ENVIRONMENTAL ASSESSMENT AND STATEMENT OF FINDINGS

1. Applicant: Lowes Home Centers, Inc.

Application Number: 200200950

2. This permit action is being taken under authority delegated to the District Engineer from the Secretary of the Army and the Chief of Engineers by Title 33, Code of Federal Regulations, Part 325.8, pursuant to:

_____	Section 10 of the Rivers and Harbors Act of 1899
___X___	Section 404 of the Clean Water Act
_____	Section 103 of the Marine Protection, Research, and Sanctuaries Act

3. **Description, Location, and Purpose of Work:** The proposed project includes the permanent placement of fill in 1.11 acres of federally jurisdictional inland wetlands for construction of a 1.36 million square foot, one-story tall, Regional Distribution Center (RDC) warehouse, appurtenant parking facilities for 750 tractor trailers and 641 employee vehicles, access drive, trailer truck standing, weighing and turn-a-round areas, stormwater conveyance system and 4 stormwater infiltration basins on 127 acres of former agricultural land in Plainfield, Connecticut (File Reference Sections 1 and 2). Approximately 1.01 acre of non-jurisdictional state regulated inland wetland will be filled in association with the proposed development. Other project features include the disturbance of an additional 0.33-acre of federal jurisdictional wetlands associated with enhancement of inland wetland pockets adjacent to Packers Pond and the Mill River. There are no direct impacts proposed for Packers Pond and the Mill River. The total disturbance to inland wetlands (both jurisdictional and non-jurisdictional) associated with the proposed activity is 2.45 acres (2.12 acre fill and 0.33 acre enhancement). The basic project purpose is the construction of an industrial warehouse facility. The overall project purpose of the proposed activity is the construction of a regional warehouse in a geographically central location of New England with the ability to accommodate the efficient and competitive distribution of home improvement products to retail stores.

Activities in wetlands that will occur as part of the proposed project include the filling or disturbance of 8 inland wetlands, 4 of which are isolated, non-jurisdictional state-regulated wetlands (File Reference 2.3). Federal jurisdictional wetlands consist of 0.02-acre and 0.04-acre man-made scrub shrub wetlands and a 0.14-acre farmed wetland that will be disturbed or re-graded for wetland enhancement purposes, and a 1.05-acre palustrine emergent/scrub shrub depressional wetland that will be filled for construction of the RDC. Non-jurisdictional state-regulated wetlands consist of a 0.02-acre man-made depression within an existing gravel pit that will be re-graded and incorporated into the design of infiltration basin number one, a 0.13-acre farmed wetland that will be disturbed for wetland enhancement, and a 0.08-acre palustrine scrub shrub wetland and a 0.97-acre man-made wet meadow, both of which will be filled for construction of the RDC.

4. Description of General Environmental Setting: The proposed facility is to be located on a 211-acre tract of land consisting of wooded and agricultural areas and comprised of three

parcels located south of the center of the Town of Plainfield and about ¾ of a mile east of Interstate 395. The parcels are more specifically described in Section 6, below. The subject properties are located on both sides of Lillibridge Road. Tarbox Road and Douglas Drive, predominantly residential neighborhoods, border the site to the south and west, the Providence and Worcester Railroad bounds the project to the north and west, Packers Pond a dam-controlled surface water body is located to the north, and a large Atlantic white cedar swamp, associated with Mill Brook, lies to the east (File Reference 1.1). The subject land tracts consist of multiple sub-basins in which the majority of runoff remains on site and infiltrates into the ground water (File Reference 3.3 and 3.4). The project area is located outside the 500-year floodplain flood insurance rate map for Windham County (File Reference 3.3).

5. Functions and Values Assessment of Resources Impacted: A total of fourteen wetlands have been delineated on the subject parcels. The wetlands generally fall into two categories, groundwater depression wetlands and surface-water slope wetlands (File Reference 2.2). The majority of the wetlands are groundwater depression wetlands consisting of palustrine emergent and scrub shrub habitat, providing a point of groundwater recharge and discharge depending on seasonal fluctuations in the water table (see Table 5 below). Major habitat divisions on and immediately adjacent to the site include deciduous forest, kettle ponds, scarified gravelly areas, riparian wooded swampland, low grassland, pine barrens and white cedar swamp. Deciduous forest (oak dominated) occurs between the gravel pit and Wetland C on the Osiper property and along the eskers that traverse and separate the Mill Brook swampland from the white cedar swamp. A variety of kettle depressions are scattered across the site, two are noteworthy in that they have well developed wetland communities; Wetland L on the Gluck property and Wetland C on the Osiper property. Of these two, only Wetland L will be directly impacted by the proposed activity.

As a result of glacial and post-glacial events that distributed a variety of soils across the landscape, the subject site contains a diversity of ecological habitats (File Reference 3.5). Two state-listed species of amphibians are present on the site in and around Wetland area C, the Endangered spadefoot toad (*Scaphiopus holbrookii*) and the threatened pure diploid blue-spotted salamander (*Ambystoma laterale*). Five state-listed avian species are present at the site, the endangered vesper sparrow (*Pooecetes gramineus*) and grasshopper sparrow (*Ammodramus savannarum*), the threatened Cooper's hawk (*Accipiter cooperi*), and two species of special concern, the red shouldered hawk (*Buteo lineatus*) and Savannah sparrow (*Passerculus sandwichensis*). Also identified was the state-listed species of special concern, eastern ribbon snake (*Thamnophis sauritus*). Habitat of the key state-listed species is identified in File Reference 1.10 and 3.5. The small mammal fauna identified on site was very rich, consistent with a habitat exhibiting a rich supply of food sources, a diversity of habitat, and modest fragmentation. There are no known populations of federally listed endangered or threatened species at the site.

Wetland areas to be impacted by the proposed activity include:

<u>Wetland A</u> – A 0.34-acre, predominantly palustrine forested wetland dominated by red maple (*Acer rubrum*) trees. High bush blueberry (*Vaccinium corymbosum*) and dogwood (*Cornus sp*) dominate the shrub layer while ferns; grasses and sedges dominate the herbaceous layer. A portion of this wetland is farmed and consists of crop stubble. The wetland is a part of a larger

forested red maple wetland that continues off of the property (drainage basin area Offsite 1). The trees in the forested portion of the wetland exhibit signs of hydrology including buttressed roots and mound and pool microtopography. Because of this wetland's location in the agricultural field, it is likely to have a significant role in maintaining water quality by trapping and filtering sediments prior to infiltration into the groundwater. Consequently, its principle function appears to be sediment/toxicant retention, but the wetland also exhibits groundwater recharge and discharge, floodflow alteration, nutrient removal, wildlife habitat and recreational potential.

Wetland B – A small (0.13-acre) isolated wetland that exists entirely within an actively farmed field and dominated by crop stubble. The wetland appears to have been recently filled, per observations of a buried A-horizon and recently disturbed ground surface (subsoil at the surface). As with Wetland A above, the principal function of this small wetland is sediment/toxicant retention. Other functions include groundwater recharge/discharge, nutrient removal and production export.

Wetland D – A small (0.02-acre) isolated wetland located within an active gravel pit that appears to have been created by removal of gravel material. Open water is present in the depression, and the bottom is devoid of vegetation. The ground surface is approximately 10 feet higher that the surface water level and the banks are very steep. Water observed in the wetland likely reflects the local groundwater table. As a result, its principal function appears to be Groundwater recharge.

Wetland E – A small (0.08-acre) wetland dominated by shrubs including elderberry (*Sambucas Canadensis*), dogwood, and smooth sumac (*Rhus glabra*). Areas of water stained leaves and oxidized root channels were observed in this depression. Its principal function is sediment/toxicant retention, but the wetland also exhibits groundwater recharge/discharge, nutrient removal and wildlife habitat in the form of terrestrial field habitat.

Wetland F - This 0.97-acre wetland appears to have developed in a disturbed area and is dominated by emergent herbaceous plants including bentgrass (*Agrostis sp*.), water plantain (*Alisima sp*.), meadow sweet (*Spirea sp*.), wild carrot (*Daucus carota*), bedstraw, and orchard grass (*Dactylis glomerata*). The ground surface, although vegetated, appears to have been quarried as large mounds of soil and steep cut banks surround the area delineated as a wetland. The wetland is functioning primarily as terrestrial field habitat. Both garter snakes (*thamnophis sirtalis*) and milk snakes (*Lampropeltis triangulum*) were documented here. In damp weather Ranid frogs, especially pickerel frogs (Rana palustris) may forage in the grasses. Spring peepers (*Pseudacris crucifer*) may also use the grassy areas.

Wetlands I and J – These wetlands, 0.02 and 0.04-acre respectively, are small shrubby wetland pockets in a gravel pit. Dominant vegetation includes alder (*Alnus sp*.), Russian olive (*Elaeagnus angustifolia L*.), multiflora rose (*Rosa multiflora*), elderberry and blackberry (*Rubus sp*.). Principal functions appear to be groundwater recharge/discharge and sediment/toxicant retention. Other functions include production export and wildlife habitat. Their small size precludes many species, but it would be reasonable to assume that the wetlands may serve as breeding sites for American toads (*Bufo americanus*), spring peepers, gray tree frogs (Hyla versicolor), as well as habitat for garter snakes and ribbon snakes (*Thamnophis sauritus*). These wetlands are proposed to be impacted for wetland enhancement purposes, only.

Wetland L – An isolated 1.05-acre groundwater depression characterized by emergent marsh ringed by forested and scrub shrub vegetation. Sedges (*Carex sp*.) and cattails (*Typha latiflia*) dominate the emergent marsh. Willows (*Salix babylonica*), box elder (*Acer negundo*), eastern cottonwood (*Populus deltoids*), alders, elderberry, blackberry and purple loosestrife (*Lythrum salicaria*) dominate the forested and scrub shrub areas. Hydrology observed in the emergent wetland included areas of ponded water, and the soils had oxidized root channels. Evidence of eutrophication of the surface water was observed during summer, likely due to runoff from surrounding farmland. The principal function of the wetland appears to be nutrient removal and wildlife habitat. Other functions present include groundwater recharge/discharge, floodflow alteration, and sediment/toxicant retention. The list of species collected at this wetland in a summer field assessment is diverse, and includes generalist species such as red spotted newt (*Notophthalmus viridescens*), Fowlers toad (*Bufo fowleri*), spring peeper, green frog (*Rana clamitans*), snapping turtle (*Chelydra serpentina*), painted turtle (*Chrysemys picta*), water snake (*Nerodia sipedon*), ribbon snake, masked shrew (*Sorex cinereus*), shorttail shrew (*Blarina brevicauda*), meadow jumping mouse (*Zapus husonicus*) and meadow vole (*Microtus pennsylvanicus*). None of the specialized wetland species such as mole salamander, gray treefrog and spadefoot toad were located at this wetland (File Reference 3.5).

Table 5 **Wetland**

Function	**A**	**B**	**L**	**I & J**	**D**	**E**	**F**
Groundwater Recharge/Discharge	×	×	×	P	P	×	
Floodflow Alteration	×		×				
Fish & Shellfish							
Sediment/Toxicant Retention	P	P	×	P		P	
Nutrient Removal	×	×	P			×	
Production Export		×		×			
Sediment/Shoreline Stabilization							
Wildlife Habitat	×		P	×		×	×
Recreational	×						
Educational/Scientific Value							
Uniqueness/Heritage							
Visual Quality/Aesthetics							
Endangered Species Habitat			×				

P = Principal function in accordance with U.S. Army Corps of Engineers Highway Methodology

For a summary of wetland areas avoided (Wetlands C, G, H, K, M, and N) see File Reference 2.1 and 7.0.

