APPENDIX F

GROUNDWATER RECHARGE AND REUSE,

PHASE 2 – LAND APPLICATION FEASIBILITY RANKING

November 6, 2006

Method of Transmission

Via E-Mail

New Hampshire Seacoast Project Team
c/o Matthew Formica
Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, MA 01880

Subject: **Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study Groundwater Recharge and Reuse Option**

Dear Team Members:

ENSR is proposing the following revised Phase 2 Methodology, Land Application Feasibility Ranking, as part of its support for the New Hampshire Seacoast Wastewater Management Study overseen by Metcalf & Eddy, Inc. (M&E). This proposed Phase 2 Methodology, which addresses and incorporates the comments provided by M&E on the July 22, 2006 draft methodology, will be used to further evaluate wastewater management alternatives selected in the March 25, 2006 "Charette" meeting facilitated by M&E; specifically, *Alternative 4 – Treatment at Existing WWTFs and Discharge at Land Application Sites* (formerly presented as Alternative No. 3 in the *Scope of Work for Feasibility Study for a Regional Outfall Sewer System, May 27, 2004*).

The Phase 1 Favorable Zone Identification Study conducted by ENSR in April 2005 resulted in maps of areas in the study area that may be suitable for the land application alternative. The Phase 1 Study excluded areas within mapped sand and gravel aquifers that were identified to be urban areas, wetlands, roads, within a flood plain, within an established well-head protection area, or within 1,000 feet of a drinking-water reservoir. The areas that remained after this exclusionary criterion was applied are considered candidate areas worthy of further study.

In order to further evaluate the candidate areas identified in Phase 1, the following prioritization method is proposed as the Phase 2, Land Application Feasibility Ranking.

The proposed evaluation process consists of:

1) The scoring and ranking of candidate areas based on the following characteristics:

   a) Distance from wastewater treatment facility (WWTF)
   b) Distance to surface water
   c) Transmissivity
   d) Distance to water supplies

2) The development of a map layer that identifies developed areas that were not excluded in Phase 1. This layer will be generated from the aerial photos taken in 2003 for the National Agricultural Imagery Program. These developed areas will be removed from the ranked candidate areas.

3) The minimum amount of land required by each wastewater treatment facility to make land disposal a feasible option will be used to remove the unsuitably small isolated fragments of land from the candidate areas. Minimum land area requirements are to be provided to ENSR from M&E.

4) Summaries of the candidate areas around each wastewater treatment facility will be provided in table and map forms, and will include a brief description of the remaining candidate areas around each WWTF, sizes of the areas and their respective ranking scores.

The results of this evaluation are not intended to determine the actual feasibility of the candidate areas for the land application disposal alternative. It is intended to generally assess the overall potential for this disposal alternative within the Study Area. Considerably more detailed investigations would be required to accurately assess the feasibility of individual candidate areas; however, this level of site-specific investigation is not within the scope of this project.

1) SCORING AND RANKING METHODOLOGY

Using the Geographic Information System (GIS), candidate areas will be scored using the following numbering scheme and ranked in order to evaluate the favorability of the areas near each of the wastewater treatment facilities with respect to their potential for the land application alternative. Scores for each of the characteristics, a through d, listed above will be applied to each of the candidate areas. The sums of the scores reflect the relative favorability of each of the areas. The areas will then be ranked by their overall score in order to prioritize the areas for further consideration. Study area maps and tables will be generated to assist with the feasibility evaluation. The candidate areas will be divided into three score categories, high, medium, and low, based on an equal division of the total range of scores. This division of the relative feasibility ranking will be referenced in the summaries.

The justification for the specific characteristic divisions and ranking values is presented below.

a) Distance from WWTF

The three ranking divisions are based upon the distances deemed appropriate for the geographic scale of study area. The distance categories were developed by Metcalf & Eddy, Inc. to account for the relative feasibility of pumping treated wastewater effluent with respect to its volume (projected average daily flow). Ranking scores were derived specifically for each WWTF based on distance/flow ratios. One point will be applied to candidate areas that are located beyond the distance that is calculated by multiplying 0.66 times the projected average daily flow (MGD). The resultant distance in miles is converted to feet in the attached

table. Candidate areas located beyond these distances are considered to have low feasibility. For the eight smallest WWTF's in the study, the computed areas are unrealistically small, ranging from 188 feet to 1,812 feet, to be considered the only areas with a potentially high favorability. For these WWTF's, the final feasibility evaluation will consider candidate areas located within 4,000 feet of the facilities.

Three points will be applied to candidate areas that are located closer than the distance calculated by multiplying 0.33 times the projected average daily flow (MGD). These areas are considered to have the highest with respect to their distance from the WWTF. Two points will be applied to areas located between the 0.33x and 0.66x distances. These areas are considered to have moderate feasibility with respect to their distance from the WWTF.

See the attached table, *Phase 2 Land Application Alternative, Proposed Scoring for the Distance Criterion*, for specific distances used for scoring each candidate area with respect to each WWTF.

b) **Distance to Surface Water**

The four ranking divisions are based upon the concept that the closer the site is to a surface water-body, the higher the likelihood that the groundwater flow direction is toward the water-body. The divisions also reflect the greater desirability of sites that have the potential receiving surface water-body within their property boundary, thus avoiding compliance issues regarding achievement of the groundwater quality standard at the property boundary.

- *Greater than 2,000 feet* 0
- *Between 2,000 and 1,000 feet* 1
- *Between 1,000 and 500 feet* 2
- *Within 500 feet* 3

c) Transmissivity

Category divisions are based on the "range" attribute codes that are published in the USGS stratified drift aquifer maps from which the GIS data was derived. The codes are grouped into three categories to simplify the scoring system while maintaining the inherent favorability of areas with higher transmissivities.

Values are assigned with a linear scale by generalized ranges of transmissivity.

- *Low Transmissivity* *1*
- *Medium Transmissivity* *2*
- *High Transmissivity* *3*

d) **Distance to Existing Water Supply *(Public)***

In Phase 1, properties within established well-head protection areas associated with community water supplies were eliminated. In Phase 2, the remaining candidate areas will be scored by their proximity to public water supplies. The category divisions are intended to promote areas that are further from public water supplies.

The categories are based on the 1,300 feet and 2,050 foot radii which relate to the NHDES proposed WHPA's for a 0 to 7,200 gallon per day withdrawal and a 14,401 to 28,800 gallon per day withdrawal, respectively. Actual withdrawal rates for these users are not available so these buffers are applied as a preliminary recognition of their potential influence on the candidate areas.

o *Within established WHPA*	Excluded in Phase 1
o *Less than 1,300 feet from PWS**	0
o *Between 1,300 and 2,050 feet from PWS**	1
o *Greater than 2,050 feet from PWS**	2

**Public Water Supply (PWS), including community, non-community, transient and non-transient sources. A 500 foot buffer area around all of the wells in the inventory, and areas within established wellhead protection areas have been removed from consideration during the Phase 1 process.*

2) LAND DEVELOPMENT DATA

In the Phase 1 Favorable Zone Study, the developed land areas that were removed from consideration were based on Landsat Thematic Mapper(TM) imagery collected between 1990 and 2001. This data was developed from satellite images and has a pixel size of 30 meters. More accurate developed land data is necessary to truly evaluate the candidate areas in this study. A preliminary review of the candidate areas overlaid upon a 2003 aerial photo revealed many areas that would be infeasible due to presence of buildings and pavement. In order to revise the candidate area boundaries, GIS polygons will be generated where development is apparent in the 2003 aerial photos (National Agricultural Imagery Program).

3) ELIMINATION OF SMALL ISOLATED AREAS

Using the minimum land area requirements for each of the WWTF's, that are to be provided to ENSR from M&E, the candidate areas will be modified by eliminating the isolated insufficiently small areas and the grouping of otherwise small areas that are within close proximity (i.e., cut by a 100 ft road buffer). Comparisons with the minimum land area requirements will also be made to evaluate the feasibility of the candidate areas surrounding the WWTF's.

