Environmental Assessment

For the Construction and Operation of an Armed Forces Reserve Center

Newtown, CT

Prepared for

U.S. Army Reserve

Prepared by

U.S. Army Corps of Engineers, Mobile District

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Environmental Assessment for

Construction and Operation of Armed Forces Reserve Center

Newtown, Connecticut

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Executive Summary

ES-1 Introduction

This Environmental Assessment (EA) analyzes the environmental impacts of the proposed action, which is to construct and operate an Armed Forces Reserve Center (AFRC) within 50 miles of Newtown, Connecticut (CT). This new AFRC will accommodate eight United States Army Reserve (USAR) and two Army National Guard (ARNG) units being relocated under the 2005 Defense Base Realignment and Closure (BRAC) Commission's recommendation and the seven new USAR units being established under the Grow the Army (GTA) initiative.

This EA was developed in accordance with the *National Environmental Policy Act* (NEPA) [42 United States Code (USC) § 4321 et seq.]; implementing regulations issued by the President's Council on Environmental Quality (CEQ), 40 *Code of Federal Regulations* (CFR) Parts 1500-1508; and *Environmental Analysis of Army Actions,* 32 CFR Part 651. Its purpose is to inform decision makers and the public of the likely environmental consequences of the Proposed Action and alternatives. This EA was prepared by the US Army, the United States Army Corps of Engineers (USACE) Mobile District, and the USACE Louisville District and presents the environmental effects associated with the proposed action. Details on the proposed action are in Section 2, Description of the Proposed Action. Details on alternatives considered are described in Section 3, Alternatives.

ES-2 Proposed Action and Alternatives

Proposed Action

The proposed action is to construct and operate an AFRC within 50 miles of Newtown, Connecticut. This new AFRC will accommodate eight USAR and two ARNG units being relocated under the 2005 Defense BRAC Commission's recommendation and seven new USAR units being established under the GTA initiative. The proposed action includes acquisition of land and construction and operation of a 1,000-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas. The new facility would include an AFRC training building (113,370 square feet [ft^2]), a vehicle maintenance shop (26,905 ft^2) and an unheated storage building (5,341 ft^2) for a total interior building space of 145,616 ft^2. Approximately 46,000 square yards (9.50 acres) of paved parking would be developed to provide adequate parking space for military and privately owned vehicles, including the 270 wheeled vehicles and 583 trailers authorized for the units. A 4,000-gallon aboveground storage tank with a double-walled steel tank with a concrete outer shell would be installed to refuel the CT Army National Guard military vehicles. A 650-kilowatt emergency generator with a 2,000-gallon diesel fuel tank would be installed to provide emergency power to the AFRC.

The Preferred Site for the new AFRC is located at 150 Park Avenue in Danbury, CT. Approximately 30 acres (12 acres north of Wooster Heights Road for the proposed training center and privately owned vehicle parking and 18 acres south of Wooster Heights Road for

the proposed vehicle maintenance facility and military equipment parking) would be acquired at the Preferred Site for construction of the Proposed AFRC. Alternate Site 2 is located at 764 Southford Road in Middlebury, CT, and Alternate Site 3 is located at 23-29 Towner Lane in Oxford, CT (Figure 2-1).

Alternatives Not Considered in Detail

The USACE initiated a site selection process that identified 17 potentially suitable sites for construction of the new AFRC (USACE, 2009a). The methods and results of the site selection are further described in the *Bridgeport, Connecticut Site Survey Report* (USACE, 2008), the *Newtown/Bridgeport, Connecticut Site Survey Report* (USACE, 2009a), and the *Newtown, Connecticut Available Site Identification and Validation Report* (USACE, 2009b). Potential alternatives were screened based on the following criteria:

- Compliant with the BRAC Recommendation to be located within a 50-mile radius of target search area (Newtown, CT)
- Minimum of 19 to 25 acres
- Adequate visibility to the public
- Adequate nearby restaurants and hotels to support troops during training
- Reasonable site access with proximity to major roadway corridors without heavy traffic congestion
- Reasonable connections to public utilities
- Uncontaminated and without landfills or underground storage tanks
- Support intended construction with flat or gently rolling topography and without steep slopes, cliffs, or ravines requiring excessive cuts or fills
- Not have unacceptable environmental impacts such as impacts to wetlands or 100-year floodplains.

The USAR initially considered the following 17 site locations for the new joint facility:

- Newtown Site #NC1 – 46 Mill Plain Road, Danbury, CT
- Newtown Site #NC2 – 380 Pierpont Road, Waterbury, CT
- Newtown Site #NC3 – 299 Sheffield Street, Danbury, CT
- Newtown Site #1 - 150 Park Avenue, Danbury, CT (originally 13 acres, later expanded)
- Newtown Site #2 – 189 Danbury Road, New Milford, CT (30 acres)
- Newtown Site #3 – 78 Interstate Lane, Waterbury, CT (parcels of various sizes)
- Newtown Site #4/Bridgeport Site #4 – 480 Captain Neville Drive, Waterbury, CT (17.9 acres)
- Newtown Site # 5 – 1405 Hamilton Avenue, Waterbury, CT (13.35 acres)
- Newtown Site #6/Bridgeport Site #5 – 23-29 Towner Lane, Oxford, CT (62 acres)
- Newtown Site #7 – 190 Avenue of the Industries, Waterbury, CT (24 acres)
- Newtown Site #8 – 764 Southford Road, Middlebury, CT (19 acres)
- Bridgeport Site #1 – 500 Pepper Street, Monroe, CT (44 acres cleared, 50 acres forested)
- Bridgeport Site #2 – 837 Main Street, Monroe, CT (120 acres)
- Bridgeport Site #3 – 86 Benson Road, Middlebury, CT (28 acres)
- Bridgeport Site #6 – 25 and 46 Nichols Road, Oxford, CT (28 acres)
- Bridgeport Site #7 – Birmingham Boulevard, Ansonia, CT (44 acres)
- Bridgeport Site #8 – Hurley Road and Donovan Road, Oxford, CT (34 acres)

Newtown Sites #NC1, #NC2, and #NC3 were determined to be impractical and eliminated from further consideration because of steep slopes, lack of suitable site access, or the difficulty of utility installation.

Newtown Site #2 was eliminated from further consideration because Site #2 contained several monitoring wells for which the real estate broker did not have information; therefore, there was concern about potential contamination of the site. In addition, Highway 7 /Danbury Road, the road fronting the parcel, has high traffic volumes and traffic is expected to be exacerbated by the addition of a shopping area on an adjacent parcel.

Newtown Site #3 was eliminated from further consideration because of construction constraints related to steep slopes which would require excessive cut and fill and which would limit the amount of buildable acreage to a level below the required acreage.

Newtown Site #4/Bridgeport Site #4 (17.9 acres) and Newtown Site #5 (13.35 acres) were eliminated from further consideration because the sites were not large enough to support a joint facility.

Newtown Site #7 was eliminated from further consideration because of constraints on buildable area due to the presence of wetlands and streams in areas that could not be avoided. There was no way to accommodate the full site design without unacceptable environmental impacts to these features.

Bridgeport Site #1 consists of separate parcels of 50 and 44 acres. The 50-acre parcel was eliminated from further consideration because of construction constraints related to extensive cut and fill requirements because of uneven terrain. Additionally, there were wetlands on the property that could not be avoided through site design that would have resulted in unacceptable environmental impacts to wetlands. This site was eliminated from further consideration because the site is remote without visibility to the public to enhance troop recruitment and because the area lacks restaurants to support troops during training.

Bridgeport Site #2 was eliminated from further consideration because the location is remote and has no visibility to the public to enhance troop recruitment and retainment, because it has little or no troop support facilities such as restaurants for reservists, because of construction constraints associated with high cut and fill requirements, and because of uncertainties regarding the availability of sanitary sewer lines.

Bridgeport Site #3 was eliminated from further consideration because adequate buildable acreage is not available because of steep slopes and presence of wetlands. Onsite wetlands could not be avoided in development, which would result in unacceptable environmental impacts to wetlands.

Bridgeport Site #6 was eliminated from further consideration because adequate buildable acreage is not available because of the presence of wetlands. Onsite wetlands could not be avoided in development, which would result in unacceptable environmental impacts to wetlands.

Bridgeport Site #7 was eliminated from further consideration because the developer will not subdivide the site which would result in excessive purchase costs, and because extensive site preparation would be required to construct a service road to the usable acreage available.

Bridgeport Site #8 was eliminated from further consideration because there are not restaurants or hotels in the immediate area to support troops during training, because of construction constraints associated with a small pond and streams on the site which greatly reduced the buildable area to below the minimum required area, and because of construction constraints associated with tree clearing and cut and fill requirements.

Action Alternatives Considered in Detail

Preferred Alternative – Danbury, CT

The Preferred Alternative includes construction and operation of a joint facility at 150 Park Avenue in Danbury, CT (Figures 3-1 and 3-2). The Preferred Site consists of three parcels of land totaling approximately 61.4-acres and is surrounded by residential, commercial, and industrial areas. The owner is willing to subdivide the parcel.

Parcel A of the Preferred Site is approximately 38 acres and is part of a farm with open grassy fields along the northern portion and wooded areas along the southern and eastern portions of the site. The entire 38-acre parcel was evaluated in this EA; however, construction would only occur on approximately 12 acres of this parcel. The AFRC training center, privately owned vehicle parking, and four small stormwater retention ponds would be constructed on Parcel A. An entrance road to the AFRC training center would be constructed from Lee Farm Road.

Parcel B is approximately 3.4 acres and consists of open field with shrubs and trees on the western side of the parcel. No construction is planned on Parcel B.

Parcel C is approximately 20 acres and consists of a rolling open field surrounded by wooded areas. Construction would occur on approximately 18 acres of this parcel. The vehicle maintenance facility including associated fuel point, wash platforms, and loading rack; military vehicle parking; a small privately owned vehicle parking lot; and two stormwater retention ponds would be constructed on Parcel C. An entrance road to the vehicle maintenance facility would be constructed from Wooster Heights Road, southwest of the intersection with Lee Farm Road.

Alternative 2 – Middlebury, CT

Alternative 2 includes construction and operation of a joint facility at 764 Southford Road in Middlebury, CT (Figure 3-3). Alternate Site 2 is a 19-acre, rectangular parcel surrounded by residential and commercial areas. Alternate Site 2 is wooded with topography sloping from the middle of the site to the west, north, and east. Alternate Site 2 contains a private residence and several outbuildings. In addition to construction of the facilities described for the proposed action, Alternative 2 would include demolition of the existing structures, construction of an entrance road into the facility from Southford Road, and construction of a stormwater retention area.

Alternative 3 – Oxford, CT

Alternative 3 includes construction and operation of a joint facility at 23-29 Towner Lane in Oxford CT (Figure 3-4). Alternate Site 3 is a 62-acre, irregularly shaped parcel that is surrounded by residential, commercial, and industrial areas. Alternate Site 3 includes a farm

with a vacant barn, building foundations, two vacant houses, and an occupied house. The farm consists of large grassy fields separated by stone walls and wooded hedgerows on the southern portions of the parcel and woods on the northern portion of the site. The entrance to the combined facility would be constructed along Willenbrock Road in the adjacent Industrial Park to the north of the site. An entrance from Towner Lane would not be possible because large trucks are prohibited along Towner Lane, which would preclude use of this road by some of the military equipment that would be assigned to the AFRC. In addition to construction of the facilities described for the proposed action, Alternative 3 would also include demolition of the existing structures and construction of a stormwater retention area.

No Action Alternative

Under the no action alternative, the new joint facility would not be constructed, the 15 existing USAR units and two ARNG units would not be relocated and the seven new USAR units would not be activated. The no action alternative would result in units continuing to occupy aging, decentralized facilities that lack the capacity for expansion or consolidation, would impair the ability of units to fulfill their designated missions, and would conflict with the Commission recommendation and Public Law 101-510 and Senate Bill S 1390 Sec 2706. In addition, the USAR would not be able to provide adequate facilities to train the new USAR units.

The no action alternative would not address the purpose and need for the proposed action; however, inclusion of the no action alternative serves as a benchmark for evaluation of the potential effects of the proposed federal action. Therefore, the no action alternative is evaluated in detail in this EA.

ES-3 Environmental Consequences

Table ES-1 summarizes the consequences of the Preferred Alternative, Alternative 2, Alternative 3, and the no action alternative.

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences

AFRC Environmental Assessment, Newtown, CT

	Environmental and Socioeconomic Consequences			
Resource	**No Action**	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Land Use	No Change from Baseline Conditions	Minor long-term Impact	Minor long-term Impact	Minor long-term Impact
Aesthetics and Visual Resources	No Change from Baseline Conditions	Moderate long-term reduced to minor by planting a visual screen of trees and shrubs around the AFRC.	Minor long-term. Reduced by planting a visual screen of trees and shrubs around the AFRC.	Moderate long-term reduced to minor by planting a visual screen of trees and shrubs around the AFRC.

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences

AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Air Quality	No Change from Baseline Conditions from construction activities. Minor long-term impact from continued use of existing energy inefficient facilities.	Minor short-term impact from construction activities that would be controlled through appropriate best management practices (BMPs). Minor long-term impact during operation from building heating units, generators, fuel points, and water heaters.	Minor short-term impact from construction activities that would be controlled through appropriate BMPs. Minor long-term impact during operation from building heating units, generators, fuel points, and water heaters.	Minor short-term impact from construction activities that would be controlled through appropriate BMPs. Minor long-term impact during operation from building heating units, generators, fuel points, and water heaters.
Noise	No Change from Baseline Conditions	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects during operation from vehicle noise. Minor long-term noise impacts on nearby residential area possible.	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects during operation from vehicle noise. Minor long-term noise impacts on nearby residential area possible.	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects during operation from vehicle noise. Minor long-term noise impacts on nearby residential area possible.
Geology and Soils				
Geology and Soils	No Change from Baseline Conditions	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction.	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction.	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction.
Prime Farmland	No Change from Baseline Conditions	No short-term or long-term impact to prime farmlands.	No short-term or long-term impact to prime farmlands.	No short-term or long-term impact to prime farmlands.

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences

AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Water Resources				
Surface Water, Stormwater, and Wetlands	No Change from Baseline Conditions	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.
Hydrology/Groundwater	No Change from Baseline Conditions	Minor impact to groundwater recharge rates from the increase in impervious surface.	Minor impact to groundwater recharge rates from the increase in impervious surface.	Minor impact to groundwater recharge rates from the increase in impervious surface.
Floodplains	No Change from Baseline Conditions	No impact to floodplains.	No impact to floodplains.	No impact to floodplains.
Coastal Zone	No Change from Baseline Conditions	No Impact: Not in coastal zone.	No Impact: Not in coastal zone.	No Impact: Not in coastal zone.
Biological Resources				
Vegetation	No Change from Baseline Conditions	Negligible adverse impact to common flora.	Negligible adverse impact to common flora.	Negligible adverse impact to common flora.

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences

AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Wildlife	No Change from Baseline Conditions	Negligible adverse impact to common fauna. No impact to migratory birds.	Negligible adverse impact to common fauna. No impact to migratory birds.	Negligible adverse impact to common fauna. No impact to migratory birds.
Sensitive Species	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Cultural Resources				
Section 106 Consultation to obtain SHPO concurrence of no impacts is ongoing.				
Historic Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Archeological Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Native American Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Socioeconomics				
Economic Development	No Change from Baseline Conditions	Minor short-term beneficial impact from construction activities	Minor short-term beneficial impact from construction activities	Minor short-term beneficial impact from construction activities
Demographics	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Housing	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Environmental Justice	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Protection of Children	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Transportation	No Change from Baseline Conditions	Minor short-term impact from construction; Negligible impact on traffic flow during operation	Minor short-term impact from construction; Negligible impact on traffic flow during operation	Minor short-term impact from construction; Negligible impact on traffic flow during operation

TABLE ES-1
Summary of Potential Environmental and Socioeconomic Consequences

AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Utilities				
Potable Water	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand
Wastewater	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand for service	Minor impact during operation, slight increase in demand for service	Minor impact during operation, slight increase in demand for service
Energy	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand
Solid Waste	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities
Hazardous/Toxic Materials	No Change from Baseline Conditions	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.
Indirect and Cumulative Impacts	No Change from Baseline Conditions	No Significant Impact	No Significant Impact	No Significant Impact

Consequences of the Preferred Alternative-Danbury, CT

Implementation of the Preferred Alternative would result in:

- Minor short-term adverse impacts during construction to air quality, noise, geology and soils, stormwater, vegetation, wildlife, and transportation (traffic);
- Minor long-term adverse impacts during operation (typical of the conversion of undeveloped lands to areas of light commercial uses) to land use, aesthetics and visual resources, air quality, noise, stormwater, groundwater recharge rates, transportation (traffic), utilities from increase in demand, and hazardous and toxic materials;
- Minor beneficial impacts to the local economy during construction and operation;
- No direct impacts to surface water or wetlands;
- No impacts to prime farmlands, floodplains, coastal zones, threatened, endangered, or rare species, migratory birds, cultural resources, housing, demographics, environmental justice, and protection of children;
- Minor indirect impacts to surface waters or wetlands from stormwater runoff;
- Minor cumulative impacts to land use, aesthetics and visual resources, air quality, noise, geology and soils, surface waters, groundwater recharge rates, biological resources, transportation (traffic), utilities, and hazardous and toxic materials;
- No cumulative impacts to prime farmlands, floodplains, coastal zones, wetlands, threatened, endangered, or rare species, migratory birds, cultural resources, housing, demographics, environmental justice, and protection of children.

Section 106 consultation with the SHPO to obtain SHPO concurrence to the Army's determination of no adverse impacts to cultural resources is ongoing.

None of these impacts are considered to be significant.

Consequences of Alternative 2-Middlebury, CT

Alternative 2 would result in impacts similar to those of the Preferred Alternative.

Consequences of Alternative 3-Oxford, CT

Alternative 3 would result in impacts similar to those of the Preferred Alternative.

Consequences of the No Action Alternative

There would be no impact on any resources evaluated in this EA from the no action alternative.

ES-4 Conclusions

Based upon the environmental impact analysis, it has been concluded that no significant direct, indirect, or cumulative environmental or socioeconomic impacts would result from the Preferred Alternative, Alternative 2, Alternative 3, or the No Action Alternative. Therefore, it is not necessary to prepare an environmental impact statement to address the proposed action and a Finding of No Significant Impact (FNSI) should be issued. Section 106

consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

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1.0 Purpose, Need, and Scope

1.1 Introduction

This Environmental Assessment (EA) analyzes the environmental impacts of the proposed action, which is to construct and operate an Armed Forces Reserve Center (AFRC) within 50 miles of Newtown, Connecticut (CT). This new AFRC will accommodate eight United States Army Reserve (USAR) and two Army National Guard (ARNG) units being relocated under the 2005 Defense Base Realignment and Closure (BRAC) Commission's recommendation and the seven new USAR units being established under the Grow the Army (GTA) initiative.

This EA was developed in accordance with the *National Environmental Policy Act* (NEPA) [42 United States Code (USC) § 4321 et seq.]; implementing regulations issued by the President's Council on Environmental Quality (CEQ), 40 *Code of Federal Regulations* (CFR) Parts 1500-1508; and *Environmental Analysis of Army Actions,* 32 CFR Part 651. Its purpose is to inform decision makers and the public of the likely environmental consequences of the Proposed Action and alternatives. This EA was prepared by the US Army, the United States Army Corps of Engineers (USACE) Mobile District, and the USACE Louisville District and presents the environmental effects associated with the proposed action. Details on the proposed action are in Section 2, Description of the Proposed Action. Details on alternatives considered are described in Section 3, Alternatives.

1.2 Purpose and Need

The mission of the USAR, under Title 10 of the USC, is to provide trained and ready soldiers and units with the critical combat service and combat support capabilities necessary to support national strategy during peacetime, contingencies, and war (USAR, 2008).

The purpose of the proposed action is to provide a training facility to support the eight existing USAR units and the two existing National Guard units being relocated under BRAC and the seven new USAR units being formed in the Newtown, CT area under the GTA initiative.

A new AFRC is needed to implement the 2005 BRAC recommendation which is to close existing USAR Centers and build a new facility to support the eight existing Army Reserve units and two existing National Guard units and because existing facilities are inadequate to support the operational requirements of the new GTA units. The USAR proposes to construct a joint facility to be more energy efficient and to reduce costs.

The proposed action would enhance the ability of the USAR and the National Guard to fulfill their training requirements by allowing them to support the existing and new units in one centralized AFRC facility. This would enhance military value, improve homeland defense capability, greatly improve training and deployment capability, create significant efficiencies and cost savings, and is consistent with the Army's force structure plans and transformational objectives. Existing facilities in the area do not have the capacity to support the personnel and equipment of the seven new Army Reserve units or the eight realigned

Army Reserve and two realigned National Guard units. If this project is not executed, the units would be forced to operate and train in facilities not properly configured to allow the most effective training to complete mission requirements, and the BRAC recommendation would not be implemented. Military value and homeland defense capabilities would not be enhanced, training and deployment capability would not be improved and significant efficiencies and cost savings would not be realized.

1.3 Scope

This EA identifies, documents, and evaluates the environmental and socioeconomic effects of constructing a combined AFRC facility within 50 miles of Newtown, CT. An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action and alternatives. Reasonably foreseeable future needs are assessed in the cumulative impacts/effects section of this EA. Any additional requirements stemming from other military actions will undergo separate NEPA analysis and evaluation.

This EA also considers the potential impacts of the no action alternative, as required by NEPA, to provide a benchmark for comparison of the potential impacts of the proposed action and the alternatives.

This EA has been developed in accordance with NEPA and implementing regulations found at 40 CFR Part 1500 through Part 1508 (CEQ, 2002), and 32 CFR Part 651 (Office of the Deputy Assistant Secretary of the Army, 2002). Its purpose is to inform decision-makers and the public of the likely environmental consequences of the proposed action and alternatives.

The Defense Base Closure and Realignment Act of 1990 specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider "(i) the need for closing or realigning the military installations which have been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected" (Sec. 2905(c)(2)(B), Public Law 101-510, as amended). The Commission's deliberations and decisions, as well as the need for closing or realigning a military installation, are exempt from NEPA. Accordingly, this EA does not address the need for closure or realignment.

1.4 Public Involvement

The Army is committed to open decision-making. The collaborative involvement of other agencies, organizations, and individuals in the NEPA process enhances issue identification and problem solving. In preparing this EA, the Army consulted with the State Historic Preservation Officer, US Fish and Wildlife Service (USFWS), Native American Tribes, federal, state and local regulatory agencies, state and local governments, non-governmental organizations, individuals and others as appropriate (Appendix A).

The Army will begin a 30-day, public-review period by placing a Notice of Availability of the final EA and a draft Finding of No Significant Impact (FNSI) in the following local newspapers; the Danbury News-Times, the Hartford Courant, and the New Haven Register. The EA and draft FNSI will be available at the Southford Public Library located at 100 Poverty Road, Southbury CT; the Ruth A. Haas Library located at 181 White Street, Danbury, CT; and the Town of Oxford Public Library located at 486 Oxford Road, Oxford, CT; and on the BRAC website at http://www.hqda.army.mil/acsim/brac/env_ea_review.htm. The Army will invite the public and all interested and affected parties to review and comment on this EA and the draft FNSI. Comments and requests for information should be submitted to Mr. Jeff Hrzic, Chief, Environmental Branch, USAR – 99th RSC, 5231 South Scott Plaza, Fort Dix, New Jersey, 08640, or by emailing him at jeff.hrzic1@usar.army.mil.

At the end of the public review period, the Army will review all comments received, compare environmental impacts associated with reasonable alternatives, and make a decision. If the impacts of the proposed action are not significant, the Army will revise, if necessary, and execute the FNSI and the action can proceed immediately. If potential impacts are found to be significant, the Army will either commit to mitigation to reduce the anticipated impact to a less significant level, or will publish a Notice of Intent to prepare an Environmental Impact Statement (EIS) in the Federal Register. Section 106 consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

1.5 Relevant Statutes and Executive Orders

In addressing environmental considerations, the Army and USACE are guided by relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. A list of these statutes and EOs are located in Appendix B.

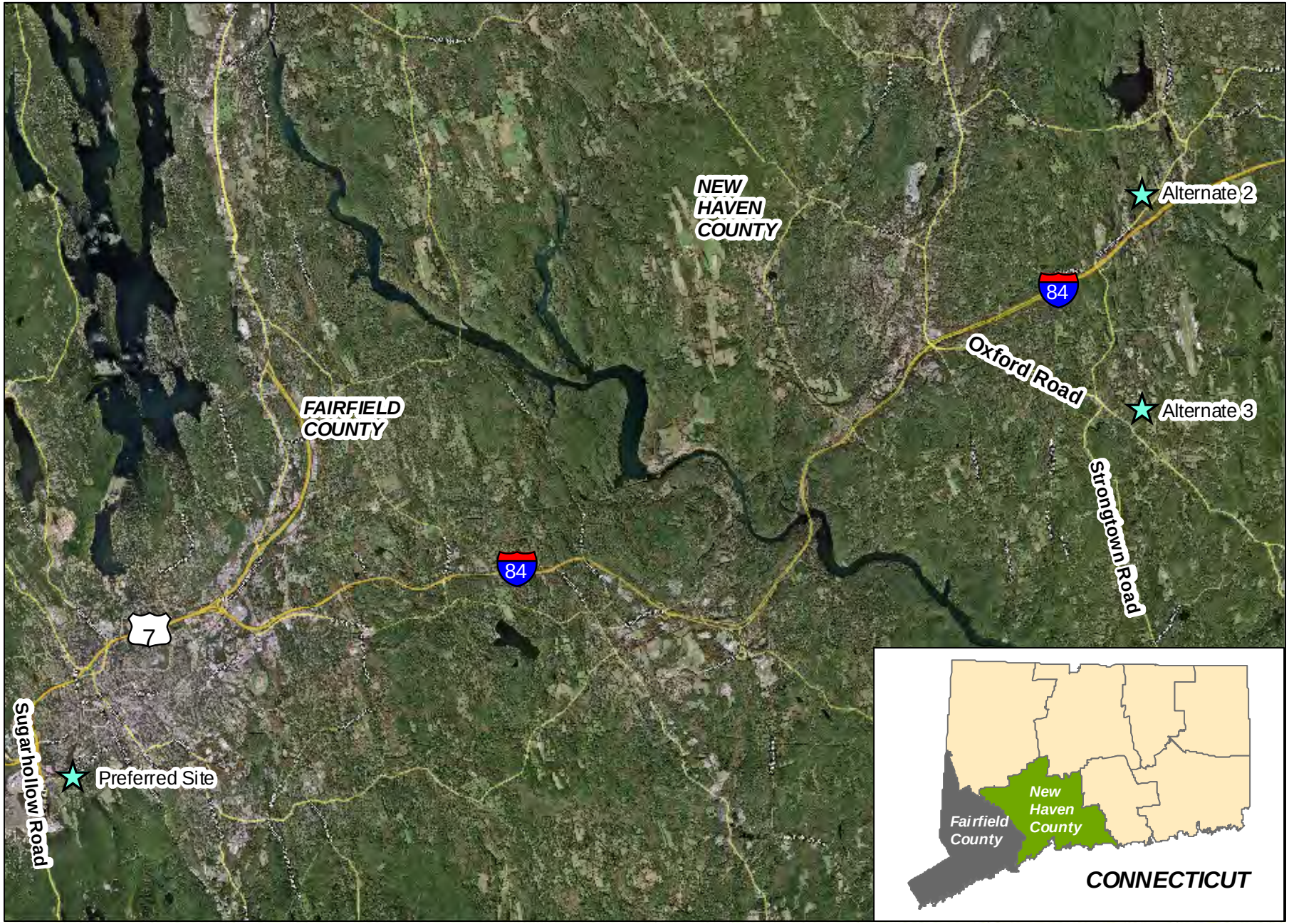
These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at http://www.denix.osd.mil.

2.0 Description of the Proposed Action

2.1 Proposed Action

The proposed action is to construct and operate an AFRC within 50 miles of Newtown, Connecticut. This new AFRC will accommodate eight USAR and two ARNG units being relocated under the 2005 Defense BRAC Commission's recommendation and seven new USAR units being established under the GTA initiative. The proposed action includes acquisition of land and construction and operation of a 1,000-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas. The new facility would include an AFRC training building (113,370 square feet [ft^2]), a vehicle maintenance shop (26,905 ft^2) and an unheated storage building (5,341 ft^2) for a total interior building space of 145,616 ft^2. Approximately 46,000 square yards (9.50 acres) of paved parking would be developed to provide adequate parking space for military and privately owned vehicles, including the 270 wheeled vehicles and 583 trailers authorized for the units. A 4,000-gallon aboveground storage tank with a double-walled steel tank with a concrete outer shell would be installed to refuel the CT Army National Guard military vehicles. A 650-kilowatt emergency generator with a 2,000-gallon diesel fuel tank would be installed to provide emergency power to the AFRC.

The Preferred Site for the new AFRC is located at 150 Park Avenue in Danbury, CT. Approximately 30 acres (12 acres north of Wooster Heights Road for the proposed training center and privately owned vehicle parking and 18 acres south of Wooster Heights Road for the proposed vehicle maintenance facility and military equipment parking) would be acquired at the Preferred Site for construction of the Proposed AFRC. Alternate Site 2 is located at 764 Southford Road in Middlebury, CT, and Alternate Site 3 is located at 23-29 Towner Lane in Oxford, CT (Figure 2-1).



Site location

0 6,000 12,000
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 2-1
Site Location Map
USACE AFRC, Newtown, CT

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3.0 Alternatives

This section presents information on the alternatives considered to meet the purpose and need of the project. Section 3.1 describes other alternatives that were considered early in the NEPA process but were determined to be not feasible. The Preferred Alternative, Alternative 2, and Alternative 3 are described in Section 3.2. The no action alternative is presented in Section 3.3.

3.1 Alternatives Considered

3.1.1 Evaluation Criteria

The USACE initiated a site selection process that identified 17 potentially suitable sites for construction of the new AFRC (USACE, 2009a). The methods and results of the site selection and elimination of sites are further described in the *Bridgeport, Connecticut Site Survey Report* (USACE, 2008), the *Newtown/Bridgeport, Connecticut Site Survey Report* (USACE, 2009a), and the *Newtown, Connecticut Available Site Identification and Validation Report* (USACE, 2009b). Potential alternatives were screened based on the following criteria:

- Compliant with the BRAC Recommendation to be located within a 50-mile radius of target search area (Newtown, CT)
- Minimum of 19 to 25 acres
- Adequate visibility to the public
- Adequate nearby restaurants and hotels to support troops during training
- Reasonable site access with proximity to major roadway corridors without heavy traffic congestion
- Reasonable connections to public utilities
- Uncontaminated and without landfills or underground storage tanks
- Support intended construction with flat or gently rolling topography and without steep slopes, cliffs, or ravines requiring excessive cuts or fills
- No unacceptable environmental impacts such as impacts to wetlands or 100-year floodplains

3.1.2 Initial Alternatives Considered

- The USAR initially considered eleven sites (Newtown Site #NC1, NC2, NC3, and Newtown Sites #1 through #8) for the Armed Forces Reserve Center to support the BRAC decision and eight sites (Bridgeport Site #1 through #8) for the US Army Reserve Center to support the Grow the Army initiative. Newtown Site #2, #6 and Bridgeport Site #1, #2, #3, #6, #7, and #8 were considered for the joint AFRC. Newtown Site #NC1 – 46 Mill Plain Road, Danbury, CT
- Newtown Site #NC2 – 380 Pierpont Road, Waterbury, CT
- Newtown Site #NC3 – 299 Sheffield Street, Danbury, CT
- Newtown Site #1 - 150 Park Avenue, Danbury, CT (30 acres)

- Newtown Site #2 – 189 Danbury Road, New Milford, CT (30 acres)
- Newtown Site #3 – 78 Interstate Lane, Waterbury, CT (parcels of various sizes)
- Newtown Site #4/Bridgeport Site #4 – 480 Captain Neville Drive, Waterbury, CT (17.9 acres)
- Newtown Site # 5 – 1405 Hamilton Avenue, Waterbury, CT (13.35 acres)
- Newtown Site #6/Bridgeport Site #5 – 23-29 Towner Lane, Oxford, CT (62 acres)
- Newtown Site #7 – 190 Avenue of the Industries, Waterbury, CT (24 acres)
- Newtown Site #8 – 764 Southford Road, Middlebury, CT (19 acres)
- Bridgeport Site #1 – 500 Pepper Street, Monroe, CT (44 acres cleared, 50 acres forested)
- Bridgeport Site #2 – 837 Main Street, Monroe, CT (120 acres)
- Bridgeport Site #3 – 86 Benson Road, Middlebury, CT (28 acres)
- Bridgeport Site #6 – 25 and 46 Nichols Road, Oxford, CT (28 acres)
- Bridgeport Site #7 – Birmingham Boulevard, Ansonia, CT (44 acres)
- Bridgeport Site #8 – Hurley Road and Donovan Road, Oxford, CT (34 acres)

3.1.3 Alternatives Eliminated from Further Consideration

Newtown Sites #NC1, #NC2, and #NC3 were determined to be impractical and were eliminated from further consideration because of steep slopes, lack of suitable site access, or the difficulty of utility installation.

Newtown Site #2 was eliminated from further consideration because Site #2 contained several monitoring wells for which the real estate broker did not have information; therefore, there was concern about potential contamination of the site. In addition, Highway 7 /Danbury Road, the road fronting the parcel, has high traffic volumes and traffic is expected to be exacerbated by the addition of a shopping area on an adjacent parcel.

Newtown Site #3 was eliminated from further consideration because of construction constraints related to steep slopes which would require excessive cut and fill and which would limit the amount of buildable acreage to a level below the required acreage.

Newtown Site #4/Bridgeport Site #4 (17.9 acres) and Newtown Site #5 (13.35 acres) were eliminated from further consideration because the site was not large enough to support a joint facility.

Newtown Site #7 was eliminated from further consideration because of constraints on buildable area due to the presence of wetlands and streams in areas that could not be avoided. There was no way to accommodate the full site design without unacceptable environmental impacts to these features.

Bridgeport Site #1 consists of separate parcels of 50 and 44 acres. The 50-acre parcel was eliminated from further consideration because of construction constraints related to extensive cut and fill requirements because of uneven terrain. Additionally, there were wetlands on the property that could not be avoided through site design that would have resulted in unacceptable environmental impacts to wetlands. This site was eliminated from further consideration because the site is remote without visibility to the public to enhance

troop recruitment and because the area lacks restaurants or hotels to support troops during training.

Bridgeport Site #2 was eliminated from further consideration because the location is remote and has no visibility to the public to enhance troop recruitment and retainment, because it has little or no troop support facilities such as restaurants and hotels for training, because of construction constraints associated with high cut and fill requirements, and because of uncertainties regarding the availability of sanitary sewer lines.

Bridgeport Site #3 was eliminated from further consideration because adequate buildable acreage is not available because of steep slopes and presence of wetlands. Onsite wetlands could not be avoided in development, which would result in unacceptable environmental impacts to wetlands.

Bridgeport Site #6 was eliminated from further consideration because adequate buildable acreage is not available because of the presence of wetlands. Onsite wetlands could not be avoided in development, which would result in unacceptable environmental impacts to wetlands.

Bridgeport Site #7 was eliminated from further consideration because the developer will not subdivide the site which would result in excessive purchase costs, and because extensive site preparation would be required to construct a service road to the usable acreage available.

Bridgeport Site #8 was eliminated from further consideration because there are not restaurants or hotels in the immediate area to support troops during training, because of construction constraints associated with a small pond and streams on the site which greatly reduced the buildable area to below the minimum required area, and because of construction constraints associated with tree clearing and cut and fill requirements.

3.1.4 Alternatives Carried Forward

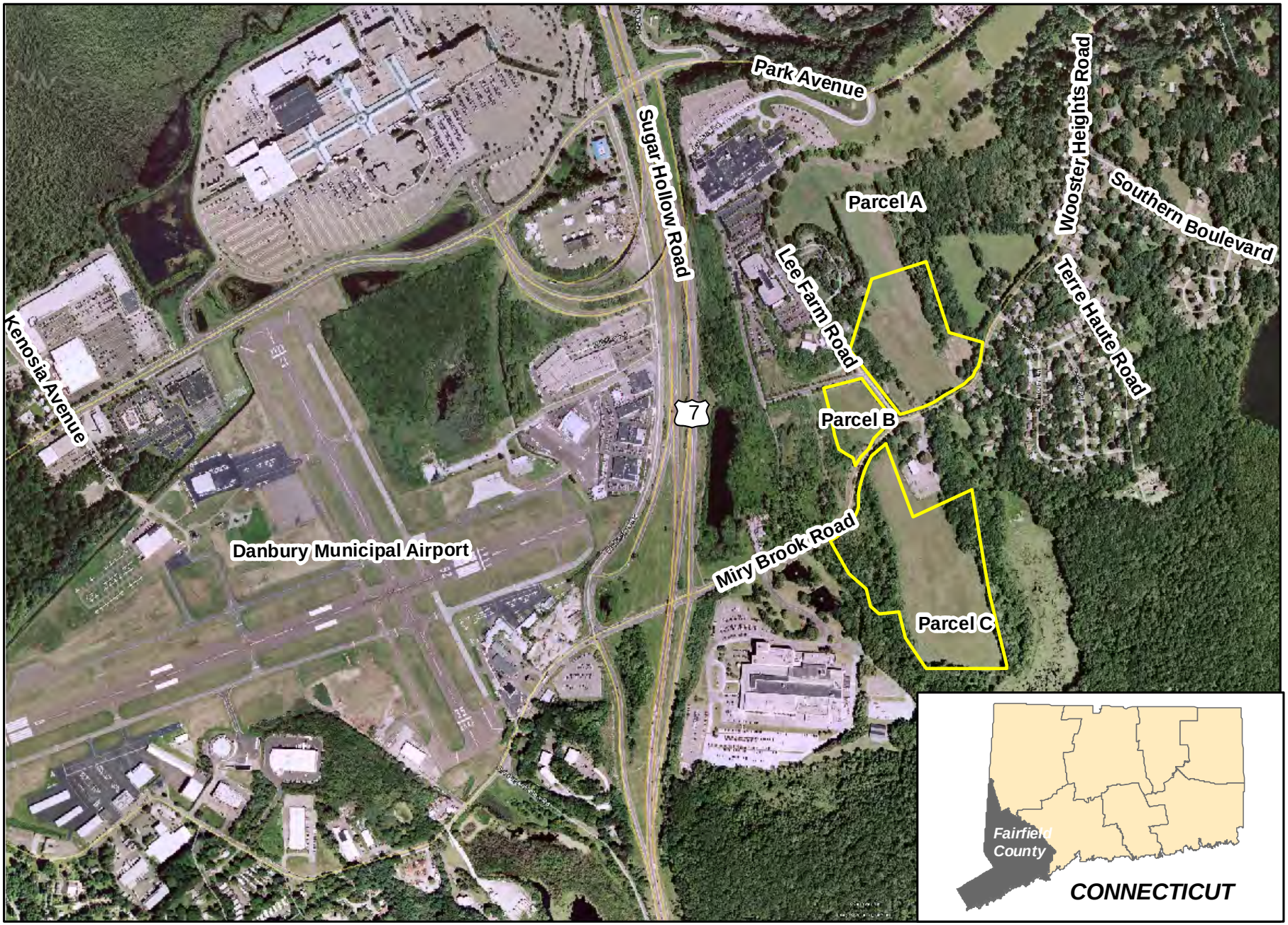
Newtown Site #1, Newtown Site #6/Bridgeport #5, and Newtown Site #8 were carried forward for further detailed evaluation in this EA.

3.2 Action Alternatives Considered in Detail

3.2.1 Preferred Alternative-Danbury, CT

The Preferred Alternative includes construction and operation of a joint facility at 150 Park Avenue in Danbury, Connecticut (Figures 3-1 and 3-2). The Preferred Site consists of three parcels of land totaling approximately 61.4-acres and is surrounded by residential, commercial, and industrial areas. The owner is willing to subdivide the parcel.

Parcel A of the Preferred Site is approximately 38 acres and is part of a farm with open grassy fields along the northern portion and wooded areas along the southern and eastern portions of the site. The entire 38-acre parcel was evaluated in this EA; however; construction would only occur on approximately 12 acres of this parcel. The AFRC training center, privately owned vehicle parking, and four small stormwater retention ponds would be constructed on Parcel A. An entrance road to the AFRC training center would be constructed from Lee Farm Road.



Approximate Site Boundary

0 490 980
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-1
Preferred Site - 150 Park Avenue, Danbury, Fairfield County, CT
USACE AFRC, Newtown, CT

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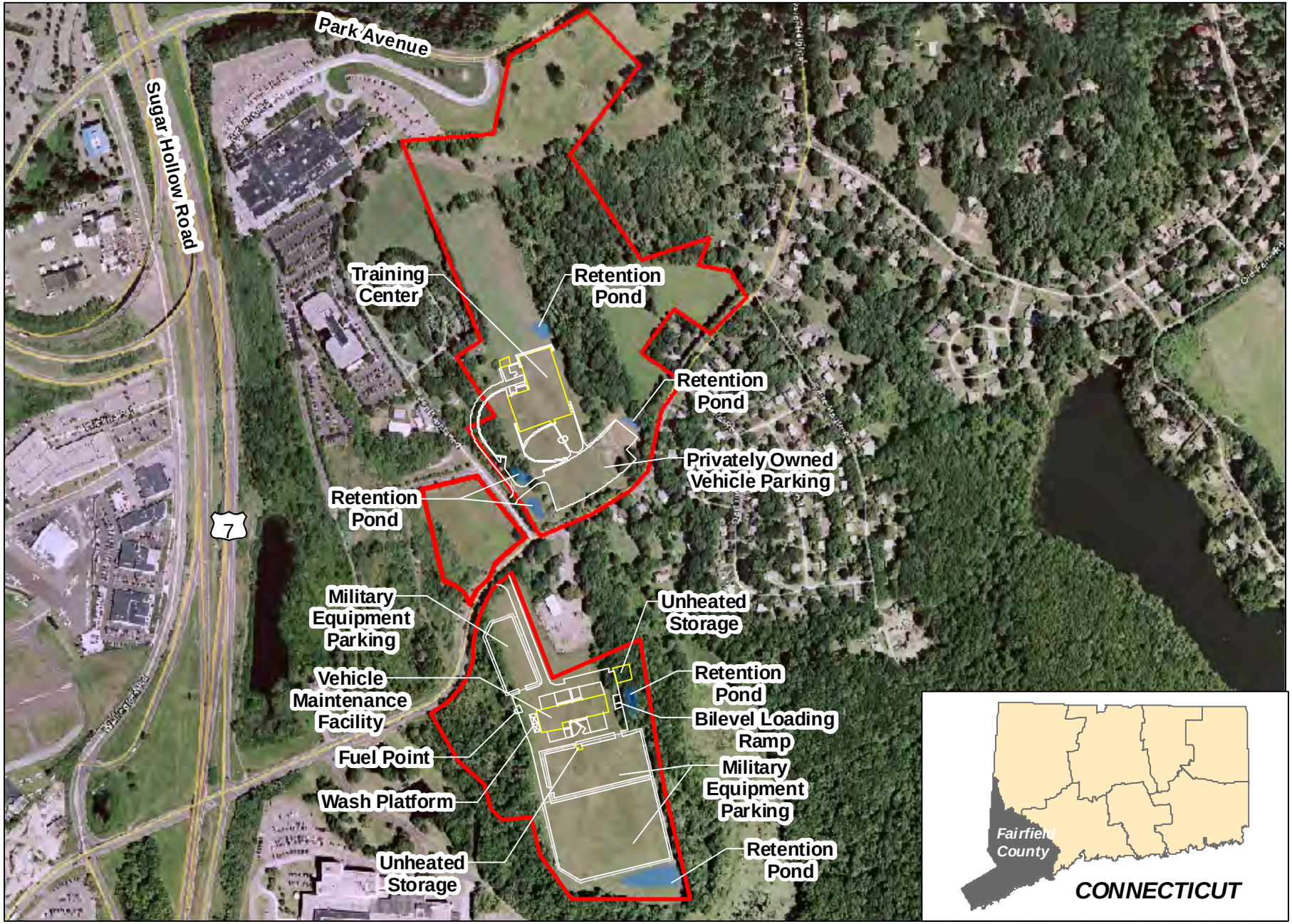


Approximate Site Boundary

0 300 600
Approximate Scale in Feet

N

Source:
Aerial: Google Earth, 2009

FIGURE 3-2
Approximate Site Layout - Subject to Modification
Danbury, Fairfield County, CT
USACE AFRC, Newtown, CT

CH2MHILL

Parcel B is approximately 3.4 acres and consists of open field with shrubs and trees on the western side of the parcel. No construction is planned on Parcel B.

Parcel C is approximately 20 acres and consists of a rolling open field surrounded by wooded areas. Construction would occur on approximately 18 acres of this parcel. The vehicle maintenance facility including associated fuel point, wash platforms, and loading rack; military vehicle parking; a small privately owned vehicle parking lot; and two stormwater retention ponds would be constructed on Parcel C. An entrance road to the vehicle maintenance facility would be constructed from Wooster Heights Road, southwest of the intersection with Lee Farm Road.

3.2.2 Alternative 2-Middlebury, CT

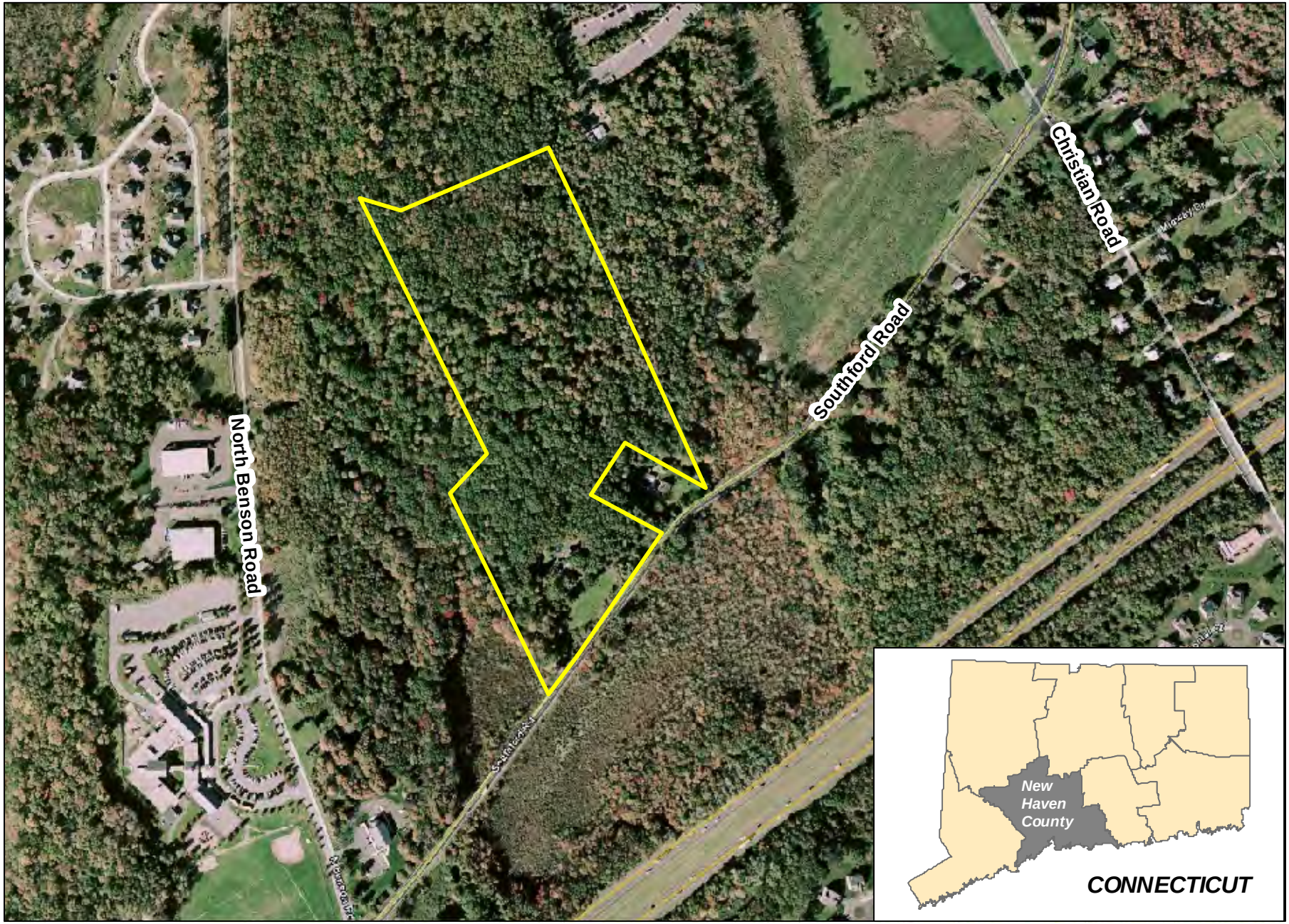
Alternative 2 includes construction and operation of a joint facility at 764 Southford Road in Middlebury, Connecticut (Figure 3-3). Alternate Site 2 is a 19-acre, rectangular parcel surrounded by residential and commercial areas. Because the site is only 19-acres, special design considerations, such as two or three story buildings could be required to be able to fit the proposed AFRC on this site. Alternate Site 2 is wooded with topography sloping from the middle of the site to the west, north, and east. Alternate Site 2 contains a private residence and several outbuildings. In addition to construction of the facilities described for the proposed action, Alternative 2 would include demolition of the existing structures, construction of an entrance road into the facility from Southford Road, and construction of a stormwater retention area.

3.2.3 Alternative 3-Oxford, CT

Alternative 3 includes construction and operation of a combined facility at 23-29 Towner Lane in Oxford Connecticut (Figure 3-4). Alternate Site 3 is a 62-acre, irregularly shaped parcel that is surrounded by residential, commercial, and industrial areas. Of the 62 available acres, only approximately 25 would be needed for construction and operation of the proposed AFRC. Alternate Site 3 includes a farm with a vacant barn, building foundations, two vacant houses, and an occupied house. The farm consists of large grassy fields separated by stone walls and wooded hedgerows on the southern portions of the parcel and woods on the northern portion of the site. The entrance to the combined facility would be constructed along Willenbrock Road in the adjacent Industrial Park to the north of the site. An entrance from Towner Lane would not be possible because large trucks are prohibited along Towner Lane, which would preclude use of this road by some of the military equipment that would be assigned to the AFRC. In addition to construction of the facilities described for the proposed action, Alternative 3 would also include demolition of the existing structures and construction of a stormwater retention area.

3.3 No Action Alternative

Under the no action alternative, the new joint facility would not be constructed, the 15 existing USAR units and two ARNG units would not be relocated and the seven new USAR units would not be activated. The no action alternative would result in units continuing to occupy aging, decentralized facilities that lack the capacity for expansion or consolidation, would impair the ability of units to fulfill their designated missions, and would conflict with



Approximate Site Boundary

0 225 450
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-3
Alternate Site 2 - 764 Southford Road, Middlebury, New Haven County, CT
USACE AFRC, Newtown, CT

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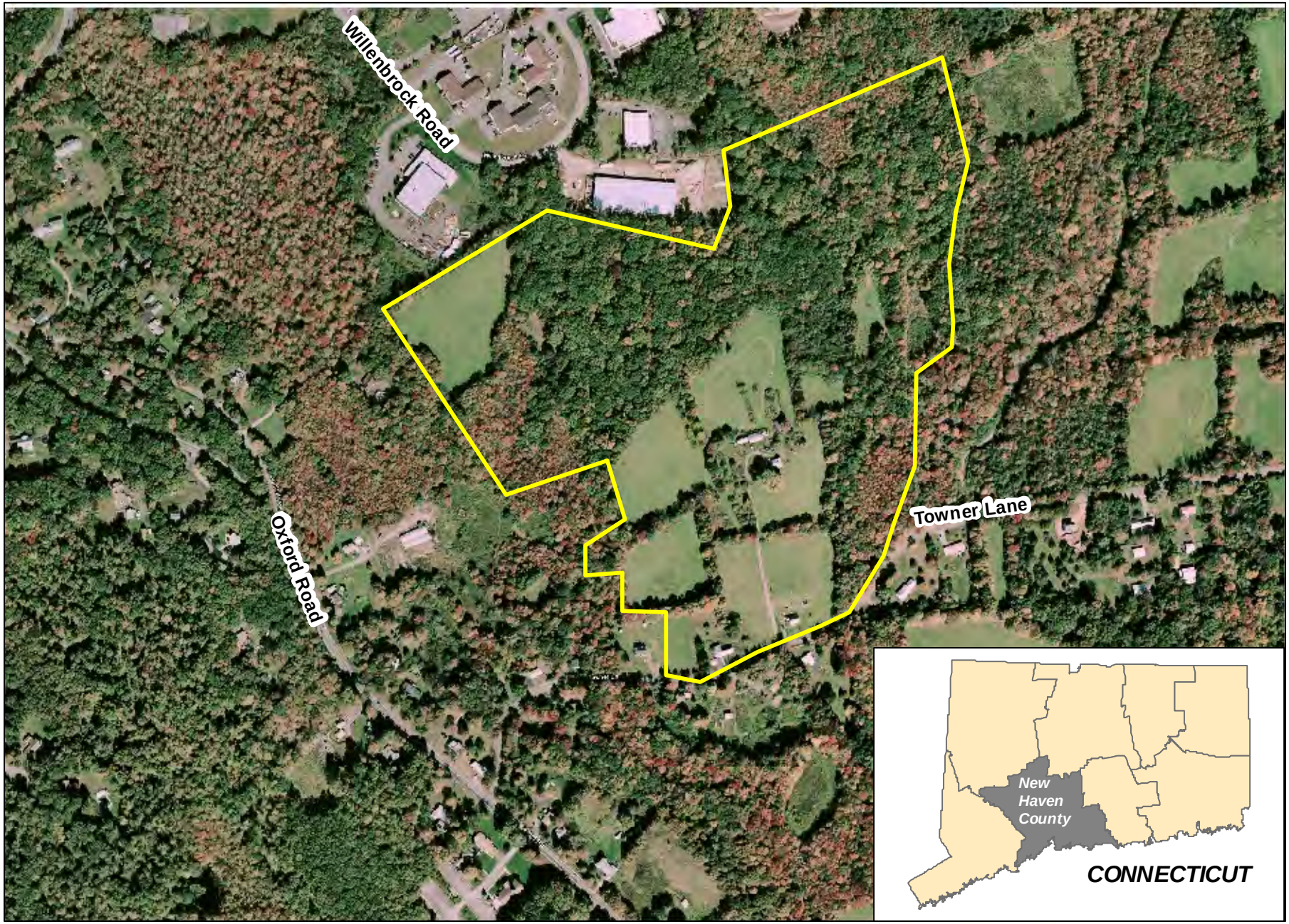

Approximate Site Boundary

0 250 500
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-4
Alternate Site 3 - 29 Towner Lane, Oxford, New Haven County, CT
USACE AFRC, Newtown, CT

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the Commission recommendation and Public Law 101-510 and Senate Bill S 1390 Sec 2706. In addition, the USAR would not be able to provide adequate facilities to train the new USAR units.

The no action alternative would not address the purpose and need for the proposed action; however, inclusion of the no action alternative serves as a benchmark for evaluation of the potential effects of the proposed federal action. Therefore, the no action alternative is evaluated in detail in this EA.

4.0 Affected Environment and Consequences

4.1 Introduction

This section describes the existing environmental and socioeconomic conditions potentially affected by the proposed action, as well as the potential environmental and socioeconomic impacts of implementing the proposed action or the alternative.

The existing conditions provide information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the proposed action. Baseline conditions represent current conditions.

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 651, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. These include land use, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, transportation, utilities, and hazardous and toxic substances.

Following the description of the components of the affected environment, this section presents the analysis of the direct, indirect, and cumulative environmental and socioeconomic effects that would likely occur with the proposed action, the alternative action, and the no action alternative and identifies any adverse environmental effects that cannot be avoided through project design.

4.1.1 Direct versus Indirect Effects

Effects and impacts as used in this EA are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

Direct effects are caused by the action and occur at the same time and place.

Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

4.1.2 Significance

Significance requires considerations of both context and intensity.

Context. The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-

specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

Intensity. In analyzing the intensity or severity of an impact, consideration must be given to: beneficial and adverse impacts, public health and safety, unique geographic areas, cultural and historic resources, threatened and endangered species, controversy, uncertainty, precedence, cumulative impacts, and other environmental laws. See 40 CFR 1508.27 for a more complete discussion of these considerations.

4.1.3 Intensity of Effects

As noted above, the magnitude of effects of an action must be considered regardless of whether the effects are adverse or beneficial. The following terms are used to describe the magnitude of impacts:

- No Impact = The action does not cause a detectable change.
- Negligible = No Significant Impact. The impact is at the lowest level of detection.
- Minor = No Significant Impact. The impact is slight but detectable.
- Moderate = Significant Impact. The impact is readily apparent.
- Major = Significant Impact. The impact is severely adverse or exceptionally beneficial.

4.2 Cumulative Effects

Cumulative effects are the effects on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Principles of cumulative effects analysis in the CEQ guide "Considering Cumulative Effects under the National Environmental Policy Act" (CEQ, 1997) states: "for cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully."

The potential for cumulative effects to the environment from the Preferred Alternative, Alternative 2, and Alternative 3 were evaluated by reviewing historical aerials to identify past projects, and by reviewing ongoing and planned projects within the vicinity of the sites that could affect the same environmental resources as each alternative. Actions that were considered include construction projects that were recently completed (i.e., within the past 10 years), are currently underway, or are programmed to occur within the near future (i.e., next 10 years). Construction projects have potential to impact land use, aesthetics, air quality, noise, soils, water and biological resources, cultural resources, socioeconomics, transportation, and utilities and these impacts could add cumulatively to the impacts described in this EA. Cumulative effects are described for each resource area in the following sections.

4.2.1 Past, Present, and Reasonably Foreseeable Future Projects

4.2.1.1 Preferred Alternative-Danbury, CT

Historic aerial photographs show that no major construction activities have occurred in the immediate vicinity of the Preferred Site between 1991 and 2006 (Environmental Data Resources, Inc. [EDR], 2010a).

Representatives from the City of Danbury Planning and Zoning Office indicated that residential, commercial, or industrial projects have not been proposed, recently constructed, or approved in the vicinity of the Preferred Site (Emminger, 2010, personal communication).

The City of Danbury Transportation Plan provides local officials and the public with a complete inventory and analysis of transportation needs in the City (City of Danbury, 2005). The City of Danbury is proposing to improve the alignment and roadway side slopes on Wooster Heights Road to increase visibility at the intersection of Terre Haute Road south of Parcel A (Figure 3-1; City of Danbury, 2005). In addition, the City of Danbury proposes to increase the southwest corner turning radius and add a three-way stop at Southern Boulevard east of Parcel A (Figure 3-1). The City also proposes to construct new sidewalks or multi-use paths from Park Avenue to Kenosia Avenue north of Parcel A (City of Danbury, 2005). Although the City of Danbury has a Transportation Plan in place, none of the above listed road improvement projects have received City funding; therefore, there is no immediate future plans for the proposed improvements. Representatives from the City of Danbury Planning and Zoning Office stated that major road projects near the Preferred Site have not been recently constructed or recently approved (Emminger, 2010, personal communication).

4.2.1.2 Alternative 2-Middlebury, CT

Historical aerial photographs show that several areas of construction occurred in the vicinity of Alternate Site 2 between 1991 and 2006 including a residential area to the south, construction of the school to the west, a residential area to the northwest, and construction of the Timex facility to the northeast (EDR, 2010b).

Residential projects are currently under construction in the vicinity of Alternate Site 2 (Town of Middlebury, 2009). Construction of an adult single family home residential development in Benson Woods, approximately 850 feet northwest of Alternate Site 2, began in 2006 and is currently on hold. Approximately eight additional residential units are planned within Benson Woods before the development project is complete. It is unknown when construction of the eight units would resume at Benson Woods (O'Loskey, 2010, personal communication). A new residential construction project is ongoing near the residential neighborhood of Benson Woods on the east side of North Benson Road.

The townhome community of Ridgewood, approximately 1 mile northeast of Alternate Site 2, began construction in 2006 and is currently on hold. It is unknown when construction will resume at Ridgewood (O'Loskey, 2010, personal communication).

The Avalon Farms single-family home residential community, approximately 2,200 feet north northeast of Alternate Site 2, began construction in 2001. Project completion is

anticipated in 2010 with the installation of two additional houses (O'Loskey, 2010, personal communication).

The Long Meadow Farms single-family home residential development Farms, approximately 3,600 feet east southeast of the site, began construction in 2008 and consists of 23 home lots, two of which have been built. The development is currently on hold and it is unknown when construction of the remaining 21 lots will resume at Long Meadow Farms (O'Loskey, 2010, personal communication).

The planned Gateway Industrial Design District, approximately 1,000 feet west of Alternate Site 2 at the intersection of North Benson Road and Southford Road, has not been built and it is unknown when construction would begin (O'Loskey, 2010, personal communication).

Road improvement projects have not been proposed, constructed, or recently approved in the vicinity of Alternate Site 2 (Donegan, 2010, personal communication).

4.2.1.3 Alternative 3-Oxford, CT

Historical aerial photographs show that construction of several buildings associated with the industrial park to the north of Alternate Site occurred between 1991 and 2006 (EDR, 2010b). No other major construction activities were shown on the aerial photographs during this time period.

The Town of Oxford has a 2007 Plan of Conservation Development that encompasses a long term vision of the community while being capable of offering guidance for short-range land use (Town of Oxford, 2007).

Representatives from the Town of Oxford Department of Planning & Zoning stated that residential, commercial, or industrial projects have not been proposed, recently constructed, or approved in the vicinity of Alternate Site 3 (Silva, 2010, personal communication).

Road improvement projects have not been proposed, constructed, or recently approved in the vicinity of Alternate Site 3 (Silva, 2010, personal communication).

4.3 Land Use

4.3.1 Affected Environment

4.3.1.1 Regional Geographic Setting and Location

The Preferred Site for the new AFRC is located in the City of Danbury, Fairfield County, CT (City of Danbury population 74,848 [U.S. Census Bureau (USCB), 2010a]); Fairfield County population 882,567; USCB, 2010b). Surrounding cities and communities include Newtown, Bethel, and Hayestown, CT. Alternate Site 2 is located in the town of Middlebury (population 6,451; USCB, 2010c), while Alternate Site 3 is located in the town of Oxford (population 9,821; USCB, 2010d). Both Alternate Sites are located in New Haven County, CT (population 824,008; USCB, 2010e). Surrounding cities and communities include Southbury, Waterbury, and Woodbury, CT.

4.3.1.2 Preferred Alternative-Danbury, CT

The Preferred Site consists of three undeveloped parcels (A, B, and C) located in the city limits of Danbury and are zoned as light industrial (Figure 3-1; City of Danbury, 2009). The surrounding land use includes residential, commercial, and industrial areas. The Danbury Municipal Airport is located to the west of the three parcels and the Danbury Fair Mall is located to the northwest of the parcels.

Open fields on Parcel A are currently used for hay production. A small stone and wooden barn and concrete well are located on the southern side of Parcel A. The Barden Corporation, a ball bearing manufacturer, is located north northwest of Parcel A. A small commercial area is located north of Park Avenue, north northeast of Parcel A, and comprises several businesses, including the Caribbean Club Restaurant, the Military Museum of Southern New England, and an automobile service center. An open grassy field, woods, and single-family residential homes border Parcel A to the east. Single-family residential homes are located south of the Parcel A. Lee Farm Corporate Park, a car dealership, and the Lee Farm residence border Parcel A to the west.

Parcel B is a grassy area with shrubs on the western side and landscaped trees along the northern and eastern sides. Parcel B is bordered by the Lee Farm Corporate Park to the north, Lee Farm Road and Parcel A to the east, a small commercial area with a house, parking lot, and warehouse to the southeast, Parcel C and Miry Brook Road to the south, the Goodrich Corporation to the south east, and an undeveloped area with shrubs and trees and a small pond, State Route 7 (Sugar Hollow Road), and the Danbury Municipal Airport to the west.

Parcel C consists of an open grassy field with forested areas on the northeastern corner and along the western portion of the parcel. Parcel C is bordered on the east by a small commercial building, parking lot, and warehouse, an undeveloped wooded area, and a large wetland. The wetland wraps around Parcel C to the south and a small portion of the wetland is located on the southeastern corner of Parcel C. The Goodrich Corporation has a large manufacturing facility located west of the wooded area on the western side of Parcel C. Danbury Sanitation, a septic tank cleaning company, is located to the west of Parcel B and C along Miry Brook Road, north of the Goodrich Corporation.

4.3.1.3 Alternative 2-Middlebury, CT

Alternate Site 2 is within the town Middlebury and is zoned as industrial (Town of Middlebury, 2009). Alternate Site 2 is mostly undeveloped with the exception of a single-family rental house and associated outbuildings. The surrounding land use includes undeveloped, residential, and commercial areas (Figure 3-3). Timex Corporation and wooded areas are located north of Alternate Site 2. Agricultural fields, wetlands, and wooded areas are located to the east. A private single-family residence is located to the southeast of Alternate Site 2. A large wetland is south of Alternate Site 2. A new residential construction project is located near the residential neighborhood of Benson Woods on the east side of North Benson Road. A medical office is located at the intersection of Southford Road and North Benson Road. Long Meadow Elementary School is west of North Benson Road, approximately 400 feet from the western border of Alternate Site 2. Benjamin

International and a John Deere Landscaping office are north of Long Meadow Elementary School on the western side of North Benson Road.

4.3.1.4 Alternative 3-Oxford, CT

Alternate Site 3 is within the town limits of Oxford, Connecticut and is zoned as industrial (Town of Oxford, 2005). Alternate Site 3 is a 62-acre, irregularly shaped parcel which includes a farm with a vacant barn, building foundations, two abandoned vacant houses, and an occupied rental house (Figure 3-4). The surrounding land use includes residential and industrial areas (Figure 3-4). The Willenbrock Industrial Park is north of Alternate Site 3 and contains a statuary manufacturer, a steel works manufacturer, and a bathroom remodeler. Open grassy fields and large tracts of woods border Alternate Site 3 to the east. Single-family residential homes and woods are south and west of the property.

4.3.2 Consequences

4.3.2.1 Preferred Alternative-Danbury, CT

The Preferred Alternative would result in minor long-term impacts to land use on the Preferred Site because of the change from undeveloped to developed, but the change would be consistent with adjacent land uses and local zoning. Approximately 12 acres (1.6 acres of trees and 10.4 acres of open field) on Parcel A and approximately 18 acres (2.4 acres of trees and 15.6 acres of open field) on Parcel C would be converted to developed land. No construction, and therefore no land use changes, would occur on Parcel B. While there would be minor impacts to land use on the Preferred Site from construction and operation of the AFRC, there would not be impacts to land use in the residential, commercial, or industrial areas surrounding the site. The Preferred Alternative would interact with other development projects in the area and result in minor cumulative impacts to land use through incremental reductions of green space.

4.3.2.2 Alternative 2-Middlebury, CT

Alternative 2 would result in minor long-term impacts to land use on Alternate Site 2 because of the change from rural residential to light industrial but the change would be consistent with adjacent land uses. While there would be minor impacts to land use on Alternate Site 2 from construction and operation of the AFRC, there would not be impacts to land use in the residential, commercial, or industrial areas surrounding the site. Alternative 2 would interact with other development projects in the area and result in minor cumulative impacts to land use through incremental reductions of green space.

4.3.2.3 Alternative 3-Oxford, CT

Alternative 3 would result in minor long-term impacts to land use on Alternate Site 3 because of the change from rural residential to light industrial but the change would be consistent with adjacent land uses. While there would be minor impacts to land use on Alternate Site 2 from construction and operation of the AFRC, there would not be impacts to land use in the residential, commercial, or industrial areas surrounding the site. Alternative 3 would interact with other development projects in the area and result in minor cumulative impacts to land use through incremental reductions of green space.

4.3.2.4 No Action Alternative

No impact to land use is expected under the no action alternative. Under this alternative, no construction would take place and no changes to existing land use would occur.

4.4 Aesthetics and Visual Resources

4.4.1 Affected Environment

4.4.1.1 Preferred Alternative-Danbury, CT

The Preferred Site consists of open grassy fields and wooded areas. Parcel A consists of open fields currently used for hay production, wooded areas, and wetlands. Parcel B consists of a grassy field with shrubs and small trees on the western site, landscaped trees along the northern and eastern edges, and wetlands in the center and western edge of the parcel. Parcel C consists of an open grassy field with forested areas on the northeastern corner and along the western portion of the parcel and a wetland on the southeastern corner of the parcel. The land is rolling and is not adjacent to any areas that are classified as having scenic value. Commercial and industrial properties are visible to the north and west; undeveloped property is visible to the east; and a residential area with single-family homes is visible to the southeast and south. Barden Industrial is the closest industrial developed property, approximately 300 feet north northwest of the Preferred Site. Photographs of the Primary Alternate Site are located in Appendix C.

4.4.1.2 Alternative 2-Middlebury, CT

Alternate Site 2 is mainly wooded with a wetland within the project boundary on the southeastern side and wetlands present outside the property boundary on the east and west. The site contains one single-family house and associated outbuildings. The land is flat and is not adjacent to any areas that are classified as having scenic value. The surrounding lands include green space and residential and commercial properties. The Timex Corporation headquarters is north-northeast of Alternative Site 2 and undeveloped property including wetlands is to the east, south, and west. Agricultural fields are visible to the east. No industrial developed properties are located in close proximity to Alternate Site 2. The closest commercial property is Timex Corporation, approximately 150 feet north northeast of the property. Photographs of Alternate Site 2 are located in Appendix C.

4.4.1.3 Alternative 3-Oxford, CT

Alternate Site 3 consists of large grassy fields separated by stone walls and wooded hedgerows. Large wetland complexes are located adjacent to and along the eastern and western portions of the property. In addition, a wetland is located in the northcentral portion of the property. The land is rolling and is not adjacent to any areas that are classified as having scenic value. An industrial park is to the north and undeveloped property is located to the east and west. A small residential neighborhood is located to the south. The industrial park is visible to the north and single-family residential homes are visible to the south and south southwest. The closest industrial developed property is located approximately 10 feet north of Alternate Site 3. Photographs of Alternate Site 3 are located in Appendix C.

4.4.2 Consequences

4.4.2.1 Preferred Alternative-Danbury, CT

The new AFRC would be visible from Wooster Heights Road/Miry Brook Road and Lee Farm Road, but would be constructed in an area that is already mostly developed with various man-made structures and buildings. The project would introduce a negligible change in this already-modified visual environment. Moderate long-term impacts to aesthetics or visual resources are expected to occur as a result of implementation of the Preferred Alternative. To lessen visual impacts to nearby residences, a visual screen consisting of trees and shrubs would be planted around the AFRC.

The Preferred Alternative would have a minor cumulative impact on aesthetics and visual resources through interaction with past and potential future development in the area. Although the site is undeveloped, it is surrounded by a moderately developed area containing commercial buildings, Danbury Municipal Airport, residential neighborhoods, and industrial facilities. The incremental addition of more buildings would increase the visual impact to the area, but it would not be a significant impact due to the current surrounding development.

4.4.2.2 Alternative 2-Middlebury, CT

The new AFRC would be visible from Southford Road. The AFRC would be constructed in an area surrounded both by developed and undeveloped areas. Views of the new AFRC would be comparable to the views of the commercial area to the north and east off of North Benson Road and the Timex Corporation located northeast of Alternate Site 2. Alternative 2 would result in minor long-term impacts to visual resources of the residence to the east. To lessen visual impacts to nearby residences, a visual screen consisting of trees and shrubs would be planted between the residence and the AFRC.

Cumulative effects for Alternative 2 would be similar to those described for the Preferred Alternative.

4.4.2.3 Alternative 3-Oxford, CT

The new AFRC would be visible from Willenbrock Road and partially visible from Towner Lane. The AFRC would be constructed in an area surrounded by both residential and industrial and commercial areas. Views of the new AFRC would be comparable to the views of the industrial area to the north of the site. Alternative 3 would result in moderate long-term impacts to visual resources of the residences to the south and west. To lessen visual impacts to the nearby residences, a visual screen consisting of trees and shrubs would be planted around the AFRC.

Cumulative effects for Alternative 3 would be similar to those described for the Preferred Alternative.

4.4.2.4 No Action Alternative

No impacts to aesthetics or visual resources would result, as no construction would occur. Conditions would remain as they are.

4.5 Air Quality

Air quality is measured by concentrations of various pollutants in the atmosphere. The USEPA established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, and particulate matter. Primary NAAQS are intended to protect public health, while secondary NAAQS are intended to protect the environment (crops, wildlife, buildings). Individual states may establish more stringent standards. Connecticut has adopted (the NAAQS).

Areas where ambient concentrations of a given pollutant comply with NAAQS are designated as being in attainment for that pollutant. Areas that do not comply with the NAAQS for a given pollutant are classified as a nonattainment area for that pollutant. Nonattainment areas are regulated in an effort to lower pollutant concentrations to regulatory standards.

The USEPA requires each state to prepare a State Implementation Plan (SIP) to ensure these goals are met. A SIP is a compilation of goals, strategies, source emission limitations and control requirements, schedules, and enforcement actions that would lead the state to compliance with all NAAQS. The SIP includes measures to maintain air quality standards in maintenance areas. Under the Clean Air Act Conformity rule, all Federal actions must comply with SIPs.

4.5.1 Affected Environment

The proposed Newtown AFRC is located in Fairfield County, CT and is in the New York-North New Jersey-Long Island, NY-NJ-CT and the New Haven-Meriden-Waterbury, CT air basins. The NY-NJ-CT air basin is a nonattainment area for $PM_{2.5}$ (1997 and 2006 NAAQS standards), a maintenance area for CO, and a moderate nonattainment area for 8-hour ozone. The New Haven air basin is a maintenance area for CO. Federal regulations at 40 CFR Part 81 delineate certain air quality control regions (AQCRs), based on population and topographic criteria closely approximating each air basin. The potential influence of emissions on regional air quality would typically be confined to the air basin in which the emissions occur.

Fairfield County's air emission sources primarily consist of small to medium sized businesses and fuel combustion from residential heating and on- and off-road vehicles. Larger sources of air emissions from electricity generation or industrial facilities are minimal. Table 4-1 indicates the main air pollutants in Fairfield County from all sources.

TABLE 4-1
Fairfield County Certified Pollutant Total Emissions for 2001
AFRC Environmental Assessment, Newtown, CT

Pollutant	Amount (tons)
Total VOCs[a]	48,652
Nitrogen Oxides	42,429
Carbon Monoxide	257,581
Sulfur Dioxide	21,613
Particulate Matter (10 µm[b])	26,312

[a]volatile organic compound
[b]Micrometers
Source: USEPA, 2010a

4.5.2 Consequences

4.5.2.1 Preferred Alternative-Danbury, CT

The construction associated with the proposed action would result in a negligible short-term impact to local air quality. Emissions from personal vehicles and construction equipment (earth-moving equipment, cranes, and trucks) would primarily consist of NOx, sulfur dioxide, PM, CO, and VOCs. These emissions are typical of construction sites, similar in magnitude to emissions from the construction of a typical strip mall, and will not extend past the construction period; therefore, additional air quality modeling has not been performed. Fugitive dust generated by construction activities can contribute to respiratory health problems and create an inhospitable environment. Best Management Practices (BMPs) that would be implemented during construction to reduce or eliminate fugitive dust emissions include sprinkling, vegetative cover, and mulch.

Mobile sources of air emissions include military and civilian vehicles and equipment. Military vehicle and military truck traffic would be heaviest on drill weekends and intermittent special operations. Convoy training is not expected to be conducted from the AFRC. There will be mobile emissions associated with new government-owned vehicles (GOVs) and privately-owned vehicles (POVs) due to the proposed action. Mobile emissions are based on the number of newly assigned personnel, personnel operational frequency, and the annual vehicle miles traveled (VMT) per employee. Emissions were calculated for both employee commuting in POVs and on-facility travel in GOVs. Emissions were not modeled for personnel being relocated from other nearby facilities within the AQCR. The proposed action will add approximately 142 new reservist personnel and 7 full-time personnel to the new Newtown AFRC. There will be an increase of mobile emissions associated with the 142 new reservist personnel utilizing GOVs. Reservist personnel work 24 days per year and make approximately 2.25 vehicle trips per day, resulting in 7,668 new vehicle trips per year. There will be an increase in mobile emissions as a result of the addition of 7 full-time personnel utilizing POVs on the facility. The 7 new full-time employees work 240 days per year and make an estimated 3.62 vehicle trips per day resulting in approximately 6,082 new vehicle trips by permanent employees per year. Emission calculations for mobile sources are provided in Appendix D.

New minor stationary sources include building heating units, water heaters, a 650 kW emergency generator, and a 4,000-gallon above ground storage tank at a vehicle fueling

point; however, these small sources would result in no more than a *de minimis* impact on air quality. Emission calculations are included in Appendix D.

As a minor new stationary source the Newtown AFRC is exempt from requirements to obtain a permit under the regulations for Prevention of Significant Deterioration in attainment areas or the regulations for Nonattainment New Source Review in nonattainment areas. These regulations assume that minor new sources and minor modifications do not significantly affect the air quality or interfere with plans to achieve and maintain compliance with the NAAQS.

The combined annual emissions from the stationary and mobile sources discussed above are below the threshold levels for a conformity determination (40 CFR Part 93.153 (b)) and this action is not considered regionally significant (40 CFR Part 93.153(i)). The proposed action is exempt from the requirement to prepare a conformity determination. Appendix D contains a general conformity record of non-applicability for the proposed action.

Facilities with potential emissions of less than 15 tons per year of any regulated air pollutant as defined by the Federal Clean Air Act and less than 10 tons of any hazardous air pollutant do not require a state construction or operation permit (Connecticut Department of Environmental Protection [CT DEP], 2010a). Although Newtown AFRC's emergency generator is exempt from obtaining a state construction and operation permit, the unit is still subject to operational, testing, maintenance, and recordkeeping requirements per CT DEP regulations 22a-174-3b(e) and 22a-174-3c. The above-ground storage is also exempt from obtaining a construction or operation permit.

The Preferred Alternative would not have a significant impact on greenhouse gas emissions because the construction and operation of the AFRC is not expected to cause direct emissions of 25,000 metric tons of carbon dioxide equivalent or more, which is the proposed CEQ screening level for including a quantitative and qualitative assessment of greenhouse gas emissions in the NEPA analysis. Additionally, the proposed facility will be more energy efficient when compared to the existing facilities that are being replaced reducing the amount of electricity and heat necessary for operation resulting in a decrease in criteria pollutant emissions to the atmosphere.

The Preferred Alternative would cause cumulative effects to air quality; however, those effects would not be significant cumulative effects because the relatively small scope of this project, when combined with other construction projects in the area, would not increase air pollutants to levels that exceed regulatory thresholds.

Stationary Sources

Stationary source emissions from the new AFRC will be below these limits.

4.5.2.2 Alternative 2-Middlebury, CT

The impacts under Alternative 2 would be similar to those described under the Preferred Alternative.

4.5.2.3 Alternative 3-Oxford, CT

The impacts under Alternative 3 would be similar to those described under the Preferred Alternative.

4.5.2.4 No Action Alternative

No emissions due to construction or added vehicle traffic would occur under the no action alternative. However, the no action alternative would have a negative impact on air quality from the continued use of the existing energy inefficient facilities that would result in higher criteria pollutant emissions when compared to the proposed facility from increased electricity and heat usage.

4.6 Noise

4.6.1 Affected Environment

For determination of impacts to human receptors, noise measurements are weighted to increase the contribution of noises within the normal range of human hearing and decrease the contribution of noises outside the normal range of human hearing. Human hearing is best approximated by using an A-weighted scale (dBA). When sound pressure doubles, the dBA level increases by 3. Psychologically, most humans perceive a doubling of sound as an increase of 10 dBA (USEPA, 1974). Sound pressure decreases with distance from the source. Typically, for a constant noise source, the amount of noise is halved as the distance from the source doubles (USEPA, 1974).

4.6.1.1 Preferred Alternative-Danbury, CT

Parcels A, B, and C of the Preferred Site is surrounded by residential, commercial, and industrial areas. There are no existing noise sources at the Preferred Site; however, the Danbury Municipal Airport is approximately 750 feet to the west of the Preferred Site. Runway 8/26 is oriented east to west and incoming and outgoing planes fly over the Preferred Site. The largest aircraft based at the Danbury Municipal Airport or in proximity include the Gulfstream GIVSP 907 jet, the Global Express 2919 jet, as well as other similar sized aircraft. These aircraft can carry approximately 15 passengers (OneSky, 2010). Noise levels in the vicinity of the Preferred Site would be expected to range from 60 to 85 dBA, which is typical of normal conversation and local traffic (Galen Carol Audio [GCA], 2007). Intermittent noise from jet aircraft taking off and landing at the Danbury Municipal Airport adds to the noise environment at the Preferred Site.

4.6.1.2 Alternative 2-Middlebury, CT

Alternate Site 2 is surrounded by residential, commercial, institutional, and rural areas. There are no noise sources at Alternate Site 2. Noise levels in the vicinity of Alternate Site 2 would be expected to range from 60 to 85 dBA, which is typical of normal conversation and local traffic (GCA, 2007).

4.6.1.3 Alternative 3-Oxford, CT

Alternate Site 3 is surrounded by residential, commercial, agricultural, and rural areas. There are no noise sources at Alternate Site 3. Noise levels in the vicinity of Alternate Site 3 would be expected to range from 60 to 85 dBA, which is typical of normal conversation and local traffic (GCA, 2007).

4.6.2 Consequences

4.6.2.1 Preferred Alternative-Danbury, CT

Minor short-term adverse impacts associated with noise from construction activities would be likely from the Preferred Alternative. The noise impacts would be restricted to the daylight hours during weekdays and weekends. The noise levels of construction equipment most likely to be used range from 90 to 96 dBA at 50 feet from the source (Occupational Safety and Health Administration [OSHA], 2003). Construction workers would use hearing protection and would follow OSHA standards and procedures. Therefore, significant noise-related impacts to workers would not be expected.

Typically, as sound waves travel through air, geometric spreading of noise with distance from a stationary point source results in decreases at a rate of 6 dBA per each doubling of distance. Because the distance to the nearest house is approximately 200 feet from the perimeter of the Preferred Site, construction noise at the house would be reduced by 12 dBA. In addition, typical homes have an effective noise attenuation rating of 15 dBA, making indoor noise levels less than the corresponding outdoor noise levels (USEPA, 1974). Allowing for the attenuation of noise from the structure of the house, indoor noise levels in the nearest residence would be 63-69 dBA during construction activities. Nearby workers and residents would notice construction-related noise, which would be above background noise levels. People outdoors at nearby houses could experience minor noise impacts that could interfere with normal conversations. Inside homes, the noise could be a minor impact and result in a need to increase the volume of televisions and radios. Negative health impacts to construction workers or residences would not result from construction-related noise. Therefore, the minor, temporary impacts from construction noise would be less than significant.

No new noise sources are expected from operation of the new AFRC. The closest residence is approximately 200 feet from the perimeter of the Preferred Site. Routine operation of the AFRC would result in intermittent vehicle noise during weekend daytime hours that could be audible in the nearby residential areas; however, the operation noise would be less than significant when compared to local traffic and intermittent noise generated by aircraft flying in and out of the Danbury Municipal Airport.

Cumulative impacts from construction and operation of the AFRC at the Preferred Site are anticipated to be less than significant. The City of Danbury Planning and Zoning Office stated that major road projects near the Preferred Site have not been recently approved; therefore, no new construction is anticipated in the area (Emminger, 2010, personal communication). Noise associated with the Proposed Action is consistent with the surrounding commercial and industrial uses to the west as well as the Danbury Municipal Airport.

4.6.2.2 Alternative 2-Middlebury, CT

Impacts related to noise under Alternative 2 would be similar to those of the Preferred Alternative; however, cumulative effects described for the Preferred Alternative associated with a nearby airport would not occur. The nearest house is approximately 100 feet away. Noise from construction would be 84 to 90 dBA outside the house and 69 to 75 dBA inside the house during construction activities. At this distance, people outdoors would experience

minor noise impacts that could interfere with normal conversations during construction activities. Inside homes, the noise could be a minor impact.

Cumulative impacts from construction and operation of the new AFRC combined with noise from several current and future development sites nearby would be minor. These sites include the community of Ridgewood located approximately one mile northeast of Alternate Site 2, the Avalon Farms residential community located 2,200 feet north northeast of Alternate Site 2, the residential community of Long Meadow Farms located approximately 3,600 feet east southeast of Alternate Site 2, and the Gateway Industrial Design District located approximately 1,000 feet west of Alternate Site 2 (O'Loskey, 2010, personal communication).

4.6.2.3 Alternative 3-Oxford, CT

Impacts related to noise under Alternative 3 would be similar to those of Alternative 2. The nearest house is approximately 100 feet away. Noise from construction would 84 to 90 dBA outside the house and 69 to 75 dBA inside the house during construction activities. At this distance, people outdoors would experience noise levels that could interfere with normal conversations during construction activities. Inside homes, these noise levels would be reduced. Impacts from noise outdoors and inside homes would be minor.

Cumulative impacts from construction and operation of the AFRC at the Alternate Site 3 is anticipated to be less than significant. The Town of Oxford Department of Planning and Zoning stated that residential, commercial, or industrial projects have not been proposed, recently constructed, or approved in the vicinity of Alternate Site 3 (Silva, 2010, personal communication).

4.6.2.4 No Action Alternative

There would be no new impacts from noise under the No Action Alternative, as new construction would not occur.

4.7 Geology and Soils

4.7.1 Affected Environment

4.7.1.1 Preferred Alternative-Danbury, CT

The Preferred Site is relatively flat with slopes ranging from 0 to 5 percent. No drainage ditches are located within the property boundary. The elevation of the site ranges from approximately 490 to 615 feet above mean sea level. Seismic activity is known to occur near Fairfield County. The probability of an earthquake occurring in Fairfield County having a magnitude greater than 5.0 within 100 years is four to six percent (U.S. Geological Survey [USGS], 2010a). In June of 2000, a magnitude 3.3 earthquake occurred 96.1 miles away from the Fairfield County center (City-Data.com, 2010a).

Parcel A

Parcel A consists of four primary soil associations, Paxton and Montauk fine sandy loams, Woodbridge fine sandy loam, Canton and Charlton fine sandy loam, and urban land (Natural Resources Conservation Service [NRCS], 2010a). The Paxton and Montauk series

and the Woodbridge series consist of well drained loamy soils formed in lodgement till (glacial debris left behind by a glacier). Soils are generally very deep to bedrock and moderately deep to the glacial till. They are nearly level to steep soils on till plains (extensive flat plains of unsorted glacial sediment), moraines, hills, and drumlins (elongated hills formed from glacial action) (NRCS, 2010a; NRCS, 2010b; NRCS, 2010c). The Canton series (0 to 35 percent slopes) consist of very deep, well drained soils formed in a loamy mantle underlain by sandy till derived from parent materials that are very low in iron sulfides. They are on nearly level through very steep glaciated plains, hills, and ridges (NRCS, 2010d). The Charlton series (0 to 50 percent slopes) consist of very deep, well drained loamy soils formed in till. They are nearly level to very steep soils on till plains and hills (NRCS, 2010e). Urban land series (0 to 8 percent slopes) is mainly covered by impervious surfaces and there is no drainage class for these soils (NRCS, 2010).

Parcel B

Parcel B consists primarily of two primary soil associations, Paxton and Montauk fine sandy loams and Woodbridge fine sandy loam. The soil descriptions for these soil associations were provided in the discussion of Parcel A.

Parcel C

Parcel C consists primarily of two primary soil associations, Paxton and Montauk fine sandy loams and Woodbridge fine sandy loam. The soil descriptions for these soil associations were provided in the discussion of Parcel A.

Prime Farmland and Farmlands of Statewide Importance

Woodbridge fine sandy loam (3 to 8 percent slopes) and Paxton and Montauk fine sandy loam (3 to 8 percent slopes) are classified as prime farmland. Paxton and Montauk fine sandy loam (8 to 15 percent slopes) and Woodbridge fine sandy loam (8 to 15 percent slopes) are considered farmlands of statewide importance. The Farmland Protection Policy Act of 1990 (FPPA), 7 U.S.C. 4201, requires federal agencies to identify and take into account the adverse effects of their actions on the preservation of farmland. The FPPA protects the conversion of prime farmland to non-agricultural uses. The FPPA defines prime farmland as "… land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion and without intolerable soil erosion, as determined by the Secretary. Prime farmland includes land that possesses the above characteristics but is being used currently to produce live stock and timber. It does not include land already in or committed to urban development or water storage…" (7 USC 4201(c)(1)(A)). Soils on the Preferred Site are not considered prime farmland as identified by the NRCS National Soil Survey Handbook Part 622.04 (U.S. Department of Agriculture [USDA], 2010) because the land has been designated by the USCB as an Urban Area (USCB, 2010f).