6. Relationship to Existing Uses: The proposed development of the site combines three parcels, abandoning a large part of Lillibridge Road. Lillibridge Road will be realigned to the south of Packers Pond and will reconnect with the existing road (File Reference 1.3). The three parcels, identified as Gluck, Osiper and Kranc, consist predominantly of active or fallow agriculture fields. The Gluck parcel consists of approximately 85 percent field, has been farmed for at least 35 years, and has been used most recently for the growing of corn. Approximately 10 percent of the property is forested, located mainly along the riparian corridor of Packers Pond. Two areas of the parcel, located on the south side of Packers Pond, are currently being mined for sand and gravel (File Reference 1.2). The parcel has been used as an impromptu landfill for

construction debris and other difficult to dispose of items such as automobiles and large appliances. Two other areas appear to have been mined in the past and have become revegetated with grasses and saplings. A total of 10 wetlands were mapped on the Gluck parcel. As the project is currently proposed, the Gluck parcel will become host to the majority of the RDC related development, a large portion of the access road and 3 of the 4 infiltration basins. The gravel excavation areas located immediately south of Packers Pond will be incorporated into compensatory wetland enhancement and creation activities. The remainder of the site south of Packers Pond and north of the developed RDC will be placed into conservation easement for protection in perpetuity. Disposal of debris will no longer be allowed.

The Osiper parcel is approximately 50 percent farm field, 15 percent woods and 35 percent gravel mining. The fields have been left fallow and vegetation includes, but is not limited to, golden rod, mallow and wild carrot. The scarified gravel-mined area is largely unvegetated. Two dirt roads are present along Lillibridge Road and used to access the gravel excavation area. A majority of the wooded area occurs in the center of the property and separates the farm fields from the gravel mining operation. Smaller wooded areas occur in the northeast corner of the parcel, along the northern boundary of the parcel, and on the southern edge of the parcel. The woods occurring on the site are predominantly deciduous hardwoods consisting of oak and maple, with some pines. A total of four wetlands have been identified on this parcel. All but one of the wetlands on this parcel (Wetland D) will be preserved and incorporated into the design of the compensatory mitigation plan. The area of hardwood forest, in addition to enhanced and created wetland habitat, will be preserved and placed into protection as a spadefoot toad conservation area. The area of the existing gravel pit will host the major infiltration basin for the site, and will be designed in accordance with the needs of both the spadefoot toad and the spotted salamander.

The Kranc property is partially wooded and partially open farm field. The field has not been actively farmed and is overgrown with indigenous meadow species. The wooded portion of the parcel under option contains a mixture of hard and soft woods. The topography is relatively flat with some natural depressions. There are no wetlands identified on the portion of this property under option. This property will contain a single infiltration basin, the northeast corner of the RDC and provides the approach to the access road.

7. Alternatives: The applicant has undertaken a comprehensive study to identify parcels of land to construct a proposed RDC to serve stores in New England and upstate New York (File Reference 2.4). The analysis included both an off-site and on-site analysis of alternatives, comprising 60 off-site locations, and 12 on-site configurations to minimize impacts to jurisdictional wetlands and waters. Criteria for screening of the alternatives, as presented, was coordinated with, and approved by the Corps (see Section 7c below).

Section 404 Mitigation MOA Requirements

a. **Basic Project Purpose:** Industrial warehouse facility (non-water dependent activity).

b. **Overall Project Purpose:** The construction of a regional warehouse in a geographically central location of New England with the ability to accommodate the

efficient and competitive distribution of home improvement products to retail stores in New England.

c. **Avoidance – Alternatives Analysis:**

No Action Alternative - The no-action alternative was discounted because it would not achieve the applicant's project purpose as identified above and the impacts to natural resources at the site, including degradation or outright loss of spadefoot toad and diploid blue-spotted salamander habitat, would be expected to occur if no action is undertaken at the site.

Two of the current landowners of the parcels that comprise the site are actively removing sand, gravel, and in some instances, topsoil, from the properties. This is expected to continue if development does not take place. It has also been reported that a gravel distribution company has interest in the Osiper parcel and has discussed future mining with the owner. If the proposed development were not to occur, it is likely that continued extraction of gravel would have serious impact to the mapped spadefoot toad habitat (File Reference 1.13). Resource studies have shown a correlation between the Hinckley gravelly sandy loam soil series and the spadefoot toad. Consequently, this soil series represents an attractive area to a future gravel mining operation.

In addition, it is possible that farming could continue into the near future. As demonstrated by the existing land use, erosion of soil into the wetlands would continue to occur. Also, because the majority of the land is upland and zoned as industrial, commercial development of the subject parcels is likely to occur within the next 10 years. Depending on the size and permitting requirements of such future development, impacts to mapped wetlands could occur and may even affect higher value wetlands on site (Wetland C and riparian wetlands associated with Packers Pond). In summary, it is concluded that impacts to rare wetland dependent amphibians may be more severe than the impacts that will occur if the distribution center, as proposed, is constructed. Consequently, it is concluded that the no action alternative is not practicable or environmentally preferable.

Offsite Alternatives - The applicant conducted a search for developable land in the northeast United States in order to locate a selection of sites capable of supporting the RDC. The following criteria were used in Tier 1 of the off-site alternatives analysis to evaluate the feasibility of each of 60 sites located in greater New England, including Connecticut, Massachusetts, New York, New Hampshire and central-upstate New York:

- Geographically central location within 300 miles of retail service stores
- Quality labor force available
- Approximately 150 contiguous acres
- Interstate (east-west and north south) highway access
- Definable site boundaries
- Existing access to utilities
- Appropriate zoning and building allowances

Twenty-five of the 60 stores were viewed as having potential and were the focus of on-site evaluation. Thirteen were eliminated for a variety of reasons including proximity to major highways, environmental constraints, parcel configuration, and logistics of land development.

Tier 2 of the off-site alternatives analysis resulted in the selection of 12 of the original 60 sites for additional review. The 12 sites were evaluated and ranked according to the following three factors:

- Feasibility of construction including construction cost, land acquisition cost, site logistics and utilities.
- Operational factors including labor, transportation, taxes and incentives.
- Anticipated environmental impact to wetlands, floodplains and waterbodies.

A summary of the Level 2 analysis is available in Table 4-1 of the revised application dated December 20, 2002, identified as File Reference 2.3.

In Tier 3 of the off-site alternatives analysis, the 4 sites deemed to be the most practicable and feasible, from a construction and operational standpoint, with the lowest anticipated environmental impact, defined as generally less than 5 acre of wetland and watercourse impact, were subjected to additional environmental review. The sites were Kingston, NY, Coxsackie, NY, Plainfield, CT and Windsor Locks, CT. This review included NRCS soil maps, Federal Emergency Management Agency Flood Insurance Rate Maps, Fish and Wildlife Service National Wetland Inventory Maps and on-site inspection. Based on the evaluation it was concluded that impacts to streams and associated wetlands at both the Coxsackie and Kinston sites would be unavoidable. Environmental impact of these sites was considered moderate. Based on the results of Tier 3 analysis, two sites were selected for final consideration, Windsor Locks, CT and Plainfield, CT. These two sites were then subjected to detailed on-site analysis including wetland delineation, review of significant natural community maps, coordination with state and federal resource agencies for potential impact to endangered and threatened species and on-site jurisdictional coordination with the Corps. Both sites had been identified as possible locations of endangered and threatened species, however, the Windsor Locks site would also have a greater impact to wetlands and a direct impact to a waterbody, Hathaway Hollow Brook, a tributary to the Connecticut River. The site was also deemed substandard due to constraints to on-site configuration (File Reference 2.4). Consequently, the Windsor Locks, CT site was eliminated from analysis.

Two-building RDC Alternative – Also considered was the use of two smaller sized RDC's, one located at the Plainfield site and one located at the Windsor Locks site, to meet the needs of the projected 148 retail stores in the New England service area. In order to provide efficient distribution of product to retail stores within the service area, a single RDC is required to handle the projected number of retail stores. Assessment of the construction of two smaller RDC's to supply the service area indicated that the alternative would not meet the overall project purpose identified in Section 7b above, primarily because the alternative would roughly double the capital cost for the distribution network, ultimately resulting in higher product cost and a significant reduction in efficiency of operation which would undermine the applicant's goal of competitive distribution of product to New England retail centers. Consequently, this alternative was eliminated from consideration.

On-site Alternatives Analysis - The applicant evaluated the use of several properties and building configurations on-site in an effort to avoid and minimize impact to wetlands. All of the configurations are identified in File Reference 2.4. The first on-site configurations considered

(Alternative 1, SPP 1 – 3**)** showed configuration of the proposed facility to the north and east of its current alignment. This alignment would have required purchase and option on residential properties, including Provencher, Graveline, Barbiarz, and Deloge. It was determined that because the Barbiarz property was not available, the remaining three properties would be of little use to the development because the Barbiarz property prohibits full use of the other parcels. In addition, the three alternative alignments depicted in this series would not result in avoidance and minimization to federal jurisdictional wetlands and waters on the site. The impact to state and federal jurisdictional wetlands in these early options ranged from 4.03-acres to 10.13-acres.

An option to purchase the Osiper parcel made it possible to realign the building and associated parking facilities to the west by elimination of Lillibridge Road (Alternative 2, SPP 4 – 8). This step resulted in the avoidance or minimization of impacts to Wetland N (Packers Pond). Additional investigation allowed avoidance of all impact to Wetland N, but did result in the placement of fill in a majority of Wetlands C and L, as well as Wetlands A, B, E and F. Wetland K would also be impacted through construction of the access road. The impact to state and federal jurisdictional wetlands as a result of these configurations ranged from 2.52-acres to 4.05-acres.

As a result of coordination with the state and federal regulatory agencies, Alternative 3 (SPP 9 – 11) resulted in the reconfiguration of the building on-site and allowed for avoidance of Wetland L and a reduction of impact to Wetland K and Wetland A. A slight increase in impact to Wetland F occurred with these configurations, but still resulted in a reduction of the overall impact by 0.02-acre. The final revised configuration in this series resulted in avoidance of all impacts to Wetland K as a result of redesign of the access road, but demonstrated the need to fill all of Wetland F. These configurations were undertaken prior to the results of the endangered & threatened species surveys. The impact to state and federal jurisdictional wetlands as a result of these configurations ranged from 2.70-acres to 2.84-acres.

Results of the endangered & threatened species (ETS) survey indicated the presence of two state-listed threatened or endangered species associated with the kettle-hole depression Wetland C (File Reference 1.10 and 3.5). Federal and state resource agencies requested avoidance of this wetland. Repeated attempts were made to avoid impacts to both Wetlands C and L. However, following consideration of the need for a minimum building footprint to serve the projected number of New England stores (148) and to maintain a fixed rectangular building configuration that allows for installation of the applicant's specially designed internal conveyor system used to efficiently distribute products to the various loading docks, the need to provide a visual and acoustic buffer to residences along Tarbox Road, and the requirement to avoid direct impact to Packers Pond riparian wetlands, it was determined that avoidance of impact to both Wetlands C and L would not be feasible. The building was again reconfigured, this time to avoid impact to Wetland C, a 1.6-acre wetland believed necessary for the survival of the ETS, but the reconfiguration resulted in the filling of Wetland L (Alternative 4, SPP 12). This is the alternative that was described in our November 21, 2002 Public Notice.