4) SUMMARY MAPS AND TABLES

The final products of the Phase 2 ranking process will include:

a) 1 Study Area Map Including:

i. Study Area Boundaries

ii. Town Boundaries

iii. Major Roads

iv. WWTF Locations (Color coded to indicate whether any candidate areas are located within the '0.66x' distance, or 4,000 feet (which ever is further) from the WWTF.)

b) Maps of Individual WWTF's Including:

i. 2003 Aerial Base Map

ii. WWTF Location

iii. Final Candidate Areas (Color coded by relative feasibility (high, medium, and low))

c) Summary Table Including:

i. WWTF Name

ii. Total Size (in acres) of Candidate Areas within the '0.66x' distance or 4,000 foot radius (which ever is greater) around the WWTF

iii. Minimum land area required for the land disposal alternative (to be provided by M&E).

iv. Percents of Candidate Areas around the WWTF categorized by high, medium, and low feasibility based on their ranking.

v. Brief Description of Candidate Areas around each WWTF

vi. Total Size of Candidate Areas within Study Area

Thank you for your consideration of this proposed approach to Phase 2. Any comments or suggestions would be appreciated before we proceed.

Sincerely,

Albert N. Pratt
Water Resources Specialist

John J. Donohue IV
Vice President
Hydrogeology and Water Supply

cc: Dave Mitchell, ENSR
Project Files

j:\01 ensr projects\nh seacoast wastewater management study\phase 2 study\nh seacoast phase2 methodology_nov06.doc

CANDIDATE AREA TABLE 1

NEW HAMPSHIRE SEACOAST REGION WASTEWATER MANAGEMENT STUDY

SUMMARY OF LAND AREAS POTENTIALLY SUITABLE FOR LAND APPLICATION OF TREATED WASTEWATER

	FACILITY	2055 Total Land Needed (Acres)	Total Land Area Remaining Near WWTF (Acres)*	Radius used for Facility Specific Ranking Summaries (Feet)	Ranking of Land Application Favorability					
					Highest Ranked Areas Score 10 & 11 points		Medium Ranked Areas Score 8 & 9 points		Lowest Ranked Areas Score 2 through 7 points	
					Acres	Percent of Total Area Remaining Near WWTF	Acres	Percent of Total Area Remaining Near WWTF	Acres	Percent of Total Area Remaining Near WWTF
1	DOVER WASTEWATER	96.1	1,731.3	9,932	165.3	9.5%	1,260.7	72.8%	305.2	17.6%
2	DURHAM WASTEWATER	37.8	0.0	4,000						
3	EPPING WATER & SEWER	8.1	56.8	4,000	0.0	0.0%	1.5	2.6%	55.3	97.4%
4	EXETER WASTEWATER	72.5	0.0	7,318						
5	FARMINGTON WASTEWATER	10.4	33.6	4,000	0.0	0.0%	5.1	15.2%	28.5	84.8%
6	HAMPTON WASTEWATER	97.7	0.0	9,757						
7	MILTON WASTEWATER	2.4	66.0	4,000	0.0	0.0%	21.1	32.0%	44.9	68.0%
8	NEWFIELDS WASTEWATER	2.1	0.0	4,000						
9	NEWINGTON WASTEWATER	6.2	0.0	4,000						
10	NEWMARKET WASTEWATER	27.1	26.5	4,000	0.0	0.0%	1.9	7.2%	24.6	92.8%
11	PEASE DEVELOPMENT AUTHORITY	21.8	29.7	4,000	0.0	0.0%	0.0	0.0%	29.7	100.0%
12	PORTSMOUTH WASTEWATER	176.4	230.4	18,121	0.0	0.0%	113.3	49.2%	117.1	50.8%
13	ROCHESTER WASTEWATER	129.2	3,169.0	12,197	809.3	25.5%	1,943.7	61.3%	415.8	13.1%
14	ROCKINGHAM COUNTY WWTF	4.5	0.0	4,000						
15	ROLLINSFORD WASTEWATER	4.5	24.9	4,000	0.0	0.0%	9.6	38.6%	15.3	61.4%
16	SEABROOK WASTEWATER	42.5	13.1	4,182	0.0	0.0%	11.2	85.5%	1.9	14.5%
17	SOMERSWORTH WASTEWATER	44.1	164.2	4,530	6.4	3.9%	134.7	82.0%	23.1	14.1%
			sum**:	5,545.5						

* Total land area remaining within 4,000 feet or the 0.66x distance factor, whichever is larger. The 0.66x distance factor is derived by multiplying 0.66 times the projected average daily flow in MGD, and converting the resultant value from miles to feet. This factor is intended to represent the maximum distance reasonable for transporting treated wastewater for disposal.

** The total candidate land area within the study area that remained after the Phase 1 criteria were applied totals 37,902 acres. Of this area, 5,545.5 acres were located within the radii used for the facility ranking process.

CANDIDATE AREA TABLE 2

NEW HAMPSHIRE SEACOAST REGION WASTEWATER MANAGEMENT STUDY

SUMMARY OF LAND AREAS POTENTIALLY SUITABLE FOR LAND APPLICATION OF TREATED WASTEWATER

	FACILITY	POTENTIALLY SUITABLE AREAS*	DESCRIPTION OF CANDIDATE AREAS
1	DOVER WASTEWATER	Yes	A sufficient area for land disposal appears to exist near the treatment plant. Much of the land appears to be forested or in use for agriculture.
2	DURHAM WASTEWATER	No	No candidate areas are located near WWTF. The nearest potentially suitable area is located between 2 and 3 miles east of the WWTF on conservation land.
3	EPPING WATER & SEWER	Yes	Potentially suitable area surrounds the WWTF, however residential development may limit the feasibility of the land application alternative.
4	EXETER WASTEWATER	No	No candidate areas are located near the WWTF. The nearest potentially suitable area, located approximately 2.4 miles east of the WWTF, was ranked with primarily low scores.
5	FARMINGTON WASTEWATER	Limited	Remaining candidate areas are fragmented and are located on an aquifer may support nearby public water supplies.
6	HAMPTON WASTEWATER	No	No candidate areas are located near the WWTF. The nearest potentially suitable area is located between 2.5 and 4.0 miles southeast of the WWTF.
7	MILTON WASTEWATER	Yes	Potentially suitable area surrounds the WWTF. Potentially suitable areas south of the WWTF are fragmented by residential development.
8	NEWFIELDS WASTEWATER	No	No candidate areas are located near the WWTF. The nearest potentially suitable area is located approximately 2 miles east of the WWTF.
9	NEWINGTON WASTEWATER	No	No candidate areas are located near the WWTF. The nearest potentially suitable area is located 2.5 and 3 miles west of the WWTF.
10	NEWMARKET WASTEWATER	Limited	The suitability of the candidate areas located near the WWTF are limited by their relatively small size and fragmentation due to development. The nearest potentially suitable area is located between 1.5 and 2.0 miles north north-west of the WWTF.
11	PEASE DEVELOPMENT AUTHORITY	Limited	Remaining candidate areas are surrounded by developed areas and are relatively small with respect to the projected land requirements.
12	PORTSMOUTH WASTEWATER	Limited	Remaining candidate areas, located between 2.2 and 3.5 miles southwest of the WWTF, are fragmented and surrounded by developed areas.
13	ROCHESTER WASTEWATER	Yes	Many potentially suitable candidate areas are located within 2 miles of the WWTF.
14	ROCKINGHAM COUNTY WWTF	No	No candidate areas are located near the WWTF. The nearest potentially suitable area is located approximately 2 miles southeast of the WWTF.
15	ROLLINSFORD WASTEWATER	Limited	No candidate areas are located near the WWTF. The nearest potentially suitable area is located approximately 0.8 miles northwest of the WWTF.
16	SEABROOK WASTEWATER	No	No candidate areas are located near the WWTF.
17	SOMERSWORTH WASTEWATER	Yes	Potentially suitable areas are located within 1 mile southwest of the WWTF.

* Preliminary suitability determination based only upon criteria established through this study (see "Phase 2 Methodology, Land Application Feasibility Ranking, NH Seacoast Wastewater Study, Groundwater Recharge and Reuse Option", ENSR, November 2006).