4.7.1.2 Alternative 2-Middlebury, CT

Alternate Site 2 is relatively flat with slopes ranging from 0 to 5 percent. No drainage ditches are located within the Alternate Site 2 boundary. The elevation of the site ranges from approximately 630 to 680 feet above mean sea level. Seismic activity is known to occur near New Haven County. The probability of an earthquake occurring in New Haven County having a magnitude greater than 5.0 within 100 years is three to four percent (USGS,

2010a). In June of 2000, a magnitude 3.3 earthquake occurred 49.4 miles away from the New Haven County center (City-Data.com, 2010b).

Alternate Site 2 consists primarily of two major soil associations, Paxton and Montauk fine sandy loams (3 to 8 percent) and Woodbridge fine sandy loam (3 to 8 percent slopes) (NRCS, 2010f). The Paxton and, Montauk series and the Woodbridge series consist of well drained loamy soils formed in lodgement till (glacial debris left behind by a glacier). The soils are very deep to bedrock and moderately deep to a densic contact (boundary between soil and densic material such as glacial till). They are nearly level to steep soils on till plains (extensive flat plains of unsorted glacial sediment), moraines, hills, and drumlins (elongated hills formed from glacial action) (NRCS, 2010a; NRCS, 2010b; NRCS, 2010c).

Paxton and Montauk fine sandy loam (3 to 8 percent) and Woodbridge fine sandy loam (3 to 8 percent slopes) are considered prime farmland. The FPPA does not apply to Alternative Site 2 because it is zoned for industrial use and considered to be committed to urban development and is, therefore, not "farmland" as defined under FPPA.

4.7.1.3 Alternative 3-Oxford, CT

Alternate Site 3 is relatively flat with slopes ranging from 0 to 5 percent. No drainage ditches are located within the Alternate Site 3 property boundary. The elevation of the site ranges from approximately 475 to 550 feet above mean sea level. Seismic activity is known to occur near New Haven County. The probability of an earthquake occurring in New Haven County having a magnitude greater than 5.0 within 100 years is three to four (USGS, 2010a). In June of 2000, a magnitude 3.3 earthquake occurred 49.4 miles away from the New Haven County center (City-Data.com, 2010b).

Alternate Site 3 consists primarily of two major soil associations, Canton and Charlton soils (NRCS, 2010g). The soil descriptions for the Canton series and the Charlton series are similar to those described for the Preferred Site Parcel A. Soils also include Ninigret and Tisbury soils (0 to 5 percent) well drained soils, Sutton fine sandy loam (3 to 8 percent slopes) moderately well drained soils, Paxton and Montauk (3 to 8 percent slopes), Waxpole sandy loam poorly drained soils, and Hinkley gravelly sandy loam (3 to 15 percent slopes) excessively drained soils, Ridgebury, Leicester, and Whitman soils which are extremely stony, Scarboro muck very poorly drained soils, and Agawam fine sandy loam (3 to 8 percent slopes) well drained soils.

Ninigret and Tisbury soils (0 to 5 percent slopes), Sutton fine sandy loam (3 to 8 percent), Canton and Charlton soil (3 to 8 percent slopes), and Paxton and Montauk fine sandy loams (3 to 8 percent slopes) are considered prime farmland. Walpole sandy loam, Hinkley gravelly sandy loam, and Canton and Charlton soils (8 to 15 percent slopes) are considered farmland of state wide importance. The FPPA does not apply to Alternative Site 3 because it is zoned for industrial use and considered to be committed to urban development and is, therefore, not "farmland" as defined under FPPA.

4.7.2 Consequences

4.7.2.1 Preferred Alternative-Danbury, CT

The Preferred Alternative would have minor short-term impacts to soils and geologic resources during construction. There are no special qualities associated with the soils or geologic resources at this site, and the Preferred Site contains no prime farmland as defined by the FPPA.

Impacts to soils associated with erosion would be minimized by adherence to procedures outlined in the:

- Stormwater and Dewatering Wastewaters from Construction Activities general construction permit (DEP-PERD-GP-015) as required by the State of Connecticut;
- Stormwater Pollution Control Plan in accordance with NPDES;
- Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA and State of Connecticut;
- The Soil Erosion and Sedimentation Control Plan; and
- By implementing appropriate post-construction stormwater controls in the 2004 CT DEP Stormwater Quality Manual, including construction BMPs.

BMPs to minimize impacts to soil from erosion would include, but not be limited to, installation of silt fencing and sediment traps, stormwater retention ponds, and revegetation of disturbed areas as soon as possible, where appropriate. The Preferred Alternative would have no long-term impacts on soils during operation of the AFRC. There are no constraints on development of the Preferred Site as a result of site geologic and soil conditions.

The Preferred Alternative would result in negligible cumulative impacts to geology and soils from construction of the building footings.

4.7.2.2 Alternative 2-Middlebury, CT

Alternative 2 would have minor short-term impacts to soils and geologic resources during construction. Measures to reduce soil erosion described in the Preferred Alternative would also be used under Alternative 2.

Alternate Site 2 is zoned as industrial. According to the FPPA, prime farmlands do not include land “already in or committed to urban development” (7 USC 4201(c)(1)(A)). Alternative 2 would not impact farmlands, because it is zoned for industrial use and is, therefore, not "farmland" as defined under FPPA. There are no constraints on development of the property as a result of site geologic and soil conditions.

Cumulative effects for Alternative 2 would be similar to those described for the Preferred Alternative.

4.7.2.3 Alternative 3-Oxford, CT

Alternative 3 would have minor short-term impacts to soils and geologic resources during construction.

Measures to reduce soil erosion described in the Preferred Alternative would also be used under Alternative 3. Alternative 3 would not impact farmlands, because it is zoned for industrial use and is, therefore, not "farmland" as defined under FPPA. There are no constraints on development of the property as a result of site geologic and soil conditions.

Cumulative effects for Alternative 3 would be similar to those described for the Preferred Alternative.

4.7.2.4 No Action Alternative

Under the No Action Alternative, none of the proposed construction or demolition activities would occur, and there would not be impacts to geologic and soil resources.

4.8 Water Resources

4.8.1 Affected Environment

4.8.1.1 Preferred Alternative-Danbury, CT

Surface Water, Stormwater, and Waters of the United States

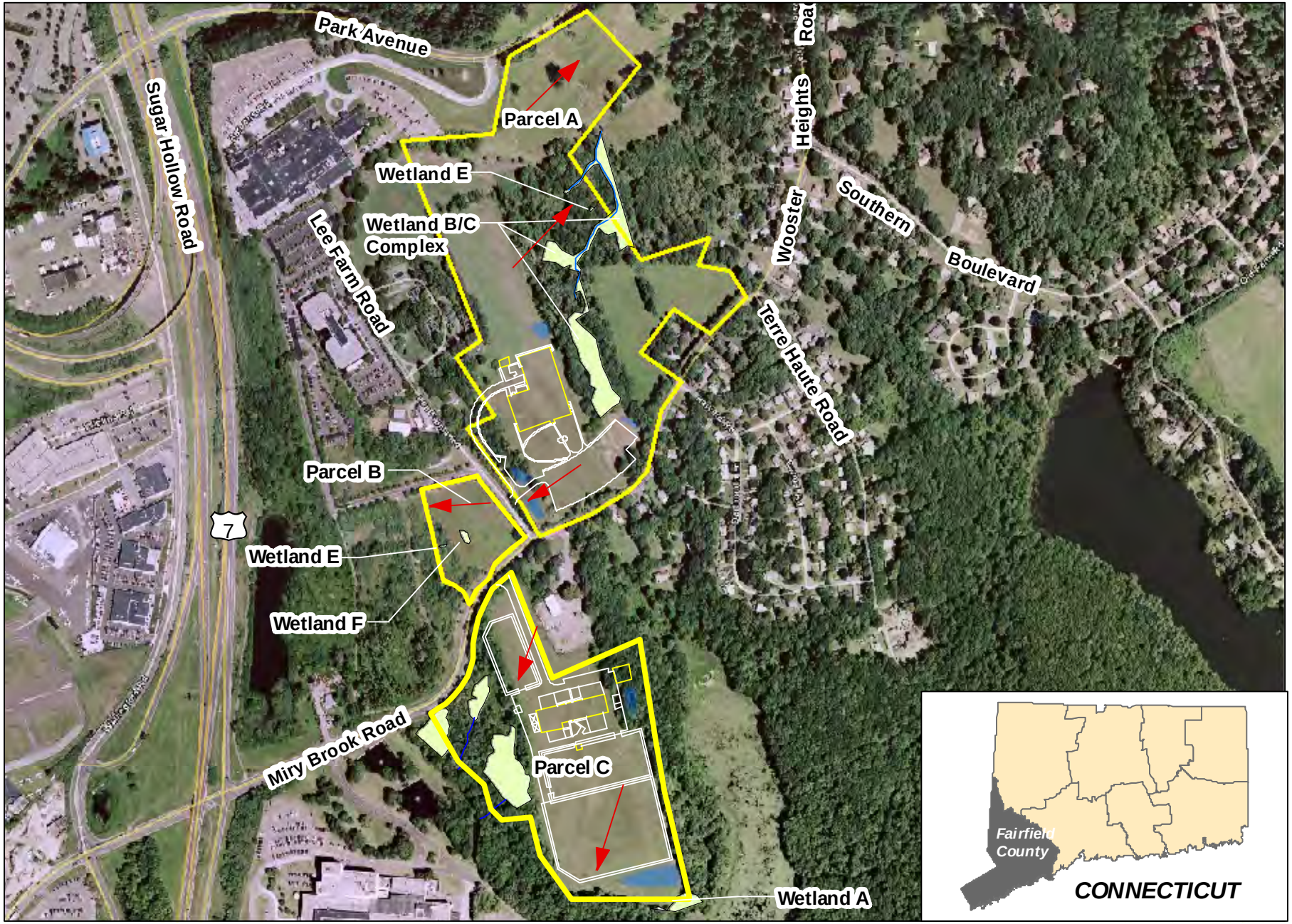
The Preferred Site lies approximately 400 feet south of an unnamed tributary to Lake Kenosia, which is approximately 1.6 miles to the west of the site. Nearby hydrological features include Tarrywile Lake, which is approximately 2,300 feet southeast of Parcel A and approximately 2,175 feet east of Parcel C of the Preferred Site.

Parcel A

Stormwater on Parcel A generally flows via sheet flow into a channelized tributary and drainage pipe located along the shoulder of the existing paved Lee Farm Road. Stormwater on Parcel B flows via sheet flow to the west into a down gradient wetland located offsite to the west before flowing into a large pond and eventually Kissen Brook located across Sugarhollow Road. There are no streams, ponds, lakes, or other open water on Parcel B. Stormwater on Parcel C flows via sheet flow to the south and west (Figure 4-1).

Epsilon Associates completed a wetland delineation at the Preferred Site on May 11 and 12, 2010. Six wetland systems (Wetland A through F) were delineated within the limits of the Preferred Site (Figure 4-1; Epsilon, 2010). A copy of the wetland delineation report is located in Appendix E.

Wetland B/C is located generally in the middle of Parcel A (Figure 4-1; Epsilon, 2010). It is a mix of palustrine forested wetlands (PFO) and palustrine scrub-shrub (PSS) cover types. A small area of wet meadow exists along the extreme southern edge of the wetland. The portion of this wetland system within the project boundary is approximately 2.15 acres in surface area. The wetland abuts a well defined first order intermittent stream channel that conveys surface water flows in a northerly direction from the wet meadow portion of the delineated wetland through the forested wetland and eventually into a channelized tributary and drainage pipe located along the shoulder of the existing paved Lee Farm Road. The flows likely eventually reach the Still River located offsite and to the north of Park Avenue. There are also a number of finger-like tributaries and non-descript overland flow areas located perpendicular to the main stream channel that are associated with hillside seeps. The wetland appears to receive inflow from groundwater and from surface



Approximate Site Boundary
Stream Centerline
Wetland Area
Stormwater Flow Direction

0 300 600
Approximate Scale in Feet

N

Source:
Aerial: Google Earth, 2009

FIGURE 4-1
Wetlands for Preferred Site - 150 Park Avenue, Danbury, Fairfield County, CT
USACE AFRC, Newtown, CT

CH2MHILL

flows from the main stream channel and tributaries during precipitation events. The main stream channel has a variable width but in general it is approximately 8 to 10 feet wide with a well defined bank of approximately 1 to 2 feet. The bank has limited vegetation and exhibits some erosion from undercutting. The stream substrate is composed mostly of large stones and cobbles with fine sands interspersed in the voids. For the purposes of this analysis, the ordinary high water mark (OHWM) of the stream is coincident with the delineated wetland boundary. The wetland complex slopes gradually downward in a southerly direction, with an approximately 100-foot change in elevation over a distance of approximately 1,000 linear feet. The wetland has limited micro-topographic features present (e.g., pit-and-mound type relief, rocky outcrops, etc.).

Wetland E is an approximately 0.01-acre PSS and palustrine emergent (PEM) wetland surrounded by deciduous forested upland (Figure 4-1; Epsilon, 2010). It is located to the west of Wetland B/C along a hillside seep on Parcel A. While not readily apparent at the time of delineation, under certain circumstances this wetland may drain via diffuse overland flow into Wetland B/C and its adjoining stream channel. Wetland E appears to receive inflow from groundwater, primarily via hillside seeps.

Parcel B

Wetland D is a very small PEM wetland approximately 400 square feet in surface area located along a hillside seep on Parcel B (Figure 4-1; Epsilon, 2010). While not readily apparent at the time of delineation, the wetland likely drains via overland flow into a drainage channel toward the west, which likely flows into a down gradient wetland located offsite to the west before flowing into a large pond and eventually Kissen Brook located across Sugarhollow Road (Route 7). The wetland appears to receive inflow from groundwater discharge, primarily hillside seeps.

Wetland F is a small PEM pocket wetland approximately 1,850 square feet in surface area located in an open hayfield on Parcel B (Figure 4-1; Epsilon, 2010). Similar to Wetland D, this wetland may drain via overland flow toward two down gradient drainage channels to the west. These drainage channels likely flow into a down gradient wetland located offsite to the west before flowing into a large pond and eventually Kissen Brook located across Sugarhollow Road (Route 7). The wetland appears to receive inflow from groundwater discharge.

Parcel C

Wetland A is located at the extreme southern end of Parcel C adjacent to a well defined toe-of-slope and active hayfield (Figure 4-1; Epsilon, 2010). There is an abrupt transition at the wetland-upland interface. The wetland is a mix of PSS and PEM cover types. The wetland covers approximately 9,100 square feet within the boundary of Parcel C and extends offsite. The wetland borders a large unnamed pond and Lees Pond Brook located offsite to the east and south, respectively. An unnamed intermittent stream flows from the pond in a westerly direction towards Sugar Hollow Road (Route 7). The wetland appears to receive inflow from groundwater and surface flows from the pond and river during high water events.

Wetland B is located on the western side of Parcel C (Figure 4-1; Epsilon, 2010). Wetland B is approximately one acre in size and is a mix of forested, scrub-shrub, and wet meadow cover types. Water flow Wetland B flows to the south via sheet flow, then through a well developed channel that connect with an offsite forested wetland, and into a stream.

Wetland C is a 0.25 acre wet meadow northwest of Wetland B (Figure 4-1; Epsilon, 2010). Wetland C flows to the south via sheet flow, then through a well developed channel that connects with an offsite forested wetland, and into a stream.

Wetland D is a 0.45 acre wet meadow and scrub-shrub wetland approximately 80 feet southwest of Wetland C (Figure 4-1; Epsilon, 2010). Wetland D flows south via sheet flow and discharges into an offsite scrub-shrub wetland and then into stormwater ponds west of Parcel C.

Hydrology/Groundwater

Fairfield County is located in the Western Uplands-Southwest Hills physiographic zone (CT DEP, 2010b). Bedrock aquifers underlie most of the state and are the source of most self-supplied drinking water, commonly in the range of 3 to 5 gallons per minute. These aquifers are subdivided into sedimentary, crystalline, and carbonate rock types. Eastern and Western Connecticut are underlain by crystalline rocks. Crystalline (noncarbonate) rocks consist predominantly of metamorphic rocks, are highly folded, and contain numerous joints (CT DEP, 2010b). The bedrock aquifers yield adequate water supply for domestic use (CT DEP, 2010b). Fairfield County is located within a minor aquifer (USGS, 2010b). Such areas are underlain by low-permeability deposits and rocks, unsaturated materials, or aquifers that supply little water because they are of local extent, poorly permeable, or both (USGS, 2010c).

Connecticut's Aquifer Protection Area (APA) Program protects major public water supply wells in sand and gravel aquifers. The project area is not located within a CTDEP APA (CT DEP, 2010c).

Groundwater recharge is mainly from precipitation over the drainage basin. The flow of groundwater in Connecticut is concentrated in the upper part of the saturated zone, (below the water table), generally within 300 feet of the surface. Because of the relatively shallow depth of the flow system, high rates of recharge, and moderate topographic relief, groundwater circulation in most of the state is localized within each basin that is drained by a perennial stream, and as a result, surface water drainage basins can be used to delineate areas of groundwater flow systems (CT DEP, 2010b).

Under natural, undisturbed conditions, shallow groundwater flow generally follows the topography of the land surface. Based on topography, groundwater on the Property likely flows in a northeasterly direction. However, localized conditions can alter flow direction; therefore, the actual groundwater flow may not coincide with the topography.

No domestic, public, industrial, or monitoring wells are installed on the property. EDR conducted a search of available environmental records and located four USGS water wells within a one-mile radius of the Preferred Site. No depth to groundwater information was available for the four USGS wells.

Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel number 0900040010B indicates that the Preferred Alternative is not located within a 100- or 500-year floodplain (FEMA, 2010a).

Coastal Zone

The Preferred Site is not located within a coastal zone (CT DEP, 2010d).

4.8.1.2 Alternative 2-Middlebury, CT

Surface Water, Stormwater, and Wetlands

An unnamed tributary to Lake Zoar lies approximately 385 feet south of Alternate Site 2. Lake Zoar is approximately 6.6 miles to the south southwest of Alternate Site 2. Nearby hydrological features include Long Meadow Pond, approximately 4,600 feet south southeast of Alternate Site 2. Stormwater on Alternate Site 2 flows via sheet flow from the highest point in the northcentral portion of the site outwards to the west, north, and east. There are no streams or lakes located on Alternate Site 2 (Figure 4-2).

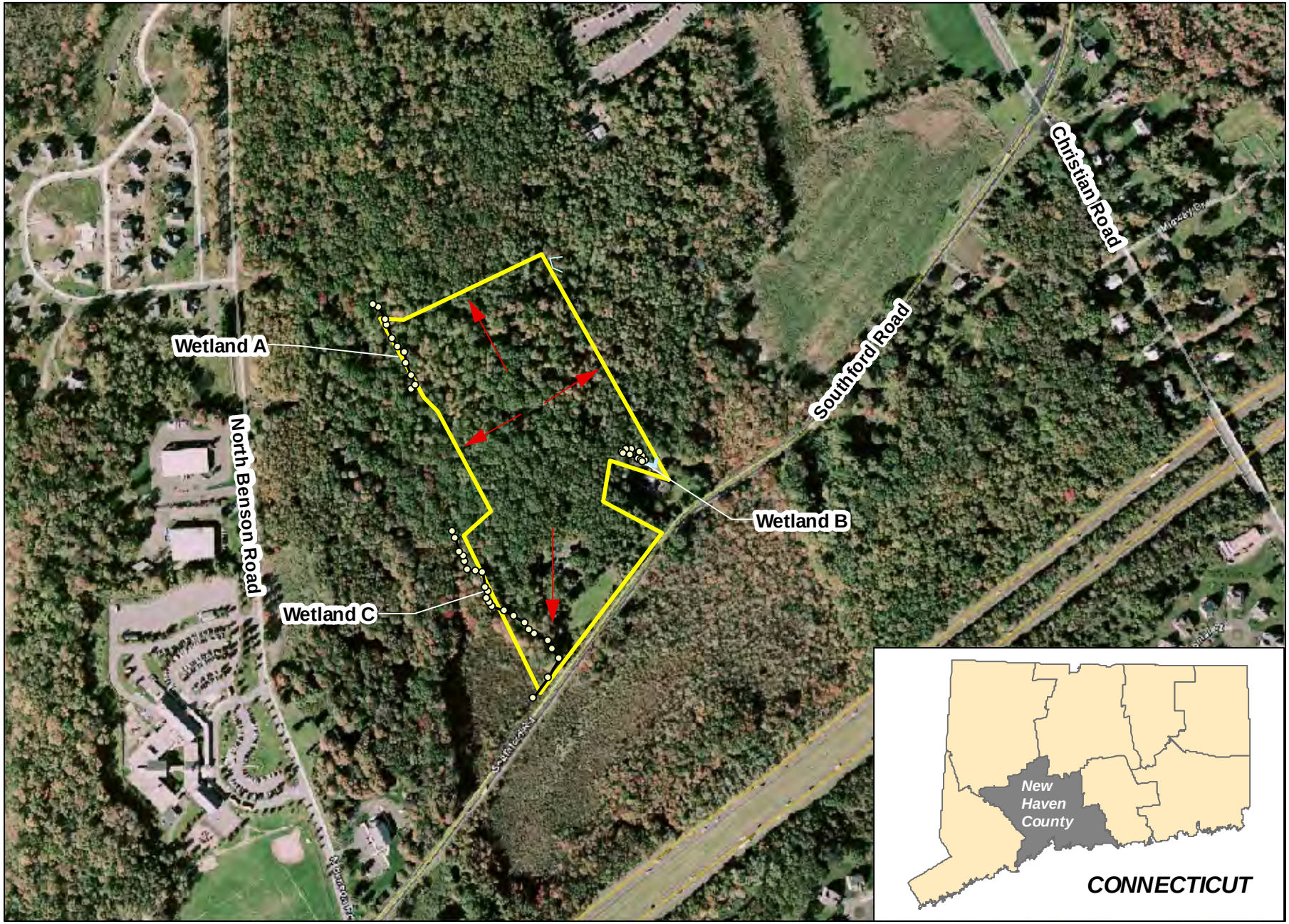
Epsilon Associates completed a wetland delineation at Alternate Site 3 on May 19, 2010. Three wetland systems were delineated within Alternate Site 2 (Figure 4-2; Epsilon, 2010). A fourth wetland system was evaluated towards the northeastern corner of the site but was determined to be outside the boundaries of Alternate Site 2 and was not delineated.

Wetland A occurs along the northwestern corner/property line of Alternate Site 2 (Figure 4-2; Epsilon, 2010). It is primarily a PFO. The field delineation was limited to a portion of its eastern edge where the wetland extends onto Alternate Site 2 for a distance of approximately 320 feet. Most of this large wetland system extends offsite and it appears to connect with Wetland C which is located along the southern edge of Alternate Site 2. Wetland C abuts a well defined stream channel where it transitions from a PFO to a PEM before flowing through a culvert beneath Southford Road (Route 188) into a large emergent marsh system to the south.

Wetland A contains pit-and-mound micro-topography and was covered with approximately 6 inches of standing water at the time of inspection (Figure 4-2; Epsilon, 2010). It may provide suitable vernal pool habitat during the early spring. The wetland appears to receive its primary inflow from groundwater flow.

Wetland B is a PFO wetland approximately 2,200 square feet in surface area and is located along the extreme eastern corner of Alternate Site 2 (Figure 4-2; Epsilon, 2010). Wetland B formed in an old excavated borrow pit. Its boundary is well defined by very steep slopes approaching 20 feet in height. The wetland appears to receive inflow from groundwater. It is hydrologically connected by a 6-inch diameter pipe and a rocky approximately 2-foot wide drainage channel to a sizeable down gradient PFO located offsite to the east. The flows from Wetland B are likely to be seasonal and only occur under high water events as the invert of the pipe is well above the bottom of the wetland.

Wetland C exists along the southern edge of the Study Area and is part of the same system as Wetland A (Figure 4-2; Epsilon, 2010). Wetland C extends approximately 620 feet into Alternate Site 2. Wetland C abuts a well defined approximately 5-foot wide stream channel from an intermittent stream that conveys flows towards a culvert located at Southford Road (Route 188). The culvert connects Wetland C to a large emergent marsh system located on the opposite side of Route 188. The stream channel meanders and has low profile banks (approximately 6 inches in height) and a silty substrate.



Approximate Site Boundary
Ditch Centerline
Wetland Flag
Stormwater Flow Direction

0 225 450
Approximate Scale in Feet

N

Source:
Aerial: Google Earth, 2009

FIGURE 4-2
Wetlands for Alternate Site 2 - 764 Southford Road, Middlebury, New Haven County, CT
USACE AFRC, Newtown, CT

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The northern half of Wetland C is characterized as PFO (Figure 4-2; Epsilon, 2010). It contains the aforementioned stream channel from the intermittent stream and pit-and-mound micro-topography. It was flooded with approximately 3 to 6 inches of standing water at the time of inspection. Similar to Wetland A, it may provide suitable vernal pool habitat during the early spring. The southern half of Wetland C is characterized as an emergent marsh (PEM) with some transitional scrub-shrub vegetation present within its interior (primarily highbush blueberry). The wetland system appears to receive its primary inflow via groundwater and the flooding from the abutting stream channel.

Hydrology/Groundwater

Groundwater conditions at Alternate Site 2 are similar to those described for the Preferred Site because both lie in the crystalline-rock aquifers that underlie the Western Uplands-Southwest Hills physiographic zone. The bedrock aquifers yield adequate water supply for domestic use (CT DEP, 2010b). Based on topography, groundwater on the Property likely flows to the southwest and southeast. However, localized conditions can alter flow direction; therefore, the actual groundwater flow may not coincide with the topography.

According to CT DEP APA maps, Alternate Site 2 is not located within a CTDEP APA (CT DEP, 2010e).

No domestic, public, industrial, or monitoring wells are installed on the property. EDR conducted a search of available environmental records and did not locate any water wells within a one-mile radius of Alternate Site 2; therefore, the depth to groundwater information was not readily available.

Floodplains

FEMA Flood Insurance Rate Map Panel number 0900800005B indicates that Alternate Site 2 is not located within a 100- or 500-year floodplain (FEMA, 2010b).

Coastal Zone

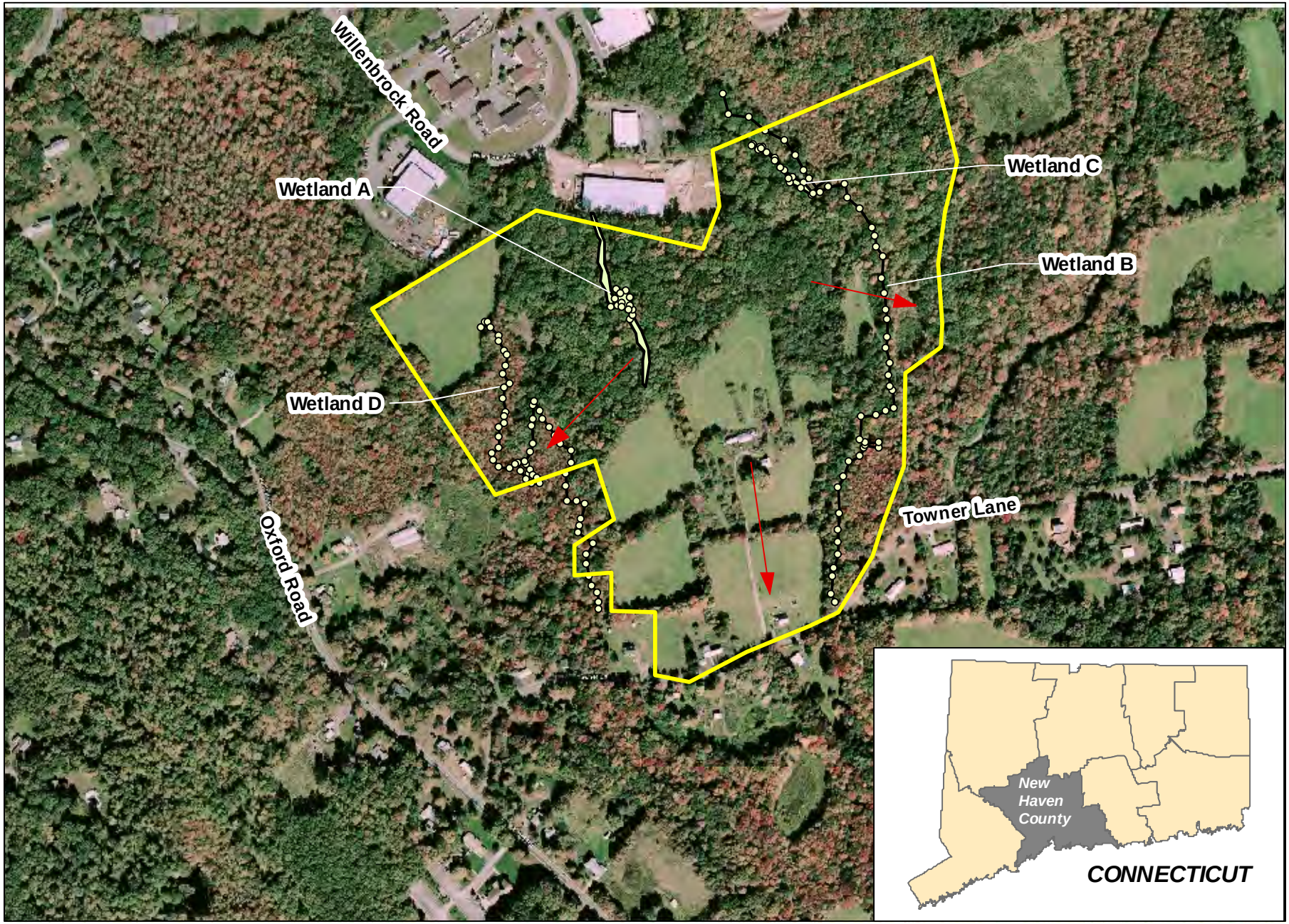
Alternate Site 2 is not located within a coastal zone (CT DEP, 2010d).

4.8.1.3 Alternative 3-Oxford, CT

Surface Water, Stormwater, and Wetlands

Alternate Site 3 is adjacent to unnamed streams on the east and west sides of the site that drain to Swan Lake. The unnamed streams are, at their closest points, approximately 125 feet to the east and 130 feet to the west. Swan Lake is approximately 4 miles to the south southeast of Alternate Site 3. Nearby hydrological features include Paper Mill Pond, located approximately 4,000 feet west of the site. Stormwater on Alternate Site 3 flows via sheet flow from the north central portions of the site to the east and west. There are no lakes or ponds on Alternate Site 3 (Figure 4-3).

Epsilon Associates completed a wetland delineation at Alternate Site 3 on May 12, 2010. Four wetland areas were identified within Alternate Site 3 (Figure 4-3; Epsilon, 2010). Wetland A is associated with an intermittent water course towards the northern half of Alternate Site 3 (Figure 4-3). The system is primarily forested and is approximately 670 feet in length with a surface area of approximately 0.46 acre. The intermittent water course has an observable OHWM, originates from a pipe, and flows into Wetland A. The pipe appears to convey stormwater runoff from the roof of an adjacent offsite warehouse. However, the



Approximate Site Boundary
Wetland Flag
Wetland Area
Stormwater Flow Direction

0 250 500
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 4-3
Wetlands for Alternate Site 3 - 29 Towner Lane, Oxford, New Haven County, CT
USACE AFRC, Newtown, CT

CH2MHILL

source of hydrology could not be confirmed at the time of delineation. Based on the substantial volume of water that was observed exiting the pipe and flowing into Wetland A, it is likely that there is some groundwater discharge input as well. The OHWM of the water course varies in width but is generally 15 feet to 30 feet wide. The water course is composed primarily of large stones and cobbles. Wetland A is located approximately 300 feet down gradient of the pipe and is approximately 5,500 square feet in surface area.

Wetland B exists along the eastern edge of Alternate Site 3 (Figure 4-3; Epsilon, 2010). Approximately 2,000 feet of Wetland B extends within Alternate Site 3. It has a primarily PFO cover type (red maple swamp). There is an abrupt transition from wetland to upland along a steeply sloped area. Wetland B abuts a well defined approximately 10- to 15-foot wide stream and adjoining floodplain. The stream is tributary to the Little River located to the east of the Study Area. The tributary and the Little River flow through a large culvert and headwall beneath Towner Lane and into a down gradient PFO. The banks of the tributary are approximately 2 to 3 feet in height with some undercutting from scouring. The tributary has a silty and cobble bottom with sand and gravel in the voids. Because of its location in the floodplain, Wetland B is generally flat with limited micro-topography. The wetland system appears to receive its hydrology via groundwater and from flooding of the abutting tributary and river system.

Wetland C is a PEM wetland that lies along the northern edge of Alternate Site 3 (Figure 4-3; Epsilon, 2010). It is located along a maintained path and is hydrologically connected to Wetland B via approximately 50 feet of overland sheet-flow. It has a surface area of approximately 4,900 square feet. Because of its location in the path, Wetland C is generally flat with limited micro-topography. The wetland system appears to receive its hydrology via groundwater flow.

Wetland D is a PFO wetland that lies along the western half of Alternate Site 3 (Figure 4-3; Epsilon, 2010). Approximately 1,200 linear feet of Wetland D extends into Alternate Site 3. The wetland system appears to receive its hydrology via groundwater flow. There was no apparent surface water body observed at the time of inspection; however, a PFO wetland on the south side of Towner Lane is likely hydrologically connected with Wetland D via a culvert.

Hydrology/Groundwater

Groundwater conditions at Alternate Site 3 are similar to those described for the Preferred Site and Alternate Site 2 because of the underlying crystalline-rock aquifer in the Western Uplands-Southwest Hills physiographic zone. The bedrock aquifers yield adequate water supply for domestic use (CT DEP, 2010b).Based on topography, groundwater on the Property likely flows to the southwest and southeast. However, localized conditions can alter flow direction; therefore, the actual groundwater flow may not coincide with the topography.

According to CT DEP APA maps, Alternate Site 3 is not located within a CTDEP APA (CT DEP, 2010e).

No domestic, public, industrial, or monitoring wells are installed on the property. EDR conducted a search of available environmental records and did not locate any water wells

within a one-mile radius of Alternate Site 3; therefore, the depth to groundwater information was not readily available.

Floodplains

FEMA Flood Insurance Rate Map Panel number 0901500003B indicates that the majority of Alternate Site 3 is located within Zone C, an area of minimal flooding. Low areas on the far eastern and western portions of the site are located within Zone B (areas between the 100- and 500-year floodplain) and low areas on the far eastern side of the site are located in Zone A (within the 100-year floodplain (FEMA, 2010c).

Coastal Zone

Alternate Site 3 is not located within a coastal zone (CT DEP, 2010d).

4.8.2 Consequences

4.8.2.1 Section 404 Permitting Process

CTDEP and USACE have established a Programmatic General Permit (PGP) for Connecticut. The PGP establishes two categories of eligibility based on the size of impact on wetlands which meet the federal wetland definition. Category 1 generally covers projects with direct and secondary impacts to federally jurisdictional wetlands of less than 5,000 square feet. Projects that fall within Category 1 are deemed to have minimal impact on aquatic resources and do not require notice to the USACE provided that the project has received a permit under the Connecticut Inland Wetlands and Watercourses Act, Connecticut General Stat. § 22a-36 *et seq*. Category 2 requires an application to the USACE and the DEP, interagency screening, and written authorization from the USACE. Category 2 is limited to projects with direct and secondary impact to USACE-regulated resources between 5,000 square feet and one acre. Individual Permits are required for projects that exceed specified impact thresholds and are not covered by the PGP. The USACE and federal resource agencies also have discretion to require an Individual Permit for projects otherwise falling into Categories I and II if they believe that the project will result in more than minimal adverse impact.

The City of Danbury Environmental Impact Commission regulates activities in upland review areas. Upland review areas include certain specified activities located within 100 feet of the outer boundary of a wetland, within 200 feet of the mean high water line of certain lakes and rivers, and within 100 feet of the mean high water line of any other watercourse. Specified activities include, but are not limited to, excavating, filling or stockpiling more than 5,000 ft^2 of earth materials and clear cutting or grubbing of land (unless otherwise permitted as-of-right as explained in the regulations). During review of an application, the inland wetlands agencies may consider the characteristics of upland review areas, such as the presence of steep slopes that may increase the potential for adverse impacts on wetlands and watercourses. Conditions may include limitations on the scope and location of work in the upland review area as necessary to avoid alteration of wetlands and watercourses. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the wetland and watercourse and/or other measures commensurate with the scope and location of the work relative to the wetlands (Epsilon, 2010).

4.8.2.2 Preferred Alternative-Danbury, CT

Site grading and preparation would result in exposed soils that would be subject to erosion which could result in increased sediment transport to offsite receiving waters. A Stormwater and Dewatering Wastewaters from Construction Activities general construction permit (DEP-PERD-GP-015), required for land disturbances greater than one or more total acres of land area, would be obtained from CT DEP in accordance with the National Pollutant Discharge Elimination System, prior to construction (CT DEP, 2010f). The USAR would adhere to the erosion and sediment control land use regulations of Danbury. A soil erosion and sedimentation control plan would be developed during design of the AFRC and submitted to the City of Danbury.

The USAR also would develop a Stormwater Pollution Control Plan, as required for authorization of the CT DEP general permit, which includes a description of appropriate controls and measures that will be performed at the site to prevent pollution of the waters of the state including use of perimeter controls; preservation of existing vegetation to the extent practicable; stabilization practices such as the use of silt fences, temporary and permanent seeding, mulching, geotextiles, vegetative buffer strips, protection of trees, preservation of mature trees; and structural practices to limit runoff and discharge of pollutants from the site such as earth dikes, drainage swales, storm inlet protection, outlet protection, and sediment basins (CT DEP, 2010f). Specific BMPs and control measures would be at the discretion of the construction contractor, however, the contractor would be required to comply with the state and local requirements in selecting which measures to implement.

The addition of paved, impermeable surfaces to the site would likely increase the volume of stormwater runoff from the property, and reduce infiltration to shallow groundwater. Post-construction stormwater controls, including retention basins, would be included in the facility design and implemented to minimize the potential for exceeding the capacity of drainage ditches and other conveyance channels along Lee Farm Road and Wooster Heights Road and to ensure that the post construction runoff rate does not exceed the pre-construction runoff rate. In addition, retention basin outlets would have stormwater treatment units that include sedimentation and floatable controls to ensure that post development annual pollution loadings do not exceed pre-development loadings, and would be designed to avoid downstream erosion.

The facility would connect to water and sanitary sewer provided by the City of Danbury. All interior drains would drain to a sanitary collection system and ultimately all interior waste waters would be treated by the municipality. Prior to release into the municipal system, water from vehicle service areas will be intercepted by an oil/water separator. The oil/water separator will collect spills that may occur while routine vehicle maintenance is being performed.

The post-construction stormwater controls would ensure compliance with Section 438 of the Energy Independence and Security Act of 2007, which requires that projects "involving a federal facility with a footprint that exceeds 5,000 ft^2 shall use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow." The DoD Unified Facilities

Criteria on Low Impact Development (LID) (UFC 3-210-10) mandates stormwater management to maintain hydrologic functions of a site and mitigate the potential adverse impacts of stormwater runoff. The facility design will include green infrastructure and LID features to comply with these requirements such as reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs. In addition, the post-construction stormwater controls will be designed to comply with the 2004 CT DEP Stormwater Quality Manual.

The Preferred Alternative would not have direct impacts to wetlands because the site will be designed to avoid the wetlands that occur on the property. In addition, the USAR will not construct within 50 feet of the wetlands and streams at the site. Indirect impacts to wetlands from increased stormwater runoff would be minimized through the establishment of this buffer area and implementation of the stormwater BMPs discussed above. A Programmatic General Permit would not be required because wetlands would not be impacted.

As indicated by FEMA Flood Insurance Rate Map number 0900040010B, the project area is not located within a 100- or 500-year floodplain (FEMA, 2010a); therefore, there would be no potential for impacts to floodplains under the Preferred Alternative. The Preferred Site is not within a Coastal Zone. There would be no potential for impacts to coastal resources.

Development, as proposed, on the Preferred Site would not result in cumulative impacts to wetlands because it would have no impacts to wetlands. Impacts to surface water and groundwater from the Preferred Alternative could add incrementally to similar impacts from the various residential, commercial, and industrial projects in the vicinity. Increased development in the area would add to the potential for soil erosion and related sedimentation of surrounding surface water and for the potential for spills to impact receiving surface water and groundwater. However, cumulative effects are not anticipated to be significant because of the use of BMPs to minimize impacts to these resources.

4.8.2.3 Alternative 2-Middlebury, CT

The impacts of Alternative 2 would be similar to those of the Preferred Alternative. Construction and post-construction stormwater controls would be similar to those described for the Preferred Alternative. Impacts would be minimized by adherence to requirements of the Stormwater and Dewatering Wastewaters from Construction Activities general construction permit, the soil erosion and sedimentation control plan which would be developed during design of the AFRC and submitted to the Town of Middlebury, the Stormwater Pollution Control Plan, and by following requirements of the 2004 CT DEP Stormwater Quality Manual.

Alternative 2 would not have direct impacts to wetlands because the site will be designed to avoid the three wetlands that occur on the property. In addition, the USAR will not construct within 50 feet of the wetlands and streams at the site. Indirect impacts to wetlands from increased stormwater runoff would be minimized through the establishment of this buffer area and implementation of the stormwater BMPs discussed above. A Programmatic General Permit would not be required because wetlands would not be impacted.

There would not be impacts to floodplains because floodplains are not located on Alternate Site 2. The Alternative 2 site is not within a Coastal Zone. There would be no potential for impacts to coastal resources.

The potential for cumulative impacts would be similar to that described for the Preferred Alternative. Any cumulative effects are not anticipated to be significant because of the use of BMPs to minimize impacts to these resources.

4.8.2.4 Alternative 3-Oxford, CT

The impacts of Alternative 3 would be similar to those of the Preferred Alternative and Alternative 2. Construction and post-construction stormwater controls would be similar to those described for the Preferred Alternative. Impacts would be minimized by adherence to requirements of the Stormwater and Dewatering Wastewaters from Construction Activities general construction permit, the soil erosion and sedimentation control plan which would be developed during design of the AFRC and submitted to the Town of Oxford, the Stormwater Pollution Control Plan, and by following requirements of the 2004 CT DEP Stormwater Quality Manual. The Town of Oxford will also require a submittal of a Stormwater Management Plan.

Alternative 3 would not have direct impacts to wetlands because the site will be designed to avoid the four wetlands identified on the property. In addition, the USAR will not construct within 50 feet of the wetlands and streams at the site. Indirect impacts to wetlands from increased stormwater runoff would be minimized through the establishment of this buffer area and implementation of the stormwater BMPs discussed above. A Programmatic General Permit would not be required because wetlands would not be impacted. The Alternative 3 site is not within a Coastal Zone. There would be no potential for impacts to coastal resources.

The potential for cumulative impacts would be similar to that described for the Preferred Alternative. Any cumulative effects are not anticipated to be significant because of the use of BMPs to minimize impacts to these resources.

4.8.2.5 No Action Alternative

Under the no action alternative, none of the proposed construction activities would occur, and there would be no impacts to water resources, floodplains, or coastal resources.

4.9 Biological Resources

4.9.1 Affected Environment

4.9.1.1 Preferred Alternative-Danbury, CT

Site visits of the Preferred Site were conducted on December 14, 2009 and on May 11, 12, and 13, 2010. Most of the ground was covered with one to two inches of snow during the December site visit.

Vegetation

Parcel A of the Preferred Site consists of open grassy fields in the north northeastern corner, south southeastern corner, and western boundary of the property. Scattered pockets of trees are located in the grassy field in the south southeastern corner, and a wooded rectangular shaped area is located in the center of the property. Vegetation within the open grassy fields consisted of pasture grasses such as fescue (*Festuca* spp). At the time of the site

investigation, the grass had been recently mowed and the area appears to be used for hay production. Vegetation within the wooded areas consisted of northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), flowering dogwood (*Cornus florida*), blackhaw (*Viburnum prunifolium*), tulip poplar (*Liriodendron tulipifera*), green ash (*Fraxinus pennsylvanica*), multiflora rose (*Rosa multiflora*), roundleaf greenbrier (*Smilax rotundifolia*), sugar maple (*Acer saccharum*), American hornbeam (*Carpinus caroliniana*), paper birch (*Betula papyrifera)*, and red maple (*Acer rubrum*).

Parcel B consists of an open grassy field with a row of landscaped trees on the northern and eastern border and autumn olive (*Elaeagnus umbellate*) shrubs and quaking aspen (*Populus tremuloides*) trees on the western edge of the site.

Parcel C consists of an open grassy field surrounded by wooded areas on the east and west, and a stream and associated wetlands on the south. A small area of cattails (*Typha latifolia*) is located in the wetland in the southeast corner of Parcel C.

Wildlife

Wildlife species that could use open field habitats similar to those at the Preferred Site include white-tailed deer (*Odocoileus virginianus*), rodents, reptiles, insects, and various species of migratory birds. The wooded areas could support species such as white-tailed deer, Eastern gray squirrel (*Sciurus carolinensis*), North American opossum (*Didelphis virginiana),* raccoon *(Procyon lotor*), birds, reptiles, and amphibians. No wildlife was observed during the site visit on December 14, 2009. Eastern wild turkey (*Meleagris gallopavo*) and white-tailed deer were observed during the May 2010 site visit.

The Migratory Bird Treaty Act (MBTA) regulates or prohibits the taking, killing, possession of, or harm to migratory bird species listed in 50 CFR Part 10.13. Connecticut is located within the Atlantic migratory bird flyway and the project area may be used by migrants during spring and fall. It is likely that migratory birds would use the wooded or grassy areas for foraging and/or nesting. The nesting season in the northeast for migratory birds is from April 15 to August 15 (USFWS, 2010).

Threatened and Endangered Species

The USFWS Northeast Region provides information regarding federal listed threatened and endangered species through the USFWS Endangered Species System website (USFWS, 2009). The CT DEP has compiled information regarding federal and state listed threatened and endangered species in Connecticut and is available for review through the online CT DEP Natural Diversity Data Base (NDDB; CT DEP, 2009a). The USFWS Endangered Species System and the CT DEP NDDB internet databases were reviewed prior to the site visit to determine if federal- or state-listed endangered, threatened, or candidate species are likely to occur in the project area.

The bog turtle (*Clemmys muhlenbergii*) is the only federally-listed wildlife species listed by the USFWS Endangered Species System website as having potential to occur on the Preferred Site. Bog turtle habitat consists of calcareous (containing calcium carbonate, calcium or lime) wetlands such as open sphagnum bogs, wet meadows, and wet pastures (CT DEP, 2010g). Soils at the Preferred Site consist of fine sandy loams that are not derived from calcareous bedrock and are unlikely to be suitable for the species. There are wetlands

on the Preferred Site, which could provide marginal bog turtle habitat. No threatened or endangered species were observed during the site visit on December 14, 2009.

The USAR sent early coordination letters to the USFWS requesting information regarding the known presence of any federally-listed threatened and endangered (T&E) species in the vicinity of the Preferred Site, and any designated critical habitat for T&E species (Appendix A). The USFWS response letter indicted that "no federally-listed or proposed, threatened or endangered or threatened species or critical habitat under the jurisdiction of the USFWS are known to occur in the project areas" (Appendix A).

The CT DEP NDDB maps show the approximate locations of endangered, threatened, and special concern species and significant natural communities in Connecticut. The NDDB map was reviewed and did not show any locations of endangered, threatened, and special concern species and significant natural communities within the vicinity of the Preferred Site (CT DEP, 2009a). No species or natural communities tracked by the CT DEP NDDB were observed during the December 2009 or May 2010 site visits. The USAR sent a Connecticut NDDB Review Request Form to the CT DEP to confirm that there are not any known state-listed T&E species or designated critical habitat located in the vicinity of the Preferred Site (Appendix A). The CT DEP response letter dated May 28, 2010 indicated that the state endangered bog turtle historically occurred in the vicinity of the Preferred Site.

4.9.1.2 Alternative 2-Middlebury, CT

An investigation of Alternate Site 2 was conducted on December 15, 2009 and on May 12, 2010. Most of the ground was covered with one to two inches of snow during the December site visit.

Vegetation

Alternate Site 2 is wooded with areas of dense underbrush. Woody vegetation within the wooded areas consisted of northern red oak, sugar maple, paper birch, red maple, shagbark hickory (*Carya ovata*), American bittersweet (*Celastrus scandens*), American witchhazel (*Hamamelis virginiana*), Eastern hemlock (*Tsuga canadensis*), and yellow birch (*Betula alleghaniensis*).

Wildlife

The wooded areas could support species such as white-tailed deer, Eastern gray squirrel, North American opossum, raccoon, birds, reptiles, and amphibians. No wildlife was observed during the December or May site visits.

The MBTA regulates or prohibits the taking, killing, possession of, or harm to migratory bird species listed in 50 CFR Section 10.13. Connecticut is located within the Atlantic migratory bird flyway and the project area may be used by migrants during spring and fall. It is possible that migratory birds would use the wooded area or the grasses on the remainder of the site for foraging and nesting. The nesting season in the northeast for migratory birds is from April 15 to August 15 (USFWS, 2010).

Threatened and Endangered Species

The USFWS Endangered Species System and the CT DEP NDDB internet databases (USFWS, 2009; CT DEP, 2009c) were reviewed prior to the site visit to determine if any federally- or state-listed endangered, threatened, or candidate species are likely to occur in

the project area. No federally-listed species were identified as occurring in the Town of Middlebury; therefore, the USAR sent a "no further coordination letter" to the USFWS regarding Alternate Site 2. The USFWS response letter indicated that "no federally-listed or proposed, threatened or endangered or threatened species or critical habitat under the jurisdiction of the USFWS are known to occur in the project areas" (Appendix A). No threatened or endangered species were identified during the site visits.

The NDDB map was reviewed and an area containing state-listed species and natural communities is located along the western boundary of Alternate Site 2 (CT DEP, 2009b). The USAR sent a Connecticut NDDB Review Request Form to the CT DEP requesting information regarding the known presence of any state-listed T&E species and any designated critical habitat for T&E species on or in the vicinity of Alternate Site 2 (Appendix A). The CT DEP response letter dated May 28, 2010 indicated that there are no known extant populations of federal or state endangered, threatened, or special concern species on Alternate Site 2 (Appendix A). No species or natural communities tracked by the CT DEP NDDB were observed during the December 2009 or May 2010 site visits.

4.9.1.3 Alternative 3-Oxford, CT

An investigation of Alternate Site 3 was conducted on December 14, 2009 and on May 12 and 13, 2010. Most of the ground was covered with one to two inches of snow during the site visit; however, there were patches of ground without snow.

Vegetation

Alternate Site 3 consists of large grassy fields separated by stone walls and wooded hedgerows on the southern portions of the parcel and woods on the northern portion of the site. Vegetation within the grassy fields consisted of pasture grasses such as fescue (*Festuca* spp). The grass had been recently mowed. The hedgerows consisted of invasive winged euonymus (*Euonymus alata*), and blackhaw. Vegetation within the wooded areas consisted of northern red oak, pin oak (*Quercus palustris*), sugar maple, red maple, shagbark hickory, American bittersweet, and black cherry (*Prunus serotina*).

Wildlife

Wildlife species observed during the December site visit included blue jay (*Cyanocitta cristata*) and mourning dove (*Zenaida macroura*) within the hedgerows. White-tailed deer tracks were noted within the wooded area and hedgerows. In May, a spring peeper (*Pseudacris crucifer*) was observed in the wetland in the northern portion of the site, a red-tailed hawk (*Buteo jamaicensis*) was observed flying over the site, and a small gray treefrog (*Hyla versicolor*) was observed on a tree in the westernmost wetland.

The MBTA protects nesting migratory birds from direct impacts from federal actions. Connecticut is located within the Atlantic migratory bird flyway and the project area may be used by migrants during spring and fall. It is possible that migratory birds would use the wooded area or the grasses on the remainder of the site for foraging and nesting. The nesting season in the northeast for migratory birds is from April 15 to August 15 (USFWS, 2010).

Sensitive Species

The USFWS Endangered Species System and the CT DEP NDDB internet databases (USFWS, 2009; CT DEP, 2009d) were reviewed prior to the site visit to determine if any

federal-or state-listed endangered, threatened, or candidate species are likely to occur in the project area. No federally-listed wildlife species were identified as occurring in the Town of Oxford; therefore, the USAR sent a "no further coordination letter" to the USFWS regarding Alternate Site 3 (Appendix A). The USFWS response letter indicted that "no federally-listed or proposed, threatened or endangered or threatened species or critical habitat under the jurisdiction of the USFWS are known to occur in the project areas" (Appendix A). No threatened or endangered species were identified during the site visit on December 14, 2009.

The NDDB map was reviewed and Alternate Site 3 is located one-half mile upstream of an area containing state-listed species and natural communities (CT DEP, 2009b). The USAR sent a Connecticut NDDB Review Request Form to the CT DEP requesting information regarding the known presence of any state-listed T&E species and designated critical habitat on or in the vicinity of Alternate Site 3 (Appendix A). The CT DEP response letter indicated that the NDDB indicated that the state threatened American kestrel (*Falco sparverius*) occurred historically in the vicinity of Alternate Site 3 (Appendix A). No species or natural communities tracked by the CT DEP NDDB were observed during the December 2009 or May 2010 site visits.

4.9.2 Consequences

4.9.2.1 Preferred Alternative-Danbury, CT

The Preferred Alternative would have minor impacts on vegetation and wildlife because unique habitat is not present on the site and the site does not provide suitable habitat for large populations of wildlife. Approximately 1.6 acres of trees and 10.4 acres of open field would be developed on Parcel A to support construction of the proposed AFRC training center and privately owned vehicle parking. Approximately 2.4 acres of trees and 15.6 acres of open field would be developed on Parcel C to support construction of the vehicle maintenance facility and military equipment parking. No construction would occur on Parcel B. Open field habitat on Parcels A and C consist of areas that are currently used for hay production and are routinely disturbed during mowing of the hay. Implementation of the Preferred Alternative would result in permanent conversion of open field habitat and forest habitat to a developed area. This would result in displacement of mobile species and the potential incidental loss of individuals of less mobile species.

The Preferred Alternative would not adversely impact the federally-threatened or state endangered bog turtle because wetlands or streams would not be disturbed during construction and construction activities would not occur within 50 feet of wetlands or streams. In addition, the USFWS stated in a letter dated May 19, 2010 that no federally known endangered species or critical habitat under the jurisdiction of the USFWS are known to occur in the project area and that further consultation would not be required (Appendix A). The CT DEP response letter dated June 7, 2010, indicated that the DEP Wildlife Division does not believe that the project will impact historic bog turtle areas (Appendix A). No other federal- or state-listed plant or animal species are known to occur within the Preferred Site; therefore, no impacts to such species are anticipated.

The Preferred Alternative would not impact nesting migratory birds that are protected under the MBTA because areas that contain nesting birds would not be cleared until the young have vacated the nests. The USFWS recommends that nesting habitat not be cleared

from April 15 to August 15 (USFWS, 2010). The CT DEP recommends that grassland and forested habitat not be cleared from late May through the end of July to protect grassland and forest dwelling bird species during the nesting season (CT DEP, 2010h). The Army would conduct a preconstruction survey for nesting birds prior to clearing vegetation. If nesting migratory birds are found, these areas would not be disturbed until the young have naturally vacated the nest.

Impacts to natural and biological resources from the Preferred Alternative would add incrementally to similar impacts from the various residential, commercial, and industrial projects in the vicinity. Increased development in the area further reduces natural vegetation and habitat for wildlife. The area surrounding the Preferred Site is already heavily disturbed and developed; therefore, the cumulative effects are not expected to be significant. The Preferred Alternative is not expected to impact federal- or state-listed species, so cumulative impacts to these resources are not anticipated.

4.9.2.2 Alternative 2-Middlebury, CT

Alternative 2 would result in the permanent conversion of approximately 25 acres of woods to a developed area. This would result in displacement of mobile species and the potential incidental loss of individuals of less mobile species. Although approximately 25 acres of woods will be permanently removed, the land surrounding Alternate Site 2 provides similar wooded habitat, which is a common habitat in the area. Mobile species would be able to utilize the surrounding woods.

No federally-listed plant or animal species or communities are known to occur within Alternate Site 2; therefore, no impacts to such species are anticipated. This was confirmed by the CT DEP response letter dated May 28, 2010 indicating that there are no known extant populations of federal or state endangered, threatened, or special concern species on Alternate Site 2 (Appendix A). Impacts to migratory birds would be avoided by not clearing areas that contain nesting birds until the young have vacated the nests.

Impacts to natural and biological resources from Alternative 2 would add incrementally to similar impacts from the various residential and commercial projects in the vicinity. Increased development in the area further reduces natural vegetation and habitat for wildlife. Alternative 2 is not expected to impact federal- or state-listed species, so cumulative impacts to these resources are not anticipated.

4.9.2.3 Alternative 3-Oxford, CT

Alternative 3 would result in the permanent conversion of open grassy fields to a developed area. This would result in displacement of mobile species and the potential incidental loss of individuals of less mobile species.

No federally-listed plant or animal species or communities are known to occur within Alternate Site 3; therefore, no impacts to such species are anticipated. Alternate Site 3 was identified by the CT Wildlife Division in a letter dated May 28, 2010 as being an area in which the American kestrel occurred historically (Appendix A). If Alternate Site 3 is selected for construction, additional coordination with the CT DEP would be conducted and additional surveys for the American kestrel by a qualified ornithologist, as recommended by the CT DEP Wildlife Division in the May 28, 2010 letter, would be conducted prior to the

start of construction activities to determine if the American kestrel nests on the site. In addition, the Army would not clear vegetation during the nesting season of the American kestrel if surveys determined that nests are located on Alternate Site 3. Impacts to migratory birds would be avoided by not clearing areas that contain nesting birds until the young have vacated the nests.

Impacts to natural and biological resources from Alternative 3 would add incrementally to similar impacts from the various residential and commercial projects in the vicinity. Increased development in the area further reduces natural vegetation and habitat for wildlife. The area surrounding Alternate Site 3 is mostly developed with residential homes and an industrial area; therefore, impacts would be less than if the site was surrounded by undeveloped areas. Alternative 3 is not expected to impact federal- or state-listed species listed species.

4.9.2.4 No Action Alternative

Under the no action alternative, new construction activities would not occur as a result of the Proposed Action and there would be no impacts to biological resources.

4.10 Cultural Resources

Cultural resources include historic and prehistoric sites of interest and may include structures, archaeological sites, or religious sites of importance to Native American cultures. Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consult with the State Historic Preservation Officer (SHPO) and interested tribes to identify potential significant cultural resources.

Within this section, the terms "significant" and "significance" are used in the context of the NEPA and the NHPA. When referring to structures, objects, or artifacts, the terms are used as defined in 36 CFR Part 800 for the NHPA. When referring to impacts, the terms are applied relative to their meaning under the NEPA.

Regulations implementing Section 106 of the NHPA, 36 CFR Part 800.8, encourage the coordination of two processes: (1) the review of possible impacts to the environment under NEPA and (2) the assessment of effects of undertakings required under the NHPA.

The Area of Potential Effect (APE) for purposes of compliance with Section 106 of the NHPA includes the immediate vicinity of the proposed construction, where direct effects of the construction might affect historic properties. The APE also includes adjacent areas where the setting of existing historic structures may be compromised as a result of construction. Additionally, there could be long-term indirect visual impacts to cultural or archeological resources resulting from increased human use of an area following implementation of the project.

Cultural resources are defined in Army Regulation 200-1, Environmental Protection and Enhancement, Headquarters, Department of the Army, as:

- Historic Properties, protected through the NHPA
- Archaeological Resources, protected through the Archaeological Resources Protection Act

- Cultural Items, as defined by the Native American Graves Protection and Repatriation Act
- Sacred Sites, as referenced in the American Indian Religious Freedom Act and Executive Order 13007
- Significant paleontological items as described by 16 USC 431-433 (Antiquities Act of 1906)
- Collections of artifacts and records pertaining to them as directed in 36 CFR Part 79

An early coordination letter was sent to the SHPO on May 18, 2010 to describe the proposed project, to inform the SHPO that cultural resource surveys would be conducted at the three proposed sites, and to inform SHPO that a report would be submitted for their review. On June 30, 2010, the SHPO responded and recommended that the Army complete professional archaeological reconnaissance surveys of the Preferred Site, Alternate Site 2, and Alternate Site 3. Copies of these letters and responses received to date are provided in Appendix A. A Phase I Cultural Resources Survey was completed for the Preferred Site, Alternate Site 2, and Alternate Site 3 and submitted to SHPO on August 16, 2010. Section 106 consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

Early coordination letters requesting information about traditional cultural properties or sites of particular interest were sent to Native American organizations that may have interest in the project areas on May 18, 2010. A list of Native American organizations contacted during this process is provided in Section 7. The Mashantucket Pequot Tribe responded on May 27, 2010 to request a copy of the Final EA and to request that a Phase I Archaeological Survey be conducted on the properties. Copies of these letters and responses received to date are provided in Appendix A.

4.10.1 Affected Environment

4.10.1.1 Preferred Alternative-Danbury, CT

Brockington and Associates, Inc. completed a Phase I cultural resources survey at the Preferred Site between May 18, 2010 and May 27, 2010. The survey included an archive and literature search, a cultural resources reconnaissance and archaeological shovel testing survey of all three sites. The archaeological APE encompasses the Preferred Site. The architectural resources APE is defined as the entire Preferred Site and the immediate viewshed. The architectural survey consisted of both background research and vehicular reconnaissance. The purpose of the vehicular reconnaissance was to identify and record all architectural resources within the APE meeting or exceeding 50 years of age which might be eligible for the NRHP.

Archaeological Resources

Archival research conducted at the Connecticut State Museum of Natural History and Archaeology (CSMNHA) Center showed the Preferred Site does not contain previously recorded archaeological resources. In addition, no archaeological sites are located within one mile of the Preferred Site. Given the location of the Preferred Site generally within undeveloped uplands above small drainages, the survey area was considered to have a moderate probability for prehistoric cultural resources. Further, given the historic

farmsteads in and around the Preferred Site, it was assumed that the project area had a high probability for historic resources.

At the Preferred Site soil profiles generally revealed an approximately 30-centimeter (cm) sandy loam plow zone overlying yellowish brown sandy loam subsoils. Disturbed soils profiles displayed an unconsolidated mix of plow zone and subsoil overlying a truncated subsoil horizon.

Nine-hundred forty-seven shovel tests were conducted at the Preferred Site during the Phase I cultural resources survey conducted in May 2010. Several historic artifact scatters were identified throughout the Preferred Site. No prehistoric artifacts were identified during the survey. At each artifact find spot, additional shovel tests were excavated at 7.5 meter intervals in four directions to establish boundaries of the artifact scatter. All of the historic artifact scatters are considered, isolated finds, ineligible for the NRHP:

- PSA-1 is comprised of three cut nail fragments found along the wooded strip east of Lee Farm Road.
- PSA-3 is a single sherd of blue transfer printed whiteware, and some brick fragments 60 meters (m) south of PSA-1.
- PSA-4 is comprised of two undecorated whiteware fragments found in the field along Wooster Heights Road.
- PSA-5 is a small artifact scatter, containing mostly whiteware fragments found just east of the bank barn in the southern end of the parcel.
- PSA-6 is a single brick from a shovel test in the field south of Park Avenue.

In addition, PSA-2 is a series of stone foundations found in the southern edge of the parcel along Wooster Heights Road. The partial foundations indicate two or three small structures including a cellar hole that has been backfilled with field stone. This location is identified as "ruins" on recent tax maps. Artifacts from shovel tests around the foundations included transfer printed whiteware from several different colored vessels, as well as iron stoneware, glazed and unglazed brick fragments and machine-made bottle glass and wire nails. The artifacts suggest the site was occupied from the nineteenth century and demolished sometime in the twentieth century. However, sites of this type are common throughout the region and the incompleteness of the foundations and scant artifact assemblage suggests the site has been impacted during modern reconfiguration of the area between Wooster Heights Road and Park Avenue. While this site will be registered with the Connecticut Archaeological Site File at CSMNH, it is recommended ineligible for the NRHP.

No artifacts were found in Parcel B of the Preferred Site. Three isolated artifact finds were found in Parcel C, which are ineligible for the NRHP:

- PSC-1 is a single iron stoneware fragment from a disturbed soil context.
- PSC-2 is comprised of an iron stoneware and a milk glass fragment located in the southeast corner of the field.
- PSC-3 is a single fragment of modern, machine-made bottle glass.

Architectural Resources

Background research revealed there were no previously recorded historic resources within the APE of the Preferred Site. Two architectural surveys by the Danbury Preservation Trust in 1980 and 1981 focused on downtown and did not extend to the Preferred Site. The vehicular reconnaissance identified five previously unrecorded resources within the project APE at the Preferred or Preferred Site; these resources include Resource CT-001-001(Folk Victorian), CT-001-002 (Bank Barn), CT-001-003 (Side-Gable Cottage), CT-001-004 (Pyramidal Roof House), and CT-001-005 (Colonial Revival). Of these five newly recorded resources, one resource (CT-001-005) may be individually eligible for the NRHP under Criterion C-architecture.

4.10.1.2 Alternative 2-Middlebury, CT

Brockington and Associates, Inc. completed a Phase I cultural resources survey at Alternate Site 2 between May 18, 2010 and May 27, 2010. The survey included an archive and literature search, a cultural resources reconnaissance and archaeological shovel testing survey. The archaeological APE encompasses Alternate Site 2. The architectural resources APE is defined as Alternate Site 2 and the immediate viewshed.

Archaeological Resources

Archival research conducted at the CSMNHA Center showed Alternate Site 2 does not contain previously recorded archaeological resources. Background research indicates that eight archaeological sites are within one mile of Alternate Site 2. Of note, the Mobil Station Site (81-5) is plotted just outside the eastern boundary of the site, along the edge of the Kissawaug Swamp. However, this site may be misplotted as the Mobil Station referenced on the site form is approximately one mile further south on CT 188. The site appears to be an amateur surface collection of several Archaic or Early Woodland projectile points by the "Dingle Family" in 1975. A survey of the AMS Manufacturing Plant, south of CT 188 also documented a Late Archaic lithic scatter along the edge of this swamp. These sites are of unknown NRHP-eligibility.

Several prehistoric lithic sites are clustered along Long Meadow Road, approximately one mile northeast of Alternate Site 2. Site 81-004 represents a second Dingle Family collection of Archaic and Woodland material. Site 81-12 is a Late Archaic lithic scatter recorded by American Cultural Specialists in 2003; it was recommended ineligible for the NRHP. Three more sites, 81-14 (Late Archaic), 81-15 (Late Archaic-Late Woodland), and 81-16 (General Prehistoric), were all identified by Archaeological Consulting Services in 2002 in a survey of the Middlebury Golf Community. Sites 81-14 and 81-15 also contained possible hearth features; however no recommendations of NRHP-eligibility were made. Site 81-20, about 1 mile east of Alternate Site 2, was also identified in the survey as a nineteenth century stone farmhouse foundation.

The location of Alternate Site 2 is generally within undeveloped uplands above small drainages, therefore; the survey area was considered to have a moderate probability for prehistoric cultural resources. Further, given the historic farmsteads in and around the site, it was assumed that the project area had a high probability for historic resources.

Alternate Site 2 generally demonstrated thick humus layers overlying a thin (less than 15 cm), sandy loam topsoil. Impassable glacial till was generally reached within the first 5 to 10 cm of sandy loam subsoil. Disturbed soils profiles displayed an unconsolidated mix of plow zone and subsoil overlying a truncated subsoil horizon. Shovel testing in significant portions of Alternate Site 2 were hindered by bedrock and glacial till both at the surface and throughout the soil column, as expected based on the USDA soil classifications.

Three hundred seventy-five shovel tests were conducted at Alternate Site 2 during the Phase I cultural resources survey conducted in May 2010. No prehistoric artifacts were identified during the survey of any parcel, and no cultural materials were identified at Alternate Site 2.

Architectural Resources

Background research revealed there were no previously recorded historic resources within Alternate Site 2. No published architectural surveys exist for Middlebury (Alternate Site 2). Alternate Site 2 consisted of only one previously unrecorded resource, CT-009-001 (Vernacular House), within the viewshed of Alternate Site 2; however, based on field survey this resource is not likely to be individually ineligible for the NRHP, due to extensive alterations.

4.10.1.3 Alternative 3-Oxford, CT

Brockington and Associates, Inc. completed a Phase I cultural resources survey at Alternate Site 3 between May 18, 2010 and May 27, 2010. The survey included an archive and literature search, a cultural resources reconnaissance and archaeological shovel testing survey of the site. The APE encompasses Alternate Site 3. The architectural resources APE is defined as the entire Alternate Site 3 and the immediate viewshed.

Archaeological Resources

Archival research conducted at the CSMNHA Center showed Alternate Site 3 does not contain previously recorded archaeological resources. However, two archaeological sites are within a one-mile radius of Alternate Site 3. Site 108-003 (Southford Falls State Park Site) is a scatter of Archaic and Woodland lithic materials on the south shore of Papermill Pond identified by Archaeological Services and Consultancy in 1979. The site is of unknown NRHP eligibility. In addition, Site 130-28 is plotted along drainage between Alternate Site 3 and CT 67. However, the site form for this site is missing from the site file and no information on this site is available. Given the location of Alternate Site 3 generally within undeveloped uplands above small drainages, the survey area was considered to have a moderate probability for prehistoric cultural resources. Further, given the historic farmsteads in and around the site, it was assumed that the project area had a high probability for historic resources.

At Alternate Site 3, soil profiles generally revealed an approximately 30-cm sandy loam plow zone overlying yellowish brown sandy loam subsoils. Wooded areas of Alternate Site 3 generally demonstrated thick humus layers overlying a thin (less than 15 cm), sandy loam topsoil. Impassable glacial till was generally reached within the first 5 to 10 cm of sandy loam subsoil. Disturbed soils profiles displayed an unconsolidated mix of plow zone and subsoil overlying a truncated subsoil horizon. Shovel testing in significant portions of

Alternate Site 3 were hindered by bedrock and glacial till both at the surface and throughout the soil column, as expected based on the USDA soil classifications.

One thousand one hundred twelve shovel tests were conducted at Alternate Site 3 during the Phase I cultural resources survey conducted in May 2010. No prehistoric artifacts were identified during the survey. Alternate Site 3 contained three historic artifact loci:

- AS3-1 is a scatter of likely twentieth century materials found approximately 15 m northeast of the Kissel farmhouse. Materials noted include modern bottle and window glass, machine-made wire nails, and a knob from a wind-up alarm clock.
- AS3-2 is an isolated iron stoneware sherd found in the field north of the vacant lot on Towner Lane.
- AS3-3 is a single whiteware sherd located in the southeast corner of the field located south of Willenbrock Road.
- AS3-4 is a scatter of modern bottle glass approximately 15 m south of two covered wells, located on a wooded slope between the Kissel farmhouse and the wetlands surrounding Little River.
- AS3-5 is the remains of some historic farm machinery on a small wooded hilltop in the eastern portion of the site.

Architectural Resources

Background research revealed there were no previously recorded historic resources within Alternate Site 3. No published architectural surveys exist for Oxford (Alternate Site 3). Alternate Site 3 incorporated a total of six previously unrecorded resources within the APE of Alternate Site 3; these resources include CT-009-002 (Side-Gable House), CT-009-003 (Cape Cod Cottage), CT-009-004 (No academic style), CT-009-005 (Gable-Front-and-Side-Wing House), CT-009-006 (Minimal Traditional House), and Resource CT-009-007 (Gable-Front House). None of these six previously unrecorded resources is considered individually eligible for the NRHP based on field survey.

4.10.2 Consequences

4.10.2.1 Preferred Alternative-Danbury, CT

The colonial revival style house (CT-001-005) is located outside the project boundary but within approximately 300 feet of the project's western boundary. While the house is considered potentially eligible for listing on the NRHP under Criterion C, it is screened from the project boundary by tall trees, including a row of evergreen trees surrounding the house to the east, north, and south. In addition, a modern office park complex including structures and paved parking lots is located adjacent to the house on the west. This modern development is in open view of the house and has partially compromised its historic setting. Given the distance of the home from the project boundary and the visual screening of the house from tall trees, the AFRC is not expected to adversely impact site CT-001-005, should the existing landscape features be left intact.

No impacts to NRHP-eligible archaeological resources would be likely as a result of the Preferred Alternative. A Phase I cultural resources investigation found several small scatters

of historic cultural materials, as well as the partial remains of nineteenth century farmstead foundations. However, none of the archaeological resources were identified were listed in or considered potentially eligible for the NRHP. The Phase I Cultural Resources Survey Report documenting these findings was submitted to SHPO on August 16, 2010 and the USAR is currently waiting for concurrence from the SHPO. Section 106 consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

4.10.2.2 Alternative 2-Middlebury, CT

No impacts to architectural resources would be likely as a result of Alternative 2. No buildings listed, eligible for listing, or potentially eligible for listing on the NRHP occur in or near the project area. No impacts to archaeological resources would be likely as a result of Alternative 2. A Phase I cultural resources investigation did not find any prehistoric or historic cultural materials. No sites were identified that were listed in or potentially eligible for the NRHP. The Phase I Cultural Resources Survey Report documenting these findings was submitted to SHPO on August 16, 2010 and the USAR is currently waiting for concurrence from the SHPO. Section 106 consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

4.10.2.3 Alternative 3-Oxford, CT

No impacts to architectural resources would be likely as a result of Alternative 3. No buildings listed, eligible for listing, or potentially eligible for listing on the NRHP occur in or near the project area. No impacts to archaeological resources would be likely as a result of Alternative 3. A Phase I cultural resources investigation did not find any prehistoric or historic cultural materials. No sites were identified that were listed in or potentially eligible for the NRHP. The Phase I Cultural Resources Survey Report documenting these findings was submitted to SHPO on August 16, 2010 and the USAR is currently waiting for concurrence from the SHPO. Section 106 consultation is currently ongoing. The FNSI will not be signed or executed until Section 106 consultation is complete.

4.11 Socioeconomics

4.11.1 Affected Environment

Socioeconomic resources are defined as the basic attributes associated with the human environment, particularly population and economic activity. Population is described as the magnitude, characteristics, and distribution of people. Economic activity is described in terms of employment distribution, personal income, and business growth. Tables from this section are included in Appendix F.

Preferred Alternative-Danbury, CT

The Preferred Site is located in Danbury City, within Fairfield County. The ROI for this analysis includes Danbury City and Fairfield County. Danbury City grew by 5.9 percent and Fairfield County grew by 1.4 percent between 2000 and 2008, compared to an approximate 2.8 percent growth rate in the same period for the State of Connecticut (Table F-1). However, growth predictions between 2009 and 2014 show a decrease in growth by 0.6 percent for

Fairfield County and a decrease of 0.1 percent for the State of Connecticut (Connecticut Economic Resource Center, Inc. [CERC], 2009).

Household incomes in 2000 in Danbury City were 21.6 percent lower than those in Fairfield County, but almost equal to the State of Connecticut as a whole. Additionally, household incomes within the State of Connecticut were 28.4 percent higher than that of the U.S. Poverty levels between Danbury City, Fairfield County, and Connecticut are comparable but lower than the National level (Table F-1).

The labor force in Fairfield County in 2008 was approximately 470,199, with 445,997 employed, leaving 5.2 percent unemployed, which is lower than the state or national averages (CERC, 2009). The unemployment rates for Connecticut and the U.S. were 5.7 percent and 5.8 percent, respectively, in 2008 (CERC, 2009; U.S. Department of Labor, 2009).

Most of the labor force in Fairfield County is employed by the health care and social assistance service industry, retail trade, government, and manufacturing sectors (Connecticut Department of Labor, 2008). Major government employers in the Danbury city area include the Danbury School District and the City of Danbury (Housatonic Valley Council of Elected Officials [HVCEO], 2008). Major private employers in the Danbury city area include Danbury Hospital, Cartus, Boehringer Ingelheim, Pitney Bowes, Inc., GE Capital – VFS, and the Goodrich Corporation (HVCEO, 2008).

Alternative 2-Middlebury, CT

Alternate Site 2 is located in the City of Middlebury, New Haven County, CT. The ROI for this analysis includes the City of Middlebury and New Haven County. The city experienced a 13.8 percent increase in population between 2000 and 2008, while New Haven County experienced a 2.7 percent increase in population (Table F-1). New Haven County is anticipated to experience little to no growth between 2009 and 2014, while the state is expected to decrease in population by 0.1 percent (CERC, 2009).

Middlebury household incomes in 2000 were higher than that of the surrounding county. New Haven County, as a whole, had a lower median household income and higher poverty level when compared to Fairfield County and the State. However, poverty levels in Middlebury were lower by 6.8 and 5.2 percent than county and state levels, respectively (Table F-1).

The labor force in New Haven County in 2008 was approximately 448,049, with 419,933 employed. The unemployment rate of 6.3 percent is comparable to but slightly higher, than state or national averages (CERC, 2009). The unemployment rates for Connecticut and the U.S. were 5.7 percent and 5.8 percent, respectively, in 2008 (CERC, 2009 & U.S. Department of Labor, 2009). A majority of the labor force in New Haven County is employed in the services, trade, and manufacturing job sectors (CERC, 2009).

A single-family house rental property is located on Alternate Site 2. As shown in Table F-2, in 2008 there were 2,531 housing units available for rent in Middlebury and 18,783 housing units available for rent in Fairfield and New Haven counties combined. New Haven County had 365 more units available for rent than Fairfield County. Rent in Fairfield County is 15.3 percent greater than in New Haven.

Alternative 3-Oxford, CT

Alternative 3 is located in the City of Oxford, New Haven County, CT. The ROI for this analysis includes the City of Oxford and New Haven County. Oxford grew by 29.7 percent between 2000 and 2008 (Table F-1). Oxford is expected to grow by 2.1 percent between 2008 and 2013 (CERC, 2009).

At $77,126, the City of Oxford had a higher median household income in 2000 than New Haven County as a whole. Oxford also has a low poverty level when compared to New Haven and Fairfield Counties and is more than five percent less than the state-wide level.

The labor force of Oxford was approximately 7,336 in 2007 with approximately 7,080 of those in the labor force employed. The 3.5 percent unemployment rate is lower than the state or New Haven County average of 5.0 and 4.6 percent, respectively (CERC, 2009).

Three single-family house rental properties, one occupied and two vacant are located on Alternate Site 3. In 2008 there were 9,564 housing units available for rent in New Haven County (Table F-2).

4.11.1.1 Environmental Justice and Protection of Children

Preferred Alternative-Danbury, CT

The ROI for environmental justice analysis consists of the Census Tract (CT) for the location for the new AFRC. Reference area populations are defined as those in Danbury City, Fairfield County, New Haven, and Connecticut. National estimates were included for comparison purposes. "Disproportionate" impacts are defined as impacting a meaningfully greater population, which is considered approximately 20 percentage points higher than the reference population.

The Preferred Site is located in CT 2106. CT 2106 covers a small area on the edge of an urban area, capturing the Preferred Site and neighboring urban population to the east. CT 2106 is bordered by U.S. 7/Sugar Hollow Road to the west, Park Avenue and West Street to the north, Deer Hill Avenue and Grand Street to the east, and Wooster Heights and Southern Boulevard to the south. Block groups (BGs) were not analyzed for CT 2106 because they are too small to provide an accurate description of the area surrounding the Preferred Site; therefore the full CT was used.

Overall, the racial and ethnic percentages of CT 2106 are similar to those of Danbury City, Fairfield County, and Connecticut, as shown in Table F-3. While Asian and Hispanic populations are higher near the Preferred Site (CT 2106) compared to the reference populations in Fairfield County and the state, the Asian and Hispanic populations near the Preferred Site are similar to those in Danbury. African American populations near the Preferred Site are comparable to those in Danbury, Fairfield County, and in the state. Therefore, the minority populations within CT 2106, the location of the Preferred Site, are not disproportionately higher than the reference populations. Table F-4 shows that CT 2106 has a poverty level that is only slightly higher than those of the reference populations in Danbury, Fairfield County, or the state.

Table F-4 also shows that CT 2106 has a percentage of individuals under the age of 18 that is similar to those of the reference populations within Danbury City, county, state and the U.S.

The population of CT 2106 includes 22.2 percent of individuals under the age of 18, which is 0.5 percent higher than Danbury City, 3.4 percent lower than Fairfield County, and 2.5 percent lower than the State of Connecticut. There are residential neighborhoods to east of the Preferred Site along Wooster Heights. The nearest school serving these residential neighborhoods is the Park Avenue School located at 82 Park Avenue. Park Avenue School has 376 students and serves kindergarten through fifth grade (National Center for Education Statistics [NCES], 2010a).

Alternative 2-Middlebury, CT

For purposes of comparison, reference area populations are defined as those in City of Middlebury, Fairfield County, New Haven County, and Connecticut. Alternative 2 is located in the middle of CT 3442 within BG1. CT 3442 includes the corner of the county where Lake Quassapaug is located south to just past Long Meadow Pond. CT 3442 in 2000 was 97 percent white, which was similar to Middlebury, while New Haven County had a 79.4 percent white population. There were fewer minorities in CT 3442 than the region in 2000 (Table F-3). A majority of CT 3442 is undeveloped.

The percentage of individuals living in poverty in 2000 was 1.3 percent in CT 3442. This was well below the average of individuals living in poverty in New Haven County and Connecticut, which averaged 9.5 and 7.9 percent, respectively, in 2000 (Table F-4). The percentage of individuals under the age of 18 in CT 3442 was comparable to New Haven County and Connecticut.

The closest school to Alternative 2 is Long Meadow Elementary School, which is located less than 0.25 miles from Alternate Site 2 just across North Benson Road. This school has 616 students and serves grades pre-kindergarten through fifth grade (NCES, 2010b).

Alternative 3-Oxford, CT

Reference area populations are defined as those in City of Oxford, Fairfield County, New Haven County, and Connecticut. Alternative 3 is located in CT 3461.02. Alternative Site 3 is more specifically located in CT 3461.02 BG 2, which provides a more accurate description of what is in the vicinity of the site. CT 3461.02 BG 2 is mostly rural with residential housing spread throughout.

There are a very low percentage of minority groups in CT 3461.02 BG 2 in 2000, with 98 percent of the population consisting of white alone (Table F-3). The percentage of individuals living in poverty in CT 3461.02 BG 2 at the time was 1.3 percent, well below the surrounding area and reference populations. The percentage of individuals under the age of 18 in CT 3461.02 BG 2 was 27.5 percent, three percent higher than New Haven County. The percentage of individuals under the age of 18 in New Haven County and Connecticut was 24.5 and 24.7, respectively (Table F-4). There are no nearby schools to Alternate Site 3. However, there are two learning centers within a mile of Alternate Site 3, the First Steps Learning Center in Southford on Oxford Road and Kinetic Kids-Children in Motion located off of Jacks Hill Road.

4.11.2 Consequences

4.11.2.1 Preferred Alternative-Danbury, CT

The USACE's Economic Impact Forecast System (EIFS) model is used to assess the economic effects of base realignment and closure recommendations. The EIFS model, its inputs, outputs, and significance measures are discussed in more detail in Appendix F. Economic impacts of construction is further discussed in Appendix F.

Economic Impacts of Construction

Short-term minor beneficial effects would be expected. In the short term, the expenditures and employment associated with the construction project would increase the sales volume, employment, and income in the ROI, as estimated by the EIFS model results. Table F-5 displays the change of direct and total economic growth (which includes induced growth) during 2011. The sales and income estimates are in 2010 dollars.

Economic Impacts of Operations

Reservists with the existing and new USAR and ARNG units are not expected to relocate to new housing as a result of the proposed action because of the proposed new AFRC would be within drivable distance of the existing facilities. Of the proposed 50 fulltime employees, approximately seven new full-time personnel (two civilians and five military) could potentially relocate to the area to support the newly established GTA units. Operational expenditures likely would be similar to expenditures associated with the existing facilities, even with the new GTA units, because consolidation from many facilities into a single AFRC would reduce costs such as facility maintenance and utilities.

Since only slight changes in full-time personnel and no major change in operational expenditures are expected, the EIFS model was not necessary to determine that the long-term economic effects associated with operations is unlikely to have significant long-term effects on the regional economy. Full-time personnel who relocate to the area would result in some level of long-term economic benefits in the ROI and minor (if any) change in demand for housing and community services. New units established at the new AFRC may also result in long-term economic benefits in the ROI from additional spending on meals, gasoline and other convenience retail purchases when reservists are present for training.

Environmental Justice and Protection of Children

The Environmental Justice ROI and the area surrounding the Preferred Site are similar with respect to racial/ethnic minority or low income populations. Thus, there would be no disproportionate impacts to racial/minority populations or low income population under the Preferred Alternative. The Preferred Alternative would not result in environmental health or safety risks that may affect children. There would be no families or resident populations living on the AFRC after implementation of the Preferred Alternative, so no children under the age of 18 would reside onsite. Access to construction areas and the AFRC would be controlled, thereby limiting unauthorized access by any persons, including children.

4.11.2.2 Alternative 2-Middlebury, CT

Economic Impacts of Construction

Short-term minor beneficial effects would be expected. In the short term, the expenditures and employment associated with the construction project would increase the sales volume, employment, and income in the ROI, as estimated by the EIFS model results. Table F-6 displays the change of direct and total economic growth (which includes induced growth) during 2011. The sales and income estimates are in 2010 dollars. These economic benefits would be temporary, lasting only for the duration of construction. These changes in specific economic parameters would fall well within historical fluctuations, as represented by the RTVs calculated for Alternate Site 2 to be between approximately negative seven percent to positive 15 percent, and would be considered minor. The construction project is not expected to trigger a temporary movement of workers to the area to fill the supply of construction job opportunities.

Economic Impacts of Operations

The regional economic impacts of operations would be the same as the Preferred Alternative. Social and economic consequences of Alternative 2 would be the same as those of the Preferred Alternative, with the exception that the rental housing unit on the property would be demolished and renters would be relocated. However, there are ample housing units available in the New Haven County and Fairfield County area. Additionally, renters would be given a minimum of 90 days to find new housing and move out of their existing dwelling. Government assistance to relocate to a similar dwelling with similar rent would be provided if needed. Relocated renters may also be entitled to a housing differential payment if similar priced housing is not available (Redlinger, 2010, personal communication).

Environmental Justice and Protection of Children

The Environmental Justice ROI and the area surrounding Alternate Site 2 are similar with respect to racial/ethnic minority or low income populations. Thus, there would be no disproportionate impacts to racial/minority populations or low income population under Alternative 2. Alternative 2 would not result in environmental health or safety risks that may affect children. There would be no families or resident populations living on the AFRC after implementation of the Alternative 2, so no children under the age of 18 would reside onsite. Long Meadow Elementary School is located approximately 0.25 miles from Alternate Site 2. However, access to construction areas and the operational facility would be controlled, thereby limiting unauthorized access by any persons, including children. Additionally, the new AFRC would include security fencing and lighting.

4.11.2.3 Alternative 3-Oxford, CT

Economic Impacts of Construction

Short-term minor beneficial effects would be expected. In the short term, the expenditures and employment associated with the construction project would increase the sales volume, employment, and income in the ROI, as estimated by the EIFS model results. Table F-7 displays the change of direct and total economic growth (which includes induced growth) during 2011. The sales and income estimates are in 2010 dollars. These economic benefits would be temporary, lasting only for the duration of construction. These changes in specific economic parameters would fall well within historical fluctuations, as represented by the

RTVs calculated for Alternate Site 3 to be between approximately negative seven percent to positive 15 percent, and would be considered minor. The construction project is not expected to trigger a temporary movement of workers to the area to fill the supply of construction job opportunities.

Economic Impacts of Operations

The regional economic impacts of operations would be the same Preferred Alternative. Social and economic consequences of the Alternative 3 would be the same as those of the Preferred Alternative, with the exception that the rental property on the property would be demolished and renters would be relocated. However, there are ample housing units available in the New Haven County area. Additionally, renters would be given a minimum of 90 days to find new housing and move out of their existing dwelling. Government assistance to relocate to a similar dwelling with similar rent would be provided if needed. Relocated renters may also be entitled to a housing differential payment if similar priced housing is not available (Redlinger, 2010, personal communication).

Environmental Justice and Protection of Children

The Environmental Justice ROI and the area surrounding Alternate Site 3 are similar with respect to proportion of racial/ethnic minority or low income populations. Thus, there would be no disproportionate impacts to racial/minority or low income populations under Alternative 3. Alternative 3 would not result in environmental health or safety risks that may disproportionately affect children. There would be no families or resident populations living on the AFRC after implementation of the Preferred Alternative, so no children under the age of 18 would reside onsite. Access to construction areas and the operational facility would be controlled, thereby limiting unauthorized access by any persons, including children.

4.11.2.4 No Action Alternative

There would be no impacts to low-income families, minorities, or children under the no action alternative. There would be no beneficial economic impact from construction as no project construction would occur.