This final configuration, which is the subject of this assessment, results in the permanent alteration/placement of fill in 1.11-acre of federal jurisdictional inland wetlands or the placement of a total of 2.12-acre of both federal jurisdictional and state regulated wetlands inland wetlands, for a total reduction of approximately 9.02 and 8.02 acres, respectively

over the original proposal.

d. Least Environmentally Damaging Practicable Alternative (LEDPA): Fill and disturbance for the commercial regional distribution center building, appurtenant parking, loading and inspection facilities, and stormwater collection and handling system in its current configuration as identified in Alternative 4, SPP 12 and described in Section 3 and Section 9c above, and submission of a compensatory mitigation package that includes creation and enhancement of wetlands on-site, enhancement of upland habitat on-site, protection and preservation of rare water-dependent amphibian habitat on and off-site, resource provision for establishment and/or enhancement of songbird grassland habitat, resource provision for investigatory surveys of the status of the diploid blue-spotted salamander and spadefoot toad in the upper Quinebaug Valley, provision for a survey to evaluate and document the distribution of the vesper and grasshopper sparrows in Plainfield, Connecticut, and long-term mitigation monitoring of created and enhanced wetland and upland areas is the least environmentally damaging practicable alternative.

e. Jurisdictional Determination for LEDPA: Based upon the results of a field verification conducted by my staff on April 29, 2002, the Corps of Engineers has determined that the wetland line accurately defines the limits of wetlands subject to Federal jurisdiction in conformance with the 1987 Corps of Engineers Wetlands Delineation Manual.

f. Minimization: The original proposal consisted of on-site configurations utilizing one industrial parcel and 4 residential properties with an estimated impact to wetlands in the range of 4.03-acres to 10.13-acres. Steps taken by the applicant to avoid and minimize wetland impacts included acquisition of an option on the Osiper parcel to avoid impact to Wetland N, realignment of the access road to avoid impact to Wetland K, acquisition of an option to purchase a portion of the Kranc parcel to avoid impact to Wetland C, redesign of surface water and facility drainage collection system to protect and enhance wetland-dependent amphibian habitat and creation of a new building layout for the Plainfield site which has the lowest number of trailer spaces, employee parking spaces, and RDC space per store than any of the Lowes RDC's that have been designed, or built, to date. Sequencing of the avoidance and minimization steps are described in more detail in the On-site Alternatives discussion in Section 7c above.

After repeated modifications and extensive revisions and coordination between, the Corps, the Connecticut Department of Environmental Protection, the U.S. Fish and Wildlife Service and the U.S. Environmental Protection Agency, the applicant arrived at a final configuration agreeable to all parties (see Section 9bi and 9bii). The proffered proposal attempts to strike a balance between the applicant's need to meet standard engineering and operational specifications for the RDC while preserving and enhancing rare wetland-dependent amphibian habitat, providing the maximum amount of visual and acoustic protection to nearby residential homes, ensuring that post-development peak flow of stormwater runoff to Packers Pond and adjacent properties is less than the pre-developed condition, and minimizing the impact to federal and state jurisdictional wetlands, to the maximum extent possible, at the subject development site.

This final configuration, which is the subject of this assessment, results in the permanent alteration/placement of fill in 1.11-acre of federal jurisdictional inland wetlands or the placement of a total of 2.12-acre of both federal jurisdictional and state regulated wetlands

inland wetlands, for a total reduction of approximately 9.02 and 8.02 acres, respectively over the original proposal.

g. Compensatory Mitigation for Unavoidable Losses: Although 1.11 acre of federally jurisdictional wetlands will be filled for the proposed activity, the Corps made a determination early during pre-application coordination that it was practical, giving consideration of our Public Interest Review pursuant to the National Environmental Policy Act (NEPA), to require compensatory mitigation for the loss of all wetlands (both federally regulated jurisdictional and non-jurisdictional) impacted by the proposed development (2.12 acres). Actions proposed to be completed to help offset the unavoidable impacts to natural resources associated with the construction of the RDC identified above are described in the *Final Mitigation Plan for Lowes Proposed Regional Distribution Center*, dated September 15, 2003 (File Reference 7). The goal of the proposed mitigation is to:

- Establish new wetland and enhance degraded wetlands so they replace the functions and values (wildlife habitat, groundwater recharge/discharge, flood flow alteration, sediment/toxicant retention, nutrient removal, and production export) of those wetlands being impacted by the proposed development.

- Provide enhancement to the upland habitats on-site to create additional area suitable for use the state-threatened and endangered amphibians at the site.

- Provide preservation of lands within the Mill Brook watershed against future development.

- Provide enhancement of wetlands off-site (Atlantic white cedar bog) in the Mill Brook watershed.

- Collect and report additional data on the distribution of state-listed threatened and endangered species (spadefoot toad and diploid blue-spotted salamander) that will be the basis of a plan for their conservation in the upper Quinebaug Valley.

- Conduct conservation activities that will lead to increased quality and quantity of habitat for warm season grassland birds observed using the site.

The proposed compensatory mitigation plan includes, but is not limited to, the establishment of 5.02 acres of wetlands on-site in two locations (3.13-acres at ONSW-1 and 1.89-acres at ONSW-2); the enhancement of 0.33-acre of disturbed wetlands (0.27-acre at ONSW-1 and 0.06-acre at ONSW-2); the protection (49-acres) and enhancement (8.7-acres reforestation) of upland oak-dominated forest on-site within the critical upland habitat zone for the spadefoot toad; the preservation of Wetland C on-site within the critical breeding area for the spadefoot toad and diploid blue-spotted salamander (1.63-acres); the connection of red maple wetland (Wetland A) to the created wetlands and existing wetlands for the establishment of a continuous habitat corridor on-site and off-site; the installation and planting of 14 habitat islands within the proposed Infiltration Basin number 1 (IB-1) to provide areas of suitable habitat for spadefoot toads at elevations to allow refuge from rising water levels, particularly in times of high precipitation (note: IB-1 does not count towards wetland habitat mitigation credits); and the preservation, in perpetuity, of 247.5 acres of land, 82 acres on-site and 165.5 acres off-site in the

Town of Plainfield (169 acres total of upland and 78.5 acres total of wetland), with physical, chemical and biological functions important to the region**. The natural resources gained by the proposed mitigation activities identified above, will outweigh the resources lost to filling for development of the proposed RDC.**

8. Impacts to Public Interest Factors:

+ Beneficial - Adverse 0 Negligible Effect

+ Water Supply and Conservation	0 Land Use Classification/Zoning
0 Historical/Archeological Resources	+ Water Quality
- Aesthetics	0 Traffic/Safety
0 Mineral Needs	- Property Ownership
0 Parks/Refuges	0 Recreation
0 Drainage/Flooding	0 Navigation
0 Circulation Patterns	0 General Environmental Concerns
+ Erosion/Accretion	+ Needs and Welfare of the People
0 Energy Needs	+ Endangered & Threatened Species
0 Air Quality	0 Noise
0 Floodplain Values	0 Wetlands
0 Food and Fiber Production	0 Finfish/Plankton
- Wildlife	0 Shellfish
+ Economics	+ Conservation

The following evaluation of affected public interest factors includes assessment of foreseeable short term, long term and cumulative impacts of the proposed activity.

FACTOR	**ANTICIPATED EFFECT (+/-)**		**COMMENTS**
	Short Term	**Long Term**	**Including Possible Cumulative Effects**
Water Supply & Conservation	0	+	**During and after construction, the majority of stormwater runoff will continue to be retained on site in basins or sub-basins and ultimately infiltrated into the soil or evaporated on site (File Reference 3.3). In the long-term, implementation of the stormwater management system as proposed will improve the rate of infiltration, maximize the quality of water recharging the aquifer, and provide primary filtration of the runoff prior to discharge into the basins.** **The existing aquifer below the Osiper and a portion of the Gluck parcel is classified as "GB," "*groundwater in a highly urbanized or intensely industrial area and public water supply available*." This definition indicates that groundwater quality as it currently exists may be limited. A Connecticut Water Company community well services the nearby Tarbox Road residences. There are no private residential wells located along Tarbox Road. Town officials indicate that the water supply in the eastern region of the Gallup system has historically had problems with both water pressure and quality. Although, opportunity for contamination of the community well is limited with the proposed development of the RDC, the Town of Plainfield will undertake construction of a water main to serve these residences. Replacement of the existing community well with a new**

			water source and distribution system will result in a long-term beneficial impact to water supply for area residents. **As the site exists in its current condition, the majority of stormwater runoff is retained on-site in basins or sub-basins and ultimately infiltrated into the soil or evaporated on-site Use of the proposed infiltration basins to manage stormwater runoff will emulate the current site condition with some basins remaining unchanged, and will improve the rate of infiltration for others.** **Long-term use of the site includes freight handling. There will be no maintenance of trucks on site as tractors used for hauling are independent contractors responsible for their own maintenance. Also, such tractors will be restricted to only short-term standing at the site. Consequently, opportunity for on-site contamination is mitigated.**
Aesthetics	-	-	**The short-term aesthetic impact of construction may be substantial and development will result in the permanent conversion of the current view from rolling hills and agricultural fields to that of an industrial facility and associated parking facilities. Although an adverse effect, it is a foreseeable impact associated with any proposal considering the land use plan established by the Town of Plainfield and current zoning of the property for industrial and/or commercial uses (see File Reference 4.4).**
Drainage / Flooding	0	0/+	**Approximately 120 acres will be changed from natural soil to impervious surfaces. The pre-developed condition includes 20.5 acres contributing flow to Packers Pond (File Reference 3.3). The post-developed condition will have 18.7 acres. The configuration as proposed will result in a 9% reduction in peak flow (from 13 cfs to 11 cfs during 100-year storm) to Packers Pond. The total area contributing flow to properties offsite in a 100-year storm will decrease from 6.9 acres to 5.5 acres. The post-construction peak offsite runoff for a 100-year storm will be decreased from 12.7 cfs to 10.3 cfs, consequently it is foreseeable that there will be no adverse impact to adjoining properties or downstream landowners as a result of this development. It is possible that nearby southwest and southeast property owners such as Barbiarz, Kranc, Coughlin, Potvin, Staling, Rodriguez and Palobo may experience a slight improvement consisting of a decrease in stormwater runoff to their properties (File Reference 3.5). The project, as proposed, will have no impact to floodplain storage capacity.**
Erosion Accretion Water Quality	0	+	**Current land use appears to be resulting in the transport of unstabilized excavated material into the wetland areas on site, in particular Wetlands C, K and L, as well as discharge directly into Packers Pond (File Reference 3.4). The development is likely to continue to contribute some minor sediment discharges during the initial phase of construction; at least until the primary detention system has been installed. The best management practices identified in the preliminary stormwater management plan and erosion control plan will most likely ensure that construction-related (short-term) discharges that do exist are less than those occurring under current site conditions.** **There will be a permanent loss of wetlands that function to provide filtering of sediments, nutrients, and other pollutants. The wetland creation component of the mitigation plan will provide an equal, if not greater, opportunity for water quality renovation. In the long-term, the proposed stormwater management system is likely to have a beneficial impact on the water quality of the remaining wetlands and Packers Pond since the design will eliminate direct stormwater runoff to the wetlands and the waterbody.**