PRELIMINARY FEASIBILITY of the LAND APPLICATION OPTION for SEACOAST NEW HAMPSHIRE WASTEWATER TREATMENT FACILITIES

Legend

Study Area Boundary

Town Boundary

Wastewater Treatment Facility Ranking

- Land Application Alternative Is Potentially Feasible*
- Land Application Alternative Has Limited Feasibility*
- Land Application Alternative Is Not Feasible*

Candidate Areas for Land Application

Regional Ranking (see notes)**

- 1 - 4 Low Favorability
- 5 - 6 Moderate Favorability
- 7 - 8 High Favorability

Wakefield
Brookfield
Middleton
New Durham
Milton
MILTON WWTF
FARMINGTON WWTF
Farmington
Rochester
ROCHESTER WWTF
Strafford
SOMERSWORTH WWTF
Somersworth
ROLLINSFORD WWTF
Rollinsford
Northwood
Barrington
Dover
Madbury
DOVER WWTF
Deerfield
Nottingham
Lee
DURHAM WWTF
Durham
NEWINGTON WWTF
Newington
PEASE DEVELOPMENT AUTHORITY
New Castle
PORTSMOUTH WWTF
Portsmouth
Newmarket
NEWMARKET WWTF
Greenland
Candia
Epping
Newfields
Raymond
EPPING WWTF
NEWFIELDS VIL SEWER DIST
Stratham
Rye
ROCKINGHAM COUNTY HOME WWTF
EXETER WWTF
Fremont
Brentwood
Exeter
North Hampton
Chester
Hampton
HAMPTON WWTF
Sandown
Danville
Kingston
East Kingston
Kensington
Hampton Falls
Hampstead
South Hampton
Seabrook
SEABROOK WWTF

* -'Potentially Feasible' ranking assigned to WWTF's where the area within the ranking radius remaining after the Phase 2 analysis appears suitable in size and location for the land application option.

-'Limited Feasibility' ranking assigned to WWTF's where some apparently suitable areas for the land application option remain within the ranking radius after the Phase 2 analysis, however, the size, degree of fragmentation and proximity to potentially sensitive receptors may be restrictive.

-'Not Feasible' ranking assigned to WWTF's where there is insufficient area remaining within the ranking radius after the Phase 2 analysis.

**Notes:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Tables 1 and 2" for information regarding the ranked areas.

The displayed ranking does not include the factor associated with the distance from the WWTF.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

