**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): April 23, 2009**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAE-2008-00403 Roscoe Enterprises PM: Cori M. Rose**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**
State: CT County/parish/borough: Hartford City: East Windsor
Center coordinates of site (lat/long in degree decimal format): Lat. 41.918296° N, Long. -72.6057248° E.
Universal Transverse Mercator: 18
Name of nearest waterbody: Unnamed Tributary of Blue Ditch
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Connecticut River
Name of watershed or Hydrologic Unit Code (HUC): Lower Connecticut 01080205
☒ 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: March 7, 2008
☒ Field Determination. Date(s): October 19, 2005 and October 15, 2008

## SECTION II: SUMMARY OF FINDINGS

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are no** "*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 no** "*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: linear feet: width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
   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: **Wetland A was assessed for jurisdiction and found that there was not a significant nexus with TNW.**

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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: 1106.82**square miles**
   Drainage area: 16.2 **acres**
   Average annual rainfall: 45 inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through 3 tributaries before entering TNW.

   Project waters are 1 (or less) river miles from TNW.
   Project waters are 1-2 river miles from RPW.
   Project waters are 1 (or less) 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]: It is assumed that under an extreme rainfall event Wetland A will discharge into Water1 which is a non-jurisdictional conveyance feature excavated out of upland, into a manmade retention basin, overflow into

[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.

a manmade municipal storm sewer for approximately 1 mile downstream to discharge into an unnamed tributary of Blue Ditch (perennial stream) and then into the tidal, navigable Connecticut River. Total distance to TNW is 0.882 square miles or 4,668 lf.
Tributary stream order, if known: N/A.

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☐ Natural
☒ Artificial (man-made). Explain: Manmade drainage ditch excavated out of upland and municipal storm sewer located under Newberry Road, both considered non-jurisdictional conveyances.
☐ Manipulated (man-altered). Explain: .

**Tributary** properties with respect to top of bank (estimate):
Average width: 3 feet
Average depth: 3 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: 80
☒ Other. Explain: riprap.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 1 %

(c) Flow:
Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: 1
Describe flow regime: It is anticipated that surface water flow from this wetland into the manmade drainage ditch would occur only under extreme rainfall conditions. Review of precipitation records from our October 19, 2005 site visit indicate that a storm of a magnitude of a 24 hour precipitation event with a 50-year return period or a 240 hour (10 day) 10 day cumulative rainfall total equivalent to a 50-year return period would likely be necessary for flow from the subject wetland.

Surface flow is: **Discrete.** Characteristics: Braided rivulents through wetland.

Subsurface flow: **No.** Explain findings: Subsurface flow is not likely due to the tightly packed soil (hardpan0 at the site.
☐ 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.

[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.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: .

Identify specific pollutants, if known: Anticipate that the only pollutants available at the site will be sediment and or toxicants from offsite source totalling no more than 2 acres. Specific pollutants may include road sand, calcium or sodium chloride, PAHs.

**(iv) Biological Characteristics. Channel supports (check all that apply):**

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ 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: 2.3 acres

Wetland type. Explain: The northeastern corner of the Wetland A consists of a small (<1000 sf) seep with an area of open shrubs (PSS) and a seasonally saturated wet meadow (PEM) dominated by sedges and reed canary grass. Signs of agricultural use are visible including discarded farm equipment, a small stone foundation and barbed wire fencing. The majority of the site is flat to gently sloping. There were no primary or secondary field indicators of hydrology or of any hydrological connection between the wetland and the man-made conveyance feature at the time of a site visit considered "typical" for precipitation year (October 15, 2008). The wetland which consists of mostly pole sized saplings (maple and beech) appears to be seasonally saturated. Depth to saturation during the winter months was 6 inches. The primary source for hydrology on the site appears to be precipitation, at least as it relates directly to a potential surface hydrological connection offsite. It is not anticipated that there will be a surface connection without extreme rainfall event. Other than groundwater discharge, the wildlife habitat function appears to be principal for this site, although the function is significantly degraded and very small in scale. The site has been impacted by human activity (farming) and fragmented from other wetlands and upland forest by industrial development. On average, the site itself has a low vegetation density, moderate class diversity, high vegetation strata (at least within the groundwater discharge area) but low species diversity. It has a drier water regime, with low to moderate cover and food sources and no interspersion of open water and vegetation. Many plant species at the site are considered opportunistic.

:.