4.12 Transportation

4.12.1 Affected Environment

4.12.1.1 Regional Transportation

Three major highways provide driving access to western Connecticut. Interstate 95 (I-95) runs parallel to the coast along the southern part of the state connecting Rhode Island and northern New England to New York, New Jersey and more southern states. Interstate 91 (I-91) runs north-south through the central part of the state connecting western Massachusetts and Vermont to I-95 in southwestern Connecticut. Interstate Highway 84 (I-84) runs northeast-southwest through Connecticut, bisecting I-91before running west into southern New York state and Pennsylvania.

Other transportation alternatives to western Connecticut include two Amtrak routes; the Acela Express, providing access to Connecticut along a corridor similar to I-95 and the

Vermonter, providing access to central Connecticut along a corridor similar to I-91. Major Amtrak stops in central and western parts of the state include Hartford, Berlin, Meriden, and New Haven, Connecticut.

Bradley International Airport, located in Windsor Locks, is a commercial airport in north central Connecticut near I-91. Logan airport in Boston Massachusetts is located 90 miles to the northeast and JFK International, Newark Liberty International and LaGuardia International airports in the New York City area are located 106 miles to the southwest.

4.12.1.2 Preferred Alternative-Danbury, CT

Access to the Preferred Site would be from I-84, south on State Highway 7, east on Miry Brooks Road which turns into Wooster Heights Road, and left onto Lee Farm Road. The proposed entrance to the Preferred Site would be located along Lee Farm Road. Lee Farm Road is a two-lane road running northwest-southeast. Wooster Heights Road, a two-lane road running northeast-southwest, intersects Lee Farm Road on the southwest corner of the Preferred Site. Turning lanes and traffic lights are provided at the intersection. State Highway 7, which is located approximately 0.1 mile west of the Preferred Site, has an Average Annual Daily Traffic (AADT) of 23,000. Park Avenue, which borders the northern boundary of the Preferred Site, has an AADT of 11,300; and Wooster Heights Road, which borders the southern boundary of the Preferred Site, has an AADT of 8,800 (Connecticut Department of Transportation [CDOT], 2007). Bus stops, bike paths, or walking paths are not located near the proposed entrance to the Preferred Site.

According to Jennifer Emminger, City of Danbury Planning and Zoning, Danbury has no plans for any new roads or near-term road maintenance in the vicinity of the Preferred Site (Emminger, 2010, personal communication).

4.12.1.3 Alternative 2-Middlebury, CT

Access to Alternate Site 2 would be from I-84, north on Strongtown Road, which becomes Southford Road. The entrance to Alternate Site 2 would be located along Southford Road, a two-lane road which runs southwest-northeast. North Benson Street, a two-lane road running north-south, intersects Southford Road approximately 0.25 mile southwest of Alternate Site 2. This intersection does not have turning lanes or traffic lights. Southford Road has an AADT of 6,700 (CDOT, 2008). Bus stops, bike paths, or walking paths are not located near the proposed entrance to this location.

According to Jean Donegan with the Town of Middlebury Planning and Zoning Department, there are currently no plans for road development or near-term maintenance within the vicinity of Alternate Site 2 (Donegan, 2010, personal communication).

4.12.1.4 Alternative 3-Oxford, CT

Access to Alternate Site 3 would be from State Highway 67, east along Hawley Road, and south along Willenbroch Road. The entrance to Alternate Site 3 would be from Willenbrock Road which is a U-shaped two-lane road in the adjacent industrial park. Hawley Road is a two-lane road which runs northeast-southwest. State Highway 67 is a two-lane road that runs north-south. The intersections of State Highway 67 and Hawley Road and of Hawley Road and Willenbrock Road do not have turning lanes or traffic lights. State Highway 67, which is approximately 0.15 mile west of Alternate Site 3, has an AADT of 10,800 (CDOT,

2006). Bus stops, bike paths, or walking paths are not located near the proposed entrance to this location.

According to Anna Silva with the Town of Oxford, there are currently no plans for road development or near-term maintenance within the vicinity of Alternate Site 3 (Silva, 2010, personal communication).

4.12.2 Consequences

4.12.2.1 Preferred Alternative-Danbury, CT

Negligible impacts to traffic conditions near the Preferred Site would be expected under the Preferred Alternative. An entrance road to the proposed AFRC training center on Parcel A would be constructed from Lee Farm Road. An entrance road to the proposed vehicle maintenance facility on Parcel C would be constructed from Wooster Heights Road, southwest of the intersection with Lee Farm Road. New parking spaces for privately owned vehicles would be provided at Parcel A and Parcel C of the Preferred Site. During construction, workers would use appropriate controls, such as flagmen, to maintain safe traffic conditions. No lane closures or other disruptions to circulation patterns are required for construction, and no activities that would create traffic hazards are anticipated. The increased construction traffic would have a temporary impact on traffic on streets and roads near the site and on the level of service on local roads. Construction is estimated to occur over a 15-month period from spring 2011 to summer 2012.

The number of vehicle trips anticipated for the Preferred Alternative during daily operation of the AFRC was estimated using methodologies from the Institute of Transportation Engineers (ITE) Trip Generation, seventh edition (ITE, 2003). The facilities under the Preferred Alternative are similar to the Single Tenant Office Building classification because the facilities would be under a single tenant and workers would arrive in the morning, stay throughout the day, and leave after work in the evening. The average rate of trip generation per employee for a Single Tenant Office Building is 3.62. The AFRC would employ approximately 50 full-time employees, which would result in approximately 181 new vehicle trips by permanent employees per weekday in the area surrounding the Preferred Site. A small number of additional vehicle trips would be expected from visitors, mail service, and vendors. The estimated 181 additional vehicle trips per day would have no significant long-term impact to traffic on roadways in the vicinity because the additional trips are very small in comparison to existing traffic volume and there are no known traffic congestion concerns in the area. The reserve personnel at the site would increase to a maximum of 928 reservists during drill weekends. The average trip rate per day for the weekend training periods was assumed to be 2.25. Using this rate, approximately 2,088 additional vehicle trips per day would occur on training weekends. Approximately half of the 2,088 trips would occur in the morning and approximately half in the evening with some trips occurring at noon. This multiplier would account for additional vehicle trips from visitors and potential additional ingress/egress from the reservists. The average daily trip rate for weekend drill activities differs from the daily operation trip generation rate because permanent staff are more likely to leave for lunch or to run work related errands whereas, personnel training at the facility on weekends are less likely to leave the AFRC during the day. The estimated 2,088 additional vehicle trips per training weekend day would not have significant long-term impacts to traffic because the additional trips are minor in comparison

to AADT volumes and the weekend AADT volumes would be lower than weekday volumes.

Large military vehicle and military truck traffic would be heaviest on drill weekends and intermittent special operations. Convoy training is not expected to be conducted from the AFRC. Sufficient parking would be provided at the site to accommodate the vehicular needs. Parking spaces for assigned USAR personnel, as well as for assigned military vehicles and equipment, would be provided (Figure 3-2). A new access driveway from Lee Farm Road to the facility is proposed. However, no lane closures or other disruptions to circulation patterns are anticipated. On-street parking would not be required and would not be constructed under the Preferred Alternative.

Traffic impacts on training weekends would be minor because local circulation patterns would not be altered, lane closures or other impediments to traffic would not occur. New traffic safety hazards would not be created, conflicts with pedestrian and bicycle routes or fixed-route transit would not occur, and parking demand would not exceed supply.

The Preferred Alternative would result in minor cumulative impacts to local traffic from the combined privately owned vehicles. The additional vehicle traffic would not result in significant long-term cumulative impacts to local transportation and traffic because current traffic flow patterns would not be disrupted, and post-construction transportation would primarily involve weekend traffic conditions, when there is generally less traffic.

4.12.2.2 Alternative 2-Middlebury, CT

Alternative 2 would result in impacts to traffic and transportation resources that would be similar to those described for the Preferred Alternative. An entrance road to the proposed AFRC would be constructed along Southford Road. During construction, workers would use appropriate controls, such as flagmen, to maintain safe traffic conditions. No lane closures or other disruptions to circulation patterns are required for construction, and no activities that would create traffic hazards are anticipated. The increased construction traffic would have a temporary impact on traffic on streets and roads near the site and on the level of service on local roads. Construction is estimated to occur over a 15-month period from spring 2011 to summer 2012.

The estimated 181 additional vehicle trips per day would have no significant long-term impact to traffic on roadways in the vicinity because the additional trips are very small in comparison to existing traffic volume and there are no known traffic congestion concerns in the area.

The estimated 2,088 additional vehicle trips per training weekend day would not have significant long-term impacts to traffic because the additional trips are minor in comparison to AADT volumes, the weekend AADT volumes would be lower than weekday volumes, local circulation patterns would not be altered, and lane closures or other impediments to traffic would not occur.

No impacts to pedestrian or bike routes or to fixed-route transit would occur because no bike trails, walking paths, sidewalks, or bus stops were observed in the immediate vicinity of Alternate Site 2. Cumulative effects for Alternative 2 would be similar to those described for the Preferred Alternative.

4.12.2.3 Alternative 3-Oxford, CT

Alternative 3 would result in impacts to traffic and transportation resources that would be similar to those described for the Preferred Alternative. An entrance road to the proposed AFRC would be constructed from Willenbrock Road because large trucks are not allowed on Towner Lane. During construction, workers would use appropriate controls, such as flagmen, to maintain safe traffic conditions. No lane closures or other disruptions to circulation patterns are required for construction, and no activities that would create traffic hazards are anticipated. The increased construction traffic would have a temporary impact on traffic on streets and roads near the site and on the level of service on local roads. Construction is estimated to occur over a 15-month period from spring 2011 to summer 2012.

The estimated 181 additional vehicle trips per day would have no significant long-term impact to traffic on roadways in the vicinity because the additional trips are very small in comparison to existing traffic volume and there are no known traffic congestion concerns in the area.

The estimated 2,088 additional vehicle trips per training weekend day would not have significant long-term impacts to traffic, because the additional trips are minor in comparison to AADT volumes, the weekend AADT volumes would be lower than weekday volumes, local circulation patterns would not be altered, and lane closures or other impediments to traffic would not occur.

No impacts to pedestrian or bike routes or to fixed-route transit would occur because no bike trails, walking paths, sidewalks, or bus stops were observed in the immediate vicinity of Alternate Site 3. Cumulative effects for Alternative 3 would be similar to those described for the Preferred Alternative.

4.12.2.4 No Action Alternative

There would be no impacts on traffic conditions under the No Action Alternative, as no construction would occur.

4.13 Utilities

4.13.1 Affected Environment

4.13.1.1 Preferred Alternative-Danbury, CT

Water and wastewater services for the Preferred Alternative site are provided by the City of Danbury.

Electricity is supplied by Connecticut Light & Power. Natural Gas is supplied by Yankee Gas Services Company. Telephone service is provided by AT&T. AT&T and Comcast provide internet services (Preston, 2010, personal communication).

The Preferred Alternative Site is served by the City of Danbury Police Department, City of Danbury Fire Department, and the Danbury Hospital Emergency Medical Services. The nearest hospital is Danbury Hospital, located at 24 Hospital Avenue, Danbury, CT.

4.13.1.2 Alternative 2-Middlebury, CT

Water and sewer services for Alternate Site 2 are provided by Heritage Water Company and the Town of Middlebury Water Pollution Control Authority, respectively.

Electricity is supplied by Connecticut Light & Power. Natural Gas is supplied by Yankee Gas Services Company. Telephone service is provided by AT&T. AT&T and Comcast provide the local internet services (Tata, 2010, personal communication).

Alternate Site 2 is served by the Middlebury Police Department and the Middlebury Fire Department. Emergency Medical Services are also performed by the Middlebury Fire Department. The nearest hospital is Waterbury Hospital, located at 64 Robbins Street, Waterbury, CT.

4.13.1.3 Alternative 3-Oxford, CT

Water services for Alternate Site 3 are provided by Heritage Water Company and wastewater services are provided through a wastewater purchase agreement with the Town of Naugatuck.

Electricity is supplied by Connecticut Light & Power. Natural Gas is supplied by Yankee Gas Services Company. Telephone service is provided by AT&T. AT&T and Comcast provide the local internet services (Schuler, 2010, personal communication).

Alternate Site 3 is served by the Oxford Police Department, the Oxford Fire Department, and the Oxford Ambulance. The nearest hospital is Waterbury Hospital, located at 64 Robbins Street, Waterbury.

4.13.2 Consequences

4.13.2.1 Preferred Alternative-Danbury, CT

There would be no adverse impacts on the utilities infrastructure from the Preferred Alternative. The City of Danbury is capable of accommodating the increased demand on the sewer and water system (Null, 2010, personal communication).

The increased demand for electricity from Connecticut Light & Power and natural gas from Yankee Gas would not unduly burden the existing supply (Robles, 2010, personal communication; Nolan, 2010, personal communication).

The City of Danbury Police Department, the City of Danbury Fire Department, and emergency medical services have the capacity to provide service to the new AFRC without reduction of service to other areas (Mr. Pacific, 2010, personal communication; Johnson, 2010, personal communication; Cassevechia, 2010, personal communication).

4.13.2.2 Alternative 2-Middlebury, CT

There would be no adverse impacts on the utilities infrastructure from Alternative 2. The Natural Heritage Water Company is capable of accommodating the increased demand on the water system (Adamaitis, 2010, personal communication). There would be increased demand on the wastewater treatment system, but this system has excess capacity and is capable of providing service to the new AFRC (Angieri, 2010, personal communication).

The increased demand for electricity from Connecticut Light & Power and natural gas from Yankee Gas would not unduly burden the existing supply (Campbell, 2010, personal communication; Nolan, 2010, personal communication).

The Middlebury Police Department, the Middlebury Fire Department and emergency medical service, have the capacity to provide service to the new AFRC without reduction of service to other areas (Justi, 2010, personal communication; Perrotti, 2010, personal communication).

4.13.2.3 Alternative 3-Oxford, CT

There would be no adverse impacts on the utilities infrastructure from Alternative 3. The Natural Heritage Water Company is capable of accommodating the increased demand on the water system (Adamaitis, 2010, personal communication). There would be increased demand on the wastewater treatment system at the Town of Naugatuck; however, based on the Town of Oxford's wastewater purchase agreement, this system has excess capacity and is capable of providing service to the new AFRC (Halstead, 2010, personal communication).

The increased demand for electricity from Connecticut Light & Power and natural gas from Yankee Gas would not unduly burden the existing supply (Campbell, 2010, personal communication; Nolan, 2010, personal communication).

The Oxford Police Department has the capacity to provide service to the new AFRC; however, there may be impacts to services if the increased traffic on Towner Lane increases dramatically over the weekend training periods (Semosky, 2010, personal communication). The Oxford Fire Department and Oxford Ambulance have the capacity to provide service to the new AFRC without reduction of service to other areas (Pellettier, 2010, personal communication; Schwab, 2010, personal communication).

4.13.2.4 No Action Alternative

Under the No Action Alternative, there would be no change in existing conditions and no impacts to utilities would occur.

4.14 Hazardous and Toxic Substances

4.14.1 Affected Environment

4.14.1.1 Preferred Site

There are no known hazardous materials or contamination at the Preferred Site (USACE, 2009b). The Preferred Site is vacant land currently being used for agricultural purposes with a small portion of the Preferred Site being wooded. The portion of the 85 acres where development is proposed is primarily agriculture.

An EDR report was generated for the Preferred Site to determine if any known hazardous sites occur within a one-mile radius of the Preferred Site. According to EDR, there is one State Hazardous Waste Site (priority sites planned for cleanup using state funds and sites where cleanup will be paid for by potentially responsible parties) and three Leachate and Wastewater Discharge sites (areas where leachate and wastewater are discharged) within one mile of the Preferred Site. There are two Site Discovery and Assessment Database sites

(sites which have been used for toxic or hazardous waste disposal), two State Leaking Underground Storage Tank sites, and two Leachate and Wastewater Discharge sites within one-half mile of the Preferred Site. There are also two State Underground Storage Tank sites within one-quarter mile of the Preferred Site and two sites with Manifest data (manifest is a document that lists and tracks hazardous waste from the generator through transporters to a treatment, storage, and disposal facility) within one-eighth mile of the Preferred Site (EDR, 2010a).

4.14.1.2 Alternate Site 2

There are not any known hazardous materials or contamination at Alternate Site 2 (USACE, 2009b). The land is primarily a forest lot with a small unoccupied residence and garage along the southern property boundary.

An EDR report was generated for Alternate Site 2 to determine if any known hazardous sites occur within a one-mile radius of Alternate Site 2. According to EDR, there are two Leachate and Wastewater Discharge sites within one mile of Alternate Site 2. There is one federal Comprehensive Environmental Response, Compensation, and Liability Site (CERCLIS) – No Further Remedial Action Planned site (sites that the EPA has determined no further steps will be taken to list this site on the National Priorities List), one State Hazardous Waste site, two Site Discovery and Assessment Database sites, and three Leachate and Wastewater Discharge sites within one-half mile of Alternate Site 2. There is also one Site Discovery and Assessment Database site, one State Voluntary Remediate Cleanup site, two Resource Conservation and Recovery Act Non-Generator Sites (sites which transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act), and six sites with Manifest data within one-quarter mile of Alternate Site 2 (EDR, 2010b).

4.14.1.3 Alternate Site 3

There are not any known hazardous materials or contamination at Alternate Site 3 (USACE, 2009b). The land is a mix of forested and agricultural with an unoccupied residence.

An EDR report was generated for Alternate Site 3 to determine if any known hazardous sites occur within a one-mile radius of Alternate Site 3. According to EDR, there is one federal CERCLIS site (sites which are either proposed to or on the National Priorities List and sites which are in the screening and assessment phase for possible inclusion on the National Priorities List) within one-half mile of Alternate Site 3 (EDR, 2010c).

4.14.2 Consequences

4.14.2.1 Preferred Alternative-Danbury, CT

The Preferred Alternative would use construction materials consistent with existing local, state, and federal regulations. Small amounts of debris or solid waste may be generated during construction; however, no hazardous materials would be generated, stored, or disposed of as a result of proposed construction activities. During construction of the AFRC, no hazardous wastes are expected to be generated.

Operation of the AFRC would result in use or generation of small amounts of regulated substances, including cleaning solvents, mineral spirits, and oils and lubricants for vehicles

and equipment. All hazardous and toxic substances that would be used or generated would be managed and disposed of in compliance with all applicable laws and regulations.

The federal Clean Water Act requires facilities that store any kind of oil in certain volumes to prepare and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans to prevent the discharge of oil from a facility into navigable waters or adjoining shorelines. "Oil" is defined in Section 311(a)(1) of the Clean Water Act as "oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." EPA interprets this definition to include crude oil, petroleum and petroleum refined products, as well as non-petroleum oils such as vegetable and animal oils. A facility is required to develop a SPCC plan if it stores oil above ground in any size tank(s) with a total aggregate volume over 1,320 gallons (containers of less than 55 gallons and/or permanently closed storage tanks are exempt from the total) (CT DEP, 2007). Therefore, an SPCC Plan is required to support the installation of a 4,000-gallon diesel AST at the AFRC. The design will include adequate secondary containment, such as berms and dikes around the fuel tank to protect the soil and water in the event of a spill.

In addition, the facility would connect to water and sanitary sewer provided by the City of Danbury. All interior drains would connect to a sanitary collection system and ultimately all interior waste waters would be treated by the municipality. Prior to release into the municipal system, drains in the vehicle service areas would be intercepted by an underground oil/water separator. The oil/water separator would collect spills that could occur while routine vehicle maintenance is being performed at the maintenance facility. The oil/water separator would be emptied periodically with a vacuum truck. Material from the oil/water separator would then be disposed of in an approved manner according to the materials collected.

Potential hazardous materials at the AFRC are expected to have insignificant impact on the environment. Negligible impacts on the generation or disposal of hazardous or toxic waste or materials would be expected during construction or operation under the Preferred Alternative.

The Preferred Alternative would have a minor cumulative impact on the use of hazardous materials and disposal of hazardous waste when combined with other commercial, residential, and transportation projects in the area. It is anticipated the hazardous waste generated by these projects would be handled, stored, and disposed of in accordance with applicable federal, state, and local regulations.

4.14.2.2 Alternative 2-Middlebury, CT

The impacts under Alternative 2 would be similar as those for the Preferred Alternative.

4.14.2.3 Alternative 3-Oxford, CT

The impacts under Alternative 3 would be similar as those for the Preferred Alternative.

4.14.2.4 No Action Alternative

Under the No Action Alternative, there would be no change in existing conditions and no impacts to or from hazardous or toxic materials.

4.15 Actions to Minimize Potential Impacts

4.15.1 Preferred Alternative-Danbury, CT

The USAR would obtain any required permits, approvals, or certifications prior to implementing construction activities. Personnel conducting construction activities would strictly adhere to all applicable occupational safety requirements during construction activities. During construction, workers would use appropriate controls, such as flagmen, to maintain safe traffic conditions.

Undeveloped portions of the property would be landscaped or left in their natural state to enhance visual resources.

The facility design will include green infrastructure and LID features to comply with requirements regarding stormwater management to maintain hydrologic functions of a site and mitigate the potential adverse impacts of stormwater runoff. This would include reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs.

During construction, BMPs to minimize impacts to soil from erosion would include, but not be limited to, installation of silt fencing and sediment traps, stormwater retention ponds, and revegetation of disturbed areas as soon as possible, where appropriate. Minor post-construction impacts to soil and receiving waters from erosion and stormwater runoff would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques such as reducing impervious surfaces, using vegetative practices, porous pavements, cisterns, and green roofs.

Prior to release into the municipal system, water from vehicle service areas will be intercepted by an oil/water separator to collect spills that may occur while routine vehicle maintenance is being performed.

Generation of fugitive dust is unavoidable during construction. Specific project design features that would be implemented to minimize or eliminate impacts from fugitive dust include the use of sprinkling, irrigation, or mulching to prevent generation of airborne dust and the use of revegetation and mulching as soon as work is complete to minimize the exposure of bare soil.

The Army would conduct a preconstruction survey for nesting birds prior to clearing vegetation. If nesting migratory birds are found, these areas would not be disturbed until the young have naturally vacated the nest.

Construction-related noise would occur, but would be limited to weekdays and daylight hours to minimize disturbance to residents in the area.

An SPCC Plan would be prepared to prevent the discharge of oil from a facility into navigable waters. The design of the 4,000-gallon diesel AST would include adequate secondary containment, such as berms and dikes around the fuel tank to protect the soil and water in the event of a spill.

All hazardous and toxic substances that would be used or generated would be managed and disposed of in compliance with all applicable laws and regulations.

4.15.2 Alternative 2-Middlebury, CT

BMPs to avoid or minimize impacts for Alternative 2 would be similar to those described for the Preferred Alternative.

4.15.3 Alternative 3-Oxford, CT

BMPs to avoid or minimize impacts for Alternative 3 would be similar to those described for the Preferred Alternative.

5.0 Findings and Conclusions

5.1 Findings

Table 5-1 summarizes the consequences of the Preferred Alternative, Alternative 1, Alternative 2, and the no action alternative. The following sections provide a summary of the anticipated impacts of each alternative.

5.1.1 Consequences of the Preferred Alternative-Danbury, CT

Implementation of the Preferred Alternative would result in:

- Minor short-term adverse impacts during construction to air quality, noise, geology and soils, stormwater, vegetation, wildlife, and transportation (traffic);
- Minor long-term adverse impacts during operation to land use, aesthetics and visual resources, air quality, noise, stormwater, groundwater recharge rates, transportation (traffic), utilities from increase in demand, and hazardous and toxic materials;
- Minor beneficial impacts to the local economy during construction and operation;
- No direct impacts to surface water or wetlands;
- No impacts to prime farmlands, floodplains, coastal zones, threatened, endangered, or rare species, migratory birds, cultural resources, housing, demographics, environmental justice, and protection of children;
- Minor indirect impacts to surface waters or wetlands from stormwater runoff;
- Minor cumulative impacts to land use, aesthetics and visual resources, air quality, noise, geology and soils, surface waters, groundwater recharge rates, biological resources, transportation (traffic), utilities, and hazardous and toxic materials;
- No cumulative impacts to prime farmlands, floodplains, coastal zones, wetlands, threatened, endangered, or rare species, migratory birds, cultural resources, housing, demographics, environmental justice, and protection of children.

Section 106 consultation with the SHPO to obtain SHPO concurrence to the Army's determination of no adverse impacts to cultural resources is ongoing.

None of these impacts are considered to be significant.

TABLE 5-1

Summary of Potential Environmental and Socioeconomic Consequences
AFRC Environmental Assessment, Newtown, CT

	Environmental and Socioeconomic Consequences			
Resource	**No Action**	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Land Use	No Change from Baseline Conditions	Minor long-term Impact	Minor long-term Impact	Minor long-term Impact

TABLE 5-1

Summary of Potential Environmental and Socioeconomic Consequences
AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Aesthetics and Visual Resources	No Change from Baseline Conditions	Moderate long-term reduced to minor by planting a visual screen of trees and shrubs around the AFRC.	Minor long-term. Reduced by planting a visual screen of trees and shrubs around the AFRC	Moderate long-term reduced to minor by planting a visual screen of trees and shrubs around the AFRC.
Air Quality	No Change from Baseline Conditions from construction activities. Minor long-term impact from continued use of existing energy inefficient facilities.	Minor short-term impact from construction activities that would be controlled through appropriate best management practices (BMPs). Minor long-term impact during operation from building heating units, generators, a fuel point, and water heaters.	Minor short-term impact from construction activities that would be controlled through appropriate BMPs. Minor long-term impact during construction from building heating units, generators, a fuel point, and water heaters.	Minor short-term impact from construction activities that would be controlled through appropriate BMPs. Minor long-term impact during construction from building heating units, generators, a fuel point, and water heaters.
Noise	No Change from Baseline Conditions	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects from operation during vehicle noise. Minor noise impacts on nearby residential area possible.	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects from operation during vehicle noise. Minor noise impacts on nearby residential area possible.	Minor short-term impacts from construction: appropriate worker safety measures would be implemented; minor long-term effects from operation during vehicle noise. Minor noise impacts on nearby residential area possible.
Geology and Soils				
Geology and Soils	No Change from Baseline Conditions	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction.	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction	Minor short-term impacts from soil erosion during construction and minor long-term impacts from grading and construction
Prime Farmland	No Change from Baseline Conditions	No short-term or long-term impacts to prime farmlands	No short-term or long-term impacts to prime farmlands	No short-term or long-term impacts to prime farmlands

TABLE 5-1

Summary of Potential Environmental and Socioeconomic Consequences
AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Water Resources				
Surface Water, Stormwater, and Wetlands	No Change from Baseline Conditions	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.	No direct impact to surface waters or wetlands during construction or operation. Minor indirect impacts from increased stormwater runoff would occur during construction and operation of the AFRC. Stormwater impacts would be minimized by designing controls to prevent post-construction runoff rate from exceeding pre-construction runoff rate as per Section 438 of EISA, by using retention ponds with floatable outlets to prevent downstream erosion, and by using LID techniques.
Hydrology/ Groundwater	No Change from Baseline Conditions	Minor impact to groundwater recharge rates from the increase in impervious surface.	Minor impact to groundwater recharge rates from the increase in impervious surface.	Minor impact to groundwater recharge rates from the increase in impervious surface.
Floodplains	No Change from Baseline Conditions	No impact to floodplains	No impact to floodplains	No impact to floodplains
Coastal Zone	No Change from Baseline Conditions	No Impact. Not in coastal zone.	No Impact. Not in coastal zone.	No Impact. Not in coastal zone.
Biological Resources				
Vegetation	No Change from Baseline Conditions	Negligible adverse impact to common flora.	Negligible adverse impact to common flora.	Negligible adverse impact to common flora.
Wildlife	No Change from Baseline Conditions	Negligible adverse impact to common fauna. No impact to migratory birds.	Negligible adverse impact to common fauna. No impact to migratory birds.	Negligible adverse impact to common fauna. No impact to migratory birds.

TABLE 5-1

Summary of Potential Environmental and Socioeconomic Consequences
AFRC Environmental Assessment, Newtown, CT

Resource	Environmental and Socioeconomic Consequences			
	No Action	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Sensitive Species	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Cultural Resources				
Section 106 Consultation to obtain SHPO concurrence of no impacts is ongoing.				
Historic Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Archeological Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Native American Resources	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Socioeconomics				
Economic Development	No Change from Baseline Conditions	Minor short-term beneficial impact from construction activities	Minor short-term beneficial impact from construction activities	Minor short-term beneficial impact from construction activities
Demographics	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Housing	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Environmental Justice	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Protection of Children	No Change from Baseline Conditions	No Impact	No Impact	No Impact
Transportation	No Change from Baseline Conditions	Minor short-term impact from construction; Negligible impact on traffic flow during operation.	Minor short-term impact from construction; Negligible impact on traffic flow during operation.	Minor short-term impact from construction; Negligible impact on traffic flow during operation.
Utilities				
Potable Water	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand

TABLE 5-1

Summary of Potential Environmental and Socioeconomic Consequences
AFRC Environmental Assessment, Newtown, CT

	Environmental and Socioeconomic Consequences			
Resource	**No Action**	**Preferred Alternative**	**Alternative 2**	**Alternative 3**
Wastewater	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand for service	Minor impact during operation, slight increase in demand for service	Minor impact during operation, slight increase in demand for service
Energy	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand	Minor impact during operation, slight increase in demand
Solid Waste	No Change from Baseline Conditions	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities	Minor impact during operation, slight increase in demand for service; typical construction waste would be within the capacity of local waste disposal facilities
Hazardous/Toxic Materials	No Change from Baseline Conditions	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.	Minor impact from small quantities of hazardous materials that would likely be stored and used at the Property. Staff would be trained in proper spill prevention, spill handling and containment. Containment and clean-up equipment and materials would be available onsite.
Indirect and Cumulative Impacts	No Change from Baseline Conditions	No Significant Impact	No Significant Impact	No Significant Impact

5.1.2 Consequences of Alternative 2

Implementation of Alternative 2 would result in impacts similar to those of the Preferred Alternative.

5.1.3 Consequences of Alternative 3

Implementation of Alternative 3 would result in impacts similar to those of the Preferred Alternative.

5.1.4 Consequences of the No Action Alternative

There would be no impact to any resources evaluated in this EA from the no action alternative.

5.2 Conclusions

Based upon the findings presented above, it has been concluded that no significant direct, indirect, or cumulative environmental or socioeconomic impacts would result from the Preferred Alternative. Therefore, it is not necessary to prepare an EIS to address the proposed action and a FNSI should be issued.

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9.0 Abbreviations and Acronyms

µm	micrometer
µg/m^3	micrograms per cubic meter
AADT	Average Annual Daily Traffic
AFRC	Armed Forces Reserve Center
APE	Area of Potential Effects
AQCR	Air Quality Control Region
ARNG	Army National Guard
BG	block groups
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CDOT	Connecticut Department of Transportation
CEQ	President's Council on Environmental Quality
CERC	Connecticut Economic Resource Center, Inc.
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Site
CFR	Code of Federal Regulations
cm	centimeter
CO	Carbon Monoxide
CSMNHA	Connecticut State Museum of Natural History and Archaeology
CT	Connecticut
CT DEP	Connecticut Department of Environmental Protection
dBA	A-weighted decibel level
EA	Environmental Assessment
EDR	Environmental Data Resources, Inc.
EIFS	Economic Impact Forecast System
EIS	Environmental Impact Statement
EO	Executive Order
ft^2	Square Feet
FEMA	Federal Emergency Management Agency
FNSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GCA	Galen Carol Audio
GTA	Grow the Army
HVCEO	Housatonic Valley Council of Elected Officials
I-84	Interstate Highway 84
I-91	Interstate Highway 91
I-95	Interstate Highway 95
ITE	Institute of Transportation Engineers
m	meter
MBTA	Migratory Bird Treaty Act
mg/m^3	milligrams per cubic meter
NAAQS	National Ambient Air Quality Standards
NCES	National Center for Education Statistics
NDDB	Natural Diversity Data Base

NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNSR	Nonattainment New Source Review
NOx	Nitrogen Oxides
NRCS	Natural Resources Conservation Service
OHWM	ordinary high water mark
OSHA	Occupational Safety and Health Administration
PEM	palustrine emergent
PFO	palustrine forested wetlands
PGP	Programmatic General Permit
PM	Particulate Matter
$PM_{2.5}$	Respirable particulate matter less than or equal to 2.5 micrometers in diameter
PM_{10}	Respirable particulate matter less than or equal to 10 micrometers in diameter
ppm	parts per million
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
ROI	Region of Influence
RTV	Rational Threshold Values
SHPO	State Historic Preservation Office
SPCC	Spill Prevention, Control, and Countermeasure
T&E	Threatened and endangered
USACE	United States Army Corps of Engineers
USAR	United States Army Reserve
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	US Fish and Wildlife Service
VOC	volatile organic compound

Appendix A
Agency Coordination

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

April 14, 2010

U.S. Fish and Wildlife Service
70 Commercial Street
Suite 300
Concord, NH 03301

To Whom It May Concern,

The Assistant Chief of Staff Installation Management-Army Reserve Division and the US Army Reserve (USAR) 99th Regional Support Command (RSC) are preparing an Environmental Assessment (EA) for a proposed military construction project located near Newtown (City of Danbury), Connecticut (Enclosure 1). The USAR 99th RSC proposes to design and construct a Joint Armed Forces Center which would include an approximately 113,370-square-foot Army Reserve Center training building; a 26,905-square-foot vehicle maintenance shop; a 5,341-square-foot unheated storage building; and approximately 40,000 square-yards of parking for military equipment and privately owned vehicles.

The USAR is considering three sites: Primary Site, Alternate Site 2, and Alternate Site 3 (Enclosure 1). The Primary Site is comprised of three parcels of land totaling approximately 55 acres in size located in the City of Danbury, Fairfield County, Connecticut (Enclosure 2). The Primary Site is surrounded by residential, commercial, and industrial areas. The location is centered on the following coordinates: 41° 22'43.28"N, -73°28'1.88"W. Alternate Site 2 is located at 764 Southford Road in Middlebury, Connecticut (Enclosure 3). The location is centered on the following coordinates: 41° 30'26.32"N, -73°8'59.93"W. Alternate Site 3 is located at 23-29 Towner Lane in Oxford Connecticut (Enclosure 4). The location is centered on the following coordinates: 41° 27'37.51"N, -73°8'48.73"W. USGS Quadrangle maps showing the location of each site are attached (Enclosures 5, 6, and 7)

Primary Site

Site Characteristics

On December 14, 2009, two biologists conducted a meander survey to assess the ecological communities of the Primary Site. The Primary Site is undeveloped and contains two separate ecological communities; open grassy fields and wooded areas. The site consists of open grassy fields in the northern, eastern, and western portions of the site, with wooded areas located in the center portions. The open grassy fields are comprised of grasses and forbs generally found in uplands and appear to be regularly maintained and mowed. The wooded areas include mature trees such as northern red oak (*Quercus rubra*), black oak (*Quercus velutina*), sugar maple (*Acer saccharum*), flowering dogwood (*Cornus florida*), and blackhaw (*Viburnum prunifolium*).

Potential wetland areas were identified within the wooded areas, although no formal wetland delineation was conducted during the site visit. The National Wetland Inventory (NWI) indicated the site has no mapped wetlands. The meander survey identified a large wetland complex in the forested area located in the central portion of the property. Vegetation within the forested wetland area was comprised of tulip poplar (*Liriodendron tulipifera*), green ash (*Fraxinus pennsylvanica*), American hornbeam (*Carpinus caroliniana*), roundleaf greenbrier (*Smilax rotundifolia*), and multiflora rose (*Rosa multiflora*).

Listed and Candidate Species

A review of the U.S. Fish and Wildlife Service (USFWS) federally-listed endangered and threatened species in Connecticut list revealed one species, the bog turtle (*Clemmys muhlenbergii*), classified as federally threatened in the Town of Danbury, Fairfield County, Connecticut where the Primary Site is located. The bog turtle is the only federally-listed wildlife species listed by the USFWS as having potential to occur on the Primary Site. Bog turtle habitat consists of calcareous (containing calcium carbonate, calcium or lime) wetlands such as open sphagnum bogs, wet meadows, and wet pastures. Soils at the Primary Site consist of fine sandy loams and are not known to contain calcium carbonate, calcium or lime. The forested wetland located in the central portion of the site could support potential bog turtle habitat. A review of the Connecticut Department of Environmental Protection Natural Diversity Data Base revealed no historical occurrences of state-listed threatened or endangered species or significant natural communities within the vicinity of the Primary Site (Enclosure 8).

Alternate Sites

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the USFWS are known to occur in the Alternate Site 2 or the Alternate Site 3 project areas. Preparation of a Biological Assessment or further consultation with the Department of the Army under Section 7 of the Endangered Species Act is not required for Alternate Site 2 or Alternate Site 3.

The following are general environmental measures and best management practices (BMPs) that are common practice to USAR construction sites.

- Prior to construction activity, onsite construction personnel will be briefed regarding BMPs.
- The construction contractor will demarcate the project boundaries and keep these boundaries to the smallest area possible.

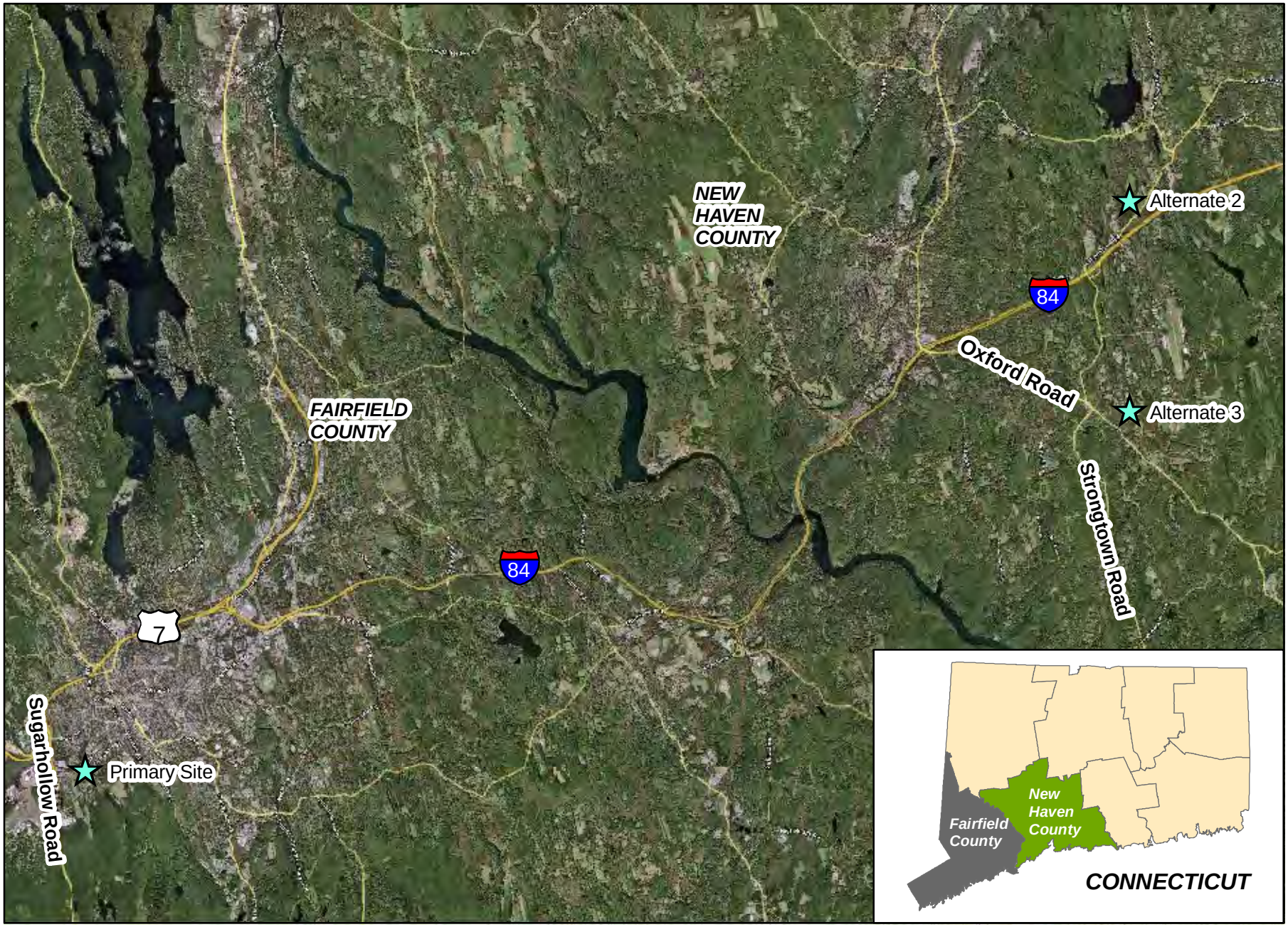
- Garbage and construction debris is to be managed so that it will not attract nuisance wildlife, and refuse will be removed from the Property or stored in appropriate containers until it is removed.
- Soil erosion and sediment control devices will be used and maintained throughout construction.

I would like to thank you in advance for your efforts. We request your comments and concurrence on the proposed undertaking within 30 days of receiving this correspondence. Correspondence and other communication regarding this matter should be directed to Robyn Mock, 99th RSC DPW, Environmental Division, 5231 South Scott Plaza, Fort Dix, NJ 08640-5000, Phone: (609)562-7662, Email: Robyn.Mock@usar.army.mil.

Sincerely,

JEFFREY M HRZIC
Chief, Environmental Division

Enclosures:
Enclosure 1: Location Map of three Potential Sites
Enclosure 2: Location Map of Primary Site
Enclosure 3: Location Map of Alternate Site 2
Enclosure 4: Location Map of Alternate Site 3
Enclosure 5: USGS Quadrangle Map of Primary Site
Enclosure 6: USGS Quadrangle Map of Alternate Site 2
Enclosure 7: USGS Quadrangle Map of Alternate Site 3
Enclosure 8: Natural Diversity Data Base Results for the Primary Site



Site location

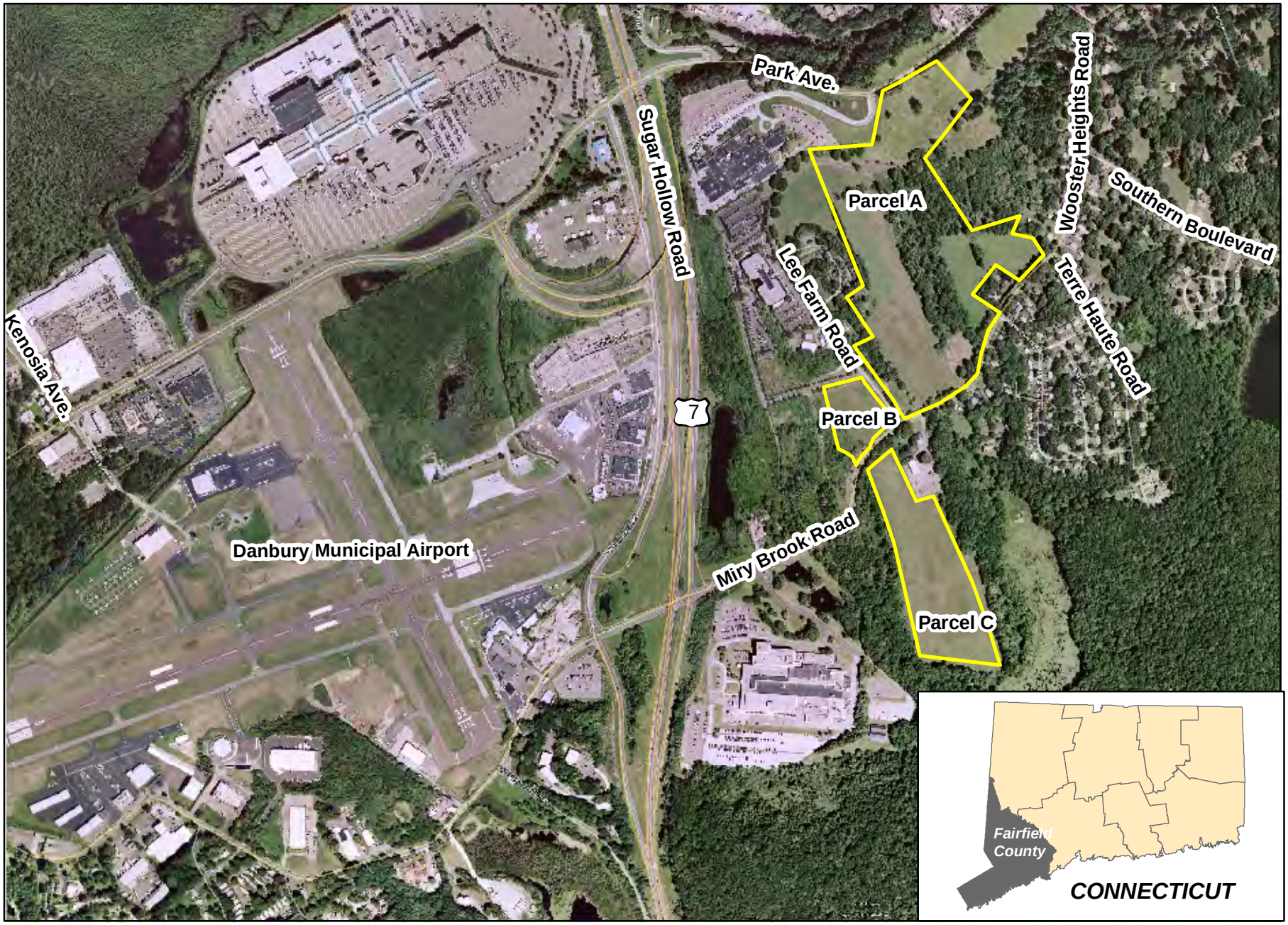
0 6,000 12,000
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 2-1
Site Location Map
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

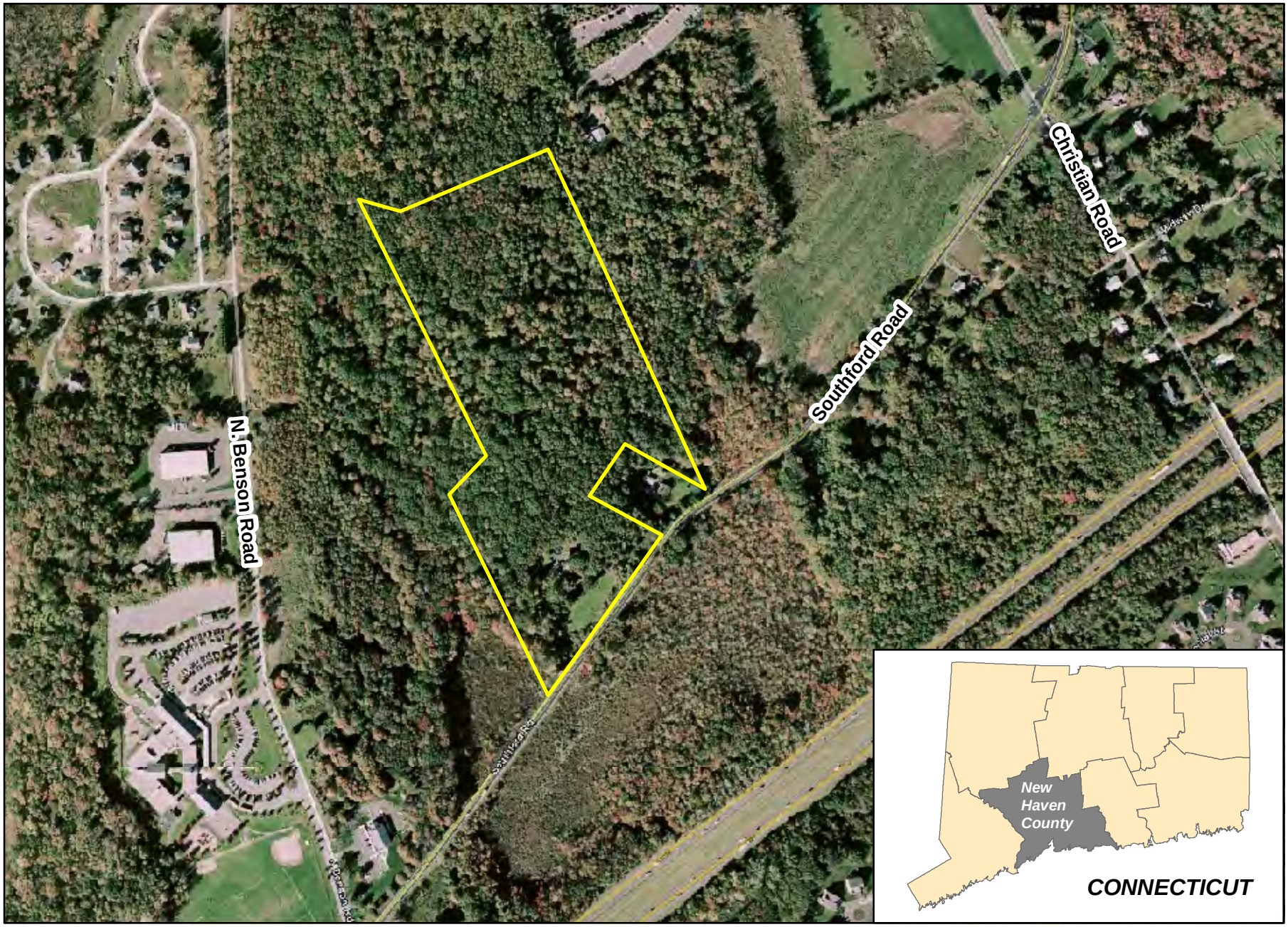
0 490 980
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-1
Primary Site
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

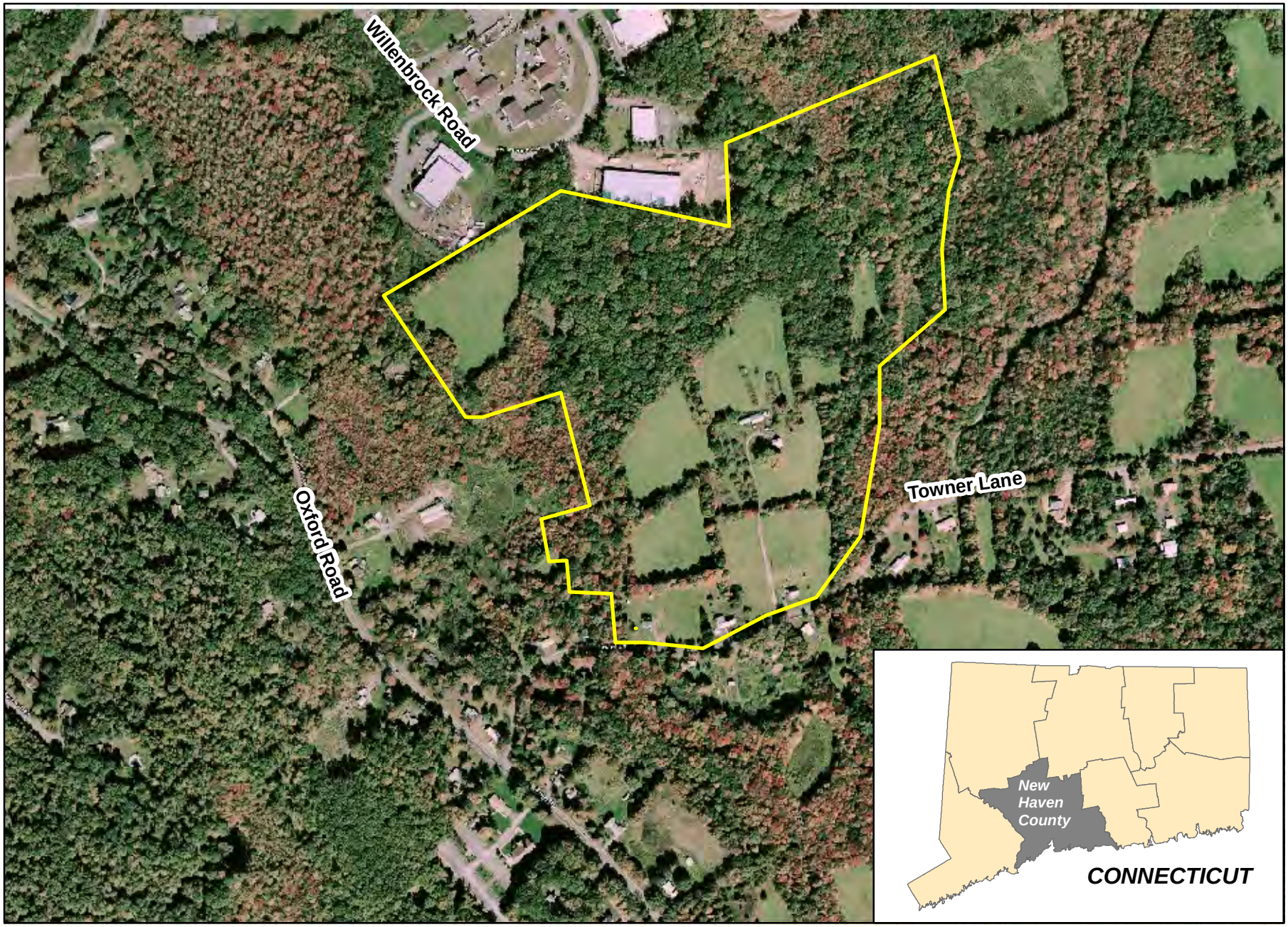
0 185 370
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-3
Alternate Site 2 Location
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

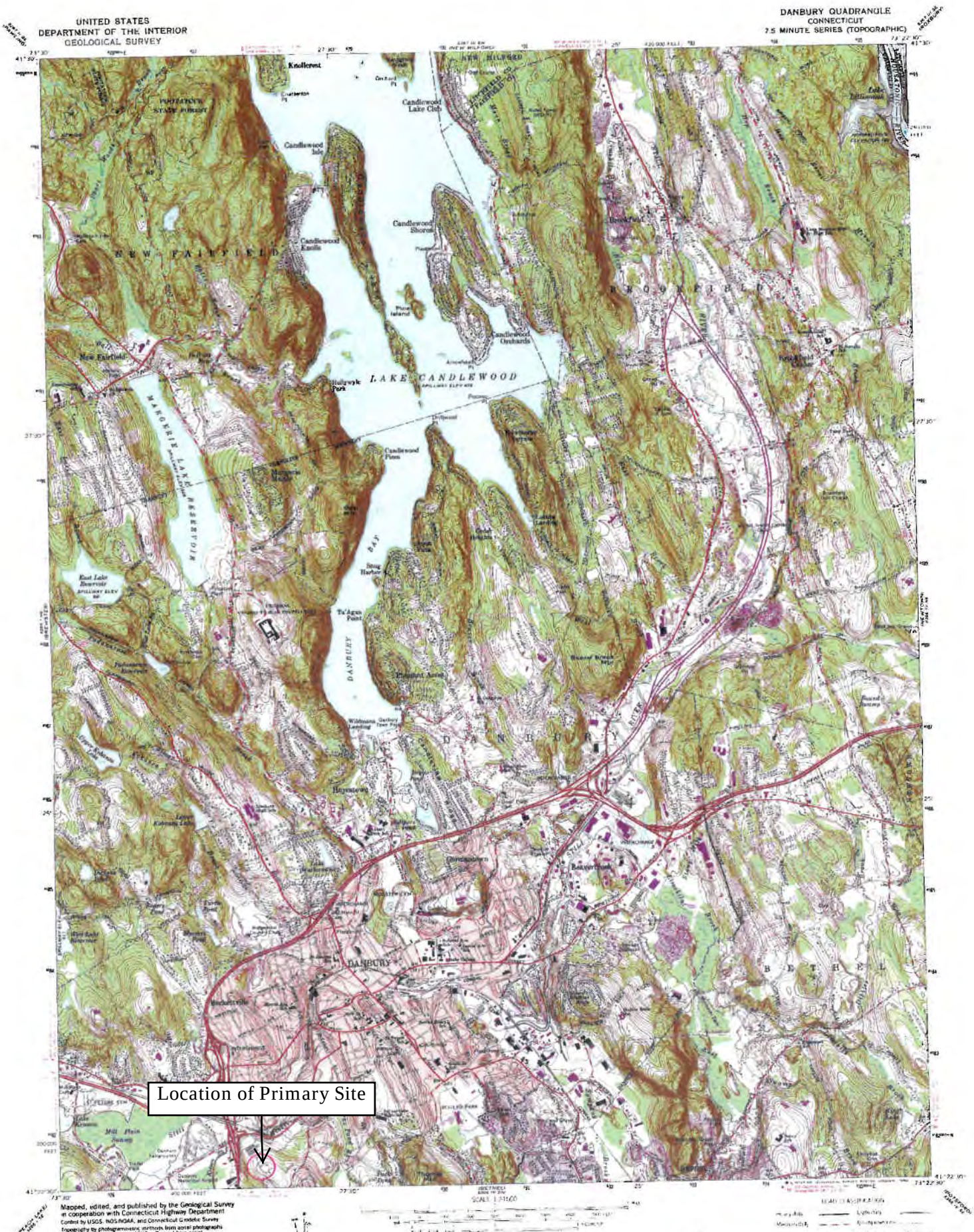
0 300 600
Approximate Scale in Feet

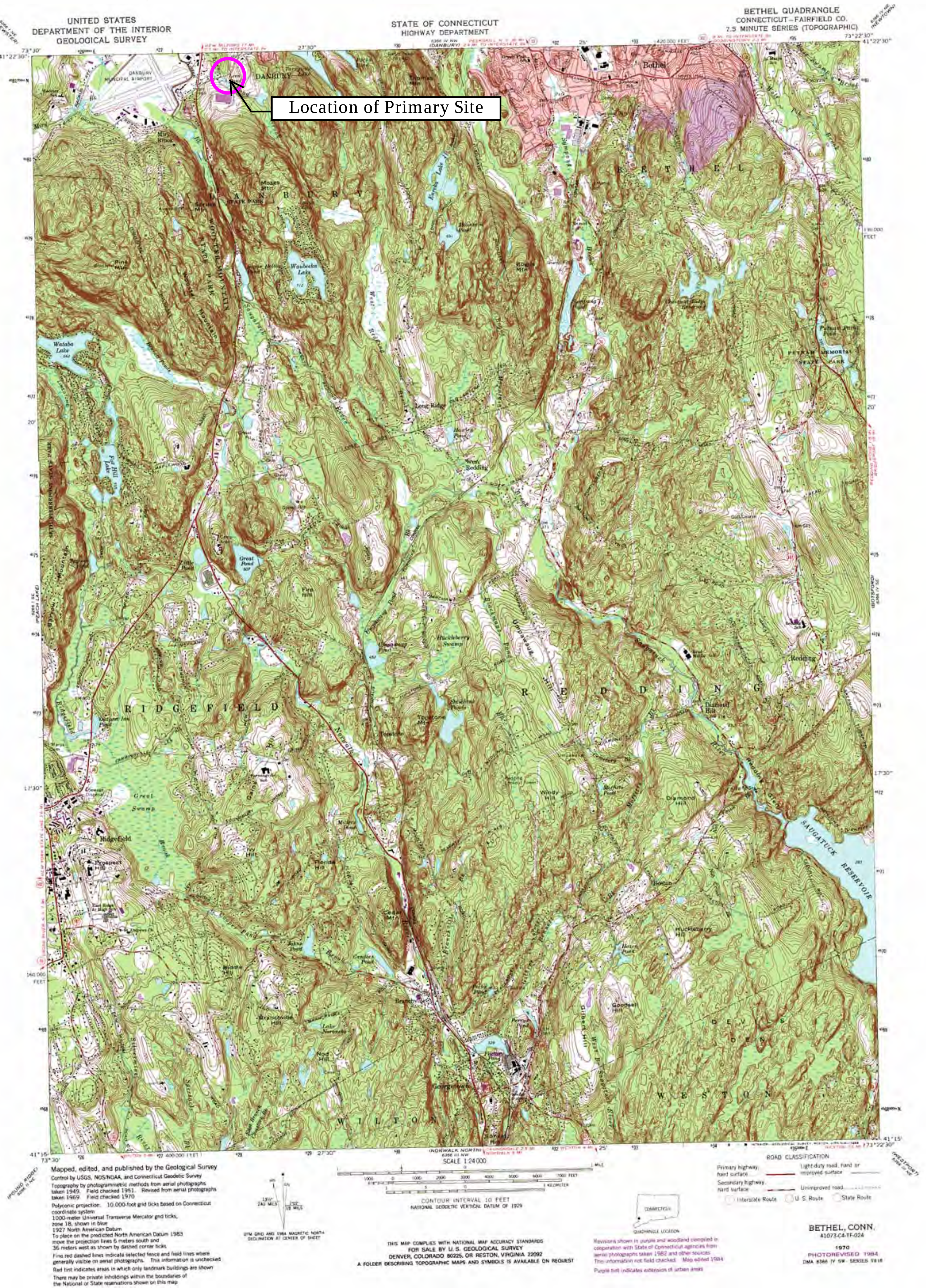
Source:
Aerial: Google Earth, 2009

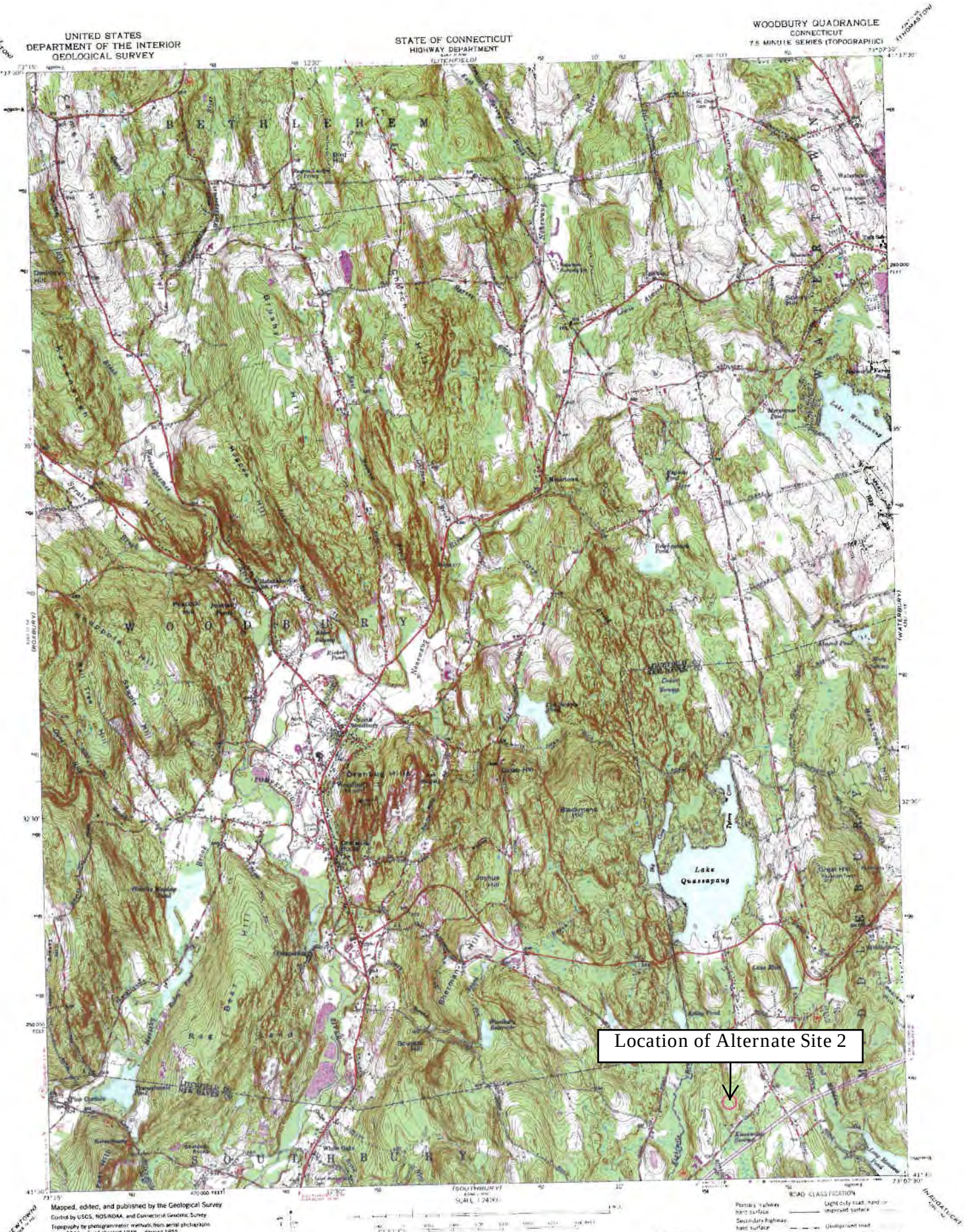
N

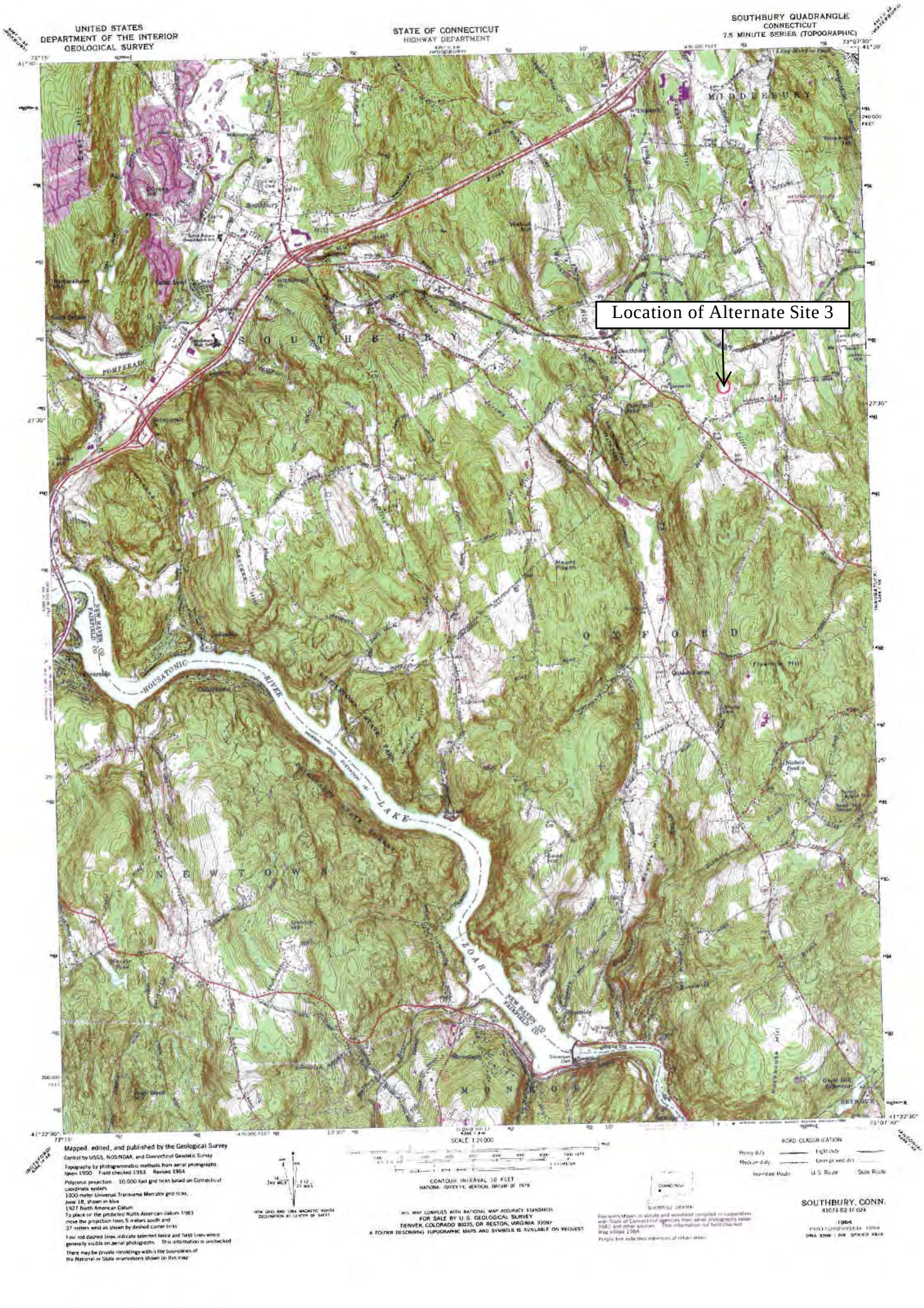
FIGURE 3-4
Alternate Site 3 Location
USACE AFRC, Newtown, CT

CH2MHILL


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
DANBURY QUADRANGLE
CONNECTICUT
7.5 MINUTE SERIES (TOPOGRAPHIC)
LAKE CANDLEWOOD
NEW FAIRFIELD
BROOKFIELD
DANBURY
BETHEL
Location of Primary Site
Mapped, edited, and published by the Geological Survey
in cooperation with Connecticut Highway Department
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
DANBURY, CONN.
41073 D4 TF-024
1963


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CONNECTICUT
HIGHWAY DEPARTMENT
BETHEL QUADRANGLE
CONNECTICUT–FAIRFIELD CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
Location of Primary Site
DANBURY
Bethel
BETHEL
Waubeeka Lake
Long Ridge
Great Pond
Huckleberry Swamp
Tepetone Mtn
R E D D I N G
R I D G E F I E L D
Great Swamp
Ridgefield
Prospect Hill
Redding
Diamond Hill
SAUGATUCK RESERVOIR
Branchville
Georgetown
W I L T O N
W E S T O N
Goodsell Hill
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
ROAD CLASSIFICATION
Primary highway, hard surface
Light duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route
QUADRANGLE LOCATION
BETHEL, CONN.
1970
PHOTOREVISED 1984
Mapped, edited, and published by the Geological Survey
Purple tint indicates extension of urban areas


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CONNECTICUT
HIGHWAY DEPARTMENT
WOODBURY QUADRANGLE
CONNECTICUT
7.5 MINUTE SERIES (TOPOGRAPHIC)
Lake Quassapaug
Location of Alternate Site 2
Mapped, edited, and published by the Geological Survey
Control by USGS, NOS/NOAA, and Connecticut Geodetic Survey
Topography by photogrammetric methods from aerial photographs taken 1944. Field checked 1948. Revised 1955
Polyconic projection. 10,000 foot grid ticks based on Connecticut coordinate system
1000 meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 5 meters south and 37 meters west as shown by dashed corner ticks
CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
ROAD CLASSIFICATION
Primary highway, hard surface
Light duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route
WOODBURY, CONN.
41073 E3 TF 024
1956


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CONNECTICUT
HIGHWAY DEPARTMENT
SOUTHBURY QUADRANGLE
CONNECTICUT
7.5 MINUTE SERIES (TOPOGRAPHIC)
Location of Alternate Site 3
MIDDLEBURY
SOUTHBURY
OXFORD
NEWTOWN
MONROE
POMPERAUG
HOUSATONIC
RIVER
LAKE
ZOAR
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
ROAD CLASSIFICATION
Mapped, edited, and published by the Geological Survey
Control by USGS, NOS/NOAA, and Connecticut Geodetic Survey
Topography by photogrammetric methods from aerial photographs taken 1950. Field checked 1953. Revised 1964
Polyconic projection. 10,000 foot grid ticks based on Connecticut coordinate system
1000 meter Universal Transverse Mercator grid ticks, zone 18, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 5 meters south and 37 meters west as shown by dashed corner ticks
Fine red dashed lines indicate selected trails and field lines where generally visible on aerial photographs. This information is unchecked
There may be private inholdings within the boundaries of the National or State reservations shown on this map
UTM GRID AND 1964 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET
NTS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
SOUTHBURY, CONN.
41073-B2-TF-024
1964
PHOTOREVISED 1974
DMA 6368 I NW-SERIES V816

STATE AND FEDERAL LISTED SPECIES
AND SIGNIFICANT NATURAL COMMUNITIES

Danbury

LEGEND

- Listed Species and Natural Communities*
- State Boundary
- County Boundary
- Town Boundary
- Coastline
- Primary Route
- Secondary Route
- Local Road
- Railroad
- Water, Shore
- Drainage Ditch
- Intermittent Water
- Dam
- Dredged Channel
- Aqueduct
- Water
- Intermittent Water
- Tidal, Sand Flats
- Rocks in Water
- Inundated Area
- Marsh
- Dam

TO USE MAP

Locate project boundaries and any additional affected areas on the map. If the project is not within a shaded area; or overlapping a lake, pond or wetland that has any shading; or upstream or downstream (by less than 1/2 mile) from a shaded area, the project is unlikely to affect any known occurrence of listed species or significant natural community. If any part of the project is within a shaded area; or overlapping a lake, pond, or wetland that has any shading; or upstream or downstream (by less than 1/2 mile) from a shaded area, then the project may have a potential conflict with a species or natural community. Complete a Data Base Request Form and submit to the Natural Diversity Data Base along with a project description and a copy of a map clearly showing the project boundaries.

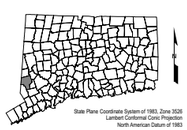
DATA SOURCES

BASE MAP INFORMATION - Political boundaries, railroads, and hydrography originally derived from 1:24,000 scale 7.5 Minute U.S. Geological Survey Digital Line Graphs and enhanced by the Connecticut Department of Environmental Protection. The data is based on 1:24,000 scale Topographic Quadrangle maps published between 1969 and 1984. The roads and road name data are provided by Tele Atlas. Annotation derived in part from U.S. Geological Survey Geographic Names Information System and information on file at the Connecticut Department of Environmental Protection. The base map data may be neither current nor complete.

* NDDB INFORMATION - Locations of listed species and natural communities are based on data collected by the CT Department of Environmental Protection, private conservation groups and the scientific community and compiled by the Natural Diversity Data Base. The information is not necessarily the result of comprehensive or site-specific field investigations; in some cases locations have been derived from literature or museum searches or historic records. Exact locations have been buffered to produce generalized locations. The exact species or community location falls somewhere within the shaded area and not necessarily in the center. Information on this map does not include Natural Area Preserves, designated wetland areas or wildlife concentration areas. More information is available at www.ct.gov/dep/endangeredspecies

Date of Map: June 2009,
Natural Diversity Database Digital Data

For inquiries about the State and Federal Listed Species and Significant Natural Communities map: Contact DEP, Bureau of Natural Resource, Wildlife Division. Tel: 860-424-3011



State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

SCALE

1 0.5 0 1 Miles

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometers

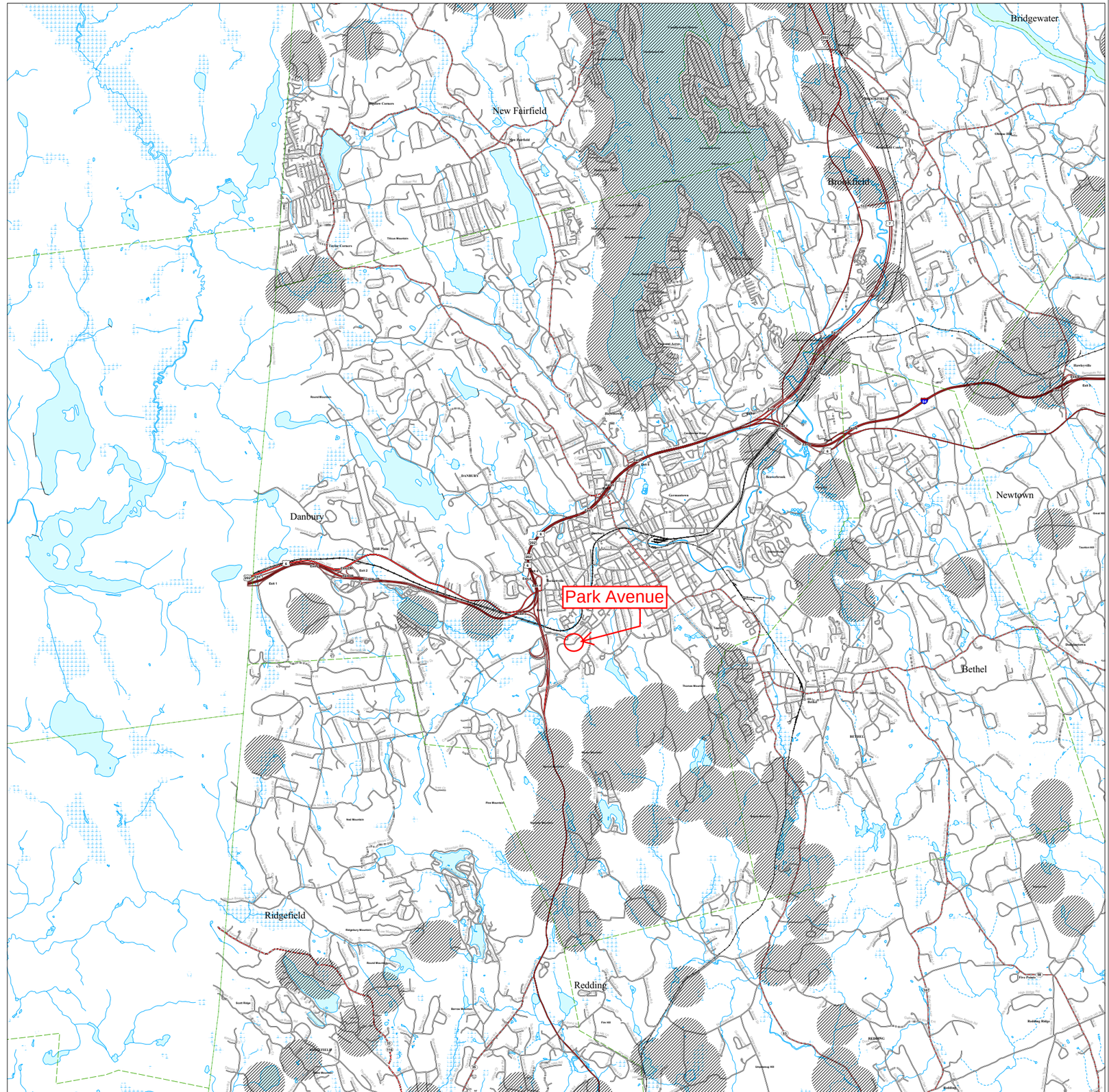
STATE OF CONNECTICUT
DEPARTMENT OF
ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

www.ct.gov/dep

Maps Available at the DEP Store
79 Elm St, Hartford, CT 06106-5127
860.424.3555 fax 860.424.4088
depstore@po.state.ct.us

GIS data available for download
www.ct.gov/dep/gis

NOTE: This map is not colorfast. Protect from light and moisture.



10-TA-0177

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

May 19, 2010

Reference:	Project	Location
	EA, Joint Armed Forces Reserve Center	Danbury, Middlebury, Oxford, CT

Robyn Mock
99th RSC DPW
Environmental Division
5231 South Scott Plaza
Fort Dix, NJ 08640-5000

Dear Ms. Mock:

This responds to Jeffrey Hrzic's recent correspondence requesting information on the presence of federally-listed and/or proposed endangered or threatened species in relation to the proposed activity(ies) referenced above.

Based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required.

This concludes our review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

In order to curtail the need to contact this office in the future for updated lists of federally-listed or proposed threatened or endangered species and critical habitats, please visit the Endangered Species Consultation page on the New England Field Office's website:

www.fws.gov/newengland/endangeredspec-consultation.htm

In addition, there is a link to procedures that may allow you to conclude if habitat for a listed species is present in the project area. If no habitat exists, then no federally-listed species are present in the project area and there is no need to contact us for further consultation. If the above conclusion

cannot be reached, further consultation with this office is advised. Information describing the nature and location of the proposed activity that should be provided to us for further informal consultation can be found at the above-referenced site.

Thank you for your coordination. Please contact Anthony Tur at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Eric L. Dewhirst
Acting For

Thomas R. Chapman
Supervisor
New England Field Office

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

April 14, 2010

Mr. Lance Hansen
Wildlife Division
Bureau of Natural Resources
Department of Environmental Protection
79 Elm St, 6th Floor
Hartford, CT 06106-5127

Dear Mr. Hansen,

The Assistant Chief of Staff Installation Management-Army Reserve Division and the US Army Reserve (USAR) 99th Regional Support Command (RSC) are preparing an Environmental Assessment (EA) for a proposed military construction project located near Newtown, Connecticut. Three potential sites (Enclosure 1) are being evaluated as locations for the proposed military construction project: the Primary Site (150 Park Avenue) located in the City of Danbury, Alternate Site 2 (764 Southford Road) located in the Town of Middlebury, and Alternate Site 3 (23-29 Towner Lane) located in the Town of Oxford (Enclosures 2 through 4).

The USAR 99th RSC proposes to design and construct an approximately 113,370-square-foot Armed Forces Reserve Center training building; a 26,905-square-foot vehicle maintenance shop; a 5,341-square-foot unheated storage building; and parking for military equipment and privately owned vehicles.

Enclosed please find three Connecticut Natural Diversity Data Base (NDDB) Review Request Forms for the potential sites (Enclosures 5 through 7). The NDDB was reviewed and no impacts were identified at the Primary Site. Alternate Site 2 is located within an area identified as having potential to contain endangered or threatened species or significant natural communities. Alternate Site 3 is located 1/2 mile upstream to an area identified as having potential to contain endangered or threatened species or significant natural communities. Please review the enclosed maps and provide information regarding any additional required coordination.

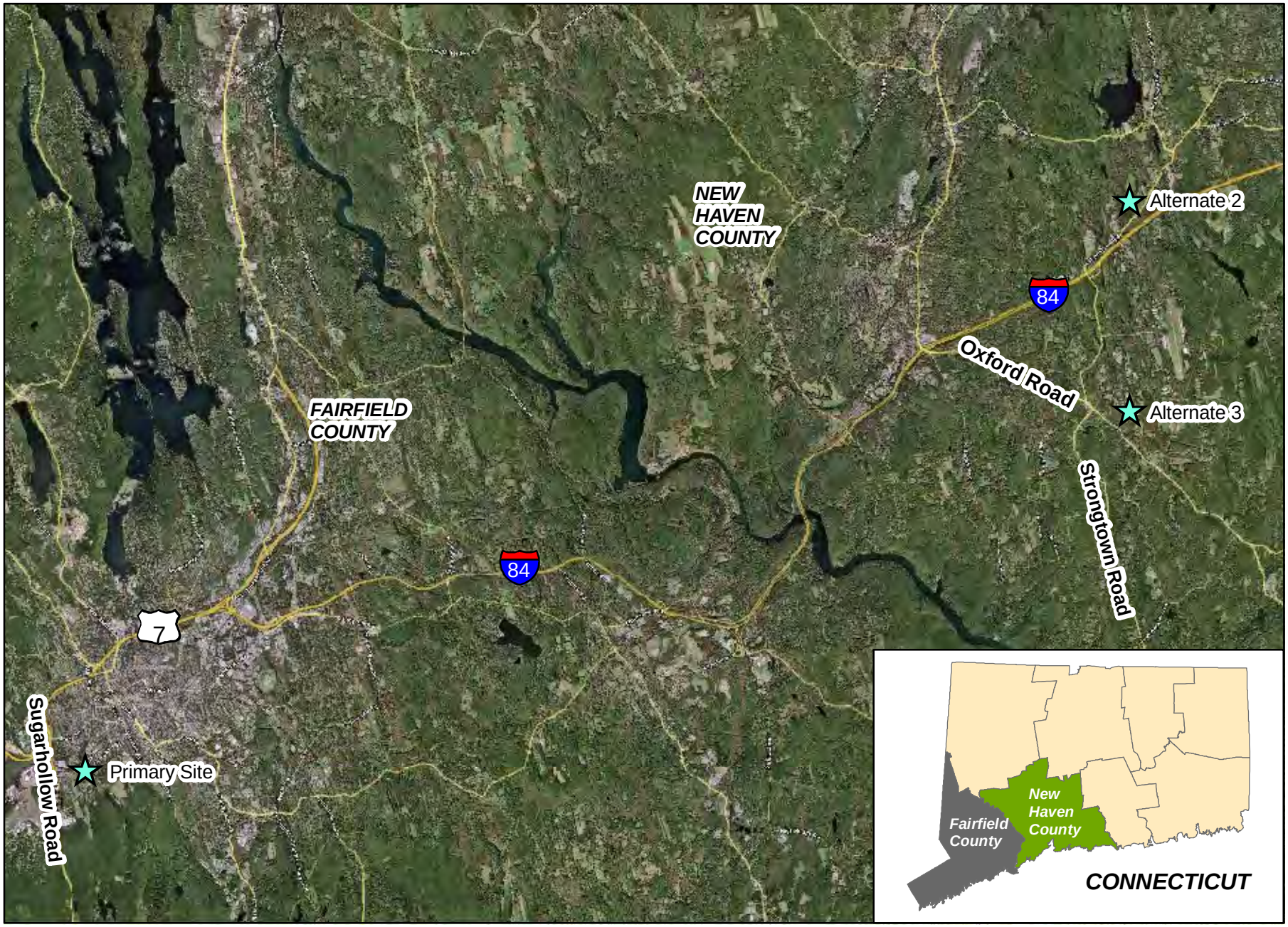
I would like to thank you in advance for your efforts. We request your comments and concurrence on the proposed undertaking within 30 days of receiving this correspondence. Correspondence and other communication regarding this matter should be directed to Robyn

Mock, 99th RSC DPW, Environmental Division, 5231 South Scott Plaza, Fort Dix, NJ 08640-5000, Phone: (609)562-7662, Email: Robyn.Mock@usar.army.mil.

