OFFICE OF ADJUDICATIONS

IN THE MATTER OF	***:***	***APPLICATION NO. IW-2000-108***
DOT/ROUTE 7 DANBURY/RIDGEFIELD	***:***	***SEPTEMBER 10 , 2002***

PROPOSED FINAL DECISION

The parties in the above-referenced matter have reached an agreement and submitted an *Agreed Draft Decision* for my consideration, which is attached hereto. Upon review of the facts, legal conclusions and recommendations, including special conditions contained in this *Agreed Draft Decision,* I adopt it as my *Proposed Final Decision* and recommend that the commissioner issue the requested permit.

September 10, 2002
Date

/s/ Lewis J. Miller
Lewis J. Miller, Hearing Officer

State of Connecticut Department of Transportation
Reconstruction of U.S. Route 7
Ridgefield and Danbury
State Project No. 34-260
Public Hearing for the Connecticut Department of Environmental Protection
Agreed Draft Decision

AGREED DRAFT DECISION

I

SUMMARY

The Connecticut Department of Transportation (the "applicant") has applied to the Department of Environmental Protection for a permit to conduct regulated activities along U.S. Route 7 in the Town of Ridgefield and the City of Danbury (State Project 34-260). The southerly limit is approximately 0.6 kilometer (0.4 mile) north of the intersection of U.S. Route 7 and State Route 35. The northerly project limit is approximately 1.4 kilometers (0.9 mile) south of Interstate 84. These regulated activities are associated with the reconstruction of approximately 5.4 kilometers (3.4 miles) of U.S. Route 7. The Connecticut Department of Transportation has filed an application for an Inland Wetlands and Watercourses Permit pursuant to General Statutes §22a-39 of the Inland Wetlands and Watercourses Act. General Statutes §22a – 36 through 22a-45. (Exhibit APP-1, Exhibit DEP-6, Exhibit APP-6 p.1)

The applicant and Inland Water Resources Division ("staff") are the only parties in this matter. Staff supports issuance of the permit and has submitted into the record a draft permit that would authorize the applicant's proposed regulated activities. (Exhibit DEP-6)

The reconstruction of approximately 5.4 kilometers (3.4 miles) of U.S. Route 7 that is the subject of this permit application would improve public safety by increasing capacity by adding an additional lane in each direction and by realigning the road on the present alignment using American Association of State Highway and Transportation Officials ("AASHTO") and Connecticut Department of Transportation standards for horizontal and vertical geometry. The existing highway's capacity and geometric deficiencies cause unsafe driving conditions and excessive delays. Side roads will be reconstructed in order to provide a safe and efficient intersection with U.S. Route 7. The proposed project will alleviate existing problems and provide a safer, more efficient roadway. (Exhibit APP-6 p.1, Exhibit APP-7 p.4)

The project has been planned to minimize wetland impacts and improve water quality while meeting current highway design and safety standards. These proposed regulated activities, if conducted in accordance with the terms and conditions of the draft permit, would be consistent with the applicable legal standards for issuance of the permit. (Exhibit APP-1, Exhibit APP-8 p.38, Exhibit DEP-6)

Five wetland mitigation sites will be located adjacent to the project. The goal of the mitigation sites is to create approximately 1.4 hectares (3.47 acres) of wetlands to compensate in kind for the loss of 0.94 hectares (2.32 acres) of inland wetlands and watercourses and associated habitats that will occur as a result of the project impacts.

This permit should be issued in accordance with the terms and conditions of the draft permit. (Exhibit DEP-6)

II

DECISION

A

FINDINGS OF FACT

1. The Application

On *June 14, 2000*, the Department of Transportation submitted an application to the Department of Environmental Protection Inland Water Resources Division for an Inland Wetland and Watercourses permit. *Subsequent revisions to the application were requested by the Connecticut Department of Environmental Protection on December 28, 2000, mainly in response to drainage design revisions and advancement of the roadway and wetland mitigation designs*. Additional information was submitted to the Connecticut Department of Environmental Protection on May 16, 2001. On April 17, 2002, the Inland Water Resources Division of Connecticut Department of Environmental Protection issued a Floodplain Management Certification approval. (Exhibit DEP-7) Additional comments were received from the Connecticut Department of Environmental Protection on March 1, 2002. The Connecticut Department of Transportation responded to these comments on May 1, 2002. A Hearing was scheduled upon determination of significant impact, and a hearing was held on *July 30, 2002.*

2. The Project

a. The proposed regulated activities that are the subject of this permit application (the "project") are all associated with the reconstruction of a 5.4 kilometers (3.4-mile) section of U.S. Route 7. The southerly limit is approximately 0.6 kilometer (0.4 miles) north of the intersection of U.S. Route 7 and State Route 35. The northerly project limit is approximately 1.4 kilometers (0.9 miles) south of Interstate 84. U.S. Rout 7 is a Principal Urban Arterial. Capacity will be improved by adding an additional lane in each direction and the existing roadway will be realigned using AASHTO and Connecticut Department of Transportation standards for horizontal and vertical geometry. Side roads (Bennett's Farm Road, West Starrs Plain Road, Starrs Plain Road, and Old Sugar Hollow Road) will be reconstructed in order to provide a

safe and efficient intersection with U.S. Route 7. As a result of the proposed work, 19 wetland areas will be impacted (herein described as Sites Z, 1A, 1B, 2, 3, 5, 6, 7, 8A, 8B, 9, 10, 11, 13, 14, 15, 16A, 16B, and 17). A total of 2.32 acres of wetlands (9,370 square meters) will be permanently impacted by the project. Four additional wetland areas (4, 12, 18, and 19) will not be impacted by the proposed work. A new drainage system will be provided that incorporates best management practices for cleaning the stormwater runoff prior to discharging to the wetlands. The storm drainage design for the project area conforms to applicable state and federal guidelines. (Exhibit APP-1, Exhibit APP-5, Exhibit APP-7 p.4)

b. The proposed project has been identified by the Connecticut Department of Transportation as a priority due to the existing highway's capacity and geometric deficiencies that cause unsafe driving conditions and excessive delays. (Exhibit APP-7 p.3)

c. The present horizontal and vertical alignments of U.S. Route 7 for its entire length and the local road intersections in the project area do not conform to federal and state operational, geometric and safety standards. (Exhibit APP-5, Exhibit APP-7 p.3)

d. The project area has accident rates that are average for a rural, two-lane, bi-directional highway in Connecticut. An analysis of the accidents indicated that they were typical of a congested and high volume roadway without turning lanes or adequate gaps in flow for entering the traffic stream, and roadways with poor geometry and lack of a vehicle recovery clear zone. Without improvements to the roadway the rate of accidents will increase. The intersection of U.S. Route 7 at Old Sugar Hollow Road was on the Connecticut Department of Transportation's list of highway segments where accidents are above normal. (Exhibit APP-1, Exhibit APP-7 p.4)

Watercourses/ Flood Control

e. A very small portion of the project at the southerly project limit is in the Norwalk River watershed.

Bennett Ponds Brook (a tributary to the Saugatuck River) flows from west to east, crossing under the project at Station 91+275. A series of wetlands associated with the Saugatuck River extend along the east side of U.S. Route 7 in the southern and central part of the project corridor from Station 90+260 to 93+300. The Saugatuck River flows northerly as it passes under West Starrs Plain Road at Station 30+150. A northern branch of the Saugatuck River flows from north to south as it passes under Starrs Plain Road at Station 40+040.

A series of wetlands associated with Kissen Brook extend along the northern portions of the project. This brook system flows from south to north and crosses U.S. Route 7 at Station 93+950. (Exhibit APP-5, Exhibit APP-7 p.5)

f. The 100-year flood plains of the Saugatuck River, and Kissen Brook will be impacted by the project. The project will not impact the 100-year floodplain associated with Bennett Ponds Brook. The project will increase the hydraulic capacity of the new culverts and will raise the roadway near major stream crossings above the predicted 100-year flood elevation. The Starrs Plain Road crossing of the Saugatuck River will be above the 50-year flood elevation. (Exhibit APP-1, Exhibit APP-7 p.6, Exhibit DEP-7)

g. Two stratified drift deposits with a saturated thickness of greater than 3 meters (10 feet) are crossed by the highway study area. In the northern portion of the study area, the Mill Plain Swamp Aquifer underlies Lake Kenosia and Mill Plain Swamp and extends south and east to the U.S. Route 7 study area. The southeastern extent of this aquifer is extensively developed by light industrial concerns that serve the Danbury Airport, which also overlies the aquifer. This portion of the aquifer is not used as a public water supply aquifer. The topographically lower reaches of the streams and wetlands in the southern half of the study area flow through valleys underlain by deposits of stratified glacial drift of varying thickness. The Sugar Hollow Aquifer, is under the upper Saugatuck River. The western lobe of this aquifer underlies Bennett Ponds Brook, and it is crossed by U.S. Route 7. The Sugar Hollow Aquifer is identified by the State of Connecticut Department of Health and Addiction Services, and the Ridgefield Water Supply Company as having a potential for development of future water supplies along this portion of the study area.