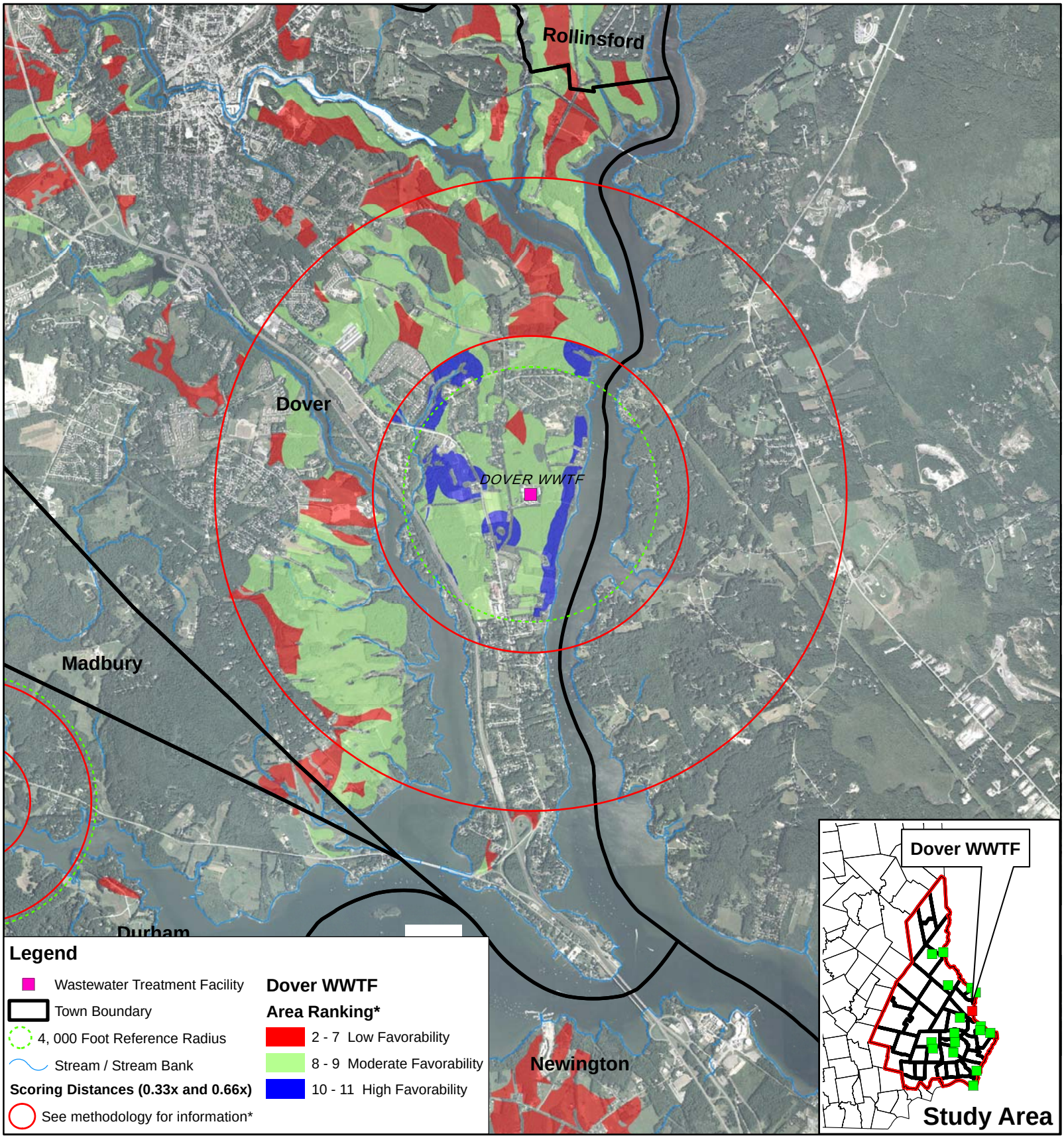
N

DRAFT

0 2.5 5 7.5 10 Miles

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com

February 2007



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

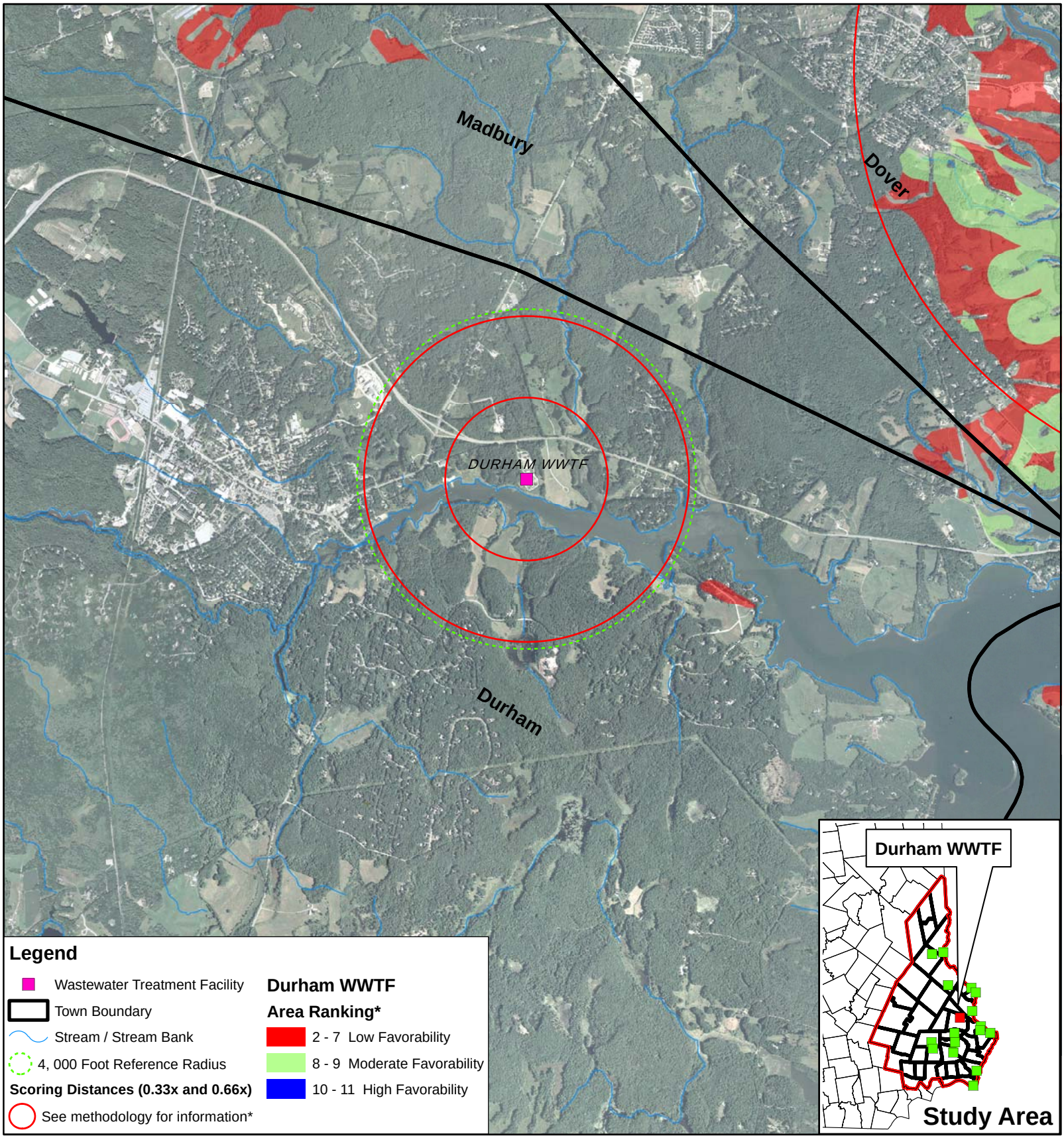
DRAFT

Feet
0 2,000 4,000 6,000 8,000

DOVER WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com

February 2007



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

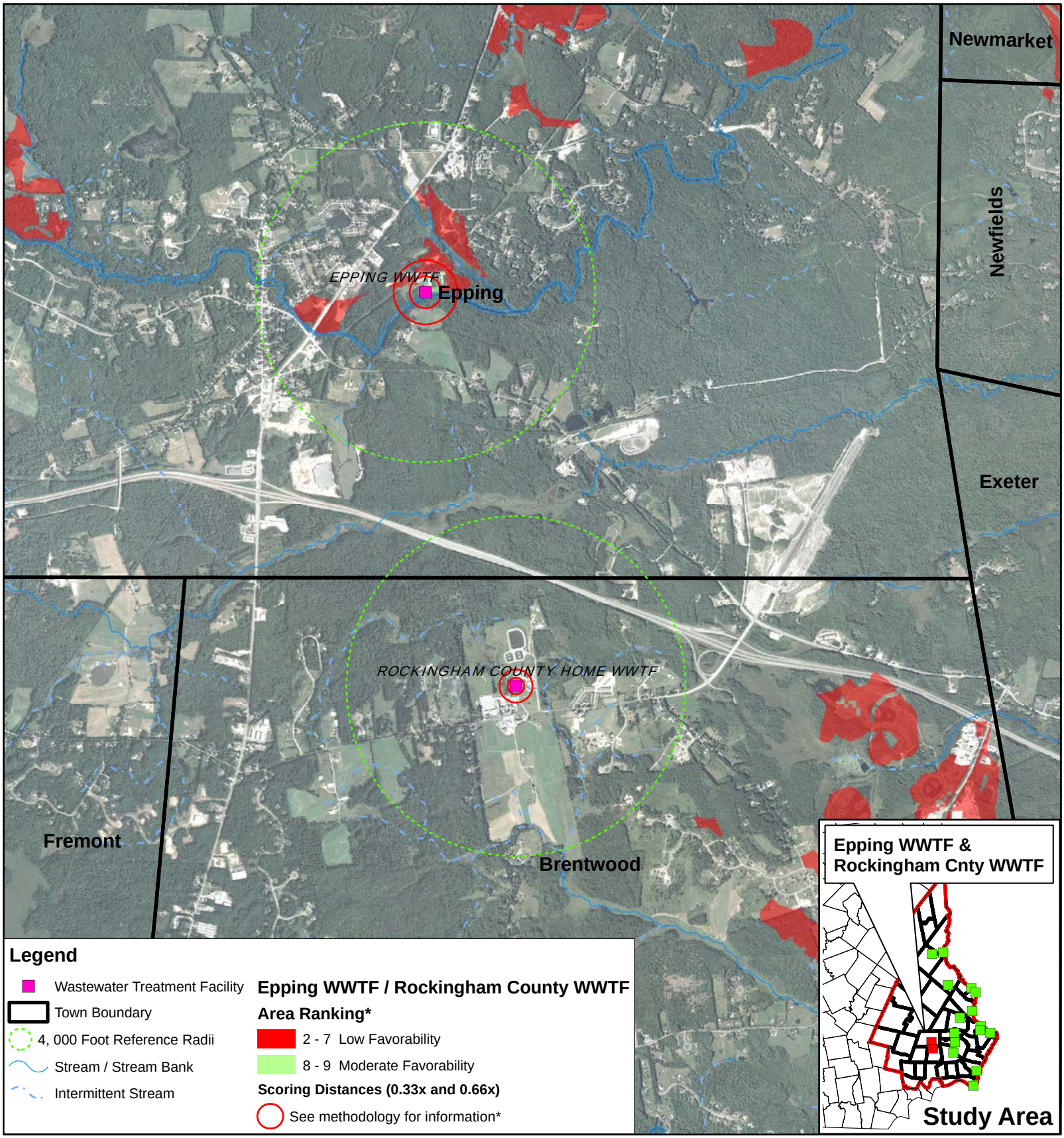
DRAFT

0 1,500 3,000 4,500 6,000 Feet

DURHAM WWTF
CANDIDATE AREAS
for the
LAND APPLICATION OPTION*

February 2007

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

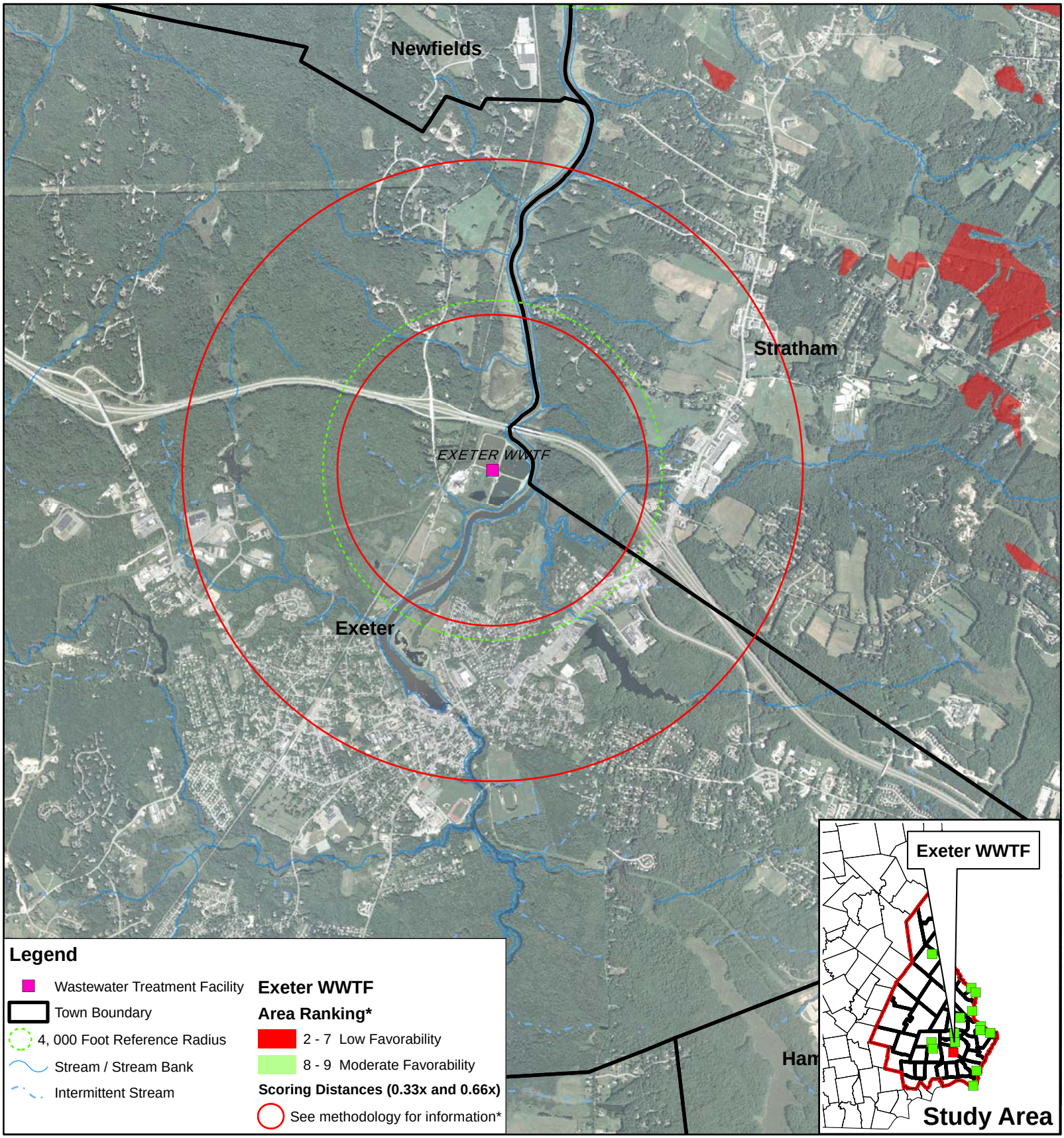
DRAFT

EPPING WWTF & ROCKINGHAM COUNTY WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