Wetland quality. Explain: Degraded by previous agricultural use, fragmented from other waters, wetlands and upland corridors, low density of vegetation and species diversity.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: As indicated above, flow offsite to a manmade conveyance is not anticipated except in the circumstance of an extreme rainfall event.

Surface flow is: **Not present**

Characteristics: .

Subsurface flow: **No**. Explain findings: .

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☒ Not directly abutting
  - ☒ Discrete wetland hydrologic connection. Explain: Only under an extreme rainfall event.
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **1 (or less)** river miles from TNW.

Project waters are **1 (or less)** aerial (straight) miles from TNW.

Flow is from: **No Flow.**

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: Water at the site is limited to groundwater discharge and precipitation on-site. The could be minimal storm water entry from adjacent roadway, but the entire site is vegetated.
Identify specific pollutants, if known: Calcium and sodium chloride, road sand, oil and grease.

**(iii) Biological Characteristics. Wetland supports (check all that apply):**

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☒ Vegetation type/percent cover. Explain: sparse.
- ☐ 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: 1
Approximately ( 2.3 ) 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) |
|---|---|---|---|
| N | 2.3 | | |

Summarize overall biological, chemical and physical functions being performed: Groundwater discharge, sediment and toxicant retention, nutrient removal and transformation, wildlife habitat. All at low levels except groundwater discharge.

## 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:

At the time of an October 15, 2008 site visit were that there was no physical evidence to support a determination of a regular hydrologic surface connection between the wetland and the non-jurisdictional conveyance feature. In fact, review of the site's slope suggested that surface water flow, if it existed routinely, would accumulate in a depression to the northwest and away from the manmade ditch. At the

time of the site visit there were no primary or secondary field indicators of hydrology or of any hydrological connection between the wetland and the man-made conveyance feature. There was also no indication or regular flow or ordinary high water mark within the manmade drainage feature Our observations on this date brought about our reassessment of the precipitation patterns for the time-frame leading up to our site visit on October 19, 2005.

The site visit on October 19, 2005 was conducted when precipitation levels were the wettest on record dating back as far as 1905. It rained 12 of 13 days prior to the date of the site visit and daily events included extreme daily torrential events, three of which came close to, or exceeded, the monthly average rainfall in just a day. As identified above, the range of normal precipitation for this site is between 3.91 and 3.94 inches. At the time of the site visit on October 19th, 13 inches of rain had fallen exceeding all maximum recorded observations (approximately 660 percent of normal) and by the end of the month the total precipitation recorded for the nearby Hartford WSO station was 16.32 inches (exceeding 370% of normal precipitation levels). Based upon the data, it is reasonable to conclude that the condition represented by the October 2005 site visit is not a regular event and the condition observed during the October 2008 site visit is more representative of "normal" for this site. Consequently the baseline observed in 2008 was used to approximate a "typical" condition.

Groundwater - The opportunity for groundwater recharge is minimal at this site due mostly to the tightly packed fine-grained soils (Soil Type Group C) with a sub-layer that impedes the downward flow of water and infiltration. Groundwater discharge is present in the form of a hillside seep upslope of the lowland wetland area. There is no inlet to the wetland. The plateau where the seep is located is a heavily vegetated emergent pocket and is the only portion of the site with well developed micro-relief. Groundwater discharge is a principal function of this wetland.

Sediment & Toxicant Retention - Potential exists for this function but it is particularly limited by the areal extent of the watershed. The parcel totals 14.4 acres and there is only approximately 1.8 acres of additional land that drains onto the property from the north and northeast. The entire parcel is vegetated; consequently there is no real expectation for a source of sediment onsite and only minor opportunity for input of sediments and toxicants from the upstream source offsite. The most likely source is overflow storm water runoff exceeding storm drain capacity from Route 5. Because there is a low topographical gradient at the base of the slope, fine grained soils are predominant, water flow through the wetland is diffuse, and duration of water retention in the wetland is anticipated to be long, it is concluded that this is a principal function for the wetland, even though the opportunity is limited by scale.

Nutrient Removal/Retention & Transformation – All of the same characteristics identified for sediment and toxicant retention make the opportunity for this function available, but unlikely. Factors that suggest that this is not a principle function of this wetland include a deficiency of nutrient sources upslope available for attenuation, the wetland does not pond and it is not saturated for most of the growing season, woody vegetation diversity and density is sparse and micro-relief is almost non-existent.