   The Ridgefield Water Supply Company (now Bridgeport Hydraulic Company) is presently looking for a supply of water for the northern portion of Ridgefield. One of several alternate sites presently being investigated is located east of U.S. Route 7 in Ridgefield. The proposed storm drainage design for this project has been coordinated closely with the Ridgefield Water Company. As requested by the water company, we have eliminated outlets, separated roadway runoff from offsite water, and redirected roadway storm drainage away from a potential well site. This will improve the water quality in the area.

   The Atlas of the Public Water Supply Sources & Drainage Basins of Connecticut (1982) lists two well sites as occurring in the vicinity of the study area, both of these utilize the water resources of the Sugar Hollow Aquifer. Two wells, belonging to the Lake Waubeeka Property Owners Association are located approximately 0.5 kilometer (0.30 mile) east of U.S. Route 7, and 0.75 kilometer (0.45 mile) south of the U.S. Route 7 / Starrs Plain Road intersection along Starrs Plain Road. This well will not be impacted by this project.

   A small, private well that served Danridge Manor Apartments was located in the Sugar Hollow Aquifer east of U.S. Route 7 near Bennett's Farm Road. The apartments and the well have been removed.

Two additional community wells are listed in the Connecticut Department of Environmental Protection / Connecticut Department of Health and Addiction Services Datural Diversity Database (Geographic Information System). First is the Bridgeport Hydraulic Company – Laurelwood System. This serves a convalesent hospital east of the U.S. Route 7 / Route 35 intersection in Ridgefield and south of the project limit. Second is the Stonehouse Commons Condominium located west of U.S. Route 7 in Ridgefield, south of the project limit. Neither of these wells will be impacted by this project.

Private bedrock wells along the study area will not be impacted by this project. All reinforced concrete storm drainage pipe will have watertight gaskets cast integrally into the pipe.

There are no sole source aquifers known to exist within the study area. This project will not have cuts into the aquifer that will allow roadway storm drainage to directly enter the aquifer. The roadway storm drainage will for the most part be separated from the offsite water. The roadway runoff will be cleaned by the use of grass swales and waterways and catch basin sumps and discharged in most cases in upland areas on existing ground to provide additional cleaning prior to entering the wetlands. This project will have a net positive impact on water quality because of the design features incorporated into the storm drainage design and the use of best management practices. This project will have no adverse impact to wells or the aquifers in the project area.

(Exhibit APP-1, Exhibit APP-7 p.6)

Wetland Impact Sites/ Proposed Activities

j. The proposed project will affect 19 small wetland areas, which we call areas of impact. A total of 0.94 hectare (2.32 acres) of wetland will be permanently impacted by the project. By this, what is meant is that 2.32 acres will be filled, or in one case, de-watered by the project. The proposed permanent impact areas consist of 1295 square meters (0.32 acres) of forested swamp, 1133 square meters (0.28 acres) of open water, 0.58 hectare (1.43 acres) emergent marsh, 971 square meters (0.24 acres) of scrub-shrub swamp, and 202 square meters (0.05 acres) riverine/watercourse wetlands. To compensate for this loss, we will construct five new wetland mitigation sites that will provide 1.4 hectares (3.47 acres) of new wetlands as mitigation for the wetland impacts. Most of the proposed impacts are minimal lateral encroachments to wetland edges and all wetland impacts are unavoidable with the proposed roadway alignment.

   Included within the proposed 0.94 hectare (2.32 acres) of wetland impact are six watercourse crossings. These six watercourses include the following:
   - an intermittent unnamed tributary to the Saugatuck River at Station 96+650 (see description of proposed impacts at Wetland Area 1B, below),

- the south branch of the Saugatuck River at West Starrs Plain Road (see description of proposed impacts at Wetland Area 6, below),
- the north branch of the Saugatuck River at Starrs Plain Road (see description of proposed impacts at Wetland Area 9, below),
- an unnamed perennial tributary to the Saugatuck River at Station 93+045 (see description of proposed impacts at Wetland Area 10, below),
- an intermittent stream at the headwater to Kissen Brook at Station 93+320 to 93+590 (see description of proposed impacts at Wetland Area 14, below), and
- a watercourse at the headwaters to Kissen Brook (downstream from the above location) at Station 93+950 (see description of proposed impacts at Wetland Area 14, below).

One additional watercourse, Bennett Ponds Brook (a perennial tributary to the Saugatuck River) crosses the project at Station 91+280. The project will have a small impact on Wetland Area 5, which is associated with the brook, but will not impact the brook channel.

The following is a detailed description of the proposed wetland impacts along the project. Note that each wetland is called a 'Wetland Area' here (e.g., Wetland Area Z), matching the terminology on the Plan Graphic and corresponding to 'Area Z' on the permit plates. All wetlands in the project area are inland wetlands and most are associated with watercourses.
(Exhibit APP-1, Exhibit APP-5, Exhibit APP-8 p.5)

1. Wetland Area Z (Station 90 + 070 west of U.S. Route 7)
   - Wetland Area Z is associated with a watercourse and is composed of a mosaic of forested swamp, open water and marsh wetland types. The principal wetland function is sediment/toxicant retention.
   - There is one proposed impact location at Wetland Area Z. Approximately 6.5 square meters (7.8 square yards) of wetland will be permanently impacted. The total fill will be approximately 2.6 cubic meters (3.4 cubic yards). There will be no temporary impacts to this wetland area.
     (Exhibit APP-8 p.6)

2. Wetland Area 1A (Station 90 + 300, Station 90 + 425 and Station 90 + 615 east of U.S. Route 7)
   - Wetland Area 1A is composed of open ponded water, wet meadow marsh, and forested swamp as the dominant wetland types. This is a large wetland system associated with the Saugatuck River. The principal wetland functions are groundwater recharge/discharge, sediment/toxicant retention, nutrient removal/retention/transformation, wildlife habitat, and visual quality/aesthetics.
   - There are three proposed impact locations at Wetland Area 1A. Approximately 8.0 square meters (9.6 square yards) of wetland will be permanently impacted. The total fill will be approximately 1.8 cubic meters

(2.35 cubic yards). Approximately 429.1 square meters (0.11 acres) of wetland will be temporarily impacted.
(Exhibit APP-8 p.6)

3. Wetland Area 1B (Station 90 + 640 to Station 90 + 655 east of U.S. Route 7).

- Wetland Area 1B includes mowed wet meadow and scrub-shrub swamp as the dominant wetland types. The principal wetland function is nutrient removal/retention/transformation.
- There is one proposed impact location at Wetland Area 1B. Approximately 122.3 square meters (0.03 acres) of wetland, will be permanently impacted. The total fill will be approximately 150.1 cubic meters (196.33 cubic yards). There will be no temporary impacts to this wetland area.
(Exhibit APP-8 p.8)

4. Wetland Area 2 (Station 90 + 630 to Station 90 + 650 west of U.S. Route 7)

- Wetland Area 2 includes wet meadow/emergent marsh wetland cover type and is associated with an intermittent watercourse. The principal wetland functions are sediment/toxicant retention, and nutrient removal/retention/transformation.
- There is one proposed impact location at Wetland Area 2. Approximately 232.6 square meters (0.06 acres) of wetland will be permanently impacted. The total fill will be approximately 363.3 cubic meters (475.2 cubic yards). There will be no temporary impacts to this wetland area.
(Exhibit APP-8 p.9)

5. Wetland Area 3 (Station 90 + 805 to Station 90 + 885 east of U.S. Route 7)

- Wetland Area 3 includes emergent marsh and scrub-shrub swamp as the dominant wetland cover types. The principal wetland function is wildlife habitat.
- There is one proposed impact location at Wetland Area 3. Approximately 474.9 square meters (0.12 acres) of wetland will be permanently impacted. The total fill will be approximately 1045.4 cubic meters (1367.38 cubic yards). Approximately 197.3 square meters (0.05 acres) of wetland will be temporarily impacted.
(Exhibit APP-8 p.10)

6. Wetland Area 5 (Station 10+060 north of Bennett's Farm Road)

- Wetland Area 5 includes floodplain forest swamp as the dominant wetland cover type. The wetland is associated with a perennial watercourse, and the principal wetland function is groundwater recharge/discharge.
- There is one proposed impact location at Wetland Area 5. Approximately 2.0 square meters (2.4 square yards) of wetland will be permanently impacted. The total fill will be approximately 0.2 cubic meters (0.26 cubic yards). There will be no temporary impacts to this wetland area. Bennett's Farm Road is presently a two-lane road and will remain as such. There will be no widening of Bennett's Farm Road at the point of wetland impact. However, the

roadway grade will be raised approximately one meter (3 feet) to improve the sight distance at the Route 7 and Bennett's Farm Road intersection. A small area of this wetland will be filled by the new embankment. The Bennett Ponds Brook watercourse will not be directly or indirectly impacted by the project.
(Exhibit APP-8 p.11)