0 1,500 3,000 4,500 6,000 Feet

February 2007

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

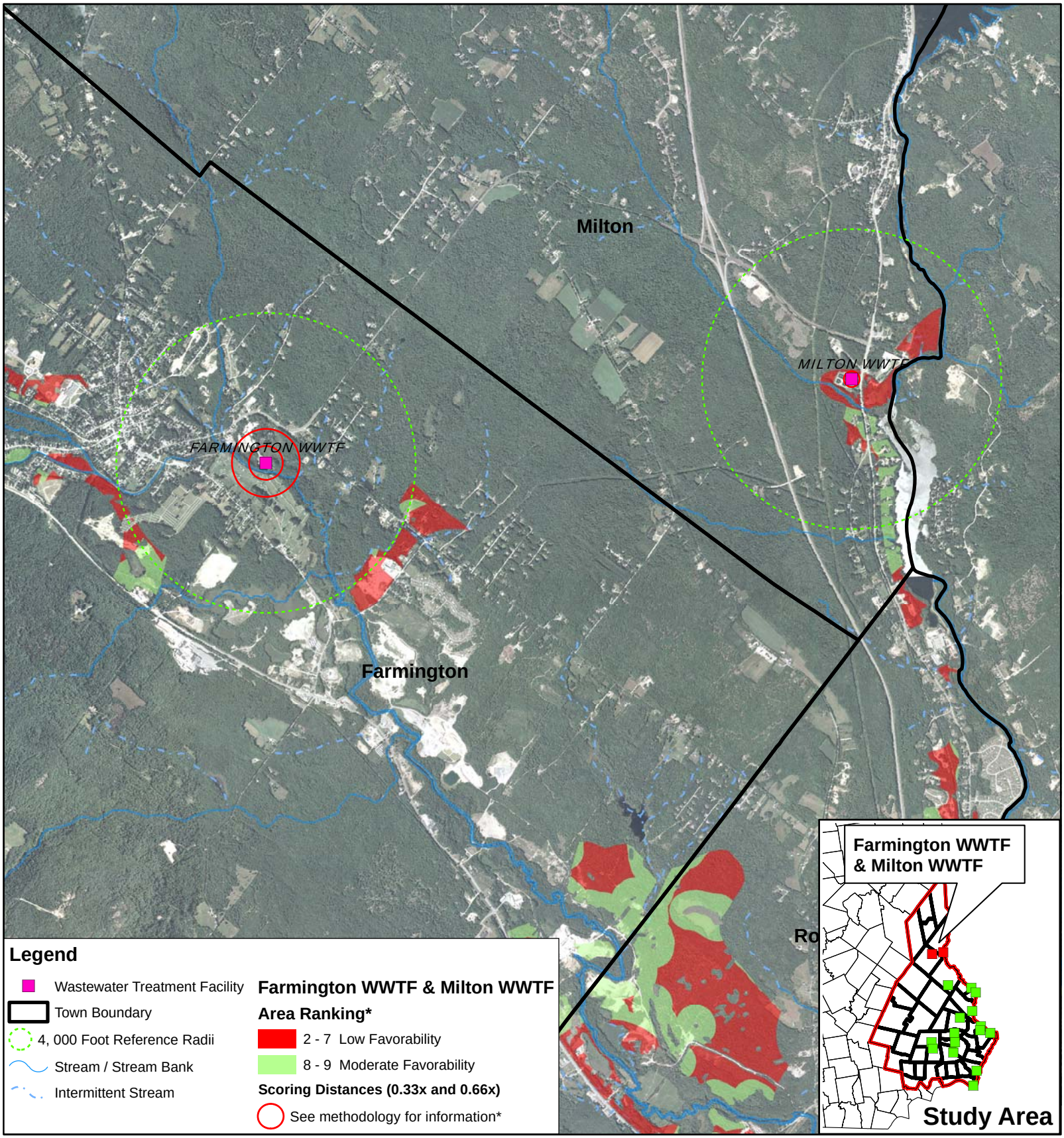
DRAFT

EXETER WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

0 1,500 3,000 4,500 6,000 Feet

February 2007

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

DRAFT

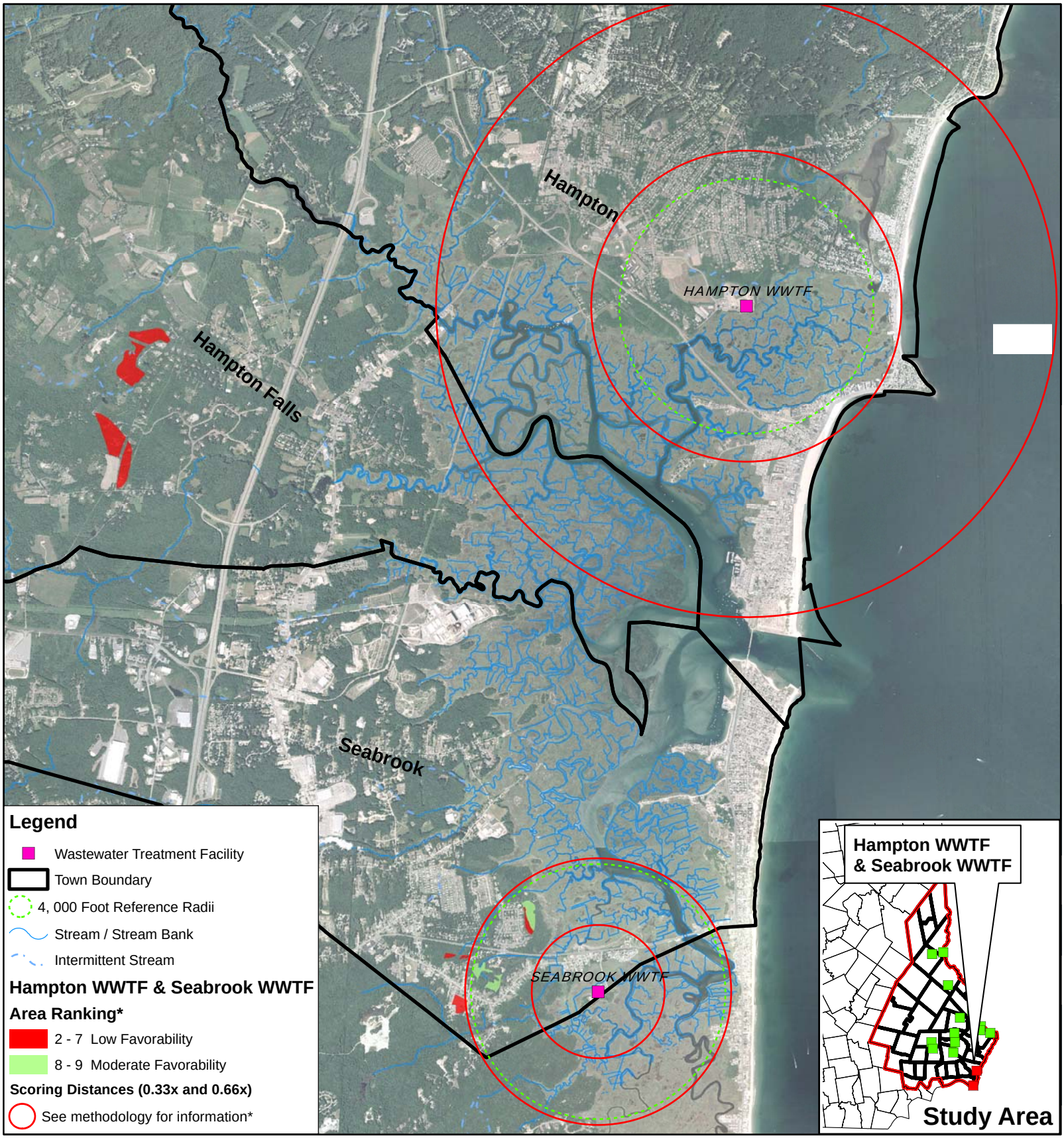
FARMINGTON WWTF & MILTON WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