Production Export – The presence or opportunity for this function is based partially on the assumption that there is a regular outlet emanating from this wetland to the drainage feature. This does not appear to be the case. There are wildlife food sources present but at low density and species diversity and there is some development of detritus. Wildlife use is assumed present but limited by the size of the site and low production levels. Because there does not appear to be permanent outlet to this wetland nutrients are not capable of being regularly transported offsite. This does not appear to be a significant function of this wetland.

Wildlife Habitat – Other than groundwater discharge, the wildlife habitat function appears to be principal for this site, although the function is significantly degraded and very small in scale. The site has been impacted by human activity (farming) and fragmented from other wetlands and upland forest by industrial development. On average, the site itself has a low vegetation density, moderate class diversity, high vegetation strata (at least within the groundwater discharge area) but low species diversity. It has a drier water regime, with low to moderate cover and food sources and no interspersion of open water and vegetation. Many plant species at the site are considered opportunistic.

TRIBUTARY FUNCTION

Based upon Department of Transportation information the municipal storm sewer for Newberry Road collects and conveys runoff from a watershed totaling approximately 135 acres. Assuming a relatively permanent connection to this system, the 16.2 acre drainage area for this parcel would constitute 1.2 percent of the total drainage. The manmade drainage ditch and retention pond provide primary treatment for any waters leaving the Roscoe site, which is better than anticipated for the rest of the roadway collection system. Consequently, the primary function of this non-jurisdictional conveyance feature is sediment and toxicant retention from 44 Prospect Hill Road and possibly, the Roscoe Enterprises Newberry Road parcel.

It is not possible to determine peak discharge from the wetland to the drainage ditch without undertaking detailed measurements and complicated prediction processes. It is also not possible to calculate a cumulative volume of discharge from this and the adjacent site without specifications for the retention basin. However, our on-site observations during October 2005, with consideration of the historical precipitation data and a baseline from October 2008, do provide some useful information.

Using the historical calendar day observations for precipitation recorded at Windsor Locks and applying the empirical adjustment factors from the *Northeast Regional Climate Center (NRCC) Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada* (September 1993), we can obtain an estimate of maximum precipitation over an hourly time period (24, 48, 120 or 240 hours). This will allow us to determine the "average return period" or yearly "frequency" for the rainfall events leading up to the site visit on October 19, 2005. What this revealed is that leading up to the site visit there was one 24 hour precipitation event with a 25-year return period and one 24 hour precipitation event with a 50-year return period (October 8th and October 14th, respectively). The 10

day cumulative rainfall total for 240 hours from October 8th through October 19th was equivalent to a 50-year return period (Attachment 4). This data gives us an approximation of the extreme nature of storm flow at the Roscoe site that resulted in the observed discharge into the manmade drainage feature on October 19, 2005.

It is also important to note that by virtue of the fact that after 12 days of continuous precipitation (some days at unprecedented levels or second only to the fall storms of 1955), flow in the wetland itself during our October 2005 site visit was limited to rivulets approximating 3 inches wide, there was no direct discharge to the manmade drainage ditch after over 0.64 inches of rain that day, and the drainage ditch was dry. All of this information cumulatively allows for a conclusion that the duration and frequency of flow necessary to result in discharge off-site is limited to storms of significant intensity likely to be associated with very rare rainfall events.

PHYSICAL CHARACTERISTICS OF TRIBUTARY

As identified above, a physical assessment of the character of a tributary connection is limited to the non-jurisdictional conveyance features (manmade drainage ditch and municipal storm sewer). The drainage ditch that is excavated out of upland is approximately 120 lf long and 3 feet wide with 2 to 1 side slopes. It does not possess an evidence of an ordinary high water mark or hydrological indicators that would denote that it functions as a relatively permanent surface connection between Wetland A and WOUS. The portion closer to the retention pond has a substrate of medium-size riprap. In closer proximity to the wetland the ditch is vegetated with opportunistic upland plant species such as Japanese knotweed, yarrow, and goldenrod. It is a reasonable conclusion that the tributary/drainage ditch serves no other function than conveyance of an infrequent volume of storm water.