7. Wetland Area 6 (Station 30 + 150 along relocated West Starrs Plain Road)

- Wetland Area 6 includes watercourse, open water, emergent marsh, and scrub-shrub swamp dominant wetland types. The principal wetland functions are floodflow alteration (storage and desynchronization) and wildlife habitat.
- There are three proposed impact locations at Wetland Area 6. Approximately 413.2 square meters (0.10 acres) of wetland will be permanently impacted. The total fill will be approximately 884.6 cubic meters (1157.06 cubic yards). Approximately 266.6 square meters (0.07 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.12)

8. Wetland Area 7 (Station 92 + 040 east of U.S. Route 7)

- Wetland Area 7 includes forested swamp and emergent marsh as the dominant wetland cover types. The principal wetland function is sediment/toxicant retention.
- There is one proposed impact location at Wetland Area 7. Approximately 15.2 square meters (18.2 square yards) of wetland will be permanently impacted. The total fill will be approximately 2.2 cubic meters (2.93 cubic yards). There will be no temporary impacts to this wetland area.
  (Exhibit APP-8 p.13)

9. Wetland Area 8A (Station 92 + 110 to Station 92 + 210 west of U.S. Route 7)

- Wetland Area 8A includes forested swamp as the dominant wetland type. There are no principal wetland functions associated with this wetland, but groundwater recharge/discharge function is present.
- There are two proposed impact locations at Wetland Area 8A. Approximately 200.9 square meters (0.05 acres) of wetland will be permanently impacted. The total fill will be approximately 38.3 cubic meters (50.10 cubic yards). There will be no temporary impacts to this wetland area.
  (Exhibit APP-8 p.14)

10. Wetland Area 8B (Station 92 + 120 east of U.S. Route 7)

- Wetland Area 8B includes forested watercourse as the dominant wetland type. There are no principal wetland functions associated with this wetland.
- There is one proposed impact location at Wetland Area 8B. Approximately 19.2 square meters (23.0 square yards) of wetland will be permanently impacted. The total fill will be approximately 26.9 cubic meters (35.19 cubic yards). There will be no temporary impacts to this wetland area.
  (Exhibit APP-8 p.15)

11. Wetland Area 9 (Station 40 + 020 to Station 40 + 100 south of Starrs Plain Road)

- Wetland Area 9 includes emergent marsh and scrub-shrub and forested swamp as the dominant wetland types. The principal wetland functions associated with this wetland are floodflow alteration (storage and desynchronization), sediment/toxicant retention, nutrient removal/retention/transformation, and wildlife habitat.
- There is one proposed impact location at Wetland Area 9. Approximately 1007.4 square meters (0.25 acres) of wetland will be permanently impacted. The total fill will be approximately 4179.7 cubic meters (5467.05 cubic yards). Approximately 215.5 square meters (0.05 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.15)

12. Wetland Area 10 (Station 40 + 020 to Station 40 + 030 and Station 40 + 110 to Station 40 + 160 north of Starrs Plain Road; Station 92 +710 east of U.S. Route 7; and Station 93 + 030 to Station 93 + 200 east of U.S. Route 7)

- Wetland Area 10 includes open water pond, and scrub-shrub and forested swamp as the dominant wetland types, with some emergent marsh. The principal wetland functions associated with Wetland Area 10 are floodflow alteration (storage and desynchronization), fish and shellfish habitat, wildlife habitat, and uniqueness/heritage. The uniqueness characteristic of this wetland system is due to it containing a small area classified as a poor fen. Note that the area designated as a poor fen is located upstream of proposed Starrs Plain Road construction area.
- There are three proposed impact locations at Wetland Area 10. A total of approximately 1550.8 square meters (0.38 acres) of wetland will be permanently impacted. The total fill will be approximately 1400.8 cubic meters (1832.25 cubic yards). Approximately 1088.4 square meters (0.27 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.17)

13. Wetland Area 11 (Station 92 + 710 to Station 92 + 760 west of U.S. Route 7)

- Wetland Area 11 includes wet meadow as the dominant wetland cover type. The principal wetland function is sediment/toxicant retention.
- There is one proposed impact location at Wetland Area 11. Approximately 240.0 square meters (0.06 acres) of wetland will be permanently impacted. The total fill will be approximately 141.2 cubic meters (184.69 cubic yards). Approximately 4.0 square meters (4.8 square yards) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.19)

14. Wetland Area 13 (Station 93 + 330 to Station 93 + 420 east of U.S. Route 7)

- Wetland Area 13 includes wet meadow, forested and scrub-shrub swamp as the dominant wetland types. The principal wetland function sediment/toxicant retention.
- There is one proposed impact location at Wetland Area 13. Approximately 1042.2 square meters (0.26 acres) of wetland will be permanently impacted. The total fill will be approximately 1559.3 cubic meters (2039.56 cubic yards). There will be no temporary impacts to this wetland area.
  (Exhibit APP-8 p.19)

15. Wetland Area 14 (Station 93+425 to 93+950 east of U.S. Route 7)

- Wetland Area 14 includes scrub-shrub and forested swamp, and shallow open water as the dominant wetland types. Lesser areas of emergent marsh also occur in the wetland. The principal wetland functions are floodflow alteration (storage and desynchronization), sediment/toxicant retention, wildlife habitat and visual quality.
- There are three proposed impact locations at wetland Area 14. Approximately 1703.8 square meters (0.42 acres) of wetland will be permanently impacted. The total fill will be approximately 1866.9 cubic meters (2441.91 cubic yards). Approximately 628.3 square meters (0.16 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.20)

16. Wetland Area 15 (Station 93+820 to 93+935 west of U.S. Route 7)

- Wetland Area 15 is a seasonally ponded wetland type. Sparse shrub and herb vegetation occurs around the wetland. The principal wetland function is sediment/toxicant retention, but wildlife (salamander breeding) habitat is also an important function of this wetland area.
- There is one proposed impact location at Wetland Area 15. Approximately 876.6 square meters (0.22 acres) of wetland will be permanently impacted. The total fill will be approximately 1002.4 cubic meters (1311.14 cubic yards). There will be no temporary impacts to this wetland area.
  (Exhibit APP-8 p.23)

17. Wetland Area 16A (Station 93+950 to 94+015 west of U.S. Route 7)

- Wetland Area 16A includes scrub-shrub and forested swamp, and shallow open water as the dominant wetland types. The principal wetland function is floodflow alteration (storage and desynchronization).
- There is one proposed impact location at Wetland Area 16A. Approximately 504.3 square meters (0.12 acres) of wetland, will be permanently impacted. The total fill will be approximately 590.9 cubic meters (772.9 cubic yards). Approximately 161.7 square meters (0.04 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.23)

18. Wetland Area 16B (Station 94+060 to 94+730 / Old Sugar Hollow Road Station 50+215 to Station 50+450)

- Wetland Area 16B includes scrub-shrub and forested swamp, shallow open water and emergent marsh as the dominant wetland types. The principal wetland functions are floodflow alteration (storage and desynchronization), sediment/toxicant retention, nutrient removal/retention/transformation, and wildlife habitat.
- There are seven proposed impact locations at Wetland Area 16B. Approximately 157.9 square meters (0.04 acres) of wetland, will be permanently impacted at six locations. The total fill will be approximately 27.6 cubic meters (36.1 cubic yards). Approximately 76.2 square meters (0.02 acres) of wetland, will be temporarily impacted.
  (Exhibit APP-8 p.25)

19. Wetland Area 17 (Station 94+590 to Station 94+695, west of U.S. Route 7 and east of Old Sugar Hollow Road)

- Wetland Area 17 includes scrub-shrub swamp and emergent marsh as the dominant wetland types. The principal wetland function is sediment/toxicant retention.
- There is one proposed impact location at Wetland Area 17. Approximately 792.2 square meters (0.20 acres) of wetland will be permanently impacted. The total fill will be approximately 1674.7 cubic meters (2190.51 cubic yards). Approximately 165.8 square meters (0.04 acres) of wetland will be temporarily impacted.
  (Exhibit APP-8 p.27)

k. Portions of the larger wetlands (Z, 1A, 3, 6, 9, 10, 14, and 16B) typically provide high quality fish and wildlife habitat. Those wetlands have good interspersion of vegetation within open water, a diverse collection of cover types with a variety of plant species and substrates, and they possess varied micro-topography. High plant productivity provides a stable food chain base. Also these wetlands are connected with undeveloped upland habitat blocks which offer buffering from development and provide usable habitat for some wildlife species.

While wetland areas that are adjacent to roadways usually have reduced levels of wildlife habitat functions, they do help to maintain water quality for invertebrates, fish, and amphibians. Road runoff can affect substrates and vegetation is often dominated by weedy plant species with low wildlife food value, such as common reed (*Phragmites*), garlic mustard, Japanese honeysuckle, and purple loosestrife. Two state-listed upland plant species were identified from within the valley, but none of these occur in wetlands. Heavily used roads can discourage wildlife use, and can impede movement to other nearby habitats.

The proposed project will not significantly contribute to wildlife habitat fragmentation. The proposed roadway will use the existing alignment and only minor encroachment of wetlands along the existing disturbed edges will occur. The proposed encroachment in roadway-influenced habitat is minimal when compared with available contiguous, higher value habitats beyond the alignment.