0 1,700 3,400 5,100 6,800 Feet

ENSR | AECOM

February 2007

ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

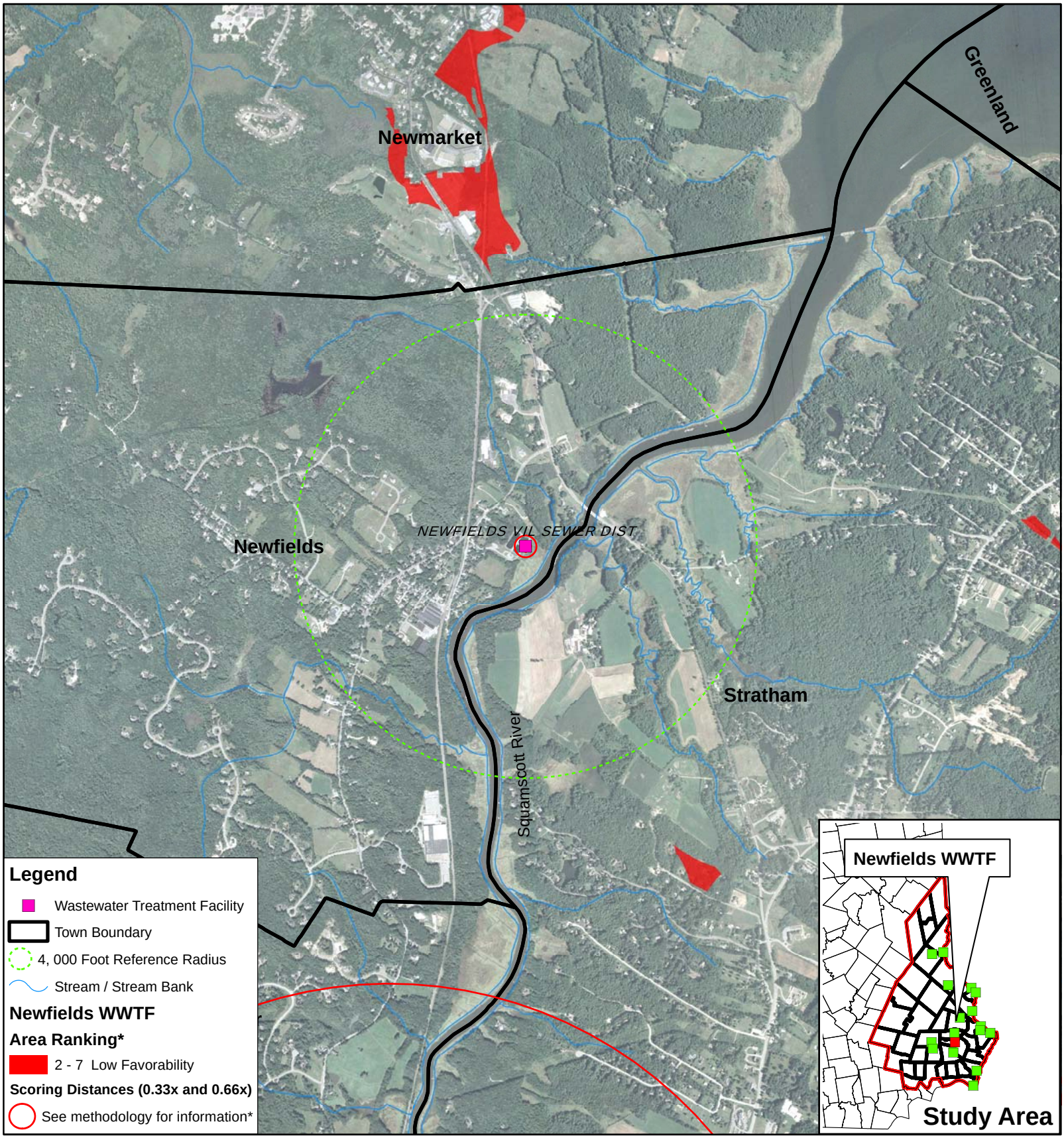
DRAFT

0 2,000 4,000 6,000 8,000 Feet

HAMPTON WWTF & SEABROOK WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com

February 2007



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

DRAFT

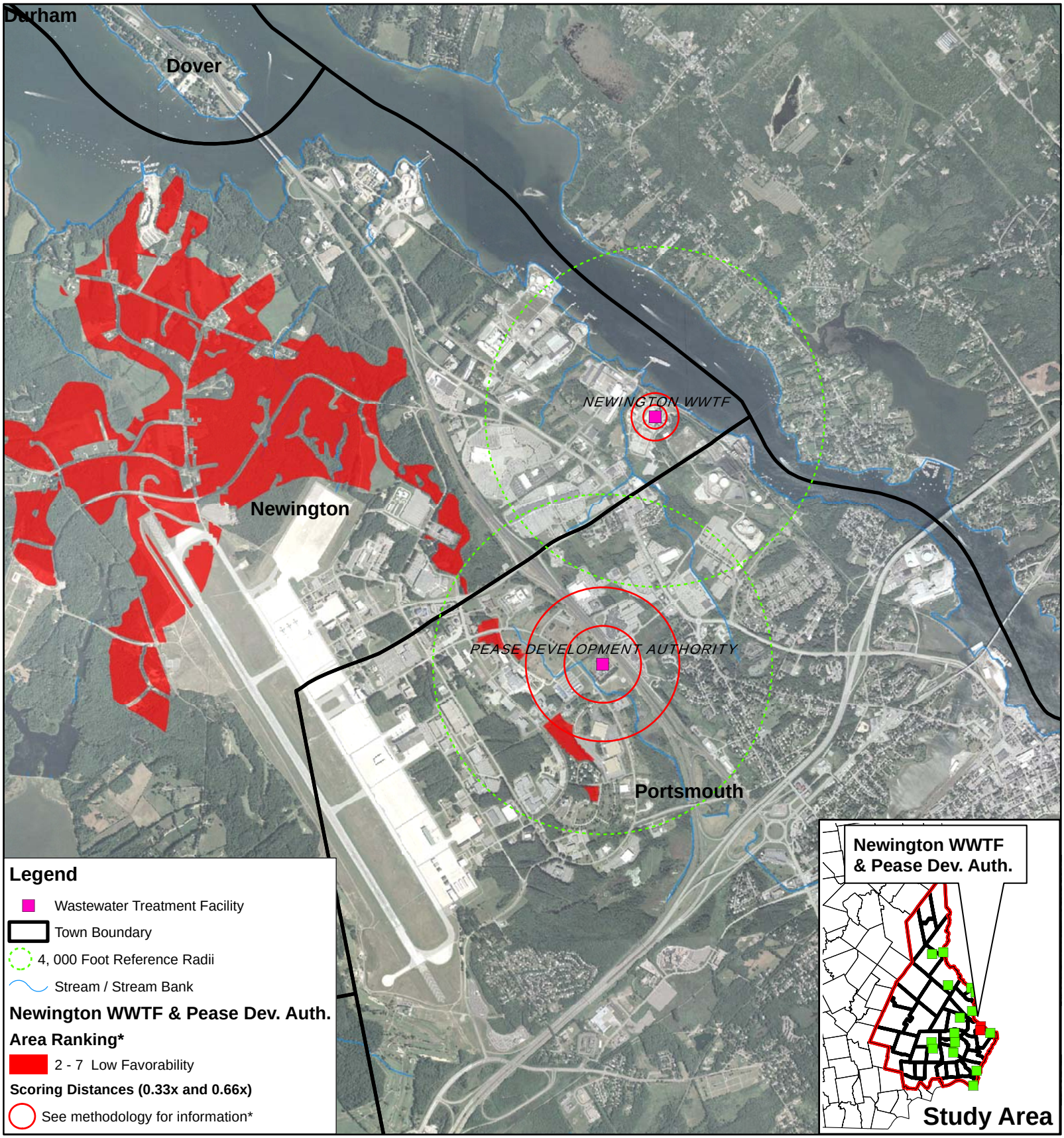
NEWFIELDS WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