MAINTENANCE OF WATER QUALITY IN THE TNW

The Lower Connecticut River has been impaired since the late 1800's, first from the industrial revolution (paper mills) and the construction of dams, and then throughout the early part of the 20th century due to the discharge of raw sewage. A review of status and trends of water quality in the basin indicates that one of the largest contributors to water quality impact in the urbanized portion of the lower Connecticut River (identified as Springfield, MA to Long Island Sound) is combined sewer overflows (CSOs) when rainfall results in the discharge of untreated sewage into the river. The Environmental Protection Agency cites the CSOs as the principal reason why the river does not consistently meet the Class B fishable/swimmable standards for impact from fecal coliform in Northern Connecticut (above Middletown). A summary of water quality trends between 1968 and 1998 from the Connecticut River Ecological Study data, as summarized by the USGS, depicts water quality improvement attributable to wastewater treatment following the clean water act. Trends documented include a decrease in total phosphorus, total nitrogen, and indicator bacteria and increase in pH and dissolved oxygen.

Problem areas include the need for additional reductions in nitrogen loading in accordance with the Long Island Sound Total Maximum Daily Load (TMDL) calculation. The TMDL calls for a reduction of nitrogen loading of 58.5%, equivalent to 1.7 million kg/year, by 2014. Although concentrations of indicator bacteria have continued to decrease, there are still annual maximums that exceed water quality standards for Class B waters. There has also been an upward trend in chloride concentrations since 1974. It is theorized that this upward trend could be attributable to the non-point discharge of inorganic compounds such as road de-icers and expansion of impervious areas without proper treatment.

Based upon this summary of water quality limitations in the Connecticut River and the physical character of the Roscoe Enterprises site, it does not appear likely that drainage from this site in its current configuration will have more than an insubstantial or speculative effect on the chemical aspects of water quality maintenance of the Connecticut River.

In conclusion it is our determination that Wetland A does not have more than an insubstantial or speculative effect on the chemical, physical, or biological integrity of the Connecticut River because:

- There is no physical evidence to support a determination of a regular hydrologic surface connection between the wetland and the non-jurisdictional conveyance feature or another WOUS
- There was also no reasonable indication or regular flow or ordinary high water mark within the manmade drainage feature
- Flows predicted to leave the site as surface water, if they do at all, are of low volume, short duration and infrequent
- The site visit we conducted on October 19, 2005 occurred immediately following a 10-day event where precipitation levels were the wettest on record (equivalent to a 50-year frequency event over a 10-day period).
- Flow in the wetland itself following such a significant rain event was limited to rivulets approximating 3 inches wide, there was no direct discharge to the manmade drainage feature, and the drainage ditch itself was dry.
- The duration and frequency of flow necessary to result in discharge off-site is limited to storms of significant intensity likely to be associated with very rare rainfall events.
- There are no other wetlands or waters within the relevant reach to contribute, cumulatively, to a determination of positive significant nexus to the TNW.
- The drainage area for the Roscoe Enterprises parcel is 16.2 acres and therefore contributes .0024 percent of the Lower Connecticut River drainage area or .00024 percent of the entire Connecticut River watershed.
- Review of the Connecticut River water quality limitations and the physical character of the Roscoe Enterprises site, does not reasonably support a determination that drainage from this site will have more than an insubstantial or speculative effect on the chemical aspects of water quality maintenance.

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).
   X Other non-wetland waters: 366 acres.
   Identify type(s) of waters: Manmade drainage ditch excavated out of upland and municipal storm sewer under road – non-jurisdictional conveyances.

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.

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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.

☐ 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: .

**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).
X Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: The surface hydrologic connection that would be required to provide relatively permanent flow only exists in extreme, rare rainfall events. As such a connection with significant nexus to the TNW and is considered inconsequential or speculative.
☐ 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):
X Non-wetland waters (i.e., rivers, streams): **120** linear feet, **3** width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
X Wetlands: 2.3 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):