An assemblage of wildlife typical of western Connecticut is likely utilizing the uplands and wetlands in the study area. Mammals such as white-tail deer, beaver, muskrat, eastern cottontail, red fox, gray fox, coyote, raccoon, ermine, Virginia opossum, striped skunk, gray squirrel, red squirrel, southern flying squirrel, woodchuck, and several bats, and many small rodents such as moles, voles, mice, are typical of the study area habitats. A diverse assemblage of birds is documented from the study area. These groups include: herons, geese, ducks, vultures, hawks, grouse, pheasant, woodcock, gulls, pigeon, dove, owls, nighthawk, hummingbird, kingfisher, woodpeckers, flycatchers, swallows, jay, crow, chickadee, titmice, nuthatch, creepers, wrens, kinglet, gnatcatcher, thrushes, mockingbird, waxwing, starling, vireos, wood warblers, cardinal, grosbeaks, bunting, towhee, sparrows, blackbirds, orioles, and finches. This local region provides habitat for a variety of reptiles and amphibians. The more common reptile varieties such as common snapping turtle, painted turtle, eastern garter snake, northern water snake, northern ring neck snake, and eastern milk snake are found in the project region. Common amphibians such as spotted salamander, northern dusky salamander, northern two-lined salamander, redback salamander, red spotted newt, eastern America toad, northern spring peeper, bullfrog, green frog, pickerel frog, and wood frog are also well documented in the region.

With the exception of Wetland Area 15, which provides breeding habitat for several spotted salamanders (*Ambystoma maculatum*), new impacts to wildlife within the project area will be minimized due to the limited impact area of the project, and encroachments occur along the edges of wetlands exhibiting the effects of existing disturbance of the existing roadway and developed land uses. The project is designed to minimize long-term reduction in habitat values for existing wildlife species and improve water quality through improved drainage pretreatment practices.

(Exhibit APP-8 p.3)

l. The following Connecticut Department of Environmental Protection fisheries recommendations have been incorporated into the plans:
   - The fill slopes at West Starrs Plain Road were steepened to minimize the box culvert length and the cells were oversized, depressed into the stream bed, and filled with excavated streambed material.
   - The fill slopes at the intersection of Starrs Plain Road and Route 7 were steepened to minimize the length of the culvert at Starrs Plain Road.
   - The stream relocation from Station 93 + 327 Rt to Station 93 + 585 Rt incorporates design criteria provided Fisheries Division for cold water resources.
   - One barrel of the triple culvert at Station 93 + 950 will be oversized and depressed into the streambed.

   (Exhibit APP-1, Exhibit APP-5, Exhibit APP-7 p.13, Exhibit DEP-2)

3. Mitigation

Wetland Mitigation Sites

a. Five wetland mitigation sites will be located adjacent to the project. The mitigation sites will create approximately 1.4 hectares (3.47 acres) of forested and shrub swamp, marsh, shallow open water, watercourse, and a special vernal pool wetland, to compensate for the unavoidable loss of 0.94 hectares (2.32 acres) of inland wetlands and watercourses.

Multiple meetings and field reviews were conducted with representatives from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Connecticut Department of Transportation, Connecticut Department of Environmental Protection and the consultant (Parsons) to evaluate and suggest the best candidate sites. Based on the screening criteria and consensus among the agencies, the best sites were selected and other candidate sites were dismissed.

Wetland Mitigation Sites 1B and 6 include meandering low-flow channels with direct connections to the Saugatuck River, and will provide stream bank habitat. These sites were designed to provide a variety of wetland functions and values, and the designed cover types will reflect the impacted cover types. The creation of micro-topography will maximize species diversity because small differences in the water regime will encourage a wider range of wetland species to develop. The selected mitigation sites are described below.

- Site 1A: Site 1A is the southernmost section of the former Site 1. *(Site 1 was located in the south end of the project, at West Starrs Plain Road between U.S. Route 7 and the Saugatuck River. It incorporates disturbed areas on either side of the existing West Starrs Plain Road. It was selected because it has low ecological value for wildlife habitat, was formerly disturbed and is located adjacent to the Saugatuck River. Based on field reviews, agency representatives requested that the connection between the two main areas of the site be removed. As a result, Site 1 was modified and separated into Sites 1A and 1B.)* It appears that this site was formerly disturbed by gravel operations. Gravelly, sandy soils are sparsely vegetated with a variety of upland grasses. Sections of the site are littered with discarded roof shingles and other construction/demolition debris. A narrow wooded buffer separates the Saugatuck River from the site. The proximity of the River, as well as pockets of seasonal open water, indicates that with some minor regrading, hydric soil conditions can be created. Also, creation of wetlands in this location will add wetland area to the existing riparian system associated with the Saugatuck River. Approximately 0.16 hectare (0.40 acre) of forested and shrub swamp and emergent marsh floodplain wetland will be created at this site. The site will also include a vernal pool and shallow open water

component. Site 1A will provide functions similar to the adjacent existing Wetland Area 6, including floodflow alteration (storage and desynchronization) and wildlife habitat.

- Site 1B: Site 1B is the northernmost portion of the former Site 1, and it is similar to Site 1A in that it is a sparsely vegetated, formerly disturbed area. A portion of this site includes the existing West Starrs Plain Road which will be removed as part of the reconstruction of the U.S. Route 7 / West Starrs Plain Road intersection. A portion of the site includes a former parking lot, now sparsely vegetated with grasses growing up through the deteriorated and cracked asphalt. This site also has the same benefits as Site 1B, as it is barely vegetated, provides little to no ecological wildlife habitat value, and is adjacent to the Saugatuck River. It is envisioned that prior to construction of the wetland mitigation area, the site will serve as a staging area for construction of the relocated West Starrs Plain Road triple box culvert crossing of the Saugatuck River. In addition to construction equipment storage and maintenance, the site will be used for dewatering associated with culvert placement and possibly used as a dewatering area for peat materials excavated elsewhere in the project. While being used as a construction staging area, best management practices will be employed to protect the site and nearby wetlands. The construction staging area will be cleaned and then re-graded for construction of the wetland mitigation area. Approximately 0.29 hectare (0.72 acre) of forested and shrub swamp and emergent marsh floodplain wetland will be created at this site. Wetland compensation Site 1B will also have a vernal pool and shallow open water component. Site 1B will provide functions similar to the adjacent existing Wetland Area 6, including floodflow alteration (storage and desynchronization) and wildlife habitat.

- Site 3A: Site 3A is located to the west of and adjacent to U.S. Route 7, toward the northern end of the project. It was selected as a site to replace a vernal pool-like wetland (Wetland Area 15) that will be impacted by the widening of U.S. Route 7. It was recommended by agency representatives while on a project field review on April 26, 2000. The site was selected to be close to the existing vernal pool-like habitat. This site requires excavation of an upland area immediately up-slope of an existing wetland. This site is intended to mitigate the impacts by replacing similar habitat near the existing vernal pool-like habitat. This site provides wetland in-kind and on-site, as recommended by state and federal mitigation guidelines. The primary function will be to provide spotted salamander and wood frog breeding habitat. Approximately 791 square meters (0.20 acres) of vernal pool habitat will be created at this site.

- Site 4: This site is located in the northern end of the project, adjacent to, and west of Old Sugar Hollow Road. This site appears to be composed of fill over former wetland and therefore is an excellent candidate for wetland reclamation. It was once part of the large adjacent wetland system that is associated with Kissen Brook (Wetland Area 16B). The fill will be removed, and the area regraded to restore hydric conditions to the site. Approximately 733

square meters (0.18 acres) of marsh and shrub swamp wetland will be restored at this site, with functions similar to the surrounding Wetland Area 16B. Wetland functions will include floodflow alteration (storage and desynchronization), sediment/toxicant retention, nutrient removal/retention/transformation, and Wildlife Habitat.

- Site 6: This site is located in the southern end of the project, east of and across the Saugatuck River from proposed mitigation Sites 1A and 1B. This site is an open field that appears to have been regraded (filled and excavated) a number of years ago, previously held residential structures, and is sparsely vegetated with moss and upland grasses. This mitigation site incorporates existing portions of West Starrs Plain Road which will be removed as part of the reconstruction of U.S. Route 7 / West Starrs Plain Road intersection. This site will be constructed as two separate wetland areas – a large complicated mosaic wetland adjacent to and connected with the Saugatuck River, and a smaller forested swamp further east along West Starrs Plain Road. The two halves of the site will be separated by an existing narrow stand of mature white pines. It is anticipated that this mitigation site may be used as a staging area and a dewatering area for the peat materials excavated elsewhere on the project. Approximately 0.80 hectare (1.97 acres) of forested swamp, emergent marsh and shallow open water wetlands will be created at this site. In addition, a small vernal pool will be constructed in the mitigation site. Site 6 will provide functions similar to the adjacent existing Wetland Area 6, including floodflow alteration (storage and desynchronization) and wildlife habitat.
  (Exhibit APP-8 p.28)

b. The mitigation areas were identified and chosen using state and federal guidelines to select sites that exhibited the greatest potential to satisfy compensatory requirements. These guidelines include:

   - the restoration of degraded wetlands is preferable to creation of new wetlands;
   - only low value non-wetland areas can be used for wetland creation;
   - mitigation sites should be located adjacent to the impact area or at least within the same watershed as the impact, if practicable;
   - sufficient hydrology must be available or able to be practicably obtained to sustain viable wetland conditions; and
   - in-kind compensatory mitigation is preferable to out-of-kind.