0 1,100 2,200 3,300 4,400 Feet

ENSR | AECOM

February 2007

ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

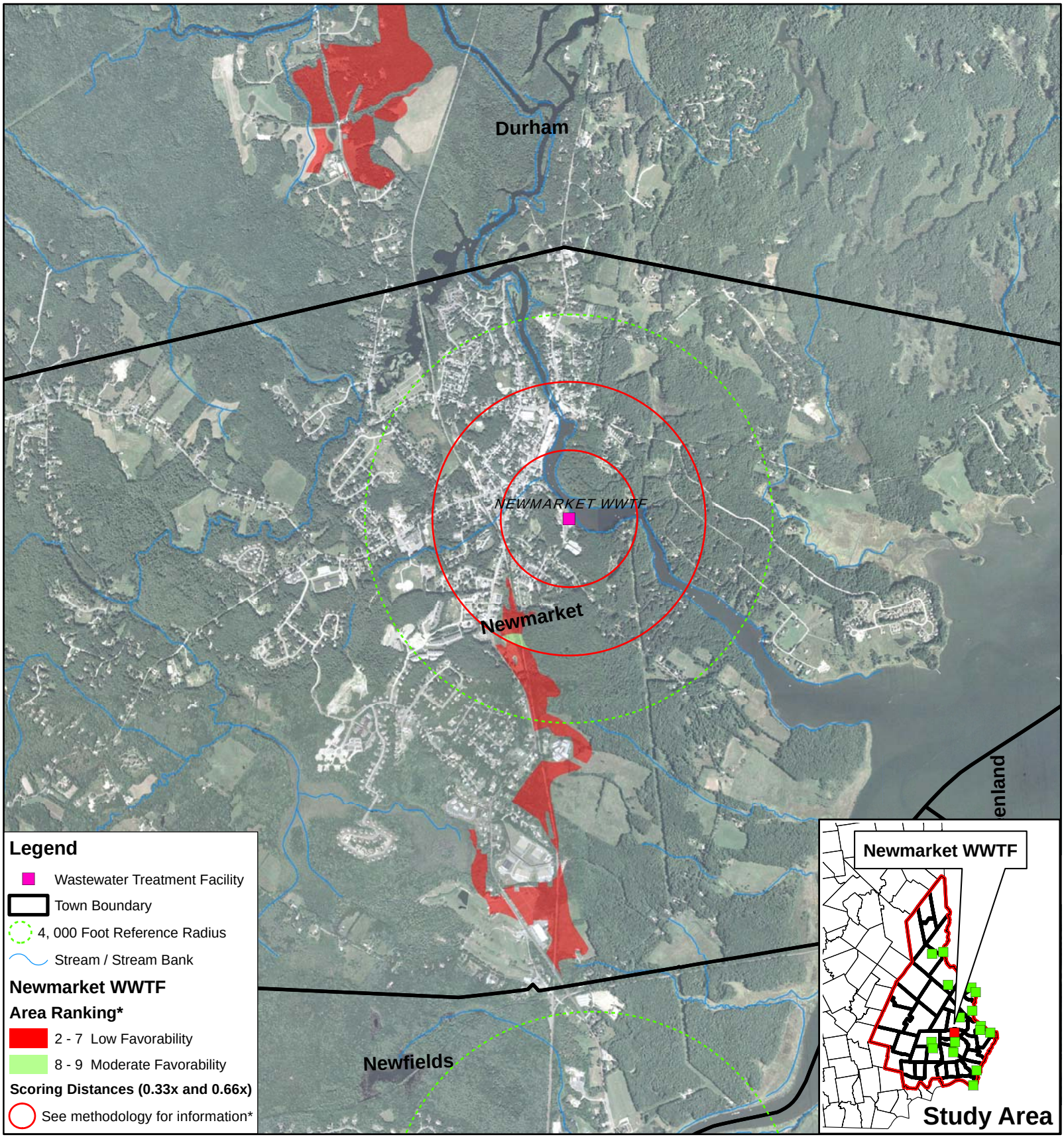
DRAFT

NEWINGTON WWTF & PEASE DEVELOPMENT AUTHORITY CANDIDATE AREAS for the LAND APPLICATION OPTION*

0 1,500 3,000 4,500 6,000 Feet

February 2007

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

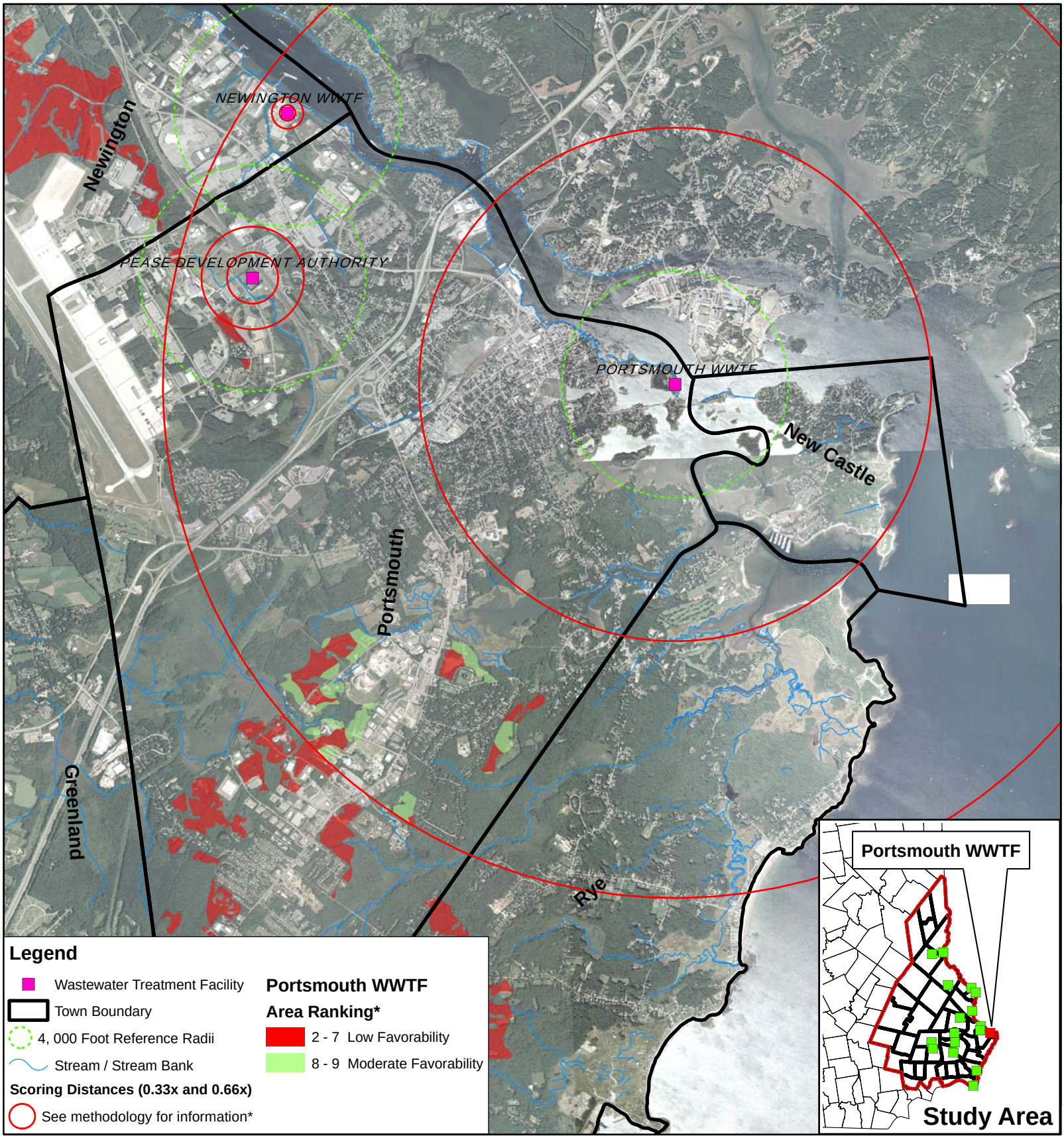
DRAFT

Feet
0 1,250 2,500 3,750 5,000

NEWMARKET WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com

February 2007



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

DRAFT

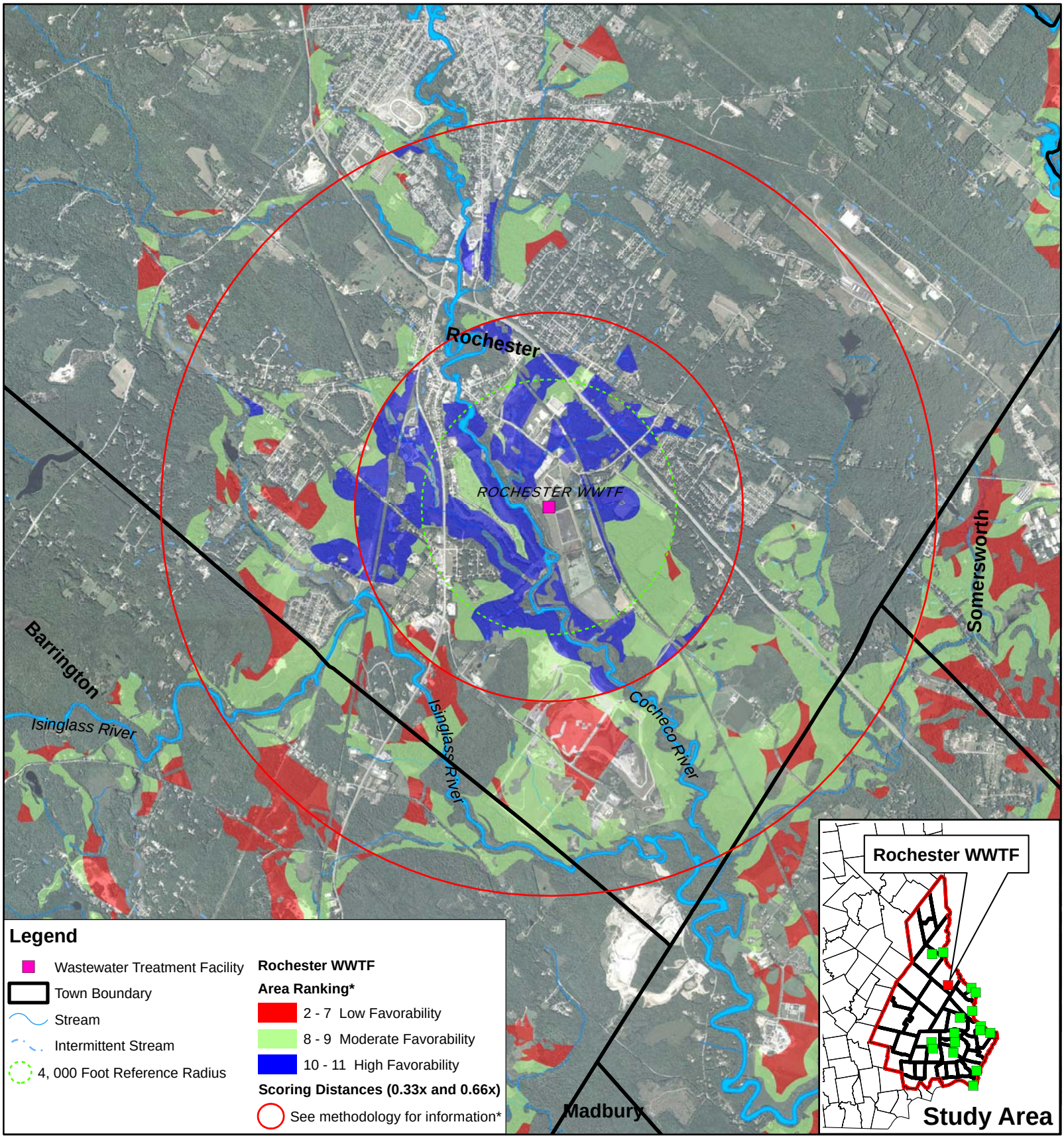
0 2,250 4,500 6,750 9,000 Feet

PORTSMOUTH WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

ENSR | AECOM

February 2007

ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



Legend

- Wastewater Treatment Facility
- Town Boundary
- Stream
- Intermittent Stream
- 4, 000 Foot Reference Radius

Rochester WWTF

Area Ranking*

- 2 - 7 Low Favorability
- 8 - 9 Moderate Favorability
- 10 - 11 High Favorability

Scoring Distances (0.33x and 0.66x)

- See methodology for information*

*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

DRAFT

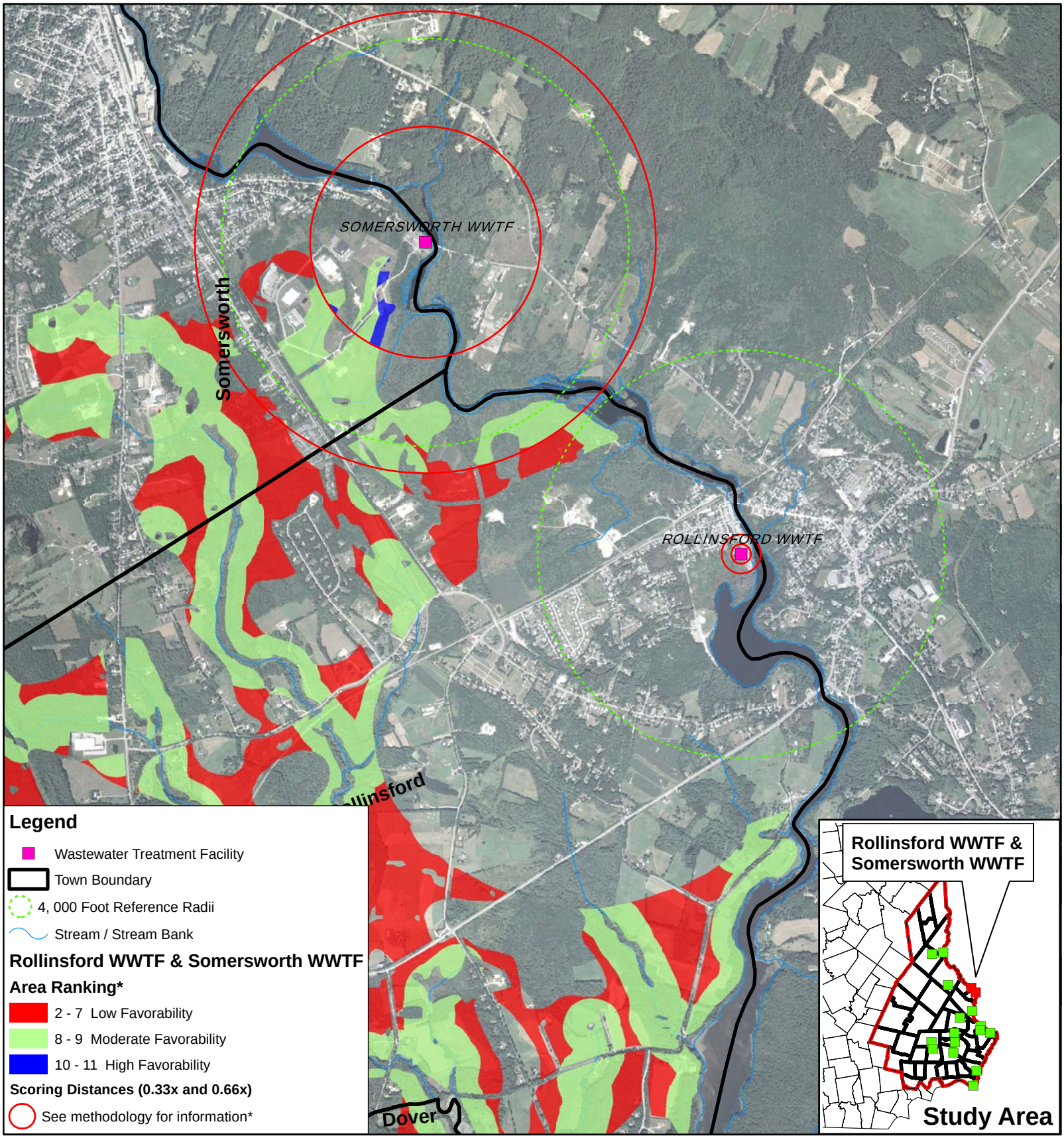
0 2,000 4,000 6,000 8,000 Feet

ROCHESTER WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

ENSR | AECOM

February 2007

ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com



*Note:
This map was prepared for the preliminary feasibility assessment of the Land Application Option in the Seacoast Wastewater Management Study by ENSR for Metcalf & Eddy Inc. (M&E). This identification and ranking of potentially favorable candidate areas is based solely upon the set of criteria used in the study as detailed in the "Phase 2 Methodology, Land Application Feasibility Ranking, New Hampshire Seacoast Wastewater Management Study, Groundwater Recharge and Reuse Option" letter to M&E from ENSR, dated November 6, 2006. See the "Candidate Area Table" for information regarding the ranked areas.

This map is intended for general reference purposes only within the context of the criteria and data used for its preparation.

Aerial photo base map created by the National Agricultural Imagery Program (NAIP), Aerial Photography Field Office, in 2003. Data obtained from NHGRANIT.

N

DRAFT

0 1,250 2,500 3,750 5,000 Feet

ROLLINSFORD WWTF & SOMERSWORTH WWTF CANDIDATE AREAS for the LAND APPLICATION OPTION*

February 2007

ENSR | AECOM
ENSR
171 Daniel Webster Highway
Suite 11
Belmont, NH 03220
ph: (603) 524-8866
www.ensr.aecom.com