Air Quality	0	0	**Tractor-trailer truck traffic activity associated with the proposed development is likely to result in localized increase in the levels of air pollutants and particulate matter. Assessment revealed that the pollutants would be well below the national standard for each pollutant, set by the EPA to protect public health and the environment. The results of the assessment were compared to the National Ambient Air Quality Standard, and are well within the State Air Quality Implementation Plan requirements.**
Food & Fiber Production	0	0	**Development of the site will reduce the amount of former farmland in the Town of Plainfield by an estimated 127 acres. However, productivity of the sites has been limited due to the presence of non-conforming gravel excavation activities on two of the parcels that have degraded the properties' ability to produce a significant agricultural commodity. Although a small portion of one of the parcels has been sublet periodically for the growing of corn, it is unlikely that loss of the particular agricultural commodity will more than negligibly affect food production.**
Wildlife	-	-	**Fill of upland areas for land development will temporarily disturb and or permanently displace wildlife and possibly result in the fragmentation of habitat used by mammals, invertebrates and songbirds. Indirect impacts include the development within 100 feet of wetlands A/A1, B, C, K, M and N, which may result in decreased wildlife habitat function by these wetlands. Mitigation incorporated into the proposed activity (inclusion of forested buffer, habitat corridor, light shields, wetland and upland forest replacement), is likely to offset the project-related impact to some extent, but short-term and long-term adverse impact will not be avoided. However, some level of impact to this resource is reasonably foreseeable in the future due to the zoning of the subject properties and the initiative of the Town of Plainfield to attract industrial development to the site.**
Economics	0	+	**The proposed RDC is anticipated to result in the creation of 600 to 800 jobs in the Town of Plainfield where income level is below average for towns in Northeastern Connecticut and provide $605,000 to $1.5 million dollars in annual revenue to the Town of Plainfield's tax base. Awarding of construction contracts regionally will generate short term employment opportunities in a regionally depressed employment market and may result in the creation or continued support of short-term manufacturing jobs associated with companies providing construction materials.**
Traffic / Safety	-	0	**It is anticipated that there will be short-term construction related traffic delays associated with turning vehicles onto the existing Tarbox Road, prior to and during construction of Talredi Road. These impacts may be minimized by improvements to Norwich Road prior to the onset of construction of Talredi Road.** **Following installation of the RDC and construction of Talredi Road, signalized intersections will continue to run at a high level of service. There will be a slight increased average delay of 0.2 to 0.6 second during pm peak hours for Lathrop Road at the I-395 northbound ramp and Old Norwich Road (File Reference 4.2). There will also be an estimated 2-second increase in delay associated with Lathrop Road southbound ramp/Old Norwich Road during the am peak traffic period. A more recognizable delay is expected to occur in this location (21.4 second increase) during the peak afternoon period. An unsignalized intersection at the confluence of Norwich Road and Tarbox (Talredi) Road will continue to run at a high level of service. The most recognizable change will be a 6.5 second to 17.2 second increase for travelers attempting an eastbound left turn during peak morning and afternoon hours, but this delay remains in an acceptable range.**

			Surveyed site distances comply with the CTDOT standards for "Intersection Sight Distances," and the proposed intersection will exceed the standard for "stopped vehicles turning left across oncoming traffic" at speeds up to 62 MPH in a posted area of 45 MPH.
Residences / Property Ownership Quality of Life	-	0	**In the short-term, proximity of the proposed distribution center construction site to some residential properties may result in reduced quality of life. The impact of construction related disturbance (dust, noise etc.) will be temporary and can appropriately be mitigated through best management practices and conditions on local approvals. It is anticipated that following construction and implementation of the stated mitigation measures to offset the project-related impact of noise, light and appearance, the long-term impact to quality of life will be negligible, and will be consistent with land-use management for this area as previously determined by local planning and zoning officials.** **Nearby residential property values may suffer a slight decrease in marketability prior to and during the initial stages of construction of the RDC. However, it is reasonably foreseeable that, in the long term, the creation of 600 to 800 jobs in the local area will make nearby properties more attractive as people who become employed at the facility consider relocating closer to their area of employment.**
Recreation	0	0	**Development of the subject parcels, although privately owned, will eliminate their use for various recreational activities that may be occurring including walking, skating, hunting, snowmobiling and all terrain vehicle/dirt bike riding. However, the general area contains many other parcels of open land that can be used for these purposes and the properties have never been designated for such uses. Recreational opportunities associated with Packers Pond will remain, as there is no change to this waterbody proposed.**
Needs and Welfare of the People	0	+	**Although a number of residential properties may be directly impacted by the RDC, the proposed industrial development will contribute new jobs and corporate community support in a currently depressed locality. At some point in the past the Town of Plainfield determined that this type of development, in this location, is in the overall best interest of its residents and would provided needed economic benefit, as evidenced by the approval of a zoning change for these properties from agricultural to industrial (see File Reference 4.4).**
Endangered & Threatened Species	-	0/+	**State listed endangered and threatened species including amphibians, songbirds and reptiles are likely to be affected by the proposed activity. In particular, the subject properties contain critical habitat for populations of two species, the spade-footed toad and the diploid blue spotted salamander. The proposed activity will result in the direct loss of some amphibian critical upland habitat, but it is the potential for other types of development to be catalyzed by the proposed development activity in accordance proposed industrial-zoned areas which may have greater, far-reaching effect upon the species' than the actual development of the RDC. It is anticipated that degradation or outright loss of the populations and their critical habitat at this site would likely occur without construction of the RDC.** **It is also likely that there is one pair each of breeding vesper and grasshopper sparrows at the site. The construction of the RDC will eliminate the critical attraction zone of open grassland for these species. However, it is likely that the species are already being adversely affected by activities that are being undertaken at the site. Species' profile**

			management plan practices indicate that haying, mowing, applying pesticide/insecticide on agricultural land and strip mining are all activities that threaten the survival and overall well being of this migratory species. In the long-term without the proposed development, is foreseeable that ongoing land management practices will result in the site being rendered unsuitable for the species. **The compensatory mitigation plan as described in Section 7g above will provide replacement for lost wetland functions and values, will preserve and enhance both wetland and bordering upland habitats, and will conserve critical habitat for state listed endangered and threatened species. The plan when executed will create a continuous habitat of upland forest atop and adjacent to gravel deposits, and will enhance and expand the critical upland habitat for the spadefoot toad.** **A total of 5.02 acres of wetlands is proposed to be created, 0.33 acres is proposed to be enhanced, 169 acres of valuable upland habitat and 75 acres of valuable wetland habitat is proposed to be preserved, and 8.76 acres of disturbed agricultural land is proposed to be restored to upland oak forest.**
Noise	-	0	**In the short-term, proximity of some residences to the proposed distribution center construction site may result in noise-related disturbance. It is anticipated that following construction and implementation of the stated mitigation measures to offset the project-related impact of noise (vegetative buffering, retaining walls, earthen berm), the long-term impact will be negligible and will be consistent with land-use management for this area as previously determined by local planning and zoning officials.**
Wetlands	-	-/0	**Fill of 2.12 acres of inland wetlands and adjacent upland areas for land development will temporarily disturb and or permanently displace wetland dependent wildlife and possibly result in the fragmentation of habitat used by mammals, reptile, amphibians, invertebrates and songbirds. Indirect impacts include the development within 100 feet of wetlands A/A1, B, C, K, M and N, which may result in decreased wildlife habitat function by these wetlands.** **However, as identified in Section 7C above, some of these impacts would be expected to occur without development of the RDC. Specifically, erosion of soil into the wetlands would continue to occur and because the majority of the land is upland and zoned as industrial, commercial development of the subject parcels is likely to occur within the next 10 years. Depending on the size and permitting requirements of such future development, impacts to mapped wetlands could occur and may even affect higher value wetlands on site (Wetland C and riparian wetlands associated with Packers Pond). In summary, it is concluded that, in the long term, impacts to wetland and wetland dependent species may be more severe than the impacts that will occur if the distribution center, as proposed with the agreed upon mitigation, is constructed.** **Mitigation incorporated into the proposed activity (inclusion of forested buffer, habitat corridor, light shields, wetland and upland forest replacement) is likely to offset the project-related impact to some extent, but short-term and long-term adverse impact will not be completely avoided.**
Land use Classification/	0	-	**The subject properties have been zoned industrial by the local municipality (File Reference 4.4). However, it is foreseeable that additional zoning**

Zoning	**changes and future development could be catalyzed by construction of the subject facility and upgrades to the existing road system. The long-term result could be the cumulatively significant impact of development in the affected Plainfield neighborhood and other bordering municipalities such as Canterbury. However, the responsibility for long-term zoning, land use management and planning is that of the local municipal government.**

9. Findings:

a. A Connecticut Department of Environmental Protection Bureau of Water Resources Water Quality Certification was issued on September 29, 2003 (File Reference 12.3).

b. A Public Notice describing the proposed work was issued on November 21, 2002 (File Reference 8) and sent to all known interested parties including adjacent property owners and a standard public distribution list. In response to the Notice we received approximately 45 written letters of objection (File Reference 8.1). The Corps reviewed and fully considered all comments received in response to the Public Notice. A summary of the comments is included below, and all of the comment letters have been made part of our administrative record of this action (File Reference 8.1).

i. The Corps received letters from the U. S. Environmental Protection Agency (EPA) dated December 23, 2002 and February 7, 2003 and a memo dated June 10, 2003 (File References 9.1, 9.2, and 9.3 respectively). The above correspondence identifies the need to:

Provide a more definitive explanation of purpose and need - *The responsibility for defining the overall project purpose for consideration of practicable alternatives rests with the District Engineer. The overall project purpose for consideration of alternatives pursuant to the 404(b)(1) guidelines was outlined in our February 13, 2003 letter to the applicant (File Reference 8.2) and the project purpose has been selected by the Corps to consider the applicant's view but with appropriate consideration that the definition of project purpose does not preclude the existence of reasonable practicable alternatives.*

Address evaluation of on- and off-site alternatives including on-site avoidance and minimization - *The on- and off-site alternatives including on-site avoidance and minimization was addressed in the December 17, 2002 revised Section 404 application and the March 26, 2003 Response to Comments (File References 2.4 and 4, respectively). We have determined that the above-referenced information as summarized in Section 7 above adequately demonstrates that the proposed analysis of alternatives and on-site configuration of Alternative 4 SPP 12 is the least environmentally damaging practicable alternative and that the proffered mitigation plan as identified in File Reference 7, and briefly summarized in Section 7g above, will adequately offset the adverse impact to wetland functions and values.*

Demonstrate that the activity is the least environmentally damaging practicable alternative - *We have concluded that the proffered proposal identified as Alternative 4, SPP 12 in Section 7 above, is the Least Environmentally Damaging Practicable Alternative.*

Identify specific functions and values impacted and specific means to compensate for functions and values lost - *The specific functions and values to be compensated for are identified in File References 2.1, 3.5 and 7 and summarized in Section 5 above.*

Demonstrate compliance with State of Connecticut idling laws and explain how the policy will be enforced and explore the feasibility of incorporating a diesel retrofit program into the proposed RDC - *File Reference 4, and more specifically File Reference 4.3, addresses the proposed activity's compliance with State and Federal air regulation including anti-idling laws, and the August 25, 2003 Response to Comments (File Reference 6) explains how the policy will be monitored and enforced. File Reference 4 reasonably explains that incorporating a diesel retrofit program into the RDC is not necessary as without it the proposed activity will comply with applicable standards, nor is it feasible as the fleet of trucks used to transport the applicant's materials are independently owned, contracted vehicles. The permittee has committed to the implementation of yard tractor pollution control devices and anti-idling policy.*

Determine whether the proposed activity is subject to EPA's general conformity regulations and subject to completion of a general conformity analysis – *The determination of compliance with General Conformity regulations is provided in Section 9f, below.*

Provide a traffic analysis to evaluate the impact of the facility on the surrounding community - *File Reference 4.2 provides an assessment of reasonably foreseeable traffic impact associated with the proposed activity including a summary of vehicle trips. We believe that this assessment is suitable for the purpose identified.*

Provide detail on construction sequence for the RDC, mitigation areas and future mitigation activities (surveys) - *The September 15, 2003 Final Mitigation Plan outlines phasing of construction of the mitigation areas, File References 1.2, 1.3, 2.7 and 3.2 identifies the erosion and sedimentation control plan for on-site facility construction. Depending on the timeframe in which necessary authorizations may be obtained, sequencing of completion of the primary infiltration basin and compensatory mitigation areas will be completed in either the fall of 2003 or the spring of 2004 (File References 6 and 7). It is likely that all necessary approvals will be received in the fall. Consequently, it is anticipated that monitoring wells will be installed, ONSW-1 will be graded and hydrology established in the fall of 2003. In the fall of 2003, prior to the filling of Wetland L, existing wetland soils (~ 120 cy), woody debris and surrounding trees and shrubs will be transferred to ONSW-1 for temporary winter storage. Concurrent with the construction of ONSW-1 and transfer of materials from Wetland L, upland enhancements proposed in the area of ONSW-1 will be undertaken with care not to disturb grading of the subsoil or final topsoil placement. When full-scale construction begins in the spring approximately one-third of the stockpiled soils will be moved to ONSW-2.*

Phase I and Phase II of the stormwater pollution control plan will be completed in the initial fall as construction progresses. At this time, the spadefoot toad critical habitat areas will be separated from future construction areas with silt fencing installed during the amphibian dormant period between October and March. Grading for IB-1 within endangered/threatened species habitat to be used for construction stormwater detention area will occur during the amphibian dormant period (File Reference 6 and 7). The island inclusions will be constructed and stabilized in the fall of 2003, but planting of the basin will not take place until after the thaw in the spring of 2004. The basin will be fenced off from amphibian access until confirmation that the grading is acceptable and IB-1 is functioning to infiltrate as proposed.