   (Exhibit APP-8 p.28)

c. The hydrology of the proposed sites is conducive to the proposed mitigation site plans, as described above. The sites were designed to support a variety of wetland cover types and functions.
   (Exhibit APP-8 p.31)

d. The planting plan for the site is designed to provide and maintain the ecological diversity and productive habitat functions and values for the wetlands. The sites have been designed to maximize species diversity, minimize erosion, and discourage the establishment of invasive species. (Exhibit APP-8 p.31)

e. The non-inundated areas of the mitigation sites will be seeded at the completion of grading and soil treatment. The seed mix represents plants with varying degrees of drought and saturation tolerance. Seedlings will establish themselves based upon micro-topography and the resulting variation in soil moisture. Conservation grass seed mix will be used on the site side slopes to establish vegetative cover to minimize erosion. (Exhibit APP-8 p.31)

f. The mitigation sites will be monitored after construction and planting of herbaceous plant materials. One of the goals of monitoring will be to determine whether the wetlands are developing and maintaining their proposed cover types and functions and values. Woody plantings will be delayed one year to ascertain hydrologic conditions and allow opportunities for adjustment to the planting plan or site hydrology. Preparation and submission of monitoring reports will occur for 3 years following the completion of construction, with a final Assessment Report following year 5. The mitigation site designs can accommodates minor modifications at the time of construction. Necessary modifications to grades will be made within a year of construction. Modifications to the plan will only be implemented with the authorization of the CT Department of Environmental Protection.
(Exhibit APP-8 p.31)

<u>Construction Mitigation: Erosion and Sedimentation Controls</u>

g. Short-term impacts from erosion and sedimentation will be minimized by implementing guidelines that will be included in the construction contract for the project as required by the Connecticut Department of Transportation. (Standard Specifications for Roads, Bridges and Incidental Construction Form 815 (1995) and Supplemental Specifications (2002); On-site Mitigation for Construction Activities, Connecticut Department of Transportation Environmental Planning Division 1994; 2002 – Connecticut Guidelines for Soil Erosion & Sediment Control (Connecticut Department of Environmental Protection Bulletin 34.) (Exhibit APP-1 – please refer to section “Attachment L” of the application, Exhibit APP-7 p.13)

h. Specific care and special construction methods will be used. Drainage work will be done during seasonal periods of low rainfall and flow. Accepted water-handling methods will be used in accordance with Best Management Practices. (Exhibit APP-1 – please refer to section “Attachment L” of the application, Exhibit APP-7 p.13)

i. In addition to the standard Best Management Practices, this project will also incorporate the following:

1. Curbing use will be minimized.
2. The use of vegetated swales will be maximized.
3. Temporary and permanent stone dikes will be used in grass waterways and at drainage outlets.
4. In select locations, steeper 1:1.5 riprap covered slopes will be used to replace standard 1:2 earth slopes to minimize wetland impacts and erosion.
5. Erosion Control Matting Type C will be placed on select 1:2 slopes that could experience stormwater runoff.
6. Overexcavation of deep peat will be performed within sheet piling.
7. Turbidity control curtains will be used in select open water areas such as for culvert and box culvert construction and for the pile supported roadway.
8. All reinforced concrete pipe will have watertight gaskets cast integrally into the pipe.

(Exhibit APP-1 – please refer to Attachment I of the application, Exhibit APP-7 p.14)

Other Mitigative Measures

j. In addition to providing compensatory wetland mitigation, the project includes design features intended to function in an environmentally appropriate manner, as follows:

A trailhead parking lot will be provided north of Sugar Hollow Pond for access to Wooster Mountain State Park east of Route 7, as requested by the Connecticut Department of Environmental Protection, Land Acquisition and Management Division.

The following measures have been incorporated into the drainage design to improve the long term stormwater runoff quality and provide a net long term benefit:

- Curbs will be eliminated wherever possible.
- Top of cut slope channels have been designed to prevent runoff from flowing over the cut slopes and to the extent possible, separate the clean offsite water from the roadway runoff.
- Natural vegetation will be used to filter runoff wherever possible.
- The number of catch basins is minimized in drainage systems. For systems with 4 to 10 basins, the last basin will have a 1.6-meter (6-foot) sump instead of the standard 0.6-meter (2-foot) sump.
- Outlet protection will be provided in the form of riprap pads, riprap scour holes and stone check dams.
- Erosion control matting, vegetation and stone check dams will be provided in channels and ditches.
- Direct discharge of storm drainage into a wetland will be eliminated wherever possible.
- Oversized grass channels with stone dikes and level spreaders will be used wherever possible. (Exhibit APP-7 p.12)

k. During construction, the Connecticut Department of Transportation will require the contractor to inspect, report and repair any erosion. An on-site project engineer and staff of the Connecticut Department of Transportation Environmental Planning Division will monitor the contractor's work to ensure compliance with Connecticut Department of Environmental Protection and Connecticut Department of Transportation regulations and guidance.
(Exhibit APP-7 p.14)

4. State Threatened, Endangered, or Species of Special Concern

The study area was investigated for known rare, endangered, special concern, or listed plant or animal species. Investigations include data searches with the U.S. Fish and Wildlife Service, and with the Connecticut Department of Environmental Protection, Natural Diversity Data Base. *(Department of Environmental Protection Natural Diversity Database mapping includes information regarding critical biological resources available to the Department of Environmental Protection. The information is a compilation of data collected over the years by the Department of Environmental Protection Natural Resource Center's Geological and Natural History Survey and cooperating units of the Department of Environmental Protection, private conservation groups, and the scientific community.)* The U.S. Fish and Wildlife Service reports occasional transient bald eagles and peregrine falcons overfly the study area, however, no impacts to either are anticipated. Both species of bird were federally classified as Endangered at the time of the Project's Environmental Assessment. Currently, the bald eagle is threatened and proposed for delisting, and the peregrine falcon is "DM" (delisted, recovered, and being monitored for the first five years). A Biological Assessment or further consultation under Section 7 of the Endangered Species Act is not required. The Connecticut Department of Environmental Protection reports four plant species listed within the study area, but only two are recent sightings. The two non-recent species were recorded over 90 years ago. They include dragon's-mouth orchid (*Arethusa bulbosa*) (state endangered) and puttyroot (*Aplectrum hyemale*) (state special concern) also an orchid. The recent sightings are a state threatened fern and a state special concern tree. Ground surveys were conducted to search for both species within the potential study area. During the survey, none of the state special concern trees were encountered. The fern was found in a small very localized and impoverished population.

In the process of conducting the search for the listed species, another state-protected plant species was located in the study area. A small but healthy population of a state endangered plant was found in a localized area. The Connecticut Department of Environmental Protection Natural Diversity Data Base was contacted regarding the occurrence of this species. On-going coordination between The Connecticut Department of Transportation and the Connecticut Department of Environmental Protection will continue regarding the continued protection of these state-listed species. The proposed roadway alignment was placed in consideration of these species, with no direct impacts occurring.

The Connecticut Department of Environmental Protection also reports the bog turtle as having occurred not far from the study area. The bog turtle (*Clemmys muhlenbergi*) is a state endangered species (federally threatened) that has very specialized habitat requirements. Although not recorded at the project site, the turtle is found mostly in the extreme western Connecticut region. It is anticipated that no bog turtle populations will be encountered on this project.

(Exhibit APP-8 p.32)

5. Alternatives

During the planning and design of this project, a continuous examination of design alternatives was conducted. Numerous alternatives were considered in consultation with the various units of the Connecticut Department of Transportation, as well as the Connecticut Department of Environmental Protection, the U.S. Army Corps of Engineers, the Town of Ridgefield and the City of Danbury, concerned citizens and regulatory agencies. Among the factors considered when assessing alternatives were geometric constraints, historical and archeological concerns, impacts to private property, and environmental concerns. The following alternatives were considered when examining the potential range of alternatives.

ALTERNATIVES CONSIDERED

Several preliminary design alternatives were considered. They are summarized below and described and analyzed in detail in the August 1997 Final Connecticut Finding of No Significant Impact ("FONSI") for the project. The alternative analysis involved a thorough assessment of each alternative with respect to traffic operations, safety, environmental impacts, and costs. Mitigation options to reduce impacts to wetlands and other environmentally sensitive areas were also considered for each alternative. The 1995 average daily traffic volume is approximately 28,000 vehicles per day and is expected to grow to approximately 38,000 vehicles per day for the design year of 2015.

Alternative 1 - NO BUILD
Route 7 within the project limits presently operates at Level of Service F which represents a highly congested condition. Because of the congestion and the geometric and safety deficiencies, the No Build Alternative does not satisfy the project objectives.