Sincerely,

JEFFREY M HRZIC
Chief, Environmental Division

Enclosures:
Enclosure 1: Location Map of three Potential Sites
Enclosure 2: USGS Map – Primary Site (150 Park Avenue)
Enclosure 3: USGS Map – Alternate Site 2 (764 Southford Road)
Enclosure 4: USGS Map – Alternate Site 3 (23-29 Towner Lane)
Enclosure 5: Connecticut Natural Diversity Data Base Review Request Form – Primary Site
Enclosure 6: Connecticut Natural Diversity Data Base Review Request Form – Alternate Site 2
Enclosure 7: Connecticut Natural Diversity Data Base Review Request Form – Alternate Site 3



Site location

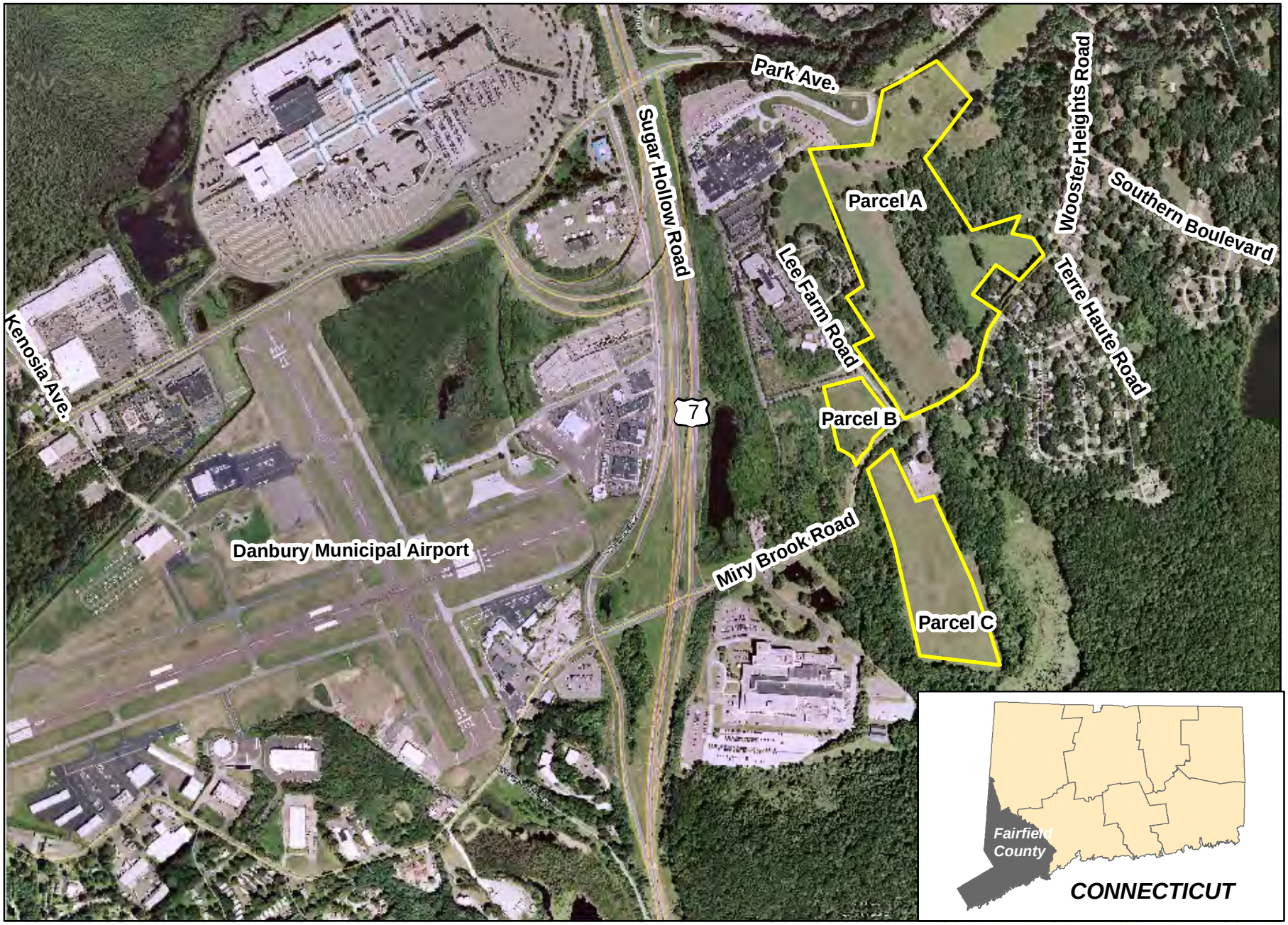
0 6,000 12,000
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 2-1
Site Location Map
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

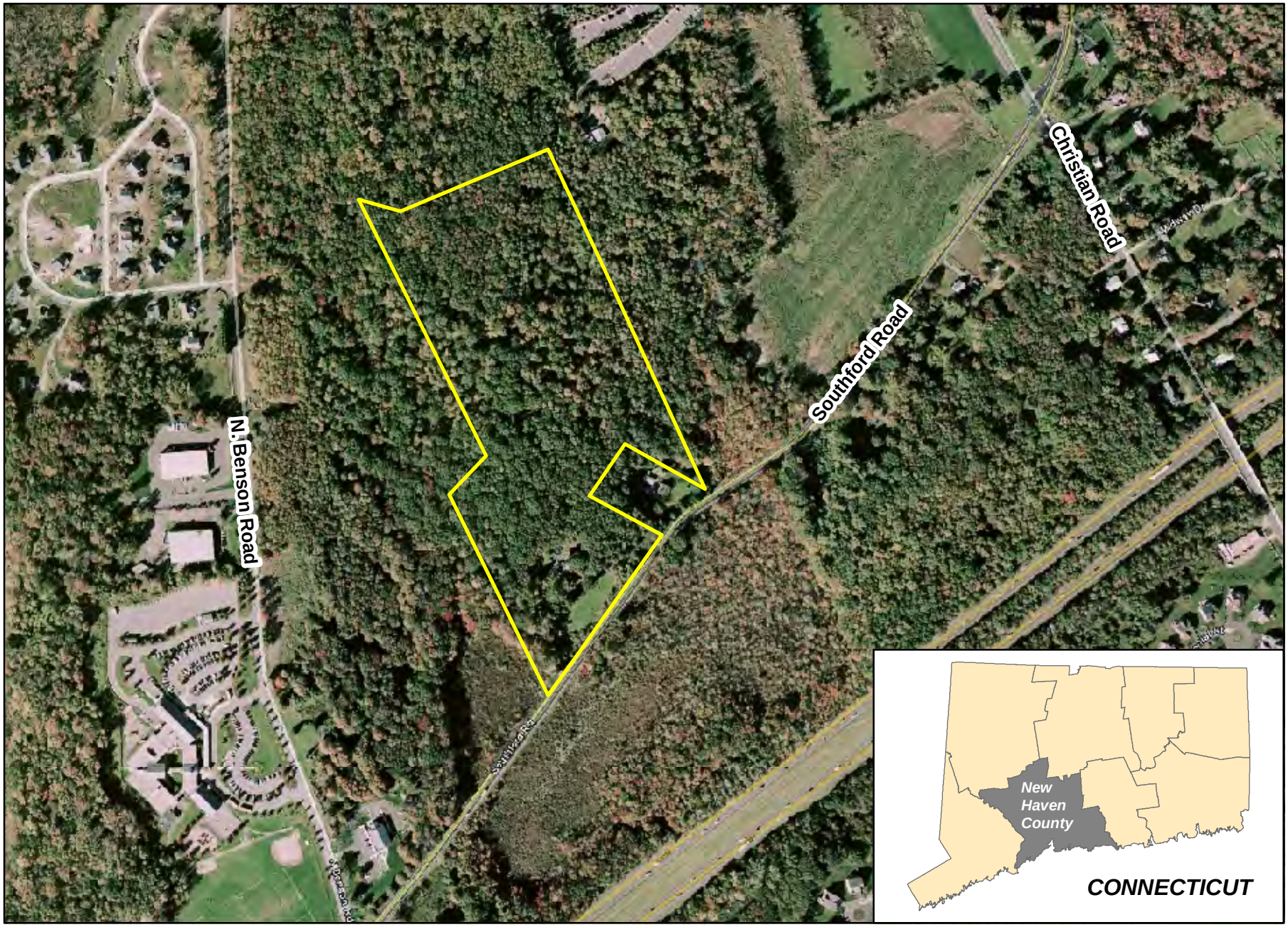
0 490 980
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-1
Primary Site
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

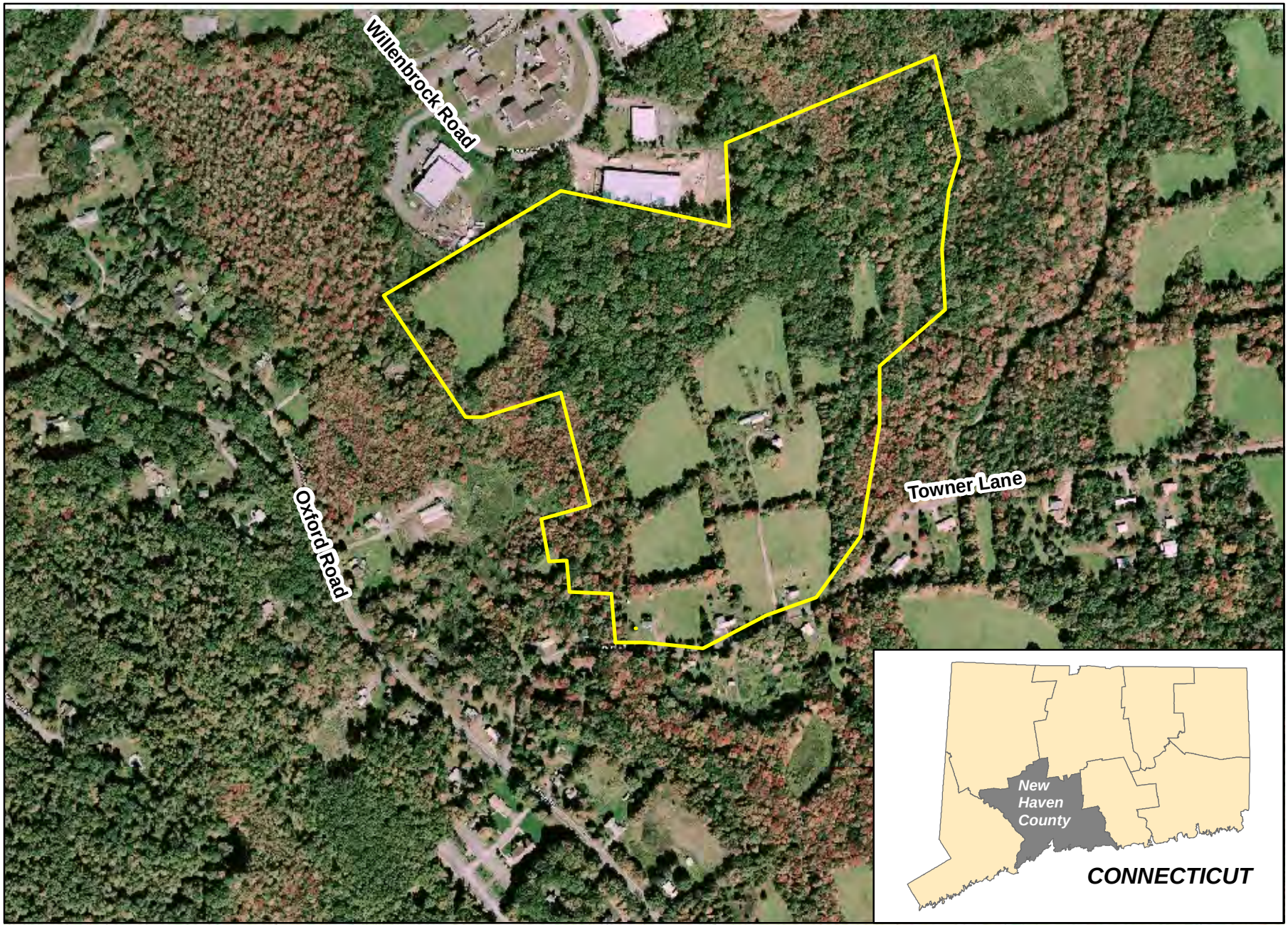
0 185 370
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-3
Alternate Site 2 Location
USACE AFRC, Newtown, CT

CH2MHILL



Approximate Site Boundary

0 300 600
Approximate Scale in Feet

Source:
Aerial: Google Earth, 2009

N

FIGURE 3-4
Alternate Site 3 Location
USACE AFRC, Newtown, CT

CH2MHILL

Connecticut Natural Diversity Data Base Review Request Form

Please complete this form *only* if you have conducted a review which determined that your activity is located in an area of concern.

Name: **Lindsey Carr**

Affiliation: **CH2M HILL**

Mailing Address: **15010 Conference Center Drive**

City/Town: **Chantilly** State: **VA** Zip Code: **20151**

Business Phone: **703-376-5000** ext. **45055** Fax: **703-376-5555**

Contact Person: **Lindsey Carr** Title: **EnvironmentalScientist**

Project or Site Name: **150 Park Avenue**

Project Location

Town: **City of Danbury (Fairfield County)** USGS Quad: **Danbury**

Brief Description of Proposed Activities:

The US Army Reserve (USAR) 99th Regional Support Command proposes to construct and operate a US Joint Armed Forces Reserve Center in Fairfield County, CT (City of Danbury). The proposed project would provide a new 1,000-member training building, a vehicle maintenance shop, an unheated storage facility, and organizational parking to support the USAR units.

Have you conducted a "State and Federal Listed Species and Natural Communities Map" review?

☒ Yes ☐ No Date of Map: **June 2009**

Has a field survey been previously conducted to determine the presence of any endangered, threatened or special concern species? ☐ Yes ☒ No

If yes, provide the following information and submit a copy of the field survey with this form.

Biologists Name:

Address:

If the project will require a permit, list type of permit, agency and date or proposed date of application:

Environmental Permit - Inland Water Resources Division Activities, CT DEP, Proposed date of application (August 2010).

(See reverse side - you must sign the certification on the reverse side of this form)

The Connecticut Natural Diversity Data Base (CT NDDB) information will be used for:

☐ permit application

☒ environmental assessment (give reasons for assessment):

USAR proposing to construct a US Army Reserve Center

☒ other (specify):

Note: The NDDB map from June 2009 was reviewed and no impacts were identified within the vicinity of the 150 Park Avenue Site.

"I certify that the information supplied on this form is complete and accurate, and that any material supplied by the CT NDDB will not be published without prior permission."

Signature

March 10, 2010

Date

All requests must include a USGS topographic map with the project boundary clearly delineated.

Return completed form to:

WILDLIFE DIVISION
BUREAU OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM ST, 6TH FLOOR
HARTFORD, CT 06106-5127

* You must submit a copy of this completed form with your registration or permit application.

Connecticut Natural Diversity Data Base Review Request Form

Please complete this form *only* if you have conducted a review which determined that your activity is located in an area of concern.

Name: **Lindsey Carr**

Affiliation: **CH2M HILL**

Mailing Address: **15010 Conference Center Drive**

City/Town: **Chantilly** State: **VA** Zip Code: **20151**

Business Phone: **703-376-5000** ext. **45055** Fax: **703-376-5555**

Contact Person: **Lindsey Carr** Title: **EnvironmentalScientist**

Project or Site Name: **764 Southford Road**

Project Location

Town: **Middlebury (New Haven County)** USGS Quad: **Woodbury**

Brief Description of Proposed Activities:

The US Army Reserve (USAR) 99th Regional Support Command proposes to construct and operate a US Joint Armed Forces Reserve Center in New Haven County, CT (Town of Middlebury). The proposed project would provide a new 1,000-member training building, a vehicle maintenance shop, an unheated storage facility, and organizational parking to support the USAR units.

Have you conducted a "State and Federal Listed Species and Natural Communities Map" review?

☒ Yes ☐ No Date of Map: **June 2009**

Has a field survey been previously conducted to determine the presence of any endangered, threatened or special concern species? ☐ Yes ☒ No

If yes, provide the following information and submit a copy of the field survey with this form.

Biologists Name:

Address:

If the project will require a permit, list type of permit, agency and date or proposed date of application:

Unknown

(See reverse side - you must sign the certification on the reverse side of this form)

The Connecticut Natural Diversity Data Base (CT NDDB) information will be used for:

☐ permit application

☒ environmental assessment (give reasons for assessment):

USAR proposing to construct a US Army Reserve Center

☒ other (specify):

Note: The NDDB map from June 2009 was reviewed and Alternate Site 2 (764 Southford Road) is located within an area identified as having potential to contain endangered or threatened species or significant natural communities.

"I certify that the information supplied on this form is complete and accurate, and that any material supplied by the CT NDDB will not be published without prior permission."

Signature

March 10, 2010

Date

All requests must include a USGS topographic map with the project boundary clearly delineated.

Return completed form to:

WILDLIFE DIVISION
BUREAU OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM ST, 6TH FLOOR
HARTFORD, CT 06106-5127

* You must submit a copy of this completed form with your registration or permit application.

Connecticut Natural Diversity Data Base Review Request Form

Please complete this form *only* if you have conducted a review which determined that your activity is located in an area of concern.

Name: **Lindsey Carr**

Affiliation: **CH2M HILL**

Mailing Address: **15010 Conference Center Drive**

City/Town: **Chantilly** State: **VA** Zip Code: **20151**

Business Phone: **703-376-5000** ext. **45055** Fax: **703-376-5555**

Contact Person: **Lindsey Carr** Title: **EnvironmentalScientist**

Project or Site Name: **23-29 Towner Lane**

Project Location

Town: **Oxford (New Haven County)** USGS Quad: **Southbury**

Brief Description of Proposed Activities:

The US Army Reserve (USAR) 99th Regional Support Command proposes to construct and operate a US Joint Armed Forces Reserve Center in New Haven County, CT (Town of Oxford). The proposed project would provide a new 1,000-member training building, a vehicle maintenance shop, an unheated storage facility, and organizational parking to support the USAR units.

Have you conducted a "State and Federal Listed Species and Natural Communities Map" review?

☒ Yes ☐ No Date of Map: **June 2009**

Has a field survey been previously conducted to determine the presence of any endangered, threatened or special concern species? ☐ Yes ☒ No

If yes, provide the following information and submit a copy of the field survey with this form.

Biologists Name:

Address:

If the project will require a permit, list type of permit, agency and date or proposed date of application:

Unknown

(See reverse side - you must sign the certification on the reverse side of this form)

The Connecticut Natural Diversity Data Base (CT NDDB) information will be used for:

☐ permit application

☒ environmental assessment (give reasons for assessment):

USAR proposing to construct a US Army Reserve Center

☒ other (specify):

Note: The NDDB map from June 2009 was reviewed and Alternate Site 3 (23-29 Towner Lane) is located 1/2 miles upstream to an area identified as having potential to contain endangered or threatened species or significant natural communities.

"I certify that the information supplied on this form is complete and accurate, and that any material supplied by the CT NDDB will not be published without prior permission."

Signature	**March 10, 2010** Date

All requests must include a USGS topographic map with the project boundary clearly delineated.

Return completed form to:

WILDLIFE DIVISION
BUREAU OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM ST, 6TH FLOOR
HARTFORD, CT 06106-5127

* You must submit a copy of this completed form with your registration or permit application.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Division of Wildlife
79 Elm Street, 6th Floor
Hartford, CT 06106
Natural Diversity Data Base

May 25, 2010

Ms. Lindsey Carr
CH2M Hill
15010 Conference Center Drive
Chantilly, VA 20151

RE: Proposed Construction of a US Joint Armed Forces Reserve Center, 150 Park Avenue, Danbury, CT

Dear Ms. Carr:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed construction of a US Joint Armed Forces Reserve Center, 150 Park Ave., Danbury, CT. According to our information, there are records for State Endangered and Federally Threatened *Clemmys muhlenbergii* (bog turtle) from the vicinity of this project site. I have sent your letter to Julie Victoria (DEP-Wildlife; 860-642-7239) for further review. She will write to you directly with her comments.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Environmental Protection's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

Dawn M. McKay
Biologist/Environmental Analyst

cc: Julie Victoria, NDDB#17692

DMM/hwo

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Division of Wildlife
79 Elm Street, 6th Floor
Hartford, CT 06106
Natural Diversity Data Base

May 25, 2010

Ms. Lindsey Carr
CH2M Hill
15010 Conference Center Drive
Chantilly, VA 20151

RE: Proposed Construction of a US Joint Armed Forces Reserve Center, 23-29 Towner Lane, Oxford, CT

Dear Ms. Carr:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed construction of a US Joint Armed Forces Reserve Center, 23-29 Towner Lane, Oxford, CT. According to our information, there are records for State Threatened *Falco sparverius* (American kestrel) from the vicinity of this project site. I have sent your letter to Julie Victoria (DEP-Wildlife; 860-642-7239) for further review. She will write to you directly with her comments.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Environmental Protection's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

Dawn M. McKay
Biologist/Environmental Analyst

cc: Julie Victoria, NDDB#17691

DMM/hwo

FACSIMILE COVER SHEET

Department of Environmental Protection
Wildlife Division
Franklin Wildlife Management Area
391 Route 32
North Franklin, CT 06254
Phone - 860-642-7239
Fax - 860-642-7964

Send To: Lindsey Carr	*From:* John V.
Company:	*Date:* 6/2/10
Fax Number: 703-376-5555	*Phone Number:*

☐ *Urgent* ☐ *Reply ASAP* ☐ *Please Comment* ☐ *As Requested* ☐ *FYI*

TOTAL PAGES, INCLUDING COVER SHEET: 3

COMMENTS: The originals are in the mail

CONFIDENTIALITY NOTICE: If you have received this facsimile in error, please immediately notify the sender by telephone at the number above. The documents accompanying this facsimile transmission contain confidential information. This information is intended only for the use of the individual(s) or entity named above. Thank you for you compliance.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FRANKLIN WILDLIFE MANAGEMENT AREA
391 ROUTE 32
NORTH FRANKLIN, CT 06254
TELEPHONE: (860) 642-7239

May 28, 2010

Ms. Lindsey Carr
CH2M Hill
15010 Conference Center Drive
Chantilly, VA 20151

re: Proposed construction of a US Joint Armed Forces Reserve Center, 150 Park Avenue, Danbury

Dear Ms. Carr:

Your request was forwarded to me on 5/28/10 from Dawn McKay of the Department of Environmental Protection's (DEP) Natural Diversity Data Base. Their records indicate that the federally threatened and state endangered, bog turtle, *Glyptemys muhlenbergii,* historically occurred in the vicinity of the project.

The preferred habitat of the bog turtle is bogs, swamps, and marshy meadows having clear slow- moving streams with soft bottoms. Draining and flooding of the habitat is a major ecological problem for the species. Eastern box turtles require old field and deciduous forest habitats, which can include power lines and logged woodlands. They are often found near small streams and ponds, the adults are completely terrestrial but the young may be semiaquatic, and hibernate on land by digging down in the soil from October to April. They have an extremely small home range and can usually be found in the same area year after year.

Since the bog turtle is a federally threatened species, you should forward a detailed project proposal to the U. S. Fish and Wildlife Service (USFWS) for their information and notification (Anthony Tur, U. S. Fish and Wildlife Service, 70 Commercial Street, Suite 300, Concord, NH 03301-5087, (603) 223-2541). If suitable habitat exists on this site and will be impacted by the project, a consultation may be required per the Endangered Species Act. The Wildlife Division will be happy to assist the USFWS and you in the consultation process. The USFWS has a list of herpetologists that are qualified to do a Phase 1 Bog Turtle Survey since particular protocols need to be addressed.

If the hydrology of any Bog Turtle habitat will be impacted, the Wildlife Division recommends that a USFWS qualified herpetologist familiar with the habitat requirements of these turtles conduct surveys (contact USFWS for list). A report summarizing the results of such surveys should include habitat descriptions, reptile species list and a statement/resume giving the herpetologist' qualifications. The DEP does not maintain a list of herpetologists in the state. A DEP Wildlife Division permit may be required by the herpetologist to conduct survey work, you should ask if your herpetologist has one. The results of this investigation can be forwarded to the Wildlife Division and, after evaluation, recommendations for additional surveys, if any, will be made.

Please be advised that the Wildlife Division has not made a field inspection of the project nor have we seen detailed timetables for work to be done. Consultation with the Wildlife Division should not be substituted for site-specific surveys that may be required for environmental assessments. The time of year when this work will take place will affect this species if they are present on the site when the work is scheduled. Please be advised that should state permits be required or should state involvement occur in some other fashion, specific restrictions or conditions relating to the species discussed above may apply. In this situation, additional evaluation of the proposal by the DEP Wildlife Division should be requested. If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review. If you have any additional questions, please feel free to contact me at Julie.Victoria@ct.gov, please reference the NDDB # at the bottom of this letter when you e-mail or write. Thank you for the opportunity to comment.

Sincerely,

Julie Victoria, Wildlife Biologist
Franklin Swamp Wildlife Management Area
391 Route 32
N. Franklin, CT 06254

cc: NDDB – 17692

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FRANKLIN WILDLIFE MANAGEMENT AREA
391 ROUTE 32
NORTH FRANKLIN, CT 06254
TELEPHONE: (860) 642-7239

May 28, 2010

Ms. Lindsey Carr
CH2M Hill
15010 Conference Center Drive
Chantilly, VA 20151

re: Proposed construction of a US Joint Armed Forces Reserve Center, 23-29 Towner Lane, Oxford

Dear Ms. Carr:

Your request was forwarded to me on 5/28/10 from Dawn McKay of the Department of Environmental Protection's (DEP) Natural Diversity Data Base. Their records indicate that a state threatened species, American kestrel occurred historically in the vicinity of this project site.

American kestrel (*Falco sparverius*) nest in late March - April in open areas like woodland edges, parks, and open field habitat. They are cavity nesters and seek out abandoned woodpecker or flicker holes to nest. They catch and eat mice, voles, shrews and insects. They winter over much of the nesting range. Kestrels are cavity nesters and will nest in artificial nesting boxes that are placed in the area. Artificial nesting box plans will be provided at your request. Nesting boxes and silvicultural practices that maintain high densities of nesting and roosting cavities in trees with a minimum diameter of 30.5 cm will benefit this species.

If this work will be conducted in any American kestrel habitat, the Wildlife Division recommends that an ornithologist familiar with the habitat requirements of these species conduct surveys. A report summarizing the results of such surveys should include habitat descriptions, avian species list and a statement/resume giving the ornithologist' qualifications. The DEP doesn't maintain a list of qualified ornithologists. The results of this investigation can be forwarded to the Wildlife Division and, after evaluation, recommendations for additional surveys, if any, will be made.

Please be advised that the Wildlife Division has not made a field inspection of the project nor have we seen detailed timetables for work to be done. Consultation with the Wildlife Division should not be substituted for site-specific surveys that may be required for environmental assessments. The time of year when this work will take place will affect this species if they are present on the site when the work is scheduled. Please be advised that should state permits be required or should state involvement occur in some other fashion, specific restrictions or conditions relating to the species discussed above may apply. In this situation, additional evaluation of the proposal by the DEP Wildlife Division should be requested. If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review. If you have any additional questions, please feel free to contact me at Julie.Victoria@ct.gov, please reference the NDDB # at the bottom of this letter when you e-mail. Thank you for the opportunity to comment.

Sincerely,

Julie Victoria, Wildlife Biologist
Franklin Swamp Wildlife Management Area
391 Route 32
N. Franklin, CT 06254

cc: NDDB – 17691

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Dr. Lewis Randall
Eastern Pequot Tribal Nation
P.O. Box 208
North Stonington, CT 06359

Dear Dr. Randall:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

Three sites (see enclosures 1 through 4) are being evaluated as reasonable locations for the proposed AFRC:

- 150 Park Avenue, Danbury, CT) (Current preferred site)
- 764 Southford Road, Middlebury, CT; and
- 23-29 Towner Lane, Oxford, CT

The USAR 99th RSC proposes to design and construct an approximately 113,370-square-foot Armed Forces Reserve Center training building; a 26,905-square-foot vehicle maintenance shop; a 5,341-square-foot unheated storage building; and parking for military equipment and privately owned vehicles.

Please accept this correspondence as notification and invitation to participate in the consultation process concerning this action, as required by the National Historic Preservation Act of 1966 (NHPA), as amended; the Archaeological Resources Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; and Presidential Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*. In accordance with the above regulations, we are proposing to conduct cultural resource assessments for these properties.

I would like to thank you in advance for your efforts. We request your comments and concurrence on the proposed undertaking within 30 days of receiving this correspondence. Correspondence and other communication regarding this matter should be directed to Robyn Mock, 99th RSC DPW, Environmental Division, 5231 South Scott Plaza, Fort Dix, NJ 08640-5000, Phone: (609)562-7662, Email: Robyn.Mock@usar.army.mil.

Sincerely,

JEFFREY M HRZIC
Chief, Environmental Division

Enclosures:
Enclosure 1: Location Map of three Potential Sites
Enclosure 2: USGS Map – Primary Site (150 Park Avenue)
Enclosure 3: USGS Map – Alternate Site 2 (764 Southford Road)
Enclosure 4: USGS Map – Alternate Site 3 (23-29 Towner Lane)

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Lin Murray
City of Danbury
Conservation Commission
155 Deer Hill Avenue
Danbury, CT 06810

Dear Ms. Murray:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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- 23-29 Towner Lane, Oxford, CT

The USAR 99th RSC proposes to design and construct an approximately 113,370-square-foot Armed Forces Reserve Center training building; a 26,905-square-foot vehicle maintenance shop; a 5,341-square-foot unheated storage building; and parking for military equipment and privately owned vehicles.

As part of the project coordination and the National Environmental Policy Act (NEPA) process, we are requesting that federal and state agencies and Native American organizations identify key issues that would be addressed as part of this evaluation. Please provide your comments relative to the following:

- Specific issues or geographic areas of concern, based on your expertise or regulatory jurisdiction

- Available technical information regarding these issues

I would like to thank you in advance for your efforts. We request your comments and concurrence on the proposed undertaking within 30 days of receiving this correspondence. Correspondence and other communication regarding this matter should be directed to Robyn Mock, 99th RSC DPW, Environmental Division, 5231 South Scott Plaza, Fort Dix, NJ 08640-5000, Phone: (609)562-7662, Email: Robyn.Mock@usar.army.mil.

Sincerely,

JEFFREY M HRZIC
Chief, Environmental Division

Enclosures:
Enclosure 1: Location Map of three Potential Sites
Enclosure 2: USGS Map – Primary Site (150 Park Avenue)
Enclosure 3: USGS Map – Alternate Site 2 (764 Southford Road)
Enclosure 4: USGS Map – Alternate Site 3 (23-29 Towner Lane)

DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Deborah Seavey
Town of Middlebury
Wetlands Enforcement
1212 Whittemore Road
Middlebury, CT 06762

Dear Ms. Seavey:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

Three sites (see enclosures 1 through 4) are being evaluated as reasonable locations for the proposed AFRC:

- 150 Park Avenue, Danbury, CT) (Current preferred site)
- 764 Southford Road, Middlebury, CT; and
- 23-29 Towner Lane, Oxford, CT

The USAR 99th RSC proposes to design and construct an approximately 113,370-square-foot Armed Forces Reserve Center training building; a 26,905-square-foot vehicle maintenance shop; a 5,341-square-foot unheated storage building; and parking for military equipment and privately owned vehicles.

As part of the project coordination and the National Environmental Policy Act (NEPA) process, we are requesting that federal and state agencies and Native American organizations identify key issues that would be addressed as part of this evaluation. Please provide your comments relative to the following:

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Bernard P. Gallo
City of Danbury
Environmental Impact Commission
155 Deer Hill Avenue
Danbury, CT 06810

Dear Mr. Gallo:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Kathleen Knowles
Mashantucket Pequot Nation
Mashantucket Pequot Museum & Research Center
110 Pequot Trail
PO Box 3180
Mashantucket, CT 06338-3180

Dear Ms. Knowles:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Sharon Maynard
Mohegan Tribal Office
5 Crow Hill Road
Uncasville, CT 06382

Dear Ms. Maynard:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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Chief, Environmental Division

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Oxford Town Hall
Inland and Wetlands Conservation Commission
486 Oxford Road
Oxford, CT 06478-1298

To Whom It May Concern:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Paucatuck Eastern Pequot Tribe
935 Lantern Hill Road
Ledyard, CT 06339

To Whom It May Concern:

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Shoran Piper
Golden Hill Paugussett Tribe
427 Shelton Road
Trumbull, CT 06611

Dear Shoran:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Chief Richard Velky
Schaghticoke Tribal Nation
33 Elizabeth Street
4th Floor
Derby, CT 06418

Dear Chief Velky:

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

David T. Forrest
Staff Archaeologist
State Historic Preservation Office
Connecticut Commission on Culture & Tourism
One Constitution Plaza, Second Floor
Hartford, CT 06103

Dear Mr. Forrest,

The Department of the Army Installation Management - Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Command are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The proposed AFRC will combine into a single facility the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT Army National Guard Armories in Naugatuck, Norwalk and New Haven in accordance with the Base Closure and Realignment Commission recommendations; and seven new Grow the Army Initiative USAR units. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction and operation of the AFRC. The purpose of this letter is to request you agency's comments on the proposed action.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

May 18, 2010

Town of Middlebury
Conservation Commission
Office of Selectman
Town Hall
1212 Whittemore Road
Middlebury, CT 06763

To Whom It May Concern:

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From: Mock, Robyn A CTR CTR USAR 99TH RSC -NA- [robyn.mock@usar.army.mil]
Sent: Thursday, May 27, 2010 10:02 AM
To: Haught, Laura/WDC
Cc: Bargerhuff, Kirk E NAE; Dellolio, Laura A CTR CTR USAR 99TH RRC -NA-
Subject: FW: 3 SITES - PROPOSED LAND ACQUISITION, CONSTRUCTION & OPERATION OF A US ARMED FORCES RESERVE CENTER (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

Folks,

Interested party from the Mashantucket Pequot Tribe. They would like a copy of the final EA.

Robyn Mock
Environmental Conservation Specialist
Contractor,Innovar Environmental, Inc.
99th RSC DPW, Environmental Division
Office: 609-562-7662
Cell: 570-885-1970

https://xtranet/Organization/MSCs/RSCs/99RSC/dpw/environmental

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Please take a moment and tell us how we are doing...

http://ice.disa.mil/index.cfm?fa=card&service_provider_id=118861&site_id=961&service_category_id=32
<http://ice.disa.mil/index.cfm?fa=card&service_provider_id=118861&site_id=961&service_category_id=32>

-----Original Message-----
From: Knowles, Kathleen [mailto:KKnowles@mptn-nsn.gov]
Sent: Thursday, May 27, 2010 9:55 AM
To: Mock, Robyn A CTR CTR USAR 99TH RSC -NA-

Subject: 3 SITES - PROPOSED LAND ACQUISITION, CONSTRUCTION & OPERATION OF A US ARMED FORCES RESERVE CENTER

Dear Ms Mock,

I am in receipt of a letter dated 5-18-2010, from Jeffrey M. Hrzic, Chief, Environmental Division, Dept. of the Army requesting consultation for three potential sites for land acquisition, construction and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, CT:

* 150 Park Ave., Danbury, CT (Current preferred site)
* 764 Southford Rd., Middlebury, CT
* 23-29 Towner Lane, Oxford, CT

I would like a copy of the Environmental Assessment that is being prepared; and based on a review of the information provided, I also recommend a Phase I Archaeological Reconnaissance Survey be conducted to identify any properties of cultural and religious importance to the Mashantucket Pequot Tribe.

I would appreciate a copy of any work performed on this project.

Kathleen Knowles,

Tribal Historic Preservation Officer

Mashantucket Pequot Tribe

Classification: UNCLASSIFIED
Caveats: FOUO

Connecticut Commission on Culture & Tourism

Historic Preservation and Museum Division

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860.256.2800
860.256.2763 (f)

June 30, 2010

Ms. Robyn Mock
99th RSC DPW
Environmental Division
5231 South Scott Plaza
Fort Dix, NJ 08640-5000

Subject: Three Possible Locations for a Proposed US Armed Forces Reserve Center near Newtown, Connecticut.

Dear Ms. Mock:

The State Historic Preservation Office understands that the Department of Army Installation Management – Operations Directorate Reserve and the US Army Reserve, 99th Regional Support Commend are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut. The new facilities will consolidate existing facilities US Army Reserve (USAR) in Fairfield, Waterbury, and Danbury and units from the Connecticut Army National Guard Armories in Naugatuck, Norwalk, and New Haven. Three sites are under consideration for the new facilities: 150 Park Avenue, Danbury (Primary Site), 764 Southford Road, Middlebury (Alternate Site 2); and 23-29 Towner Lane, Oxford (Alternate Site 3).

SHPO has reviewed the information provided by the Department of the Army concerning the three potential development sites and notes that the majority of all three parcels are currently undeveloped lands. Farm fields and woodlands comprise the bulk of the land area within the development boundaries with relatively few buildings, roads, or other evidence of substantial ground disturbance that may have affected any archaeological resources. Based on the general topographic contexts for these sites, it is our opinion that all three potential development sites have a moderate to high potential to contain prehistoric and/or historic period archaeological resources. We note that substantial surface water features, such as swamps, marshes, or ponds are present in the immediate vicinity of the Primary Site (Parcel C) and Alternate Site 2 (southern margins). Such features are strongly correlated with the location of prehistoric period archaeological resources. The archaeological sensitivity of Alternate Site 2 is further underscored by the presence of two reported prehistoric period archaeological sites just south and east of the subject parcel.

Based on previous archaeological surveys in the region, it is our opinion that any level terrain with moderately well drained to well drained soils within 150 meters of these surface water features has a high sensitivity for prehistoric period archaeological resources. The areas of greatest potential for historic period resources in all three development sites are those falling within 100 meters of historic roadways. Based on SHPO's preliminary review, these roadways would minimally include Park Avenue and Miry Brook Road in Danbury, Southford Road in Middlbury, and Towner Lane in Oxford. In our opinion, undisturbed sections of all three development sites located at distances greater than 150 meters from surface water features have a moderate sensitivity for archaeological resources, with sites most likely to occur on isolated knolls or other locations providing advantageous viewsheds of the surrounding landscape.

SHPO recommends that the Department of the Army complete professional archaeological reconnaissance surveys of the proposed Areas of Potential Effects at the three proposed development sites. The purpose of the recommended surveys is to identify any potentially significant archaeological resources that may be affected by the construction and operation of the proposed AFRC. The survey must be in compliance with the Secretary of the Interior's *Standards for the Identification of Historic Properties* and our office's *An Environmental Review Primer for Connecticut's Archaeological Resources.* Given the relatively large area to be evaluated, SHPO encourages the Department of the Army or its representatives to coordinate with our office on the development of an efficient and effective sampling design for the subject properties.

The State Historic Preservation Office appreciates the cooperation of all interested parties concerning the professional management of Connecticut's heritage resources. We look forward to further coordination with the Department of the Army on this project. This comment is provided in accordance with the National Historic Preservation Act.

For further information please contact Daniel Forrest, Staff Archaeologist, at (860) 256-2761 or daniel.forrest@ct.gov.

Sincerely,

David Bahlman
Deputy State Historic Preservation Officer

cc: Nicholas Bellantoni/OSA
Jeffrey M. Hrzic/Department of the Army – Environmental Division

CITY OF DANBURY

CONSERVATION COMMISSION
155 DEER HILL AVENUE
DANBURY, CT 06810

(203) 797-4625

July 19, 2010

Planning Commission
City of Danbury
155 Deer Hill Ave.
Danbury, CT 06810

Dear Members of the Environmental Impact Commission,

Enclosed is a letter sent to the Department of the Army from the Conservation Commission. It states the environmental issues that concern us about the acquisition of the Lee Farm property for a US Armed Forces Reserve Center. The Conservation Commissioners feel that the members of the Planning Commission should be aware of the content of the letter.

Sincerely,

Lin Murray
Chairwoman

CITY OF DANBURY

CONSERVATION COMMISSION
155 DEER HILL AVENUE
DANBURY, CT 06810

(203) 797-4625
July 17, 2010

Robyn Mock
99th RSC DPW
Environmental Division
5231 South Scott Plaza
Fort Dix, NJ 08640-5000

Dear Ms. Mock,

It is the mission of the Conservation Commission of Danbury to maintain or enhance the conservation of land or scenic resources. The contiguous Lee Farm LLC properties covering over 300 acres represent one of the largest remaining natural areas in the city. They represent the largest remaining open space, outside of Tarrywile Park, in the urban area. Developing 100 acres would represent a huge loss to the open space of the city.

Since large areas of natural communities sustain more species than small areas, such fragmentation would dramatically reduce wildlife populations.

Almost all of the proposed area is currently grasslands:

- Connecticut Audubon Society reports that grasslands may be the most threatened habitat in the state
- In recent years, grassland and shrubland birds have shown more severe and consistent declines than forest-interior species.
- Grassland habitats provide critical breeding and nesting grounds for approximately 80 bird species in the state. Thirteen of these species are listed under the Connecticut Endangered Species Act.
- Since grasslands have declined so dramatically in Danbury in recent years, the development of approximately 100 acres would represent a significant scenic and cultural loss.

We look forward to discussing these issues in more detail with your representative at the open public meetings that will be held in Danbury.

Sincerely,

Linda Murray

Linda Murray, Chairwoman
Danbury Conservation Commission

From: Victoria, Julie [mailto:Julie.Victoria@ct.gov]
Sent: Wednesday, August 04, 2010 3:49 PM
To: Carr, Lindsey/WDC
Subject: NDDB-17692
Importance: Low

Hi Lindsey:
I found my letter and this project was only flagged by DEP for Bog Turtles, *Glyptemys muhlenbergii*. A general guideline for neotropical migrants, many of which are forest interior birds, would be that any forestry operation should be conducted outside of the breeding season (late May through July), so that the potential for destruction of nests, eggs, or young is reduced. Grassland birds also nest from late May through July. The DEP Wildlife Division does not have set guidelines for impacts with development and these species. We encourage applicants to contact an appropriate biologist for the species, one who is familiar with the habitat requirements, to conduct surveys and be apprised of the project. The Wildlife Division does not maintain a list of biologists in the state. The DEP Wildlife Division does not have the personnel to conduct field surveys for applicants.

Julie Victoria
Wildlife Biologist
CT DEP Wildlife Division
Wildlife Diversity Program
Franklin Swamp WMA
391 Route 32
N. Franklin, CT 06254
860-642-7239
860-642-7964 fax

Please consider the environment before printing this email.

CH2MHILL TELEPHONE CONVERSATION RECORD

Call To: Maria Tur/USFWS

Phone No.: 603-223-2541 **Date:** August 05, 2010

Call From: Lindsey Carr/WDC **Time:** 10:16 AM

Message Taken By: Lindsey Carr/WDC

Subject: Migratory Bird Season in CT

Ms. Maria Tur/USFWS stated that the migratory bird nesting season for CT is from April 15th to August 15th.

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 99TH REGIONAL SUPPORT COMMAND
5231 SOUTH SCOTT PLAZA
FORT DIX, NEW JERSEY 08640-5000

REPLY TO
ATTENTION OF

August 10, 2010

Mr. David Bahlman
Deputy State Historic Preservation Officer
Connecticut Commission on Culture & Tourism
One Constitution Plaza, Second Floor
Hartford, CT 06103

Dear Mr. Bahlman,

The Assistant Chief of Staff Installation Management-Army Reserve Division and the US Army Reserve (USAR) 99th Regional Support Command (RSC) are proposing land acquisition, construction, and operation of a US Armed Forces Reserve Center (AFRC) located near Newtown, Connecticut (CT). The proposed AFRC will accommodate eight USAR Centers and two Army National Guard (ARNG) units who are being relocated under the 2005 Defense Base Realignment and Closure Commission's recommendation and the seven new USAR units being established under the Grow the Army initiative. They will combine into a single facility from the relocating units from USAR Centers in Fairfield, Waterbury, and Danbury, CT and units from the CT ARNG Armories in Naugatuck, Norwalk and New Haven. An Environmental Assessment is being prepared to analyze the environmental impacts from the acquisition, construction, and operation of the AFRC. The purpose of this letter is to request your agency's comments on the proposed action.

An intensive Phase I Cultural Resources Survey was conducted in order to meet the requirements of Section 106 as required under the National Historic Preservation Act of 1969, as amended. The Phase I Cultural Resources Survey was conducted by Brockington and Associates, Inc. at the three sites being evaluated as reasonable locations for the proposed AFRC:

- Preferred Alternative: 150 Park Avenue, Danbury, CT
- Alternate Site 2: 764 Southford Road, Middlebury, CT
- Alternate Site 3: 23-29 Towner Lane, Oxford, CT

During field investigations, no archaeological sites that are considered eligible for the National Register of Historic Places (NRHP) were identified with the boundaries of the three locations. Site CT-001-005 is located outside the Preferred Site project boundary but within approximately 300 feet of the project's western boundary. While the building is considered potentially eligible for listing on the NRHP under Criterion C, it is screened from the project boundary by tall trees, including a row of evergreen trees surrounding the house to the east, north, and south. A modern office park complex including structures and paved parking lots is located adjacent to the house on the west. This modern development is in open view of the house and has partially compromised its historic setting. Given the distance of the home from the project boundary and the visual screening of the house from tall trees, the AFRC is not expected to adversely affect

Site CT- 001-005 should the existing landscape features be left intact. There were no individually eligible architectural resources identified within Alternate Sites 2 and 3 during background research or field investigations.

Based upon the findings of the enclosed Cultural Resources Survey, the USAR requests concurrence with a determination of no historic properties affected by the proposed action as per 36 Code of Federal Regulations (CFR) 800.4(d)(a). We also recommend no additional cultural resource investigations at this time.

Pursuant to 36 CFR 800.4(a)(ii), we would appreciate your comments on our determination for this undertaking. Please provide us with your written concurrence of the stated eligibility and effects findings via email, or hard copy, or both, within 30 days. Please reply to Mr. David Conrad, 99th RSC DPW, Environmental Division, 5231 South Scott Plaza, Fort Dix, NJ 08640. Please contact David Conrad at 609-562-7662 or David.Richard.Conrad@usar.army.mil should you have any questions or concerns or would like additional information.

Sincerely,

JEFFREY M. HRZIC
Chief, Environmental Division

Enclosure:
Enclosure 1: Phase 1 Cultural Resources Survey

Appendix B

List of Statutes and EOs Related to this Environmental Assessment

Federal Statutes

- Archeological Resources Protection Act of 1979 (16 USC 470)
- American Indian Religious Freedom Act of 1978 (42 USC, as amended)
- Clean Air Act (42 USC 7401 et seq., as amended)
- Clean Water Act of 1977 and the Water Quality Act of 1987 (33 USC 1251 et seq., as amended)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (as amended by the Superfund Amendments and Reauthorization Act of 1986)
- Endangered Species Act of 1973 (16 USC 1531-1543)
- Energy Independence and Security Act of 2007 (16 USC 2621)
- Farmland Protection Act of 1981 (7 USC 4201 et seq., as amended)
- Fish and Wildlife Coordination Act (16 USC 661, et seq.)
- Migratory Bird Treaty Act (16 USC 701, et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 et seq., as amended)
- National Historic Preservation Act of 1966 (16 USC 470 et seq., as amended)
- National Environmental Policy Act (NEPA) (42 USC 4321-4370)
- Noise Control Act of 1972 (42 USC 4901 - 4918)
- Resource Conservation and Recovery Act of 1976 (42 USC 6901)
- Toxic Substances Control Act (15 USC 2601 et seq., as amended)

Regulations

- CEQ Regulations for Implementing NEPA (Title 40 CFR, Parts 1500-1508 (40 CFR 1500-1508)
- Protection of Historic Properties (36 CFR 800)
- Environmental Analysis of Army Actions (32 CFR 651)

Executive Orders

- EO 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991)
- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12088, Federal Compliance with Pollution Control Standards

- EO 12372, Intergovernmental Review of Federal Programs
- EO 12580, Superfund Implementation
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13007, Protection of Indian Sacred Sites
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risk
- EO 13327, Federal Real Property Asset Management (amended by EO 13423)
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance

Army Guidance

- BRAC Manual for Compliance with NEPA – September 2005

Appendix C
Photographs of Sites

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT
Date: December 2009

Photograph 1

Open fields in Parcel A (facing east)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 2

Woods in Parcel A

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: May 2010

Photograph 3

Open field in Parcel B (facing north)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT
Date: May 2010

Photograph 4

Open field in Parcel B and Lee Farm Road (facing north)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: May 2010

Photograph 5

Open field in Parcel C (facing south)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: May 2010

Photograph 6

Open field in Parcel C (facing north)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

May 2010

Photograph 7

Wooded area on western edge of Parcel C.

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 8

Alternative 2 - Single-family house on southern portion of property

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 9

Alternative 2 – Outbuildings on western portion of property

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 10

Alternative 2 – Woods and stone wall

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 11

Alternative 3 – Open fields (facing west)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 12

Alternative 3 – Vacant abandoned house in center of property (facing southeast)

PHOTO LOG

Project Name: Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

Date: December 2009

Photograph 13

Alternative 3 – Woods on property (facing north)

Appendix D

Air Emission Calculations and Record of Non-applicability

General Conformity – Record of Non-Applicability

Project/Action Name: Construction and Operation of an Armed Forces Reserve Center, Newtown, CT

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this action because total direct and indirect CO, VOC, NO_X, and PM-2.5 are below the conformity threshold values established at 40 CFR 93.153 (b) and this action is not considered regionally significant under 40 CFR 93.153(i).

Supporting documentation and emission estimates are attached.

SIGNED _____

Jeffrey M. Hrzic
99th Regional Readiness Command
Chief, Environmental Division

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3.0 CONCLUSION 6

LIST OF ATTACHMENTS

Attachment 1: Newtown AFRC Emission Totals

Attachment 2: ACAM Model Results

Attachment 3: MOBILE6 Output

Attachment 4: GOV/POV Calculations

Attachment 5: Emergency Generator Calculations

Attachment 6: TANKS v.4.0.9d Output

GENERAL CONFORMITY REVIEW (GCR)

CONSTRUCTION AND OPERATION OF A NEW JOINT ARMED FORCES RESERVE CENTER
NEWTOWN, CONNECTICUT

1.0 PROPOSED ACTION

The U.S. Army Reserve (USAR) proposes to construct and then operate a new joint Armed Reserve Forces Center (AFRC) in Newtown, Connecticut. Construction is anticipated to last from April 2011 to July 2012. The facility is anticipated to be in operation in 3rd quarter 2012.

The AFRC facility is needed to house personnel for a total of 15 USAR units and two Army National Guard (ARNG) units to fulfill the military mission of the USAR. USAR units that are being realigned as a result of the September 2005 Defense Base Closure and Realignment (BRAC) Commission recommendations. The facilities recommended for closure include: Turner US Army Reserve Center, Fairfield, CT; Sutcovey US Army Reserve Center, Waterbury, CT; and Danbury US Army Reserve Center, Danbury, CT. The new AFRC will have the capability to accommodate units from the following facilities: Connecticut Army National Guard Armories in Naugatuck, Norwalk and New Haven, CT, if the state decides to relocate those National Guard units.

The proposed action includes acquisition of approximately 25 acres of land and construction and operation of a 1,000-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness areas for 15 USAR units and two ARNG units in a new combined AFRC facility including an AFRC building (113,370 square feet [ft^2]), a vehicle maintenance shop (26,905 ft^2) and an unheated storage building (5,341 ft^2) for a total of 145,616 ft^2. Approximately 46,000 square yards of paved parking would be developed to provide adequate parking space for military and privately owned vehicles, including the 270 wheeled vehicles and 583 trailers authorized for the units. The new facility would include the following areas: administrative, educational, assembly, library, learning center, vault, weapons simulator, and physical fitness. Security fencing and lighting would be installed at the new facility. The only significant stationary sources added to the site during the project would be a 4,000 gallon diesel fuel above-ground storage tank at a vehicle fueling point and a 650 kilowatt (kW) diesel-fired emergency generator. The general conformity review for this project pertains to stationary, mobile and construction-related emissions and facility space heating. The emissions types of interest are carbon monoxide (CO), volatile organic compounds (VOCs), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and particulate matter less than 2.5 micrometers in diameter (PM-2.5).

2.0 CALCULATION OF EMISSIONS FROM NEW MOBILE SOURCES

There will be mobile emissions associated with new government owned vehicles (GOVs) and privately owned vehicles (POVs) due to the proposed action.

2.1 Military Tactical Vehicles

The proposed action will add approximately 149 new personnel to the new Newtown AFRC. There will be an increase of mobile emissions associated with GOVs operating on the facility as a result of the new personnel. Mobile emissions are calculated by a MOBILE6

module within the ACAM program and are based upon the number of newly assigned personnel, personnel operational frequency, and the annual vehicle miles traveled (VMT) per employee, not the number of vehicles assigned to the facility. Emissions were not modeled for personnel being relocated from other nearby facilities within the AQCR. The following data were input into the model:

- Emission factors for the GOV fleet mix were assumed to be 13% light-medium tactical vehicles, 13% medium tactical vehicles, and 74% Humvee equivalent vehicles.
- Total New Reserve Personnel – 142
    - Operational Frequency – 8 days/month
    - VMT per employee – 279 miles/year
- Total New Full-Time Personnel – 7
    - Operational Frequency – 25 days/month
    - VMT per employee – 279 miles/year

2.2 Personal Vehicle Use

The proposed action will add approximately new 149 personnel to the Newtown AFRC. There will be mobile emissions associated with POVs commuting to the facility. Mobile emissions are calculated by a MOBILE6 module within the ACAM program and are based upon the number of newly assigned personnel, personnel operational frequency, and the annual vehicle miles traveled (VMT) per employee, not the number of POVs on the facility. Emissions were not modeled for personnel being relocated from other nearby facilities within the AQCR. The following data were input into the model:

- Emission factors for POV fleet mix were kept at default values
- Total New Reserve Personnel – 142
    - Operational Frequency – 8 days/month
    - One-way average commute distance – 80 miles
- Total New Full-time Personnel – 7
    - Operational Frequency – 25 days/month
    - One-way average commute distance – 80 miles

2.3 Construction and Operations-Related Emissions

The proposed action includes the construction of new facilities associated with the AFRC. To support the USAR units being realigned, the USAR would construct an AFRC consisting of an AFRC training building, a vehicle maintenance shop, an unheated storage building, a vehicle fueling point equipped with a 4,000 gallon diesel above-ground storage tank, a 650 kW diesel-fired emergency generator, and paved parking for military and privately owned vehicles.

The U.S. Air Force Air Conformity Application Model (ACAM), version 4.4.09d, was used to estimate construction-related emissions and facility space heating emissions. Emergency generator emissions were calculated using US EPA's AP-42 Section 3.4. Table 3.4-1 emission factors for large stationary combustion sources. Emissions from the above-ground storage tank were calculated using US EPA's TANKS v.4.0.9d program. Construction related-emissions are also calculated separately by ACAM, which splits facility construction into two phases; Phase 1 is grading and Phase 2 is the actual construction activity. The following data were used as emissions inputs.

2.3.1 ACAM Input

- AFRC building – 113,370 ft^2,
- Vehicle maintenance shop – 26,905 ft^2
- Unheated storage building – 5,341 ft^2
- Building Construction Total – 145,616 ft^2
- Duration of Phase 1 – 90 days
- Soil Piles – covered or watered twice daily
- Exposed Surface/Grading – watered frequently, keeping soil moist at all times
- Start Date of Construction – 2nd Quarter 2011
- Duration of Phase 2- 365 days
- Total Acres Paved with Asphalt – 9.50 acres (parking area)

The model calculates emissions for the following activities:

- Grading Equipment Emissions (pounds/day, assume 1 grader, 1 wheeled and 1 tracked loader/grader per 10 acres. All equipment is diesel powered and used 6 hours per day)
- Emissions Due to Construction Worker Trips (based on 0.42 trip per 1,000 sf-day and emission factors)
- Stationary Equipment Emissions (based on sf to be constructed during Phase 2, assume 2 pieces of gasoline-powered equipment per 10,000 sq feet, equipment used 6 hours per day, and equipment average horsepower of 10 hp each)
- Mobile Equipment Emissions (mobile equipment used during Phase 2 construction, assume 2 pieces of diesel-powered equipment per 10,000 sf and equipment used 6 hours per day)
- Grading Operations Emissions (pounds/day, assume one storage pile on 1/5 of an acre per 10 acres graded, 3 pieces of heavy equipment per day per 10 acres graded)
- Architectural Coating Emissions (based on square root of gross sf of non-residential building space)

- Daily VOC Emissions from Asphalt paving (based on total acres to be paved)
- Facility Heating (based on heating energy requirement and emission factors for natural gas)

2.3.2 Emergency Generator Input

- Capacity: 650 kW (872 horsepower [hp])
- Run time: 24 hours/year
- Fuel: Diesel
- Annual potential to emit is based on 300 hour/year for backup generators

2.3.3 TANKS 4.0.9d Input

- Tank Type: Horizontal
- Capacity: 4,000 gallons
- Fuel: Diesel
- Turnovers: 0.5 per year
- Throughput: 2,000 gallons

Based on ACAM, an increase of 51.4 tons of CO, 16.8 tons of NO_X, 2.05 tons of SO_2, 4.92 tons of VOCs, and 1.43 tons of PM-10/PM-2.5 would be expected in 2012, the highest emitting year during construction (see Attachment 1).

The annual average increase in emissions from heating the proposed AFRC would be 1.3 tons of CO, 2.0 tons per year of NO_X, 0.1 tons per year of VOCs, and 0.09 tons per year of PM-10 (see Attachment 1). PM-10 emission factors were conservatively used to estimate emissions of PM-2.5.

3.0 CONCLUSION

Total emissions generated by the proposed action are expected to include a one-time release of 17.3 tons of CO, 15.9 tons of NO_X, 3.97 tons of VOCs, and 1.37 tons of PM-10/PM-2.5 due to construction-related emissions in 2012.

The proposed action is estimated to result in an increase of 34.7 tons of CO, 2.9 tons per year of NO_X, 0.99 tons per year of VOCs, and 0.15 tons per year of PM-10/PM-2.5 for facility heating, stationary sources, and employee commuting. These increases are well below the conformity threshold values. Therefore, a general conformity review is deemed unnecessary at this time.

Attachment 1
Newtown AFRC Emission Totals

SOURCE CATEGORY	CO	NO_X	SO_2	VOC	PM_{10}
Emissions (tpy)					
2011					
ACAM Area Sources	10.89	10.10	1.35	2.04	5.17
ACAM Mobile Sources	35.17	1.00	0.01	1.03	0.05
2011Total	46.06	11.10	1.36	3.07	5.22
2012					
ACAM Area Sources	16.74	15.23	2.04	3.94	1.32
ACAM Mobile Sources	34.15	0.97	0.01	0.95	0.06
ACAM Point Sources	0.52	0.64	0.00	0.03	0.05
2012 Total	51.41	16.84	2.05	4.92	1.43
2013					
ACAM Mobile Sources	33.39	0.95	0.024	0.89	0.06
ACAM Point Sources	0.52	0.64	0.00	0.03	0.05
Emergency Generator Total	0.76	1.31	0.0016	0.07	0.04
AST-1 Total	0.00	0.00	0.00	3.60E-04	0.00
2013 Total	34.67	2.90	0.026	0.99	0.15

Attachment 2
ACAM Model Results

Attachment D1 - ACAM Output

SOURCE CATEGORY	CO	NO_X	SO_2	VOC	PM_{10}
Emissions (tpy)					
2011					
Area Sources					
Other Phase I Const. – Grading Operations	0.00	0.00	0.00	0.00	4.31
Other Phase II Const. – Acres Paved	0.00	0.00	0.00	0.01	0.00
Other Phase II Const. – Mobile & Stationary Equipment (Non-Aircraft Facilities)	9.63	9.78	1.32	1.48	0.83
Other Phase II Const. – Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.47	0.00
Other Phase II Const. – Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. – Workers Trips	1.19	0.06	0.00	0.05	0.01
Other Phase I Const. – Grading Equipment	0.07	0.26	0.03	0.03	0.02
Total	10.89	10.10	1.35	2.04	5.17
Mobile Sources					
Mobile – Base Employee Commute VMT	35.15	0.98	0.01	1.02	0.05
Mobile – On-Road GOV VMT	0.02	0.03	0.00	0.01	0.00
Total	35.17	1.00	0.01	1.03	0.05
2011 Total	46.06	11.10	1.36	3.07	5.22
2012					
Area Sources					
Other Phase II Const. – Mobile & Stationary Equipment (Non-Aircraft Facilities)	14.90	15.14	2.04	3.12	1.30
Other Phase II Const. – Non-Res. Arch. Ctgs.	0.00	0.00	0.00	0.72	0.00
Other Phase II Const. – Res. Arch. Ctgs.	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. – Workers Trips	1.84	0.09	0.00	0.08	0.02
Other Phase II Const. – Acres Paved	0.00	0.00	0.00	0.02	0.00
Total	16.74	15.23	2.04	3.94	1.32
Mobile Sources					
Mobile – Base Employee Commute VMT	33.98	0.89	0.01	0.93	0.05
Mobile – On-Road GOV VMT	0.02	0.02	0.00	0.01	0.00
Off-Road Base Support Vehicles	0.16	0.06	0.00	0.01	0.01
Total	34.15	0.97	0.01	0.95	0.06
Point Sources					
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00
Other Const. – Facility Heating	0.52	0.64	0.00	0.03	0.05
Residential Space Heating	0.00	0.00	0.00	0.00	0.00
Total	0.52	0.64	0.00	0.03	0.05
2012 Total	51.41	16.84	2.05	4.92	1.43
2013					
Mobile Sources					
Mobile – Base Employee Commute VMT	33.07	0.81	0.01	0.85	0.05
Mobile – On-Road GOV VMT	0.02	0.01	0.00	0.01	0.00
Off-Road Base Support Vehicles	0.31	0.13	0.01	0.03	0.01
Total	33.39	0.95	0.02	0.89	0.06
Point Sources					
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00
Other Const. – Facility Heating	0.52	0.64	0.00	0.03	0.05
Residential Space Heating	0.00	0.00	0.00	0.00	0.00
Total	0.52	0.64	0.00	0.03	0.05
2013 Total	33.91	1.59	0.02	0.92	0.11

Attachment 3
MOBILE6 Output

Emission Factors in gram/mile for Newtown, CT

Description	% of Fleet	Vehicle Class	Year	Speed	CO	VOC	NOX	PM10	SO2
Light-Medium Tactical Vehicle (17,000 lbs GVW)	13%	HDDV5	2011	15	1.607	0.404	3.514	0.0884	0.0276
Medium Tactical Vehicle (31,000 lbs GVW)	13%	HDDV7	2011	15	2.201	0.625	5.325	0.154	0.0361
Humvee equivalent	74%	LDDT34	2011	15	1.037	0.571	0.659	0.0694	0.0161
POV	100%	LDGV	2011	45	17.269	0.503	0.481	0.0248	0.0068
Light-Medium Tactical Vehicle (17,000 lbs GVW)	13%	HDDV5	2012	15	1.412	0.388	3.095	0.0843	0.0276
Medium Tactical Vehicle (31,000 lbs GVW)	13%	HDDV7	2012	15	1.794	0.583	4.561	0.1328	0.0361
Humvee equivalent	74%	LDDT34	2012	15	0.975	0.525	0.584	0.0628	0.0161
POV	100%	LDGV	2012	45	16.691	0.458	0.437	0.0248	0.0068
Light-Medium Tactical Vehicle (17,000 lbs GVW)	13%	HDDV5	2013	15	1.281	0.377	2.763	0.0811	0.0276
Medium Tactical Vehicle (31,000 lbs GVW)	13%	HDDV7	2013	15	1.583	0.554	3.936	0.1197	0.0361
Humvee equivalent	74%	LDDT34	2013	15	0.93	0.49	0.527	0.0584	0.0161
POV	100%	LDGV	2013	45	16.244	0.42	0.398	0.0247	0.0068

Factors from MOBILE6.2 using inputs consistent with Connecticut DOT ozone and PM2.5 conformity documentation

Attachment 4
GOV/POV Calculations

On-Road Base Employee Commute VMT

$E_p = F * 2 * (N * COMDIST * (1 - ONBASE) * WORKDAYS * (EF_p / 454 * 2000)$

Pollutant Emissions		Year			Units
		2011	2012	2013	
CO	E_p =	35.15	33.98	33.07	tons/yr
NO_X	E_p =	0.98	0.89	0.81	tons/yr
VOC	E_p =	1.02	0.93	0.85	tons/yr
PM_{10}	E_p =	0.05	0.05	0.05	tons/yr
SO_2	E_p =	0.01	0.01	0.01	tons/yr

User-input Variables:

179 N = Number of personnel realigned.
0.28 F = Fraction of the year the personnel operate
80 COMDIST = One-way commute distance, miles, for off-base personnel.
0 ONBASE = Fraction of personnel living on base.

Other Parameters:

WORKDAYS = Number of work days per year, assumed to be 230.
EF_p = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE6 for total hydrocarbons (VOCs), CO, and NO_x for the chosen fleet mix in 2011 and 2012

Pollutant	2011	2012	2013
CO	17.269	16.691	16.244
NO_X	0.481	0.437	0.398
VOC	0.503	0.458	0.42
PM_{10}	0.0248	0.0248	0.0247
SO_2	0.0068	0.0068	0.0068

2 = Number of commutes per work day.
454 = Conversion factor from grams to pounds.
2000 = Conversion factor from pounds to tons.

Reference: Jagielski, 1994; USEPA, 1991, 2000b. USDOT, 1994

On-Road GOV VMT

$E_p = N * F * GOVVMT * (EF_p / 454 * 2000)$

Pollutant Emissions		Year			Units
		2011	2012	2013	
CO	E_p =	0.02	0.02	0.02	tons/yr
NO_X	E_p =	0.03	0.02	0.01	tons/yr
VOC	E_p =	0.01	0.01	0.01	tons/yr
PM_{10}	E_p =	0.001	0.001	0.001	tons/yr
SO_2	E_p =	0.0003	0.0003	0.0003	tons/yr

User-input Variables:

179 N = Number of personnel realigned.
0.28 F = Fraction of the year the personnel operate
279 GOVVMT = Per-employee VMT, miles/employee.

Other Parameters:

EF_p = Emission factor for pollutant, p, grams/mile. These factors were determined from MOBILE6 for total hydrocarbons (VOCs), CO, and NO_x for the chosen fleet mix in 2011 and 2012

Pollutant	2011	2012	2013
CO	1.057	1.137	1.060
NO_X	1.629	1.421	0.908
VOC	0.556	0.515	0.484
PM_{10}	0.083	0.075	0.069
SO_2	0.020	0.020	0.020

454 = Conversion factor from grams to pounds.
2000 = Conversion factor from pounds to tons.

Reference: PES, Inc., 1993; USEPA, 1991, 1994.

Attachment 5
Emergency Generator Calculations

1.0 Data Required to Calculate Emissions for Generators (> 600 HP)

Are there any diesel engines of this class at the facility (1 = YES, 0 = NO)? 1

Location of Unit	Generator Rating		Heat Input	Run Time	Annual Power Output		Annual Heat Input
	(kw)	(hp)	(MMBtu/hr)	(hr/yr)	(kw-hr/yr)	(hp-hr/yr)	(MMBtu/yr)
Backup Generators							
Emergency Generator	650	872	6.10	24	15,600	20,920	146.44
Total:	**650**	**872**	**6.10**		**15,600**	**20,920**	**146.4**

1.1 Calculation of Unit Rating

Unit rating (kw) x 1.341 (hp/kw) = Unit rating (hp)

1.2 Calculation of Heat Input

Generator Rating (kw) x 1.341 (hp/kw) x 7000 (BTU/hp-hr) / 1,000,000 (BTU/MMBtu) = Heat Input (MMBtu/hr)

Note: The emission factors in AP-42 take into account the approximately 35% efficiency of internal combustion engines.

2.0 Emission Factors for Criteria Pollutants, from AP-42, Section 3.4. Table 3.4-1 (10/96)

Constituent	Emission Factor (lb/hp-hr)
CO	0.0058
NOx	0.010
PM-10 (1)	0.00033
PM-2.5 (1)	0.00033
SO_2	0.000012
VOC	0.00053

(1) All particulate matter is assumed to be less than 1.0 micrometer in diameter (ie. the emission factor applies to Total PM, PM-10, and PM-2.5).

Sulfur Content = 0.0015 % (15 ppm ultra-low sulfur diesel)

3.0 Calculation of Criteria Pollutant Emissions

Constituent	Annual Actual (lb/yr)	Backup Gen. Hourly PTE (lb/hr)	Annual PTE (lb/yr) (1)	Annual PTE (tons/yr) (1)
CO	121	5.06	1,517	0.76
NOx	209	8.7	2,615	1.31
PM-10	6.90	0.29	86.3	0.04
PM-2.5	6.90	0.29	86.3	0.04
SO_2	0.25	0.01	3.17	0.002
VOC	11.1	0.46	139	0.07

(1) Annual potential to emit is based on 300 hr/yr for backup generators

3.1 Calculation of Annual Emissions:

Emission Factor (lb/hp-hr) x Annual Power Output (hp-hr/yr) = Emissions (lb/yr)

3.2 Calculation of Hourly PTE:

Emission Factor (lb/hp-hr) x Generator Rating (hp) = Emissions (lb/hr)

3.3 Calculation of Annual PTE:

Backup Generator Hourly PTE (lb/hr) x 300 hr/yr
= Emissions (lb/hr)

Attachment 6
AST-1 Fuel Usage

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	AST-1
City:	Newtown
State:	Connecticut
Company:	US Army Reserve
Type of Tank:	Horizontal Tank
Description:	4,000 gallon diesel AST

Tank Dimensions

Shell Length (ft):		17.00
Diameter (ft):		7.00
Volume (gallons):		4,000.00
Turnovers:		0.50
Net Throughput(gal/yr):		2,000.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Hartford, Connecticut (Avg Atmospheric Pressure = 14.65 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

AST-1 - Horizontal Tank
Newtown, Connecticut

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	Jan	39.50	35.66	43.34	49.87	0.0031	0.0031	0.0036	130.0000			188.00	Option 1: VP40 = .0031
Distillate fuel oil no. 2	Feb	41.17	36.95	45.39	49.87	0.0033	0.0031	0.0039	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Mar	45.96	41.21	50.70	49.87	0.0039	0.0033	0.0046	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Apr	51.33	45.55	57.12	49.87	0.0048	0.0039	0.0059	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065
Distillate fuel oil no. 2	May	56.46	50.09	62.83	49.87	0.0058	0.0045	0.0072	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065
Distillate fuel oil no. 2	Jun	60.56	54.17	66.95	49.87	0.0066	0.0053	0.0082	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
Distillate fuel oil no. 2	Jul	62.81	56.49	69.12	49.87	0.0072	0.0058	0.0088	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
Distillate fuel oil no. 2	Aug	61.59	55.64	67.54	49.87	0.0069	0.0056	0.0084	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
Distillate fuel oil no. 2	Sep	57.53	51.84	63.22	49.87	0.0060	0.0049	0.0073	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065
Distillate fuel oil no. 2	Oct	52.15	46.90	57.41	49.87	0.0049	0.0041	0.0060	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065
Distillate fuel oil no. 2	Nov	47.15	43.17	51.13	49.87	0.0041	0.0035	0.0047	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045
Distillate fuel oil no. 2	Dec	41.50	38.02	44.99	49.87	0.0033	0.0031	0.0038	130.0000			188.00	Option 1: VP40 = .0031 VP50 = .0045

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

AST-1 - Horizontal Tank
Newtown, Connecticut

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	0.0259	0.0273	0.0408	0.0584	0.0798	0.0873	0.0958	0.0864	0.0704	0.0559	0.0335	0.0245
Vapor Space Volume (cu ft):	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Space Expansion Factor:	0.0267	0.0297	0.0335	0.0413	0.0455	0.0452	0.0445	0.0418	0.0401	0.0371	0.0274	0.0238
Vented Vapor Saturation Factor:	0.9994	0.9994	0.9993	0.9991	0.9989	0.9988	0.9987	0.9987	0.9989	0.9991	0.9992	0.9994
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113	416.7113
Tank Diameter (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Effective Diameter (ft):	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123	12.3123
Vapor Space Outage (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Tank Shell Length (ft):	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000	17.0000
Vapor Density												
Vapor Density (lb/cu ft):	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031	0.0033	0.0039	0.0048	0.0058	0.0066	0.0072	0.0069	0.0060	0.0049	0.0041	0.0033
Daily Avg. Liquid Surface Temp. (deg. R):	499.1708	500.8411	505.6294	511.0038	516.1330	520.2294	522.4758	521.2632	517.1990	511.8224	506.8200	501.1726
Daily Average Ambient Temp. (deg. F):	24.5000	27.5000	37.4500	48.7000	59.6000	68.4500	73.6000	71.5500	63.3000	52.2000	41.9000	29.4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358	509.5358
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	592.6604	853.4563	1,158.9873	1,474.9882	1,723.0934	1,873.7966	1,859.2022	1,627.9124	1,304.6142	937.8501	587.5840	477.8086
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0267	0.0297	0.0335	0.0413	0.0455	0.0452	0.0445	0.0418	0.0401	0.0371	0.0274	0.0238
Daily Vapor Temperature Range (deg. R):	15.3491	16.8785	18.9808	23.1489	25.4819	25.5513	25.2658	23.8049	22.7700	21.0242	15.9009	13.9384
Daily Vapor Pressure Range (psia):	0.0005	0.0008	0.0014	0.0020	0.0027	0.0029	0.0030	0.0028	0.0024	0.0019	0.0012	0.0007
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031	0.0033	0.0039	0.0048	0.0058	0.0066	0.0072	0.0069	0.0060	0.0049	0.0041	0.0033
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0031	0.0031	0.0033	0.0039	0.0045	0.0053	0.0058	0.0056	0.0049	0.0041	0.0035	0.0031
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0036	0.0039	0.0046	0.0059	0.0072	0.0082	0.0088	0.0084	0.0073	0.0060	0.0047	0.0038
Daily Avg. Liquid Surface Temp. (deg R):	499.1708	500.8411	505.6294	511.0038	516.1330	520.2294	522.4758	521.2632	517.1990	511.8224	506.8200	501.1726
Daily Min. Liquid Surface Temp. (deg R):	495.3335	496.6214	500.8842	505.2165	509.7625	513.8416	516.1593	515.3119	511.5065	506.5664	502.8448	497.6880
Daily Max. Liquid Surface Temp. (deg R):	503.0081	505.0607	510.3746	516.7910	522.5035	526.6172	528.7922	527.2144	522.8915	517.0784	510.7952	504.6572
Daily Ambient Temp. Range (deg. R):	17.4000	17.8000	18.7000	22.4000	24.0000	23.1000	22.8000	22.3000	23.0000	23.0000	18.2000	16.2000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9994	0.9994	0.9993	0.9991	0.9989	0.9988	0.9987	0.9987	0.9989	0.9991	0.9992	0.9994
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031	0.0033	0.0039	0.0048	0.0058	0.0066	0.0072	0.0069	0.0060	0.0049	0.0041	0.0033
Vapor Space Outage (ft):	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000	3.5000
Working Losses (lb):	0.0016	0.0017	0.0020	0.0025	0.0030	0.0034	0.0037	0.0036	0.0031	0.0025	0.0021	0.0017
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0031	0.0033	0.0039	0.0048	0.0058	0.0066	0.0072	0.0069	0.0060	0.0049	0.0041	0.0033
Net Throughput (gal/mo.):	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667	166.6667

Annual Turnovers:	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tank Diameter (ft):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	0.0275	0.0290	0.0428	0.0608	0.0827	0.0907	0.0995	0.0899	0.0735	0.0584	0.0356	0.0263

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

AST-1 - Horizontal Tank
Newtown, Connecticut

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.03	0.69	0.72

Appendix E

Wetland Delineation Report

DRAFT

U.S. Joint Armed Forces Reserve Center Project
Danbury, Middlebury, Oxford, Connecticut

Wetland Delineation Report

REV June 4, 2010

Epsilon ASSOCIATES INC.

JMM WETLAND CONSULTING SERVICES, LLC

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List of Attachments

Attachment A - Figures

- USGS Locus Maps
- National Wetland Indicator Maps
- Delineated Waters of the U.S. Maps
- NRCS Soil Survey Maps
- FEMA FIRM Maps
- Major Watersheds Map

Attachment B – U.S. Army Corps of Engineers Wetland Delineation Data Forms

Attachment C - Jurisdictional Determination Forms

Attachment D - Representative Photographs of Delineated Wetlands

Attachment E – NRCS Soil Survey Reports

Attachment F – Summary of Qualifications of Wetland Delineation Team

WETLAND DELINEATION REPORT

1.0 Introduction

This wetland delineation report has been prepared in support of a request for a Jurisdictional Determination (JD) from the U.S. Army Corps of Engineers New England District (the Corps) under Section 404 of the U.S. Clean Water Act (33 U.S.C. 1344) (Section 404). The report describes the limits of certain wetlands[1] and other waters of the United States[2] at three separate and distinct sites located in the State of Connecticut. More specifically, the wetland delineation work described herein will be used to assist the United States Army with planning, site selection, environmental impact analysis, and site layout work associated with a proposed combined Armed Forces Reserve Center ("AFRC") to be located in the state of Connecticut.

During the weeks of May 10th and May 17th, 2010, wetland scientists from Epsilon Associates, Inc. (Epsilon) and soil scientists from JMM Wetland Consulting Services (JMM) delineated wetlands and other waters of the U.S. at three separate sites. The area of interest at the Primary Site is approximately 55 acres and is located in Danbury, CT; the area of interest at Alternate Site 2 is approximately 19 acres and is located in Middlebury, CT; the area of interest at Alternate Site 3 is approximately 65 acres and is located in Oxford, CT. Collectively these three sites comprise the Study Area. Refer to the locus map provided in Attachment A for their locations.

On May 13, 2010, representatives from the U.S. Army Corps of Engineers New England District – Regulatory Division conducted an inspection of the wetland lines and, where appropriate, made recommendations regarding additional information necessary to justify the proposed delineation and the processing of the JD request. The requested information included but was not necessarily limited to additional data transects describing soils, hydrology, and vegetation in select locations as well as assessing certain areas where an observable ordinary high water mark (OHWM) could be discerned and field delineated. According to 33 CFR 328.3(e) and Corps Regulatory Guidance Letters, an OHWM is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas.

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[1] Wetlands means "those area that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." 33 C.F.R. § 328.3(b).

[2] "Waters of the United States" is broadly defined in the federal regulations that implement the Clean Water Act. It includes tidal waters, rivers, streams, lakes, ponds and wetlands. 33 C.F.R. § 328.3(a).

On May 18 and 19, 2010, the supplemental data requested by the Corps during its site inspection was collected in the field by Epsilon and JMM. The collected data has been incorporated into this delineation report where noted as well as on the related attachments and graphics.

This report is organized as follows: Section 1 provides a brief overview of the project; Section 2 provides a description of the Study Area and its general environmental setting; Section 3 describes data review and the wetland delineation methodology employed by the delineation teams; Section 4 describes wetland characteristics and surface waterbodies within the Study Area including a detailed discussion of field delineated wetlands; Section 5 discusses the general functions and values of the wetlands delineated within the Study Area; Section 6 contains a general regulatory analysis regarding jurisdiction under local, state and federal wetlands regulations.

Five attachments provide supporting material for this report: Attachment A includes a series of graphics depicting the limits of delineated wetlands and other waters of the U.S., existing topographic conditions, hydrologic conditions, soil conditions, major watersheds, and mapped floodplain areas. Corps wetland determination forms are provided in Attachment B. Attachments C and D contain Corps Jurisdictional Determination forms and representative photographs of wetlands delineated within the Study Area. Attachment E contains Natural Resource Conservation Service (NRCS) soil survey reports for each site located in the Study Area.

2.0 Environmental Setting

2.1 Study Area Description

As noted above, the Study Area consists of three separate and distinct sites referred to herein as the Primary Site, Alternate Site 2, and Alternate Site 3.

2.1.1 Primary Site

The Primary Site is located in Danbury, CT in Fairfield County (73°28'4.7167"W 41°22'30.0099"N). It is comprised of three separate parcels of land referred to herein as Parcels A through C (see Attachment A, Figure 1). The total combined area of land evaluated for the presence of waters of the U.S. is approximately 55 acres. The dominant land use on the Primary Site is active agriculture (primarily hayfields) with some remnant farm buildings and related appurtenances. The Primary Site is bordered to the north by Park Avenue and existing commercial and industrial uses. Residential neighborhoods along Wooster Heights Road and Southern Boulevard exist to the east and southeast. An extensive mix of wetlands, open water, and forested uplands exist to the south. The Danbury Municipal Airport, mixed commercial uses, and Sugar Hollow Road (Route 7) border the site to the west.

2.1.2 Alternate Site 2

Alternate Site 2 is approximately 19 acres and is located in Middlebury, CT in New Haven County (73°9'0.453"W 41°30'26.162"N) (see Attachment A, Figure 1). With the exception of a single family dwelling and related appurtenances located towards the front of the site adjacent to Southford Road (Route 188), the parcel is undeveloped and composed primarily of forested upland. Significant wetlands exist along the fringe of the western property line and offsite to the east and south. Alternate Site 2 is bordered to the north by undeveloped forested upland. Forested upland and agricultural lands exist to the east. Route 188 abuts the site to the south. An extensive wetland system referred to as Kissawana Swamp exists off-site to the south between Route 188 and Interstate 84. To the west exists a significant forested wetland and North Benson Road. Long Meadow Elementary School and mixed commercial uses are on the west side of North Benson Road.

2.1.3 Alternate Site 3

Alternate Site 3 is approximately 65 acres and is located in Oxford, CT in New Haven County (73°8'47.96"W 41°27'37.329"N) (see Attachment A, Figure 1). Alternate Site 3 contains a vacant abandoned single family house, a vacant abandoned farm house, a barn, and a single family dwelling and related appurtenances. The remainder of the parcel is undeveloped and composed of forested upland, forested wetland, and agricultural fields. Alternate Site 3 is bordered to the North by an industrial park. Extensive wetlands exist to the east and west. A wetland system also exists towards the northern half of the site. Extensive wetlands and Towner Lane exist to the south.

2.2 Site Topography, Watershed and Floodplain Information

2.2.1 Primary Site

The Primary Site is located in the Housatonic River watershed (10-digit HUC 0110000508/Housatonic River-Still River to Pootatuck River) and the Still River sub-basin (see Watersheds Figure in Attachment A). The Still River is a tributary to the Housatonic River in western Connecticut (see Watershed Map in Attachment A). Its headwaters emanate from Farringtons Pond at the New York border with Danbury, Connecticut. It meanders through Sanfords Pond and Lake Kenosia before entering a concrete aqueduct near the downtown Danbury area. It then turns north and becomes a more conventional river as it flows through Brookfield and southern New Milford before joining with the Housatonic.[3] The Housatonic is located approximately 10 miles northeast of the Primary Site and flows into Long Island Sound. According to the U.S. Geological Survey (USGS) quadrangle maps, elevations at the Primary Site range from approximately 500 feet to 600 feet NAD83 (see Attachment A, Figure 1). According to the applicable Federal Emergency

[3] Source: Still River Alliance (http://www.danbury.org/stillriver/).

Management Agency (FEMA) – Flood Insurance Rate Map (FIRM), the Primary Site is located in a Zone C – Area of Minimal Flooding (see Attachment A, Figure 4).

While there were no major waterbodies and streams located on the Primary Site there is a well defined unnamed seasonally flowing stream channel within the delineated wetlands on Parcel A (see wetlands discussion in Section 4.0 below). There are also a number of major watercourses in the general vicinity and watershed. These include the Still River located approximately 250 feet to the north of Parcel A; Park's Pond Brook and Tarryville Lake located approximately 1,800 feet and 1,600 feet to the east of Parcel A, respectively; Lee's Pond Brook located approximately 80 feet to the south of Parcel C; and, Kissen Brook, Lee's Pond Brook, and Miry Brook located approximately 1,700 feet, 660 feet, and 3,000 feet to the west and southwest, respectively. According to the USGS quadrangle map the majority of Parcel A on the Primary Site drains towards the north and east; Parcel B drains towards the west; and, Parcel C drains towards the south and west.

2.2.2 Alternate Site 2

Alternate Site 2 is located in the Housatonic River watershed (10-digit HUC 0110000510/ Housatonic River-Pootatuck River to Naugatuck River) and Eightmile Brook subbasin (see Watersheds Map in Attachment A). According to USGS quadrangle maps, elevations at Alternate Site 2 range from approximately 630 feet to 690 feet NAD83 (see Attachment A, Figure 1). According to the applicable FEMA-FIRM, Alternate Site 2 is located in a Zone C – Area of Minimal Flooding (see Attachment A, Figures 4a and 4b).

As noted above, a large stream and wetland system occur along the edges of the westerly property line and offsite to the east. Eightmile Brook is approximately 1,300 to 1,500 feet to the north and west, respectively. This brook flows into the Housatonic River which ultimately flows into Long Island Sound (see Watershed Map in Attachment A). Avalon Farm Pond and tributaries that flow into the pond are approximately 2,200 feet to the east; Kissawana Swamp is approximately 50 feet to the south across Southford Road. According to the USGS quadrangle map, Alternate Site 2 drains towards all directions but primarily to the east, south, southeast, and west. A small section of the site drains towards the north.

2.2.3 Alternate Site 3

Alternate Site 3 is in the Housatonic River watershed (10-digit HUC 0110000512/ Naugatuck River-Hancock Brook to mouth) and Naugatuck River subbasin (see Watersheds Figure in Attachment A). The Naugatuck River is approximately 5 miles east of Alternate Site 3 (see Figure 1, Watersheds Map). According to USGS data, elevations at Alternate Site 3 range from approximately 550 feet to 600 feet NAD83 (see Attachment A, Figure 1). According to the applicable FEMA-FIRM, the majority of Alternate Site 3 is located in a Zone C – Area of Minimal Flooding. Low lying areas located along the eastern and western property lines are mapped as Zone A – Area of 100 Year Flood and Zone B – Areas

Between the 100 Year and 500 Year Floodplain (see Attachment A, Figure 4 for additional detail).

Significant wetlands exist to the east and west of the site. A wetland system also exists towards the northern half of the site. Extensive wetlands and Towner Lane exist off-site to the south. According to the USGS quadrangle map, Alternate Site 3 drains primarily towards the east, south, and west. A smaller section of the site drains towards the north. Eightmile Brook is approximately 2,300 feet to the northwest; and its adjacent wetlands encroach onto the western property line of the site. As noted above, Eightmile Brook flows into the Housatonic River which ultimately flows into Long Island Sound. Little River and its tributaries and adjacent wetlands are located on and proximate to the eastern property line. The Little River flows in a southerly direction away from the site south of Towner Lane.

2.3 Plant Communities

2.3.1 Primary Site

As noted above, the Primary Site is composed of agricultural land (primarily hayfields), deciduous forested upland, and deciduous forested wetland. The hayfields contain a mix of common grasses and forbs including but not limited to perennial rye *(Lolium perenne)*, timothy *(Phleum pretense)*, bedstraw *(Galium boreale)*, orchard grass *(Dactylis glomerata)*, sweet vernal grass *(Anthoxanthum odoratum)*, meadow foxtail *(Alopecurus pratensis)*, vetch *(Vicia sativa)*, clover *(Trifolium repens)*, and other species.

The forested uplands contain a variety of deciduous tree species including but not limited to red oak *(Quercus rubra)*, black oak *(Quercus velutina)*, red maple, *(Acer rubrum)*, sugar maple *(Acer saccharum)*, American elm *(Ulmus americana*, and black cherry *(Prunus serotina)*. The understory is composed a variety of shrub and herb species including but not limited to autumn olive *(Elaeagnus angustifolia)*, red maple, mutliflora rose *(Rosa multiflora)*, poison ivy *(Toxicodendron radicans)*, Virginia creeper *(Parthenocissus quinquefolia)*, oriental bittersweet *(Celastrus orbiculatus)*, hayscented fern *(Dennstaedtia punctilobula)*, garlic mustard *(Alliaria petiolata)*, wood ferns *(Dryopteris spp.)*, and honeysuckle *(Lonicera tatarica)*.

Forested wetlands on the site contain a variety of deciduous plant species in all strata. Dominant species include red maple, multiflora rose, skunk cabbage *(Symplocarpus foetidus)*, poison ivy, sensitive fern *(Onoclea sensibilis)*, interrupted fern *(Osmunda claytoniana)*, spice bush *(Lindera benzoin)*, and cinnamon fern *(Osmunda cinnamomea)*..

2.3.2 Alternate Site 2

Alternate Site 2 is composed primarily of deciduous forested upland. Significant wetlands exist along the fringe of the westerly property line and offsite to the east and south. The forested upland is composed of a variety of oak, maple, and birch species with only limited

conifer species present [an occasional hemlock *(Tsuga canadensis)* or white pine *(Pinus strobus*)]. The understory contains birch and oak saplings, sweet pepperbush *(Clethra alnifolia)*, witch hazel *(Hamamelis virginiana)*, Virginia creeper, Canada mayflower *(Maianthemum canadense*, wood fern, and black cherry.

2.3.3 Alternate Site 3

Alternate Site 3 is composed primarily of forested upland, forested wetland, and agricultural fields. The agricultural fields contain a variety of grass species including but not limited to perennial rye, timothy, bedstraw, vetch, white clover, and other species. The forested upland largely consists of deciduous tree species including oaks, birches, and maples. Dominant vegetation within the wetland includes red maple, sweet pepperbush, skunk cabbage, muscle wood *(Carpinus caroliniana)*, and a variety of fern species.

2.4 Soils

The General Soil Map Units mapped by the USDA Natural Resources Conservation Service within the Study Area are depicted for each respective site on Figure 5 in Attachment A. A summary of the predominant soil associations within the Study Area from the soil survey is provided below. For a more comprehensive discussion refer to the NRCS soil reports provided in Attachment E.

2.4.1 Primary Site

*45B - Woodbridge fine sandy loam, 3 to 8 percent slope*s - The Woodbridge component makes up 80 percent of the map unit. Minor components may include Paxton, Montauk, Ridgebury, Leicester, Sutton, Georgia, Stockbridge, and Whitman soils. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The natural drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

45C - Woodbridge fine sandy loam, 8 to 15 percent slopes - The Woodbridge component makes up 80 percent of the map unit. Minor components may include Paxton, Montauk, Ridgebury, Leicester, Sutton, Georgia, Stockbridge, and Whitman soils. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands. The natural drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

60D - Canton and Charlton soils, 15 to 25 percent slopes - The Canton component makes up 45 percent of the map unit. The Charlton component makes up 35 percent of the map unit. Other minor components may include Chatfield, Hollis, Leicester, and Sutton soils. Slopes are 15 to 25 percent. This component is on hills on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded.

There is no zone of water saturation within a depth of 72 inches. Neither this soil nor its Charlton component meets hydric criteria.

84B - Paxton and Montauk fine sandy loams, 3 to 8 percent slopes - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components may include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

84C - Paxton and Montauk fine sandy loams, 8 to 15 percent slopes - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components may include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

84D - Paxton and Montauk fine sandy loams, 15 to 25 percent slopes - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components may include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 15 to 25 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January, February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

2.4.2 Alternate Site 2

3 - Ridgebury, Leicester, and Whitman soils, extremely stony - The Ridgebury component makes up 40 percent of the map unit. The Leicester component makes up 35 percent of the map unit. The Whitman component makes up 15 percent of the map unit. Other minor components may include Sutton, Woodbridge, and unnamed soils. Slopes are 0 to 5 percent. This component is on drainage ways on uplands and depressions on uplands. The natural drainage class is poorly drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, and December. This soil and the Leicester and Whitman components, meet hydric criteria.

18 - Catden and Freetown soils - The Catden component makes up 40 percent of the map unit. The Freetown component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. Other minor components may include Natchaug, Timakwa, Whitman, Maybid, Saco, Scarboro, and Menlo. This component is on depressions. The natural drainage class is very poorly drained. According to the soil survey, this soil is rarely flooded. It is frequently ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, June, September, October, November, and December. Organic matter content in the surface horizon is about 65 percent. This soil and its Freetown component meet hydric criteria.

45B - Woodbridge fine sandy loam, 3 to 8 percent slopes - The Woodbridge component makes up 80 percent of the map unit. Minor components may include Paxton, Montauk, Ridgebury, Leicester, Sutton, Georgia, Stockbridge, and Whitman soils. Slopes are 3 to 8 percent. This component is on drumlins on uplands, and hills on uplands. The natural drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

47C - Woodbridge fine sandy loam, 2 to 15 percent slopes, extremely stony **-** The Woodbridge component makes up 80 percent of the map unit. Minor components may include Paxton, Montauk, Ridgebury, Leicester, Sutton, Georgia, Stockbridge, Whitman, and unnamed soils. Slopes are 2 to 15 percent. This component is on drumlins on uplands and hills on uplands. The natural drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

84B - Paxton and Montauk fine sandy loams, 3 to 8 percent slopes - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January, February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

86C - Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 3 to 15 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January,

February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

86D - Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Other minor components include Charlton, Ridgebury, Woodbridge, Canton, Stockbridge and unnamed soils. Slopes are 15 to 35 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January, February, March, April, November, and December. Neither this soil nor its Montauk component meets hydric criteria.

