UIL HOLDINGS CORPORATION

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203-499-2000

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CONNECTICUT
SITING COUNCIL

VIA HAND DELIVERY

September 5, 2014

Mr. Robert Stein
Chairman
The Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: PETITION NO. 1104 – Petition of The United Illuminating Company for a Declaratory Ruling that No Certificate of Environmental Compatibility and Public Need is Required for the Construction, Operation and Maintenance of a 2.2 MW AC Solar Photovoltaic Facility and a 2.8 MW AC Fuel Cell Facility on Seaside Landfill Located at 350 Waldemere Avenue, Bridgeport, Connecticut

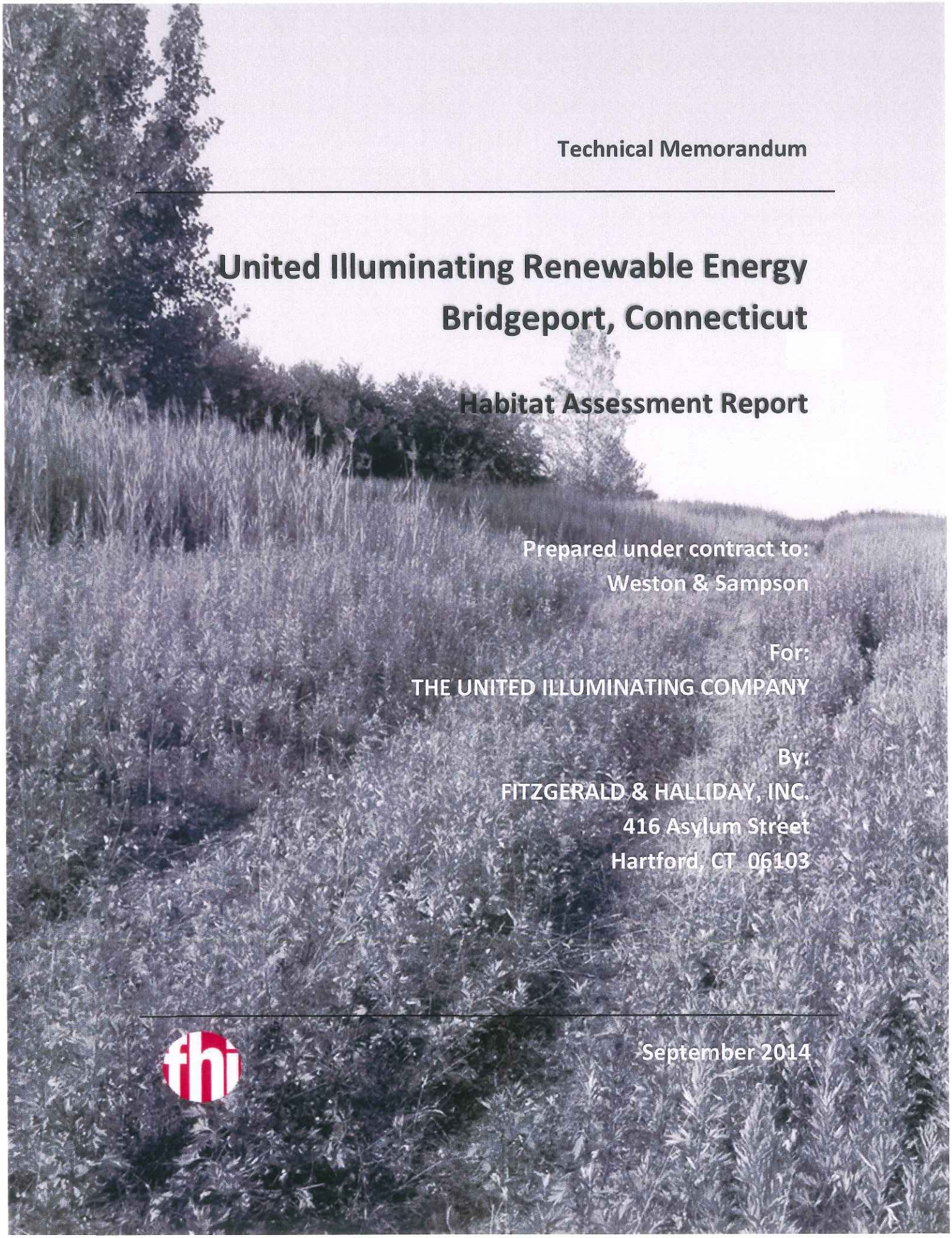
Dear Chairman Stein:

The United Illuminating Company ("UI") respectfully submits this supplemental response to the Connecticut Siting Council's ("Council") first set of interrogatories, specifically Interrogatory CSC-19. The document enclosed (an original and fifteen (15) copies) replaces the Attachment CSC-19A, Draft Habitat Assessment Report, as the environmental conditions permitted UI to finalize this document.

Very truly yours,

Bruce McDermott
Managing Counsel – Operations
UIL Holdings Corporation
On Behalf of The United Illuminating Company

cc: Lee D. Hoffman, Esq. Pullman & Comley, LLC
Enrique Torres



Technical Memorandum

United Illuminating Renewable Energy Bridgeport, Connecticut

Habitat Assessment Report

Prepared under contract to:
Weston & Sampson

For:
THE UNITED ILLUMINATING COMPANY

By:
FITZGERALD & HALLIDAY, INC.
416 Asylum Street
Hartford, CT 06103

September 2014

Table of Contents

1. Introduction

Bridgeport Seaside Landfill (see Figure 1 for location) is being considered by United Illuminating Company (UI) as a potential location for installation of UI solar photovoltaic technology. The project consists of installation of solar photovoltaic panels and supporting infrastructure atop the closed landfill. Solar panels are to be installed on approximately 12.5 acres of land in the central portion of the landfill site, west of Barnum Boulevard (see Figure 2 in Appendix A). The solar panels are to be secured with a racking system affixed to a ballast-type foundation system underlain by crushed stone. As part of the project, fuel cells and service entrance equipment are to be installed on 0.35 acres southwest of Barnum Dyke road. The fuel cell component of the project includes site work to raise the existing grade so that the fuel cells and associated equipment are above the FEMA floodplain elevation. Other work includes installation of fencing, concrete utility pads, electrical equipment, underground conduit, utility poles, overhead wire, and utilities. The project will be required to maintain the integrity of the existing landfill cap.