Alternative 2 - 2 LANE WIDENING
This alternative would include geometric and safety improvements to bring the proposed two lane facility into compliance with current safety and highway design standards. The facility would continue to operate at a Level of Service F. The Improved Two Lane Facility Alternative does not satisfy the project objectives.

Alternative 3 - 4 LANE WIDENING

This alternative would include geometric and safety improvements to bring the proposed four lane facility into compliance with current highway design standards. The facility would generally operate at a Level of Service B. The Reconstruction to Four Lanes Alternative satisfies the project objectives.

Alternative 3A - 4 LANE WIDENING

This alternative is a variation of Alternative 3. The shoulders and clear zones of the undivided portion of the roadway were reduced in width in an attempt to reduce the impacts to the adjacent wetlands and Wooster Mountain State Park. A waiver of the recommended highway design criteria would be required for this alternative. The traffic would operate at essentially the same level of service as with Alternative 3.

The reduction of impacts to the wetlands (0.08hectares [0.20 Acres]) and the park were not significant with this alternative. Because of this and the reduced safety which would be provided with this design, Alternative 3A was dropped from further consideration.

RECOMMENDED ALTERNATIVE (from the Environmental Assessment / Finding of No Significant Impact)

Alternative 3 (4 LANE WIDENING)

The results of the alternatives screening process led the Connecticut Department of Transportation to select Alternative 3 (4 Lane Widening) as its preferred alternative because it successfully fulfills the project purpose and need while keeping environmental impacts to a minimum.

NORTH END ALIGNMENT STUDY

As the design of Alternative 3 (4 Lane Widening) progressed, it became evident that an alternatives analysis was needed for the northern section of the alignment (Station 94 + 065 to Station 94 + 380). With steep rock slopes opposite unsuitable peat formations in the wetlands, a delicate balance had to be struck with regard to locating the alignment. Thus, the following alternatives were analyzed for the northern section of the project.

Alternative 1 – Preliminary Design Alignment

This is the alignment that is presented as Alternative 3. Alternative 1A would remove the soil overburden to a point where shallow rock is encountered and the slope can be stabilized. Alternative 1B would have a tiedback retaining wall to minimize the earth excavation and slope impacts. The permanent wetland impacts would be 0.08 hectare (0.19 acre).

Alternative 2 – Shifted Alignment
This alternative involves a shift of the Preliminary Design Alignment to the east towards the toe of Moses Mountain and away from the wetland to the west.. Alternative 2A would not include a retaining wall. Similar to Alternative 1B, Alternative 2B would include a retaining wall. The permanent wetland impacts would be 0.03 hectare (0.08 acre).

Alternative 3 – Peat Alignment
This alternative involves a westerly shift of the Preliminary Design Alignment into an existing wetland. The shift is far enough that a retaining wall would no longer be required along the eastern side of the roadway. Alternative 3A proposes the construction of a pile supported roadway over the wetland because deep peat deposits in this area make conventional construction techniques impractical and expensive. Alternative 3B proposes a viaduct be constructed to span the wetland area. The permanent wetland impacts would be 0.02 hectare (0.04 acre). Alternative 3B was eliminated from further consideration due to cost.

RECOMMENDED ALTERNATIVE (From the NORTH END ALIGNMENT STUDY)

Alternative 3A (Pile Supported Roadway)
The North End Alignment Study recommended Alternative 2A as the preferred alignment through this area. However, subsequent to the study, and after several coordination meetings to review the details of each alternative, the Connecticut Department of Transportation decided that Alternative 3A (Pile Supported Roadway) was the preferred alternative as it was the least environmentally damaging and most practical alternative from a constructibility and reliability perspective. No excavation will be necessary, and the remaining wetland area located underneath the pile supported roadway will maintain some of its functions, particularly its flood storage capability.

Southerly Shift
In addition to the alternatives discussed above, an alignment shift to the west of the Preliminary Design Alignment from approximately Sta. 93+600 to Sta. 94+065 was presented in the December 1998 North End Alignment Study and was selected by the Connecticut Department of Transportation. The Preliminary Design Alignment was shifted approximately 3 meters (10 ft) to the west to reduce permanent wetland impacts (0.19 acre reduction) and to reduce construction difficulties associated with deep peat deposits located in this area.

(Exhibit APP-1, Exhibit APP-7 p.7)

B
CONCLUSIONS OF LAW

The purposes and policies set forth in the Inland Wetlands and Watercourses Act are secured through the process and criteria outlined in §22a-41 of the General Statutes. Section 22a-41(b)(1) provides that where a permit application has been the subject of a hearing, the commissioner must find that there is no feasible and prudent alternative to the proposed action before issuing a permit. In determining whether such an alternative exists, the commissioner must consider all relevant facts and circumstances, including but not limited to, the six statutory factors outlined in §22a-41 (a).

The six factors set out in § 22a-41 (a) are:

(1) The environmental impact of the proposed regulated activity on wetlands or watercourses;

(2) The applicant's purpose for, and any feasible and prudent alternatives to, the proposed regulated activity which alternatives would cause less or no environmental impact to wetlands and watercourses;

(3) The relationship between the short-term and long-term impacts of the proposed regulated activity on wetlands or watercourses and the maintenance and enhancement of long-term productivity of such wetlands or watercourses;

(4) Irreversible and irretrievable loss of wetland or watercourse resources which would be caused by the proposed regulated activity, including the extent to which such activity would foreclose a future ability to protect, enhance or restore such resources, and any mitigation measures which may be considered as a condition of issuing a permit for such activity including, but not limited to, measures to (A) prevent or minimize pollution or other environmental damage, (B) maintain or enhance existing environmental quality, or (C) in the following order of priority: Restore, enhance and create productive wetland or watercourse resources;

(5) The character and degree of injury to, or interference with, safety, health or the reasonable use of property which is caused or threatened by the proposed regulated activity; and

(6) Impacts of the proposed regulated activity on wetlands or watercourses outside the area for which the activity is proposed and future activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed activity and which may have an impact on wetlands or watercourses.

Applying these factors to this permit application, the following facts are found:

(1) <u>Environmental Impacts</u>

The proposed project will result in some loss of wetlands by filling and some disturbance to wetlands during the construction phase.

The project has been designed and planned to reduce impacts on wetlands to the greatest extent possible. Recommendations of the Connecticut Department of Environmental Protection Fisheries Division have been incorporated into design plans and construction contracts, minimizing impacts to fisheries resources. Impacts to wildlife as a result of the project will be limited due to the limited lateral expansion of the project, and the existing disturbances of the proposed impact area, due to the existing roadway and developed land uses.

Alignments have been shifted to avoid and minimize impacts to wetlands and adjacent project constraints. Fill slopes have been steepened to minimize unavoidable impacts. Water quality measures have been incorporated into the drainage design which improves upon existing conditions. Lightweight fill and a pile supported roadway have been incorporated into the design to minimize wetland impacts.

Short-term impacts during construction will be reduced through measures to control sedimentation and erosion. These controls will assure that no permanent adverse effects will impact fisheries or aquatic and riparian habitat. These measures will minimize the chance that siltation and sedimentation will encroach into the area of the regulated wetlands and watercourses. Ground and surface water quality will also be protected.

Construction and operation of the proposed project will result in approximately 0.94 hectares (2.32 acres) of direct, permanent wetland impact. The majority of wetland impacts will occur to emergent marsh wetlands (0.58 hectare [1.43 acres]). Approximately 0.11 hectare (0.28 acre) of shallow open water, 0.13 hectare (0.32 acre) of forested swamp wetland and 0.10 hectare (0.24 acre) of scrub-shrub swamp wetlands will be impacted. Riverine impacts will be relatively small, at 0.02 hectare (0.05 acre). Water quality functions (sediment and nutrient retention and floodflow alteration) are the principal wetland functions affected by the proposed project.

To compensate for the loss of wetlands, mitigation sites will be constructed to create approximately 1.4 hectares (3.47 acres) of new, high quality wetlands. The sites have been designed to provide similar wetland types, habitat, and functions as the proposed wetland impact areas. Five mitigation sites will offset unavoidable wetland impacts by providing similar types of wetlands, which also perform similar functions at a quantity equal to anticipated impacts. By replacement of impacted cover types in-kind and matched hydrologic regimes, and connected with adjacent habitats and wetlands, and at a greater that 1:1 (replacement vs. impact) ratio, it is anticipated that the mitigation sites will provide suitable replacements for the impacted wetland functions and values. However, there will be a temporal lag between the impacts to wetland functions and values and the full functioning of created wetland functions and values. This is particularly true for scrub-shrub and forested swamp wetland types, which will take several years to develop the vertical stratification (layers) and vegetative productivity that support diverse wildlife.

The project will not result in any significant short or long-term environmental impacts. The overall long-term impacts to the wetlands will be minimal. The loss of 0.94 hectare (2.32 acres) of wetlands that will result from constructing the project will be compensated by the creation of 1.4 hectares (3.47 acres) of wetland mitigation sites. Short-term impacts will be controlled though the use of sedimentation and erosion controls during construction. Long-term impacts to the wetland system as a habitat for wildlife and fish will be minimal as a result of measures including foot-print minimization, avoidance of rare, threatened or endangered species, and incorporation of drainage features designed to improve water quality and aquatic habitat.