2.4.3 Alternate Site 3

3 - Ridgebury, Leicester, and Whitman soils, extremely stony - The Ridgebury component makes up 40 percent of the map unit. The Leicester component makes up 35 percent of the map unit. The Whitman component makes up 15 percent of the map unit. Other minor components may include Sutton, Woodbridge, and unnamed soils. Slopes are 0 to 5 percent. This component is on drainage ways on uplands and depressions on uplands. The natural drainage class is poorly drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, and December. This soil and the Leicester and Whitman components meet hydric criteria.

13 - Walpole sandy loam - The Walpole component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. Other minor components may include Hinckley, Merrimac, Sudbury, Ninigret, Raypol, Scarboro, and Raynham. This component is on depressions on terraces, drainage ways on terraces, depressions on outwash plains, and drainage ways on outwash plains. The natural drainage class is poorly drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, and December. Organic matter content in the surface horizon is about 70 percent. This soil meets hydric criteria.

15 - Scarboro muck - The Scarboro component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. Other minor components may include Catden, Natchaug, Raypol, Walpole, Sudbury, Timakwa, Windsor, and unnamed soils. This component is on drainage ways on outwash plains, terraces on outwash plains, and depressions on outwash plains. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. According to the soil survey, this soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, June, October, November, and December. Organic matter content in the surface horizon is about 75 percent. This soil meets hydric criteria.

21A – Ninigret and Tisbury soils, 0 to 5 percent slopes - The Ninigret component makes up 60 percent of the map unit. The Tisbury component makes up 25 percent of the map unit. Other minor components may include Agawam, Merrimac, Enfield, Haven, Sudbury, Raypol, Walpole, and unnamed soils. Slopes are 0 to 5 percent. This component is on terraces on valleys, and outwash plains on valleys. The natural drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24-inches during January, February, March, April, September, November, and December. Neither this soil nor the Tisbury component meets hydric criteria.

29B - Agawam fine sandy loam, 3 to 8 percent slopes - The Agawam component makes up 80 percent of the map unit. Other minor components may include Hinckley, Merrimac, Ninigret, Walpole, Scarboro, and unnamed soils. Slopes are 3 to 8 percent. This component is on outwash plains on valleys, and terraces on valleys. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. According to the soil survey, this soil is not flooded. It is not ponded. This soil does not meet hydric criteria.

38C – Hinckley gravelly sandy loam, 3 to 15 percent slopes - The Hinckley component makes up 80 percent of the map unit. Other minor components may include Merrimac, Windsor, Agawam, Sudbury, Scarboro, Walpole, and unnamed soils. Slopes are 3 to 15 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys, and eskers on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. According to the soil survey, this soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria.

46B - Woodbridge fine sandy loam, 2 to 8 percent slopes, very stony - The Woodbridge component makes up 80 percent of the map unit. Other minor components may include Paxton, Montauk, Ridgebury, Leicester, Sutton, Georgia, Stockbridge, Whitman, and unnamed soils. Slopes are 2 to 8 percent. This component is on drumlins on uplands, and hills on uplands. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, and December. This soil does not meet hydric criteria.

50B - Sutton fine sandy loam, 3 to 8 percent slopes - The Sutton component makes up 80 percent of the map unit. Other minor components may include Charlton, Canton, Leicester, Paxton, Rainbow, Woodbridge, and Narragansett. Slopes are 3 to 8 percent. This component is on drainage ways on uplands and depressions on uplands. The natural

drainage class is moderately well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. This soil does not meet hydric criteria.

60B – Canton and Charlton soils, 3 to 8 percent slopes - The Canton component makes up 45 percent of the map unit. The Charlton component makes up 35 percent of the map unit. Other minor components may include Chatfield, Leicester, Sutton, Hollis, and unnamed soils. Slopes are 3 to 8 percent. This component is on hills on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72-inches. Organic matter content in the surface horizon is about 70 percent. Neither this soil nor its Charlton component meets hydric criteria.

60C – Canton and Charlton soils, 8 to 15 percent slopes - The Canton component makes up 45 percent of the map unit. The Charlton component makes up 35 percent of the map unit. Other minor components may include Chatfield, Leicester, Sutton, Hollis, and unnamed soils. Slopes are 8 to 15 percent. This component is on hills on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. Neither this soil nor its Charlton component meets hydric criteria.

73C - Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky - The Charlton component makes up 45 percent of the map unit. The Chatfield component makes up 30 percent of the map unit. Other minor components may include Rock Outcrop, Hollis, Leicester, Sutton, and unnamed soils. Slopes are 3 to 15 percent. This component is on hills, uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Neither this soil nor its Chatfield complex meets hydric criteria.

84B - Paxton and Montauk fine sandy loams, 3 to 8 percent slopes - The Paxton component makes up 55 percent of the map unit. The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, and till plains on uplands. The natural drainage class is well drained. According to the soil survey, this soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, and December. This soil does not meet hydric criteria.

2.5 Threatened and Endangered Animal and Plant Species

According to U.S. Fish and Wildlife Service (USFWS) data there are no known federally-listed species at any of the three sites in the Study Area.

According to the Connecticut Department of Environmental Protection's (CTDEP) on-line mapping data, a portion of the western boundary of Alternate Site 2 is designated as "listed

habitat or significant natural community".[4] A similarly mapped area exists within 0.5 mile of Alternate Site 3. The Primary Site does not contain any designated areas.

3.0 Wetland Delineation Methodology

This section of the report describes the methods and materials used to conduct the wetland and waterbody delineation work and field survey work. The wetland delineation work was conducted by certified and professional wetland scientists from Epsilon and Connecticut-certified soil scientists from JMM. See Attachment F for information describing their qualifications.

3.1 Preliminary Data Review

Prior to performing fieldwork, background information was reviewed to assist in the initial identification of wetlands, surface waterbodies, and ephemeral waterbodies (e.g., vernal pools). Information sources included color-infrared aerial photographs of the Study Area, USGS 7.5-Minute Series Topographic Quadrangle Maps, National Wetlands Inventory (NWI) Maps, NRCS Soil Surveys, FEMA FIRMs, and several base map and environmental data layers distributed by GIS.

The USGS topographic maps, the NWI wetlands data layer, NRCS soil maps, and the aerial photographs referenced above were used to indicate the possible presence of wetlands in the Study Area. The NWI wetland information can be particularly useful in this regard, showing different types of wetland environments and the potential presence of hydrologic connections between wetlands. The soil maps can indicate the potential presence of wetlands via soil classifications (e.g., somewhat poorly drained, poorly drained, and very poorly drained soils). However, in this instance the data provided by the soil maps and NWI maps were determined to be inaccurate, particularly for the Primary Site and Alternate Site 3, depicting few or no wetlands or poorly drained soils within the Study Area. As explained in Section 3.2 below, the wetland delineation work revealed fairly extensive wetlands on and adjacent to both of these sites. The field delineation work for Alternate Site 2 was generally consistent with the NWI mapping data with only limited variations.

3.2 Field Delineation Methodology

During the week of May 10 and May 17, 2010, wetland and soil scientists from Epsilon and JMM delineated wetlands, streams, and other waterbodies at each of the three sites comprising the Study Area. The edge of wetlands were delineated with pink flagging tape with the label "Wetland Delineation" and a flag series number (e.g., A-1). Where the OHWM was not coincident with the edge of wetlands the OHWM limit was delineated with pink flagging tape with the label "Wetland Delineation" and a unique flag series

[4] Source: http://www.depdata.ct.gov/naturalresources/endangeredspecies.

number (e.g., OHWM-1). Blue flagging tape was used to identify the location of transects and pParcels where Corps wetland determination forms were completed. The upland data point along each transect contained a "U" in the flag series whereas the wetland data point along the same transect contained a ""W" in the flag series. If a single pParcel was completed to simply verify that an area was not a wetland, the flags were labeled USACE-1, 2, etc.

Wetland flags were GPS-located as they were tied in the field using a Trimble GeoXT GPS unit. With post-processing correction, the accuracy achieved with this unit was generally less than 1 meter. Following the GPS location of wetland flags and post processing correction, the data was incorporated onto the graphics included with this report.

Wetlands were delineated in accordance with the Corp's *1987 Wetland Delineation Manual* and the *2009 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. These methods include field-testing for the presence of criteria that are typically found in wetlands. These criteria include wetland hydrology, a predominance of hydrophytic vegetation, and hydric soils.

The majority of the wetlands identified were typical of wetlands found in central and southwestern Connecticut. Some of the wetlands exhibited evidence of direct and indirect disturbances as a result of past and present land use within the Study Area (e.g., agricultural practices). Vegetation cover types were classified into distinctive upland, wetland, and aquatic ecological communities. Water bodies and watercourses, including rivers, streams, drainage ditches, and seeps were characterized within the Study Area. Photographs were taken at select wetland areas representative of the Study Area. Data from the delineated wetlands including vegetation, soil characteristics, hydrology, photographic information, and sketches were recorded in an appropriate field notebook.

Soils, the first of three diagnostic characteristics of a wetland, were examined and evaluated both within and outside the wetland boundaries using a soil Dutch auger to a depth of approximately 20 inches. Soils were characterized throughout this depth. Soil colors were identified using a Munsell® Soil Color Chart (Munsell, 1998), and other characteristics such as soil texture and moisture were recorded. Hydric characteristics such as organic soil layers, reduced matrices, and redoximorphic features were noted when they occurred.

The above referenced delineation manuals provides guidelines for determining the presence of wetland hydrology, the second of the three diagnostic characteristics of a wetland. In general, the criteria for wetland hydrology are met if the area is inundated or saturated at the soil surface during the growing season for a time sufficient to develop hydric soils and support hydrophytic vegetation. In some instances, it was necessary to use other field characteristics specified in the manual to identify wetland hydrology. These characteristics included water staining, sediment deposits, drainage patterns, or drift lines. Hydrologic characteristics as well as the depth of surface water, or depth to soil saturation, were recorded for each wetland area.

To determine the presence of hydrophytic vegetation, the third of the diagnostic wetland characteristics, the dominant species in each major vegetative stratum (e.g., tree, shrub/sapling, herbaceous, and woody vine) were identified and recorded for each wetland area using the Corp's Standard Dominance Test procedure. Each plant was then assigned a wetland indicator status (e.g., obligate, facultative, etc) from the USFWS *1996 National List of Vascular Plant Species That Occur in Wetlands Region 1 Northeast.* A prevalence of dominant species (i.e., greater than or equal to 50%) that are facultative, facultative wetland, and obligate wetland indicates the presence of hydrophytic vegetation.

4.0 Wetland Characteristics

4.1 Wetland Classifications

Wetlands were categorized to a subsystem or class level according to the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al, 1979).[5] The USFWS System broadly defines wetland types by hydrology and vegetative cover. Wetlands are categorized within a classification hierarchy of Systems, Subsystems, and Classes. Systems for the highest level of the classification hierarchy; five are defined – Marine, Estuarine, Riverine, Lacustrine, and Palustrine. Marine and Estuarine Systems each have two Subsystems - Subtidal and Intertidal; the Riverine System has four Subsystems - Tidal, Lower Perennial, Upper Perennial, and Intermittent; the Lacustrine has two - Littoral and Limnetic; and the Palustrine has no Subsystems.

Within the Subsystems, Classes are based on substrate material and flooding regime, or on vegetative life form. The same Classes may appear under one or more of the Systems or Subsystems. Six Classes are based on substrate and flooding regime: (1) Rock Bottom with a substrate of bedrock, boulders, or stones; (2) Unconsolidated Bottom with a substrate of cobbles, gravel, sand, mud, or organic material; (3) Rocky Shore with the same substrates as Rock Bottom; (4) Unconsolidated Shore with the same substrates as Unconsolidated Bottom; (5) Streambed with any of the substrates; and (6) Reef with a substrate composed of the living and dead remains of invertebrates (corals, mollusks, or worms). The bottom Classes, (1) and (2) above, are flooded all or most of the time and the shore Classes, (3) and (4), are exposed most of the time. The Class Streambed is restricted to channels of intermittent streams and tidal channels that are dewatered at low tide. The life form of the dominant vegetation defines the five Classes based on vegetative form: (1) Aquatic Bed, dominated by plants that grow principally on or below the surface of the water; (2) Moss-Lichen Wetland, dominated by mosses or lichens; (3) Emergent Wetland, dominated by emergent herbaceous angiosperms; (4) Scrub-Shrub Wetland, dominated by shrubs or small trees; and (5) Forested Wetland, dominated by large trees.

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[5] Cowardin, L. et al. (1979). Classification of Wetlands and Deepwater Habitats of the United States, United States Fish and Wildlife Service, Biological Services Program, Washington, D.C., FWS/OBS-79/31.

Using the Cowardin approach, the wetland systems identified within the Study Area include a mix of Palustrine Forested Wetlands (PFO), Palustrine Scrub-Shrub Wetlands (PSS), and Palustrine Emergent Wetlands (PEM).

PFO is defined as woody vegetation that is 6 meters (20 feet) tall or taller covering 30% or more of the wetland area. They may occur in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and a herbaceous layer. Forested wetlands typically receive runoff from adjacent areas, have poorly drained soils and may be inundated for extended periods during the growing season. These areas may have several inches to a foot of water in the wet seasons while completely drying out in the summer months.

PSS wetlands are dominated by woody vegetation (i.e. young trees, shrubs) less than 6 meters (20 feet) tall covering 30% or more of the wetland area. Scrub-shrub wetlands occur mostly in landscape depressions where inundation is typically seasonal. These areas may have several inches to several feet of water in the wet seasons while completely drying out in the summer months. PSS wetlands are frequently found in conjunction with an emergent wetland area or on the fringe of a forested wetland. Scrub-shrub wetlands may represent a successional stage leading to a forested wetland, or they may be relatively stable communities.

PEM class wetlands are characterized by an open structure and the presence of erect, rooted, herbaceous hydrophytes with few or no woody plant species present. This vegetation, often dominated by perennial grasses, sedges and rushes, is present for the majority of the growing season in most years. PEM wetlands commonly occur in landscape depressions where water from slope or field drainage collects, and at the margins of inundated pond and river wetland systems. The soils typically consist of a layer of well-decomposed organic muck overlying mineral material. Emergent wetlands are known by many names including marsh and wet meadow.

There are a variety of regional specific plant communities within these classes of wetlands. These plant communities provide different functions and values to the surrounding landscape. A general functional assessment of the wetlands within the Study Area is provided in Section 5.0.

4.2 Detailed Description of Delineated Wetlands

The wetland community types identified within the Study Area are described in detail below. For the purposes of this report all of the wetland systems described herein are presumed to be waters of the United States subject to jurisdiction under Section 404 of the

U.S. Clean Water Act (see Section 6.0 for additional detail).[6] Refer to the figures provided in Attachment A for the location and extent of each wetland flag series. Site photographs of each delineated wetland are provided in Attachment D.

4.2.1 Primary Site

Six wetland systems were delineated within the limits of the Primary Site, each of which is described below. Refer to Figure 3 in Attachment A for their approximate locations.

4.2.1.1 Wetland A

Wetland A is delineated by flags A1 through A12. It is located at the extreme southern end of Parcel C on the Primary Site adjacent to a well defined toe-of-slope and active hayfield. There is an abrupt transition at the wetland-upland interface. The wetland is a mix of PFO, PSS, and PEM cover types. The delineated portion of the wetland covers approximately 0.21 acre. The topography is generally flat with some pit-and-mound features present. The wetland borders a large unnamed pond and Lees Pond Brook (a perennial stream) located offsite to the east and south respectively. Lees Pond Brook flows from the unnamed pond in a westerly direction towards Sugar Hollow Road (Route 7). The wetland appears to receive inflow from groundwater discharge and surface flows from the pond and stream during high water events.

Dominant vegetation within and adjacent to the delineated portion of the wetland includes red maple (FAC), black willow *(Salix Nigra)* (FACW), multiflora rose (FACU), and tartarian honeysuckle (FACU) in the sapling/shrub stratum. The herb stratum is composed of poison ivy (FAC), common reed *(Phragmites australis)* (FACW), jewel weed *(Impatiens capensis)* (FACW), soft rush *(Juncus effuses)* (FACW), oriental bittersweet (UPL), sensitive fern (FACW), bedstraw (FACU), goldenrod species *(Solidago spp.)*, Virginia creeper (FACU), garlic mustard *(Alliaria petiolata)* (FACU), and skunk cabbage (OBL). While there was no discernible tree stratum in the Study Area, the wetland system eventually transitions from a PSS and PEM cover type to a PFO cover type as it extends off-site along the stream bank towards the west.

While mapped by NRCS as well-drained Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, based on visual observations the soils in the delineated wetland are somewhat poorly drained and poorly drained hydric mineral soils with a texture of fine

[6] In Connecticut, wetlands are classified by soil types specified in the state regulations. The wetlands and watercourses delineated in the Study Area are therefore presumed to be "Regulated Areas" as defined under the "Inland Wetlands and Watercourses Act and Regulations of the CTDEP" because of the presence of poorly drained soils and characteristics associated with stream channels (e.g., permanent channel and bank, evidence of scour or deposits of detritus, duration of standing water, etc).

sandy loam. Redoximorphic features were present throughout the upper part of the soil profile.

4.2.1.2 Wetland B/C

Wetland B/C is delineated by flags B1 through B39 and flags C1 through C62. It is generally located in the middle of Parcel A on the Primary Site. It is a mix of PFO and PSS cover types. A small area of wet meadow (PEM) exists along the extreme southern edge of the wetland near an existing farm out-building and irrigation well.[7] The delineated portion of this wetland system is roughly 2.15 acres in surface area. The wetland series abuts a well defined first order seasonally flowing stream channel (unnamed) that conveys overland surface water flows and groundwater discharge flows in a northerly direction from the wet meadow portion of the delineated wetland (see flags B1 through B8 in Attachment A), through the forested wetland, and eventually into a channelized tributary and drainage pipe located along the shoulder of the existing paved private road on Parcel A in the vicinity of flag C1. Based on visual observations, it appears that the flows eventually reach the Still River through the municipal drainage system located in Park Avenue to the north. The Still River is located approximately 250 feet off-site and to the north of Park Avenue. There are also a number of hillside seeps and non-descript overland flow areas within the wetland system perpendicular to the main stream channel. The wetland appears to receive inflow from both groundwater discharge (including the referenced seeps) and overland flows from the main stream channel and smaller tributaries during precipitation events. The main stream channel has a variable width but in general it is approximately 8 to 12 feet wide with a well defined bank approaching 1 to 2 feet in height. The bank has limited vegetation and exhibits some undercutting in select areas. The stream is composed mostly of large stones and cobbles with fine sands interspersed in the voids. For the purposes of this analysis, the OHWM of the stream is coincident with the wetland flags.

The wetland slopes gradually downward in a southerly direction from wetland flag B4 to wetland flag C1. There is an approximately 100 foot change in elevation over this stretch (a distance of approximately 1,000 linear feet). The wetland has limited micro-topographic features present (e.g., pit-and-mound type relief, rocky outcrops, etc).

While mapped by NRCS as well-drained Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, based on visual observations the soils in the delineated wetland are somewhat poorly drained and poorly drained hydric mineral soils. They generally have a

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[7] In response to a request from the Corps during the May 13th, 2010 site inspection, a second meadow area containing a predominance of hydrophytic vegetation was evaluated approximately 50-feet southeast of flag B22. Upon detailed review of this area it was determined that it did not contain sufficient hydrology or hydric soils to be regulated as a wetland as defined by Corps criteria. Refer to the data pParcel (USACE-1) and site photographs provided in Attachments B and D for additional detail.

texture of silt loam and very fine sandy loam with redoximorphic features present within the upper part of the soil profile.

Dominant vegetation within and adjacent to the delineated portion of the wetland includes red maple (FAC), sugar maple (FACU), American elm (FACW), and yellow birch *(Betula nigra)* (FACW) in the tree stratum. The shrub stratum is composed of red maple, yellow birch, black cherry (FACU), multiflora rose (FACU), tartarian honeysuckle (FACU), autumn olive (FACU), spice bush *(Lindera benzoin)* (FACW), northern arrow-wood *(Viburnum dentatum)* (FAC), muscle-wood (FAC), hop-hornbeam *(Ostrya virginiana)* (FACU), barberry *(Berberis vulgaris)* (FACU), and highbush blueberry *(Vaccinium corymbosum* (FACW) in the sapling/shrub stratum. The herb stratum is composed of poison ivy (FAC), tussock sedge *(Carex spp.),* (FACW), soft rush (FACW), oriental bittersweet (UPL), interrupted fern (FAC), cinnamon fern (FACW), sensitive fern (FACW), bedstraw (FACU), goldenrod *(Solidago spp.)(FACW or wetter)*[8], Virginia creeper (FACU), garlic mustard (FACU), and skunk cabbage (OBL).

4.2.1.3 Wetland D

Wetland D is delineated by flags D1 through D5. It is a very small pocket wetland approximately 0.01 ac in surface area located along a hillside seep on Parcel B of the Primary Site. It is characterized as a PEM with PSS located along its fringes. While not readily apparent at the time of delineation, under certain circumstances this wetland may drain via overland flow into a drainage channel located to the west.[9] This drainage channel in turn likely flows into a down gradient wetland located off-site to the west before flowing into a large unnamed pond and eventually Kissen Brook located across Sugarhollow Road (Route 7). Kissen Brook is located approximately 1,700 feet from the Study Area boundary. The wetland appears to receive inflow from groundwater discharge, primarily a hillside seep.

Wetland D contains poorly drained hydric soils. The soils have a texture of fine sandy loam and silt loam with redoximorphic features present within the upper part of the soil profile.

Dominant vegetation within and adjacent to Wetland D includes horsetail *(Equisetum spp.)*(FACW), cattail *(Typha spp.)*(OBL), soft rush (FACW), goldenrod (FACW), purple

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[8] For the purposes of this report, the goldenrod (which could not be reliably identified to a species level during the portion of the growing season when the delineation work was occurring) is presumably a hydrophytic species because of its position in the landscape and its prevalence in the surrounding, well defined wetlands.

[9] During the May 13th, 2010 site inspection the Corps requested that these drainage channels be located and depicted on the project drawings and plans. This work was completed during the week of May 17th, 2010 via GPS survey. Refer to Attachment A, Figure 5b for their approximate locations.

loosestrife *(Lythrum salicaria)* (FACW), orchard grass (FACU), and timothy (FACU). The shrub stratum is composed of autumn olive (FACU) and willow (FACW). There was no tree stratum present within the limits of the delineated wetland.

4.2.1.4 Wetland E

Wetland E is delineated by flags E1 through E4. Wetland E is a very small pocket wetland located to the west of the aforementioned Wetland B/C along a hillside seep on Parcel A of the Primary Site.[10] It is approximately 0.01 acre in surface area and is characterized as a PSS and PEM surrounded by deciduous forested upland. While not readily apparent at the time of delineation, under certain circumstances this wetland may drain via diffuse overland flow into Wetland B/C and its adjoining stream channel (see Wetland B/C description above for additional detail). Wetland E appears to receive inflow from groundwater discharge, primarily a hillside seep.

Wetland E contains somewhat poorly drained hydric soils with redoximorphic features (high and low chroma mottles) present within upper part of the soil profile. The soils have a texture of fine sandy loam and very fine sandy loam.

Dominant vegetation (herb and shrub stratums) within or immediately adjacent to Wetland E includes skunk cabbage (OBL), jewelweed (FACW), New York fern *(Thelypteris noveboracensis)* (FAC), barberry (FACU), garlic mustard (FACU), Virginia creeper (FACU), and red maple seedlings in the herb layer. The tree stratum is composed of American elm (FACW) and sugar maple (FACU).

4.2.1.5 Wetland F

Wetland F is delineated by flags F1 through F7. Wetland F is a small pocket wetland approximately 0.04 acre in surface area located on a fairly level terraced area at the bottom of a gradually sloping active hayfield on Parcel B of the Primary Site.[11] It is characterized as a wet meadow (PEM). Under certain circumstances (e.g., during periods of seasonally

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[10] During the May 13th, 2010 site inspection the Corps identified this area as a possible wetland. Accordingly, during the week of May 17th, 2010 wetland scientists from Epsilon and JMM analyzed the area in accordance with the Corps 1987 manual and regional supplement and determined that it satisfied the criteria to be classified as a wetland. However, there was no discernible overland flow pattern leading from the wetland to the down gradient Wetland B/C series that could be located in the field by GPS survey or other means.

[11] During the May 13th, 2010 site inspection the Corps requested that this low lying meadow area be evaluated further and its limits depicted on project drawings if it was determined to satisfy the wetland criteria referenced in the Corps 1987 manual and regional supplement. This analysis and subsequent delineation was completed during the week of May 17th, 2010 and it was determined at that time that this area should be classified as a wetland. Refer to Attachment A, Figure 5b for its approximate location.

high groundwater) this wetland may drain via broad overland flow towards two down gradient drainage channels located to the west. Based on visual observations, these drainage channels in turn likely flow into a down gradient wetland located off-site to the west before flowing into a large unnamed pond and eventually Kissen Brook located across Sugarhollow Road (Route 7). As noted above, Kissen Brook is located approximately 1,700 feet from the Study Area boundary. The wetland appears to receive primary inflow from groundwater discharge.

Wetland F contains a disturbed soil profile from past and current agricultural practices (e.g., plowing, cutting, re-grading, etc). However, for the purposes of this analysis the soils can be accurately characterized as somewhat poorly drained to poorly drained hydric mineral soils. The soils have a texture of very fine sandy loam with redoximorphic features (high and low chroma mottles) present within the upper part of the soil profile. The adjoining upland contains well defined loamy soils with no indicators of hydrology present in the profile to a depth of at least 20-inches.

Dominant vegetation within and adjacent to Wetland F includes soft rush (FACW) and various hydrophytic sedge species *(Carex spp)* (FACW or wetter)[12]. The adjoining upland hayfield contains a mix of clover (FACU), orchard grass (FACU), and plantain *(Plantago major)* (FACU). There are no shrub or tree stratums present within the limits of the delineated wetland or upland.

4.2.2 Alternate Site 2

A total of three wetland systems were delineated within the limits of Alternate Site 2, each of which are described below. A fourth wetland system [red maple swamp (PFO)] was evaluated towards the northern corner of the site (as requested by the Corps during an earlier site visit in 2009) but it was determined to exist outside the Study Area and it was not therefore field delineated. To confirm this finding, the limits of the off-site wetland were GPS-located and a data pParcel was completed along the extreme northern corner of the parcel to demonstrate that their were no wetlands within the Study Area (see Attachment A Figure 3 and Attachment B, Data PParcel USACE-1).

Information describing the delineated wetlands is provided below.

[12] For the purposes of this report, the sedge (which could not be reliably identified to a species level during the portion of the growing season when the delineation work was occurring) is presumably a hydrophytic species because of existing hydrologic conditions, its position in the landscape, and its prevalence in the surrounding well defined wetlands.

4.2.2.1 Wetland A

Wetland A is delineated by flags A1 through A 11. It exists along the northwestern corner/property line of the Study Area. It is primarily a PFO cover type with PSS interspersed throughout. The field delineation was limited to a portion of its eastern edge where the wetland extends onto the Study Area (approximately 0.2 acre over a distance of approximately 320 linear feet). While the majority of this sizeable wetland system exists off-site it does eventually connect with Wetland C which is located along the southern edge of the Study Area (meaning, they comprise the same system). Wetland C abuts a well defined seasonally flowing stream channel where it transitions from a PFO/PSS to a PEM before flowing through a culvert beneath Southford Road (Route 188) into a large emergent marsh system (PEM) located to the south. Refer to description for Wetland C below for additional information.

Wetland A contains pit-and-mound micro-topography and was inundated with approximately 6-inches of standing water at the time of inspection. It may provide suitable vernal pool[13] habitat at certain times of the year, primarily in the early spring during extended periods of inundation and ponding. The wetland appears to receive its primary inflow via groundwater discharge. The wetland contains poorly drained mineral soils with a texture of fine sandy loam and silt loam. The soil was saturated to the surface at the time of inspection (or otherwise flooded) and redoximorphic features (high and low chroma mottles) were present within the upper part of the soil profile. The soil contains high organic matter content.

Dominant vegetation within and adjacent to the delineated portion of the wetland includes red maple (FAC), American elm (FACW), yellow birch (FACW), and swamp white oak *(Quercus bicolor)* (FACW) in the tree stratum. The shrub stratum is composed of sweet pepperbush (FAC), witch-hazel (FAC), winterberry *(Ilex verticillata)* (FACW), highbush blueberry (FACW), red maple (FAC), yellow birch, (FACW), and spice bush (FACW). The herb stratum is composed of jack-in-the-pulpit *(Arisaema triphyllum)* (FACW), marsh violet *(Viola palustris)* (FACW), starflower *(Trientalis borealis)* (FAC), wood reed grass *(Cinna arundinacea)* (FACW), poison ivy (FAC), skunk cabbage (OBL), cinnamon fern (FACW), sensitive fern (FACW), interrupted fern (FAC), New York fern (FAC), and Virginia creeper (FACU).

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[13] Vernal Pools are temporary bodies of fresh water that provide breeding habitat (typically in the spring) for many vertebrate (mole salamanders, wood frogs, etc) and invertebrate species (e.g., fairy shrimp). Vernal Pool habitat can occur where water is contained for more than two months in the spring and summer of most years and where no reproducing fish populations are present. Vernal Pools are common in Connecticut and occur in almost every town in the state.

4.2.2.2 Wetland B

Wetland B is delineated by flags B1 through B11. It is approximately 0.05 acre in surface area and is located along the extreme eastern corner of the Study Area adjacent to a residential dwelling and manicured lawn. It is characterized as a forested wetland (PFO) with PSS interspersed throughout. Wetland B is situated in an old excavated borrow pit. Its boundary is well defined by very steep slopes approaching 20 feet in height.[14] The wetland appears to receive primary inflow from groundwater discharge. It is hydrologically connected by a 6-inch diameter pipe and an approximately 2-foot wide rocky intermittent drainage channel to a sizeable down gradient PFO located off-site and to the east. The flows from Wetland B are likely to be seasonal and would only under high water events as the invert elevation of the pipe is higher than the elevation of the wetland.

Dominant vegetation within and adjacent to Wetland B includes red maple (FAC), skunk cabbage (OBL), poison ivy (FAC), spice bush (FACW), sensitive fern (FACW), cinnamon fern (FACW), and multiflora rose (FAC).

4.2.2.3 Wetland C

Wetland C is delineated by flags C1 through C23. As noted above, Wetland C exists along the southern edge of the Study Area and is part of the same system as Wetland A. Approximately 620-feet of Wetland C (1.12 acres) were delineated within the limits of the Study Area. Wetland C abuts a well defined approximately 5-foot wide seasonally flowing stream channel that conveys surface flows towards a culvert located at Southford Road (Route 188). The culvert connects Wetland C to a large emergent marsh system (PEM) located on the opposite side of Route 188. The stream channel itself is meandering in nature with low profile banks (approximately 6-inches in height) and a silty substrate.

The northern half of Wetland C is characterized as PFO with PSS interspersed throughout. It contains the aforementioned seasonally flowing stream channel and pit-and-mound micro-topography. It was inundated with approximately 3 to 6-inches of standing water at the time of inspection. Similar to Wetland A, it may provide suitable vernal pool habitat at certain times of the year, primarily during the early spring when water levels are at their highest. The southern half of Wetland C is characterized as an emergent marsh (PEM) with some transitional scrub-shrub vegetation present within its interior (primarily highbush blueberry) (FACW). The wetland system appears to receive its primary inflow via groundwater discharge and surface water flow from the abutting stream channel. The wetland contains primarily mucky (organic) soils.

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[14] Because of the steep slopes and extremely well defined boundary of this wetland, a Corps determination form was not completed in this location.

Dominant vegetation within and adjacent to the delineated portion of the wetland includes hickory *(Carya ovata)* (FACU), red maple (FAC), sugar maple (FACU), American elm (FACW), and swamp white oak (FACW) in the tree stratum. The shrub stratum is composed of sweet pepperbush (FAC), witch-hazel (FAC), winterberry (FACW), highbush blueberry (FACW), red maple (FAC), and spice bush (FACW). The herb stratum is composed of Canada mayflower (FAC), poison ivy (FAC), skunk cabbage (OBL), cinnamon fern (FACW), sensitive fern (FACW), interrupted fern (FAC), New York fern (FAC), and Virginia creeper (FACU).

4.2.3 Alternate Site 3

Three wetland systems were formally delineated within the limits of Alternate Site 3. A fourth system, referred to herein as Wetland B, was evaluated by wetland and soil scientists from Epsilon and JMM but not formally delineated because at the time of the delineation it was believed to exist off-site from the Study Area. However, as the Corps observed during its May 13th site inspection, the wetland/upland boundary is abrupt and very well defined and was readily located via GPS survey. Each of the wetland systems are described below.

4.2.3.1 Wetland A/OWHM

Wetland A/OHWM is delineated by flags OHWM1 through 29 and flags A1 through A10.[15] It exists towards the northern half of the Study Area. It has primarily a PFO/PSS cover type. The entire system is approximately 670-feet in length and has a total surface area of approximately 0.46 acre. A seasonally flowing water course with an observable OHWM originates at a flared end pipe and flows into and out of Wetland A.[16] The OHWM terminates on the south side of an existing dirt road. The flared end pipe appears to convey stormwater runoff from roof drains on an adjacent off-site warehouse building located to the north. However, the source of hydrology could not be confirmed at the time of inspection and based on the fairly substantial volume of water that was observed exiting the flared end pipe and flowing into and out of Wetland A it is likely that there is some groundwater

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[15] During the May 13th, 2010 site inspection the Corps requested that Wetland A be evaluated further in order to determine if its boundary should be expanded in the vicinity of flags A-9 and A-10 based on standing and flowing water and applicable wetlands criteria. This additional analysis was completed by Epsilon and JMM during the week of May 17th, 2010. The analysis confirmed that this area should be expanded. Accordingly, flags A-9a through A-9d were tied in the field, located via GPS, and incorporated onto the figures included herein. Refer to Attachment A, Figure 5b for the location of Wetland A and the referenced flag locations.

[16] During the May 13th, 2010 site inspection, the Corps determined that an observable OHWM existed along a drainage path originating at a flared end culvert. Accordingly, the limits of the observable OHWM were conservatively delineated in the field and located via GPS-survey onto project drawings. See Attachment A, Figure 3 and site photographs provided in Attachment D.

discharge input as well. The OHWM of the water course varies in width but generally speaking it is between approximately 15-feet and 30-feet wide. The water course is composed primarily of large stones and cobbles.

Wetland A is located approximately 300 feet down gradient of the existing flared end pipe. It is approximately 5,500 s.f. in surface area. The wetland contains pit-and-mound micro-topography primarily as a result of large rocks, surface runoff, overland flow, and seasonally high groundwater elevations. The rocky substrate results in shallow rooted trees and saplings throughout the wetland and adjoining upland. The wetland contains poorly drained hydric soils with a texture of sandy loam. Redoximorphic features (high and low chroma mottles) were present within the upper part of the soil profile. For additional detail, refer to the transect data provided in Attachment B, identified as USACE1-U and USACE1-W.

Dominant vegetation within and adjacent to the delineated portion of the wetland includes green ash *(Fraxinus pennsylvanica)* (FACW), hop-hornbeam (FACU), hickory (FACU), and red maple (FAC) in the tree stratum. The shrub stratum is composed largely of green ash (FACW) and red maple (FAC). The herb stratum is composed of poison ivy (FAC), skunk cabbage (OBL), cinnamon fern (FACW), interrupted fern (FAC), and Canada mayflower (FAC).

4.2.3.2 Wetland B

Wetland B is identified by GPS Reference Points B1 through B49. It exists along the eastern edge of the Study Area. Approximately 2,000 feet of Wetland B (3.5 acres) were evaluated (but not formally delineated) within the limits of the Study Area. It has a primarily PFO cover type (red maple swamp) with PSS interspersed throughout. There is an abrupt transition at the wetland/upland interface along a steeply sloped area. Wetland B abuts a well defined approximately 10 to 15-foot wide unnamed stream and adjoining floodplain. The unnamed stream is tributary to the Little River located to the east of the Study Area. The tributary and Little River eventually merge and flow through a culvert and headwall located beneath Towner Lane and into a down gradient PFO. The banks of the tributary are approximately 2 to 3-feet in height with some undercutting present from scouring. The tributary has a silty and cobble bottom with sand and gravel in the voids.

Because of its location in the floodplain, Wetland B is generally flat with limited micro-topography. The wetland system appears to receive its primary inflow via groundwater discharge and overland surface flows from the abutting tributary and river system. The wetland contains primarily mucky (organic) soils and poorly drained hydric mineral soils.

Dominant vegetation within and adjacent to the wetland includes red maple (FAC) in the tree stratum. The herb and shrub stratum is generally composed of a mix of false-hellebore *(Veratrum viride)* (FACW), red maple (FAC), sweet pepperbush (FAC), skunk cabbage (OBL),

jewelweed (FACW), cattail (OBL), cinnamon fern (FACW), sensitive fern (FACW), and winterberry (FACW).

4.2.3.3 Wetland C

Wetland C is delineated by flags C1 through C18. It exists along the northern edge of the Study Area proximate to Wetland B. It is located on an existing maintained dirt road and is hydrologically connected to Wetland B via approximately 50 feet of both overland sheet-flow and channelized flow. It has a surface area of approximately 0.11 acre. It has a primarily PEM cover type. Because of its location in the dirt road, Wetland C is generally flat or moderately sloped with limited micro-topography. The wetland system appears to receive its primary inflow via groundwater discharge (seep from the dirt road). The wetland is somewhat disturbed but contains primarily somewhat poorly drained hydric mineral soils.

Dominant vegetation within and adjacent to the wetland includes soft rush (FACW), jewelweed (FACW), miscellaneous hydrophytic sedges *(Carex spp.)* (FACW), and cinquefoil *(Potentilla spp.)*. There is no shrub or tree stratum present.

4.2.3.4 Wetland D

Wetland D is delineated by flags D1 through D69. It exists along the western half of the Study Area. It has characteristics similar to Wetland A (PFO/red maple swamp with PSS interspersed throughout). Approximately 1,200 linear feet of Wetland D (0.59 acre) was delineated within the Study Area. The wetland system appears to receive its primary inflow via groundwater discharge and surface water from a seasonally flowing stream channel that flows through the system. A wetland system (PFO) exists on the south side of Towner Lane and Wetland D is hydrologically connected to it via a culvert.

Wetland D is generally flat with limited micro-topography. The wetland contains primarily hydric mineral soils (poorly drained) with a texture of silt loam and fine sandy loam. Redoximorphic features (primarily high chroma mottles) were observed in the upper part of the soil profile.

Dominant vegetation within and adjacent to the wetland includes red maple (FAC), yellow birch (FACW), American elm (FACW), and muscle wood (FAC) in the tree stratum. The shrub stratum is generally composed of red maple (FAC), spicebush (FACW), highbush blueberry (FACW), and arrow-wood (FACW). The herb stratum is generally composed of a mix of goldthread *(Coptis trifolia)* (FACW), skunk cabbage (OBL), jewelweed (FACW), cinnamon fern (FACW), and sensitive fern (FACW).

5.0 General Functions and Values Assessment

This section includes a general description of the overall functions and values of the wetland systems delineated within the Study Area. As may be necessary in the future, a more detailed functions and value analysis should be performed during any future permitting in those discrete locations where a discharge of dredged or fill material[17] is proposed in waters of the U.S. (if such a discharge is in fact proposed). Currently, no discharge of dredged material or fill material is proposed in waters of the U.S. for this project.

All wetland habitats within the Study Area were preliminarily evaluated using the Corps *Highway Methodology Workbook Supplement for Wetlands Functions and Values: A Descriptive Approach.* This method incorporates both wetland science and human judgment of values. More specifically, functions are self sustaining properties of a wetland ecosystem that exist in the absence of society. They relate to the ecological significance of wetland properties with regard to subjective human values. Values are benefits that derive from either one or more functions and the physical characteristics associated with a wetland. The value of a particular wetland function, or combination thereof, is based on human judgment of the worth, merit, quality, or importance attributed to those functions. Functions and values can be principal if they are an important physical component of a wetland ecosystem (function only) and/or are considered of special value to society or from a local, regional, and/or national perspective.

The 13 functions and values that are considered by the Corps include the following:

1. Ground Water Recharge/Discharge
2. Floodflow Alteration (Storage & Desynchronization)
3. Fish and Shellfish Habitat
4. Sediment/Toxicant/Pathogen Retention
5. Nutrient Removal/Retention/Transformation
6. Production Export
7. Sediment/Shoreline Stabilization
8. Wildlife Habitat
9. Recreation
10. Educational/Scientific Value
11. Uniqueness/Heritage

[17] The term "discharge of fill material" means (in part) the addition of fill material into waters of the U.S. where it has the effect of replacing any portion of a water of the U.S. with dry land; or changing the bottom elevation of any portion of a water of the U.S..

12. Visual Quality/Aesthetics
13. Threatened or Endangered Species Habitat

5.1 Evaluation of Wetland Functions

5.1.1 Ground Water Recharge/Discharge

Wetlands can either recharge groundwater with surface water or discharge groundwater to surface waters. Wetlands receiving inflow from groundwater are known as discharging wetlands because water flows or discharges from the groundwater to the wetland. Discharge of groundwater maintains base flows in waterways. A recharge wetland refers to the reverse case where water flows from the wetland to the groundwater. The majority of the wetlands in the Study Area appear to function as discharge wetlands. The ability of wetlands in the Study Area to function as recharge areas is limited given the presence of a high groundwater table or restrictive subsoil layers. However, the riparian wetlands in the Study Area do interact directly with groundwater discharge entering rivers and streams.

5.1.2 Floodflow Alteration (Storage & Desynchronization)

This function considers the effectiveness of the wetlands in reducing flood damage by water retention for prolonged periods following precipitation events. Wetlands attenuate flooding by slowing and storing floodwaters, thereby diminishing the effects of flooding by gradually releasing floodwaters after the peak flood has passed. Trees and other wetland vegetation help slow the speed of flood waters. The effectiveness of wetlands for flood abatement may vary, depending on the size of the area, type and condition of vegetation, slope, location of the wetland in the floodplain, and the saturation of wetland soils before flooding. Many of the delineated wetlands in the Study Area are adjacent to rivers, streams, and ditches or are otherwise located in a mapped floodplain. These wetlands can provide important water storage during periods of seasonal flooding and the relatively dense scrub-shrub woody vegetation within the wetlands helps to reduce the velocity of floodwaters and reduce the risk of downstream flash-flooding. In addition, depressional wetlands in the Study Area collect precipitation and runoff, particularly during a drawdown condition, thus providing some limited flood storage.

5.1.3 Fish and Shellfish Habitat

This function considers the effectiveness of seasonal or permanent waterbodies associated with the wetland in question for fish and shellfish habitat. Wetlands along streams or rivers can provide cover and shade as well as a water supply and water quality for fish. Notwithstanding, seasonally flowing streams in the Study Area do not likely provide suitable fisheries habitat because of their temporal nature, warm temperatures (and resulting low DO), shallow depths, and lack of refugia (e.g., pockets of water) during dry periods.

5.1.4 Sediment/Toxicant/Pathogen Retention

This function reduces or prevents degradation of water quality. Wetlands maintain and improve water quality by trapping nutrients, sediments, and contaminants. Some Study Area wetlands are located adjacent to paved roadways, agricultural lands, and areas of industrial land use. Wetlands in these locations can function as traps for stormwater runoff containing road sand and salt, as well as potential toxicants from vehicle traffic and heavy machinery.

5.1.5 Nutrient Removal/Retention/Transformation

This function relates to the effectiveness of a wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries. This function also considers the effectiveness of wetlands as a trap for nutrients in runoff from adjacent uplands or other wetlands as well as the ability of the wetland to process these nutrients into other forms. The biological and chemical process of nitrification/denitrification in the nitrogen cycle transforms the majority of nitrogen entering wetlands, causing between 70% and 90% to be removed. Wetland plants also play an important role in the removal of phosphorous. Phosphorous has a sediment cycle with excess phosphorous being tied up in sediments, peat in organic soils and clay particles in mineral soils. Many of the Study Area wetlands border active agricultural hayfields. Agricultural practices can involve the use of fertilizers and pesticides. Wetlands receiving drainage water and surface runoff from agricultural areas can function as traps or sinks for sediments, toxicants or pathogens. Forested, scrub-shrub and emergent wetlands can also provide this function, and woody wetland vegetation is particularly effective at retaining nutrients over time.

5.1.6 Production Export

This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms. Factors to be considered include the presence of wildlife food sources and evidence of wildlife use, if high vegetation density is present, and if a wetland exhibits a high degree of plant community structure/species diversity. The forested and scrub shrub wetlands in the Study Area provide diverse habitat and food sources (i.e. mast, browse, berries) for a variety of wildlife species. Wetlands located on agricultural lands can provide an economically and commercially valuable product for the human population, such as when a wet meadow is harvested for hay or used as a food crop.

5.1.7 Sediment/Shoreline Stabilization

This function relates to the effectiveness of a wetland to stabilize or anchor stream banks and shorelines against erosion. Dense wetland vegetation intercepts precipitation, preventing soil loosening and erosion. The riparian and pond-edge wetlands within the

Study Area can provide this function as wetland vegetation stabilizes stream banks and pond shores and also reduces erosion.

5.1.8 Wildlife Habitat

This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Several of the Study Area wetlands are mosaics of wetland types (i.e. forested, shrub, emergent) and thus exhibit a high degree of interspersion of vegetation classes and a high degree of diversity in plant community structure (e.g., tree/shrub/vine/grasses/mosses). Additionally, the early successional vegetation communities found in wet meadows and emergent marshes are an especially valuable habitat type in New England. Certain wetlands in the Study Area may provide suitable vernal pool habitat at certain times of the year, primarily in the early spring during extended periods of inundation and ponding. Moreover, according to CTDEP on-line mapping data, a portion of the emergent marsh situated on the western boundary of Alternate Site 2 (Wetland C) is designated as "listed habitat or significant natural community". Approximately 0.5-mile upstream of Alternate Site 3 there is a mapped area of state-listed species and natural communities (although the site itself is not mapped).

It should be noted that those wetlands composed of dense monocultures of invasive plants (e.g., autumn olive, common reed) do not typically provide significant habitat value. This is particularly true for wetlands located on Parcel B and Parcel C of the Primary Site.

5.2 Evaluation of Wetland Values

5.2.1 Recreation

This value considers the effectiveness of the wetland and associated water-courses to provide recreational opportunities such as canoeing, boating, fishing, hunting, and other active or passive recreational activities. The Study Area wetlands where hunting is permitted provide recreation value, as do areas used for bird watching and hiking. There are limited areas available for boating and for fishing as explained above.

5.2.2 Educational/Scientific Value

This value considers the effectiveness of the wetland as a site for an "outdoor classroom" or as a location for scientific study or research. In general, all of the Study Area wetlands have the potential to serve as a location for scientific study and research although they are all currently located on private properties. Study Area wetlands located in the vicinity of the Long Meadow Elementary School proximate to Alternate Site 2 and within mapped rare species habitats near Alternate Site 2 and 3 can also provide scientific value.

5.2.3 Uniqueness/Heritage

This value considers the effectiveness of the wetland or its associated waterbodies to provide certain special values. These may include archaeological sites, critical habitat for endangered species, its overall health and appearance, its role in the ecological system of the area, its relative importance as a typical wetland class for this geographic location. Early succession plant communities, wet meadows, emergent marshes found on or adjacent to agricultural lands within the Study Area can be an important and unique habitat type in Connecticut.

5.2.4 Visual Quality/Aesthetics

This value relates to the visual and aesthetic qualities of the wetland. The visual quality of wetlands in the Study Area is expected to remain intact.

5.2.5 Threatened or Endangered Species Habitat

This value relates to the effectiveness of the wetland or associated waterbodies to support threatened or endangered species. Endangered species information is provided in Section 2.4 of this report.

5.3 Summary of Principal Functions and Values

The principal functions of wetlands within the Study Area vary from system to system but in general they include groundwater discharge/recharge, floodflow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, sediment/shoreline stabilization, and wildlife habitat.

The principal values of certain wetlands within the Study Area are recreation, uniqueness/heritage, and potentially threatened and endangered species habitat.

6.0 Regulatory Analysis

As explained in Section 3.0, for the purposes of this delineation report all of the stream and abutting and adjacent wetland systems delineated within the Study Area are presumed to be waters of the United States subject to jurisdiction under Section 404 of the U.S. Clean Water Act. In addition, the delineated wetlands and watercourses are Regulated Areas as defined under Connecticut's Inland Wetlands and Watercourses Act and Regulations because of the presence of poorly drained soils and characteristics associated with stream channels (e.g., permanent channel and bank, evidence of scour or deposits of detritus, duration of standing water, etc).[18]

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[18] According to the referenced regulations, "Wetlands" means land, including submerged land … which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and

A general discussion of the relevant Federal, state, and local regulations governing activities in or proximate to these jurisdictional areas is provided below.

6.1 Section 404 of the U.S. Clean Water Act

On May 31, 2006, the Corps issued a Programmatic General Permit (PGP) for Connecticut. This PGP remains in effect until May 31, 2011. The PGP authorizes certain activities resulting in a discharge of dredged or fill material into "waters of the United States", including wetlands, under Section 404 of the U.S. Clean Water Act that have minimal individual and cumulative adverse effects on the aquatic environment within Connecticut. More specifically, under the Corp's PGP projects are divided into three categories:

- **Category I** is for projects that clearly will have only minimal impact and can therefore proceed without application to the Corps provided said work complies with the terms and conditions contained in the GP. The Connecticut DEP has conditionally granted Water Quality Certification for Category I activities in inland wetlands and waterways. Generally speaking, to be eligible under Category I, total wetland fill and associated secondary effects must be less than 5,000 s.f.

- **Category II** is for projects that may have more than minimal impact and require written authorization from the Corps before work can proceed. Certain state approvals may also be required (e.g., Individual Water Quality Certification). These projects are screened by the Corps to determine if PGP authorization is appropriate or if an Individual Permit should be required. Through this screening process the Corps may require project modifications involving avoidance, minimization, or compensatory mitigation for unavoidable impacts to ensure the net effects of a project are minimal. Generally speaking, to be eligible under Category II total wetland fill and associated secondary effects may be greater than 5,000 s.f. but less than 1 acre.

- **Individual Permits** are for projects that exceed specified impact thresholds and are not covered by the PGP. The Corps and federal resource agencies also have discretion to require an Individual Permit for projects otherwise falling into Categories I and II if they

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floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture.

"Watercourses" means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon this state or any portion thereof … Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation;

believe that the project will result in more than minimal adverse impact. For perspective, projects which result in greater than 1 acre of wetland fill and secondary effects typically require an Individual Permit.

6.2 Section 401 of the U.S. Clean Water Act

In conjunction with a Corps 404 permit application, a 401 Water Quality Certificate ("WQC") is required under the U.S. Clean Water Act for activities resulting in a discharge of dredged or fill material into wetlands and waterways. The 401 WQC program, administered by the Connecticut Bureau of Water Protection and Land Reuse's Inland Water Resources Division and Office of Long Island Sound Programs, regulates any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge into the navigable waters, including all wetlands, watercourses, and natural and man-made ponds. Such discharges include, among other things, the discharge of dredged and fill material and stormwater during construction, incidental discharge of sediments from dredging or excavating, and the discharge of stormwater from a facility once it is constructed, and any excavation, flooding, draining, and clearing and grading in or affecting the navigable waters. Project proponents must obtain certification from CTDEP that the discharge is consistent with the federal Clean Water Act and the Connecticut Water Quality Standards. Any conditions contained in a water quality certification become conditions of the federal permit or license. In making a decision on a request for 401 WQC, CTDEP considers the effects of proposed discharges on ground and surface water quality and existing and designated uses of waters of the state.

6.3 Inland Wetlands and Water Courses Act and Regulations

Any person proposing to perform any activity in or affecting a wetland or watercourse must obtain a permit prior to conducting the activity. Such activities are regulated by CTDEP when performed by a state agency or instrumentality, except a local or regional board of education; all other activities in or affecting a wetland or watercourse are regulated by each town's municipal wetlands agency. More specifically, the Inland Wetlands and Water Courses Act is a state statute administered locally by a designated wetlands agency having jurisdiction over the inland wetlands and water course of such municipalities (e.g., Danbury Environmental Impact Commission where the Primary Site is located).[19] The municipality is charged with adopting and implementing regulations which carry out and effectuate the purposes and policies of the applicable Connecticut General Statutes.

According to the regulations, the inland wetlands agency or the CTDEP shall regulate only those activities which:

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[19] It should be noted that according to the regulations certain discrete activities, such as construction or modification of a dam or placement of a structure in a coastal water, are regulated by the CTDEP to the exclusion of the local inland wetlands agencies.

- remove material from,
- deposit material in,
- obstruct,
- construct,
- alter, or
- pollute inland wetlands and water courses.

Inland wetlands agencies can adopt more stringent regulations governing work in or near wetlands and water courses. For example, the City of Danbury Environmental Impact Commission regulates activities in so-called "Upland Review Areas". The Upland Review Area includes certain specified activities located within 100 feet of the outer boundary of a wetland; within 200 feet of the mean high water line of certain lakes and rivers, and; within 100 feet of the mean high water line of any other watercourse. The specified activities include, but are not limited to, excavating, filling or stockpiling more than 5,000 s.f. of earth materials and clear cutting or grubbing of land (unless otherwise permitted as-of-right as explained in the regulations). During its review of an application, the inland wetlands agencies may consider the characteristics of the Upland Review Area, such as the presence of steep slopes, that may increase the potential for adverse impacts on wetlands and watercourses. Conditions may include limitations on the scope and location of work in the Upland Review Area as necessary to avoid alteration of wetlands and watercourses. The issuing authority may require erosion and sedimentation controls during construction, a clear limit of work, and the preservation of natural vegetation adjacent to the wetland and watercourse and/or other measures commensurate with the scope and location of the work relative to the wetlands.

The Middlebury Conservation Commission/Inland Wetlands Agency (where Alternate Site 2 is located), also regulates all wetlands, watercourses, water bodies and their associated setback areas in accordance with Inland Wetlands and Water Courses Act. According to the Commission's website[20], "all wetlands and watercourses are regulated with a one hundred foot setback and major lakes, ponds and watercourses carry a one hundred and fifty foot setback area."

With regard to the Oxford Conservation Commission/Inlands Wetlands Agency (where Alternate Site 3 is located), its regulations are structured similarly whereas certain identified activities are regulated when they are located within 100 feet of a jurisdictional wetland or watercourse.

[20] Source: http://www.middlebury-ct.org/wetlands.php

Attachment A

Figures

Primary Site

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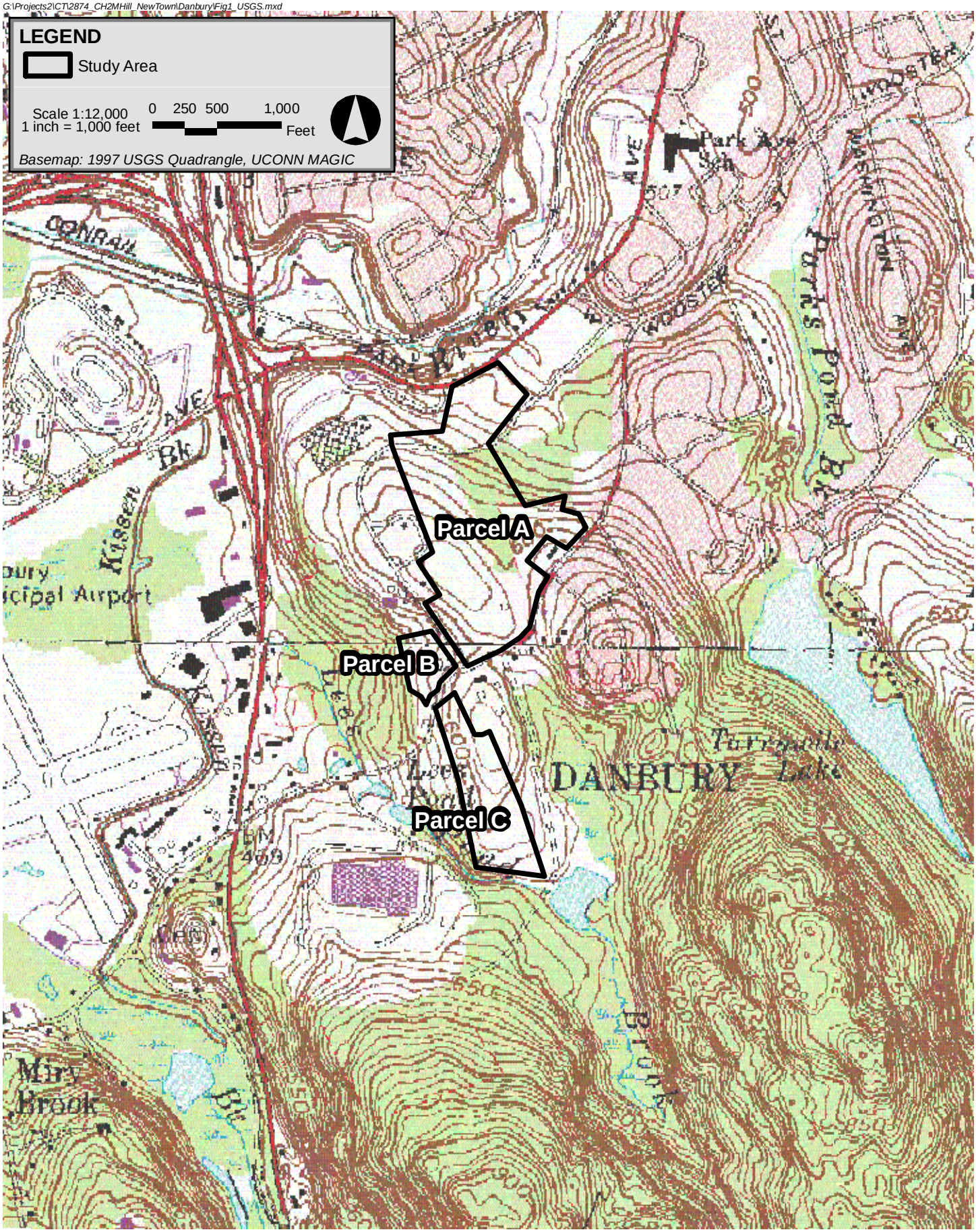

Danbury, Connecticut (Primary Site)

Epsilon ASSOCIATES INC.

Figure 1
USGS Locus

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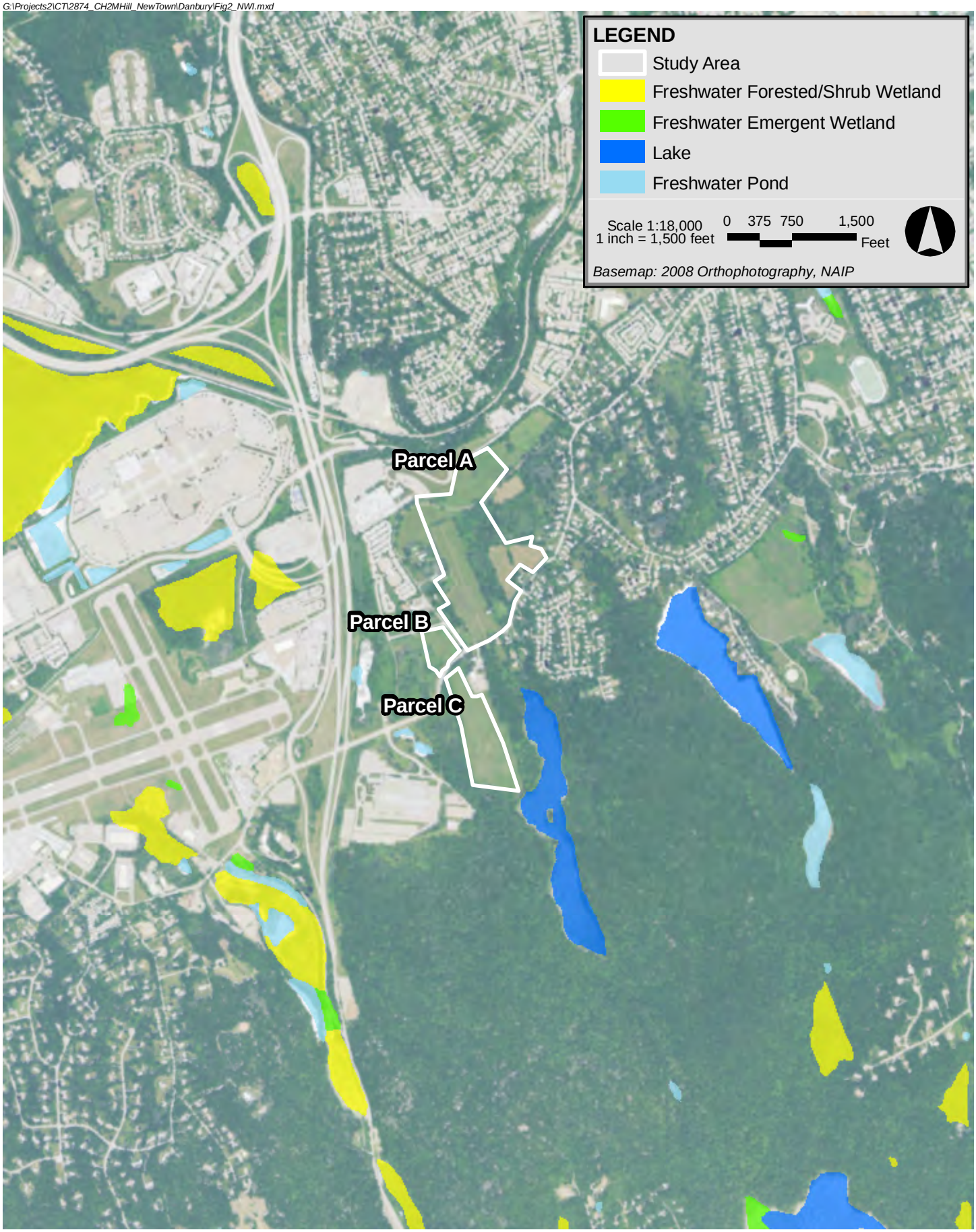

Danbury, Connecticut (Primary Site)

Epsilon ASSOCIATES INC.

Figure 2

National Wetlands Inventory

G:\Projects2\CT\2874_CH2MHill_NewTown\Danbury\Fig3a_wetlands.mxd

Danbury, Connecticut (Primary Site)

Epsilon Associates Inc.

Figure 3a

Delineated Waters of the U.S.

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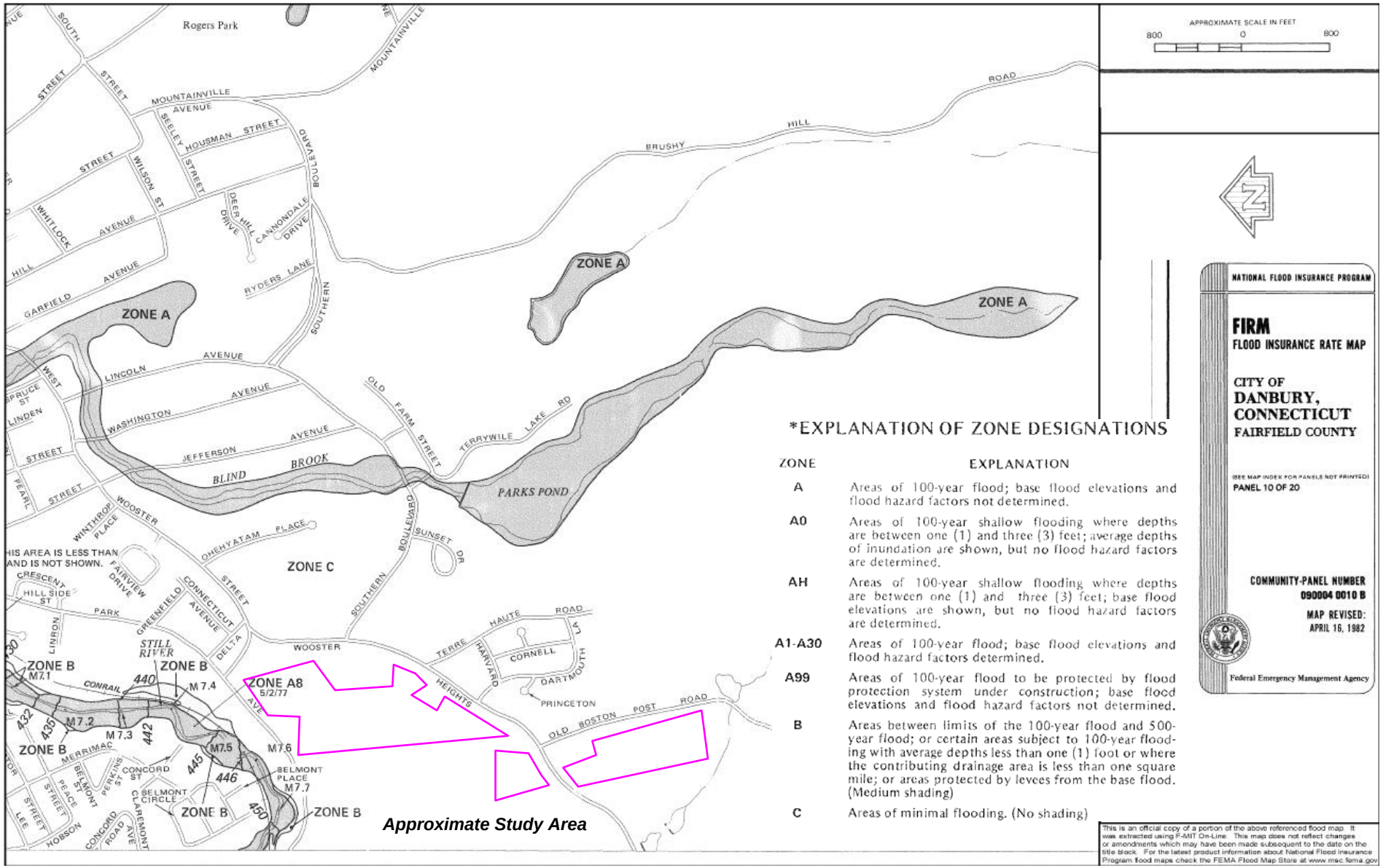
Danbury, Connecticut (Primary Site)

Epsilon ASSOCIATES INC.

Figure 3b

Delineated Waters of the U.S.



Danbury, Connecticut

Epsilon ASSOCIATES INC.

Figure 4

FEMA Floodzones

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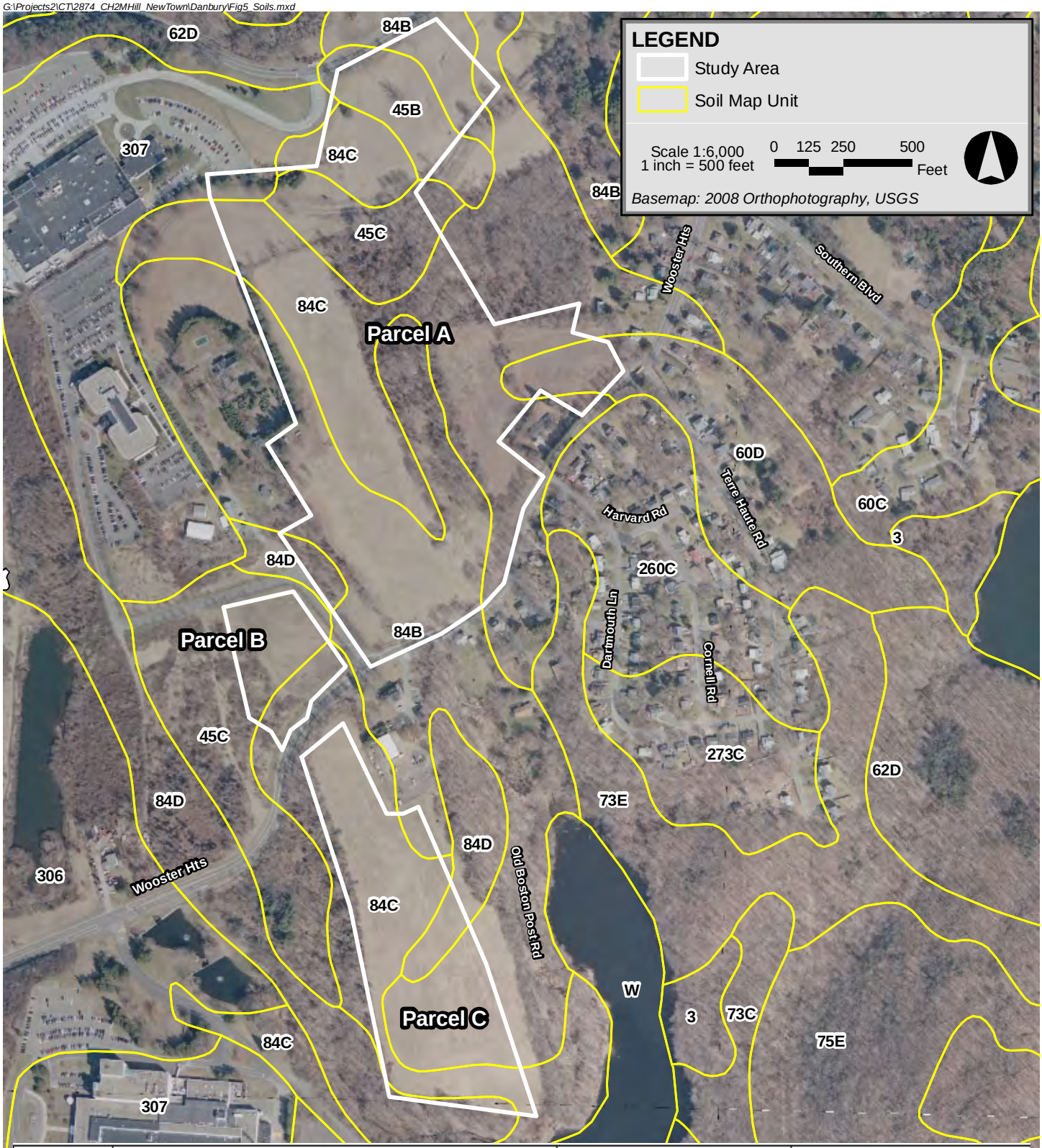


Soil ID	Soil Name	Drainage Class	Hydric/Non-Hydric
45B	Woodbridge fine sandy loam, 3-8% slopes	Moderately Well Drained	Non-Hydric
45C	Woodbridge fine sandy loam, 8-15% slopes	Moderately Well Drained	Non-Hydric
60D	Canton & Charlton, 15-25% slopes	Well Drained	Non-Hydric
84B	Paxton & Montauk fine sandy loams, 3-8% slopes	Well Drained	Non-Hydric
84C	Paxton & Montauk fine sandy loams, 8-15% slopes	Well Drained	Non-Hydric
84D	Paxton & Montauk fine sandy loams, 15-25% slopes	Well Drained	Non-Hydric

Danbury, Connecticut (Primary Site)

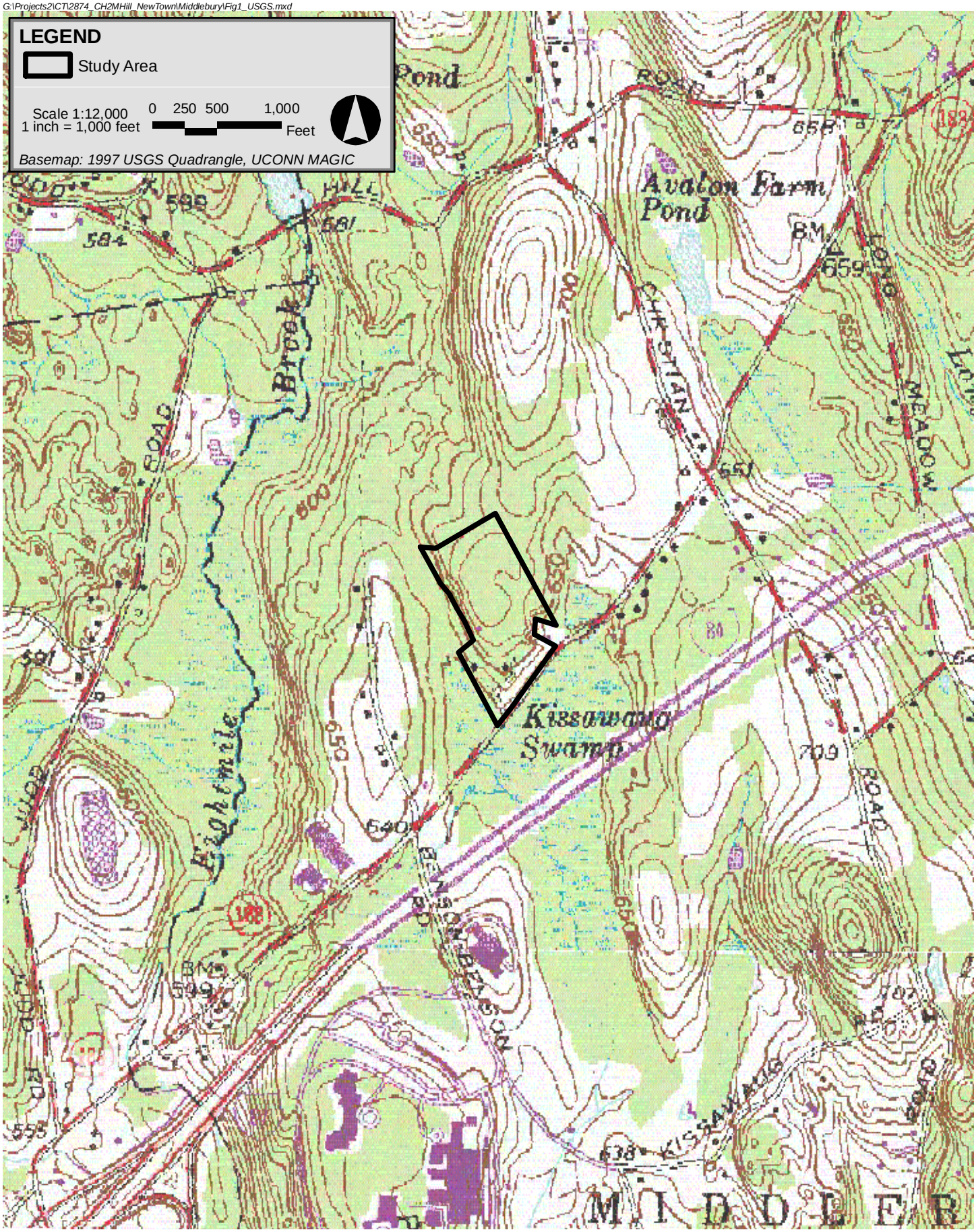
Epsilon Associates Inc.

Figure 5

Soil Survey Data

Alternate Site 2

G:\Projects2\CT\2874_CH2MHill_NewTown\Middlebury\Fig1_USGS.mxd



Middlebury, Connecticut (Alternate Site 2)

Epsilon ASSOCIATES INC.

Figure 1
USGS Locus

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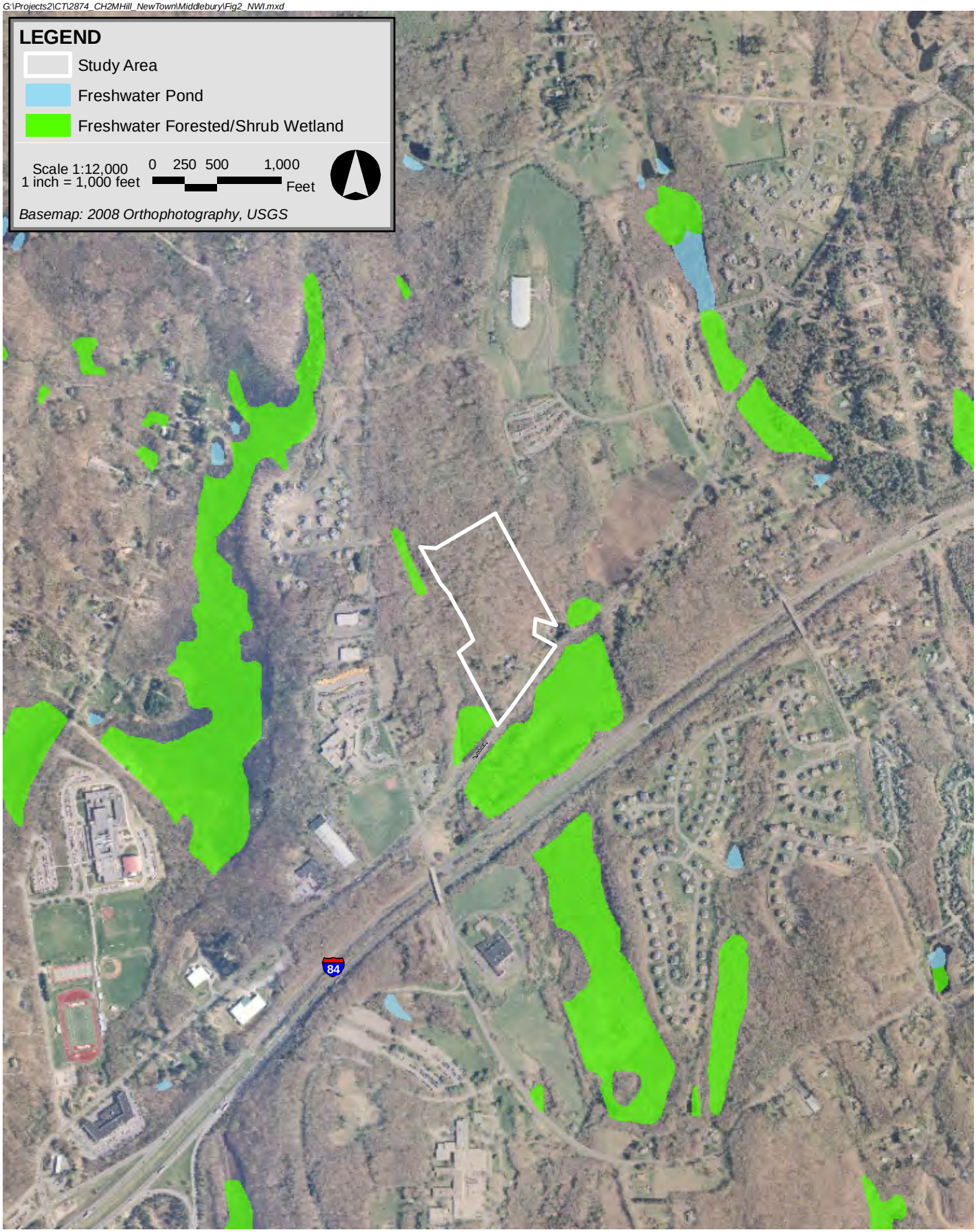


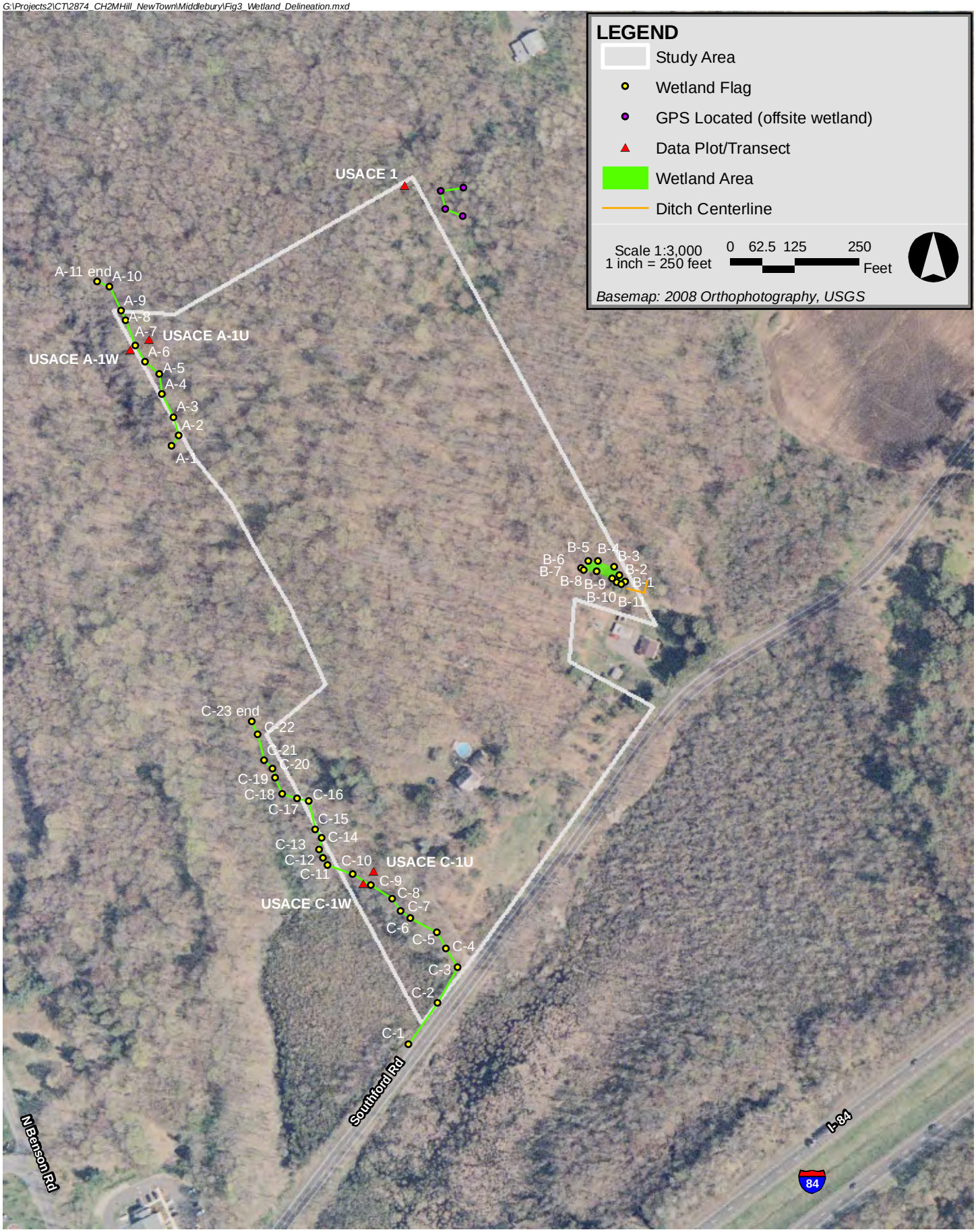
Middlebury, Connecticut (Alternate Site 2)

Epsilon ASSOCIATES INC.

Figure 2

National Wetlands Inventory

G:\Projects2\CT\2874_CH2MHill_NewTown\Middlebury\Fig3_Wetland_Delineation.mxd

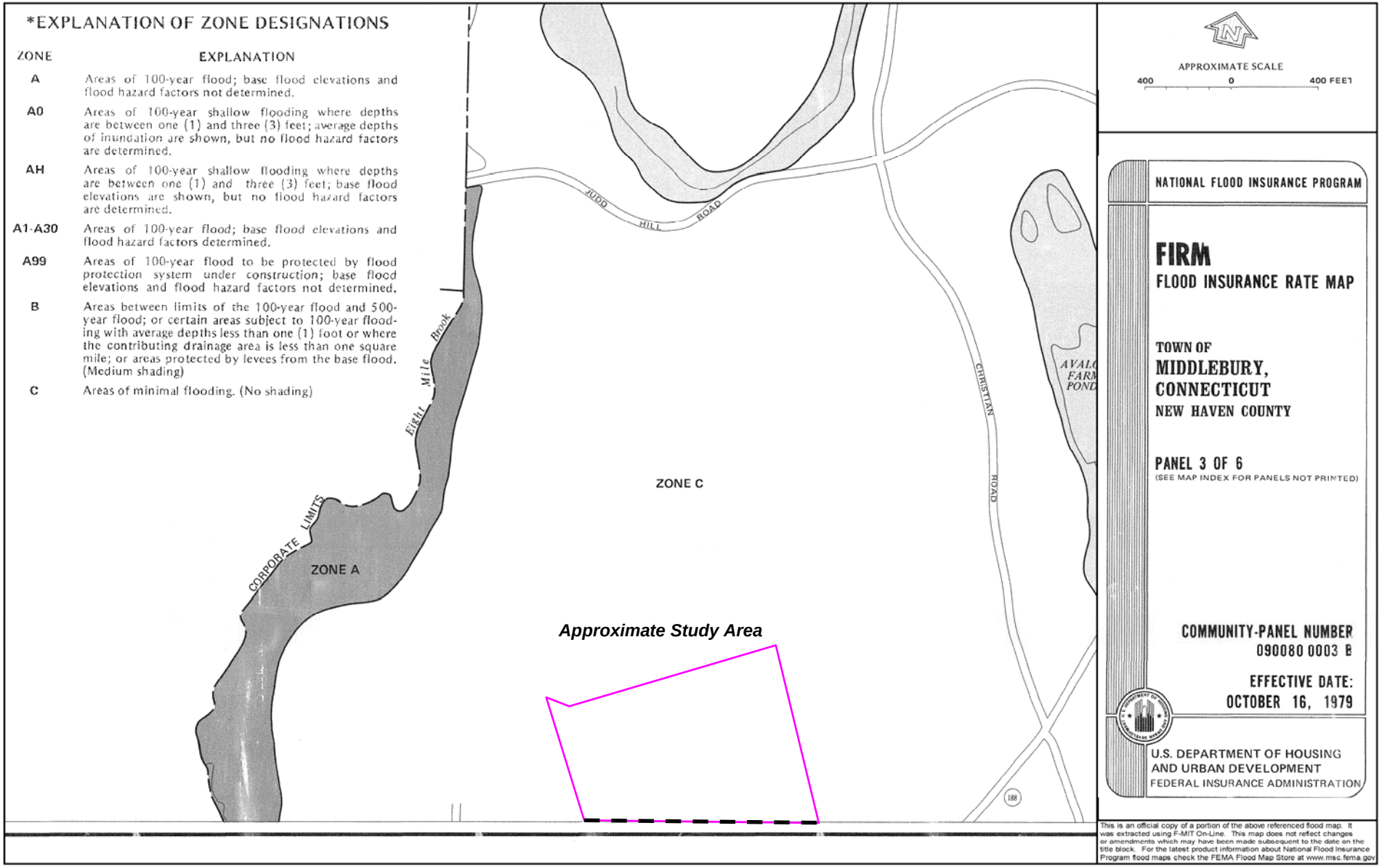


Middlebury, Connecticut (Alternate Site 2)

Epsilon ASSOCIATES INC.

Figure 3

Delineated Waters of the U.S.

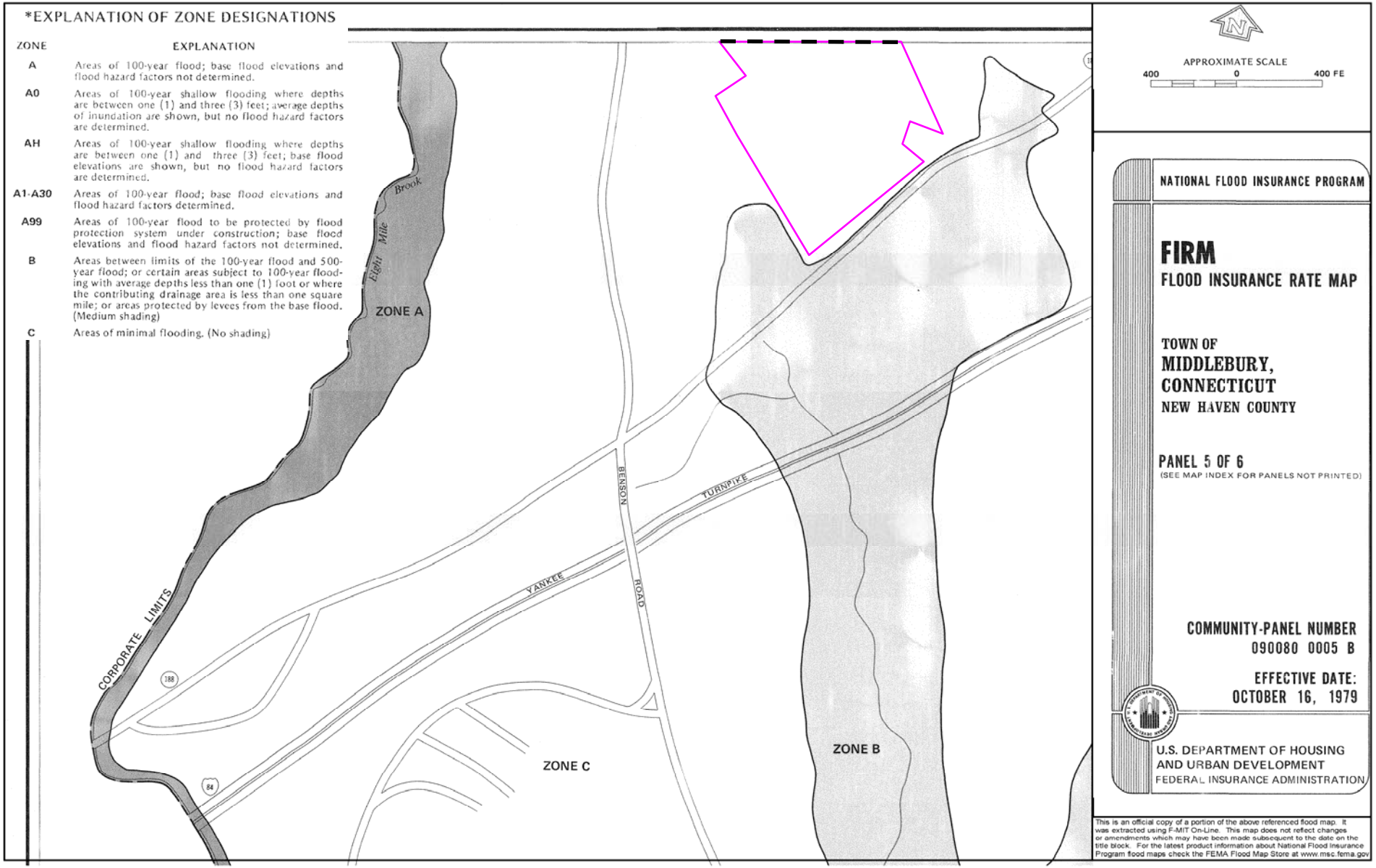


Middlebury, Connecticut

Epsilon ASSOCIATES INC.