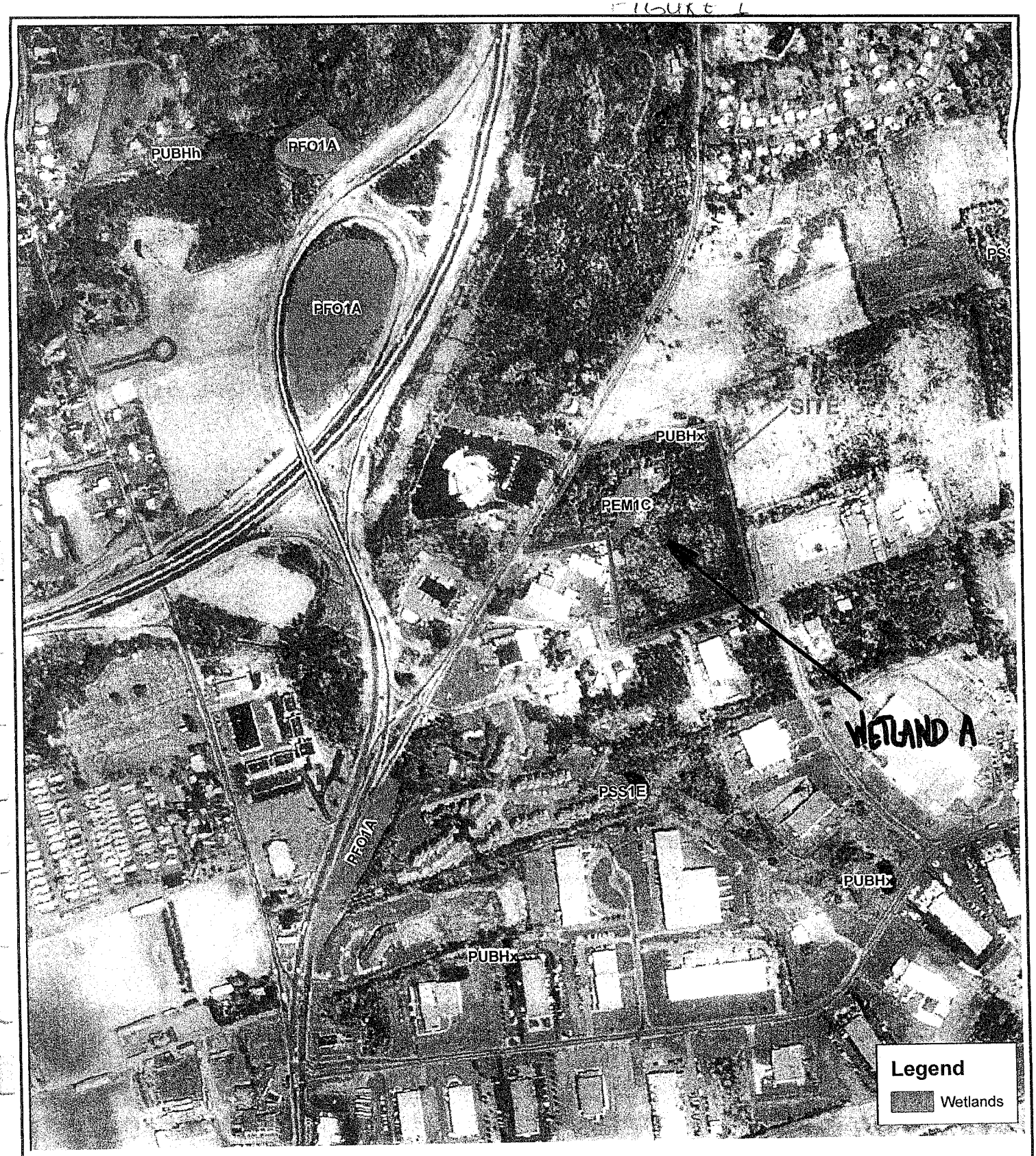
X Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland delineation aerial overlay for proposed Lowes dated June 22, 2005, Langan Engineering.
X Data sheets prepared/submitted by or on behalf of the applicant/consultant.
X Office concurs with data sheets/delineation report. 12/20/07 data sheets and 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: .

[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.***

☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
X U.S. Geological Survey map(s). Cite scale & quad name: 1890 and 1940 historical maps .
X USDA Natural Resources Conservation Service Soil Survey. Citation: Web soil survey for Hartford Country, 2005.
X National wetlands inventory map(s). Cite name: NWI map for Broadbrook CT 1"=600'.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
X 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
X Photographs: X Aerial (Name & Date): Provided by applicant and obtained from online sources.
or X Other (Name & Date): On site dated October 19, 2005 and October 15, 2008 .
X Previous determination(s). File no. and date of response letter: NAE-2008-403 July 28, 2008.
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
X Other information (please specify): MFR to file dated March 11, 2009 and all supporting attachments.

**B. ADDITIONAL COMMENTS TO SUPPORT JD:** .

FIGURE 2




Map Reference: CTDEP 1995 Aerial Photographs, National Wetlands Inventory GIS mapping, 2007

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**NWI MAP**
**PROSPECT HILL ROAD**
**East Windsor**

**Hartford County** **Connecticut**

| JOB NO. | DATE | SCALE | FIGURE NO. |
|---|---|---|---|
| 7628775 | 1-14-08 | 1" = 600' | 2 |

NJ Certificate of Authorization No: 24GA27996400
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