Provide more information on compensatory mitigation areas to be acquired, protected and/or maintained, condition permit to require deed restrictions for preservation areas and address the potential for logging on land set aside for compensatory mitigation preservation - *The compensatory mitigation areas to be acquired for protection in perpetuity are described in File Reference 7 Table 3 and depicted in File Reference 1.14 and consists of approximately263 acres of land, 97 acres on-site and 165.5 acres off-site in the Town of Plainfield (169 acres total of upland and approximately 70 acres total of wetland). The on-site acreage which includes the endangered and threatened species conservation areas will be held and managed by the CT DEP in accordance with a recorded deed restriction or restrictive covenant. Three of the off-site preservation areas identified as Preservation Areas A, B and C, totaling 25.5 acres, will be held and managed by the Town of Plainfield in accordance with a recorded deed restriction or restrictive covenant. The fourth area approximating 140 acres, will be held and managed by the Patchaug Outdoor Club in accordance with an agreement coordinated with the state and federal regulatory agencies which will address the potential for logging on the propert. The site will be protected in accordance with this agreement and a recorded deed restriction or restrictive covenant. All deed restrictions and/or restrictive covenant will need to be submitted in draft form and approved by the Corps in writing. The permittee will be required to execute the restriction within 180 days of the date of permit issuance. The approved and executed document will need to be submitted to the Corps within 90 days of the date it is recorded.*

Identify if any of the conservation/mitigation areas are located within the Gallups Quarry Superfund site - *None of the compensatory mitigation preservation areas are located within the Gallups Quarry Superfund site.*

Incorporate a vegetated buffer between the facility parking lot and ONSW-1, the spadefoot toad protection area, Wetland C and ONSW-2 - *In response to concerns raised regarding provision of vegetated buffers and density of plantings in the vicinity of the proposed compensatory mitigation creation and enhancement areas additional plantings along the eastern edge of ONSW-1 are proposed to include black chokeberry (Photinia melanocarpa), common serviceberry (Amelanchier arborea) and Staghorn sumac (Rhus hirta,) and will occur in a 50' wide strip designated for planting with conservation seed mix (Figure M-5 of File Reference 7). Shrubs will be planted at 300 stems per acre. A limited number of trees are proposed to be removed for construction of the RDC because a majority of the site is agricultural in nature. However, any trees and shrub that can be reasonably harvested (~3' – 12' tall) from disturbed uplands and/or Wetland L will be transplanted to this area.*

Design ONSW-2 to replace lost functions and values of Wetland L, to include construction sequence of ONSW-2 to utilize removed soils and vegetation; use large woody debris relocated from other portions of the in ONSW-1 and ONSW-2; relocate amphibian egg-masses from Wetland L and connect ONSW-2 hydrologically to Packers Pond and to IB-1 via vegetated area – *Both ONSW-1 and ONSW-2 are designed to replace the lost functions and values of Wetland L, which comprises the largest proposed wetland impact on the project (see Table 4 in File Reference 7). The hydrology of the proposed palustrine emergent areas have been designed to replace the open water habitat currently present at Wetland L and text clarifying the harvesting of wetland soil, trees, and shrubs around Wetland L and their reuse in ONSW-1 and ONSW-2 has been added to the final mitigation plan. Preparation of ONSW-1 mitigation area will occur prior to the filling of Wetland L to ensure that reuse of existing materials can be undertaken. If construction occurs after or during amphibian reproduction*

season, egg masses observed, that can be collected with reasonable effort, will be transferred to the mitigation area from Wetland L as appropriate. Text clarifying the placement of large woody debris prior to planting of the mitigation areas has been added to the final mitigation document. Due to the perched nature of the existing wetland in the vicinity of ONSW-2, a direct connection of the proposed mitigation area to Packers Pond could adversely reduce functions and values of the existing wetland by facilitating its drainage. Consequently, a direct connection to Packers Pond is not recommended and will not be required.

Provide wildlife-crossing areas where Lillibridge will meet Talredi Road (near ONSW-2) – *Inclusion of a wildlife crossing in the area of Lillibridge and Talredi Road between ONSW-2 and IB-1 may be difficult due to grades along the existing road. This feature of the mitigation plan will be addressed under separate cover by the Town of Plainfield's application for Talredi Road (File No. 200202328).*

Increase the diversity of plantings for the entire site and on the islands in IB-1 - *The type of plantings proposed for diversity of the mitigation areas have been selected in in coordination with a leading herpetologist and in accordance with Corps mitigation checklist requirements and will be reviewed by the Corps Environmental Resources Section prior to approval of the final mitigation plan.*

Design Infiltration Basin islands to resemble natural "inclusions" – *The islands have been reconfigured in accordance with this recommendation for the Final Mitigation Plan.*

Add an amphibian access point on the east side of IB-1 – *The basin has been designed at a 4 to 1 slope to allow amphibian access into and out of the basin along the entire perimeter. Consequently, additional access points are not required.*

Provide the PEM/PSS/PFO ratios for Wetlands C and L – *Table 1 of File Reference 7 identifies that Wetland L consists of 0.95 ac of PEM and 0.1 acre of PSS. Lowes Wetland C will not be directly impacted and Town Access Road Wetland C consists of 0.06 acre of PEM and 0.06 Acre of PSS.*

Clarify what makes up the 16-acre threatened/endangered species habitat "debit" in Table 4 – *The 16-acre debit area consists of the 750-foot radius of amphibian habitat that will be disturbed, not including the proposed wetland mitigation areas and the area of IB-1. The number has been verified in the final mitigation plan.*

Expand on proposed funding of enhancement/procurement for grassland birds – *The scope and schedule for these mitigation items will be coordinated in accordance with the requirement of the CT DEP Wildlife Division and cannot be specifically identified at this time. EPA will be notified of the details of these mitigation measures as they become available.*

Identify potential grassland bird enhancement/procurement sites in the area – *CT DEP has identified several potential areas for consideration and additional clarification on these areas will be provided at a future date.*

Clarify invasive species control for Upland Reforested Area and IB-1 – *Invasive species control measures have been added for IB-1 and the upland reforestation area in the*

Final Mitigation Plan.

Provide EPA with annual reports as described in Section 4.2.3 of the Draft Mitigation Plan – *EPA will be provided with all reports.*

Include a plan to monitor the Atlantic White Cedar bog for vegetation type and health, including presence of invasive species and wildlife use – *Qualitative assessment of the Atlantic white cedar swamp has been incorporated into the monitoring plan of the Final Mitigation Plan.*

Clarify pertinent state regulations for the completed Sound Level Survey – *Mobile Sound sources, such as moving trucks, are not regulated under the Connecticut Noise Control Standard. Although not regulated, the survey considered such mobile sources to provide a conservative measure of potential noise impact of the facility. Even with consideration of the moving sources, the RDC met the State of Connecticut daytime noise control standard. Other sources of sound such as loading and unloading of containers at the bays, ventilation and air conditioning system were well below that measured for mobile sources.*

Explain how the proposed mitigation plan addresses the identified cumulative impacts of installation of multiple retail stores in New England – *The proposed preservation plan is designed to offset projected cumulative impact of development of the RDC facility. In addition, any additional local development spurred by the RDC will be required to address and compensate for wetland impacts as required by local, state and federal regulations. The cumulative impact of the development of Lowes stores in New England continues to be dealt with on a project-specific basis. This is a consequence of many state and federal requirements including the MOA between EPA and the Department of Army regarding the determination of mitigation under the Guidelines that require mitigation on-site whenever possible. In absence of on site mitigation areas off-site mitigation measures should be undertaken in the same geographic area if practicable (i.e., in close physical proximity and, to the extent possible, the same watershed). In determining compensatory mitigation, the functional values lost by the resource to be impacted must be considered. Generally, in-kind compensatory mitigation is preferable to out-of-kind. A mitigation bank for such regional impacts would likely not comply with the federal agreement and be particularly troublesome to implement at the state level. It is therefore not considered practicable, at this time.*

Identify what control measures will be used to offset input of contaminants from stormwater runoff into the infiltration basins – *In addition to vegetated swales, all outlets for the development have been designed with a 2-foot sump, vegetated strips and hooded outlet to control pollutants. This aspect of the project is completely addressed in File Reference 2.7 and 3.3.*

ii. The Corps received letters from the U.S. Fish and Wildlife Service dated December 20, 2002 and January 21, 2003, a memo dated June 6, 2003, and an email dated September 18, 2003. (File References 10.1, 10.2, 10.3 and 10.4 respectively). Below is a response to the comments not already addressed under the EPA discussion in Section 9(b) i above:

Ensure that the proposed IB-1 is compatible with spadefoot toad and diploid blue spotted

salamander habitat – *The experimental design of IB-1 has been designed in coordination with a leading herpetologist to ensure that its characteristics provide opportunity for retreat for amphibians during seasonal high water events. As a condition of this authorization, biological monitoring of Infiltration Basin Number 1 shall be undertaken for a period of not less than 3 years in accordance with the Final Mitigation Plan. If at the end of the assessment period it is determined that the basin is not contributing to amphibian habitat as anticipated, potential corrective actions will be coordinated with the federal and state regulatory and resource agencies.*

iii. Historic and Cultural Resources: The Public Notice was sent to the Connecticut State Historic Preservation Officer (CT SHPO). The Corps received a letter dated December 2, 2002, requesting a reconnaissance survey and recommending further consultation regarding the project's potential impact to archaeological sites. Supplemental information was forwarded to the CT SHPO in the form of an Archeological report dated August 27, 2002.

An archaeological reconnaissance study was conducted in the summer of 2002 and a report of the survey was submitted to the Corps on August27, 2003. A determination of no effect to historical or archaeological resources was received on August 30, 2002. SHPO coordination documents are available as File Reference 11.

iv. Many letters and oral comments from concerned citizens, local governments, Congressional interests, and special interest groups were received in response to the Public Notice and the Public Hearing. These concerns are addressed below (in no particular order of preference):

(1) Water Quality – Many commenters raised concerns that runoff from initial construction and the installation of paved parking lots at the RDC will pollute groundwater, ponds, streams and wetlands.