Figure 4a

FEMA Floodzones (North)



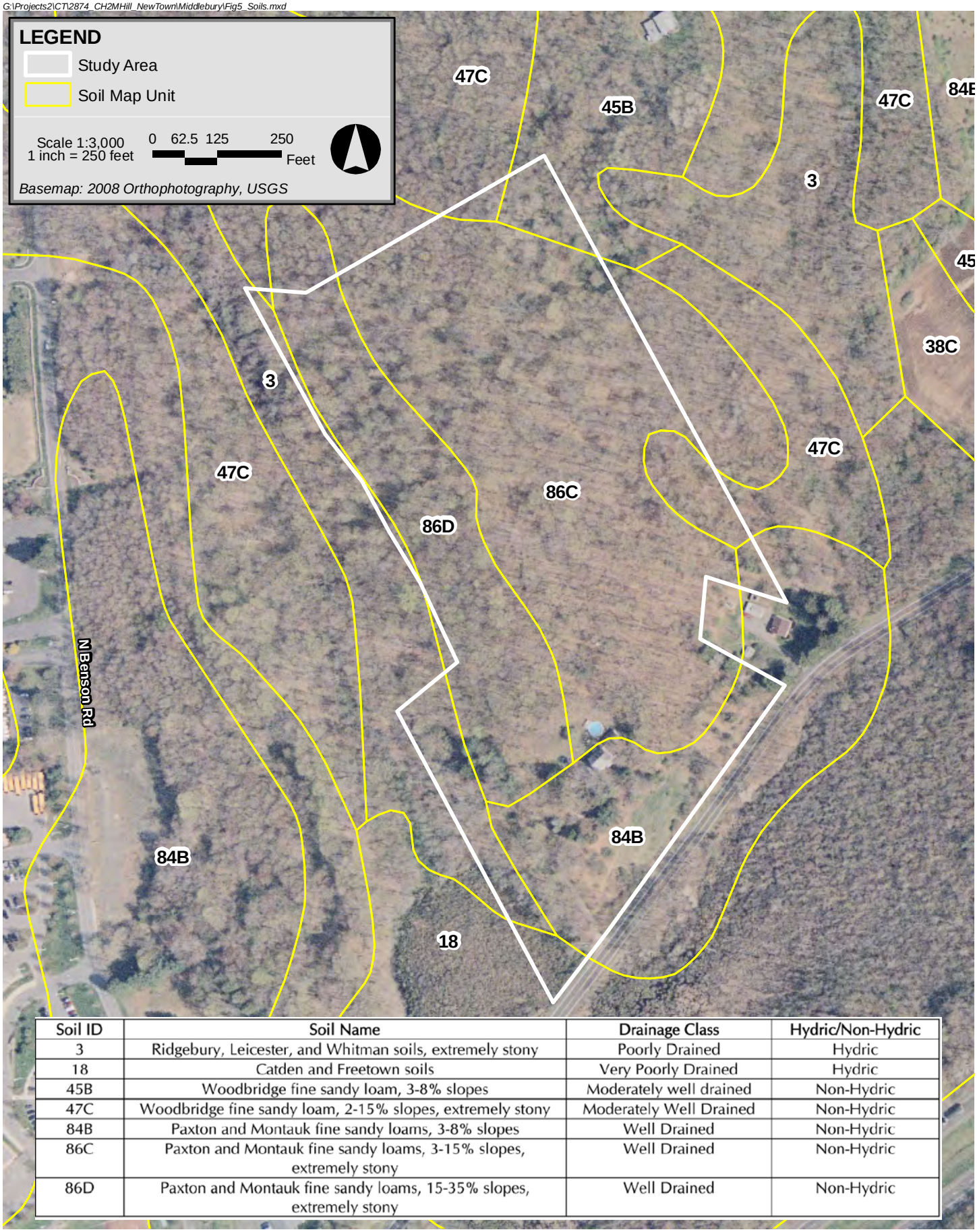
Middlebury, Connecticut

Epsilon ASSOCIATES INC.

Figure 4b

FEMA Floodzones (South)

G:\Projects2\CT\2874_CH2MHill_NewTown\Middlebury\Fig5_Soils.mxd



Soil ID	Soil Name	Drainage Class	Hydric/Non-Hydric
3	Ridgebury, Leicester, and Whitman soils, extremely stony	Poorly Drained	Hydric
18	Catden and Freetown soils	Very Poorly Drained	Hydric
45B	Woodbridge fine sandy loam, 3-8% slopes	Moderately well drained	Non-Hydric
47C	Woodbridge fine sandy loam, 2-15% slopes, extremely stony	Moderately Well Drained	Non-Hydric
84B	Paxton and Montauk fine sandy loams, 3-8% slopes	Well Drained	Non-Hydric
86C	Paxton and Montauk fine sandy loams, 3-15% slopes, extremely stony	Well Drained	Non-Hydric
86D	Paxton and Montauk fine sandy loams, 15-35% slopes, extremely stony	Well Drained	Non-Hydric

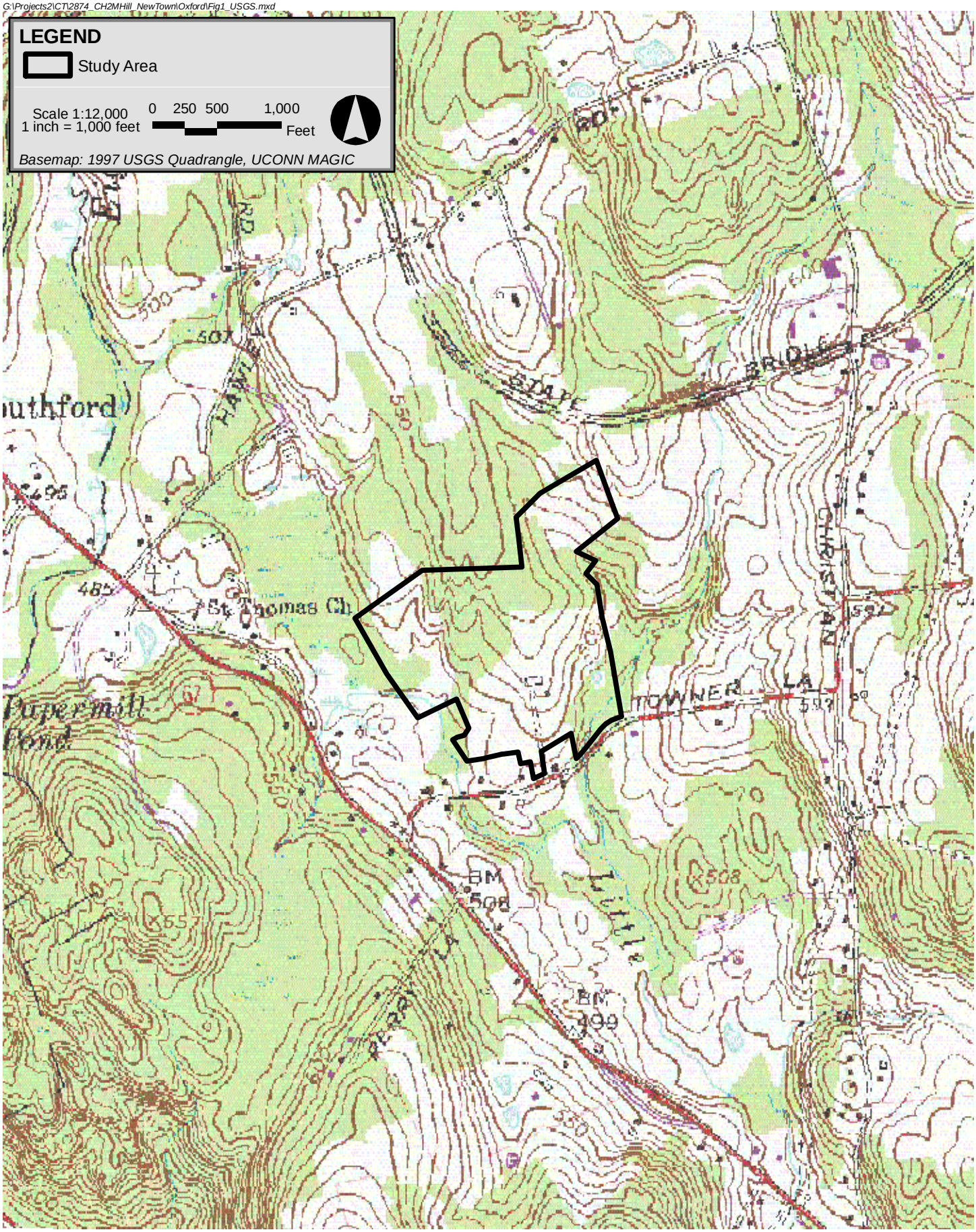
Middlebury, Connecticut (Alternate Site 2)

Epsilon ASSOCIATES INC.

Figure 5
Soil Survey Data

Alternate Site 3

G:\Projects2\CT\2874_CH2MHill_NewTown\Oxford\Fig1_USGS.mxd

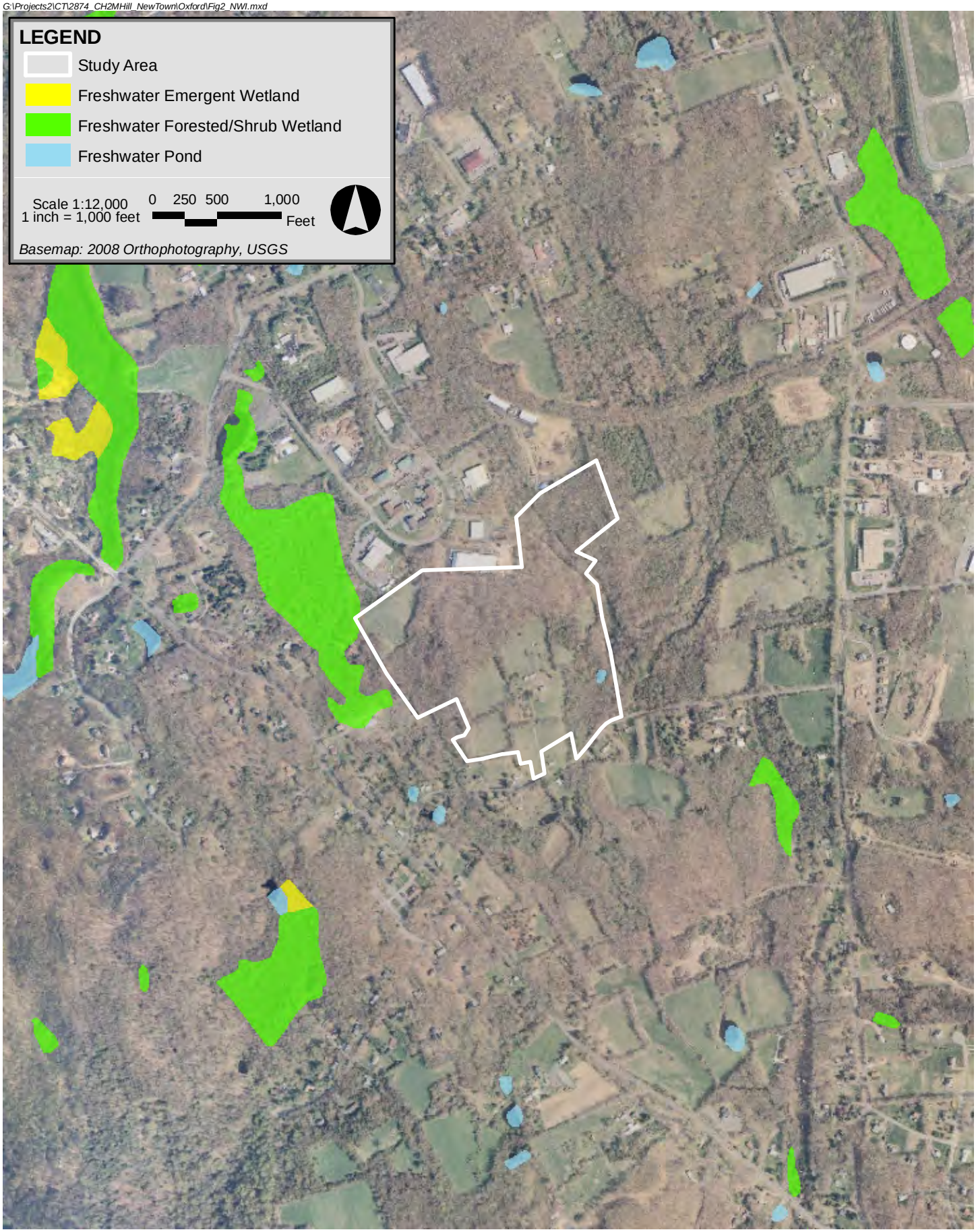


Oxford, Connecticut (Alternate Site 3)

Epsilon ASSOCIATES INC.

Figure 1
USGS Locus

G:\Projects2\CT\2874_CH2MHill_NewTown\Oxford\Fig2_NWI.mxd



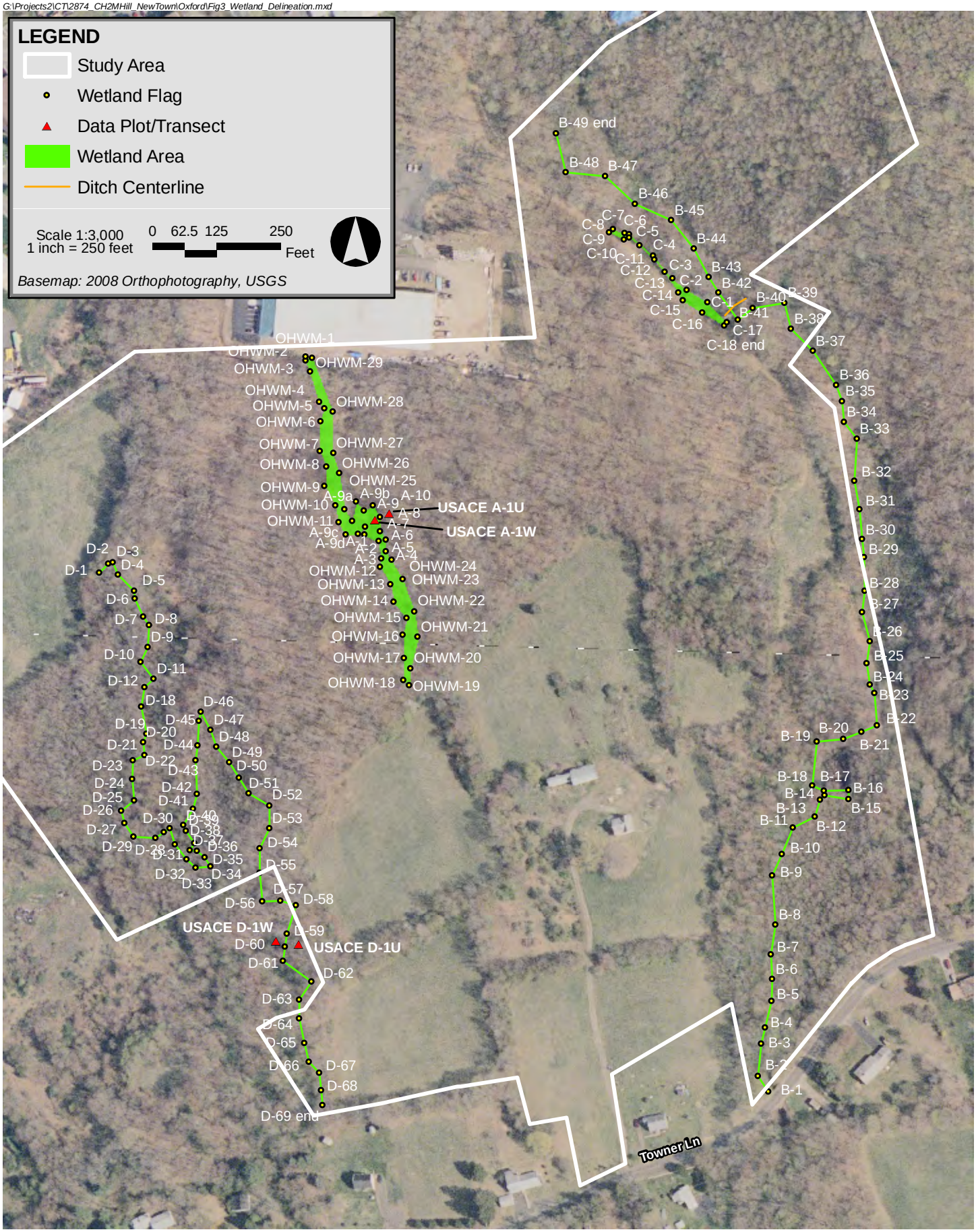
Oxford, Connecticut (Alternate Site 3)

Epsilon ASSOCIATES INC.

Figure 2

National Wetlands Inventory

G:\Projects2\CT\2874_CH2MHill_NewTown\Oxford\Fig3_Wetland_Delineation.mxd

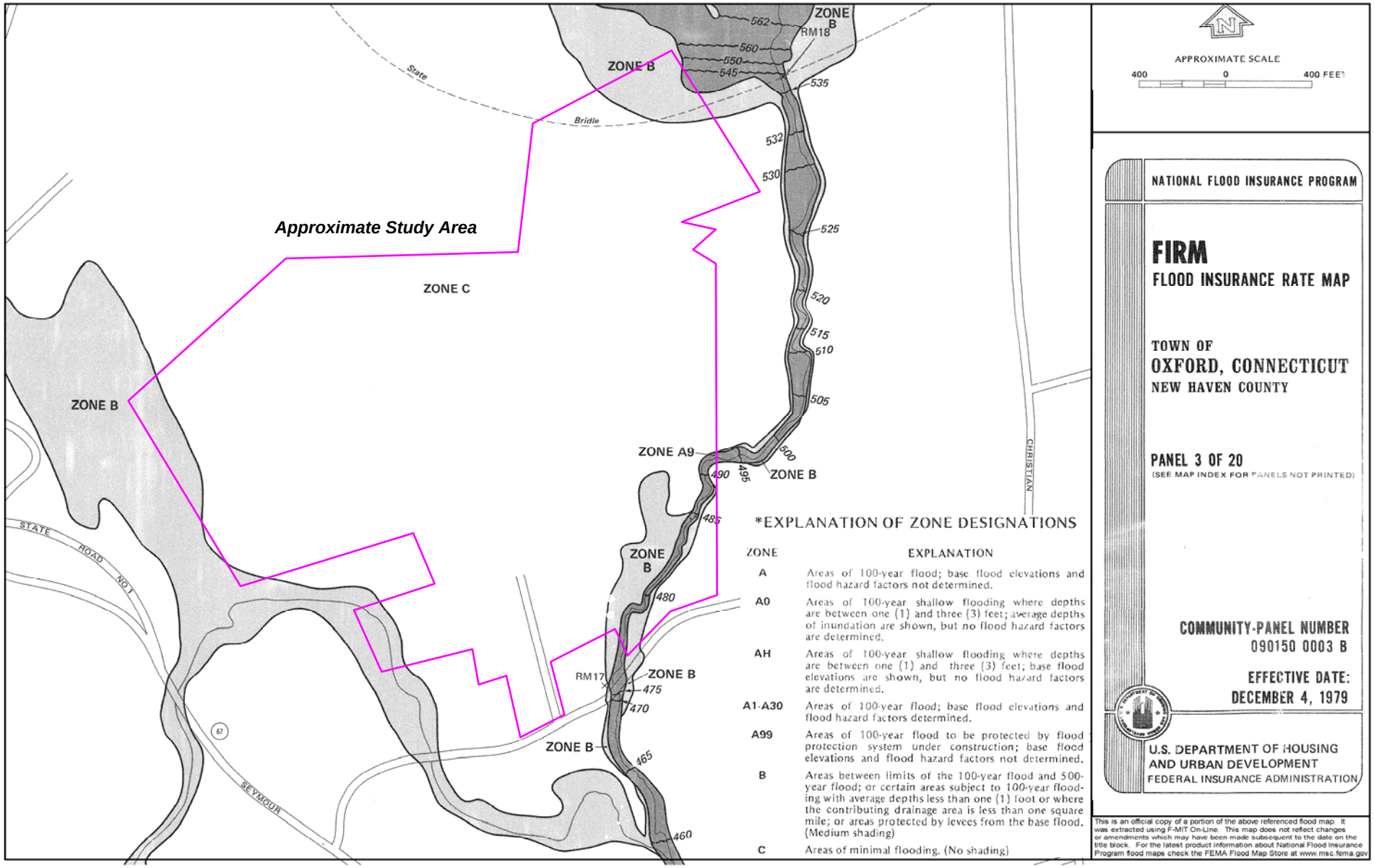


Oxford, Connecticut (Alternate Site 3)

Epsilon ASSOCIATES INC.

Figure 3

Delineated Waters of the U.S.



*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)

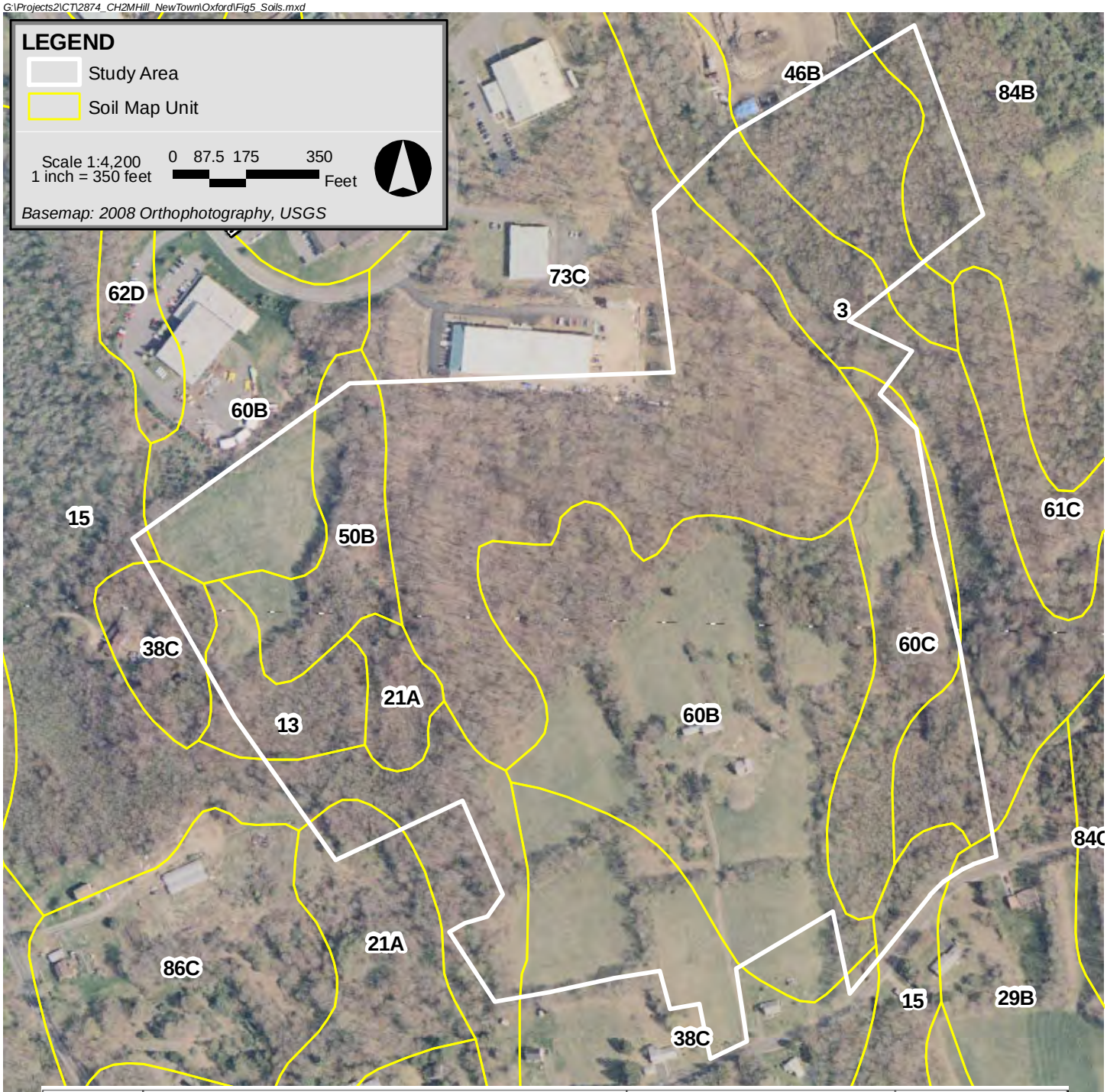
Oxford, Connecticut

Epsilon ASSOCIATES INC.

Figure 4

FEMA Floodzones

G:\Projects2\CT\2874_CH2MHill_NewTown\Oxford\Fig5_Soils.mxd



Soil ID	Soil Name	Drainage Class	Hydric/Non-Hydric
3	Ridgebury, Leicester, and Whitman soils, extremely stony	Poorly Drained	Hydric
13	Walpole sandy loam	Poorly Drained	Hydric
15	Scarboro muck	Very Poorly Drained	Hydric
21A	Ninigret and Tisbury soils, 0-5% slopes	Moderately Well Drained	Non-Hydric
29B	Agawam fine sand loam, 3-8% slopes	Well Drained	Non-Hydric
38C	Hinckley gravelly sandy loam, 3-15% slopes	Excessively Drained	Non-Hydric
46B	Woodbridge fine sandy loam, 2-8% slopes, very stony	Moderately Well Drained	Non-Hydric
50B	Sutton fine sandy loam, 3-8% slopes	Moderately Well Drained	Non-Hydric
60B	Canton and Charlton soils, 3-8% slopes	Well Drained	Non-Hydric
60C	Canton and Charlton soils, 8-15% slopes	Well Drained	Non-Hydric
73C	Charlton-Chatfield complex, 3-15% slopes, very rocky	Well Drained	Non-Hydric
84B	Paxton & Montauk fine sandy loams, 3-8% slopes	Well Drained	Non-Hydric

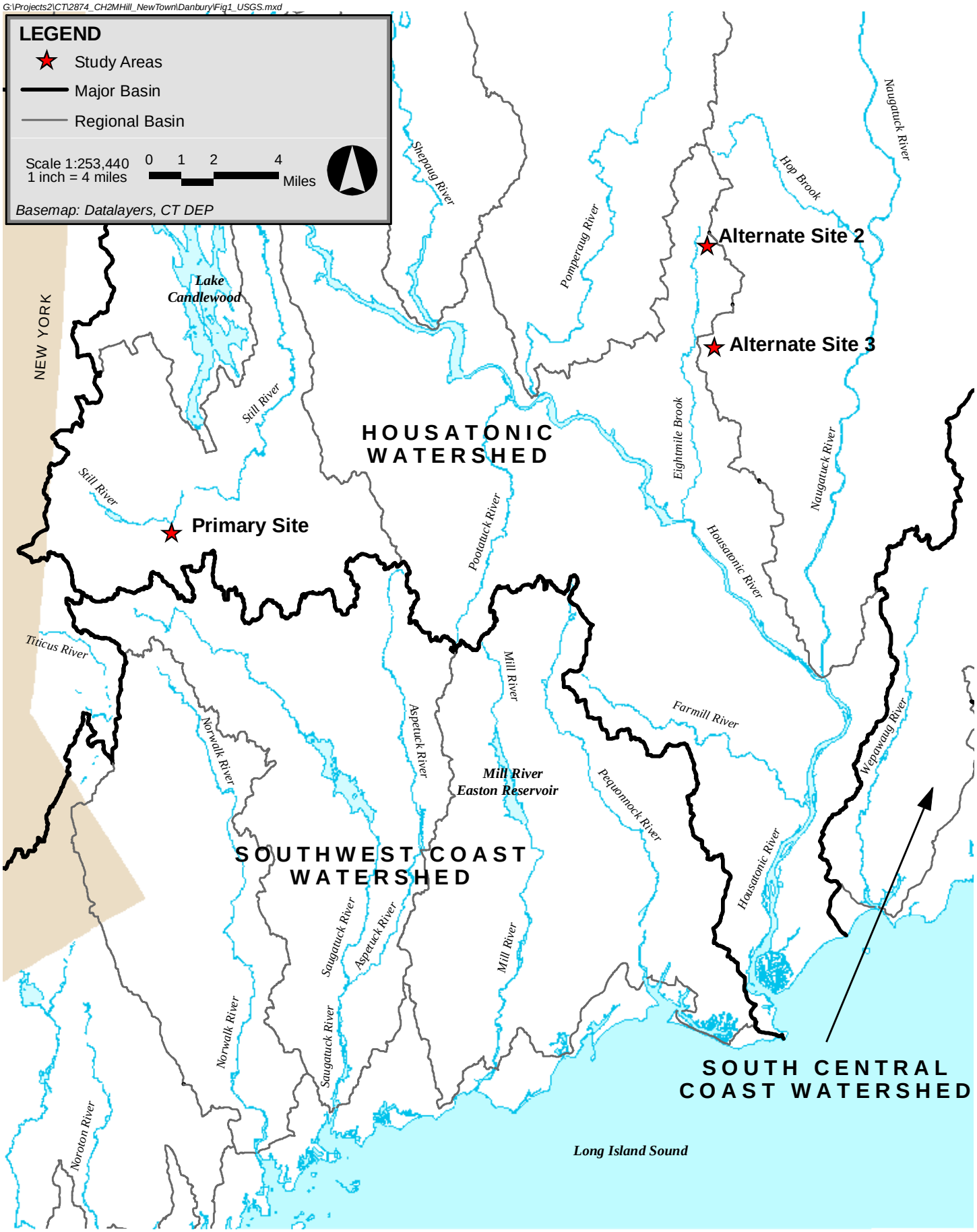
Oxford, Connecticut (Alternate Site 3)

Epsilon Associates Inc.

Figure 5

Soil Survey Data

Major Watersheds Map



Study Areas, Connecticut

Epsilon Associates Inc.

Figure 1
Watersheds

Attachment B

U.S. Army Corps of Engineers Wetland Delineation Data Forms

Primary Site

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel C) City/County: Danbury, Fairfield County Sampling Date: 5-11-10

Applicant/Owner: - State: CT Sampling Point: USACE A-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): baseslope Local relief (concave, convex, none): concave

Slope (%): flat Lat: 73 27' 56.91"W Long: 41 22' 12.75"N Datum: North America 1983

Soil Map Unit Name: 84C - Paxton & Montauk fine sandy loam, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: Wetland A (near flag A5)

Remarks: (Explain alternative procedures here or in a separate report.)

Soil somewhat disturbed along agricultural field edge proximate to stand of Phragmites australis.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): @8"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): @ 6"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1W

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Salix nigra	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		

Herb Stratum (Plot size: 15)			
1. Phragmites australis	95	Yes	FACW
2. Parthenocissus quinquefolia	5	No	FACU
3. Vitis labrusca	5	No	FACU
4. Alliaria petiolata	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 5 ft)			
1. Not Present			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10 YR 3/2	100					FSL	no features present
1-10	10 YR 4/3	85-90	7.5YR 4/6	10-15	C	M	FSL	
10-20	2.5Y 4/2	85-90	7.5YR 4/6	10-15	C	M	FSL	same color @ top

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel C) City/County: Danbury, Fairfield County Sampling Date: 5-11-10

Applicant/Owner: - State: CT Sampling Point: USACE A-10

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): meadow footslope Local relief (concave, convex, none): none

Slope (%): 5% Lat: 73 27' 57.18"W Long: 41 22' 13.08"N Datum: North America 1983

Soil Map Unit Name: 84C - Paxton & Montauk fine sandy loam, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of hydrology present.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1U

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 15)			
1. Vicia sativia	45	Yes	FACU
2. Dactylis glomerata	45	Yes	FACU
3. Festuca pratensis	35	Yes	FACU
4. Trifolium pratense	35	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	160 = Total Cover		

Woody Vine Stratum (Plot size: 5 ft)			
1. Not Present			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10 YR 3/3	100					FSL	no features present
10-20	10 YR 5/6	100					FSL	no features present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel A) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE B-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): upland meadow/hayfield Local relief (concave, convex, none): none

Slope (%): 2% Lat: 73 28' 2.67"W Long: 41 22'34.62"N Datum: North America 1983

Soil Map Unit Name: 84C - Paxton & Montauk fine sandy loam, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of hydrology present.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE B-1U

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	25	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	25 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 15)			
1. Galium boreale	40	Yes	FACU
2. Dactylis glomerata	30	Yes	FACU
3. Anthoxanthum odoratum	15	No	FACU
4. Lolium spp.	15	No	--
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 5 ft)			
1. Not Present			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE B-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10 YR 3/3						Loam	no features present
12-20	10 YR 5/6						Loam	no features present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel A) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE B-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): wet meadow Local relief (concave, convex, none): concave

Slope (%): 3% Lat: 73 28' 1.46"W Long: 41 22' 34.82"N Datum: North America 1983

Soil Map Unit Name: 84B - Paxton & Montauk fine sandy loam, 3-8% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: Wetland B/C (near flag B2)
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): @ 6"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Raining hard at time of delineation. Saturation could be attributed to precipitation versus high groundwater table.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE B-1W

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	50	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Rosa multiflora	10	Yes	FACU
2. Berberis vulgaris	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size: 15)			
1. Phleum pratense	60	Yes	FACU
2. Polygonum spp.	30	Yes	FACW
3. Polygonum sagittatum	25	Yes	FACW
4. Solidago spp.	10	No	FACW
5. Symplocarpus foetidus	10	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125	= Total Cover	

Woody Vine Stratum (Plot size: 5 ft)			
1. Not Present			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Polygonum (smartweed) and Solidago could not be readily identified this early in growing season; assumed to be hydrophytes because of position in landscape (located in nearby adjacent, well developed wetlands) and hydrologic conditions.

SOIL

Sampling Point: USACE B-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5YR 3/1	93	5YR 4/4	7	C	M	Silt Loam	many medium prominent features
5-20	2.5Y 5/3	70	2.5Y 5/2	10	D	M	VFSL	
		--	10YR 5/6	20	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel B) City/County: Danbury, Fairfield County Sampling Date: 5-12-10

Applicant/Owner: - State: CT Sampling Point: USACE D-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): depression

Slope (%): - Lat: 73 28' 10.60"W Long: 41 22' 28.00"N Datum: North America 1983

Soil Map Unit Name: 45C- Woodbridge fine sandy loam, Paxton & Montauk fine sandy loam NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No ✓	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	If yes, optional Wetland Site ID: ___
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

This area is problematic; it appears to be previously disturbed (re-graded); no obvious development of soil horizons. Surrounding vegetation includes high percentage of opportunistic and invasive species.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE D-1U

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Rosa multiflora	25	Y	FACU
2. Celastrus orbiculata	5	N	UPL
3. Elaeagnus umbellata	5	N	FACU
4.			
5.			
6.			
7.			
	35 = Total Cover		

Herb Stratum (Plot size: 5)			
1. Dactylus glomerata	80	Y	FACU
2. Solidago rigida	15	N	FACU
3. Cirsium vulgare	5	N	FACU
4. Equisetum pratense	1	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE D-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/3	100					loam	no features

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks: Disturbed soil.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel B) City/County: Danbury, Fairfield County Sampling Date: 5/12/10

Applicant/Owner: - State: CT Sampling Point: USACE D-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): depression

Slope (%): flat (terrace) Lat: 73 28' 10.94"W Long: 41 22' 28.16"N Datum: North America 1983

Soil Map Unit Name: 45C - Woodbridge fine sandy loam, 84C - Paxton & Montauk fine sandy loam NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ✓, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No ✓

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	If yes, optional Wetland Site ID: Wetland D (near flag D2)
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: (Explain alternative procedures here or in a separate report.)

This area is problematic; it appears to be previously disturbed (re-graded).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ___	Depth (inches): 1" of standing water
Water Table Present?	Yes ✓	No ___	Depth (inches): @surface
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): High water table

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE D-1W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. -			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Salix alba	35	Y	FACW
2. Elaeagnus angustifolia	5	N	FACU
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		

Herb Stratum (Plot size: 5)			
1. Typha latifolia	40	Y	OBL
2. Equisetum sp.	30	Y	FACW
3. Solidago sp.	20	N	-
4. Juncus effusus	10	N	FACW
5. Dactylus glomerata	5	N	FACU
6. Phalem pretense	5	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		

Woody Vine Stratum (Plot size:)			
1. -			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE D-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 3/2	100					FSL	Saturated to surface
5-7	Sand Lens	100						sand lens (mottled)
7-20	10 YR 4/2	95	7.5 YR 4/6	5	C	M	SL	Dense SL, soft masses, prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Disturbed in and around data plot.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel A) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE E-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): hillside seep Local relief (concave, convex, none): concave

Slope (%): 5% Lat: 73 28' 2.22"W Long: 41 22' 43.20"N Datum: North America 1983

Soil Map Unit Name: 45C - Woodbridge FSL, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Raining very hard @ time of delineation.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE E-1U

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	80	Yes	FACU
2. Ulmus americana	15	No	FACW
3.			
4.			
5.			
6.			
7.			
	95 = Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1. Ostrya virginiana	35	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		

Herb Stratum (Plot size: 15)			
1. Alliaria petiolata	15	Yes	FACU
2. Osmunda clatyoniana	10	Yes	FAC
3. Berberis vulgaris	5	No	FACU
4. Polystichum acrostichoides	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	32 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE E-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					VFSL	No features present.
5-15	10YR 5/4	100					VFSL	Silt loam mix, not features present
15-20	2.5Y 5/4	90	2.5Y 5/2	5	D	M	FSL	
			7.5YR 5/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel A) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE E-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): hillside seep Local relief (concave, convex, none): concave

Slope (%): 5% Lat: 73 28' 2.08"W Long: 41 22' 43.35"N Datum: North America 1983

Soil Map Unit Name: 45C - Woodbridge FSL, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: Wetland E (near flags E1/E2)

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): Not recorded
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): near surface

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Raining very hard @ time of delineation. Restrictive hardpan, silty, depression. Water moves slowly.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE E-1W

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	90	Yes	FACU
2. Ulmus americana	15	No	FACW
3.			
4.			
5.			
6.			
7.			
	105 = Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1. Berberis vulgaris	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15 = Total Cover		

Herb Stratum (Plot size: 15)			
1. Symplocarpus foetidus	80	Yes	OBL
2. Impatiens capensis	25	Yes	FACW
3. Alliaria petiolata	5	No	FACU
4. Parthenocissus quinquefolia	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	112 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE E-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 2/2	~100					Silt Loam	with some faint, high chroma masses
8-15	10 YR 5/4	93	10 YR 5/2	5	D	M	VFSL	
			7.5YR 4/6	7	C	M		
15-20	2.5Y 5/2	93	10YR 5/2	5	C	M	VFSL	mottles same as above but more prominent
			7.5YR 4/6	7	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Soil is poorly drained. Data does not quite fit Corps criteria at F3 but determined to be hydric based on professional judgement. @ 20" mix of 2.5Y 5/4 and 2.4Y 5/3; redoximorphic features increase with depth.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel B) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE F-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): meadow footslope Local relief (concave, convex, none): none

Slope (%): flat Lat: 73 28' 8.82"W Long: 41 22' 28.48"N Datum: North America 1983

Soil Map Unit Name: 45C - Woodbridge fine sandy loam, 8-15% slopes, 84C - Paxton & Montauk FSL, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators of hydrology present.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE F-1U

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 15)			
1. Festuca pratensis	75	Yes	FACU
2. Dactylis glomerata	75	Yes	FACU
3. Plantago major	50	Yes	FACU
4. Trifolium pratenses	25	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	225 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE F-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 3/3	100					loam	no features present
8-20	10 YR 5/6	100					loam	no features present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel B) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE F-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): meadow footslope Local relief (concave, convex, none): none

Slope (%): ~2% Lat: 73 28' 9.58"W Long: 41 22' 28.52"N Datum: North America 1983

Soil Map Unit Name: 45C - Woodbridge fine sandy loam, 8-15% slopes, 84C - Paxton & Montauk FLS, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: Wetland F (near flags F1/F2)

Remarks: (Explain alternative procedures here or in a separate report.)

Agricultural field (active hayfield); historic re-grading of soil, etc.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): ~12"+-
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): @ 10"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE F-1W

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Not Present			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 15)			
1. Carex stricta	80	Yes	OBL
2. Juncus effusus	60	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	140 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE F-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	73	10 YR 5/2	20			VFSL	Faint, soft masses @ surface
			5YR 4/4	7	C	M		Prominent, soft masses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Disturbed profile noted throughout wetland system.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Primary Site (Parcel A) City/County: Danbury, Fairfield County Sampling Date: 5-18-10

Applicant/Owner: - State: CT Sampling Point: USACE-1

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): meadow/agricultural field/woodland edge Local relief (concave, convex, none): concave

Slope (%): 3% Lat: 73 28' 1.94W Long: 41 22' 40.42"N Datum: North America 1983

Soil Map Unit Name: 84C - Paxton & Montauk fine sandy loam, 8-15% slopes NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	If yes, optional Wetland Site ID: ___
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ___	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Raining very hard @ time of delineation.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 15)			
1. Juncus effusus	50	Yes	FACW
2. Solidago spp.	50	Yes	FACW
3. Dichanthelium clandestinum	25	No	FAC
4. Rosa multiflora	25	No	FACU
5. Onoclea sensibilis	5	No	FACW
6. Galium boreale	5	No	FACU
7. Phleum pratense	5	No	FACU
8. Toxicodendron radicans	1	No	FAC
9. Achillea millefolium	1	No	FACU
10. Alliaria petiolata	1	No	FACU
11.			
12.			
	168 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Solidago could not be reliably identified to species level during period of growing season when delineation work was occurring. Assumed to be a hydrophyte based on position in landscape and prevalence in nearby, well established wetlands.

SOIL

Sampling Point: USACE-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5YR 3/2	95	5YR 4/4	3	C	M	Silt Loam	
5-20	2.5Y 5/4	93	2.5Y 5/2	2	D	M	Loam	
		--	5YR 4/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

@ 20" mix of 2.5Y 5/4 and 2.4Y 5/3; redoximorphic features increase with depth.

Alternate Site 2

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 2 City/County: Middlebury, New Haven Sampling Date: 5-19-10

Applicant/Owner: - State: CT Sampling Point: USACE A-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): convex

Slope (%): 0 Lat: 73 9' 7.0178"W Long: 41 30' 30.498"N Datum: North American 1983

Soil Map Unit Name: Ridgebury, Leicester, & Whitman soils, Paxton and Montauk fine sandy loams NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology indicators present within plot.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1U

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubra	25	yes	FACU
2. Acer rubrum	20	yes	FAC
3. Quercus alba	20	yes	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Hamamelis virginiana	85	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	85	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. Viburnum acerifolium	10	yes	UPL
2. Quercus bicolor	5	no	FACW
3. Quercus alba	5	no	FACU
4. Trientalis borealis	5	no	FAC
5. Acer rubrum	5	no	FAC
6. Fraxinus americana	5	no	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	35	= Total Cover	

Woody Vine Stratum (Plot size: 30-ft)			
1. NA			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 3/2	100					FSL	No features present
5 - 20	10YR 5/6	100					FSL	No features present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** ✓

Remarks:

No hydric soil indicators present.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 2 City/County: Middlebury, New Haven Sampling Date: 5-19-10

Applicant/Owner: - State: CT Sampling Point: USACE A-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): toe of adjacent hill slope Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 73 9' 7.5"W Long: 41 30' 30.30"N Datum: North American 1983

Soil Map Unit Name: Ridgebury, Leicester, & Whitman soils, Paxton and Montauk fine sandy loams NWI classification: Freshwater forested/shrub wetland - PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	If yes, optional Wetland Site ID: Wetland A (near flag A7)

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): w/in 1-2" of surface
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): at surface

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1W

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	25	yes	FACW
2. Acer rubrum	20	yes	FAC
3. Betula alleghaniensis	15	yes	FAC
4. Quercus bicolor	10	no	FACW
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Clethra alnifolia	60	yes	FAC
2. Hamamelis virginiana	20	yes	FAC
3. Vaccinium corymbosum	15	no	FACW
4. Ulmus americana	5	no	FACW
5.			
6.			
7.			
	100	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. Viola palustris	10	yes	FACW
2. Thelypteris noveboracensis	10	yes	FAC
3. Cinna arundinacea	10	yes	FACW
4. Parthenocissus quinquefolia	5	no	FACU
5. Symplocarpus foetidus	5	no	OBL
6. Clethra alnifolia	2	no	FAC
7. Onoclea sensibilis	2	no	FACW
8. Trientalis borealis	1	no	FAC
9. Arisaema triphyllum	1	no	FACW
10.			
11.			
12.			
	46	= Total Cover	

Woody Vine Stratum (Plot size: 30-ft)			
1. NA			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y 2.5/1	100					FSL	black color, high organic content
7-20	2.5Y 5/2	93	10YR 4/6	7	C	M	SL	Prominent mottles, soft masses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✓ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 2 City/County: Middlebury, New Haven Sampling Date: 5-19-10

Applicant/Owner: - State: CT Sampling Point: USACE C-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): low terrace Local relief (concave, convex, none): moderate slope

Slope (%): - Lat: 73 9' 1.26"W Long: 41 30' 20.38"N Datum: North American 1983

Soil Map Unit Name: Ridgebury, Leicester, & Whitman soils, Catden & Freetown soils NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE C-1U

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya ovata	35	yes	FACU
2. Acer rubrum	10	no	FAC
3. Quercus rubra	10	no	FACU
4. Acer saccharum	5	no	FACU
5. Betula alleghaniensis	5	no	FAC
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Hamamelis virginiana	25	yes	FAC
2. Carya ovata	25	yes	FACU
3. Vaccinium corymbosum	5	no	FACW
4.			
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. Maianthemum canadense	80	yes	FAC
2. Thelypteris noveboracensis	5	no	FAC
3. Hamamelis virginiana	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 30-ft)			
1. NA			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE C-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 5	10YR 3/2	100					FSL	No features present
5 - 20	10 YR 5/6	100					FSL	No features present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ____ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 2 City/County: Middlebury, New Haven Sampling Date: 5-19-10

Applicant/Owner: - State: CT Sampling Point: USACE C-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: _____

Landform (hillslope, terrace, etc.): landscape depression Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 73 9' 1.52"W Long: 41 30' 20.13"N Datum: North American 1983

Soil Map Unit Name: Ridgebury, Leicester, & Whitman soils, Catden & Freetown soils NWI classification: Freshwater forested/shrub wetland - PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	If yes, optional Wetland Site ID: Wetland C (near flags C9 & C10)

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): Not recorded
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Heavy rain at time of delineation and week prior.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE C-1W

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	25	yes	FAC
2. Acer saccharum	10	yes	FACU
3. Quercus rubra	10	yes	FACU
4.			
5.			
6.			
7.			
	45 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Hamamelis virginiana	25	yes	FAC
2. Vaccinium corymbosum	10	yes	FACW
3. Carya ovata	5	no	FACU
4. Clethra alnifolia	1	no	FAC
5.			
6.			
7.			
	41 = Total Cover		

Herb Stratum (Plot size: 5-ft)			
1. Carex stricta	15	yes	OBL
2. Osmunda claytoniana	10	yes	FAC
3. Symplocarpus foetidus	5	no	OBL
4. Osmunda cinnamomea	5	no	FACW
5. Maianthemum canadense	5	no	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40 = Total Cover		

Woody Vine Stratum (Plot size: 30-ft)			
1. NA			
2.			
3.			
4.			
	= Total Covor		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE C-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 20	2.5/N							black muck Oa/Oe horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 2 City/County: Middlebury, New Haven Sampling Date: 5-19-10

Applicant/Owner: - State: CT Sampling Point: USACE - 1

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): level hilltop area Local relief (concave, convex, none): none

Slope (%): 0 Lat: 73 9' 0.56"W Long: 41 30' 3.46"N Datum: North American 1983

Soil Map Unit Name: 45B - Woodbridge fine sandy loam NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Heavy rain at time of delineation and prior week.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE - 1

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	75	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	75 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Berberis thunbergii	20	yes	FACU
2. Lindera benzoin	15	yes	FACW
3. Ilex verticillata	10	yes	FACW
4. Rosa multiflora	5	no	FACU
5.			
6.			
7.			
	50 = Total Cover		
Herb Stratum (Plot size: 5-ft)			
1. Onoclea sensibilis	5	yes	FACW
2. Arisaema triphyllum	1	no	FACW
3. Impatiens capensis	1	no	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	7 = Total Cover		
Woody Vine Stratum (Plot size: 30-ft)			
1. NA			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE - 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100					FSL	no features
7 - 20	2.5 YR 5/6	93-95	7.5 YR 4/6	5-7	C	M	Loam	high chroma mottles at 15-17 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

Alternate Site 3

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 3 City/County: Oxford, New Haven Sampling Date: 5-12-10

Applicant/Owner: State: CT Sampling Point: USACE A-1U

Investigator(s): Hale, McManus, Howard Section, Township, Range:

Landform (hillslope, terrace, etc.): Proximate to drainage way Local relief (concave, convex, none): Relatively flat

Slope (%): 0 Lat: 73 8' 50.55"W Long: 41 27' 39.12"N Datum: NAD83

Soil Map Unit Name: Charlton-Chatfield Compex, 3-15% slopes, very rocky NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Jmagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1U

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	10	Yes	FACU
2. Fraxinus american	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Ostrya virginiana	15	Yes	FACU
2. Acer rubrum	5	No	FAC
3. Acer saccharum	5	No	FACU
4. Carpinus caroliniana	5	No	FAC
5.			
6.			
7.			
	30 = Total Cover		

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ___ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					SL	
5-20	7.5YR 4/6	100					SL	Faint redoximorphic features @ 20"; water in the test pit @ 20"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 3 City/County: Oxford, New Haven Sampling Date: 5-12-10

Applicant/Owner: State: CT Sampling Point: USACE A-1W

Investigator(s): Hale, McManus, Howard Section, Township, Range:

Landform (hillslope, terrace, etc.): Adjacent to drainage way, overland flow Local relief (concave, convex, none): Relatively Flat

Slope (%): Lat: 73 8' 50.90"W Long: 41 27' 39.00"N Datum: NAD83

Soil Map Unit Name: Charlton-Chatfield Compex, 3-15% slopes, very rocky NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	If yes, optional Wetland Site ID: Wetland A/OHWM (near flag A8)

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ___	Depth (inches): 1-2"
Water Table Present?	Yes ✓	No ___	Depth (inches): surface
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary hydrology from overland stream flow across rocky substrate versus a high groundwater table at time of delineation.

VEGETATION – Use scientific names of plants.

Sampling Point: USACE A-1W

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	60	Y	FACW
2. Ostrya virginiana	10	N	FACU
3. Acer rubrum	10	N	FAC
4.			
5.			
6.			
7.			
	80 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Fraxinus pennsylvanica	35	Y	FACW
2. Acer rubrum	5	N	FAC
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		

Herb Stratum (Plot size: 5)			
1. Solidago sp (presumed hydrophyte).	25	Y	FACW
2. Vaccinium corymbosum	15	Y	FACU
3. Rosa multiflora	10	N	FAC
4. Toxidondron radicans	10	N	FAC
5. Maianthemum canadense	5	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE A -1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	93	7.5 YR 3/4	5	C	M	SL	Prominent, soft masses
			10.5 YR 5/1	2	D	M		
12-20	10 YR 5/2& 5/3	83	7.5 YR 4/4	7	C	M	SL	Matrix mix of 10YR 5/2 and 5/3
			10 YR 5/2	10	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 3 City/County: Oxford, New Haven Sampling Date: 5-12-2010

Applicant/Owner: - State: CT Sampling Point: USACE D-1U

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): moderate slope adjacent to floodplain Local relief (concave, convex, none): moderate slope

Slope (%): - Lat: 73 8' 52.79"W Long: 41 27' 30.89"N Datum: North American 1983

Soil Map Unit Name: Ninigret and Tisbury soils, Scarboro muck NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No ____	Depth (inches): ____
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE D-1U

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	yes	FAC
2. Acer saccharum	25	yes	FACU
3. Carpinus caroliniana	20	yes	FAC
4. Prunus serotina	15	No	FACU
5.			
6.			
7.			
	100 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Carpinus caroliniana	40	yes	FAC
2. Euonymus atropurpureus	20	yes	FACU
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		

Herb Stratum (Plot size: 5-ft)			
1. Dryopteris marginalis	50	yes	FACU
2. Maiathemum canadense	15	yes	FAC
3. Toxicodendron radicans	5	no	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE D-1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10 YR 3/2	100					SiL	
8 - 20	10YR 5/6	100					SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Alternate Site 3 City/County: Oxford, New Haven Sampling Date: 5-12-2010

Applicant/Owner: - State: CT Sampling Point: USACE D-1W

Investigator(s): Howard, McManus, Hale Section, Township, Range: -

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): level

Slope (%): - Lat: 73 8' 50.90"W Long: 41 27' 30.96"N Datum: North American 1983

Soil Map Unit Name: Ninigret and Tisbury soils, Scarboro muck NWI classification: FW Forested/Shrub - PFO1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ___	**Is the Sampled Area within a Wetland?** Yes ✓ No ___
Hydric Soil Present?	Yes ✓	No ___	If yes, optional Wetland Site ID: Wetland D (near flag D-60)
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ✓ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ___	Depth (inches): 1-2"
Water Table Present?	Yes ✓	No ___	Depth (inches): Not Recorded
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): Not Recorded

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: USACE D-1W

Tree Stratum (Plot size: 30-ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	50	yes	FAC
2. Carpinus caroliniana	20	yes	FAC
3. Betula alleghaniensis	20	yes	FAC
4. Ulmus americana	10	no	FACW
5.			
6.			
7.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15-ft)			
1. Lindera benzoin	20	yes	FACW
2. Vaccinium corymbosum	15	yes	FACW
3. Carpinus caroliniana	10	yes	FAC
4.			
5.			
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5-ft)			
1. Symplocarpus foetidus	90	yes	OBL
2. Maiathemum canadense	50	yes	FAC
3. Osmunda cinnamomea	30	no	FACW
4. Coptis trifolia	10	no	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	180	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ✓ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: USACE D-1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					SiL	
8 - 20	2.5Y 5/2	90	10 YR 5/6	10	C	M	FSL	Prominent soft masses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✓ **No** ___

Remarks:

Attachment C

U.S. Army Corps of Engineers Jurisdictional Determination Forms

Parcel A – Wetlands B/C and E (Approved JD Form)

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:New England District

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CT County/parish/borough: Fairfield City: Danbury
Center coordinates of site (lat/long in degree decimal format): Lat. 41°22'30.0099"° **N**, Long. 73°28'4.7167"° **W**.
Universal Transverse Mercator: --
Name of nearest waterbody: The Still River is located ~250 feet north of Wetland B/C and Wetland E on Parcel A of the Primary Site. The Still River is a tributary to the Housatonic River)
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Housatonic River (~10 aerial miles northeast of Wetland B/C and Wetland E on Parcel A of the Primary Site)
Name of watershed or Hydrologic Unit Code (HUC): 10-digit HUC 0110000508/Housatonic River-Still River to Pootatuck River

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☒ Office (Desk) Determination. Date:
- ☒ Field Determination. Date(s): 5-10-10

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 1,000 lf (unnamed seasonally flowing stream within Wetland B/C linear feet: ~8 to 12 ftwidth (ft) and/or acres.
   Wetlands: Wetland B/C ~2.15 ac/Wetland E ~ 0.01 ac (refers to area of wetlands delineated within the limits of the Study Area on Parcel A of the Primary Site) acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: ~50 **acres**
Drainage area: Unknown **Pick List**
Average annual rainfall: 51.77 inches
Average annual snowfall: 30-40 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: See attached Wetland Delineation Report prepared by Epsilon and JMM [Section 2.2.1, Section 4.2.1.2 (Wetland B/C), and Section 4.2.1.4 (Wetland E)].

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: Wetland B/C abuts a first order stream; Wetland E is located within ~75 - 100 feet of same first order stream.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☒ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: Seasonally flowing first order stream in Wetland B/C ~8-12 feet
Average depth: <0.5 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☒ Sands	☐ Concrete
☒ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Some evidence of undercutting along banks of seasonally flowing first order stream in Wetland B/C.

Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): <10 %

(c) Flow:

Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Discrete and confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☐ the presence of litter and debris
☒ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☒ leaf litter disturbed or washed away	☒ scour
☒ sediment deposition	☒ multiple observed or predicted flow events
☒ water staining	☒ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM (Wetland B/C - Section 4.2.1.2 and Wetland E - Section 4.2.1.4) .

[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: See attached Wetland Delineation Report prepared by Epsilon & JMM (Wetland B/C - Section 4.2.1.2 and Wetland E - Section 4.2.1.4).

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: Wetland B/C is ~2.15 ac/Wetland E is ~0.01 ac (refers to area of wetlands delineated within the Study Area on Parcel A of the Primary Site) acres

Wetland type. Explain: PFO, PSS, PEM.

Wetland quality. Explain:See attached Wetland Delineation Report prepared by Epsilon & JMM (Sections 4.2.1.2 and 4.2.1.3).

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **No Flow** . Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: Wetland B/C directly abuts seasonally flowing tributary; While not readily apparent at the time of delineation, under certain circumstances Wetland E may drain via diffuse overland flow into Wetland B/C and its adjoining stream channel. Wetland E appears to receive inflow from groundwater discharge, primarily a hillside seep.

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: See attached Wetland Delineation Report prepared by Epsilon & JMM (Wetland B/C - Section 4.2.1.2 and Wetland E - 4.2.1.4).

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. Explain:See attached Wetland Delineation Report prepared by Epsilon & JMM (Wetland B/C - Section 4.2.1.2 and Wetland E - Section 4.2.1.4, and Corps Wetland Determination Forms provided in Attachment B of report).

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **2**

Approximately (2.16 ac (refers to the combined area of Wetland B/C and Wetland E that were field delineated within the limits of the Study Area on Parcel A of the Primary Site) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland B/C	2.15	Yes	
Wetland E	0.01	No	

Summarize overall biological, chemical and physical functions being performed: See attached Wetland Delineation Report prepared by Epsilon and JMM, Section 5.0 General Functions and Values Assessment..

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
or ☒ Other (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Parcel B – Wetlands D and F (Approved JD Form)

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:New England District

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CT County/parish/borough: Fairfield City: Danbury
Center coordinates of site (lat/long in degree decimal format): Lat. 41°22'28.16"° **N**, Long. 73°28'10.94"° **W**.
Universal Transverse Mercator: --
Name of nearest waterbody: Kissen Brook (~1,700 feet to the west of Wetlands D and F on Parcel B)
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Housatonic River (~10 aerial miles northeast of Wetlands D and F on Parcel B of Primary Site)
Name of watershed or Hydrologic Unit Code (HUC): 10-digit HUC 0110000508/Housatonic River-Still River to Pootatuck River

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☒ Office (Desk) Determination. Date:
- ☒ Field Determination. Date(s): 5-10-10

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 2 drainage channels exist ~40 to 50 ft north of Wetlands D and F, ~ 150 - 200 feet of which was delineated within the Study Area on Parcel B of Primary Site linear feet: <5 feet width (ft) and/or acres.
   Wetlands: Wetland D is ~ 0.01 ac and Wetland F is ~0.04 ac acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: ~5 ac for Wetlands D and F (some of watershed is cut off by roadway drainage systems; regardless, very small watershed for these two wetland pockets) **acres**
Drainage area: Unknown **Pick List**
Average annual rainfall: 51.77 inches
Average annual snowfall: 30-40 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 2.2.1 and Sections 4.2.1.3 (Wetland D) and 4.2.1.5 (Wetland F)].
Tributary stream order, if known: Wetland D and F are adjacent to, 2-drainage ditches.

(b) General Tributary Characteristics (check all that apply):
Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☒ Manipulated (man-altered). Explain: Agricultural operations, prior earth moving work.

Tributary properties with respect to top of bank (estimate):
Average width: Drainage ditches are <5 feet wide feet
Average depth: <6 inches feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
- ☒ Silts
- ☒ Sands
- ☐ Concrete
- ☐ Cobbles
- ☒ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Unknown.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): fairly steep, >10% %

(c) Flow:
Tributary provides for: **Intermittent but not seasonal flow**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):
  - ☒ clear, natural line impressed on the bank
  - ☒ changes in the character of soil
  - ☐ shelving
  - ☒ vegetation matted down, bent, or absent
  - ☒ leaf litter disturbed or washed away
  - ☒ sediment deposition
  - ☒ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☒ scour
  - ☒ multiple observed or predicted flow events
  - ☒ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 2.2.1, and 4.2.1.3 (Wetland D), and 4.2.1.5 (Wetland F)].

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[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 2.2.1, and 4.2.1.3 (Wetland D), and 4.2.1.5 (Wetland F)).

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: Wetland D is ~0.01 ac and Wetland F is ~0.04 ac acres

Wetland type. Explain:PFO/PEM/PSS.

Wetland quality. Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 2.2.1, and 4.2.1.3 (Wetland D), and 4.2.1.5 (Wetland F).

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 4.2.1.3 (Wetland D) and 4.2.1.5 (Wetland F)].

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 4.2.1.3 (Wetland D) and 4.2.1.5 (Wetland F)].

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. Explain:See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 4.2.1.3 (Wetland D) and 4.2.1.5 (Wetland F) and related Corps Wetland Determination Forms (Attachment B of Wetland Delineation Report)].

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **2**

Approximately (0.05 ac (refers to Wetland D and F combined) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland D	0.01	No	
Wetland F	0.04	No	

Summarize overall biological, chemical and physical functions being performed: See attached Wetland Delineation Report prepared by Epsilon and JMM, Section 5.0 General Functions and Values Assessment.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
or ☒ Other (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Parcel C – Wetland A (Approved JD Form)

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:New England District

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:CT County/parish/borough: Fairfield City: Danbury
Center coordinates of site (lat/long in degree decimal format): Lat. 41°22'12.75"° **N**, Long. 73°27'56.91"° **W**.
Universal Transverse Mercator: --
Name of nearest waterbody: Lees Pond Brook and Unnamed Pond
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Housatonic River (~10 aerial miles northeast of Wetland A on Parcel C of Primary Site)
Name of watershed or Hydrologic Unit Code (HUC): 10-digit HUC 0110000508/Housatonic River-Still River to Pootatuck River

- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☒ Office (Desk) Determination. Date:
- ☒ Field Determination. Date(s): 5-10-10

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: Lees Pond Brook is offsite but based on aerial photographs it is ~1,300 feet long between the two unnamed ponds that it is connected to along the southern boundary of Parcel C on the Primary Site linear feet: unknown (at least 10 - 15 feet based on visual observations at time of delineation) width (ft) and/or the unnamed offsite pond is ~ 3 ac based on USGS map acres.
   Wetlands: Wetland A is ~ 0.01 ac (refers to flagged area within study area only; extends extensively offsite along Lees Pond Brook and unnamed pond) acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: ~18 ac for the small portion of Wetland A delineated within Study Area on Parcel C; substantially larger for off-site Lees Pond Brook and unnamed pond **acres**
Drainage area: Unknown **Pick List**
Average annual rainfall: 51.77 inches
Average annual snowfall: 30-40 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW[5]: See attached Wetland Delineation Report prepared by Epsilon and JMM [Sections 2.2.1 and 4.2.1.1 (Wetland A)].
Tributary stream order, if known: Wetland A abuts Lees Pond Brook, stream order unknown.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: Lees Pond Brook is at least 10 - 15 ft wide feet
Average depth: unknown feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☒ Sands ☐ Concrete
☒ Cobbles ☒ Gravel ☐ Muck
☒ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Unknown.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): <10 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):
☒ clear, natural line impressed on the bank
☒ changes in the character of soil
☐ shelving
☒ vegetation matted down, bent, or absent
☒ leaf litter disturbed or washed away
☒ sediment deposition
☒ water staining
☐ other (list):
☐ the presence of litter and debris
☐ destruction of terrestrial vegetation
☐ the presence of wrack line
☐ sediment sorting
☒ scour
☒ multiple observed or predicted flow events
☒ abrupt change in plant community
☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gauges
☐ other (list):
☐ Mean High Water Mark indicated by:
☐ survey to available datum;
☐ physical markings;
☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: See attached Wetland Delineation Report prepared by Epsilon and JMM (Sections 2.2.1, and 4.2.1.1 (Wetland A) and Attachment B - Corps Wetland Determination Forms) .

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.
[6] A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7] Ibid.

Identify specific pollutants, if known: .

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): .

☒ Wetland fringe. Characteristics: See attached Wetland Delineation Report prepared by Epsilon & JMM (Wetland A - Section 4.2.1.1).

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: Wetland A is ~0.01 ac (refers to the area of Wetland A that was field delineated within the Study Area on Parcel C) acres

Wetland type. Explain:PFO/PEM/PSS.

Wetland quality. Explain:See attached Wetland Delineation Report prepared by Epsilon & JMM (Wetland A - Section 4.2.1.1).

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **No Flow** . Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: See attached Wetland Delineation Report prepared by Epsilon & JMM (Section 4.2.1.1 (Wetland A)).

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

☒ Riparian buffer. Characteristics (type, average width):Unknown - outside study area; estimated to be at least 50-100 ft wide along Lees Pond Brook.

☒ Vegetation type/percent cover. Explain:See attached Wetland Delineation Report prepared by Epsilon & JMM (Section 4.2.1.1 (Wetland A) and Attachment B - Corps Wetland Determination Forms).

☐ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **2**

Approximately (0.01 ac (refers to the area of Wetland A that was field delineated within the Study Area on Parcel C of Primary Site) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland A	0.01	Yes	

Summarize overall biological, chemical and physical functions being performed: See attached Wetland Delineation Report prepared by Epsilon and JMM, Section 5.0 General Functions and Values Assessment.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: **.**

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **.**

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

---

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
or ☒ Other (Name & Date):See attached Wetland Delineation Report prepared by Epsilon and JMM.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Alternate Sites 2 and 3 (Preliminary JD Form)

ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): TBD

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: TBD

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: New England District TBD

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: CT County/parish/borough: New Haven City: Middlebury and Oxford, CT

Center coordinates of site (lat/long in degree decimal format): Lat.

Middlebury Site - 73°9'0.453"W 41°30'26.162"N
Oxford Site - 73°8'47.96"W 41°27'37.329"N

Universal Transverse Mercator:

Name of nearest waterbody: Middlebury Site – Eightmile Brook; Oxford Site – Eightmile Brook

Identify (estimate) amount of waters in the review area: See Attached Table.

Non-wetland waters: linear feet: width (ft) and/or acres.

Cowardin Class:

Stream Flow:

Wetlands: acres.

Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters: *Taunton River*

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

X Office (Desk) Determination. Date: TBD

X Field Determination. Date(s): May 10, 2010

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

x Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant.

x Data sheets prepared/submitted by or on behalf of the applicant/consultant.
x Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
x U.S. Geological Survey map(s). Cite scale & quad name: See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
x USDA Natural Resources Conservation Service Soil Survey. Citation: See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
X National wetlands inventory map(s). Cite name: See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
X State/Local wetland inventory map(s): See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM..
x FEMA/FIRM maps: See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
x 100-year Floodplain Elevation is: Varies at Alternate Site 2. See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
x Photographs: ☐ Aerial (Name & Date): .
or x Other (Name & Date): See figures included with attached Wetland Delineation Report prepared by Epsilon and JMM.
☐ Previous determination(s). File no. and date of response letter: .
☐ Other information (please specify):

<u>IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.</u>

_____	_____
Signature and date of Regulatory Project Manager (REQUIRED)	Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

Table 1, Summary of Delineated Wetlands in Study Area at Alternate Site 2 and Alternate Site 3

Site ID	Municipality	Wetland ID	Wetland Classification[1]	Estimated Size of Wetland Delineated within Study Area
Alternate Site 2	Middlebury	Wetland A	PFO, PSS, PEM	0.2 ac
Alternate Site 2	Middlebury	Wetland B	PFO, PSS	0.05 ac
Alternate Site 2	Middlebury	Wetland C	PFO, PSS, PEM	0.12 ac
Alternate Site 3	Oxford	Wetland A/OHWM	PFO, PSS	0.46 ac
Alternate Site 3	Oxford	Wetland B	PFO, PSS	3.5 ac
Alternate Site 3	Oxford	Wetland C	PEM	0.11 ac
Alternate Site 3	Oxford	Wetland D	PFO, PSS	0.59 ac

1 Wetland classification based on Cowardin (1979). PEM = Palustrine Emergent Wetland, PSS = Palustrine Scrub-Shrub, PFO = Palustrine Forested.

Attachment D

Representative Photographs of Delineated Wetlands

Primary Site

Primary Site Photo 1: View south of intermittent stream channel in the vicinity of wetland flag C28. The stream channel is ~10 – 15 feet wide in this location with a substrate composed of large stones and sand/gravel in the voids. There is some undercutting along the face of the bank.

Primary Site Photo 2: Typical view of intermittent stream channel flowing through Wetland B/C on Parcel A of Primary Site (near flag C26).

Primary Site Photo 3: Typical view of intermittent stream channel flowing through Wetland B/C on Parcel A of Primary Site (near flag B30).

Primary Site Photo 4: View west of Wetland E (seep) looking upslope towards flag E1.

Primary Site Photo 5: View east of Wetland E (at Data Plot USACE E-1W), towards Wetland B/C.

Primary Site Photo 6: View east of Wetland B/C at Data Plot USACE B-1W and flags B2/B3. Wet meadow located at toe-of-slope.

Primary Site Photo 7: View north of upland meadow and Data Plot USACE-1 (approximately 50 feet east of flags B21 and B22).

Primary Site Photo 8: View west of Wetland F (wet meadow) on Parcel B of Primary Site.

Primary Site Photo 9: View east of Wetland D on Parcel B of Primary Site in the vicinity of Data Plot USACE D-1W.

Primary Site Photo 10: View west of Wetland D on Parcel B of Primary Site in the vicinity of Data Plot USACE D-1W and flag D2.

Primary Site Photo 11: View south of Wetland A on Parcel C of Primary Site looking towards unnamed pond.

Primary Site Photo 12: View south of Wetland A on Parcel C of Primary Site looking towards stand of common reed *(Phragmites australis)* and unnamed pond.

Primary Site Photo 13: View south of Wetland A on Parcel C of Primary Site looking towards flag A7 and Lees Pond Brook.

Alternate Site 2

Alternate Site #2 Photo 1: View west of Wetland A in the vicinity of wetland flags A1 and A2. Potential vernal pool habitat (pit-and-mound topography with approximately 6-inches of standing water at time of inspection on May 10, 2010).

Alternate Site #2 Photo 2: Typical view of Wetland A in the vicinity of flag A7.

Alternate Site #2 Photo 3: Typical view west of Wetland A in the vicinity of Data Plot USACE 1-W.

Alternate Site #2 Photo 4: Typical non-hydric soil profile of in the vicinity of upland Data Plot USACE-1 at northern corner of site (typ. B horizon – 2.5Y 5/6 with high chroma mottles (7.5YR 4/6) present at 15 – 17 inches).

Alternate Site #2 Photo 5: View west of Wetland B in the vicinity of flag B2. The wetland drains towards the south (left hand side of photo) into an approximately 6-inch diameter pipe and off-site rocky drainage channel.

Alternate Site #2 Photo 6: View north of Wetland C from Southford Road near flags C1 and C2.

Alternate Site #2 Photo 7: View north of Wetland C near flags C2 and C3.

Alternate Site #2 Photo 8: View west of Wetland C in the vicinity of flag C10.

Alternate Site #2 Photo 9: Typical view of intermittent stream flowing in a southerly direction through Wetland C (photo taken approximately 20 feet down gradient from flag C21).

Alternate Site 3

Alternate Site #3 Photo 1: View east of Wetland A in the vicinity of flag A-9d.

Alternate Site #3 Photo 2: View south (downstream) of intermittent stream channel in the vicinity of flag OHWM-3.

Alternate Site #3 Photo 3: View of delineated Ordinary High Water Mark in the vicinity of flags OHWM-4 and OHWM-5.

Alternate Site #3 Photo 4: View north of intermittent stream flow in the vicinity of flag OHWM-22.

Alternate Site #3 Photo 5: View east of existing cart path where ordinary high water mark terminates near flag OHWM-19.

Alternate Site #3 Photo 6: View of Wetland D in the vicinity of flag D-60 and data plot USACE D-1W.

Alternate Site #3 Photo 7: Typical view of Wetland D in the vicinity of flag D-65.

Alternate Site #3 Photo 8: View south (downstream) of Little River and tributary flowing through Wetland B at a headwall located beneath Towner Lane.

Alternate Site #3 Photo 9: View north of Wetland B in the vicinity of GPS reference point B-4.

Alternate Site #3 Photo 10: View northwest of Wetland C in the vicinity of flags C-15 and C-1.

Alternate Site #3 Photo 11: View east of drainage channel connecting Wetland C with Wetland B in the vicinity of flag C-17.

Alternate Site #3 Photo 12: View west of Wetland D in the vicinity of flag D-2.

Attachment E

NRCS Soil Survey Reports

Primary Site

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

State of Connecticut

Primary Site

May 25, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:6,930 if printed on A size (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1,000 1,500

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,930 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 7, Dec 3, 2009

Date(s) aerial images were photographed: 7/16/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	0.1	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	3.7	1.6%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	16.7	7.2%
60B	Canton and Charlton soils, 3 to 8 percent slopes	5.2	2.3%
60D	Canton and Charlton soils, 15 to 25 percent slopes	2.9	1.3%
62D	Canton and Charlton soils, 15 to 35 percent slopes, extremely stony	5.3	2.3%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	5.9	2.5%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	0.0	0.0%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	46.2	20.0%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	49.9	21.6%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	20.1	8.7%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	8.1	3.5%
273C	Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes	2.5	1.1%
306	Udorthents-Urban land complex	22.0	9.5%
307	Urban land	34.2	14.8%
W	Water	7.8	3.4%
Totals for Area of Interest		**230.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend

beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

State of Connecticut

Map Unit: 3—Ridgebury, Leicester, and Whitman soils, extremely stony

Component: Ridgebury (40%)

The Ridgebury component makes up 40 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Leicester (35%)

The Leicester component makes up 35 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Whitman (15%)

The Whitman component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 12 to 20 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 60 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, frequently flooded (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, steep slopes (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Woodbridge (2%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Unnamed, nonstony (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, silt loam surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 45C—Woodbridge fine sandy loam, 8 to 15 percent slopes

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent

material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 60B—Canton and Charlton soils, 3 to 8 percent slopes

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Hollis (3%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Unnamed, silt loam surface (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 60D—Canton and Charlton soils, 15 to 25 percent slopes

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 62D—Canton and Charlton soils, 15 to 35 percent slopes, extremely stony

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 15 to 35 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 15 to 35 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 73E—Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky

Component: Charlton (45%)

The Charlton component makes up 45 percent of the map unit. Slopes are 15 to 45 percent. This component is on uplands, hills. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Chatfield (30%)

The Chatfield component makes up 30 percent of the map unit. Slopes are 15 to 45 percent. This component is on hills, ridges, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Rock outcrop (10%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Hollis (3%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, sandy subsoil (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 75E—Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes

Component: Hollis (35%)

The Hollis component makes up 35 percent of the map unit. Slopes are 15 to 45 percent. This component is on uplands, hills, ridges. The parent material consists of loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, bedrock (lithic), is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 40 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Chatfield (30%)

The Chatfield component makes up 30 percent of the map unit. Slopes are 15 to 45 percent. This component is on uplands, hills, ridges. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Rock outcrop (15%)

Generated brief soil descriptions are created for major soil components. The Rock outcrop is a miscellaneous area.

Component: Charlton (7%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Brimfield (1%)

Generated brief soil descriptions are created for major components. The Brimfield soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, sandy subsoil (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, less sloping (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, stony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84C—Paxton and Montauk fine sandy loams, 8 to 15 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal

zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Unnamed, stony surface (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84D—Paxton and Montauk fine sandy loams, 15 to 25 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 15 to 25 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 15 to 25 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, steep slopes (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, stony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 260C—Charlton-Urban land complex, 8 to 15 percent slopes

Component: Charlton (40%)

The Charlton component makes up 40 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Udorthents (5%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Map Unit: 273C—Urban land-Charlton-Chatfield complex, rocky, 3 to 15 percent slopes

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Charlton (25%)

The Charlton component makes up 25 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Chatfield (15%)

The Chatfield component makes up 15 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, ridges, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Hollis (8%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Udorthents (5%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Component: Rock outcrop (2%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Map Unit: 306—Udorthents-Urban land complex

Component: Udorthents (50%)

The Udorthents component makes up 50 percent of the map unit. Slopes are 0 to 25 percent. This component is on urban land. The parent material consists of drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 59 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Unnamed, undisturbed soils (8%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Udorthents, wet substratum (5%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Component: Rock outcrop (2%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Map Unit: 307—Urban land

Component: Urban land (80%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Udorthents, wet substratum (10%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Component: Unnamed, undisturbed soils (10%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: W—Water

Component: Water (100%)

Generated brief soil descriptions are created for major soil components. The Water is a miscellaneous area.

Alternate Site 2

United States Department of Agriculture

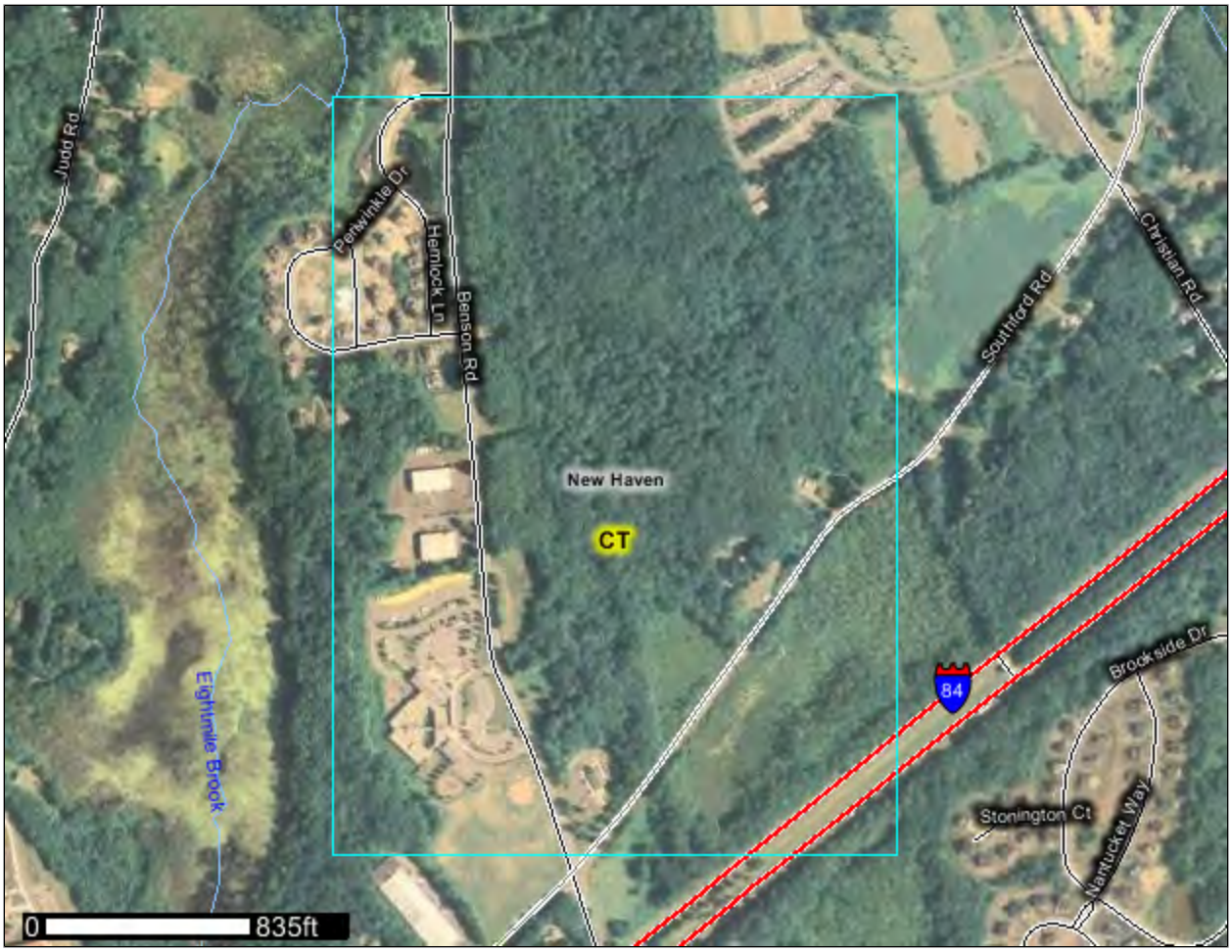
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

State of Connecticut

Alternate Site 2 - Middlebury, CT



May 25, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

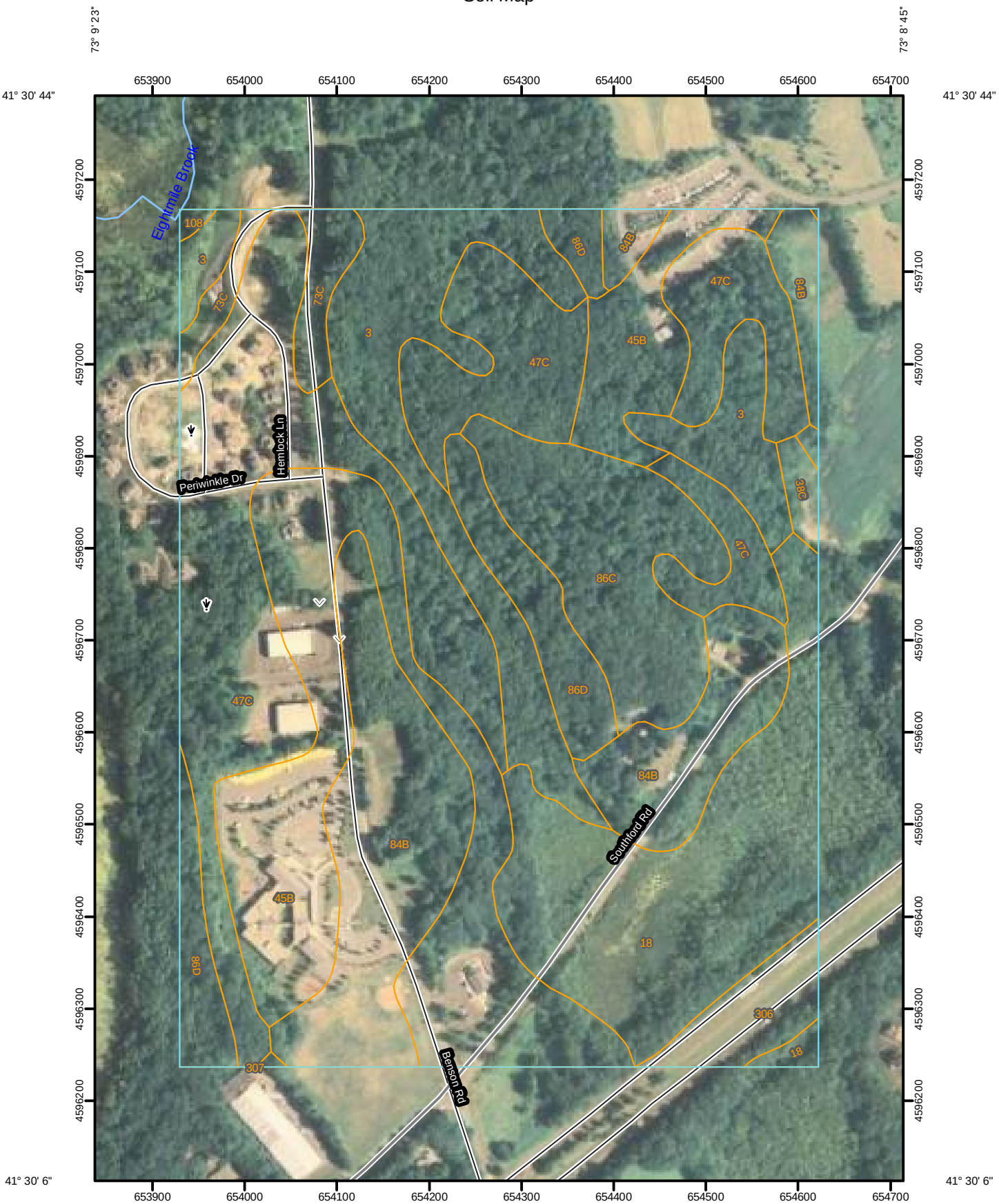
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:5,620 if printed on A size (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1,200

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:5,620 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 7, Dec 3, 2009

Date(s) aerial images were photographed: 8/14/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	18.0	11.3%
18	Catden and Freetown soils	21.0	13.2%
38C	Hinckley gravelly sandy loam, 3 to 15 percent slopes	0.9	0.6%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	29.7	18.6%
47C	Woodbridge fine sandy loam, 2 to 15 percent slopes, extremely stony	38.6	24.2%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	3.3	2.1%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	24.0	15.0%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	11.9	7.5%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	8.3	5.2%
108	Saco silt loam	0.2	0.1%
306	Udorthents-Urban land complex	3.5	2.2%
307	Urban land	0.0	0.0%
Totals for Area of Interest		**159.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

State of Connecticut

Map Unit: 3—Ridgebury, Leicester, and Whitman soils, extremely stony

Component: Ridgebury (40%)

The Ridgebury component makes up 40 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Leicester (35%)

The Leicester component makes up 35 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Whitman (15%)

The Whitman component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 12 to 20 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 60 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, frequently flooded (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, steep slopes (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Woodbridge (2%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Unnamed, nonstony (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, silt loam surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 18—Catden and Freetown soils

Component: Catden (40%)

The Catden component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions. The parent material consists of woody organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is very high. This soil is rarely flooded. It is frequently ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Freetown (40%)

The Freetown component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions. The parent material consists of woody

organic material. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is very high. This soil is rarely flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Natchaug (5%)

Generated brief soil descriptions are created for major components. The Natchaug soil is a minor component.

Component: Timakwa (5%)

Generated brief soil descriptions are created for major components. The Timakwa soil is a minor component.

Component: Whitman (3%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Component: Maybid (2%)

Generated brief soil descriptions are created for major components. The Maybid soil is a minor component.

Component: Saco (2%)

Generated brief soil descriptions are created for major components. The Saco soil is a minor component.

Component: Scarboro (2%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Menlo (1%)

Generated brief soil descriptions are created for major components. The Menlo soil is a minor component.

Map Unit: 38C—Hinckley gravelly sandy loam, 3 to 15 percent slopes

Component: Hinckley (80%)

The Hinckley component makes up 80 percent of the map unit. Slopes are 3 to 15 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys, eskers on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Merrimac (5%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Windsor (5%)

Generated brief soil descriptions are created for major components. The Windsor soil is a minor component.

Component: Agawam (3%)

Generated brief soil descriptions are created for major components. The Agawam soil is a minor component.

Component: Sudbury (2%)

Generated brief soil descriptions are created for major components. The Sudbury soil is a minor component.

