13 May 1971

Executive Order 11988, Floodplain Management, 24 May 1977 amended by Executive Order 12148, 20 July 1979.

Executive Order 11990, Protection of Wetlands, 24 May 1977.

Executive Order 12898, Environmental Justice, 11 February 1994.

Executive Order 13007, Accommodation of Sacred Sites, 24 May 1996

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks. 21 April, 1997.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, 6 November 2000.

Executive Memorandum

Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing NEPA, 11 August 1980.

White House Memorandum, Government-to-Government Relations with Indian Tribes, 29 April 1994.