(2) Alternatives

There are no feasible or prudent alternatives to the proposed plan for the project. The Connecticut Department of Transportation conducted an alternative analysis during the project's planning process. This analysis is documented in the project's Finding of No Significant Impact document, and involved a thorough assessment of each alternative with respect to traffic operations, safety, environmental impacts, and costs. Mitigation options to reduce impacts to wetlands and other environmentally-sensitive areas were also considered for each alternative. The alternative of taking no action, or the "no build alternative", would not meet the purpose and need of the project and obligation of the applicant to provide a safe roadway. The project is intended to minimize environmental impacts to the greatest extent possible. Where safety would be significantly and negatively impacted, the Connecticut Department of Transportation reasonably rejected changes to the design that would only minimally reduce the impact to the environment. The proposed plan for the Reconstruction of U.S. Route 7 in the Town of Ridgefield and the City of Danbury is reasonable in view of the social benefits to be derived from an improved and safer roadway. The applicant has adequately demonstrated that the proposed plan is a feasible and prudent choice.

(3) Short and Long-term Impacts /Maintenance and Enhancement of Long-Term Productivity

The record demonstrates that the short-term impacts of the project, primarily due to the construction activities that will be necessary, are minimized and will be further minimized through erosion and sedimentation control guidelines that will be included in the construction contract as required by the Connecticut Department of Transportation. These guidelines will protect ground and surface water by minimizing the possibility of siltation and sedimentation within the area of the wetlands and watercourses impacted by the project. Adherence to these guidelines and the terms and conditions of the permit will assure that temporary impacts to the environment will be minimal.

The project will improve the characteristics of some areas of the present wetland systems as water quality measures have been incorporated into the drainage design. Erosion protection will be provided at storm drainage outlets and crossings to

minimize erosion during storm events. Improvements to culverts and streambed channels will allow wildlife and fish movement in and around the watercourses. The improvements as a result of the project will minimize erosion and promote long term water quality. The proposed wetland mitigation sites will create 1.4 hectares (3.47 acres) of new, functioning wetland that will also provide water quality protection and enhancement functions in the greater project area

This project will impact the environment, both in the short and long term. However, the short-term impacts during construction will be tempered by construction mitigation efforts and the long-term impacts will be kept to a minimum as a result of design features incorporated into the proposed project. Improvements as a result of the project will enhance the overall long-term productivity of the wetlands and, where wetlands are lost, mitigation sites will be created as compensation.

(4) Irreversible/Irretrievable Loss of Wetlands and Watercourses Resources and Mitigation Measures

The proposed project minimizes the irreversible and irretrievable commitment of wetlands resources. In recognition of wetlands as an indispensable, irreplaceable fragile natural resource, the project is designed to protect existing wetland areas to the greatest extent practicable. The applicant will mitigate the loss of wetlands by constructing five wetland sites to replace this natural resource.

A vernal pool-like habitat (Wetland Area 15) will be unavoidably impacted. This permanent impact will be approximately 876.6 square meters (1048.4 square yards). To directly mitigate this impact, a similar vernal pool-like habitat will be built near the proposed impact and on the same side of U.S. Route 7. The mitigation site will be only 52 meters (170 feet) from the area of impact, and slightly further from the existing roadway to provide a protected setting.

Included within the proposed wetland impacts are six watercourse crossings. These six impacted watercourses include the following:

- an intermittent unnamed tributary to the Saugatuck river at Station 96+650: a 32-meter (105-foot) 900-millimeter (36-inch) reinforced concrete pipe will replace the existing 13-meter (43-foot) 600-millimeter (24-inch) reinforced concrete pipe.
- the south branch of the Saugatuck River at West Starrs Plain Road: A 25-meter (82-foot) triple box culvert with natural streambed bottom material will be installed to carry the road over the Saugatuck River, and the old roadway and bridge will be removed.
- the north branch of the Saugatuck River (at Starrs Plain Road): Twin 32-meter (105-foot) 900-millimeter (36-inch) reinforced concrete pipes will replace the existing twin 9-meter (30-foot) 450-millimeter culverts,
- an unnamed perennial tributary to the Saugatuck River at Station 93+045: The new 28-meter (92-foot) culverts will replace the existing 15-meter (49-foot) 850-millimeter corrugated metal pipe at this location,

- an intermittent stream (headwater to Kissen Brook) at Station 93+400: Approximately 270 meters (886 feet) of this intermittent stream will be relocated in Wetland Areas 13 and 14, and
- a watercourse at the headwaters to Kissen Brook (downstream from the above location) at Station 93+950: A triple culvert will carry flow under U.S. Route 7. The existing 16-meter (52-foot) culverts will be replaced by 34-meter (112-foot) culverts.

The design has attempted to eliminate, wherever possible, storm drainage outlets that discharge roadway water directly to the wetlands. Grass channels and swales have been added wherever possible to clean the roadway runoff.

The proposed roadway alignment has been shifted to avoid and minimize impacts to the wetlands. The proposed roadway fill slopes have been steepened wherever practical to minimize fill in the wetland.

Lightweight fill was used at the north end of the project to minimize temporary and permanent fill in the wetlands. A pile supported roadway will be constructed at the north end to minimize temporary and permanent wetland fill.

In one area, the proposed roadway will be shifted easterly, avoiding an area in which a state-listed endangered plant species was found

The project will improve and enhance some of the functions of the existing wetlands by providing adequate drainage systems and culverts and a stream channel that will allow fish passage, as requested by the Connecticut Department of Environmental Protection. These systems will provide better stormwater control and will provide a improved water quality renovation functions prior to roadway runoff entering the wetlands. The commitment of wetland resources to the proposed project will not result in an unacceptable loss of irretrievable or irreplaceable wetland resources and the mitigation site that will be created will restore (at Mitigation Site 4) and create (at Mitigation Sites 1A, 1B, 3A, and 6) productive wetland resources.

(5) Impact on Safety and Health or Reasonable Use of Property

The project will result in a safer roadway and has been designed to avoid adverse impacts to the wetlands to the greatest extent practicable. The project improvements will provide a safer U.S. Route 7 for the public. These improvements will also enhance the functions of the overall wetland systems to be impacted by the project. The impacts to the wetlands do not pose a threat of injury or interference with the public health or safety or the reasonable use of property. Improving U.S. Route 7 will provide a safer roadway thereby, reducing the risk of accidents and potential risks of spills into adjacent wetlands and water bodies.

This project will not have cuts into the aquifer that will allow roadway storm drainage to directly enter the aquifer. The roadway storm drainage will for the most part be

separated from the offsite water. The roadway runoff will be cleaned by the use of grass swales and waterways and catch basin sumps and discharged in most cases in upland areas on existing ground to provide additional cleaning prior to entering the wetlands. This project will have no adverse impact to wells or the aquifers in the project area.

The applicant proposes measures to mitigate the potential for harm during construction, including the protection of ground and surface waters. The success of these measures will be monitored through regular inspections during the construction phase of the project. Potential impacts to wildlife and fisheries resources will be minimized through measures that include the incorporation of recommendations of the Connecticut Department of Environmental Protection. When concluded, the construction of a new box culvert carrying West Starrs Plain Road over the Saugatuck River and the new culverts carrying Starrs Plain Road over the Saugatuck River, the new culvert carrying Route 7 over Kissen Brook and the enhancements of relocated stream channel will facilitate wildlife and fish movement throughout the already bisected wetland systems and will enhance the ability of the wetland system to control storm waters.

A trailhead parking lot will be provided north of Sugar Hollow Pond for access to Wooster Mountain State Park east of Route 7, as requested by the Connecticut Department of Environmental Protection. This proposed parking area will be safer than using existing (non-designated) parking along the roadway.

(6) Impacts on Wetlands Outside the Area and Inevitable Future Activities

There is no evidence that the proposed project will have a negative impact on wetlands outside of the project area. The measures that will be taken during construction will prevent erosion and sedimentation that could encroach upon surrounding wetlands. No significant changes to wetland hydrology will occur that could lead to off-site wetland impacts.

The roadway design and new storm drainage system will minimize flooding and improve the water quality of the stormwater runoff entering the wetlands by incorporating the following:

- Providing a roadway without curbs in Danbury.
- Separation of clean offsite water and piping it through the site.
- Pretreating roadway runoff by overland flow and using roadside grass swales.
- Providing energy dissipation devices such as erosion control matting, riprap pads and riprap scour holes at storm drainage outlets and cross culverts.
- Minimizing the size of closed storm sewer systems and providing deep sumps at the last basin prior to discharging, for larger systems (4 – 10 catch basins).
- Providing oversized grass channels, and/or level spreaders at the outlet of storm sewer systems and culverts and eliminating direct discharge of stormwater into wetlands.

The wetland mitigation sites that will be constructed will have beneficial effects, and will enhance wetland systems in the surrounding area. The project as designed will not prevent future activities in and around U.S. Route 7. Those future activities, if designed in a fashion similar to the present plan, could also have an overall minimal impact on the environment.