Component: Scarboro (1%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Unnamed, gravelly loamy sand surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, gravelly silt loam solum (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Walpole (1%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Map Unit: 45B—Woodbridge fine sandy loam, 3 to 8 percent slopes

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 47C—Woodbridge fine sandy loam, 2 to 15 percent slopes, extremely stony

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 2 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 73C—Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky

Component: Charlton (45%)

The Charlton component makes up 45 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Chatfield (30%)

The Chatfield component makes up 30 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, ridges, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to

a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Rock outcrop (6%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, red parent material (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, sandy subsoil (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4

percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, less sloping (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, stony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 86C—Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 3 to 15 percent. This component is on drumlins on uplands, till plains on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Woodbridge (4%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, nonstony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 86D—Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 15 to 35 percent. This component is on till plains on uplands, hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 15 to 35 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available

water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Woodbridge (4%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, stony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 108—Saco silt loam

Component: Saco (80%)

The Saco component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains. The parent material consists of coarse-silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is

moderately high. Available water to a depth of 60 inches is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

Component: Lim (5%)

Generated brief soil descriptions are created for major components. The Lim soil is a minor component.

Component: Rippowam (3%)

Generated brief soil descriptions are created for major components. The Rippowam soil is a minor component.

Component: Winooski (3%)

Generated brief soil descriptions are created for major components. The Winooski soil is a minor component.

Component: Bash (2%)

Generated brief soil descriptions are created for major components. The Bash soil is a minor component.

Component: Hadley (2%)

Generated brief soil descriptions are created for major components. The Hadley soil is a minor component.

Component: Limerick (2%)

Generated brief soil descriptions are created for major components. The Limerick soil is a minor component.

Map Unit: 306—Udorthents-Urban land complex

Component: Udorthents (50%)

The Udorthents component makes up 50 percent of the map unit. Slopes are 0 to 25 percent. This component is on urban land. The parent material consists of drift. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 59 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (35%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Unnamed, undisturbed soils (8%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Udorthents, wet substratum (5%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Component: Rock outcrop (2%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Map Unit: 307—Urban land

Component: Urban land (80%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Udorthents, wet substratum (10%)

Generated brief soil descriptions are created for major components. The Udorthents soil is a minor component.

Component: Unnamed, undisturbed soils (10%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Alternate Site 3

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

State of Connecticut

Alternate Site 3 - Oxford, CT

May 25, 2010

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

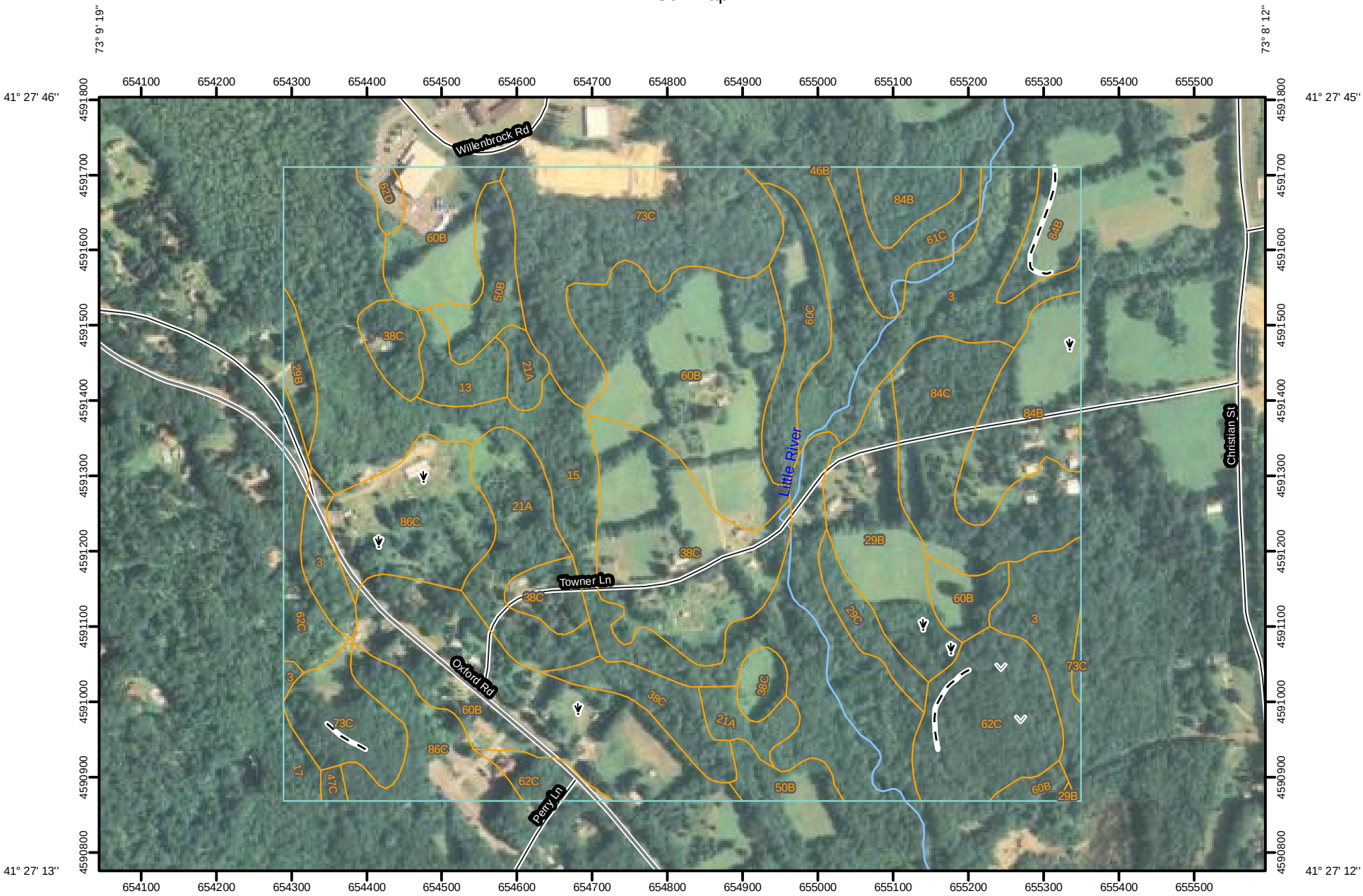
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:7,360 if printed on A size (8.5" x 11") sheet.

N

Meters: 0, 100, 200, 400, 600

Feet: 0, 400, 800, 1,600, 2,400

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:7,360 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 7, Dec 3, 2009

Date(s) aerial images were photographed: 8/14/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

State of Connecticut (CT600)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	20.3	9.2%
13	Walpole sandy loam	2.3	1.1%
15	Scarboro muck	31.8	14.4%
17	Timakwa and Natchaug soils	1.0	0.4%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	9.6	4.4%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	9.6	4.4%
29C	Agawam fine sandy loam, 8 to 15 percent slopes	2.0	0.9%
38C	Hinckley gravelly sandy loam, 3 to 15 percent slopes	21.1	9.6%
46B	Woodbridge fine sandy loam, 2 to 8 percent slopes, very stony	0.0	0.0%
47C	Woodbridge fine sandy loam, 2 to 15 percent slopes, extremely stony	0.3	0.2%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	5.2	2.4%
60B	Canton and Charlton soils, 3 to 8 percent slopes	38.6	17.5%
60C	Canton and Charlton soils, 8 to 15 percent slopes	4.7	2.2%
61C	Canton and Charlton soils, 8 to 15 percent slopes, very stony	4.0	1.8%
62C	Canton and Charlton soils, 3 to 15 percent slopes, extremely stony	13.4	6.0%
62D	Canton and Charlton soils, 15 to 35 percent slopes, extremely stony	0.9	0.4%
73C	Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky	19.5	8.9%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	12.6	5.7%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	10.7	4.8%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	13.0	5.9%
Totals for Area of Interest		**220.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

State of Connecticut

Map Unit: 3—Ridgebury, Leicester, and Whitman soils, extremely stony

Component: Ridgebury (40%)

The Ridgebury component makes up 40 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Leicester (35%)

The Leicester component makes up 35 percent of the map unit. Slopes are 0 to 5 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Whitman (15%)

The Whitman component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions on uplands, drainageways on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 12 to 20 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 60 percent. Nonirrigated land capability classification is 7s. This soil meets hydric criteria.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, frequently flooded (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, steep slopes (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Woodbridge (2%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Unnamed, nonstony (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, silt loam surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 13—Walpole sandy loam

Component: Walpole (80%)

The Walpole component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions on terraces, drainageways on terraces, depressions on outwash plains, drainageways on outwash plains. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Hinckley (5%)

Generated brief soil descriptions are created for major components. The Hinckley soil is a minor component.

Component: Merrimac (5%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Sudbury (3%)

Generated brief soil descriptions are created for major components. The Sudbury soil is a minor component.

Component: Ninigret (2%)

Generated brief soil descriptions are created for major components. The Ninigret soil is a minor component.

Component: Raypol (2%)

Generated brief soil descriptions are created for major components. The Raypol soil is a minor component.

Component: Scarboro (2%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Raynham (1%)

Generated brief soil descriptions are created for major components. The Raynham soil is a minor component.

Map Unit: 15—Scarboro muck

Component: Scarboro (80%)

The Scarboro component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on drainageways on outwash plains, terraces on outwash plains, depressions on outwash plains. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is occasionally ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, June, October, November, December. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Catden (3%)

Generated brief soil descriptions are created for major components. The Catden soil is a minor component.

Component: Natchaug (3%)

Generated brief soil descriptions are created for major components. The Natchaug soil is a minor component.

Component: Raypol (3%)

Generated brief soil descriptions are created for major components. The Raypol soil is a minor component.

Component: Walpole (3%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Component: Sudbury (2%)

Generated brief soil descriptions are created for major components. The Sudbury soil is a minor component.

Component: Timakwa (2%)

Generated brief soil descriptions are created for major components. The Timakwa soil is a minor component.

Component: Windsor (2%)

Generated brief soil descriptions are created for major components. The Windsor soil is a minor component.

Component: Unnamed, sandy loam surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, silt loam surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 17—Timakwa and Natchaug soils

Component: Timakwa (45%)

The Timakwa component makes up 45 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions. The parent material consists of woody organic material over sandy and gravelly glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is high. This soil is rarely flooded. It is frequently ponded. A seasonal zone of water saturation is at 4 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Natchaug (40%)

The Natchaug component makes up 40 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions. The parent material consists of woody organic material over loamy alluvium and/or loamy glaciofluvial deposits and/or loamy till. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high. Shrink-swell potential is moderate. This soil is rarely flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, May, June, July, August, September, October, November, December. Organic matter content in the surface horizon is about 65 percent. Nonirrigated land capability classification is 5w. This soil meets hydric criteria.

Component: Catden (3%)

Generated brief soil descriptions are created for major components. The Catden soil is a minor component.

Component: Maybid (3%)

Generated brief soil descriptions are created for major components. The Maybid soil is a minor component.

Component: Saco (3%)

Generated brief soil descriptions are created for major components. The Saco soil is a minor component.

Component: Menlo (2%)

Generated brief soil descriptions are created for major components. The Menlo soil is a minor component.

Component: Scarboro (2%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Whitman (2%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 21A—Ninigret and Tisbury soils, 0 to 5 percent slopes

Component: Ninigret (60%)

The Ninigret component makes up 60 percent of the map unit. Slopes are 0 to 5 percent. This component is on terraces on valleys, outwash plains on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, September, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Tisbury (25%)

The Tisbury component makes up 25 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-silty eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, September, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Agawam (3%)

Generated brief soil descriptions are created for major components. The Agawam soil is a minor component.

Component: Merrimac (3%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Enfield (2%)

Generated brief soil descriptions are created for major components. The Enfield soil is a minor component.

Component: Haven (2%)

Generated brief soil descriptions are created for major components. The Haven soil is a minor component.

Component: Sudbury (2%)

Generated brief soil descriptions are created for major components. The Sudbury soil is a minor component.

Component: Raypol (1%)

Generated brief soil descriptions are created for major components. The Raypol soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Walpole (1%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Map Unit: 29B—Agawam fine sandy loam, 3 to 8 percent slopes

Component: Agawam (80%)

The Agawam component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Hinckley (5%)

Generated brief soil descriptions are created for major components. The Hinckley soil is a minor component.

Component: Merrimac (5%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Ninigret (3%)

Generated brief soil descriptions are created for major components. The Ninigret soil is a minor component.

Component: Walpole (3%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Component: Scarboro (2%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Unnamed, red parent material (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 29C—Agawam fine sandy loam, 8 to 15 percent slopes

Component: Agawam (80%)

The Agawam component makes up 80 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash plains on valleys, terraces on valleys. The parent material consists of coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Hinckley (5%)

Generated brief soil descriptions are created for major components. The Hinckley soil is a minor component.

Component: Merrimac (5%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Ninigret (3%)

Generated brief soil descriptions are created for major components. The Ninigret soil is a minor component.

Component: Walpole (3%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Component: Scarboro (2%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Unnamed, red parent material (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 38C—Hinckley gravelly sandy loam, 3 to 15 percent slopes

Component: Hinckley (80%)

The Hinckley component makes up 80 percent of the map unit. Slopes are 3 to 15 percent. This component is on kames on valleys, outwash plains on valleys, terraces on valleys, eskers on valleys. The parent material consists of sandy and gravelly glaciofluvial deposits derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Merrimac (5%)

Generated brief soil descriptions are created for major components. The Merrimac soil is a minor component.

Component: Windsor (5%)

Generated brief soil descriptions are created for major components. The Windsor soil is a minor component.

Component: Agawam (3%)

Generated brief soil descriptions are created for major components. The Agawam soil is a minor component.

Component: Sudbury (2%)

Generated brief soil descriptions are created for major components. The Sudbury soil is a minor component.

Component: Scarboro (1%)

Generated brief soil descriptions are created for major components. The Scarboro soil is a minor component.

Component: Unnamed, gravelly loamy sand surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, gravelly silt loam solum (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Walpole (1%)

Generated brief soil descriptions are created for major components. The Walpole soil is a minor component.

Map Unit: 46B—Woodbridge fine sandy loam, 2 to 8 percent slopes, very stony

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 2 to 8 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 47C—Woodbridge fine sandy loam, 2 to 15 percent slopes, extremely stony

Component: Woodbridge (80%)

The Woodbridge component makes up 80 percent of the map unit. Slopes are 2 to 15 percent. This component is on drumlins on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 4

percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Paxton (5%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Montauk (3%)

Generated brief soil descriptions are created for major components. The Montauk soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Leicester (2%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (2%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, loamy substratum (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Georgia (1%)

Generated brief soil descriptions are created for major components. The Georgia soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Whitman (1%)

Generated brief soil descriptions are created for major components. The Whitman soil is a minor component.

Map Unit: 50B—Sutton fine sandy loam, 3 to 8 percent slopes

Component: Sutton (80%)

The Sutton component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on drainageways on uplands, depressions on uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Charlton (5%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Canton (4%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Leicester (3%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Paxton (3%)

Generated brief soil descriptions are created for major components. The Paxton soil is a minor component.

Component: Rainbow (2%)

Generated brief soil descriptions are created for major components. The Rainbow soil is a minor component.

Component: Woodbridge (2%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Narragansett (1%)

Generated brief soil descriptions are created for major components. The Narragansett soil is a minor component.

Map Unit: 60B—Canton and Charlton soils, 3 to 8 percent slopes

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Hollis (3%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Unnamed, silt loam surface (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 60C—Canton and Charlton soils, 8 to 15 percent slopes

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 8 to 15 percent. This component is on uplands, hills. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 61C—Canton and Charlton soils, 8 to 15 percent slopes, very stony

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 8 to 15 percent. This component is on uplands, hills. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 62C—Canton and Charlton soils, 3 to 15 percent slopes, extremely stony

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage

class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 62D—Canton and Charlton soils, 15 to 35 percent slopes, extremely stony

Component: Canton (45%)

The Canton component makes up 45 percent of the map unit. Slopes are 15 to 35 percent. This component is on hills on uplands. The parent material consists of coarse-loamy over sandy and gravelly melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72

inches. Organic matter content in the surface horizon is about 70 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Charlton (35%)

The Charlton component makes up 35 percent of the map unit. Slopes are 15 to 35 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Chatfield (5%)

Generated brief soil descriptions are created for major components. The Chatfield soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Map Unit: 73C—Charlton-Chatfield complex, 3 to 15 percent slopes, very rocky

Component: Charlton (45%)

The Charlton component makes up 45 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Chatfield (30%)

The Chatfield component makes up 30 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills, ridges, uplands. The parent material consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, bedrock (lithic), is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 75 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Rock outcrop (6%)

Generated brief soil descriptions are created for major components. The Rock outcrop soil is a minor component.

Component: Hollis (5%)

Generated brief soil descriptions are created for major components. The Hollis soil is a minor component.

Component: Leicester (5%)

Generated brief soil descriptions are created for major components. The Leicester soil is a minor component.

Component: Sutton (5%)

Generated brief soil descriptions are created for major components. The Sutton soil is a minor component.

Component: Unnamed, red parent material (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, sandy subsoil (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84B—Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 3 to 8 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material,

is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, less sloping (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, stony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 84C—Paxton and Montauk fine sandy loams, 8 to 15 percent slopes

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 8 to 15 percent. This component is on drumlins on uplands, hills on uplands, till plains on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Woodbridge (3%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Unnamed, stony surface (2%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Map Unit: 86C—Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony

Component: Paxton (55%)

The Paxton component makes up 55 percent of the map unit. Slopes are 3 to 15 percent. This component is on drumlins on uplands, till plains on uplands, hills on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or schist and/or gneiss. Depth to a root restrictive layer, densic material, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Montauk (30%)

The Montauk component makes up 30 percent of the map unit. Slopes are 3 to 15 percent. This component is on hills on uplands, drumlins on uplands. The parent material consists of coarse-loamy lodgment till derived from granite and/or coarse-

loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from gneiss and/or coarse-loamy lodgment till derived from granite. Depth to a root restrictive layer, densic material, is 20 to 38 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Component: Woodbridge (4%)

Generated brief soil descriptions are created for major components. The Woodbridge soil is a minor component.

Component: Charlton (3%)

Generated brief soil descriptions are created for major components. The Charlton soil is a minor component.

Component: Ridgebury (3%)

Generated brief soil descriptions are created for major components. The Ridgebury soil is a minor component.

Component: Canton (2%)

Generated brief soil descriptions are created for major components. The Canton soil is a minor component.

Component: Stockbridge (1%)

Generated brief soil descriptions are created for major components. The Stockbridge soil is a minor component.

Component: Unnamed, nonstony surface (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Component: Unnamed, red parent material (1%)

Generated brief soil descriptions are created for major components. The Unnamed soil is a minor component.

Attachment F

Summary of Qualifications of Wetland Delineation Team

Summary of Qualifications of Wetland Delineation Team

Michael D. Howard – Mr. Howard is a Principal and Manager of the Ecological Services group at Epsilon. He has nearly 18 years experience with wetland delineations (using state and Federal methodologies), Corps Jurisdictional Determinations, wetlands ecology, wetland replication and restoration, wildlife biology, natural resource inventories, impact statement preparation, and environmental regulatory analysis. Mr. Howard successfully completed the U.S. Army Corps of Engineers Wetland Delineation Certification Training Program in 1995. Mr. Howard earned a degree in Forestry and Wildlife Management from the University of Massachusetts at Amherst. He is a Professional Wetlands Scientist (Cert. #1354) and a New Hampshire state-Certified Wetlands Scientist (NH Cert. #00223).

James McManus – Mr. McManus is a Principal at JMM Wetland Consulting Services, LLC based out of Newtown, CT. He is a Registered Certified Professional Soil Scientist (CPSS #15226) in the State of Connecticut with primary expertise in wetland and hydric soil assessment and delineations. Mr. McManus holds a B.S. degree in Agronomy and an M.S. degree in Plant and Soil Science from the University of Connecticut. He has conducted over 2,000 wetland delineations and assessments throughout New England as well as in many other states throughout the United States.

Sean Hale - Mr. Hale is a Wetland Scientist in the Ecological Sciences group at Epsilon with over 10 years of experience in wetlands ecology, resource management, habitat and rare species inventories, plant identification and wetland restoration. He has conducted hundreds of wetland delineations, utilizing federal and state methodologies. Mr. Hale has extensive experience mapping wetlands with a GPS unit to sub-meter accuracy as well as the preparation of GIS-based graphics depicting the limits of delineated wetlands. In addition to his experience in private industry, Mr. Hale previously worked for the National Wetlands Inventory Program, the U.S. Fish and Wildlife Service, and the U.S. Forest Service.

Appendix F

Economic Impact Forecast System

Executive Orders – Environmental Justice and Protection of Children

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* was enacted to ensure fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, or local programs and policies.

Guidance on how to implement EO 12898 and conduct an Environmental Justice analysis has been issued by the President's Council on Environmental Quality (CEQ, 1997). The CEQ Guidance state that "minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis." The CEQ further adds that "The selection of the appropriate unit of geographical analysis may be a governing body's jurisdiction, a neighborhood, a census tract, or other similar unit that is chosen so as not to artificially dilute or inflate the affected minority population."

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* was signed in 1997 to prioritize the identification and assessment of environmental health and safety risks that may affect children, and to ensure that federal agency policies, programs, activities, and standards address environmental and safety risks to children. These risks are defined as "risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest." This section identifies the distribution of children and locations where the number of children in the affected area may be proportionately high (schools, childcare centers, etc.).

Economic Impacts of Construction

Implementation of the Preferred Alternative, Alternative 2, and Alternative 3 include construction of a new AFRC to replace existing AFRCs that are approximately 35 miles of the proposed AFRC. Economic modeling used Fairfield County and New Haven County as the ROI. It utilized construction cost estimates for the project that is currently anticipated to be at construction midpoint in fiscal year 2011. It is anticipated that the large majority of economic effects associated with the proposed construction project would be experienced in the ROI.

TABLE F-1
Economic and Population Data from 2000 U.S. Census
AFRC Environmental Assessment, Newtown, CT

Geographic Area	Total Population in 2000[a]	Estimated Population in 2008	Median Household Income ($)[a]	Population Below Poverty Level[a] (percent)
Danbury	74,848	79,256[b]	53,664	8.0 %
Middlebury	6,451	7,343[b]	70,469	2.7%
Oxford	9,821	12,734[b]	77,126	2.1%
Fairfield County	882,567	895,030[b]	65,249	6.9 %
New Haven County	824,008	846,101	48,834	9.5%
Connecticut	3,405,565	3,501,152[b]	53,935	7.9 %

Sources: [a]USCB, 2000; [b] Connecticut Department of Public Health, 2008, [c] USCB, 2008a

TABLE F-2
Housing Data from 2008 U.S. Census American Community Survey
AFRC Environmental Assessment, Newtown, CT

Geographic Area	Total Housing Units in 2008	Renter Occupied in 2008	Vacant in 2008	For Rent in 2008	Median Gross Rent ($)
Danbury	31,784	11,071	2,686	NA	$1,117
Middlebury	2,531	273	113	NA	$989
Oxford	3,420	299	77	NA	$1,019
Fairfield County	352,042	90,743	28,055	9,209	$1,165
New Haven County	349,835	115,006	27,399	9,574	$987

Sources: USCB, 2008b; City-Data, 2010c
NA – Not Available

TABLE F-3
Race and Ethnicity Data
AFRC Environmental Assessment, Newtown, CT

Race	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Other Race Alone	Two or More Races	Hispanic or Latino[a]
Census Tract 2106 (Preferred Alternative)	70.9%	7.8%	0.3%	7.0%	0.0%	9.7%	4.2%	19.7%
Census Tract 3442 Block Group 1 (Alternative 2)	97.0%	0.1%	0.0%	1.4%	0.0%	0.4%	1.2%	1.3%
Census Tract 3461.02 Block Group 2 (Alternative 3)	98.0%	0.2%	0.3%	0.6%	0.0%	0.2%	0.8%	2.3%
Danbury	76.0%	6.8%	0.3%	5.5%	0.0%	7.6%	4.0%	15.8%
Middlebury[b]	97.1%	0.4%	0.1%	1.3%	0.0%	0.3%	0.9%	1.2%
Oxford[b]	97.7%	0.5%	0.2%	0.7%	0.0%	0.3%	0.6%	1.8%
Fairfield County	79.3%	10.0%	0.2%	3.3%	0.0%	4.7%	2.5%	11.9%
New Haven	79.4%	11.3%	0.2%	2.3%	0.0%	4.5%	2.2%	10.1%
Connecticut	81.6%	9.1%	0.3%	2.4%	0.0%	4.3%	2.2%	9.4%

Source: USCB, 2000
[a] Hispanic: The 2000 Census included a category for Hispanic or Latino. This category is for individuals who classify themselves in one of the specific Hispanic or Latino categories such as “Mexican,” “Puerto Rican,” or “Cuban,“ as well as those who indicate that they are “other Spanish, Hispanic, or Latino.” Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person’s parents or ancestors before arrival in the U.S. People who identify their origin as Spanish, Hispanic, or Latino may be of any race. Therefore, the totals may not add up to 100%.
[b]USCB, 2000 Profile of General Demographic Characteristics for Middlebury and Oxford

TABLE F-4
Poverty Level and Individuals Under the Age of 18
AFRC Environmental Assessment, Newtown, CT

Geographic Area	Total Population	Poverty Level (%)	Individuals Under the Age of 18	Individuals Under the Age of 18 (%)
Census Tract 2106 (Preferred Alternative)	6,185	9.4%	1,373	22.2%
Census Tract 3442 Block Group 1 (Alternative 2)	1,954	1.3%	515	26.4%
Census Tract 3461.02 Block Group 2 (Alternative 3)	2,357	1.3%	649	27.5%
Danbury	74,848	8.0%	16,227	21.7%
Middlebury	6,451	2.7%	1,582	24.5%
Oxford	9,821	2.1%	2,663	27.1%
Fairfield County	882,567	6.9%	226,214	25.6%
New Haven County	824,008	9.5%	201,679	24.5%

TABLE F-4
Poverty Level and Individuals Under the Age of 18
AFRC Environmental Assessment, Newtown, CT

Connecticut	3,405,565	7.9%	841,688	24.7%

Source: USCB, 2000

TABLE F-5
EIFS Model Output for the Primary Alternative
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$165,240,000	0.18%	-6.11% to 12.7%
Direct Income	$6,952,180		
Total Income	$21,273,670	0.05%	-4.67% to 11.86%
Direct Employment	135		
Total Employment	413	0.08%	-3.38% to 3.65%
Local Population	0	0	-0.69 to 1.21%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for detailed EIFS model report.

TABLE F-6
EIFS Model Output for Alternative 2
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$199,260,000	0.56%	-6.43% to 14.75%
Direct Income	$10,452,140		
Total Income	$38,568,400	0.16%	-3.21% to 12.8%
Direct Employment	246		
Total Employment	909	0.2%	-3.62% to 4.34%
Local Population	0	0	-0.25 to 0.95%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for complete EIFS model report.

TABLE F-7
EIFS Model Output for Alternative 2
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$199,260,000	0.56%	-6.43% to 14.75%
Direct Income	$10,452,140		

Total Income	$38,568,400	0.16%	-3.21% to 12.8%
Direct Employment	246		
Total Employment	909	0.2%	-3.62% to 4.34%
Local Population	0	0	-0.25 to 0.95%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for complete EIFS model report.

ECONOMIC IMPACT FORECAST SYSTEM

THE NEED FOR SOCIOECONOMIC IMPACT ASSESSMENT

Assessing socioeconomic impacts that result from Federal agency actions can be one of the more controversial issues related to the relocation of an installation. The economic and social well-being of a local community can be dependent upon the activities of an installation. The objective of a socioeconomic analysis of Federal agency actions is an open, realistic, and documented assessment of the potential effects.

The requirement to assess socioeconomic impacts in environmental assessments (EAs) or environmental impact statements (EISs) has been a source of legal discussion since the passage of the National Environmental Policy Act (NEPA). Although NEPA is predominately oriented toward the biophysical environment, court decisions have supported the need for analyzing socioeconomic impacts when they are accompanied by biophysical impacts.

THE ECONOMIC IMPACT FORECAST SYSTEM

The U.S. Army developed the Economic Impact Forecast System (EIFS) with the assistance of many academic and professional economists and regional scientists to address the economic impacts pursuant to NEPA and to measure the significance of the impacts. EIFS is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS, in its current form, exists as a World Wide Web-based application. The application resides on a Web server hosted by the U.S. Army Corps of Engineers, Mobile District. The EIFS model is available to U.S. government employees, contractors, and other people who have an approved login and password. U.S. Army Corps of Engineers planners, analysts and their contractors are authorized to access the EIFS application for the purpose of preparing Base Realignment and Closure Act (BRAC) National Environmental Policy Act (NEPA) documentation..

As currently configured, EIFS provides:

- Selected statistics about the socioeconomic characteristics of any county or any multi-county area in the United States, including metropolitan statistical areas (MSA) and planning commission regions.
- An analytical process for estimating the magnitude and significance of potential socioeconomic effects of proposed Federal agency activities in these areas.

THE EIFS IMPACT MODEL

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used for estimating the impacts resulting from U.S. Army-related changes in local expenditures and employment. In calculating the multipliers, EIFS uses the economic base model approach that relies on the ratio of total economic activity to “basic” economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services

outside the Region of Influence (ROI) (in this case Fairfield County) or by Federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This technique is especially appropriate for estimating "aggregate" impacts and makes the economic base model ideal for the EA / EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its basic sector; for example, a dollar increase in local expenditures due to an expansion of a military installation. EIFS estimates its multipliers using a "location quotient" approach, which is based on the concentration of industries within the region relative to the industrial concentrations for the nation.

The EIFS model produces output that includes:

- Change in total sales by local businesses
- Change in total income
- Change in total employment
- Change in total population
- The significance of these changes

THE SIGNIFICANCE OF SOCIOECONOMIC IMPACTS

Once model projections are obtained, the rational threshold values (RTV) enable the user to evaluate the significance of the impacts. This analytical tool shows the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, employment, income, and population. The evaluation identifies a range of positive and negative changes, within which a project can affect the local economy without creating a significant impact.

The techniques have two major strengths: (1) they are specific to the region under analysis and (2) they are based on actual historical time series data for the defined region. The use of the EIFS impact model in combination with the RTV has proven very successful in addressing perceived socioeconomic impacts. The EIFS model and the significance-measuring techniques are theoretically sound and have been reviewed on numerous occasions.

RTVs are positive and negative percent changes that establish an acceptable range around the maximum historic percentage fluctuations in the ROI. The average yearly decreases or increases in the ROI are obtained by analyzing regional data for the last 16 to 19 years, depending on data availability. For each variable (sales volume, employment, income, and population), the current time-series data available from the U.S. Bureau of Economic Analysis (BEA) for the ROI is used. The average annual change is calculated as the difference between the first and last observations in the particular data set, divided by the number of years in the time series. The maximum percent positive and negative deviations from that average are the basis for the RTVs.

Negative RTVs are percentages of the maximum negative deviations. These percentages are weighted to reflect the severity of potential impacts on individuals. Population changes are the most heavily weighted, at 50 percent, followed by employment and personal income

changes (67 percent); changes in sales volume receive the least weight (75 percent). Using population as an example, if the greatest historic negative deviation from the annual average population change in the ROI was -0.952 percent, a population decrease of more than half of that (-0.476 percent) would be considered significant.

Positive RTVs represent the maximum positive historical fluctuation in the ROI, because of the generally positive connotations of economic growth. If the maximum historic positive deviation from annual average employment growth was 2.368 percent, an increase of more than 2.368 percent would be considered significant in the ROI.

Definitions

Change in Local Expenditures: Dollar value of expenditures for all services and supplies that are related to the action. This figure is entered by the user when the local purchases are not known. The system then computes an estimated value for the local purchases. Items supplied by General Services Administration (GSA) or Defense Logistics Agency (DLA) are not normally included in expenditures. A negative value is entered for a decrease in activity and a positive value is used if there is an expansion.

Change in Civilian Employment: Number of civilian personnel affected by the action. These are separated or newly added civilian employees. Personnel shifted from one position to another within the same geographic area should not be included. Enter a positive number for an increase or a negative number for a decrease.

Average Income of Affected Civilian Personnel: Average annual gross (before tax) income of civilian personnel affected by the action. Average income figures are entered as positive numbers. Income, in EIFS, is a broader concept than just the wages and salaries of employees. Consideration should also be given, if possible, to income earned from second jobs, working dependents, unearned income (i.e. interest, dividends, and rents), etc.

Percent of Civilians Expected To Relocate: The actual value will vary depending on work force composition and local availability of labor in the required skill categories. If the employees affected generally are clerical, professional, or highly skilled technical personnel, then it is likely that some of these workers will move to or from other geographic areas. If the action involves a large number of personnel, the proportion of those relocating is also likely to increase.

Employment Multiplier: The export-employment multiplier based on the location quotient methodology.

Income Multiplier: The export-income multiplier based on the location quotient methodology.

Sales Volume – Direct: Direct change in business activity attributable to the Federal action. This represents the change in sales volume at local retail and wholesale service establishments where civilian personnel spend their wages and salaries and where local procurements are made. Housing expenditures are also included in this variable.

Sales Volume – Induced: Induced change in local business volume due to the Federal action. Defined as the difference between total change and direct change of local business volume.

Sales Volume – Total: Total change in local business volume due to the Federal action. Business volume is defined as local business activity or sales and is the sum of total retail and wholesale trade sales, total selected service receipts, and value added by manufacturing.

Employment – Direct: Direct change in local employment due to the Federal action. These are establishments that are initially affected by the Federal action.

Employment – Total: Total change in local employment due to the Federal action. This not only includes the direct and secondary changes in local employment, but also includes those Federal personnel who are initially affected by the Federal action.

Income – Direct: Direct change in local wages and salaries due to the Federal action. This is assumed to be earnings of the employees in local retail, wholesale, and service establishments that are initially affected by the Federal action.

Income – Total (place of work): Total change in local wages and salaries earned in the area due to the Federal action. This is the sum of the direct and secondary changes in wages and salaries plus the income of the Federal personnel affected by the Federal action.

Income - Total (place of residence): Total change in local personal income of residents due to the Federal action. This not only includes the direct and secondary changes in local personal income, adjusted for commuting patterns, but also includes the income of the Federal personnel initially affected by the Federal action.

Impact Methodology

The initial step in estimating socioeconomic effects is to characterize aspects of the construction and operational phases of the Preferred Alternative. With the aid of economic impact modeling techniques (described below), the economic effects of each aspect of the Preferred Alternative are translated into measures such as jobs and income.

The primary catalyst for changes to socioeconomic resources is a change in economic activity, i.e., industrial output (value of goods and services), employment, and income. Changes in employment have the potential to affect population, housing, and associated community services and infrastructure.

A distinction is made between direct effects and secondary effects, the latter encompassing both indirect and induced effects.

- Direct effects are defined as changes in expenditures on goods and services directly related to construction and operation. For example, an increase in the final demand for construction inputs such as concrete block and brick of $25 million will cause the concrete block and brick manufacturing sector to increase output by $25 million worth of concrete block and brick.
- Indirect effects are defined as backward linkages through expenditures on intermediate goods or services required by the direct industry in order to increase output. These include operation labor and other inputs. For example, $25 million worth of additional concrete block and brick would require increased output by the cement producing

industry (to produce additional cement) and aggregate industry (to produce additional sand / gravel).

- Induced effects are defined as forward linkages derived from employees (both direct and indirect) spending wages within a region. For example, if additional employees were hired to work in the industries supporting and providing inputs to the construction sector, their personal consumption expenditures will induce employment.

The differentiation that is made between direct, indirect, and induced effects contributes to the concept of the "economic multiplier." The larger and more highly urbanized the area, the more complex and integrated the economy is likely to be. Thus, more of the additional economic activity will likely occur within the area and increase the size of the multiplier.

EIFS Modeling Results

TABLE 1
EIFS Model Output for the Preferred Alternative
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$165,240,000	0.18%	-6.11% to 12.7%
Direct Income	$6,952,180		
Total Income	$21,273,670	0.05%	-4.67% to 11.86%
Direct Employment	135		
Total Employment	413	0.08%	-3.38% to 3.65%
Local Population	0	0	-0.69 to 1.21%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for detailed EIFS model report.

TABLE 2
EIFS Model Output for Alternative 2
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$199,260,000	0.56%	-6.43% to 14.75%
Direct Income	$10,452,140		
Total Income	$38,568,400	0.16%	-3.21% to 12.8%
Direct Employment	246		
Total Employment	909	0.2%	-3.62% to 4.34%
Local Population	0	0	-0.25 to 0.95%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for complete EIFS model report.

TABLE 3
EIFS Model Output for Alternative 2
AFRC Environmental Assessment, Newtown, CT

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	$54,000,000		
Total Sales Volume	$199,260,000	0.56%	-6.43% to 14.75%
Direct Income	$10,452,140		
Total Income	$38,568,400	0.16%	-3.21% to 12.8%
Direct Employment	246		
Total Employment	909	0.2%	-3.62% to 4.34%
Local Population	0	0	-0.25 to 0.95%

EIFS model results are based on peak construction year (2011) when the majority of construction is expected to take place. See Appendix F for complete EIFS model report.

Economic Impact Forecast System
US Army Corps of Engineers
Mobile District

EIFS REPORT

PROJECT NAME

Newton BRAC EA Construction

STUDY AREA

09001 Fairfield, CT

FORECAST INPUT

Change In Local Expenditures	$54,000,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	3.06	
Income Multiplier	3.06	
Sales Volume - Direct	$54,000,000	
Sales Volume - Induced	$111,240,000	
Sales Volume - Total	$165,240,000	0.18%
Income - Direct	$6,952,180	
Income - Induced)	$14,321,490	
Income - Total(place of work)	$21,273,670	0.05%
Employment - Direct	135	
Employment - Induced	278	
Employment - Total	413	0.08%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	12.7 %	11.86 %	3.65 %	1.21 %
Negative RTV	-6.11 %	-4.67 %	-3.38 %	-0.69 %

******** End of Report ********

Economic Impact Forecast System
US Army Corps of Engineers
Mobile District

EIFS REPORT

PROJECT NAME

Newtown BRAC EA Construction - New Haven

STUDY AREA

09009 New Haven, CT

FORECAST INPUT

Change In Local Expenditures	$54,000,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Militart Living On-post	0

FORECAST OUTPUT

Employment Multiplier	3.69	
Income Multiplier	3.69	
Sales Volume - Direct	$54,000,000	
Sales Volume - Induced	$145,260,000	
Sales Volume - Total	$199,260,000	0.56%
Income - Direct	$10,452,140	
Income - Induced)	$28,116,260	
Income - Total(place of work)	$38,568,400	0.16%
Employment - Direct	246	
Employment - Induced	663	
Employment - Total	909	0.2%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	14.75 %	12.8 %	4.34 %	0.95 %
Negative RTV	-6.43 %	-3.21 %	-3.62 %	-0.25 %

******** End of Report ********

Appendix G

Comments and Comment Responses

Newtown CT AFRC EA Comments and Responses

1.0 Executive Summary of Comments Received on the Environmental Assessment

1.1 Introduction

During the 30-day public comment period for the Environmental Assessment and draft Finding of No Significant Impact from Wednesday August 25 to Friday September 24, 2010, the Army received 47 letters from individuals, organizations, and State and local agencies. Letters were received from the CT Department of Environmental Protection, five City of Danbury offices, two Homeowners Associations, and one organization (the Friends of Lee Farm). The remaining letters were from individuals.

Seven commentors were in favor of the project, citing economic benefit, prevention of high-density housing development, support of the United States military mission, and the presence of the Army as a good neighbor as major reasons to support the project.

Thirty-seven commentors were opposed to the project, citing concerns over the location and development of the two parcels, consisting of 30 total acres, described in the Preferred Alternative. Their concerns included the analysis of alternative sites and potential impacts to open space, natural and cultural resources, the community and nearby residences, traffic and noise, utilities, air quality, stormwater, and wetlands.

1.2 Summary of the Army responses to comments.

1.2.1. Proposed Action. The Army has decided to reduce the size and scope of the Proposed Action. This will reduce impacts on open space, traffic, noise, and other areas of environmental concern identified during the 30-day public comment period.

The original Proposed Action analyzed in the EA called for the construction and operation of a joint-use 1,000-member AFRC on 30 acres of land to support:

- Eight USAR and two Connecticut Army Reserve National Guard (ARNG) units being relocated under the 2005 Defense BRAC Commission's recommendation
- Seven new USAR units being established under the Grow The Army (GTA) initiative

The Army has decided to not locate the 7 GTA units at Danbury, and plans instead to initiate NEPA analysis to determine the location of those units at a future date.

The Proposed Action as modified is to construct and operate a 400-member AFRC on 18 acres of land which will house only the 8 USAR and 2 ARNG units designated in the BRAC Commission recommendations (See Appendix G, Figure G-1). Although none of the impacts of the EA's Proposed Action were considered to be significant, this reduced size and scope is an environmentally positive revision.

1.2.2. Analysis of Alternative Sites.
The Army identified 17 potential sites in the vicinity of Newtown, Connecticut. This included sites identified in Danbury, Waterbury, New Milford, Oxford, Middlebury, Monroe, and Ansonia. The Army received assistance for sites within Danbury from the City of Danbury. The Army eliminated 14 sites that did not meet the Army's stated objectives. The EA analyzed 3 sites in detail. Two of these sites had environmental, real estate, and engineering constraints that the preferred site does not incur. The Army's Preferred Alternative in the EA was to construct and operate a 30-acre AFRC on 2 parcels of land known as the Lee Farm.

In December 2010, the City of Danbury submitted six additional parcels for review by the Army as alternate sites for the AFRC. A Site Selection Team visited each of the six parcels and after considerable review determined that these sites were unsuitable to meet the needs of the Army. Considerations included, but were not limited to, parcel size, location, acquisition capability, Anti-Terrorism and Force Protection requirements, military functionality, access for military vehicles, traffic and transportation issues, potential site contamination from previous industrial use, constructability issues, encroachment into federally-protected species habitats, potential encroachment into the 100-year floodplain, and impacts to wetland and waters of the U.S.

Subsequently, the Army modified the Proposed Action in the FNSI. Because the Proposed Action has been modified, the Preferred Alternative has been modified as follows:

- Parcel A (12 acres) of the Lee Farm will be left undeveloped and remain in private ownership.
- Parcel C (18 acres) will be the site for the smaller AFRC.

1.2.3. Open space. To provide for more open space, the Army would develop only one of the two parcels originally evaluated in the EA for the Preferred Alternative. The Army will construct the AFRC on the 18-acre Parcel C, located south of Wooster Heights Road. The 12-acre Parcel A, located north of Wooster Heights Road, would not be purchased by the Army. This parcel together with the remainder of the Lee Farm property would remain in private ownership. The Army has no plans to expand the AFRC.

Construction and operation of an AFRC at the preferred site would convert 18 acres of a primarily agriculture field to a campus-type training building and associated grounds and a vehicle maintenance area. Parcel C is zoned for industrial development. The rest of the Lee Farm property (280+ acres) would remain undeveloped. The Lee Farm borders about 1,500 acres of undeveloped land to the south.

1.2.4. Natural Resources. No federal- or state-listed endangered or Threatened Species are known to occur on this site. The US Fish and Wildlife Service and the Connecticut Department agree that there will be no adverse effects on federal- or state-listed species. Although the federal- and state-listed bog turtle does not occur on the property, it occurs in the region; therefore, the design of the AFRC maintains a 50-foot upland buffer around the wetlands to protect potential bog-turtle habitat.

Wildlife species such as deer, squirrels, opossums, raccoons, rodents, reptiles, insects, and migratory birds use open field and wooded habitats on Parcel C. Any animals displaced by construction of the AFRC would relocate to other suitable similar habitat on the Lee Farm property and other nearby habitat. The Army would not clear vegetation during the migratory bird nesting season without a preconstruction survey for nesting birds that indicates no nesting birds are present. If nesting migratory birds are found during the preconstruction survey, those areas of the containing nesting birds would not be disturbed or cleared until the young have naturally vacated the nest.

1.2.5. Cultural Resources. The Army completed Phase 1 Cultural Resources Surveys in May 2010 for each of the three alternative sites considered in the EA: Danbury, Oxford, and Middlebury. Project planning coordination letters requesting information about traditional cultural properties or sites of particular interest were sent to Native American organizations that may have interest in the project areas on May 18, 2010. One response was received requesting a copy of the Final EA and FNSI. On August 10, 2010, the Army provided the Connecticut State Historic Preservation Officer (SHPO) with its determination that no historic resources will be affected by the Proposed Action and a copy of the Phase 1 Cultural Resource Survey (the "Survey"). After waiting 30 days for a response, the Army chose to proceed with the Proposed Action in accordance with 36 CFR 800.3(c)(4).

1.2.6. Local community and nearby residences. The general appearance of the AFRC Training Building would reflect an office or classroom building that compliments the local and regional architecture. Noise levels would be similar to those of an office building. The operation, noise levels,

and appearance of the Organizational Maintenance Shop (OMS) would be similar to an automobile service station or garage, except there would be no signs. Setbacks, grading, existing tree lines, and landscaping would help to screen the AFRC from the view of any passerby and reduce noise. Nighttime lighting would be the minimum illumination required for security, directed into the property, and shielded to minimize offsite light pollution. The construction and operation of the AFRC is expected to have a minor beneficial economic impact on the community. The Army's Proposed Action reduces the amount of land needed for the AFRC and lessens impacts on the local community, its tax base, and nearby residences.

1.2.7. Traffic and noise. Since there are no aviation units assigned to the AFRC, the AFRC would not use the Danbury Airport for training. Consequently, there would be no significant impact on air traffic or noise. Commuters traveling to and from the AFRC in privately owned vehicles would not significantly affect traffic volume or noise levels on State Route 7, Wooster Heights Road/Miry Brook Road. Most commuters will approach the AFRC from the West, turning right to enter and left to exit, minimizing traffic backups from left-hand turns. Onsite vehicle operation would be limited to movement between parking, fueling, and maintenance areas and repositioning trailers. Vehicles would be operated intermittently for short periods on weekends to accomplish these tasks. Convoys of military vehicles would be brief events (the time it takes to enter or leave the AFRC) occurring approximately 14 times a year. Temporary convoy noise would be comparable to truck traffic on State Route 7. Air traffic at the nearby Danbury airport is louder and occurs more frequently.

1.2.8. Utilities. The Army has contacted the City of Danbury Engineering Department (water and sewage), Yankee Gas, and Connecticut Light and Power. All indicate they have sufficient capacity to provide service to the AFRC.

1.2.9. Air quality. Estimated air emissions from the construction and operation of the AFRC, including emissions from commuter traffic and the operation of military vehicles will not have a significant impact on air quality and do not require a Conformity Determination. Air emission calculations and a Record of Non-Applicability (RONA) may be found at Appendix D in the EA.

1.2.10. Stormwater. Prior to construction, the Army will obtain a Stormwater and Dewatering Wastewaters from Construction Activities general construction permit (DEP-PERD-GP-015) from the State of Connecticut Department of Environmental Protection and implement construction stormwater controls to prevent movement of sediments or other potential contaminants from the site. The facility design incorporates post-construction stormwater controls, including low impact development and "green" development practices to maintain post-construction stormwater run-off at or below preconstruction levels with regard to volume and water quality.

1.2.11. Wetlands. The Army conducted a wetland delineation that complies with Federal and State of Connecticut delineation requirements to identify the boundaries of jurisdictional wetlands on Parcel C. The U.S. Army Corps of Engineers (New England District Regulatory Division) field checked the jurisdictional wetland boundaries on the Preferred/Primary Site in Danbury, CT, against the proposed construction footprint of the AFRC and determined there will be no fill into wetlands and waterbodies of the United States and further review of the Proposed Action is not required under Section 404 of the Clean Water Act.

2.0 LIST OF COMMENTERS

Comments on the EA were received from 1 state agency, 4 local governmental agencies, 1 organization (Friends of Lee Farm), 2 homeowner's associations, and the remaining were from individuals.

FEDERAL AGENCIES
None

STATE AND LOCAL GOVERNMENTS
Connecticut Department of Environmental Protection, Office of Environmental Review
City of Danbury, Mayor's Office
City of Danbury, Engineering Division
City of Danbury, Environmental Impact Commission
City of Danbury, Planning and Zoning Department
City of Danbury, Office of the City Council

GROUPS AND INDIVIDUALS

- Leslie Ballard, President – Boulevard Drive Homeowner's Association
- Joseph Walkovich
- Patricia Osowski
- Stephanie Sharlow
- Cheryl Fusco
- Sara and Chris Weir
- Victoria Winkelman
- Lois Barber
- Paul J. Valeri,
- Kirsten Purdie
- Meghan Schmiedel
- Mary A. Reynolds
- Betty Jane Ross
- Sherry Bermingham
- Kathy Ehli
- Irene O'Donnell
- Mark Simiele
- John Hannah - LEED AP
- Jay Moody - Shelter Rock Business Center
- Sandra & Richard Reifeiss
- Leslie Ballard
- Diane Sanders
- Joe DiComo, Representative, Friends of the Lee Farm and Friends of Lee Farm (124 Signatures)
- Jonathan Levine
- David Bennett
- Lyn Hottes
- Rich Schmiedel
- Cindi Healey
- Hubert and Regina Morgan
- Nelle Tresselt
- Foster M. Crawford, President, Tri-Community Homeowner's Association
- Deborah Morgan
- Dana Hill
- Joe DiComo
- Mark Azzara
- Mary Ellen Pagano
- Matt Serfass
- William Wisnowski

3.0 ARMY RESPONSE TO COMMENTS ON THE EA

The comments received during the 30-day public review period are summarized below by resource area and followed by the Army's response.

3.1. The Proposed Action.

The Army has decided to reduce the size and scope of the Proposed Action. This will reduce impacts on open space, traffic, noise, and other areas of environmental concern identified during the 30-day public comment period.

The original Proposed Action analyzed in the EA called for the construction and operation of a joint-use 1,000-member AFRC on 30 acres of land to support:

- Eight USAR and two Connecticut Army Reserve National Guard (ARNG) units being relocated under the 2005 Defense BRAC Commission's recommendation
- Seven new USAR units being established under the Grow The Army (GTA) initiative

The Army has decided to not locate the 7 GTA units at Danbury, and plans instead to initiate NEPA analysis to determine the location of those units at a future date.

The Proposed Action as modified is to construct and operate a 400-member AFRC on 18 acres of land which will house only the 8 USAR and 2 ARNG units designated in the BRAC Commission recommendations (See Appendix G, Figure G-1). Although none of the impacts of the EA's Proposed Action were considered to be significant, this reduced size and scope is an environmentally positive revision.

3.2. Analysis of Alternative sites. Three comments questioned whether the Army had adequately examined other alternatives.

The Army identified 17 potential sites in the vicinity of Newtown, Connecticut. This included sites identified in Danbury, Waterbury, New Milford, Oxford, Middlebury, Monroe, and Ansonia. The Army received assistance for sites within Danbury from the City of Danbury. The Army eliminated 14 sites that did not meet the Army's stated objectives. The EA analyzed 3 sites in detail. Two of these sites had environmental, real estate, and engineering constraints that the preferred site does not incur. The Army's Preferred Alternative in the EA was to construct and operate a 30-acre AFRC on 2 parcels of land known as the Lee Farm.

In December 2010, the City of Danbury submitted six additional parcels for review by the Army as alternate sites for the AFRC. A Site Selection Team visited each of the six parcels and after considerable review determined that these sites were unsuitable to meet the needs of the Army. Considerations included, but were not limited to, parcel size, location, acquisition capability, Anti-Terrorism and Force Protection requirements, military functionality, access for military vehicles, traffic and transportation issues, potential site contamination from previous industrial use, constructability issues, encroachment into federally-protected species habitats, potential encroachment into the 100-year floodplain, and impacts to wetland and waters of the U.S.

Subsequently, the Army modified the Proposed Action in the FNSI. Because the Proposed Action has been modified, the Preferred Alternative has been modified as follows:

- Parcel A (12 acres) of the Lee Farm will be left undeveloped and remain in private ownership.
- Parcel C (18 acres) will be the site for the smaller AFRC.

3.3. Open Space. Three comments concerned the amount of land the Army would purchase and the potential for future military growth. Twenty-one comments concerned the loss of open space.

Army Response: The reduction in the size and scope of the EA's Proposed Action will reduce impacts on open space and other areas of environmental concern identified during the 30-day public comment period. Parcel A (12 acres) will be left undeveloped and in private ownership.

The remaining 280+ acres of the Lee Farm property would remain in private ownership. The Lee Farm property is primarily zoned for industrial use and not listed as open space; nor has the property been identified for acquisition as open space (see the Danbury 2008 Open Space Bond Report, Summary of Prioritization of Open Space Projects). The owner of the property and the community of Danbury would decide whether the remainder of the Lee Farm property would be developed in the future or left as open space.

Immediately south of the Lee Farm property there are more than 1,500 acres of open space consisting primarily of undeveloped forested land and including Wooster State Park. The 18 acres of the Lee Farm Property that would be acquired for the AFRC represents about 1 per cent of this undeveloped land.

3.4. Natural Resources. Seven comments concerned potential impacts to wildlife habitats and Threatened and Endangered Species (Environmental Assessment Section 4.9). In addition, the Connecticut Departments of Environmental Protection (CTDEP) requested that their June 10, 2010 letter (no adverse effects to protected species) be included in the Appendix for Agency Correspondence.

Army Response: Both the United States Fish and Wildlife Service (USFWS) and the Connecticut Department of Environmental Protection agree that the development of Parcels A and C of the Lee Farm would not have an adverse effect on threatened or endangered species. The USFWS and CTDEP letters of no adverse effects are included in the EA, Appendix A, Agency Correspondence. All DEP correspondence is included in Appendix A

Under the Army's Proposed Action only Parcel C (18 acres) would be developed. Although the federal- and state- listed bog turtle is not known to occur on this parcel, the design of the AFRC still protects its potential habitat by avoiding streams and wetlands. This species spends its entire life in wetlands unless it is dispersing in search of new wetland habitats.

Wildlife habitat affected by the construction and operation of the AFRC includes 18 acres of agriculture fields, bordered by forested uplands and jurisdictional forested wetlands. The design of the proposed AFRC avoids direct impacts to sensitive wildlife habitats, wetlands, streams, and waterbodies. Forested areas are avoided to the maximum extent practicable. Because most of the area that would be disturbed by construction of the AFRC currently is open and predominantly grass-covered, only species that regularly use this type of suburban habitats, such as small mammals, and seed-eating birds, would likely be displaced. Forest-dwelling species that occasionally venture into open areas, such as white-tailed deer, may become less visible, but will remain in the area.

Approximately 280+ acres of the Lee Farm would remain undeveloped and in private holding. There are more than 1,500 acres of open space, consisting primarily of undeveloped forested land and including Wooster State Park to the south of the Lee Farm property. Any displaced terrestrial wildlife would be expected relocate to other suitable habitat on these properties.

The Army would not clear vegetation during the migratory bird nesting season without a preconstruction survey for nesting birds that indicates no nesting birds are present. If nesting migratory birds are found during the preconstruction survey, those areas of the containing nesting birds would not be disturbed or cleared until the young have naturally vacated the nest. After construction of the AFRC, wildlife would

be expected to use the undisturbed forested and wetland areas on and adjacent to the AFRC site. The Proposed Action will not have a significant impact on wildlife.

3.5. Cultural resources. Five comments concerned impacts to cultural resources and historic properties (Environmental Assessment Section 4.10).

Army Response: The Army conducted a Phase 1 Cultural Resources Survey in May 2010 for Parcels A and C of the Lee Property. This survey included an archive and literature search, a cultural resources reconnaissance, and archaeological shovel testing. Only one resource, a Colonial Revival style house (CT-001-005), was identified as being potentially eligible for listing on the National Register of Historic Properties under Criterion C-architecture; however, a modern office park complex (structures and paved parking) immediately to the west has partially compromised its historic setting, because it is in open view of the house. The house is approximately 300 feet from the western boundary of Parcel A and about 1,100 feet north/northwest of Parcel C. Parcel A will not be acquired or developed by the Army. The house is screened from Parcel C by tall evergreen trees. Given the distance between this home and Parcel C and the visual screening provided by tall trees, the AFRC is not expected to adversely impact site CT-001-005.

Project planning coordination letters requesting information about traditional cultural properties or sites of particular interest were sent to Native American organizations that may have interest in the project areas on May 18, 2010. A list of Native American organizations contacted during this process is provided in Section 7 of the Environmental Assessment. One response was received requesting a copy of the Final EA.

On August 10, 2010, the Army provided the Connecticut State Historic Preservation Officer (SHPO) with its determination that no historic resources will be affected by the proposed action and a copy of the Phase 1 Cultural Resource Survey. After waiting 30 days for a response, the Army proceeded in accordance with 36 CFR 800.3(c)(4).

On November 4, 2010, the SHPO requested the Army to explain the rational for leaving archeological artifacts in place and the effect of this approach on the identification and evaluation of archeological artifacts. The SHPO also requested additional information and evaluation of the historic context for the Survey. On December 03, 2010, the Army replied that its Survey had been revised and expanded to respond to the SHPO comments. The revised Survey supports the Army's determination that no historic resources will be affected by the proposed action.

- Only small low-density scatters or isolated finds of archeological artifacts, such as dropped items or casual discards without research utility were found; and
- The three alternative sites collectively lack historic integrity and significance due to the loss of landscape features such as fence rows, pastureland, plowed fields, and buildings. These sites no longer operate as working farms and are zoned for light industrial use.

3.6. Local community and nearby residences

3.6.1. Seven comments regarded potential disruption to the quality of life in the residential area.

Army Response: The AFRC would operate like an office building and most of the training would be conducted inside in an office and classroom setting. Nearby residential areas would not be affected. Outdoor formations and drills would occur infrequently, if at all. Physical training may occur outdoors, but would be done onsite and would not significantly affect residential areas. To further reduce impacts,

the number of personnel that would be assigned to the AFRC has been reduced from about 1,000 to about 400.

The Organizational Maintenance Shop (OMS) would operate like an automobile service station or garage. Vehicle maintenance would be performed in service bays. Existing trees along the property boundaries, new landscaping, and setbacks would screen the OMS and vehicle parking areas from view and reduce noise levels from the property. The number of vehicles that would be assigned to the AFRC has been reduced from about 270 to about 195.

3.6.2 Three comments concerned the impact of the AFRC on aesthetics. One comment addressed the effect of security lighting and fencing on nearby residences.

Army Response: The Army would only acquire Parcel C (18 acres) to construct and operate the AFRC. The AFRC training building would have the appearance of an office building or school. The OMS would have the appearance of an ordinary automobile service station without the signs.

The AFRC would be LEED certified. Night time lighting would provide the minimum illumination required to maintain security of the buildings and equipment. Off-site light dispersal would be minimized. Security lighting would be directed into the property and shielded to minimize offsite light pollution. Fencing would not be placed around the AFRC training buildings. An eight-foot chain-link security fence would be installed around the perimeter of the storage and military parking areas.

The AFRC, OMS, parking areas, access control gates on drives, and fencing around military parking and the storage building would be setback from the property boundaries and Wooster Heights Road. The AFRC would be screened from view by existing trees and future landscaping and would not be readily apparent to persons passing in automobiles.

3.6.3 Eight comments were received regarding the potential for a decline in property values as a result of the new AFRC. One comment was concerned with increased crime and persons driving while impaired. Five comments questioned whether the Army would pay property taxes and impacts on city tax revenues.

Army Response: The construction and operation of the AFRC is expected to have a minor beneficial economic impact on the local community (see Section 4.11, Socioeconomic Resources in the EA) and is consistent with the existing zoning of Parcel C (industrial).

The Reservists and National Guard personnel who would train at the AFRC are local residents, who live and work in the community and who have a vested interest in the community.

Federal, state, and local governments do not tax each other. The Proposed Action reduces impacts on city tax revenues by reducing the amount of land the Army will acquire. Parcel A (12 acres) will remain in private ownership and continue to be subject to state and local taxes.

3.7. Traffic and Noise

3.7.1. Eight comments concerned whether the Army would use the Danbury Airport for training and the potential impacts to residences from increased air traffic.

Army Response: There is no aviation training or use of the airport by the units assigned to the AFRC. There will be no air traffic associated with military use from the AFRC. Military convoys would travel overland. Reservists training at the AFRC would commute in privately owned vehicles.

The Danbury Airport Manager does not object to the proposed project and has offered to assist in preparing filings with the FAA. The AFRC design would comply with FAA requirements.

3.7.2. Twenty-three comments concerned increases in vehicle traffic on Wooster Heights Road during the week and traffic disruptions to the residential community during the weekends (see Environmental Assessment, Section 4.12)

Army Response: The Proposed Action reduces the number of full-time employees to about 30. During the week, these employees would generate an estimated 109 trips each day in privately owned vehicles. This would not significantly increase traffic on State Route 7 (23,000 vehicles per day) or Wooster Heights Road (8,800 vehicles per day). About 90 percent of the employees would approach the AFRC from the west. They would travel east on Miry Brook Road and Wooster Heights Road from State Route 7 and turn right to enter the AFRC. When exiting, they would wait on the property for a safe opportunity to make a left-hand turn. Any traffic backups from left-hand turns would occur on the AFRC property. There would be no significant impact to traffic volume or flow.

The number of Reservists has been reduced from about 1,000 to about 400 individuals. Since there are three training weekends per month an average of 120 Reservists would use the AFRC on training weekends, with a maximum of approximately 201 Reservists. They would generate approximately 270 trips each day (Saturday and Sunday) in privately owned vehicles, with the majority of these trips occurring early in the day (before 7 AM) and at the end of the day (around 5 PM), when traffic would be typically light.

Traffic data from the Connecticut Department of Transportation was used to determine weekday traffic volumes and predict potential impacts. This analysis assumes that weekend traffic volumes are lower than normal weekday traffic volumes. Miry Brook Road/Wooster Heights Road are classified as collectors, roads designed to move traffic to and from local roads to major arterials (City of Danbury Traffic Plan). Use of these roads by personnel assigned to the AFRC to reach Lee Farm Road is consistent with this classification.

The number of military vehicles at the AFRC has been reduced from about 270 to about 195 wheeled vehicles and from about 583 to abour 148 trailers. An average of 65 vehicles would be in use on a training weekend to reposition trailers and short trips between onsite parking and maintenance areas. This type of training requires no exit from the facility or transportation from a "point A to point B." Vehicle operation would be short and intermittent. Engines would be turned off when vehicles are not in use. Military vehicles used by the Army Reserve units would be refueled in the local areas as needed and military vehicles used by the Army National Guard would be refueled on site.

Under the Proposed Action, four units would conduct approximately 14 convoy events each year. Convoy events consist of units taking their vehicles to another military training location and returning to the AFRC. Convoys would exit the vehicle maintenance facility by turning left to travel west on Wooster Heights Road/Miry Brook Road to Route 7. Convoy departures would be early in the day on a weekend when little other traffic would be on the roads.

Unit	Assigned Vehicles	Convoy Training
417 BCT Bn (USAR)	No assigned vehicles	No convoy training
411 CA Bn (USAR)	HUMMV's	Twice a year, 20 to 25 vehicles
142nd Medical Company (CNG)	Light Duty Trucks	Maximum of about 5 times per year with up to 30 vehicles
102nd Company A (CNG)	Medium Duty Trucks	Maximum of about 7 times per year with 4 military vehicles and 2 buses

3.7.3. Five comments concerned the potential for training activities at the new AFRC to produce noise that would disturb nearby residents.

Army Response: The noise generated by the AFRC administration and training building would be similar to the noise generated by any office or school building and would not have a significant impact on background noise levels. No outdoor formation drill activities are planned. Any physical training that occurred outdoors would be conducted onsite and would not be a major source of noise.

Personnel commuting to and from the AFRC in privately owned vehicles would not significantly increase existing noise levels from traffic on State Route 7 and Miry Brook Road/Wooster Heights Road.

Convoys would be brief events occurring approximately 14 times a year. Vehicle engines would be turned off while awaiting convoy departure to conserve fuel and reduce noise. Temporary convoy noise would be comparable to truck traffic on State Route 7 and Wooster Heights Road. Air traffic at the Danbury Municipal Airport west of the AFRC generates louder noise levels more frequently.

Onsite military vehicle operation would be limited refueling, movement between parking and maintenance areas, and repositioning trailers for training activities. Vehicle engines would be operated intermittently for short periods of time to accomplish these tasks. Otherwise, the engines would be turned off to conserve fuel and reduce noise. Vehicle maintenance would be conducted in service bays and would generate noise comparable to an automobile service station.

Landscaping, setbacks, and grading will minimize military vehicle noise from onsite operations. The operation of military vehicles is not expected to have a significant impact on existing noise levels or disturb nearby residents.

3.8. Utilities

3.8.1. One comment asked if the community's water and sewer systems have sufficient capacity.

Army Response: On March 8, 2010, the City of Danbury Engineering Department confirmed there is sufficient capacity to provide water and sewage to the AFRC (Environmental Assessment Section 4.13.1).

An average of 30 full-time personnel will use the AFRC on weekdays and an average of 120 Reservists will use the AFRC on the three training weekends each month. The maximum weekend training would have about 201 Reservists or National Guardsmen onsite. Most of these individuals live in the community and already use the local water and wastewater facilities. Any increases in demand on water or wastewater services would be insignificant.

3.8.2 Departments within the City of Danbury asked how utilities would be extended to and connected with the AFRC.

Army Response: The Army contacted the City of Danbury Engineering Department to review the proposed project connection points along with the estimated project utility requirements. The Engineering Department did not identify any issues regarding utility integration.

Yankee Gas received the Army's anticipated natural gas requirements and indicated that natural gas service would be available from an existing line located along Wooster Heights Road. The estimated electrical service requirements for the project were provided to Connecticut Light & Power and they confirmed available capacity to supply the AFRC.

The Army continues to work with the City of Danbury to ensure adequate availability and integration.

3.9. Air Quality. One comment was received on the potential for increased emissions from the new AFRC to adversely affect air quality.

Army Response: Projected air quality emissions from the construction and operation of the combined BRAC/GTA AFRC were calculated using a standard approach. The Air Conformity Applicability Model (ACAM) model developed by the U.S. Air Force was used to estimate construction and operational air emissions. The results of this modeling were included in the NEPA document as Appendix D, Air Emission Calculations and draft Record of Non-Applicability (RONA). The MOBILE6 module within ACAM modeled emissions from commuter traffic to and from the AFRC and the operation of military vehicles onsite and in convoys. The total projected direct and indirect CO, VOC, NOX, and PM-2.5 are below the conformity threshold values established at 40 CFR 93.153 (b) and this action is not considered regionally significant under 40 CFR 93.153(i). Therefore, no significant adverse impacts to air quality would result from construction and operations of the AFRC. The Army will sign a RONA for this action.

The EA's air quality analysis for the combined BRAC/GTA AFRC indicated that the emissions would be below the conformity threshold values. No adverse cumulative impacts to air quality would be expected from the two actions being implemented. Although the Army has decided to build separate BRAC and GTA AFRCs, this will not affect the EA's air quality analysis, since both will be constructed and operated in the same air quality region. See Section 4.0, Air Quality, and Appendix D in the Environmental Assessment for additional information.

3.10. Stormwater. Seven comments concerned the potential for stormwater runoff to contribute to surface water and groundwater pollution (Environmental Assessment Section 4.8)

Army Response: The facility will connect to water and sanitary sewer provided by the City of Danbury. All interior drains would drain to a sanitary collection system and ultimately all interior waste waters would be treated by the municipality. Stormwater discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb one or more acres, or smaller sites that are part of a larger common plan of development or sale, are regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater program.

In Connecticut, the EPA has authorized the State of CT to implement the NPDES stormwater program. Federal, State, and local stormwater management permits and plans will be prepared, submitted for review and approval, and implemented during construction and operation of the Armed Forces Reserve Center. The Army will obtain and comply with the required stormwater permits, including the following:

- General Permit for the Discharge of Vehicle Maintenance Wastewater (DEP-PERD-GP-010).
- General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEP-PERD-GP-015).

In accordance with the National Pollutant Discharge Elimination System (NPDES) Permit, a Storm Water Pollution Prevention Plan (SWPPP) that incorporates the components of an Erosion Control Plan, is required for this project. The construction contractor will prepare and submit to the U.S. Army Corps of Engineers (Corps) an Erosion Control Plan and Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA and State of Connecticut. This plan, developed as part of the design process, must meet the erosion and sediment control requirements for the State of Connecticut. The SWPPP must address compliance with all State laws regarding historic preservation and endangered species with State Letters attached. Once the SWPPP is approved by the State of Connecticut, the NOI will be prepared by the Contractor, utilizing information contained in the approved SWPPP. A Notice of Intent (NOI) will be forwarded to the State by the construction contractor. The commencement of construction (ground disturbing activity) by the construction contractor shall not begin prior to the NPDES permit and letter for compliance being received. A copy of the SWPPP and NPDES Permit must be kept at the construction

site. The SWPPP is a part of the total Pollution Prevention Plan that the Contractor is responsible for preparing in accordance with Specification Section.

The 99th RSC has the responsibility for operation of the Reserve Centers and will obtain the operating NPDES permits.

Prevention of potential leaks or spills of fluids from impacting the environment is a high priority and mandated for Armed Forces Reserve Centers. Waste water from vehicle service areas will pass through an oil/water separator to capture petroleum, oils, and lubricants that may be spilled during maintenance prior to release into the municipal system. The waste that is removed from the wastewater stream is hauled away by a licensed hauling company and disposed of in accordance with Federal, State, and local regulations.

The Energy Independence and Security Act requires that the post-construction stormwater controls for federal facilities are to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration. The design of the facility would meet the requirements of the Energy Independence and Security Act and no adverse impacts to offsite waters are expected to result from operation of the facility.

3.11. Wetlands. The Connecticut Department of Environmental Protection (CTDEP) asked whether the wetland delineation complies with state requirements, which are different from the Federal wetland delineation requirements. One comment stated that the City of Danbury regulates activities within 100 feet of wetlands and streams. The Danbury Environmental Impact Commission (EIC) expressed concerns regarding the Army's compliance with the City of Danbury's Inland Wetlands and Watercourses Regulations and requested additional information.

Army Response: The Army's wetland delineation complies with Federal and State wetland delineation requirements. The wetland delineation was led by a Certified Professional Soil Scientist and Registered Professional Soil Scientist by the Soil Science Society of Southern New England, with support from certified and professional wetland scientists.

Since dredged or fill material would not be discharged into waters of the US, this federal action is not subject to further review under Section 404 of the Clean Water Act. The Army has established a 50-foot, no-build buffer zone to prevent direct impacts to wetland resources. All construction will take place in upland areas. Any indirect impacts to wetlands from stormwater runoff will be mitigated by:

- A 50-foot no-build upland buffer zone will protect wetlands.
- Sediment and Erosion Control Plan and landscaping will minimize soil erosion.
- Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA and State of Connecticut will help maintain the predevelopment hydrology of the property (temperature, rate, volume, and duration of flow). Stormwater basins beneath the vehicle parking area would provide sufficient capacity so the runoff rate does not exceed the existing rate for the design storm. Outlets shall have floatable controls and be designed as to avoid erosion.
- The AFRC, including all interior drains, will connect to the sanitary sewer system provided by the City of Danbury.
- An oil-water separator will collect oil from spills that occur during routine vehicle maintenance at the maintenance facility before water is discharged into the municipal sewer system.
- A kitchen grease trap will keep unwanted debris from entering the municipal sewer system.

This table provides the Army's response to the additional information requested by the Danbury EIC:

Comment/Request		Response
1	Provide a survey prepared by a licensed land surveyor according to A2 survey standards which depicts existing conditions. The survey should include topography, existing property outline with north arrow, existing structures, significant natural features, any waterbodies, and all inland wetland boundaries with flag numbers as determined by a qualified soil scientist using definitions provided by the CT General Statutes as their basis for their methodology.	The survey prepared for the proposed action meets A2 survey standards and has been prepared by a surveyor based in the State of Connecticut.
2	Site plan prepared to A2 standards showing proposed activities, including buildings, structures, parking lots, developed areas, proposed grading.	The Army will issue a Request for Proposal (RFP) to design and build the AFRC. The RFP will include a "conceptual" site layout plan showing proposed activities and potential locations for buildings, structures, parking, and other developed areas. The contractor will prepare the site layout and grading plans to A2 standards and submit them to the Army for approval. The Army in turn will provide these plans to the Danbury EIC for review and comment.
3	Erosion Control Plan as a separate sheet(s), pursuant to the 2002 CT Erosion and Sedimentation Guidelines.	See EA, Section 4.8.2.2. The construction contractor will prepare and submit to the U.S. Army Corps of Engineers (Corps) an Erosion Control Plan and Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA and State of Connecticut. Measures outlined in the SWPPP will minimize erosion and sediment runoff due to construction activity. These plans will conform to Corps requirements for sediment and erosion control during construction and operation. The ECP will incorporate the 2002 CT Erosion and Sedimentation Guidelines. The City of Danbury EIC will be provided this information for comment. The plan would thereby adhere to the sediment and erosion control policies acceptable to the City of Danbury.

4	Detailed soils information derived from field survey by the project Soil Scientist using methodology conforming to the CT General Statute wetlands definition. Information should include a report describing inland wetland soil types according to National Cooperative Soil Survey nomenclature, and a characterization of wetland vegetation for each inland wetland or watercourse area. The report should include a sketch map of all inland wetland or watercourse boundaries with a signature from the project soil scientist.	The Wetland Delineation Report (September 2010) that was provided to the Danbury Environmental Commission conforms to the CT General Statutes and includes a sketch map of inland wetland watercourses (see report Attachment A and EA, Appendix E). The report completed by the U.S. Army Corps of Engineers contains the data and qualifications of the CT based soil scientist.
5	Existing Functions and Values Analysis of all CT General Statute defined inland wetland and watercourse areas on site and adjacent to the site, using the Army Corps Highway Methodology or the equivalent descriptive approach. The report should include habitat characteristics and wildlife usage for each area.	See EA, Appendix E, Wetland Delineation Report (Draft) or the Final Wetland Delineation Report. There are no direct impacts or fill into to wetlands and waters of the U.S. as a result of the federal action.
6	Completed "State Wide Inland Wetland Activity Reporting Form."	The responsibility for completion of this form is with the City of Danbury EIC or Inland Wetlands Agency.
7	List of names and addresses of all abutting property owners, including those across the street, to be used for proof of mailings by the applicant during the formal review process.	Addresses of abutting property owners are available to the EIC for their use.
8	Narrative description of proposed activities including the following:	
8a	The geographical location of subject property and a description of the land in sufficient detail to allow identification of the CGS defined inland wetlands and watercourses, the area in acres of CGS defined wetlands or watercourses contained on the property, and the area of CGS defined wetlands or watercourses to be disturbed.	See EA, Section 3.2.1, and in Appendix E, Wetland Delineation Report.
8b	Purpose and description of proposed activity, Best Management Practices and Mitigation Measures including, but not limited to, specific measures to (a) prevent or minimize pollution or other environmental damage, (b)maintain or enhance existing environmental quality, or (c) in the following order of priority: restore, enhance and create productive CGS defined inland wetlands and watercourses.	See the Environmental Assessment.
8c	Alternatives considered - on site and off site - including other sites within the City of Danbury - and alternative subsequently rejected, and why the activity set forth was chosen.	See the EA, Section 3.0, Alternatives.

8d	Program for erosion and sedimentation control during and after construction.	See EA, Section 4.8. The contractor will prepare and submit an Erosion Control Plan that complies with the standards of the 2002 CT Erosion and Sedimentation Guidelines during the design phase. The Army will provide a copy of the ECP to the City of Danbury EIC at that time.
8e	Program for stormwater pollution prevention during and after construction.	The construction contractor will prepare and submit a Stormwater Pollution Prevention Plan (SWPPP) as required by the EPA and State of Connecticut. Measures outlined in the SWPPP will minimize erosion and sediment runoff due to construction activity. For this federal action, the stormwater basins are to be designed and constructed to accommodate the storm level as required. Detention ponds are to provide capacity so that the expected rate does not exceed the existing rate for the design storm. Outlets shall have floatable controls and be designed as to avoid downstream erosion. The SWPPP will include landscaping to supplement the natural environment and minimize erosion potential.
9	Wildlife inventory for the site including wetland and upland areas to include species that currently use the site, and species that are expected to use the site.	See EA, Section 4.9. The EA adequately addresses wildlife that uses the open field farmland of the identified Parcel 'C' at the Lee Farm and the impacts to those resources.
10	Wildlife inventory and impact analysis for the site including wetland and upland areas, to include species that are expected to use the site after disturbance.	See EA, Section 4.9. The EA adequately addresses wildlife that uses the open field farmland of the Lee Farm and the impacts to those resources.
11	Additional detail as to the exact drainage basin that the proposed activity is located in, as well as a more detailed understanding of downstream flow patterns and ultimate receiving watershed of any runoff into the natural drainage system.	See EA, Section 4.8.1.2. See Wetland Delineation Report, Section 2.0, Environmental Setting.
12	An appropriately scoped ecological risk assessment to identify any potential contaminants, migration pathways, and ecological receptors due to the proposed activities.	The U.S. Army completed an Environmental Site Assessment for the proposed site. No sources of contamination have been identified. The site is farmland that has a traceable life history. An Ecological Risk Assessment as requested is not warranted.

Figure G-1

Draft Facility Layout

for

Armed Forces Reserve Center Near Newtown, Connecticut

1 SITE PLAN - OVER AERIAL PHOTO
C-100

US Army Corps of Engineers
Louisville District

Symbol	Description	Date	Appr.
	Revisions		

Designed by: D. BERNHARDSEN
Drawn by: D. BERNHARDSEN
Reviewed by: J FITZHUGH
Checked by: M STOUSLAND
Date: 7 APRIL 2011
Scale: AS NOTED
Drawing code:

RSP Architects Ltd.
1220 Marshall Street NE
Minneapolis, MN 55413
612.677.7100

SITE PLAN
OVER AERIAL PHOTO

FY2011

DANBURY, CT

NEWTOWN
ARMED FORCES
RESERVE CENTER

PN CAR ??-?????

SHEET REFERENCE NUMBER:

G-1

SHEET ____ OF ____

CORRECTED CHARETTE SUBMITTAL

From: Mark Azzara [indeedchristian@yahoo.com]
Sent: Thursday, September 23, 2010 5:14 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Lee Farm reserve center

Dear Mr. Hrzic,

I am writing to express my opposition to the U.S. Army's plan for a reserve center on property known as Lee Farm in Danbury. I know the area well, having lived in the city since 1969 and having worked as an address canvasser for the Census Bureau in that area in 2009.

Wooster Heights Road cannot stand the traffic that will be generated, and the quiet nearby residential neighborhood will be destroyed if this plan is implemented. The entire central-west side of Danbury, from Westville Avenue south through the affected Wooster Heights-Harvard Road area, already is jampacked with single-family homes, condos and apartments. Lee Farm is the ONLY remaining natural open-space buffer that mitigates these crowded conditions.

Danbury also does not need and cannot afford the financial and non-financial cost that will be demanded of the city as a result of this plan. Several studies, including one by the Catholic Church (sic!), have shown that Danbury is a city that is under increasing social, cultural, financial and development stress as a result of massive residential growth over the past 20 years, most of it created by the needs of commuters who work in New York City and Westchester County, N.Y. For some reason, Connecticut is attractive to them and Danbury is feeling the brunt of the growth because of the comparatively high cost of housing in southern Fairfield County. The creation of a reserve center here will almost certainly create even more housing-construction pressure because of the number of new employees who will work there.

In addition, the decision by the state Department of Transportation to abandon its plan for a Route 7 superhighway from Norwalk to Danbury, in favor of a widened Route 7 corridor road which will soon be completed, will prove to be ill-advised if there is a substantial increase in traffic from southern Fairfield County to Danbury because of this center. The possible need to rebuild roads and perhaps even construct new schools, coupled with the potential increase in retailers drawn by such a center, is a nightmare for the city and the state because of the projected $3.5-billion (sic!) state budget deficit in the 2011-2012 fiscal year. That deficit will make it impossible for the state and city (which will get less state aid next year) to respond to the demands created by such a center. Lee Farm can, at best, accommodate a small increase in the corporate office facilities now on part of the site without further burdening the city.

If a center is absolutely essential in this area, I ask that you consider building it just across the state line in Putnam and Dutchess counties in New York State, where there is vastly more open space available in communities with sparser population, thus offering more opportunities to accommodate a reserve center. Above all, I ask that you and others in authority regarding this project withdraw the Lee Farm proposal in order not to irreparably hurt a vulnerable city.

Sincerely,

Mark Azzara

From: Leslie [elleballard2@aol.com]
Sent: Tuesday, September 21, 2010 5:02 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: question about Danbury training center

Hello, Jeff,
We have a simple question, in four parts, about Danbury Airport in regards to the new military training center. Your answer will help us to determine if we should put the "for sale" sign on our homes right away. (All the residents in the Lake Kenosia area are going to have to try to sell and move if this goes the way we think it will.) 1. Will increased activity at Danbury Airport include commercial traffic?
2. Will the flight pattern go over Lake Kenosia?
1. Will the training center include helicopter training?
2. Will the training be conducted over Lake Kenosia?
Thank you,
Leslie Ballard
President, Boulevard Drive Homeowners Association

From: Lois Barber [loisbarber@sbcglobal.net]
Sent: Wednesday, September 22, 2010 10:03 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM; mboughton@ci.danbury.ct.us; Lois Barber
Subject: Army base

My family and I are all in favor of having the United States Army in Danbury.
It would be a boost to the economy of the city. It will bring more customers to the restaurants and stores in the area, and therefore will provide jobs and tax revenue for the city.

I would be very proud to have the Army as one of my neighbors.

Sincerely,

Lois Barber

CITY OF DANBURY

155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

PLANNING & ZONING DEPARTMENT
(203) 797-4525
(203) 797-4586 (FAX)

September 19, 2010

To: Hon. Mark D. Boughton, Mayor

From: Dennis I. Elpern, Planning Director

Re: Environmental Assessment – Proposed Construction and Operation of an Armed Forces Reserve Center, August 2010

We have reviewed the Environmental Assessment referenced above prepared for the U.S. Army Reserve by the U.S. Army Corps of Engineers and submitted to us by CH2M HILL on August 24, 2010. The U.S. Army Reserve has invited comments on the Environmental Assessment by September 24, 2010.

The Danbury site is zoned IL-40 and consists of three parcels totaling 61.4 acres of the much larger Robinson farm. Although the EA gives the facility an address of 150 Park Avenue, all development is, in fact, adjacent to and receives access from Wooster Heights Road. The road divides the development into two sectors, with parcels A and B to the north and parcel C to the south. Traffic from parcel C to the other parcels must travel across the road in a dog-leg pattern. Good land use planning suggests that the entire facility be grouped together.

In the past, we have advised that if the U.S. Army Reserve was determined to select this area for the Reserve Center, then development should preferably be adjacent to existing commercial development on Park Avenue rather than intrude toward residential areas on Wooster Heights Road. Under this scenario, access would be entirely from Park Avenue, thus minimizing potential traffic concerns and land use conflicts with adjacent residential neighborhoods. Careful site design along Park Avenue could retain extensive amounts of open space and provide buffering by existing woodlands on the remainder of the site adjacent to Wooster Heights Road and Fry's Corner.

We also noted that Wooster Heights Road is a two-lane road, one with steep gradients and sharp curves near the entrances to the proposed facility. Moreover, we cautioned that access off Wooster Heights Road would probably encounter opposition from proximate homeowners concerned about traffic and the loss of open space.

It appears that these parcels, as proposed, will have to be subdivided from the Robinson farm. Other comments regarding environmental constraints, the adequacy of utilities, traffic conditions, and airport protection zones should be received from appropriate City departments.

Please let us know if we may be of further assistance.

CITY OF DANBURY

155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

ENGINEERING DIVISION
(203) 797-4641
FAX (203) 796-1586

FARID L. KHOURI, P.E.
CITY ENGINEER

MEMO TO: Hon. Mark D. Boughton
Mayor

FROM: Farid L. Khouri, P.E.
City Engineer

SUBJECT: **Proposed Armed Forces Reserve Center**
150 Park Avenue, Danbury, CT

DATE: September 21, 2010

The Engineering Division of the City of Danbury has reviewed the submitted Environmental Assessment Report dated August 2010 prepared by the U.S. Army Reserve and U.S. Army Corps of Engineers Mobile District, for the proposed construction and operation of an Armed Forces Reserve Center in Danbury relative to traffic accessibility and impact on the surrounding roadway system and the effect on City-owned utilities (sanitary sewer, water mains and roadway storm drainage). The traffic review was conducted by the City's Traffic Engineer, Abdul Mohamed, who has been employed by the City for approximately 23 years. Utilities reviews were conducted by David Null, P.E., licensed professional engineer in the State of Connecticut. He has been employed by the City for almost 8 years.

Project Description:

The proposed development is to be located at 150 Park Avenue, adjacent to the Barden Corporation site. The site consists of three parcels of land totaling approximately 61.5 acres. Parcels A and B (totaling approximately 41.5 acres) are located between Park Avenue and Wooster Heights Road. Parcel C is located southerly of Wooster Heights Road. Parcels A and B are earmarked for construction of an 113,370 square foot building. An entrance for Parcels A and B would be constructed off of an existing driveway which serves Lee Farm Corporate Park. Parcel C is earmarked for a construction of a 26,905 square foot vehicle maintenance facility and a 5,340 square foot storage space. Its entrance would be provided off of Wooster Heights Road, southwest of the signalized intersection of Wooster Street and Lee Farm Corporation's driveway. Overall, a total of 9.5 acres of the three sites would be utilized for provision of on-site parking for 270 wheeled vehicles, 583 military trailers plus a privately owned number of passenger vehicles. At its peak, the proposed development would facilitate accommodation of **approximately 1,000 people**.

The following comments are provided for traffic impact:

A. Traffic Generation and Impact:

The proposed development is unique. Traffic and parking generation data for such facilities is not widely available. In addition, no attempt was made to provide the information in the submitted

Environmental Assessment Report. However, it can be expected that a 1,000 member facility can generate **at least 2,500 vehicle trips** each week-end day. The most predominant access routes to and from the site would be the Interstate 84 Expressway, U.S. Route 7 Expressway South (Sugar Hollow Road) and the westerly leg of Wooster Heights Road. At least 25 percent of the generated traffic can be expected to travel through the easterly leg of Wooster Heights between Southern Boulevard and the Lee Farm Corporation driveway towards and from the City's center. As a result of the proposed development, a very significant change in traffic volume would be experienced along Wooster Heights Road between the Lee Farm driveway and the Route 7 South ramps.

The number of lanes along Wooster Heights Road varies from two to four. On the easterly leg of Wooster Heights Road, the roadway is provided with a two-lane cross section. Between the driveways of Lee Farm Corporation and Goodrich Corporation, the roadway is predominantly a two-lane roadway with left-turn lanes at the driveways. The remaining section of the roadway between Goodrich Corporation's driveway and Sugar Hollow Road intersection is a four-lane, cross-section roadway. In terms of 24-hour traffic volumes, the section of Wooster Heights Road between Southern Boulevard and Lee Farm Road carries an average of 9,000 vehicles per weekday. The section between Lee Farm Corporation's driveway and Sugar Hollow Road experiences an average of 11,000 vehicles per weekday.

Safe operation of Wooster Heights Road is hampered by its physical characteristics including the following:

- The westerly section of roadway between the Lee Farm Corporation and Goodrich driveways has long steep vertical grades. The grades of some sections of the roadway are between 8 and 11 percent.

- The roadway grades of Wooster Heights Road, easterly of the proposed facility between Harvard Road and Terre Haute Road, range from 9 to 10 percent with limited lane capacity. Additionally, the roadway has multiple combinations of vertical and horizontal curves as well as inadequate shoulders in terms of grading and widths. As a result of these conditions, both Harvard Road and Terre Haute Road intersections have limited sight distances.

We are of the opinion that the existing physical roadway features are not suitable for operation of the heavy duty trucks and trailers that are expected to be utilized at the proposed development and would be used regularly on these roads. Due to the above-mentioned grades, the speed of such vehicles would have a negative impact on the general flow of traffic. The slow traffic movement expected of heavy vehicles will cause traffic to back up on surrounding roads approaching Wooster Heights Road. In addition, the elevated vehicle noise factor will be more noticeable due to extra automobile movement in the area and the existence of steep grades on the road. This type of vehicle movement will cause delay in weekend travel to all residents of Danbury. Also, in the long run, the weekly increase of traffic movement on Wooster Heights Road and the surrounding roads will cause severe deterioration which will require regular maintenance. This type of maintenance will have an impact on the City's budget. Consequently, the extra cost would have to be absorbed by residents. Please note that during winter months such vehicles could potentially cause traffic accidents along Wooster Heights Road and hinder the City's maintenance (snow plow operation) to these roads.

B. Traffic Conclusions and Recommendations:

Although the submitted Environmental Assessment Report does not provide details on traffic generation from the proposed development, we are of the opinion that placement of access points for Parcels A & B as well as Parcel C on Wooster Heights Road would not be in the best interest of public safety. As a result, it is our recommendation that the proposed project be consolidated on

Parcels A & B with suitable access off of Park Avenue to preserve the appearance of the residential neighborhood of Wooster Heights. Park Avenue access would also better fit in with the surrounding neighborhood at Park Avenue. Also, other driveway location options should be explored if the Park Avenue driveway cannot be established.