Current land use practices of the Gluck and Osiper parcels, specifically agriculture and sand/gravel extraction, are already resulting in the uncontrolled transport of unstabilized scarified material into the wetland areas, in particular Wetlands C, K, L, and N, as well as discharge directly into Packers Pond and the Mill River (File Reference 3.4). With implementation of the best management protection measures identified in the Erosion and Sedimentation Control Plan, the short-term impact of construction of the proposed RDC is unlikely to result in a greater rate of erosion than that already occurring. The phasing of on-site construction in accordance with the stormwater pollution prevention plan ensures that during the major construction activity phase, on-site detention will be employed.

The existing aquifer below the Osiper, and a portion of the Gluck parcel, is classified as "GB," "groundwater in a highly urbanized or intensely industrial area and public water supply available." This definition indicates that groundwater quality, as it currently exists, may be limited. Town officials have stated that the water supply in the eastern region of the Gallup system has historically had problems with both water pressure and quality. The long-term agricultural use of the land also implies that the pollution of groundwater and surface water resources may already be occurring. Agriculture is a major user of pesticides in the U.S. They are most commonly used to prevent damage to crops and maximize harvest by destroying harmful insects and invasive weeds. The chemical constituents of pesticides and herbicides have

a high potential to pollute land and watercourses from direct runoff, atmospheric deposition, spray drift and incorrect storage, handling and disposal. Chemical residue washed out of soils can also affect groundwater. As a result of the current land use the risk to the groundwater/aquifer from the proposed activity is unlikely to increase the potential for groundwater contamination.

The long-term use of the site proposed is freight handling. There will be no maintenance of trucks on site as tractors used for hauling are independent contractors responsible for their own maintenance. Also, such tractors and trailers will be restricted to only short-term (2-week maximum) standing at the site. Consequently, opportunity for on-site contamination from spills and leakage is minimized.

Several measures will be implemented to ensure that reasonably foreseeable impacts to water quality are adequately mitigated. The wetland creation component of the mitigation plan will provide an equal, if not greater, opportunity for water quality renovation. In the long-term, the proposed stormwater management system is likely to have a beneficial impact on the water quality of the remaining wetlands and Packers Pond since the design will eliminate direct stormwater runoff to the wetlands and the waterbody.

The infiltration basins have been designed to divert and infiltrate the design volumes within 48 hours in accordance with state requirements. No water up to the flow/capacity of the 100-year storm will be discharged directly into surface waters. Measures have been taken to maximize the quality of water recharging the aquifer due to the infiltration. First, the detention ponds have been designed to maintain a minimum 5' vertical separation from the bottom of the basin to the peak annual water table elevation. Second, vegetated swales are proposed to provide primary filtration of the runoff prior to discharge into the basins, enhancing overall water quality in accordance with EPA recommendations. Third, all storm drainage outlets have been designed with a 2-foot sump to facilitate the settlement of heavy pollutants and with a hooded outlet to skim away lightweight floating pollutants, and curbing has been minimized to encourage overland-dispersed flow through stable vegetated areas.

Also, the phasing of on-site construction as depicted in File Reference 1.6 and 1.7 in accordance with development and implementation of a detailed Sediment and Erosion Control Plan (SECP) and Stormwater Pollution Prevention Plan (SPPP), which shall be included as a condition of the permit authorization, will ensure that during the major phases of construction adequate on-site detention and protection will be used and maintained.

(2) Aesthetics - Several commenters objected to the degradation of the existing view from that of rolling hills and cornfields to a large industrial facility.

The short-term aesthetic impact of construction may be substantial and development will result in the permanent conversion of the current view from rolling hills and agricultural fields to that of an industrial facility and associated parking facilities. Although an adverse effect, it is a foreseeable impact associated with any proposal considering the land use plan established by the Town of Plainfield and current zoning of the property for industrial and/or commercial uses (see File Reference 4.4). Town managers have taken the nearby residential properties into consideration in establishment of the industrial zoning. The intention of creating an Industrial 2 zone district is to establish a higher standard than that of a regular

Industrial District from the perspective of protecting the quality of life of the people that reside in the surrounding properties.

The applicant has undertaken measures to mitigate the visual impact of the facility by increasing the buffer from 20' to 60' between the existing Tarbox Road and the proposed facility. Also, a landscaping plan has been developed that calls for the planting of dense vegetation along Tarbox Road and along the southern side of the eastern boundary site. The site will be graded to incorporate an earthen berm. Forest will be preserved south of the existing Lillibridge Road confluence, which will be technically feasible due to the installation of an 840' long 10' to 25' high retaining wall.

(3) Flooding - Several commenters expressed the concern that the loss of so many acres of impermeable land, even with incorporation of stormwater management facilities, will result in a decrease of flood storage capacity and an increase in local flooding to nearby residents and areas downstream.

A hydrological analysis was undertaken to evaluate the impact the proposed development will have on Packers Pond and off-site down-gradient properties (File Reference 3.3). A pre and post development peak flow analysis was performed. The study was conducted in conformance with the CTDOT Drainage Manual. Approximately 120 acres will be converted from natural soil to impervious surfaces. The pre-developed condition currently has 20.5 acres contributing flow to Packers Pond (File Reference 1.8). The post-developed condition with proposed stormwater detention and infiltration facilities will have 18.7 acres. The configuration as proposed will result in a 9% reduction in peak flow (from 13 cfs to 11 cfs during 100-year storm) to Packers Pond. Also, the total area contributing flow to properties offsite in a 100-year storm will decrease from 6.9 acres to 5.5 acres. The period of return for 2, 5, 10, 25, 50 and 100-year storms decreased for four of the six offsite drainage areas. Runoff for the remaining two areas was unchanged. The analysis indicates that the post-construction peak offsite runoff for a 100-year storm will decrease from 12.7 cfs to 10.3 cfs, consequently it is anticipated that there will be no adverse impact to adjoining properties or downstream landowners as a result of the development.

The infiltration capacity of the proposed detention ponds was modeled and the applicant has satisfactorily demonstrated that the basin design, as currently proposed, will have the capacity to capture and store the 100 year 24 hour storm runoff on-site and provide for infiltration of the water quality volume in less than 48 hours. Post-construction monitoring of the infiltration basin and provision for corrective action will be included as a condition of the permit to ensure that the stormwater management system meets or exceeds the proposed design standards.

Flood rate insurance maps indicate that the project area is outside the 500-year regulated floodplain area (File Reference 1.12). No portion of the proposed activity will alter the pond or the base flood elevation. Consequently, the project, as proposed, will have no impact to floodplain storage capacity.

(4) Air Quality - Many concerns were raised regarding the possible long-term health effect of diesel exhaust from moving and idling trucks.

The proposed project is located in the Greater Connecticut one-hour ozone nonattainment area and is subject to Section 176(c) of the Clean Air Act as amended "Determining Conformity of General Federal Actions to State and Federal Implementation Plans." A General Conformity analysis is triggered if either (1) the de minimus limits described in the rule are exceeded, or (2) the project will emit 10 percent of the total emissions of the pollutant of concern in the nonattainment or maintenance area.

An analysis was not completed to assess the potential impact of direct emissions of a criteria pollutant or its precursor associated with the proposed RDC facility, because the specified activity is categorically exempt pursuant to 40 CFR 93.153(c)(2)-(3)).

The General Conformity Rule does not require the Corps to document or analyze "indirect emissions" associated with a regulated activity based on the fact that it is not practicable for the Corps to control such emissions, and it has no continuing program responsibility over them (See File Reference 13.5). However, the applicant did complete an analysis to verify that the level of anticipated impact to air quality from indirect emissions associated with the proposed activity would not exceed de minimus levels. Air dispersion modeling (EPA AERMOD and MOBILE6 model) was undertaken to examine ambient impacts from carbon monoxide, particulate matter and nitrogen oxide emissions (File Reference 4.3). The model was run using conservative input parameters including worst-case meteorology, higher truck traffic rates, heavy trailer loads and high background concentrations. The results were compared to the National Ambient Air Quality Standard (NAAQS). The study revealed that the pollutants would be well below the national standard for each pollutant, set by the EPA to protect public health and the environment. The contributions from the truck emissions contributed less than 1 percent of the NAAQS for Carbon Monoxide (CO) and particulate matter (PM), and about 2 percent of the NAAQS for nitrogen dioxide (NO2) emissions. The results achieved were well within the State Air Quality Implementation Plan requirements.

Consequently, the impact to air quality from this activity will not exceed de minimus levels of direct or indirect emissions of a criteria pollutant or its precursor, and is exempted by 40 CFR Part 93.153. Therefore, a conformity determination is not required (also see General Conformity Statement in Section 9f below).

(5) Traffic & Safety – Several commenters stated that the proposed RDC would result in increased use of Route 12 and the new road would be used as a local shortcut to Route 169 and I-395.

It is anticipated that there will be short-term construction related traffic delays associated with turning vehicles onto the existing Tarbox Road, prior to and during construction of Talredi Road. These impacts may be minimized by improvements to Norwich Road prior to the onset of construction of Talredi Road.

The permittee and its duly authorized contractor shall be required, in accordance with the June 23, 2003 Bid specifications (File Reference 2.6), to ensure establishment and maintenance of a temporary traffic control zone that takes into full consideration traffic and pedestrian safety, worker safety, and efficiency of traffic movement.

Following installation of the RDC and construction of Talredi Road, signalized

intersections will continue to run at a high level of service. There will be a slight increased average delay of 0.2 to 0.6 second during pm peak hours for Lathrop Road at the I-395 northbound ramp and Old Norwich Road (File Reference 4.2). There will also be an estimated 2-second increase in delay associated with Lathrop Road southbound ramp/Old Norwich Road during the am peak traffic period. A more recognizable delay is expected to occur in this location (21.4 second increase) during the peak afternoon period. An unsignalized intersection at the confluence of Norwich Road and Tarbox (Talredi) Road will continue to run at a high level of service. The most recognizable change will be a 6.5 second to 17.2 second increase for travelers attempting an eastbound left turn during peak morning and afternoon hours.

Surveyed site distances comply with the CTDOT standards for "Intersection Sight Distances," and the proposed intersection will exceed the standard for "stopped vehicles turning left across oncoming traffic" at speeds up to 62 MPH in a posted area of 45 MPH.

Measures proposed to be undertaken to mitigate the minor delays identified above include: 1) the widening of Norwich Road to provide a northbound bypass area and a southbound deceleration lane for vehicles entering Talredi Road, 2) the embankment along the west side of Norwich Road will be graded during the installation of site utilities to allow a measure of increase to site distance for drivers leaving Talredi Road, 3) timing changes to the existing traffic signals located at the intersection of Lathrop Road at the I-395 Southbound ramps and Old Norwich Road will be undertaken to allow the Old Norwich Road approach to operate at a better level of service, and 4) the lane use on Old Norwich Road will be revised to provide an exclusive right turn lane for access to the southbound on-ramp and a combination left turn, through and right turn lane onto Lathrop Road.

One commenter stated that the constant coming and going of traffic trailers would result in unsafe conditions for children in the residential neighborhood.

The resolution to discontinue Tarbox Road and construct a new access road for the proposed RDC was specifically designed to segregate the industrial activity from the residential neighborhood.