The applicant has provided sufficient information to prove that there is no feasible and prudent alternative to this project, and the project impacts are reasonable and fully mitigated.
(Exhibit APP-8 p.33)

RECOMMENDATION

The requirements of General Statutes §22a-41(b) have been met by this permit application. The record presented and consideration of all the relevant facts and circumstances pursuant to the six factors outlined in §22a-41(a) demonstrate that there is no feasible and prudent alternative to the proposed project that meets the purpose of the project and that would cause substantially fewer impacts to the natural resources.

The reconstruction and reconfiguration of U.S. Route 7 will result in a safer and better roadway and a more efficient transportation system. The proposed plan strikes an appropriate balance between the obligation of the applicant to improve a road that is presently a risk to human health and safety and the mission of the Connecticut Department of Environmental Protection to protect the environment. The permit that is the subject of this application should be issued.

/s/ Edgar Hurle — August 28, 2002
Applicant, Department of Transportation — *Date*

/s/ Robert L. Smith — September 9, 2002
CT DEP IWRD Representative — *Date*

Exhibit A - DRAFT DATE 8/29/2002

DRAFT PERMIT

Permittee: Connecticut Department of Transportation
2800 Berlin Turnpike
P.O. Box 317546
Newington, CT 06131-7546

Attn: Edgar T. Hurle

Permit No: IW-2000-108, WQC-200001922
Permit Type: Inland Wetlands and Watercourses
Town: Danbury / Ridgefield
Project: DOT Project Number 34-260

Pursuant to Connecticut General Statutes Section 22a-39 the Commissioner of Environmental Protection hereby grants a permit to the Connecticut Department of Transportation (the "permittee") to conduct activities within inland wetlands and watercourses, and pursuant to Section 401 of the Federal Clean Water Act (33 USC 1341) Water Quality Certification is hereby issued for the discharge(s) of material into waters of the State in the City of Danbury and the Town of Ridgefield in accordance with its application and plans which are part thereof filed with this Department on June 19, 2000 signed by Edgar T. Hurle and dated June 12, 2000, revised May 1, 2002(the "plans"). The purpose of said activities is to reconstruct U.S. Route 7 from 0.4 miles north of the Route 7/35 intersection northerly to 0.9 miles south of I-84 (the "site").

AUTHORIZED ACTIVITY

Specifically, the permittee is authorized to alter 2.31 acres of inland wetlands or watercourses and certification is granted to discharge material incidental to the reconstruction of U.S. Route 7 in accordance with said application.

This authorization constitutes the permits and approvals required by Section 22a-39 of the Connecticut General Statutes and is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby.

PERMITTEE'S FAILURE TO COMPLY WITH THE TERMS AND CONDITIONS OF THIS PERMIT SHALL SUBJECT PERMITTEE AND PERMITTEE'S CONTRACTOR(S) TO ENFORCEMENT ACTIONS AND PENALTIES AS PROVIDED BY LAW.

This authorization is subject to the following conditions:

SPECIAL CONDITIONS

1. If any changes are proposed in the water handling plan at the site from that which is shown on the permit plates, the permittee shall submit such changes to the Commissioner for review and written approval. The permittee shall not implement any such plan until an approval is issued.

2. If any changes are proposed in the storm drainage system at the site, including any proposed swales, from that which is shown on the permit plates, the permittee shall submit such changes to the Commissioner for review and written approval. The permittee shall not implement any such plan until an approval is issued.

3. If any changes are proposed in the bank protection from that which is shown on the permit plates, the permittee shall submit such changes to the Commissioner for review and written approval. The permittee shall not implement any such plan until an approval is issued.

4. By the expiration date of this permit the permittee shall implement the mitigation shown on plans entitled “Wetland Mitigation Sites” dated May 2001.

5. The permittee shall provide a copy of each of the three annual monitoring reports and the post construction assessment report required pursuant to the Mitigation Plan to the Commissioner no later than December 15th of the monitoring year.

6. The Commissioner may, based on the findings of the post-construction assessment conducted pursuant to the Mitigation Plan, direct the permittee to take corrective action to remediate deficiencies at the wetland mitigation areas.

GENERAL CONDITIONS

1. **Initiation and Completion of Work.** At least five (5) days prior to starting any construction activity at the site, the permittee shall notify the Commissioner of Environmental Protection (the "Commissioner"), in writing, as to the date activity will start, and no later than five (5) days after completing such activity, notify the Commissioner, in writing, that the activity has been completed.
2. **Expiration of Permit.** If the activities authorized herein are not completed by five years after the date of this permit, or by the expiration date of the permit issued by the USACOE, which ever occurs first said activity shall cease and, if not previously revoked, this permit shall be null and void.

Any application to renew or reissue this permit shall be filed in accordance with Sections 22a-6j and 22a-39 of the General Statutes and Section 22a-3a-5(c) of the regulations of Connecticut State Agencies. In order to be considered timely, any such application must be filed at least 120 days prior to the expiration date of this permit.

3. **Compliance with Permit.** All work and all activities authorized herein conducted by the permittee at the site shall be consistent with the terms and conditions of this permit. Any regulated activities carried out at the site, including but not limited to, construction of any structure, excavation, fill, obstruction, or encroachment, that are not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation. In constructing or maintaining the activities authorized herein, the permittee shall not store, deposit or place equipment or material including without limitation, fill, construction materials, or debris in any wetland or watercourse on or off site unless specifically authorized by this permit. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this permit.

4. **Transfer of Permit.** This authorization is not transferable without the written consent of the Commissioner.

5. **Reliance on Application.** In evaluating the permittee's application, the Commissioner has relied on information provided by the permittee. If such information subsequently proves to be false, deceptive, incomplete or inaccurate, this permit may be modified, suspended or revoked.

6. **Best Management Practices.** In constructing or maintaining the activities authorized herein, the permittee shall employ best management practices, consistent with the terms and conditions of this permit, to control storm water discharges and erosion and sedimentation and to prevent pollution. Such practices to be implemented by the permittee at the site include, but are not necessarily limited to:

    a. Prohibiting dumping of any quantity of oil, chemicals or other deleterious material on the ground;

    b. Immediately informing the Commissioner's Oil and Chemical Spill Section at 424-3338 of any adverse impact or hazard to the environment, including any discharges, spillage or loss of oil or petroleum or chemical liquids or solids, which occurs or is likely to occur as the direct or indirect result of the activities authorized herein;

c. Separating staging areas at the site from the regulated areas by silt fences or haybales at all times.

d. Prohibiting storage of any fuel and refueling of equipment within 25 feet from any wetland or watercourse.

e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within forty eight (48) hours of said deficiencies being found.

f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.

g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day.

h. Immediately informing the Commissioner's Inland Water Resources Division (IWRD) of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this permit. The permittee shall, no later than 48 hours after the permittee learns of a violation of this permit, report same in writing to the Commissioner. Such report shall contain the following information:

(i) the provision(s) of this permit that has been violated;

(ii) the date and time the violation(s) was first observed and by whom;

(iii) the cause of the violation(s), if known

(iv) if the violation(s) has ceased, the duration of the violation(s) and the exact date(s) and times(s) it was corrected;

(v) if the violation(s) has not ceased, the anticipated date when it will be corrected;

(vi) steps taken and steps planned to prevent a reoccurrence of the violation(s) and the date(s) such steps were implemented or will be implemented;

(vii) the signatures of the permittee and of the individual(s) responsible for actually preparing such report, each of whom shall certify said report in accordance with section 9 of this permit.

For information and technical assistance, contact the Department of Environmental Protection's Inland Water Resources Division at (860)424-3019.

6. **Contractor Liability.** The permittee shall give a copy of this permit to the contractor(s) who will be carrying out the activities authorized herein prior to the start of construction and shall receive a written receipt for such copy, signed and dated by such contractor(s). The permittee's contractor(s) shall conduct all operations at the site in full compliance with this permit and, to the extent provided by law, may be held liable for any violation of the terms and conditions of this permit.

8. **Monitoring and Reports to the Commissioner.** The permittee shall record all actions taken pursuant to Condition Number 6(e) of this permit and shall, on a monthly basis, submit a report of such actions to the Commissioner. This report shall indicate compliance or noncompliance with this permit for all aspects of the project which is the subject of this permit. The report shall be signed by the environmental inspector assigned to the site by the permittee and shall be certified in accordance with Condition Number 9 below. Such monthly report shall be submitted to the Commissioner no later than the 15th of the month subsequent to the month being reported. The permittee shall submit such reports until the subject project is completed.

9. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

"I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense in accordance with Section 22a-6 under Section 53a-157b of the Connecticut General Statutes."

10. **Submission of Documents.** The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. Except as otherwise specified in this permit, the word "day" as used in this permit means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

Any document or notice required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

The Director
DEP/Inland Water Resources Division
79 Elm Street, 3rd Floor
Hartford, Connecticut, 06106-5127

Issued by the Commissioner of Environmental Protection on:

_____

Date Arthur J. Rocque, Jr., Commissioner