The following comments are provided for Utilities Impact:

A. General:

The vicinity of Wooster Heights has a City-owned 10" sanitary sewer main and a 12" water main. There is no City-owned storm drainage system on the above-mentioned parcels. Some storm drainage exists on some City streets. It is difficult to evaluate and judge whether the existing City utilities will be adequate for the usage of 1,000 personnel on the weekend and for the development of this facility for the following reasons:

B. Sanitary Sewer System:

The report does not clearly indicate the expected sanitary sewer usage, existing capacity and point of connection to all buildings. City ordinances and policy require that the City own any new sanitary sewer main extension. We are concerned as to whether or not the Federal Government will allow the City to own the new sanitary line on its property, which will in turn allow the use of the new extension by others. If the line is to remain private (which is against City policy and regulations), this will have a negative impact on future development by surrounding neighbors. We are also concerned that sewer volume for this facility, especially on the weekend, will lead to over-load capacity on City sanitary sewer lines and will limit future expansion to surrounding properties. A complete backup calculation and discharge flows are warranted for our review to conclude the extent of impact on the City sanitary sewer lines.

C. Water system:

The report does not clearly indicate the expected volume of water usage, existing pressure and point of connection to all buildings. City ordinances and policy require that the City own any new water main extension. We are concerned as to whether or not the Federal Government will allow the City to own the new water line on their property, which will in turn allow the use of the new extension by others. If the line is to remain private (which is against City policy and regulations), this will have a negative impact on future development by surrounding neighbors. We are also concerned that water volume needed for this facility, especially on the weekend, will lead to high demand on the City water main and will limit future expansion to surrounding properties. A complete backup calculation and required water usage volume with fire flow calculations are warranted for our review to conclude the extent of impact on the City water main.

D. Storm Drainage System:

Similar to water and sanitary sewer systems mentioned above, the storm drainage system calculation, storage volumes and details are not provided in the report to assist us to review this major development. Although the report referred to the mandated usage of stormwater management to maintain hydrologic functions of a site and mitigate the potential adverse impact on stormwater runoff, the report does not clearly show the method or the impact on existing soil for the type of army vehicles usage on site and how the polluted runoff will be treated and maintained before it is collected. The report does not specifically address how the storm drainage management system will be implemented. This may have a negative impact on site soil and eventually affect the City roadway

system. The report does not mention how often the proposed retention system will be maintained and what the long range impact on the neighborhood will be if the system is not maintained regularly.

E. Utilities Conclusions and Recommendations:

It is difficult to give specific recommendations on this type of development given the absence of critical information in the report about utilities usage and maintenance as mentioned above. At this point we must caution that this project may have a severe impact on all City utilities.

If you require any additional information, please feel free to call me.

cc: Antonio Iadarola, P.E., Director of Public Works
Laszlo L. Pinter, Deputy Corporation Counsel
Robin L. Edwards, Assistant Corporation Counsel

CITY OF DANBURY

155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

ENVIRONMENTAL IMPACT COMMISSION
(203) 797-4525
(203) 797-4586 (FAX)

CONFIDENTIAL

To: Hon. Mark D. Boughton, Mayor

From: Daniel Baroody, Danbury Health & Human Services, Associate Director

Date: September 20, 2010

Re: Comments regarding Environmental Assessment and Finding of No Significant Impact (EA/FNSI) for proposed Construction and Operation of an Armed Forces Reserve Center

---

I have reviewed the above referenced Environmental Assessment and Finding of No Significant Impact (EA/FNSI) for the Danbury Environmental Impact Commission (EIC) submitted for comment by Armed Forces Reserve. Following the review of the (EA/FNSI), I have listed concerns regarding compliance with The Inland Wetlands and Watercourses Regulations, City of Danbury.

Information provided within the Environmental Assessment documentation (EA/FNSI) was insufficient to adequately evaluate the environmental impacts on any inland wetlands and watercourses that may be located within and adjacent to the site. Additional information needs to be provided by appropriate qualified experts. The additional information should include, but not be limited to:

1. Survey prepared by a licensed land surveyor according to A2 survey standards which depicts existing conditions. The survey should include topography, existing property outline with north arrow, existing structures, significant natural features, any waterbodies, and all inland wetland boundaries with flag numbers as determined by a qualified soil scientist using definitions provided by the CT General Statutes as their basis for their methodology.

2. Site plan prepared to A2 standards showing proposed activities, including buildings, structures, parking lots, developed areas, proposed grading.

3. Erosion Control Plan as a separate sheet(s), pursuant to the 2002 CT Erosion and Sedimentation Guidelines.

4. Detailed soils information derived from field survey by the project Soil Scientist using methodology conforming with the CT General Statute wetlands definition. Information should include a report describing inland wetland soil types according to National Cooperative Soil Survey nomenclature, and a characterization of wetland vegetation for each inland wetland or watercourse area. The report should include a sketch map of all inland wetland or watercourse boundaries with a signature from the project soil scientist.

5. Existing Functions and Values Analysis of all CT General Statute defined inland wetland and watercourse areas on site and adjacent to the site, using the Army Corp Highway Methodology or the equivalent descriptive approach. The report should include habitat characteristics and wildlife usage for each area.

6. Completed "State Wide Inland Wetland Activity Reporting Form."

7. List of names and addresses of all abutting property owners, including those across the street, to be used for proof of mailings by the applicant during the formal review process.

8. Narrative description of proposed activities including the following:

    a. The geographical location of subject property, and a description of the land in sufficient detail to allow identification of the CGS defined inland wetlands and watercourses, the area in acres of CGS defined wetlands or watercourses contained on the property, and the area of CGS defined wetlands or watercourses to be disturbed.

    b. Purpose and description of proposed activity, Best Management Practices and Mitigation Measures including, but not limited to, specific measures to (a) prevent or minimize pollution or other environmental damage, (b)maintain or enhance existing environmental quality, or (c) in the following order of priority: restore, enhance and create productive CGS defined inland wetlands and watercourses.

    c. Alternatives considered – on site and off site – including other sites within the City of Danbury – and alternative subsequently rejected, and why the activity set forth was chosen.

    d. Program for erosion and sedimentation control during and after construction.

    e. Program for stormwater pollution prevention during and after construction.

9. Wildlife inventory for the site including wetland and upland areas to include species that currently use the site, and species that are expected to use the site.

10. Wildlife inventory and impact analysis for the site including wetland and upland areas, to include species that are expected to use the site after disturbance.

11. Additional detail as to the exact drainage basin that the proposed activity is located in, as well as a more detailed understanding of downstream flow patterns and ultimate receiving watershed of any runoff into the natural drainage system.

12. An appropriately scoped ecological risk assessment to identify any potential contaminants, migration pathways, and ecological receptors due to the proposed activities.

Conclusion:

According to analysis in (EA/FNSI), Section 6.3, page 32 of Appendix E "Wetland Delineation Report, Joint AFRC, Connecticut" prepared by Epsilon Associated, Inc., the proposed project would be regulated by the Danbury Environmental Impact Commission (EIC).

I agree with the analysis and submit that The Armed Forces Reserve must apply for regulated activity to the Environmental Impact Commission (EIC). The proposed activity is within the regulated area as defined in The City of Danbury Inland Wetlands and Watercourses Regulations. The application must include, but need not be limited to the items listed above.

From: Lee Farm [friendsofleefarm@att.net]
Sent: Thursday, September 23, 2010 11:07 AM
To: M.Boughton@ci.danbury.ct.us; .r.arconti@ci.danbury.ct.us; p.curran@ci.danbury.ct.us; n.deep@ci.danbury.ct.us; b.riley@ci.danbury.ct.us; g.seabury@ci.danbury.ct.us; c.stanley@ci.danbury.ct.us; d.taylor@ci.danbury.ct.us; p.colla@ci.danbury.ct.us; s.nagarsheth@ci.danbury.ct.us; m.halas@ci.danbury.ct.us; c.trombetta@ci.danbury.ct.us; j.cavo@ci.danbury.ct.us; j.knapp@ci.danbury.ct.us; p.nero@ci.danbury.ct.us; t.saadi@ci.danbury.ct.us; d.perkins@ci.danbury.ct.us; f.visconti@ci.danbury.ct.us; b.chianese@ci.danbury.ct.us; p.rotello@ci.danbury.ct.us; m.teicholz@ci.danbury.ct.us; s.tumino@ci.danbury.ct.us
Cc: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM; Cmurphy.Casework@mail.house.gov; Mike Mclachlan; Jason Bartlet
Subject: Proposed Wooster Heights Army Reserve Training Site
Attachments: Lee Farm Letter.pdf

Mayor Boughton & Common Council,

Please find a letter attached regarding the proposed Wooster Heights Army Reserve Training Facility. Let me make it clear that we are not saying that the Army is not welcome in Danbury. We are saying that it doesn't make sense for this site. There are 124 citizen signatures including one corporate citizen. Signatures are still being collected at the time of this communication. We hope you will give this matter your immediate attention.
Please appoint a designate(s) of the City to communicate plans, reports, updates, meetings etc. We anticipate having a small group meet with the appointed designate(s) to discuss next steps and look forward to being part of a solution that satisfies all stakeholders regarding this property.
Thank you for your support!

Sincerely
Joe DiComo
Representative for the Friends of Lee Farm

Friends of Lee Farm

September 21, 2010

To: The City of Danbury
Mayor Boughton & Common Council

We, the undersigned, oppose locating the Wooster Heights Army Reserve & Training Center on the Lee Farm property. We call on Mayor Boughton and City Council members who share this position to make it known and to assist the citizens of Danbury in our efforts to prevent this inappropriate development of Lee Farm.

Locating an Army Reserve & Training Facility with the capacity to accommodate 15 U.S. Army Reserve units and two Army National Guard units for 1,000 people- including 145,616 square feet of interior building space with 9.5 acres of paved parking, 270 wheeled military vehicles, 583 trailers and two fuel tanks with a combined 6,000-gallon capacity along with personal vehicles on this parcel is bad public policy.

The implications for traffic, safety, lowered property values plus effects on the natural environment, combined with the fact that no property tax will be levied to pay for city services rendered, far outweigh the benefits.

Thirty days is simply not enough time for public input on the proposed Army Reserve & Training Center. We ask that the Mayor and Council mediate an extension with the Army. Decisions of this magnitude should not be rushed. Therefore we also expect that the relevant Boards and Departments have an opportunity to do their due diligence and review the plans and present a report with ample time to disseminate its findings before public comment is cut off.

We ask you, as the elected governing leaders of Danbury, to show leadership and stand with your citizens against this irresponsible development. The City passed a $6.2 million open space bond to purchase such properties. Seize the opportunity to preserve the quality of life for generations to come.

Thank you for your consideration on this matter:

The Friends of Lee Farm

September 21, 2010

1. Justin Molito 203 Middleriver Road
2. Leah Vaninni 203 Middle River Road
3. Christine Rotello 14 Pleasant Street
4. Louis Rotello 14 Pleasant Street
5. Renato Ghio 31 Sunset Drive
6. Alicia Ghio 31 Sunset Drive
7. Marion Liberati 43 Old Lantern Road
8. Jill Hancock 69 1/2 Osborne Street
9. Michael Burnett 112 Westville avenue
10. Pedro Gonzalez 5 Harding Place
11. Audrey Rubin Salzberg 197a Westville Ave
12. Cytnthia Simmons 17 Topstone Drive
13. Sean Morris 7 King Street
14. Jill Austin 22 Ivy Lane
15. Jonathan Greenfield 4 Short Lane
16. Michelle Greenfield 4 Short Lane
17. Michael Socci 264 Main Street # 2
18. Lynn Taborsak 109 East Hayestown Road
19. Bob Taborsak 109 East Hayestown Road
20. Joanne Wolff 34 carriage House Drive
21. Melvin Wolff 34 carriage House Drive
22. Lucinda Hicks-beach Quinn 10 Hall Street
23. Lisa Giallenza-Sweeting 9 Boxwood Lane
24. Dale Sniffin Nolan 108 Deerfield Ave
25. Aurelio Murracca 137 Deerhill avenue
26. Karin Mansberg 137 Deerhill Ave
27. Francine Schoffner 5 Oakland Avenue
28. William Gwynn 15 Cornell Road
29. Howard Polley 126 Triangle Street b 45
30. Brandi Smith 1 Cornell Road
31. Roger Waterhouse 18 Beech Street
32. Bill Foster 17 Library Place #2
33. Dave Noonan 11 Coachill Drive
34. Jane Miller 9 Centential Rd
35. Maryrose Schiering 4 Ford Lane
36. Patricia Weiner 150 Brushy Hill Rd.
37. Jay Weiner 150 Brushy Hill Rd.
38. Ed Prybylski 36 Mountainville Rd.
39. Kim Botelho 12 Buckskin Hgts.
40. Tim Botelho 12 Buckskin Hgts.
41. Mary Reynolds 15 Library Place
42. Hubert Morgan 64 Wooster Heights
43. Regina Morgan 64 Wooster Heights
44. Kathy Ehli 18 1/2 Morgan Ave
45. William Ehli 18 1/2 Morgan CT
46. Elizabeth Hudson 40 Boulevard Drive
47. Joseph Hudson 40 Boulevard Drive
48. Deborah Morgan 64 Wooster Heights
49. Roy Betts 62 Wooster Heights
50. Doreen Bedini 62 Wooster Heights
51. Pat Baker 14 Starrs Plain Rd
52. John Baker 14 Starrs Plain Rd
53. Cindy Ryan 60 Wooster Heights
54. Jennifer Ehli 12 Summit St
55. Mrs Anthoni J, Valeri 56 Wooster Hgts Rd.
56. Thomas Valeri 40 Brushy Hill Rd
57. Paul Valeri Hayestown Rd.
58. Tim Tuttle 212 Southern Blvd
59. Amos Turk 7 Tarrywile Lake Rd
60. Pearl Turk 7 Tarrywile Lake Rd
61. Joe DiComo 5 Wooster Heights Rd
62. Maureen DiComo 5 Wooster Heights Rd
63. Stephan Perrealt 40 Hardwood Dr
64. Wendy Perrealt 40 Hardwood Dr
65. Ellen Adamski 11 Ole Musket Lane
66. Richard Adamski 11 Ole Musket Lane
67. Lee Farm Corporate Park 83 Wooster Hgts
68. Mary Gregory Strawberry Hill Rd
69. Will Gregory Strawberry Hill Rd
70. John Costigan 47 Ole Musket Lane
71. Mary Costigan 47 Ole Musket Lane
72. Gail Cherry 7 Harvard Rd
73. Mary Backman Reservoir Street
74. Bart Backman Reservoir Street
75. Justin Saxagne 95 Park Ave
76. Sara Waterfall 9 Wedgewood Drive
77. Joan Hodge 201 Southern Boulevard
78. Eleanor Lewis 25 Center St
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80. Jane Miller 9 Centential Rd
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85. Jimmetta Samaha 288 Southern Blvd

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120. Joanne Targett 11 Wooster Heights
121. Tim Targett 11 Wooster Heights
122. Frances Merante 11 Deer Hill Ave
123. Cristina Blazek 3 Greenfield Ave
124. Christopher Gonzales 7 Winthrop Place

From: Robin Shepard/LEGAL/COD [R.Shepard@ci.danbury.ct.us]
Sent: Thursday, September 23, 2010 1:03 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Cc: Mark Boughton/MAYOR/COD
Subject: Armed Forces Reserve Center - 150 Park Avenue, Danbury CT
Attachments: Mayor ltr to Jeff Hrzic.pdf; Dept reports to Jeff Hrzic.pdf

Importance: High

Mr. Hrzic:

Please find comments from Mayor Mark D. Boughton regarding the environmental assessment for the construction and operation of an Armed Forces Reserve Center in Danbury, Connecticut, which are being filed pursuant to the 30 day public comment period. Please contact me if you have any questions with respect to this transmission.

Thank you.

Robin A. Shepard
Legal Secretary
Office of the Corporation Counsel
City of Danbury
155 Deer Hill Avenue
Danbury, CT 06810
(203) 797-4518
(203) 796-8043 FAX

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

September 23, 2010

Jeff Hrzic, Chief
Environmental Branch
U.S Army Reserve - 99th RSC
5231 South Scott Plaza
Fort Dix, New Jersey 08640-5000

Dear Mr. Hrzic:

The Department of Environmental Protection has reviewed the *Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center, Newtown, CT*. The document evaluates the impacts of construction and operation of a facility that would include a 113,000 sq.ft. training building, 27,000 sq.ft. vehicle maintenance shop and 9.5 acres of paved parking, with a preferred site at 150 Park Avenue in Danbury.

The field delineation methodology described in the *Wetland Delineation Report*, included as Appendix E, states the wetlands were delineated at the Danbury site in accordance with the Army Corps' methodology that utilizes three criteria: wetland hydrology, hydrophytic vegetation and hydric soils. However, as noted in the Regulatory Analysis section, Connecticut regulated wetlands are defined solely by soil type. Therefore, state regulated wetlands may be more extensive than the federally regulated areas. It is not certain whether Connecticut regulated wetlands and watercourses have been delineated at the Danbury site.

The assessment correctly notes that the City of Danbury Environmental Impact Commission regulates activities within 100 feet of the wetland boundary. The commission should be consulted regarding permit application requirements.

In describing drainage from Wetland B/C, page 4-18 states it eventually discharges into a channelized tributary and drainage pipe along Lee Farm Road, while Figure 4-1 depicts drainage to the northeast, away from Lee Farm Road to the west of the site. This Figure also has two wetlands labeled E, mislabeling Wetland D on Parcel B.

The Still River is on the Department's Impaired Waters List in the *2008 State of Connecticut Integrated Water Quality Report* for the following impaired designated uses: (1) Habitat for Fish, Other Aquatic Life and Wildlife; cause - unknown; potential sources include unspecified urban stormwater; and (2) Recreation; cause - bacteria; potential sources include unspecified urban stormwater (and other unknown sources). (See Table 3-3 in the report, on-line at: http://www.ct.gov/dep/iwqr)

The Department has developed a draft Total Maximum Daily Load (TMDL) for the Still River Regional Basin for Recreational Uses, which is in the process of being adopted. (See our website at: http://www.ct.gov/dep/tmdl) This TMDL looks to reduce existing sources of

bacteria from both point and nonpoint sources by implementing control actions where technically and economically feasible.

In addition to bacteria issues, the Still River has also been identified as contributing proportionately high levels of phosphorus to the Housatonic River and downstream impoundments, particularly Lake Lillinonah, which has been experiencing severe eutrophication problems during warm, low flow summer months. A certain portion of this phosphorus loading is associated with the Danbury waste water treatment plant and the Department has been working with the City to find ways to address this issue. However, nonpoint source, stormwater contributions of phosphorus from developed areas are also of concern.

Danbury is an urbanized area subject to the Department's "*General Permit for Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems*" (MS4 GP). The MS4 GP was created as a result of requirements issued by U.S. EPA for Phase II of the Stormwater Program under the federal Clean Water Act. As stated on EPA's website: Each regulated MS4 operator, such as the City of Danbury, is required "to develop and implement a stormwater management program ... to reduce the contamination of stormwater runoff and prohibit illicit discharges." (See EPA website at: http://cfpub.epa.gov/npdes/stormwater/munic.cfm). The MS4 GP requires six "Minimum Control Measures," including: (4) "Construction site stormwater runoff control" and (5) "Post-construction stormwater management in new development and redevelopment."

Stormwater from the proposed site ultimately drains to the Still River which is in relatively close proximity to the preferred site for the proposed facility. The treatment and handling of stormwater on this site is particularly important in this very urbanized area, as attested by the concerns identified above. The Army Reserve is proposing to implement measures to control stormwater runoff during and after construction. The effectiveness in treating bacteria and phosphorus should be major criteria in the selection of stormwater control measures at the site.

Page 4-57 notes that the facility design will include green infrastructure and low impact development (LID) features. The Department strongly supports the use of LID practices such as water quality swales and rain gardens for infiltration of stormwater on site. Key strategies for effective LID include: managing stormwater close to where precipitation falls; infiltrating, filtering, and storing as much stormwater as feasible; managing stormwater at multiple locations throughout the landscape; conserving and restoring natural vegetation and soils; preserving open space and minimizing land disturbance; designing the site to minimize impervious surfaces; and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. Consequently, we typically recommend the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas,
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and parking lots),
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface,
- if soil conditions permit, the use of dry wells to manage runoff from the building roofs,

- the use of vegetated roofs (green roofs) to reduce the runoff from buildings,
- proper treatment of special activity areas (e.g. loading docks, covered maintenance and service areas),
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation, and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The effectiveness of various LID techniques that rely on infiltration depends on the soil types present at the site. The various soils in the project area are generally rated as most suitable for wet and dry detention basin and least suitable for various stormwater management practices that utilize infiltration. However, infiltration practices may be suitable at this site. Natural Resources Conservation Service mapping consists of a minimum 3 acres map unit and soils may vary substantially within each mapping unit. Soil inclusions within the site may allow for adequate infiltration of stormwater. Test pits should be dug in areas planned for infiltration practices to verify soil suitability and/or limitations. Planning should insure that areas to be used for infiltration are not compacted during the construction process by vehicles or machinery. The siting of areas for infiltration must also consider any existing soil or groundwater contamination.

Even if infiltration is limited at this site, it would still be possible to implement LID practices. Specifically, potential exists for the installation of green roofs on any new buildings and/or the use of cisterns to capture and reuse rainwater. The EA states that the preferred alternative would comply with Section 438 of the Energy Independence and Security Act (EISA) of 2007. In December 2009, the EPA developed a technical guidance document on implementing the stormwater runoff requirements for federal projects under Section 438 of EISA. The document contains guidance on how compliance with Section 438 can be achieved, measured and evaluated and can be found at: LID Guidance.

Page 4-28 states that that facility would connect to the City of Danbury sanitary sewer system and that water from vehicle service areas will be intercepted by an oil/water separator. Vehicle maintenance facilities with interior floor drains that are connected to the sanitary sewer require a permit from the Department. The *General Permit for the Discharge of Vehicle Maintenance Wastewater* (DEP-PERD-GP-010) covers the discharge of up to 15,000 gallons/day of wastewater generated by vehicle drippage, floor washdown and the washing of vehicles or steam cleaning of engines. For further information, contact the Permitting & Enforcement Division at 860-424-3018. A fact sheet, the general permit, a guidance document and registration forms may be downloaded at: Vehicle Maintenance GP. The contents of the oil/water separator tank must be periodically pumped and hauled by a certified waste oil hauler. A list of certified haulers can be obtained from the Bureau of Materials Management & Compliance Assurance (at 860-424-3366) or on-line at: Transporter List.

The Wildlife Division concurs with the conclusion on page 4-34 that bog turtles (*Glyptemys muhlenbergii*) will not be impacted because wetlands or streams would not be disturbed during construction and construction activities would not occur within 50 feet of wetlands or steams. However, the referenced June 7, 2010 letter could not be found in the appendix of our copy of the document; it is attached for your convenience. The Division supports the commitment noted on page 4-35 to conduct a preconstruction survey for nesting birds prior to clearing vegetation.

The Division also concurs with the statement that there would be no impacts to state listed or federally listed species at the Middlebury alternate site, since none are known to occur at this location. The division agrees that if the Oxford alternate site is selected, additional coordination with the Department should occur and surveys for the state listed American kestrel (*Falco sparvarius*) will be conducted prior to construction.

Thank you for the opportunity to participate in the this NEPA process. If you have any questions, please contact me at david.fox@ct.gov or 860-424-4111.

Sincerely,

David J. Fox

David J. Fox
Senior Environmental Analyst
Office of Environmental Review

cc: Robert Hannon, DEP/OPPD
Jenny Dickson, DEP/WD
Susan Peterson, DEP/WPSD
Steven Tessitore, DEP/IWRD
Julie Victoria, DEP/WD

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FRANKLIN WILDLIFE MANAGEMENT AREA
391 ROUTE 32
NORTH FRANKLIN, CT 06254
TELEPHONE: (860) 642-7239

June 7, 2010

Ms. Laura Haught
CH2M Hill
15010 Conference Center Drive
Chantilly, VA 20151

re: Proposed construction of a US Joint Armed Forces Reserve Center, 150 Park Avenue, Danbury

Dear Ms. Haught:

Thank you for the additional materials that you forwarded to me on 6/3/10. Please disregard my reference in my 5/28/10 letter to Eastern Box turtles, as that was a typographical error. Eastern Box turtle records are not in the Department of Environmental Protection's (DEP) Natural Diversity Data Base (NDDB) for this site, only historic records of the federally threatened and state endangered, bog turtle, *Glyptemys muhlenbergii.*

From the 5/19/10 letter from Thomas Chapman, US Fish and Wildlife Service (USFWS) that you forwarded to me, the USFWS does not consider this location to be within the critical habitat of the bog turtle. Also, as you indicate, the Army intends to avoid wetland impacts and avoid construction activities within 50 feet of wetlands and waters of the US, therefore, the DEP Wildlife Division does not think that this project will impact any historic bog turtle areas.

If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review. If you have any additional questions, please feel free to contact me at Julie.Victoria@ct.gov, please reference the NDDB # at the bottom of this letter when you e-mail or write. Thank you for the opportunity to comment.

Sincerely,

Julie Victoria
Wildlife Biologist
Franklin Swamp Wildlife Management Area
391 Route 32
N. Franklin, CT 06254

cc: NDDB – 17692

From: Cheryl Fusco [cherylf27@yahoo.com]
Sent: Tuesday, September 21, 2010 5:23 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: proposed military reserve center in Danbury, CT

Dear Sir:
I am writing to put my two cents in regarding the proposed building of a military reserve center on what is currently Lee Farm in Danbury,CT.. As a Danbury resident for over forty years I would beseech you to find another site for your center. The area you are considering is and has always been beautiful and peaceful. We are concerned, too, that it will change the whole atmosphere of that area of town and most probably lower property values. I hope that you will decide to look elsewhere for a place that will meet your needs - one that will not impinge on civilian neighborhoods and the accustomed enjoyment of the surounding natural beauty. Thank you so much for your kind consideration.
Respectfully Submitted,
Cheryl Fusco
Resident Danbury, CT

From: Lyn Hottes [lynh@snet.net]
Sent: Thursday, September 23, 2010 2:58 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Fw: letter to editor on army training center

To: Jeff Hrzic
Chief, Environmental Branch, USAR
9/23/10
Dear Mr. Hrzic,

This is my Letter to the editor that was published in The News-Times on 9/5/10. I have serious concerns about this proposal and nothing I have heard or read has answered them for me.

If the military wants to be a good neighbor, it must reveal how big an effect the Wooster Heights training center will have on us all. Thirty days is not enough time for public input. Ask the planning, zoning and environmental protection experts at city departments and/or Common Council committees to review the plans and present a report before public comment is cut off.

The 564-page report (www.hqda.army.mil/acsim/brac/env_ea_review.htm) calls for 10 relocated units and SEVEN new units. It's a "1,000-member training facility with administrative, educational, assembly, library, learning center, vault, weapons simulator and physical fitness areas." Besides a total interior building space of 145,616 square feet, it includes 9.5 acres of paved parking for "military and privately owned vehicles, including the 270 wheeled vehicles and 583 trailers authorized for the units," a 4,000-gallon fuel tank and a 2,000-gallon diesel tank.

It's a little city! Where will the 583 trailers and two tanks be located? Will trucks leave the southern section part way up the hill and climb up to the corporate park access road, tying up traffic more than it already is?

I'm not against the military and not necessarily against the center; if these beautiful fields have to be sold, it might be less invasive than something like condos or a mall. But is the military buying just the 30 acres it needs, or more of the 350 acres for future expansion?

What AREN'T they telling us yet? Are they planning to use the airport for training and transportation? I've never complained about airport noise; I grew up in Miry Brook and bought a house in the flight pattern. But helicopter training all weekend long will affect the whole region, not just me.

Please attend Thursday's (9/9) 7:30 p.m. council meeting at City Hall and ask questions.

Lyn Hottes

203-792-4825
46 Wooster Heights
Danbury , CT 06810

lynh@snet.net

Friends of Lee Farm

September 21, 2010

To: The City of Danbury
Mayor Boughton & Common Council

We, the undersigned, oppose locating the Wooster Heights Army Reserve & Training Center on the Lee Farm property. We call on Mayor Boughton and City Council members who share this position to make it known and to assist the citizens of Danbury in our efforts to prevent this inappropriate development of Lee Farm.

Locating an Army Reserve & Training Facility with the capacity to accommodate 15 U.S. Army Reserve units and two Army National Guard units for 1,000 people- including 145,616 square feet of interior building space with 9.5 acres of paved parking, 270 wheeled military vehicles, 583 trailers and two fuel tanks with a combined 6,000-gallon capacity along with personal vehicles on this parcel is bad public policy.

The implications for traffic, safety, lowered property values plus effects on the natural environment, combined with the fact that no property tax will be levied to pay for city services rendered, far outweigh the benefits.

Thirty days is simply not enough time for public input on the proposed Army Reserve & Training Center. We ask that the Mayor and Council mediate an extension with the Army. Decisions of this magnitude should not be rushed. Therefore we also expect that the relevant Boards and Departments have an opportunity to do their due diligence and review the plans and present a report with ample time to disseminate its findings before public comment is cut off.

We ask you, as the elected governing leaders of Danbury, to show leadership and stand with your citizens against this irresponsible development. The City passed a $6.2 million open space bond to purchase such properties. Seize the opportunity to preserve the quality of life for generations to come.

Thank you for your consideration on this matter:

The Friends of Lee Farm

September 21, 2010

1. Justin Molito 203 Middleriver Road
2. Leah Vaninni 203 Middle River Road
3. Christine Rotello 14 Pleasant Street
4. Louis Rotello 14 Pleasant Street
5. Renato Ghio 31 Sunset Drive
6. Alicia Ghio 31 Sunset Drive
7. Marion Liberati 43 Old Lantern Road
8. Jill Hancock 69 1/2 Osborne Street
9. Michael Burnett 112 Westville avenue
10. Pedro Gonzalez 5 Harding Place
11. Audrey Rubin Salzberg 197a Westville Ave
12. Cytnthia Simmons 17 Topstone Drive
13. Sean Morris 7 King Street
14. Jill Austin 22 Ivy Lane
15. Jonathan Greenfield 4 Short Lane
16. Michelle Greenfield 4 Short Lane
17. Michael Socci 264 Main Street # 2
18. Lynn Taborsak 109 East Hayestown Road
19. Bob Taborsak 109 East Hayestown Road
20. Joanne Wolff 34 carriage House Drive
21. Melvin Wolff 34 carriage House Drive
22. Lucinda Hicks-beach Quinn 10 Hall Street
23. Lisa Giallenza-Sweeting 9 Boxwood Lane
24. Dale Sniffin Nolan 108 Deerfield Ave
25. Aurelio Murracca 137 Deerhill avenue
26. Karin Mansberg 137 Deerhill Ave
27. Francine Schoffner 5 Oakland Avenue
28. William Gwynn 15 Cornell Road
29. Howard Polley 126 Triangle Street b 45
30. Brandi Smith 1 Cornell Road
31. Roger Waterhouse 18 Beech Street
32. Bill Foster 17 Library Place #2
33. Dave Noonan 11 Coachill Drive
34. Jane Miller 9 Centential Rd
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74. Bart Backman Reservoir Street
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118. Jeanne Mulvihill 32 Wooster Heights
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120. Joanne Targett 11 Wooster Heights
121. Tim Targett 11 Wooster Heights
122. Frances Merante 11 Deer Hill Ave
123. Cristina Blazek 3 Greenfield Ave
124. Christopher Gonzales 7 Winthrop Place

CITY OF DANBURY

OFFICE OF THE MAYOR
155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

MARK D. BOUGHTON
MAYOR

(203) 797-4511
FAX (203) 796-1666
m.boughton@ci.danbury.ct.us

September 23, 2010

Mr. Jeff Hrzic, Chief
Environmental Branch
USAR – 99th RSC
5231 South Scoot Plaza
Fort Dix, NJ 08640

Re: Environmental Assessment – Proposed Construction And Operation of an Armed Forces Reserve Center - 150 Park Avenue, Danbury, CT (August 2010)

Dear Mr. Hrzic:

Thank you for the opportunity to comment on the Environmental Assessment ("EA") prepared for the above project by the U.S. Army Corps of Engineers ("USACE"), on August 24, 2010. I should note at the outset that the USACE seeks comments by September 24, 2010. I have asked City departments to prepare their comments to meet this deadline, and I attach to this letter the comments of the City's Planning Director, City Engineer, and Associate Director of City Health and Human Services. I must stress, however, that these comments must be regarded as preliminary, given the extremely tight deadline given for a response. I also request a thirty day extension of the deadline to allow Danbury residents the opportunity to comment further on this proposal.

I believe that this project at this location is not in the best interest of the City of Danbury, and respectfully request the U.S. Army Reserve to choose another venue. To begin with, the 61.4-acre site is one of the City's few remaining industrially zoned (IL-40) parcels. It is precisely because of the dwindling supply of industrially zoned land in Danbury that our Plan of Conservation and Development ("POCD") warns that "[e]conomic expansion will falter as sites reserved for future industrial and corporate development are lost. ..." The POCD stresses the need for the City to monitor and preserve the supply of industrially zoned land. The U. S. Army Reserve project would deal a serious blow to that objective. The project would also remove this large acreage from the City's tax rolls.

RECYCLED PAPER

Second, as detailed in the comments of the Director of Planning, all development for the project is adjacent to and receives access from Wooster Heights Road. This makes little sense because the Wooster Heights Road area is predominantly residential, and the street itself is a two-lane, steep road with sharp curves near the proposed facility entrance.

It is also important to note that a portion of the project site is in the Airport Protection Zone, established under the City's Zoning Regulations to prevent hazards to aircraft approaching the Danbury Municipal Airport. The City's Airport Administrator indicates that the plans as presented do not show precise locations and heights of structures, and thus it is difficult to assess at this point whether the project will create such hazards. The City reserves the right to comment on more detailed plans which we understand will be required by the Federal Aviation Authority as part of its review of the project.

In short, I respectfully request the U.S. Army Reserve to reconsider the proposed location of the project at this site. The project as proposed is inefficiently planned, ignores the interest of nearby residential homeowners, and contravenes the City's long-term plans for orderly and beneficial development of its remaining industrial acreage. We are more than willing to discuss potential alternative locations within the 44 square miles of the City. Wooster Heights, however, is simply the wrong location for such a substantial undertaking.

Sincerely,

Mark D. Boughton
Mayor

Enclosures

cc: Hon. Chris Murphy
Hon. Joseph Lieberman
Hon. Christopher Dodd

Sent by regular U.S. Mail and email to jeff.hrzic1@usar.army.mil

RECYCLED PAPER

From: Sharon Maynard [mailto:smaynard@moheganmail.com]
Sent: Wednesday, September 08, 2010 10:14 AM
To: Mock, Robyn A CTR CTR USAR 99TH RSC -NA-
Cc: Elaine Thomas
Subject: Proposed land aquisition,construction and operation of (AFRC) near Newtown, Connecticut

Dear Ms. Mock:

This email is in reference to correspondence dated May 18,2010 concerning the proposed US Armed Forces Reserve Center to be located near Newtown, Connecticut.

We have no comment at this time, however, we would like to keep informed as this project moves forward.

In the future, could you please forward any correspondence to:

Ms. Elaine Thomas
Archaeology Program Coordinator
Mohegan Tribe
5 Crow Hill
Uncasville, Ct. 06382

Email: ethomas@moheganmail.com

Sincerely,

Sharon I. Maynard

Dear Mr. Hrzic

As a veteran of WWII I understand the need for a training facility for our young men and women serving our country but I strongly question the choice of location. I have lived on Wooster Heights for 56 years and have seen many changes some good and some bad. This change would be one of the bad ones. The increase in traffic over the past 10 years has made us(my family) put our lives in Gods hands many days just trying to get out of our driveway. If you have not yet personally visited the area then I must let you know that Wooster Heights is a narrow country road that has been widened at one end to allow the building of Lee Farm Corporate Park, but the rest of the road is windy and hilly. This is a road that has its fair share of accidents too (too much traffic at too high a speed). Your report states that traffic will increase on the weekends by over 2000 vehicle trips per day, but yet you also say the facility will have little or no impact on the area traffic. To us this means what little reprieve we get from commuter traffic on the weekends will now be gone. You also talk in the report, about historical significance of the area, and that nothing of great historic value was found, but on the road just outside the large field to the south west of Wooster Heights we found a Civil War bayonet. We are also aware of an old stage coach way station not too far past this same location on the pond side of the property. So I guess I have to question you reports about historical value.

I have not yet gotten thru all the details of the report but have come up with the following question so far.

1. The report states there will be minimal impact of noise and environment concern. Can we please have a copy of the peer review of this report?

2. Can you explain what you mean by negligible impact on plants and animals when the proposed site plan shows extensive paving of this area? Where is all the wildlife to go?

3. What will this project do the property values in the area? Already a house in the neighborhood has gone on the market; a family home that has been in that

family for at least 50 years. Is there a report on this? Is there a peer review of this report?

4. The report states there is no historical or archeological impact but the only home mentioned was the Robinson home. What about the historical significance of the Old Boston Post Road? What about Wooster Heights(formally Hulls Hill)? What about the homes across the street that were built in 1690 and 1750 as well as the other homes built in the early 1900's?

5. What will the impact be on local wells and water supply?

We have many concerns about the impact on our family life if this project were to go thru, from the increased traffic, increased use of the airport and the proposed installation of large fuel storage tanks. We do hope you will reconsider your choice of sites and select one that has no impact on residential areas.

Sincerely,

Hubert & Regina Morgan

64 Wooster Heights

Dear Mr. Hrzic,

Having read through the extensive report on line I now have several questions. I am the proud mother-in-law of a navy sonar technician, and so I strongly support our military. On the other hand as a neighboring home owner I strongly reject the idea of putting a training center in the middle of a residential historic area. I have difficulty now exiting my driveway at commuter times onto Wooster Heights so I don't understand how you say this building and increased traffic will not affect us. Forget about getting home if there is a tie up on I-84, it can take up to fifteen minutes to get up the hill. It is my understanding that the Danbury site is the only one that will have any effect on residential neighborhoods and is the only one that eradicates meadows, not one but two. I also have concerns of the placement of the equipment repair garage so close to the 10 plus acre pond on the south west side of Wooster Heights, also the above ground fuel tanks at this same location.

I need to reread the report and sort thru more of the technical stuff but here are my questions so far.

1. The report states that the project will cause a minimal impact on noise and on the environment. How was this decided? Can we get a copy of the peer review of this report?

2. Can you explain what you mean by having little or no impact on plants and animals when the proposed site plan shows extensive paving of all parcels?

3. What will this project do the property values in the area? Has anyone even looked into this.

4. The report talks about historical and archeological value of the area and that there will no impact on it, but the only home mentioned was the Robinson home. The roads mentioned were Park Ave and Miry Brook. What about the historical significance of the Old Boston Post Road, and Wooster Heights? What about the homes across the street that were built in 1690 and 1750 as well as the other homes built in the early 1900's?

5. What will the impact be on local wells and water supply?

Having lived in this area for more than fifty years I am greatly saddened by your proposal to pave such lovely grounds and force more wildlife into the populated city areas. I do hope that you will reconsider and move the proposed site to a more suitable location.

Sincerely,
Deborah Morgan

From: Pattyto@aol.com
Sent: Friday, September 24, 2010 1:12 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Cc: ddsand@snet.net
Subject: RE: Proposed Military Base in Danbury, Connecticut

Dear Mr. Hrzic,
I am writing you to ask you to reconsider the Lee Farm property for a military base.

This area is so over populated now with homes, aircaft, cars, businesses, construction, we really don't need anymore congestion. I have lived here in Danbury for 25 years and have seen the changes. It takes us at least 20 minutes to exit from the bottom of our street. Route 7 is always backed up even without the construction. The airport traffic has increased immensely plus Westchester Airport has re-routed all their commercial aircraft over our area so now we have aircraft flying over our homes at all hours day and night.
We cannot even leave our window open with the noise.

Our area was once a quiet area with open space,old farms, historic homes, wildlife, fresh air(not exhaust from aircraft) We loved living on the west side of Danburybut because of all of this our life has been changed.

The idea of a military base in such a populated area with all the other congestion, and problems we have here is really inconceivable. I feel the military should consider Oxford or Middlebury, an area which has large areas of land,but are not in a residental area.

I am a native of Verona, New Jersey, I was born and raised in New Jersey. I have been on your base back in the 1960's when I had friends being trained for Viet Nam. Your base covers a large area in the Pine Barrens with very little residental neighborhoods other then for the military families. On your base you have had security breaches in the past with terriorist gaining access to your base, this is unforgiveable when you have a residential area around you, such as it would be here in Danbury. The military would be putting all residents at a high risk.

I am sorry, but I feel our area is not suitable for a military base, its too over populated, dangerous for the residents in the area.(this includes Wooster School, businesses and the airport as well)

Please consider another area with more land and less residents for this base.

Thank you.

Sincerely,
Patricia Osowski

U.S. Army Corps of Engineers,
U.S. Army Reserve, 99th Regional Support Command,
Attn: Jeffrey M. Krzic, Environmental Division Chief,
5231 S. Scott Plaza,
Fort Dix, NJ 08640

Received
99th RRC ARIM
SEP 2 2 2010

Sara and Chris Weir
185 Lake Place South
Danbury, CT 06810

September 17, 2010

Dear Mr. Krzic,

I am writing as a resident of the West Side of Danbury, CT, to request that you not build your Army Reserve Facility on the Lee Farm Property.

I fully support the Army and would fully support having an Army Reserve Center somewhere else in Danbury, or at other locations you have found. It should be in a place that has already lost its open space quality while still being close to highways or whatever else you need for your facility.

I am opposed to a housing development, as well. While there are many other places you can put an Army Reserve Facility and certainly endless places to put housing, there is no other large piece of open land in Downtown West Side of Danbury.

I am also writing the mayor's office and the owners of Lee Farm to make it a high priority to preserve this last large piece of open space in Danbury as open space—or as a park amenity for Danbury residents now and into the long future.

I realize that Lee Farm is private property. I am also appealing to the Lee Farm owners to sell it to the City of Danbury at a reasonable price, as a philanthropic, environmental act of civic generosity.

Hot, Flat and Crowded I think is the title to a recent book. It is also the trend as we go into the future. Populations go up, open space disappears.

The army can find other places. We cannot find more open space. Please decide to build elsewhere.

Sincerely,

Sara & Chris Weir

Sara and Chris Weir

P.S. IMPORTANT. You should also provide more time for public comment and, very important, provide an email so people can write to that. You beg people not to respond with your "write-an-address-only approach"

Sara and Chris Weir
185 Lake Place South
Danbury, CT 06810

HARTFORD CT 061
18 SEP 2010 PM 5 L

USA FIRST-CLASS PRIORITY

Attn:
Jeffrey M. Krzic, Environmental Division Chief,

U.S. Army Corps of Engineers,
U.S. Army Reserve, 99th Reg. Support
5231 S. Scott Plaza,
Fort Dix, NJ 08640

08640+5062

-----Original Message-----
From: Leslie [mailto:elleballard2@aol.com]
Sent: Sunday, September 19, 2010 3:02 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Danbury airport question

Dear Jeff,
(I apologize for the informality, but your last name is not given in the newspaper where I got this address). I lived with relatives on Schofield base during college-- the largest military base in Hawaii, and am very familiar with army life. I am as patriotic as the next person -- my brother volunteered in Vietnam, my brother-in-law was a Green Beret and was there twice, my nephew is a colonel in the Army Rangers and just returned from his third tour in the Middle East. Another nephew was in the President's Honor Guard, serving President Reagan.

1. That said, I have valid concerns not being addressed by Danbury's public: the "training center" is a military base, is it not? Won't the Danbury Airport be the delivery point for everything the center needs from now on? Won't that lead to expansion of our small airport? And how will the increased air traffic affect the nearby residential areas? As it is, a single helicopter traveling over Lake Kenosia is so loud and percussive, it interrupts normal activity. Property value will be affected.

2. What do 1,000 trainees do to blow off steam? They go to bars and look for excitement -- as they deserve! Has any study been conducted, or any consideration been given to the impact on Danbury's culture, and current low crime rate? The growth of bars, pubs, and saloons to accommodate this new market will be considerable -- as will the number of drunk drivers and incidents. Danbury will need a bigger police force. How did Groton's base affect the local community?

Candidly yours,
Leslie Ballard
Danbury, CT.

LAW OFFICES OF
DAVID F. BENNETT
72 NORTH STREET
SUITE 204
DANBURY, CONNECTICUT 06810
TELEPHONE (203) 797-9888
FACSIMILE (203) 743-4672
24 HOUR TELEPHONE (203) 470-5536
TAX ID# 06-1098531

E-MAIL
BULLDOG799@AOL.COM
WEBSITE
WWW.BULLDOGESQ.COM

ALSO LICENSED IN:
NEW YORK, FLORIDA
AND DISTRICT OF
COLUMBIA

Received
99th RRC ARIM
SEP 20 2010

U.S.Army Corps of Engineers
U.S.Army Reserve
99th Regional Support Command
Attn: Jeffrey M. Hrzic
Environmental Division Chief
5231 S.Scott Plaza
Fort Dix, N.J. 08640

9/16/10

Ladies and Gentlemen:

I am writing to express my support for your proposed use of the Lee Farm property in Danbury, Connecticut, for an Army Reserve training center. I have practiced law here in Danbury for 33 years. I have two sons who graduated from Immaculate High School in Danbury, and both sons graduated from the United States Naval Academy. They currently are 2nd Lieutenants in the United States Marine Corps. Both had the privilege to spend an exchange semester at West Point and both received their jump wings at Fort Benning courtesy of the United States Army. Immaculate High School has also sent a number of graduates to West Point. Each year, many young men and women from the greater Danbury area join the United States military.

The Lee Farm property is an excellent location for the proposed center. Danbury has an active veterans community. I am enclosing a copy of my letter to the Editor of the local paper, The News Times.

A recent article in the News Times stated that you are also looking at sites in Oxford and Middlebury. While both are wonderful towns, I would respectfully suggest that the Lee Farm site here in Dan bury is a much better choice. The site has high visibility from Route 84, easy access to Route 84 and the city of Danbury has an abundance of hotels, restaurants and related facilities. As part of the business community of Danbury, I think the center would be a welcome addition to the local economy.

You will of course encounter some opposition to the proposed project. Some people oppose any project on open land in Danbury. Some may oppose the particular use. Some may oppose the presence of the Army itself, yet those same individuals will wave the flag and profess their support of those in uniform. Thomas Paine called those individuals "sunshine soldiers and summer patriots." I would hope

that the presence of the Army center at Lee Farm will over time change the opinions of those who may initially oppose your project.

I hope that this letter will assist you in your decision making process. I wish you fair winds and following seas. If I provide any other information or support for this proposed center, I will be happy to do so.

Sincerely

David F. Bennett

LAW OFFICES OF
DAVID F. BENNETT
72 NORTH STREET
SUITE 204
DANBURY, CONNECTICUT 06810
TELEPHONE (203) 797-9888
FACSIMILE (203) 743-4672
24 HOUR TELEPHONE (203) 470-5536
TAX ID# 06-1098531

E-MAIL
BULLDOG799@AOL.COM
WEBSITE
WWW.BULLDOGESQ.COM

ALSO LICENSED IN:
NEW YORK, FLORIDA
AND DISTRICT OF
COLUMBIA

September 15, 2010

To the Editor:

I support the United States Army application for the Lee Farm property here in Danbury. I am puzzled by the opposition. There are many vehicles in Danbury with yellow ribbon "We support the troops" magnets or bumper stickers. Connecticut was happy to keep the sub base in New London open. Sikorsky, United Technologies and Electric Boat are all military contractors and employers here in Connecticut. Many veterans, rightly proud of their service, live here. Our Governor, Jody Rell, from Brookfield is married to a former Navy pilot. Why oppose this project on the hill here in Danbury? Too visible? Too blue collar? Are men and women in military uniform not welcome in Danbury?

Today, the United States military is 100% volunteer. The active duty military and their families today constitute only 1 % of the population of this nation. For 99% of the population, there is no danger that one may have to serve. There is no military draft, no obligation to serve.

Fifty years ago, President John F. Kennedy said: "Ask not what your country can do for you, ask what you can do for your country". Danbury is being asked today to become an Army town; just like New London is a Navy and Coast Guard town. Why is Danbury not anxious to host this Army training facility? Why is Danbury not eager to host this Army training facility?

My wonderful wife and I are the proud parents of two sons who are 2nd Lieutenants in the United States Marine Corps. Both are graduates of Immaculate High School and the United States Naval Academy. Our oldest is just finishing his first combat infantry tour in Afghanistan. Many other parents in the area have sons and daughters who have attended a service academy, an ROTC program or enlisted in a branch of the military. All who serve, regardless of branch or rank, deserve the respect and thanks of a grateful nation.

So here we are now in Danbury, presented with an opportunity to collectively do our share and host this Army facility. A large flag will hopefully be visible from Route 84 at the site to tell everyone who drives by that Danbury has joined New London as a Connecticut military town. If you oppose this Army training facility at the Lee Farm property, I suggest you take a short ride to West Point, New York and take the tour at the United States Military Academy. In the alternative, take a longer ride and visit Arlington National Cemetery in Arlington, Virginia. Be sure to go to Section 60 of the cemetery where those service men and women who are dying in

Iraq and Afghanistan are being buried every day. If you have time, visit the Vietnam Memorial or the new World War II Memorial in D.C.

As you drive back into Danbury, look up at the hill on the Lee Farm property.

If you believe that Danbury should be honored to be host the United States Army, make your opinion known to the Army and the politicians you elected. If you still do not wish to see a big flag at the new Army training facility up on the hill at the Lee Farm property or to have the opportunity for your son or daughter to sit next to a young man or woman in uniform at a local restaurant, then oppose this project.

If you think it is too much of a burden to ask Danbury to host this Army facility, and you oppose this project, I respectfully ask you to remove the "We support the troops" magnet or bumper sticker from your vehicle.

Even in Danbury, hypocrisy should have its limits.

Respectfully,

David F. Bennett

Law Offices of David F. Bennett
72 North Street
Suite 204
Danbury, CT 06810

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U.S. Army Corps of Engineers
U.S. Army Reserve
99th Regional Support Command
Attn: Jeffrey M. Hrzic
Environmental Division Chief
5231 S. Scott Plaza
Fort Dix, N.J. 08640

08640+5062

From: Ctbhams@aol.com
Sent: Monday, September 20, 2010 8:01 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: proposed Army Reserve Center in Danbury

Jeff,

Although I live in Newtown, I'm in Danbury a great deal. In my opinion, the Army Reserve Center should never be sited on the pristine property that is Lee Farm.

No, I'm not anti-military, after all they fight for my freedoms such as being able to express myself on this subject. As it did in Newtown, the Army is trying to establish a center on pristine land. In Newtown's case it was the prime spot in Fairfield Hills. The Army Reserve Center will consist of quonset huts and corrugated metal buildings where the army will be working on vehicle and equipment repair. There will be no regard for the beauty of the open land--something that is becoming scarce. Why can't the Army find some area in a industrial park where it would fit in, or at least not be an eyesore on pristine land?

Thanks for hearing me out,

Sherry Bermingham

From: Joey DiComo [notoparkavesite@prodigy.net]
Sent: Tuesday, September 21, 2010 12:33 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Proposed prefered site for the Newtown Army Reserve base consolidation

TO: U.S. Army Reserve, 99th Regional Support Command
Attn: Jeffrey M. Hrzic, Chief, Environmental Division
5231 South Scott Plaza, Fort Dix, NJ 08640.

Mr. Jeff Hrzic,

I am a resident adjacent to the Lee Farm property. I have tried to keep an open mind regarding the building of the Army Reserve base on a portion of this property. After carefully reading the EA I have questions.

Questions:
1. What is the time frame to complete this project? We seem to be on an accelerated schedule with only 30 days to comment on the EA. Most of us are not experts in this area. Can the Army extend this time frame?
2. Do you have case histories of how an Army Reserve site such as this one impact the surrounding home values after being built. (before & after)?
Could you provide copies?
3. Does the Army typically bond monies up front for unforeseen loss of quality of life to the surrounding residents?
4. Will there be at any time the use of military aircraft at the Danbury Airport?
5.Will there be any caravans of Military vehicles on Wooster Heights Road?
6. How frequent will military vehicles be driven on Wooster Heights Road?
7. The report says the Army is looking at a 55 acres. According to the plans it looks like 12 acres will be developed north of Wooster Heights road and 18 south. The report was unclear if the Army is purchasing 55 acres or more and developing 30 or only looking to purchase 30 acres? Please clarify.
8. Exactly which Parcels is the Army looking purchase? Map / Lot / Unit?
9. How will the Army compensate the City of Danbury for for their services in lieu of property taxes?

The report indicated that most of the activity would be on the weekends and traffic, noise etc would be close to normal weekday activity. That's a point I don't like. Most families in this neighborhood work during the week and are home on weekends. We don't want weekday activity on the weekends we want peace and quiet while we are relaxing in our yards.

I could understand why the Army would want to build here since it would be easy and cost effective. These parcels of land are prime real estate. The views are majestic, that is just one reason I feel that they should be saved as open meadow. We would love to have you in Danbury but there are other sites available in Danbury that do not encroach on residential neighborhoods and were not mentioned as possible locations. Please go back to the discovery stage and find a more suitable location.

Respectfully
Joe DiComo

-----Original Message-----
From: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
[mailto:jeff.hrzic1@usar.army.mil]
Sent: Monday, September 20, 2010 9:52 AM
To: Bargerhuff, Kirk E NAE
Subject: FW: Lee Farm Danbury CT (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Additional comment.

-----Original Message-----
From: BKEHLI@comcast.net [mailto:BKEHLI@comcast.net]
Sent: Thursday, September 16, 2010 8:31 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Lee Farm Danbury CT

Dear Mr. Hrzic,

After reading more of the proposal I have a few more questions and concerns.

Upon closer review of the proposal why was the decision made to use outdated maps and information to make such crucial decisions that will have a lasting affect on the entire area?

How will this project affect the current quality of life that the residents currently have and are entitled to continue?

o What is the proposal for exterior lighting on the buildings and parking areas? How many hours a day will they these lights be on?

o What type of security will there be?

o What type of fencing will be installed?

o What will the daily work schedule be?
- How many full time staff will be on site?
- How often are training weekends held

o When was the traffic study done?
- What time of year?
- What time of day?
- How long of a time period?

Wooster Heights is already a difficult road to come out on to from both individual driveways and the three roads that intersect with it. How can you say there will be minimal impact when you clearly state the facility is designed to train up to 1,000 people at one time?

Sincerely,

Kathy Ehli

Classification: UNCLASSIFIED
Caveats: NONE

95 Hoyts Hill Road
Bethel, CT06801
September 9, 2010

Received
99th RRC ARIM
SEP 20 2010

U.S. Army Corps of Engineers
U.S. Army Reserve
99th Regional Support Command
Attn. Jeffrey M. Hrzic
Environmental Division Chief
5231 S. Scott Plaza
Fort Dix, NJ 08640

Dear Sir,

I am writing to you in regard to the Army Reserve Center proposed to be located at the Lee Farms property in Danbury, Connecticut. My understanding is that this is a greenfield site. I believe that the same applies to other sites in the state of Connecticut that are actively under consideration. It would be more environmentally sound if consideration were given to redeveloping a brownfield site. There are many brownfield sites in the state that could be made suitable for your use.

The citizens of Connecticut have the right to expect the U.S. Army Corps of Engineers to provide leadership in environmentally conscious development. I believe that site selection is an important criterion for this, particularly since the design requirements for the Army Reserve Center will likely include a LEED rating or its equivalent.

I therefore urge you to reconsider the redevelopment of a brownfield site rather than use previously undeveloped land.

Sincerely,
John Hannah IEng MIET LEED® AP

cc Editor, News-Times

J. HANNAH
95 HOYTS HILL ROAD
BETHEL, CT 06801
U.S.A.

STAMFORD CT 068
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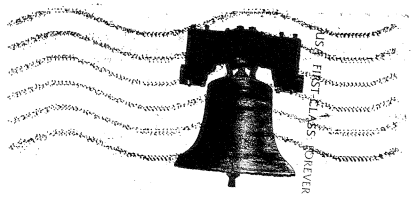


ATTN: Jeffrey M. Hriz
Environmental Division Chief
U.S. Army Corps of Engineers
U.S. Army Reserve
99th Regional Support Command
5231 S. Scott Plaza
Fort Dix, NJ 08640

08640+5062

From: Dana Hill [danahill1028@yahoo.com]
Sent: Thursday, September 16, 2010 10:51 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM; m.boughton@ci.danbury.ct.us
Subject: Lee Farm/Army training center

Dear Mr. Hrzic and Mayor Boughton,

A recent Letter to the Editor in the Danbury News-Times encourages readers to write to you to share opinions regarding the potential developing of an army training center at the Lee Farm property in Danbury, CT. Presumably, the author of the letter hoped that you would receive negative feedback from the citizens of our town; however, I am in support of the army's proposal.

The owners of the property and nearby residents have stated their desire to have the property used for residential development. However, at this point in time, such development is not in the best economic or aesthetic interests of our town. It has been noted that the property would be an ideal site for "cluster" housing or townhomes. A quick scan through a realtor's Web site would indicate a glut of such housing in our community; surely adding to the inventory is not necessary, nor is it beneficial. (Despite the fact that the town receives a real estate conveyance tax on properties sold, it receives nothing when properties languish on the market for prolonged periods of
time.) Some might argue that the town has been remiss in its oversight of development; housing complexes are being built when there is no demand and properties are being cleared seemingly just for the sake of clearing.

Conversely--as Mayor Boughton has noted in the past--the army training center would prove economically beneficial to our community. The reservists visiting our city would likely frequent restaurants and stores. Local businesses--and our city's tax coffers--would profit.

Several writers of Letters to the Editors have voiced their opposition to the potential use/overuse of our airport if a training center were to be built.
It is not quite clear what kind of air traffic these writers expect; it is not my understanding that the army reservists are flown in, or that there are airfield training exercises. I would ask people to consider the fact that in times of distress or disaster, they would be grateful to have an airport that promotes the accessibility of our community. Surely, then, that same airport should be made available should the army reservists need it on what would likely be a limited basis.

Lastly, it is of paramount importance that all citizens consider (or perhaps reconsider) their patriotism and loyalty to this country. Ensuring the security of our nation has never been more critical. Being able to contribute in some way to the training of troops and to our national defense is, for our town, a call to duty that we should answer.

Regards,

Dana Hill
Danbury, CT

-----Original Message-----
From: Jonathan Levine [mailto:jonathan.levine@snet.net]
Sent: Sunday, September 19, 2010 10:40 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: lee farm property danbury ct

hello mr. hrzic,
your name was listed in a newspaper letter as the person to write to, concerning the army's purchase of lee farm property in danbury, ct. i am a taxpayer in danbury, and i support the army building a base there. the only thing that would change my mind, is if the army were exempt from paying property taxes. please don't let a bunch of old geezers who don't want ANY development on that land to cause the army to look elsewhere. as is typical of most situations where there are groups of people for and against something, the opponents are more vocal and organized. thereare people in danbury who want to see the army build on the lee farm property. i'll be honest, i see the army's plans as a great

new source of tax revenue for the city. the situation in danbury, is your typical 'not in my backyard' situation.

so before i get more support for this plan, can you confirm that the army is not exempt from property taxes?

regards

jonathan levine

jonathan.levine@snet.net

US Army Corp of Engineers
US Army Reserve
99th Regional Support Command
Attn Jeffrey Hrzic
ENV Div Chief
52315 Scott Plaza
Fort Dix NJ 08640

FROM

SHELTER ROCK BUSINESS CENTER, LLC.
23 Juniper Ridge Rd.
Danbury, CT 06811
(203) 744-1800

RECEIVED
99th RRC ARIM
SEP 20 2010

SUBJECT

FOLD HERE

DATE 9.11.10

Dear MR HRZIC,

I am contacting you to show my support for the reserve centr to locate on the Lee farm property in Danbury. I believe you will be an asset to our community, additionally I believe the location will have a minimal effect on traffic, being as close as it is to I-84. I hope the Reserves succeed in this, their new location.

Respectfully Submitted
JAY MOODY

SIGNED

J. T. Moody
23 Juniper Ridge Rd.
Danbury, CT 06811

STAMFORD CT 068
14 SEP 2010 PM 25 T

USA FIRST CLASS

US Army Corp of Engineers
US Army Reserve
99th Regional Support Command
Attn: Jeffrey Hrzic
Env DIV Chief
5231 S. Scott Plaza
Fort Dix NJ 08640

Sept 14, 2010

Dear Jeffrey Hrzic

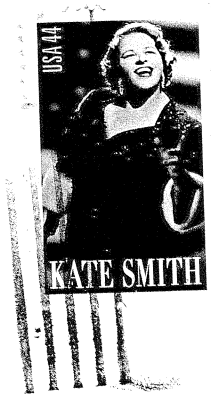
I am not opposed to the U.S. Army Reserve traing center to be built in Danbury. I just think having it built on the Lee Farm property is not the right place. Living or just driving up Wooster Heights and seeing the undeveloped beautiful Lee Farm land lets you know it is in the city but looks like the country. Wooster Heights is a narrow road that is heavily traveled. With all the cars from the service men and women going and coming from the traing center will only make it worst for the people living on Wooster Heights and the side streets.

Please consider other property.

Received
99th RSC ARIM
SEP 20 2010

Irene O'Donnell
2 Cornell Rd.
Danbury, CT 06810

I. E. O'Donnell
2 Cornell Rd
Danbury CT 06810-7542



U.S. Army Corps of Engineers
U.S. Army Reserve.
99th Regional Support Command.
ATT. Jeffrey M. Hrzic
Environmental Division chief
5231 S. Scott Plaza
Fort Dix, N.J. 08640.

P.O. Box 3135
Danbury, CT 06813
September 1, 2010

U.S. Army Reserve
99 Regional Support Command
Attn: Jeffrey M. Hrzic,
Chief Environmental Division
5231 S. Scott Plaza
Fort Dix, N.J. 08640

Subject: Proposed Army Center, Danbury, CT

Dear Sir:

As a resident of 40 Wooster Heights, Danbury, I support the Army Reserve Center locating in my neighborhood. I have spoken with a few of my neighbors and I find they also support the Center. I have friends in other parts of the City who would also be acceptable to it.

I have a two fold purpose for supporting your plan.
(1) There would be no building of condo units, and (2) A family member who is now serving with the CT National Guard 102nd Infantry Divison in Afghanestan. I know he trains at Camp Rell. Hopefully his unit would be served by this Center.

My one concern, however, is the wildlife that exists there. I'm sure it will be dealt with in a humane manner.

I wish you well in your endeavor to locate in Danbury.

Sincerely,

Kirsten Purdie

(Mrs) Kirsten Purdie

Ms. Kirsten Purdie
PO Box 3135
Danbury, CT 06813

STAMFORD CT 068
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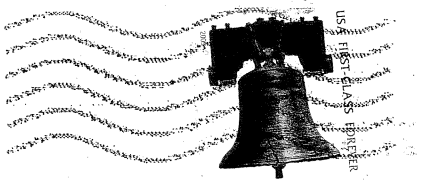

U.S. Army Reserve
99 Regional Support Command
Attn: Jeffrey M. Argic
Chief Environmental Division
5231 S. Scott Plaza
Fort Dix, NJ 08640

08640+5062

Betty Jane Rose
50 Old Market Lane (50 OLE Musket Ln)
Danbury, CT 06810

Attn: Jeffrey M. Hrycie
Environmental Division Chief

SEP 20 2010

Dear Mr. Hrycie,

We know you are considering the Lee Farm property for a U.S. army reserve center.

I sincerely hope you will share another site.

The Lee Farm property is the most peaceful haven for city residents to pass by and admire and feel all is right with the world.

Mostly everywhere we look in our area is being built up and this was one of the pristine, farmlike areas anywhere around.

I hope you find it in your hearts to let us keep our beautiful area and bring peace to so many residents. The areas for wild life are quickly disappearing. We see hawks, coyotes, turkeys deer, etc., which is so refreshing in the middle of the city. This is a much loved space I hope you reconsider & do hope you find a more suitable space.

Sincerely,
Betty Jane Rose

Betty Jane Ross
50 OLE Musket Ln
Danbury, CT 06810

STAMFORD CT 068
10 SEP 2010 PM 26 T

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U.S. Army Corp of Engineers
U.S. Army Reserve
99th Regional Support Command
5231 S. Scott Plaza
Fort Dix, N.J. 08640

ATTN: Jeffrey M. Hrzic, Environmental Division Chief

TO: U.S. Army Reserve, 99th Regional Support Command
Attn: Jeffrey M. Hrzic, Chief, Environmental Division
5231 South Scott Plaza, Fort Dix, NJ 08640.

Received
99th RRC ARIM
SEP 2 2 2010

FROM: Diane Sanders
15A Weindorf Ln
Danbury, CT 06810

CC: Danbury Mayor Mark Boughton
Danbury City Council President Joe Cavo; Members Benjamin Chianese and Paul Rotello
Danbury Environmental Impact Commission Chair Bernard Gallo
Danbury Planning and Zoning Director Dennis Elpern
Danbury Aviation Commission Chair John Ashkar
Danbury Airport Administrator Paul Estefan
Connecticut State Senator Michael McLachlan

Sept. 19, 2010

I am writing in opposition to the proposed location off Wooster Heights Rd, Danbury for the new Army Reserve Center. I am also asking for an extension of the time limit for public comment and question on this matter. This proposal calls for an extensively developed facility on this pastoral property, and the public does not yet have a good understanding of what daily and weekend operations would be like there. My opposition, and local opinion, may change if more information was forthcoming, and if the repeated assertion that "impact" to our neighborhood would be "minor" or "negligible" is supported by more than words on the page of an Army report (http://www.hqda.army.mil/acsim/brac/env_ea_review.htm).

Specifically, my objections include:

(1) Impact on aesthetics - *"Moderate long-term reduced to minor by planting a visual screen of trees and shrubs around the AFRC."* The existing Lee Farm Corporate Park has had a minimal affect on the surrounding area because it is set so far back from the road, and even the parking and road frontage does not intrude on nearby residential areas. It is unclear whether this proposal / site plan includes enough setback to truly blend with the neighboring residences in the Wooster Heights area. I am pleased the conceptual site plan appears to meet minimum setbacks of even the RO Zone. However, for such a large and active facility, I wonder if minimum requirements will be enough to mediate adverse affects on property values. A "reduction" of impact to "minor" (and not "negligible") by plantings is not enough to change my opposition.

(2) Impact on air quality – *"Minor long-term impact during operation from building heating units, generators, fuel points, and water heaters."* What are the hours of operation? An unanswered question. What about vehicle exhaust? The EA report states 270 wheeled vehicles on site – are those diesel? What about the vehicle repair shop? I live not too far from a trucking facility, and over the years, one of the major complaints from nearby residents, that the City of Danbury is well familiar with, has been diesel fumes. And that's not nearly as many trucks. Vehicles, generators, filling fuel storage tanks, fueling vehicles,… can generate quite a bit of exhaust and/or fumes. Maybe it won't add to the "average reading" on an on-site pollution-meter as the fumes dissipate, but it sure can ruin dinner.

(3) Impact on noise – *"minor long-term effects during operation from vehicle noise. Minor long-term noise impacts on nearby residential area possible."* This is one of the worst. Did I mention I live near a trucking facility? I know vehicle noise. If you're nearby, it only takes one truck, idling and idling. You won't think it is a "minor effect" if it is running when you want to leave your windows open or on a Saturday when you want to enjoy your yard. The fact that the report consistently compares generated noise detectable to residents to that of aircraft from the municipal airport is disturbing, since that long has been a tense issue in this area. But here is my other question – what about those weekend drills? I purposely chose not to live near a school or park because of the weekend noise of organized outdoor activities. Will those drills include organized outdoor activities? I ask because I have found so little information on daily and weekend use – detailing expected activities and times, except that there will be classroom activities and no *live* weapons firing. Need more information on what actually *will* take place. The fact that this proposal is practically IN a residential area causes grave concern. Until questions like this are adequately answered, I must be opposed.

(4) Impact on transportation – *"Negligible impact on traffic flow during operation"* Again, I have little information on what the hours of operation are, so what does that leave me to think? Does this imply that weekday use will not employ standard business hours? (Have you seen the Wooster Heights / Miry Brook / Rt 7 section in the morning and evening?) As for weekends, it is hard to believe 275 (or 800!) personnel arriving for, and leaving from, "drills" on Wooster Heights Rd would be "negligible". In fact, this very characterization, to me, casts aspersions on ALL of the conclusions of the environmental assessment report. Certainly this is one area the public needs more information. Additionally, I request full disclosure of any report, communication or consideration of the use, or non-use, of the Danbury Municipal airport/heliport. This is also an area of concern, being without a public, binding commitment that associated use by the center, or those otherwise affiliated with the center, would not adversely affect the residential-community surrounding airport.

I could go on with other objections, but what I most hope to bring to light is that there is not enough detailed information readily available to the public, and closing the time for public comment *and questions* before we can understand the impact of this proposal is a sham. I could oppose on that assertion alone, but until adequately addressed, my objections begin with the detriment of the aesthetics, air quality, noise and transportation in the immediate vicinity. I implore further consideration of other sites in Danbury, or the alternatives in Middlebury or Oxford. At the very least, I respectfully entreat you to extend the time for public comment and questions.

Thank you for your consideration.
Respectfully Submitted,

Diane Sanders

Diane Sanders
15A Weindorf Ln
Danbury, CT 06810
(203) 792-8857

Diane Sanders
15A Weindorf Ln.
Danbury, CT 06810-8226

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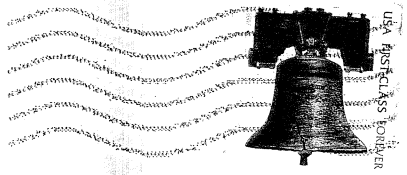

U.S. Army Reserve, 99th Regional Support Command
Attn: Jeffrey M. Hrzac, Chief Environmental Division
5231 South Scott Plaza
Fort Dix NJ 08640-5062

From: Rich Schmiedel [rschmiedel20@comcast.net]
Sent: Monday, September 20, 2010 5:32 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Lee Farm

Dear Jeff
I am writing this letter regarding Lee Farm, and the possibility of the army using it for a reserve center. I have lived in this area for 35 years, and it would be a sin, to disrupt this beautiful land for such a terrible project. I am sure there are plenty of areas the army could use, that are not in or near residential areas. The traffic we encounter already is bad enough. We don`t need it to get worse. If the army wants to be a good nieghbor, then they should do just that. Think of all the people first. The people in this area DO NOT want this project. Leave the open land alone. If people want to build a residentail area, then so be it. But what you want to bring is nothing more than a new city dump. I can be contacted at 203 792 3247, or rschmiedel20@comcast.net Thank You for your time.
Sincerely
Richard J Schmiedel
8 Harvard Rd
Danbury Ct 06810

From: Rich Schmiedel [rschmiedel20@comcast.net]
Sent: Monday, September 20, 2010 5:24 PM
To: mboughton@ci.danbury.ct.us
Cc: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Lee Farm

Dear Mayor Boughton
I`m writing this letter to you regarding Lee Farm. I personally have lived in this area for 35 years. This is a great treasure right in the center of Danbury. I live on Wooster Heights. The traffic is already a nightmare. To bring a project that large to an area that has residential housing is a shame, and should not be allowed under any conditions. I`m sure I am speaking for a majority of my nieghbors, when I say NO, to this project. I can be contacted for any reasons to discuss this issue at 203 792 3247, or rschmiedel20@comcast.net. Thank You for you time.
Sincerely,

Rich Schmiedel

From: ms [matt_serfass@yahoo.com]
Sent: Tuesday, September 21, 2010 12:32 PM
To: matt_serfass@yahoo.com
Subject: Opposition to Proposed Army Reserve Center in Danbury, CT

Dear Sir,

I am writing to express my strong opposition to the proposed Army Reserve Center at Lee Farms in Danbury, CT. That area remains one of the last open spaces in downtown Danbury. The town seems determined to rid the area of every last tree and meadow available. Looking back on Danbury's great agricultural past it is sad to see what the city has become. I live within a mile of the the site and do not want the center right in my back yard.

Wooster Heights is already over burdened with traffic and the addition of 200+ army vehicles will not help. Also, increased pollution from the facility and the potential for fuel leaks from the large tanks that are proposed can damage the land and ground water for countless generations to come. Why must we pave over everything?

Surrounding towns that have taken steps to protect their open space have created a legacy for the future. Sometime we must not be shortsighted because of the bottom line.

I have chosen to keep my personal and political beliefs about the Army out of this letter and have focused on the negative effects that the center would have on the area.

Once again, I strongly oppose the proposed Army Reserve Center at Lee Farms in Danbury, CT.

Thank you,

Matt Serfass
Jefferson Ave.
Danbury, CT

Sharlow
31 Wooster Hts
Danbury, CT 06810

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USARMY RESERVE 99TH REG.
SUPPORT COMMAND
JEFFREY M. HRZIC
5231 S. SCOTT PLAZA
FORT DIX, NJ 08640

54015062

Received
99th RRC ARIM
AUG 31 2010

AUG. 25th

Received
99th RRC ARIM
AUG 31 2010

OBVIOUSLY FROM MY ADDRESS
YOU UNDERSTAND THIS WILL
BE A LETTER OF PROTEST -

OF ALL THE PLACES IN THE
US - NORTHEAST - CT OR EVEN
DANBURY AREA YOU CHOOSE
ONE OF THE OLDEST, MOST
BEAUTIFUL NEIGHBORHOODS OF
THE CITY - WHAT CAN POSSIBLY
BE A REASON FOR CONCRETE
& CEMENT BLDG'S HOLDING
ARMY EQUIP. IN OUR FIELDS

AND WOODS?? ITS MAKES
ME ILL TO EVEN IMAGINE
YOUR COMING HERE &
DESTROYING THE ANIMALS
& PROPERTY. I CAME
HERE & BOUGHT A 100 YR.
OLD HOUSE TO RAISE MY
KIDS - NOT FOR ARMY
PRESENCE OR TRAFFIC.
WHAT ABOUT OUR INVESTMENTS
& RESALE? THIS DECISION
WILL RESULT IN MUCH
RESIDENTAL ANGER.

STEPHANIE SAFARIOW

-----Original Message-----
From: dallas1997@aol.com [mailto:dallas1997@aol.com]
Sent: Thursday, September 16, 2010 8:04 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Cc: m.boughton@ci.danbury.ct.us
Subject: wooster heights- danbury CT

In todays Danbury News Times there was a letter against the Army Training Center on Wooster Hgts. In it stated that you the Army, had not heard much from the residents so I writing again, to refresh your memory.

I am beyond belief that in all the states...towns...areas.. that you could choose to build a1000 person plus facility, parking lots, fuel tanks and other junk in the oldest most historic NEIGHBORHOOD in Danbury. Its absurd. Go somewhere without children, animals, open space and historic homes...seriously how is it even a consideration.
I purchased my home there over 20 years ago to raise my kids and pets just for that reason, its lovely.
How would you feel if it were in your backyard...your street, your home, your family?

There are dozens of areas not in a neighborhood, that traffic would not upset peoples daily lives, kids on buses, home values, (in this economy...just great...) Areas without beautiful fields and nature and many animals living in it.

I am still in shock as I said that such a historic place would be mowed down for concrete...everywhere.
Stand there and look at the space. Not just some map...you talk of protection, this is the opposite.
No one will feel the same about the military again,in our neighborhood.

Stephanie Sharlow
Classification: UNCLASSIFIED
Caveats: NONE

From: mark simiele [mrkbraden@yahoo.com]
Sent: Thursday, September 16, 2010 10:25 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Cc: m.boughton@ci.danbury.ct.us
Subject: DANBURY CT PROPOSAL

Jeff,

I am a resident of Danbury, Connecticut, and I have been following the news regarding the U.S Army's proposal for a possible National Guard Training facility at Lee Farm. I am confident that the planned training facility would only benefit Danbury, as well as the surrounding area and our troops, and would foster development that would not strain city services. Mayor Boughton himself has said in the past that the personnel using the facility when training is in session would frequent area restaurants, hotels and stores, thus benefiting the local economy. In addtion, the Lee Farm property is zoned for industrial use, not residential--despite the owners' wish and that of some residents, that housing get built instead of an army facility. The city appears to be quickly ready to re-zone the area at the request of the property owners and neighbors for residential use despite the fact that Danbury does not need any more housing in the form of cluster homes or townhouses--the last thing the city needs more of, as the market is already saturated with real estate of that type.

Sincerely,

Mark Simiele
Danbury, CT

Received
99th RRC ARIM

SEP 2 0 2010

TCHA

TRI-COMMUNITY HOMEOWNER'S ASSOCIATION
12 Marc Road
DANBURY, CONNECTICUT 06810-8262
tcha@snet.net

OFFICERS
2009-2010

PRESIDENT
Foster M. Crawford
VICE PRESIDENT
Joan Stapleton
SECRETARY
Diane Sanders
MEMBERSHIP SECRETARY*
Dawn Marie Lopes
TREASURER
Joshua Kessler

September 13, 2010

U.S. Army Corps of Engineers
U.S. Army Reserve, 99th Regional Support Command
Attn: Jeffrey M. Hrzic, Environmental Division Chief
5231 S. Scott Plaza
Fort Dix, NJ 08640

Re: Army Reserve Center Proposal: Danbury, Connecticut

Dear Sirs:

In recent weeks, we have been attempting to learn the details of the proposed Army Reserve Center proposed for the Lee Farms property in Danbury, CT. We have seen the sketch of the property use, but are still unclear as to the overall impact on the area. It is my understanding that the Army will be holding a meeting open to the public during which we hope to learn more and to express our thoughts about the use of the selected location. Please advise us as to when and where this meeting will be.

As the President of a neighborhood association that represents the 300 plus families on Miry Brook Road and the streets immediately off of it, we are very concerned with the impact of the proposed Training Center. Miry Brook Road to the East becomes Wooster Heights Road and as such is directly impacted by any air or auto traffic in the area. We are open to learning more about the pro and con of the location you are considering. At a recent meeting of the Danbury Common Council on September 9th, we were made aware of many concerns regarding potential negative impact to the area. Some of these concerns are:

- Loss of open space and the only meadow left in Danbury
- Increased traffic on an already congested street
- Questions of increased helicopter flights into the local airport
- Disruption of the residential neighborhoods
- Use of pristine land when other options exist in Danbury and could meet the Army's needs and be an improvement in Danbury.
- Possible environmental damage from run off and hazards of above ground gas and diesel storage facilities.
- Location of the facility on both sides of Wooster Heights Road

A meeting of the TCHA Board of Directors is scheduled for Tuesday September 21st and I would appreciate any additional information from the Army that would shed light on why the Lee Farms location is seen by the Army as an appropriate location for the new facilities. Clarification about the activities that will go on and the amount and type of traffic to be generated would also be useful to know.

Will there be time for additional public input beyond September 25th or will that date be the cut off for comments?

Finally, please know that we, and the people who spoke before the Common Council, are supportive of your mission and the only question is whether there is a better location for the training center that will avoid the residential neighborhood and preserve the open space.

Thank you for any information you can provide.

Sincerely yours,

Foster M. Crawford
President,
Tri-Community Homeowners Association, Inc.

Foster Crawford
12 Marc Rd
Danbury CT 06810-8262

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USA FIRST-CLASS FOREVER

U.S. Army Corps of Engineers
U.S. Army Reserve, 99th Regional Support Command
Attn: Jeffrey M. Hrzic, Environmental Division Chief
5231 S. Scott Plaza
Fort Dix, NJ 08640

08640+5062

From: Ellen Tresselt [ntresselt@snet.net]
Sent: Monday, September 20, 2010 2:34 PM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: RE: Army's acquisition of the Lee Farm property in Danbury, CT

Respectful greetings to Whom It May Concern,

I am a lifelong resident of Danbury, Connecticut and wish to contact you regarding my opposition to the Army's proposed plan to locate the Wooster Heights Army Reserve & Training Center on the Lee Farm property. While I do not oppose an Army base in our general area, I believe this site to be an inappropriate use of this land.

We have reached a point in our history when the value of open space is greater than at any previous time, and it will continue to appreciate in the years to come. Open meadows are no longer created and every one we loose is a habitat gone forever.
The way our small city functions has been dependent on this one remaining large area, located so close to it's epicenter, remaining free of development. Danbury has experi- enced enormous growth, particularly in the vicinity where Lee Farm is located, resulting in a huge strain on our roads, traffic flow, and associated city services.
An army base
& training facility in this location will have further negative impact: with the capacity to accommodate 15 U.S. Army Reserve units and two Army National Guard units for 1,000 people--including 145,616 square feet of interior building space with
9.5 acres
of paved parking, 270 wheeled military vehicles, 583 trailers and two fuel tanks with a combined 6,000-gallon capacity along with personal vehicles on this parcel, believe this will be detrimental to the quality of life we currently enjoy in Danbury.

It would make much greater sense to explore other possible locations, of which there are many in our region, that do not involve the development of pristine open space, for your project. Properties that have already seen construction and now sit vacant.
We would welcome your presence on such a piece of land.

Thank you very much for you kind consideration.

Nelle Tresselt
54 Jefferson Avenue
Danbury, Connecticut 06810

From: Joe Walkovich [walkovich2000j@aol.com]
Sent: Monday, September 20, 2010 10:42 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Lee Farm Danbury, Conn.

Dear Sir,

I am writing to express my opposition to the location of the Army Reserve and Training Center at Lee Farm in Danbury, Connecticut. The voluminous Assessment filed by the Army gives the residents some idea what is to be located on the site. The location of a 145,616 square foot building, 9.5 acres of paved parking, 270 military vehicle, 583 trailers and two fuel tanks will have a devastating effect on this area. This space which has been vacant for decades doesn't have the local infrastructure to support this type of development. Traffic on Wooster Heights is already to capacity as this area is a bypass for residents seeking access to I-84 and Route 7 North & South. While I welcome the Army and the Reserve Training Center this simply is not the right location. I ask the Army to look at alternative locations and also to hold a public information session in order for the army to explain this proposal more completely and for the residents to personally express their concerns.

Sincerely
Joseph Walkovich

<javascript:void(0)> Joe Walkovich
WALKOVICH ASSOCIATES
P.O. BOX 63
DANBURY, CONN. 06813
203 470-3271 MOBILE
203 730-0520 OFFICE
203 730-2751 FAX
walkovich2000j@aol.com

V. Winkelman
9 Dartmouth Lane
Danbury, CT 06810

STAMFORD CT 069
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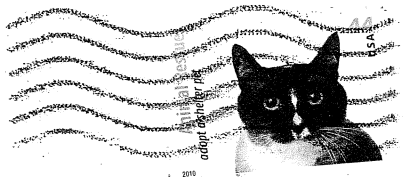

U.S. Army Reserve
99th Regional Support Command
Attn Jeffrey M. Hrzic Chief Environmental Division
5231 S. Scott Plaza
Fort Dix, N.J. 08640

08640+5062

Received
99th RRC ARIM

AUG 31 2010

August 26, 2010

To Whom It May Concern:

I am very concerned about the prospect of a U.S. Army reserve center on the Lee Farm property. There is hardly any open green space left in Danbury to enjoy, even if it is only to look at. I live in off of Wooster Heights Road on Dartmouth Lane. It gives me great sense of peace to look at this property especially during difficulty times in my life (I am currently undergoing cancer treatment). It is often difficult to get out of my road only Wooster Heights because of heavy traffic. I think it would be even more difficult if the U.S. Army reserve Center was at the Lee Farm property.

Please do not allow this to happen to this area. Please preserve this ever increasingly rare open space.

Signed a very concerned citizen of Danbury

Victoria Winkelman

Victoria Winkelman

From: Meghan Schmiedel [mschmied@g.risd.edu]
Sent: Thursday, September 23, 2010 10:24 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: Letter Concerning Lee Farm -- please read even if it is past the deadline.

To Mr. Jeff Hrzic -

First off, I hope this email is not too late. I recall reading a deadline date after which I am assuming such emails and letters would be disregarded.

My name is Meghan Schmiedel and I am a twenty-year-old whom has lived on Harvard Rd., in Danbury, CT for 20 years of my life. I could walk to the field you are considering demolishing so that some type of army related building could sit there. I could walk there in less than a minute--down the road, across the street, and I am there in a world not touched by the human hand. It is a beautiful place with a little barn-like hut to the right, whose roof I have sat on to watch the annual fourth-of-july fireworks. The field is glorious in so many different ways, depending on what time of day you may be there. My favorite time is during the winter, when the sun sets and the trees look like heavy sillouettes against a sky painted with faint blue, purple, and pink water colors. I am sure you have never seen this. Have you seen been to the field at all? Have you really sat in the field and taken in what it has to offer? Have you driven by it and seen coyotes, and deer, and turkeys, and rabbits, and birds of prey, hunting for mice.

I am going to say that you have not. I am assuming this because it is the only way I could fathom why one could even consider destroying such a place.
It is the ony explanation for why you would not care that you are taking a home from numerous species. Taking away a feast from the hawks, underground tunnels from ground hogs, taking away a place for the deer to raise their offspring. I want you to go to the field. I see you are located in New Jersey. I do not care. Before you decide to take something that is not yours, go, and sit there for the day. Watch what goes on in the field, naturally, when there are no tanks, no loud noises, no people in uniforms, no ugly man-made biuldings. Can you see why it is not yours to take?

Maybe, you have actually stood in the field, in which case you sicken me because it means you have no compassion. You have no regard for other life-for the animals who rightfully live in the field, for the neighbors whom have lived near the field for years and cringe at the thought of having beauty tainted with steel and iron, of looking out their windows and seeing something so ugly. Planted bushes from a garden store are not going to help.
There would be no hiding what you have done.
How dare you.
Where do you think the animals are going to go? Into a different field? And why? For some other ignorant group to come along and decide it would be the perfect place to train the all-american man? Or the perfect place to house tanks and other machinery? The perfect place to take. I am sorry, but the mere thought of having somthing army related so close to the house I grew up in bothers me so much that I get chills up and down my body when I think of it. When I think of the army and what it stands for, I do not want it near me. When I think of the field, and the beauty that dwells in it, I grow sad because now it is in jeopardy. The animals futures are up in the air, and they do not even know it. They are unaware of this issure, of the meeting that was held to discuss it, of this letter I am writing you to try to make you understand that you can not build anything there. No one, no living human has any right to build there.
Do you have any compassion?

Please, I am writing this letter from my heart, which sounds cliche, but I mean it. I am sure you have a lot of pressure on you, you are the chief, am I correct? Where do you go to gather yourself? To get away from everything?
Maybe you do not have a place in which case I am sorry. But maybe you would like one. Please, picture that. Close your eyes. Put yourself there, undisturbed, where no one can touch you. Where it is only you and your thoughts which become less and less frequent and soon, you are in complete calmness. You can feel things coming and going, and you can take it as much as your senses will allow you to. The animals do not mind -- you are just visiting. Maybe you can here the grass blow or the flutter of a sparrows wings. Open your eyes and maybe you can see deer dancing in the grasses, or a beautiful sky blanketing your tranquil spot. Everything is so beautiful is it not? Maybe you had nver realized it before. Take it all in.

And watch out, now, army tanks are falling from the sky.

-Meghan Schmiedel

From: BILL WISNOWSKI [wwisnowski@snet.net]
Sent: Friday, September 24, 2010 11:56 AM
To: Hrzic, Jeffrey M Mr USAR 99TH RSC ARIM
Subject: letter to editor on army training center

To: Jeff Hrzic
Chief, Environmental Branch, USAR
9/23/10
Dear Mr. Hrzic,

This is my Letter to the editor that was published 9/16/10 in The News-Times. I have serious concerns about this proposal and nothing I have heard or read has answered them for me.

I'm a property owner in the Wooster Heights neighborhood directly affected by the Robinson family property and I'm interested in being knowledgeable regarding any major development of this property, be it an Army training center, open space or cluster housing.

Regarding the Army training center, I don't think my concern is unreasonable or unpatriotic. I believe it's my constitutional responsibility.

My concerns are:

Will the Army be a good neighbor? A red flag goes up when it leaves only 30 days for public response.

Will the city of Danbury have control of zoning and building permits? Red flag! It's the federal government.

Will the Army actually build tomorrow what it shows us today? Is it buying all the land? Buying more than what it needs for the training center would mean future development.

How does the coincidence of the nearby airport come into play? Will the Army sign a document saying they will never use the airport?

A 1,000-person facility at full capacity is approximately the equivalent of more than 330 houses' worth of traffic. This is looking to radically change my neighborhood; this isn't just another cell tower in my backyard.

The Army says it hasn't received many comments yet. We have until Sept. 25 to make our voices heard. Look at the report at www.hqda.army.mil/acsim/brac/env_ea_review.htm and pay attention to the "ES-2 Proposed Action" section. Send comments and questions to Jeff Hrzic, Chief, Environmental Branch, 5231 S. Scott Plaza, Fort Dix, NJ 08640 or by e-mailing him at jeff.hrzic1@usar.army.mil.

It's also important that the mayor knows how you feel. Contact him at 203-797-4511 or m.boughton@ci.danbury.ct.us;

William Wisnowski
Danbury

46 Wooster Heights
Danbury , CT 06810

203-994-1903 (cell, best to reach me)
203-792-4825 (home)