Only two residential properties will be directly accessed off of the new Talredi Road. The Caron property (15 Tarbox Road) is obscured from the existing Tarbox Road by dense trees and will be further offset from the new road through a driveway extension when Tarbox Road is discontinued. The primary structure on this property, by direct line-of-sight, will be offset approximately 238' from Talredi Road. The Wilcox property (925 Norwich Road) is located at the confluence of Norwich Road and Tarbox Road and is directly situated on Norwich Road (CT Route 12), which is a major Town thoroughfare. The primary structure on this property, by direct line-of-sight, will be offset approximately 126' from Talredi Road. The remaining residential properties are aligned along the portions of Tarbox Road that will not be discontinued, and consequently, will not directly border Talredi Road or the RDC driveway entrance. The proposed configuration provides adequate segregation of residential and industrial uses.

(6) Noise - Numerous commenters expressed concern with the impact of noise directly related to the proximity of the new road and the distribution facility to residential properties. Questions raised include how far away will operation (traffic entering and leaving the

facility and yard tractors mobilizing shipping trailers) of the RDC be heard and will trucks (drop off and pick up) be allowed to idle for extended periods of time?

A sound level survey was undertaken to evaluate the potential impact of facility-related noise to nearby residential properties along Tarbox Road. An existing RDC facility located in Statesville, N.C. was selected to generate the estimate because it is similar in size (>1.2 million square feet), possesses comparable physical characteristics as the proposed Plainfield RDC (residential properties, farmland and roadways), and does not have sound protection measures implemented at the site (conservative estimate). The sound field measurements taken from the Statesville RDC facility were taken at distances that were comparable to the distance of the proposed Plainfield RDC site to that of nearby residences (the nearest residential property boundaries on Tarbox Road to the RDC truck activity areas range from 150' to 300' and 300' to 700' from the RDC building loading docks), and taken during peak activity times (9:30 am, 12:00 pm, 2:30 pm and 5:30 pm).

The survey conducted indicated that the anticipated daytime sound levels associated with the proposed facility will be below the level set by the Regulations of Connecticut State Agencies (RCSA) for the prevention of adverse noise impact (61 dBA) and below the Federal Highway Administration noise abatement criteria for residential development (70 dBA-Leq 10 hour average and 67 dBA-Leq one hour average). Specifically, the average weighted sound level over the increase in community noise (dBA-Leq) at the nearest residential property boundary was 56 dBA at peak activity times during daytime hours. The maximum decibel level recorded during the survey during daytime hours due to RDC activity was 61 dBA.

An assessment of nighttime sound readings was not conducted, in part because background sound levels at the Statesville site (due to the nearby interstate) would result in higher readings than would be anticipated to be exhibited in Plainfield. It is anticipated that lower sound levels would be recorded during nighttime hours because of lower activity levels.

Measures proposed to be undertaken to mitigate the generation of sound associated with the proposed facility include: 1) equipping yard tractors with strobe lights rather than a warning beep when operating in reverse, 2) the prohibition of idling for trucks/trailers, and 3) the installation of dense vegetative buffers, a retaining wall and earthen berm.

Also, because an assessment of nighttime sound readings was not conducted, and because the purpose of the model survey was to gain a general understanding of the sound levels that may reasonably occur at the proposed facility, we have incorporated a special condition into the permit which requires that a post-construction sound level survey be completed to document both daytime and nighttime noise levels. If noise levels exceed either state of federal criteria the permittee will be responsible for implementation of additional sound reduction measures.

(7) Lights – Several commenters expressed concern with the potential effect of 24-hour lighting from the distribution center on nearby residences and wildlife.

Light spillage in woodlands and wetlands is identified as a contributor to behavioral disturbance of many wildlife species. The planning tool "Best development practices:

Conserving pool-breeding amphibians in residential and commercial developments in the northeastern United States" (Calhoun & Klemens, 2002) suggests that modification of ambient lighting may affect amphibian reproduction, foraging, migration, predator avoidance and social interaction (File Reference 13.6). This guidance document recommends that exterior and road lighting sources consist of low-spillage lights, specifically those that are shielded and reflect the light downward on to the area to be illuminated.

There is no known state regulation pertaining to illumination levels associated with the proposed use and there is no local ordinance pertaining to light emissions in the Town of Plainfield.

The exterior light plan has been designed to maximize the effectiveness of site lighting while avoiding unnecessary upward illumination and lighting trespass onto adjacent properties. Area lighting for the parking facilities will consist of 1000-watt high-pressure sodium lamps with a flat lens that meets the criteria for full cut-off type fixtures (e.g. does not allow for dispersion or direct glare to shine above a 90 degree, horizontal plane from the base of the fixture). The fixtures will be mounted on 39' poles. Building-mounted lighting will consist of 150-watt high-pressure sodium lamp fixtures with a flat lens installed at a maximum tilt of 45 degrees. All perimeter fixtures will have house side-shields to prevent light spillage off of the property.

Product specifications indicate that the truck parking areas will have an average foot-candle level[1] of 3.7 with a maximum of 14.7 and a minimum of 0. The employee parking area will have an average foot-candle level of 4.9 with a maximum of 9.3 and a minimum of 0. Perimeter lights will be installed to achieve o foot-candles at the property line.

To ensure that there will be minimal off-site adverse impact from area illumination associated with the facility, a condition has been incorporated into the permit that all exterior lights shall be designed, located, installed and directed in such a manner as to conform to the "maintained horizontal illuminance recommendations" set by the Illuminating Engineering Society of North America (IES). Conformance with these guidelines should prevent the spillage of light and flare across property lines and into habitat protection areas.

(8) Mosquito Breeding - One commenter asserted that the installation of the detention basins and storm water management facilities would provide additional habitat for breeding mosquitoes.

Stormwater best management practices (BMP) such as detention, retention and infiltration basins, if not adequately maintained, can become a breeding ground for mosquitoes. According to the American Mosquito Control Association two primary factors contribute to mosquito production in BMP's: design and maintenance.

The stormwater BMP's proposed for the RDC are infiltration basins. As excavated depressions, infiltration basins capture stormwater and allow the runoff to percolate into permeable soils. This type of basin is not typically designed to retain a permanent pool volume. The main purpose of an infiltration basin is to transform a surface water flow into a

[1] A unit of illumination equal to one lumen of light flux distributed evenly on one square foot of surface.

ground water flow and to remove pollutants through mechanisms such as filtration, adsorption and biological conversion as the water percolates through the underlying soil. The use of infiltration basins for stormwater control is feasible only in small drainage areas where soil is sufficiently permeable to allow a reasonable rate of infiltration. The rate of infiltration depends on soil type. The State of Connecticut requires that runoff be retained on site and that the water quality volume in the basin is infiltrated within 48 hours.

In order to ensure that the infiltration basins will be designed in accordance with state requirements, the functionality of the ponds has been modeled based on the Darcy equation with consideration of the saturated hydraulic conductivity of the soils, water table elevation, soil porosity and moisture content. Results of the modeling effort indicates that the water quality volume for all of the basins will be infiltrated in less than 48 hours, even for initial soil moisture content as high as 67 percent (File Reference 3.3).

Inadequate maintenance is acknowledged as a common cause of infiltration basin failure. Clogged infiltration basins that develop surface standing water can become a breeding area for mosquitoes. The use and regular maintenance of pretreatment BMP's such as vegetative swales and filter strips will significantly minimize more time-intensive maintenance requirements. Regular maintenance should include routine inspection to confirm drain time and to identify accumulation of trash and debris or excessive sediment in the basin or the pretreatment swales (post-construction, twice annually and after extreme rainfall events), and the removal (scraping) of accumulated sediment to restore the original cross section and infiltration rate (every 3 to 5 years). Regular maintenance can significantly reduce the likelihood of basin failure.

Mosquitoes need stagnant, shaded water for their eggs to develop into the mature stinging pest. Standing water must be present for a minimum of 4.5 days for the eggs to develop. Consequently, any temporary body of water that is present for more than a week can be considered mosquito-breeding habitat. The preliminary design specifications identified above indicate that the infiltration basins are unlikely to retain water long enough for noteworthy mosquito reproduction. However, establishment and implementation of a long-term basin management plan will allow for quick recognition of poor basin performance and initiation of corrective measures, and will significantly reduce the risk of basin failure. Such a maintenance plan has been made a condition of this permit.

(9) Endangered and Threatened Species - Several entities commented that filling of habitat on site will significantly affect the resident populations of state listed protected species, including the spadefoot toad and the diploid blue-spotted salamander.

As identified above in Section 5 above, state listed EST including spadefoot toad, diploid blue-spotted salamander, vesper, Savannah, and grasshopper sparrow, Cooper's and red-shouldered hawk, and eastern ribbon snake, may utilize habitat available on the site. It is reasonably foreseeable that the degradation or outright loss of the identified individuals and in the case of EST amphibians, the entire reproducing population, at this site will occur without construction of the RDC. The negotiated mitigation plan identified in Section 7f above and the critical habitat best management protection measures to be implemented during construction (File Reference 7), are designed to offset the direct adverse impact of development to the amphibian species, to enhance and create additional areas suitable for maintenance of the

populations and to identify opportunities for long-term protection and management to buffer the species' survival in light of future development pressures.

At least one commenter expressed the concern that construction of the facility will result in the elimination of grassland habitat used by songbirds, including state listed threatened and endangered species.

See response above.

(10) Residences – Numerous commenters objected to the subject proposal based on the proximity of the industrial development to homes and property.

The town of Plainfield took into consideration the proximity of the subject properties in relation to the residential properties during establishment of the original industrial district in 1990 and re-zoning to I-2 in 2001 (File Reference 4.4). The proposed development is in compliance with local zoning regulation.

Commenters were concerned with the potential impact of the proposed facility on the local crime rate; in particular the proximity of the facility and its hired drivers to residential homes and yards.

U.S. Census bureau statistics for the Town of Plainfield indicate that household income is well below the state average, the rate of unemployment is well above the state average, and poverty level is slightly above the state average. The rate of non-violent crime is directly related to economic environment/unemployment trends and it is well documented that both wage level and unemployment is a determinant of crime, with wages having a slightly stronger effect. In particular a decline in the wages offered increases the relative payoff of criminal activity, thus inducing workers to substitute away from the legal sector towards the illegal sector. Consequently, there is no reason to believe that construction and operation of the RDC will result in an increase of local crime rate, and it is a reasonably foreseeable possibility that the influx of new jobs and competitive wages into the community may actually result in a reduction in the rate of non-violent crimes.

The effect that the siting of the distribution center will have on rural property values, in particular percentage value lost.

Nearby residential property values may suffer a slight decrease in marketability prior to and during the initial stages of construction of the RDC. However, it is reasonably foreseeable that, in the long term, the creation of 600 to 800 jobs in the local area will make nearby properties more attractive as people who become employed at the facility consider relocating closer to their area of employment.

(11) Recreation - Many concerns were raised regarding the loss of natural areas (farmland) used by residents for recreational purposes including ATV's, walking, and skating.

The subject land parcels, although receiving some use for active or passive recreational activities, remain private lands and are not designated as open space or public use areas.

(12) Wetland Habitat – Impact of filling and development on wetland dependent wildlife Environmental degradation associated with the filling of wetlands on the site.

The proposed development will result in the unavoidable placement of fill in 1.11 acre of federally jurisdictional inland wetlands and a total of 2.12 acre of federally jurisdictional and state regulated inland wetland. The functions and values of the wetlands to be impacted can be found above in Section 5/Table 5 above. Many of the wetlands that will be directly impacted are man-made wetlands or disturbed wetlands that exhibit limited functional value. The larger and higher quality wetlands on site are being actively degraded through current property management including gravel extraction, soil extraction and disposal of bulky debris including cars and large appliances.

Although only 1.11 acre of federally jurisdictional wetlands will be filled for the proposed activity, the Corps made a determination early on that it was practical to require compensatory mitigation for the loss of all wetlands (both federally regulated jurisdictional and non-jurisdictional) impacted by the proposed development (2.12 acres). Consequently, a mitigation plan has been developed that will provide replacement for lost wetland functions and values associated with all of the wetland impact areas on site, will preserve and enhance both wetland and bordering upland habitats, and will conserve critical habitat for state listed endangered and threatened species. A total of 5.02 acres of wetlands is proposed to be created, 0.33 acres is proposed to be enhanced, 169 acres of valuable upland habitat and 75 acres of valuable wetland habitat is proposed to be preserved, and 8.76 acres of disturbed agricultural land is proposed to be restored to upland oak forest. The ration of credit to debit approximates 10:1.

The proposed mitigation plan recognizes that some wetland dependent species, including pool-breeding amphibians, require both wetlands and adjacent upland habitat to support their entire life cycle. Consequently, the negotiated mitigation plan will create a continuous habitat of upland forest atop and adjacent to gravel deposits, and will enhance and expand the critical upland habitat for the spadefoot toad. Other species expected to benefit from the enhancement include spotted salamander (Ambystoma maculatum), marbled salamander (Ambystoma opacum), red-spotted newt, four-toed salamander (Hemidactylium scutatum) and gray treefrog (Hyla versicolor). The plan addresses species' metapopulation function between wetlands by establishing and enhancing the disturbed wetland using the existing habitat (Wetland C) as a template to create a second wetland site to add to the acreage of critical habitat. The plan will also create an interconnected habitat of wetland and wetland corridors in the lower portion of the site, complemented by oak forest cloaking sand and gravel deposits upland of the wetlands. The proposal will create a continuous habitat corridor stretch from the edge of the gravel pit, through Wetlands C, B and A westward into the adjacent Town of Canterbury and eastward into the Quinebaug River wetlands along Packer Road where other populations of spadefoot toad have been documented.

Wetland mitigation area ONSW-1 has been designed to replace, in no particular order, the following functions:

- *Groundwater Recharge/Discharge*
- *Floodflow Alteration*
- *Sediment/Toxicant Retention*

- *Nutrient Removal*
- *Production Export*
- *Wildlife Habitat (principal function)*

Wetland mitigation area ONSW-2 has been designed to replace, in no particular order, the following functions:

- *Sediment/Toxicant Retention (principal function)*
- *Wildlife Habitat (principal function)*
- *Groundwater Recharge/Discharge*

Other actions that will be undertaken as part of the compensatory mitigation package include the restoration/enhancement of wetlands off-site (Atlantic white cedar bog) in the Mill Brook watershed, the collection and ultimate reporting of additional data on the distribution of state-listed threatened and endangered species (spadefoot toad and diploid blue-spotted salamander) that will be the basis of a plan for their conservation in the upper Quinebaug Valley, and the planning, funding and completion of conservation activities that will lead to increased quality and quantity of habitat for warm season grassland birds.

The mitigation plan has been developed in accordance with the New England District Performance Guidelines and Supplemental Information on the Checklist for Review of Mitigation Plan, the Regulatory Guidance Letter 2001-1- Guidance for the Establishment and Maintenance of Compensatory Mitigation Projects Under the Corps Regulatory Program Pursuant to Section 404(a) of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 and Regulatory Guidance Letter 2002-2 - Guidance on Compensatory Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. It is our determination that the compensatory mitigation package identified above adequately offsets the direct and indirect impact of the RDC development on natural resources.

(13) Agricultural Land – Some commenters stated that conversion of active farmland to industrial users would adversely affect cash-poor farmers and result in a decrease in availability of food crops.

Development of the site will reduce the amount of former farmland in the Town of Plainfield by an estimated 127 acres. The subject parcels were rezoned as Industrial land as early as eleven years ago and as late as two years ago. The Town of Plainfield as part of its plan for conservation and development has identified as a land use management goal the objective to promote farm profitability and protect the Town's most valuable farmland. Local records indicate that even during greatest agricultural use of the subject parcels, their productivity was limited. Productivity of the sites has been limited due to the presence of non-conforming gravel excavation activities on two of the parcels that have degraded the properties' ability to produce a significant agricultural commodity. Although a small portion of one of the parcels has been sublet periodically for the growing of corn, it is unlikely that loss of the particular agricultural commodity will more than negligibly affect food production.

(14) Employment - Several commenters expressed the concern that the jobs

created by the RDC would require specialized experience that would be imported from centers in other parts of the country, thereby, significantly limiting the benefit to the local job market.

Review of the anticipated need for workers indicates that jobs created are likely to include material handling (forklift operation, order filling, packing, loading and unloading), various levels of management, security, truck drivers, data processing and equipment and facility maintenance. The experience levels for the above positions are likely to vary. For example warehouse operations management would generally require a college degree, but the applicant indicates that this in not a requirement. Some positions may require specialized experience, such as forklift operators, human resources, loss prevention, and traffic management. Other positions are not likely to require experience (loaders and unloaders, order fillers, miscellaneous administrative positions). The applicant estimates that 90 to 95 percent of the above jobs will be filled at the local level, thereby, not importing employees with special experience from other facilities.

(15) Cumulative impacts – Several commenters asserted that issuance of a permit for the proposed would effectively, over time, reduce the acreage of wetlands and waters available to water dependent wildlife as well as the recreation, and passive enjoyment of such areas.

As discussed in Sections 7c, 8, and 9bvi above, evaluation of the proposed activity has been undertaken with consideration of the reasonably foreseeable cumulative impact to wetlands and waters on, and in the general vicinity of the site. The mitigation measures and permit conditions incorporated into this authorization make every effort to ensure that these resources will be available in the long-term for the use and enjoyment of everyone.

Some commenters indicated that the new road would provide the necessary upgrade to allow access to a previously proposed transfer station at the formerly closed Yaworski Landfill superfund site.

Many commenters expressed concern that permitting the RDC (or any other large industrial development) in this location would open the door for additional industrial development in close proximity to homes and wetlands/waters.

As discussed above in Section 8 under Land Use Classification and Zoning, decisions regarding long-term use of land parcels are the responsibility of the municipal government. The possibility of "piggy back" development is reasonably foreseeable considering the number and location of industrial zoned parcels in the immediate area. Such additional development could be environmentally significant, but are beyond the scope of this action. It is anticipated that additional local development spurred by the RDC and future Town sponsored development initiatives will be required to address and compensate for wetland impacts on a site-specific basis, as required by local, state and federal regulation.

c. Summary of Evaluation:

In a related application (200202328), the Town of Plainfield proposes the placement of fill in inland wetlands and waterways for the upgrade and the construction of a new road (Talredi Road) to provide access to the Lowes RDC development site (specific project related impacts of Talredi Road construction are discussed in the related file documentation for File No.

200202328). Because the road improvements, which are the subject of the Town's application, would not take place without the corresponding industrial development currently proposed by Lowes Home Centers, the Corps determined that it was prudent for the sake of regulatory review and cumulative impact evaluation to provide simultaneous public notice of the pending applications and to conduct our evaluation of the applications concurrently. Consequently, our evaluation of the above application and issuance of an authorization for this activity has broadly considered the reasonably foreseeable future impact of the construction of Talredi Road, and the compensatory mitigation plan developed for the Lowes Home Centers application has incorporated the necessary measures to adequately offset the impact of the unavoidable impact of Talredi Road construction.

The development site is composed of three parcels consisting predominantly of active or fallow agricultural fields. Of the fourteen wetlands delineated on the subject parcels, four will be directly impacted for the construction of the RDC.

The applicant conducted an analysis of 60 off-site locations and 12 on-site configurations to avoid and minimize impacts to jurisdictional waters and wetlands. The permitted project is the result of modification and reconfiguration of the original proposal to avoid and minimize impacts to valuable wetlands and waters of the United States and to provide adequate compensation for functional losses to aquatic resources, including wetlands. **Wetland impacts have been reduced from 10.13 acres to 1.11 acre of federally regulated jurisdictional wetland (2.12 acres state regulated wetland).**

The no-build alternative is not considered practicable or environmentally preferable because it would not achieve the applicant's project purpose and the impacts to natural resources at the site, including degradation or outright loss of spadefoot toad and diploid blue spotted salamander habitat, would be expected to occur without the proposed development. The project described in Section 7d above, is considered the least environmentally damaging practicable alternative and satisfactorily strikes a balance between the applicant's need to meet standard engineering and operational specifications while preserving and enhancing rare wetland-dependent amphibian habitat. The natural resources gained by the proposed mitigation activities identified above, will outweigh the resources lost to filling for development of the proposed RDC.

During and after construction, the majority of stormwater runoff will continue to be retained on site in basins or sub-basins and ultimately infiltrated into the soil or evaporated on site. In the long-term, implementation of the stormwater management system as proposed will improve the rate of infiltration, maximize the quality of water recharging the aquifer, and provide primary filtration of the runoff prior to discharge into the basins. Approximately 120 acres will be converted from natural soil to impervious surfaces. The pre-developed condition includes 20.5 acres contributing flow to Packers Pond. The post-developed condition will have 18.7 acres. The configuration as proposed will result in a 9% reduction in peak flow (from 13 cfs to 11 cfs during 100-year storm) to Packers Pond. The total area contributing flow to properties offsite in a 100-year storm will decrease from 6.9 acres to 5.5 acres. The post-construction peak offsite runoff for a 100-year storm will be decreased from 12.7 cfs to 10.3 cfs. The subject site is located outside the 500-year floodplain flood insurance rate map for Windham Country and consequently, will have no affect on floodplain storage.

Although a number of residential properties may be directly impacted by the RDC, the proposed industrial development will contribute new jobs and corporate community support in a currently depressed locality. At some point in the past the Town of Plainfield determined that this type of development, in this location, is in the overall best interest of its residents and would provided needed economic benefit, as evidenced by the approval of a zoning change for these properties from agricultural to industrial.

d. Public Hearing Request: All requests for a public hearing have been reviewed and evaluated. A determination to not hold a public hearing was made on March 16, 2003. Although we received comments on a wide range of concerns, they were clearly stated and the Corps was able to submit detailed requests for additional information to the applicant. It was concluded that although subsequent information may be required by the Corps of Engineers to make an informed determination on the subject application, such information would be of a technical nature and unlikely to be brought forward during a public hearing or a public meeting. All comments received in response to the subject application have been fully considered.

e. Application of 404(b)(1) Guidelines: The final guidelines of the Environmental Protection Agency for the discharge of fill or dredged material (40 CFR 230) as published in the Federal Register, dated 24 December 1980, have been applied in evaluating this permit application. With the special conditions incorporated into the compliance determination, the discharge of dredged or fill material has been found to comply with the guidelines.

f. The EPA regulations published as "General Conformity Rule" (58 FR 63214, November 30, 1993) to implement section 176(c) of the Clean Air Act for non-attainment areas and maintenance areas require that Federal actions, unless exempt, conform with the Federally approved state implementation plan. The impacts on air quality associated with the regulated activity described in this EA/SOF have been considered and based upon the assessment provided as File Reference 4.3, the impact to air quality from this activity will not exceed de minimus levels of direct emissions of a criteria pollutant or its precursor, and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibilities, and generally cannot be practicably controlled by the Corps. Therefore, a conformity determination is not required.

g. I find that based on the evaluation of environmental effects discussed in this document, the decision on this application is not a major federal action significantly affecting the quality of the human environment. Hence, an environmental impact statement is not required.

h. I have considered all factors relevant to this proposal including cumulative effects. Potential factors included conservation, economics, esthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. After weighing favorable and unfavorable effects as discussed in this document, I find that this project is not contrary to the public interest and that a Department of the Army permit should be issued.

DISTRICT ENGINEER _____ DATE