Fitzgerald and Halliday, Inc. (FHI) was retained by Weston & Sampson to:

- Coordinate with Connecticut Department of Energy and Environmental Protection (CTDEEP) Wildlife Division staff for the purpose of determining any listed species concerns for the project site;
- Conduct field assessments of the site to evaluate the project area and its immediate surrounding environs for habitat suitability for the target listed species; and
- Determine potential impacts from the project to target listed species (if any) and suggest broad mitigation strategies (if necessary).

2. Methods

2.1.Initial Research

2.1.1. Coordination with CTDEEP Wildlife Division

FHI reviewed correspondence (dated May 16, 2014) from CTDEEP Wildlife Division staff on the project site. According to CTDEEP Natural Diversity Database (NDDB) mapped records there are several historic records of state endangered and threatened species in the vicinity of the landfill site (see Figure 2); no federally-listed species were identified. According to the CTDEEP correspondence, these species include:

- State Endangered *Eremophila alpestris* (horned lark)
- State Endangered *Pityopsis falcata* (sickle leaved golden aster)
- State Endangered *Aristida tuberculosa* (beach needlegrass)
- State Threatened *Sporobolus cryptandrus* (sand dropseed)

FHI contacted CTDEEP Wildlife Division staff to discuss recommended next steps. Through consultations

with Environmental Analyst Dawn McKay, the next steps were identified for concerns related to the horned lark included conducting multiple site visits during this species' breeding and nesting season (April to June) to:

- Ascertain and provide photo-documentation of the habitat suitability (or lack thereof) of the site conditions for the target species; and
- Survey for and document the presence (or lack of detection) of the target species.

Through consultations with State Botanist Nelson DeBarros, the next steps identified for concerns related to the target listed plant species were as follows:

- Conduct field investigations in late July and late August for *Pityopsis falcata* and *Aristida tuberculosa* and late August for *Sporobolus cryptandrus* for the purpose of assessing the habitat suitability (or lack thereof) of the growing conditions for these target listed species;
- Provide photo-documentation of the representative habitat areas on the site; and
- Survey for and document the presence (or lack of detection) of the target species.

Mr. DeBarros provided FHI with available data on the listed plant species known to historically inhabit the site and/or its environs. FHI reviewed these records prior to undertaking field investigations.

2.1.2. Target Species Research

Prior to conducting field investigation, FHI researched the habitat requirements of and optimal time of year to observe and identify (if present) the four target listed species to augment our existing experience with these species. The habitat preferences of each of these species, the breeding/nesting period of the horned lark, and the timeframe for production of inflorescence of the target listed plant species are all summarized in Table 1.

Table 1: State-Listed Avian Species – Habitat Preferences

Common Name	Scientific Name	State / Federal Conservation Status	Habitat	Breeding / Nesting or Flowering Timeframe
Horned lark	*Eremophila alpestris*	Endangered / None	Nests in large, open areas that are barren, sandy, stony, or have sparse grass cover. In Connecticut, the horned lark nests on beaches and open areas, mostly along the coast. Breeding has also been documented in grassland areas at airports. Not likely to be found in areas with substantial cover.	Breeding usually begins between April and mid-June.
Sickle-leaved golden aster	*Pityopsis falcata*	Endangered / None	Grows in pine barrens and sandy soils near the coast. Local occurrence in inland sandplains.	Inflorescence July-September

Common Name	Scientific Name	State / Federal Conservation Status	Habitat	Breeding / Nesting or Flowering Timeframe
Beach needlegrass	*Aristida tuberculosa*	Endangered / None	Grows on dry, sterile soils, especially on dunes. In the eastern United States, it is typically found along the coast.	Inflorescence late July-September.
Sand dropseed	*Sporobolus cryptandrus*	Threatened / None	Grows best on sandy soils at lower elevations of its range. Also grows on coarse, gravelly soils.	Inflorescence late August-September.

This information was used to plan and prepare for field investigations of the site. FHI reviewed aerial photo imagery to identify potential habitat areas for subsequent field investigation as described below.

2.2.Field Habitat Assessment

Multiple site visits were (and are being) conducted to survey for each target species when it would be expected to be found on the site. Multiple trips were also planned to optimize the potential to detect the presence of the target species. Qualified botanists and avian specialists performed the field habitat assessment work, accompanied by a data recorder; resumes of key staff are included in Appendix C of this report.

2.2.1. *Eremophila alpestris*

Half-day site visits were conducted on the Bridgeport Seaside Landfill site on the following dates to assess the site's potential to provide habitat for *Eremophila alpestris* (horned lark) and survey for its presence: April 1, 2014; June 16, 2014; July 30, 2014; and August 29, 2014. Qualified biologists walked 50-meter transects over the landfill site in search of potential habitat. Multiple transects were performed over the potential impact area atop of the landfill site. Field staff recorded all avian species observed by the biologist by sight or by sound (i.e., bird calls, songs).

2.2.2. *Pityopsis Falcata* and *Aristida tuberculosa*

A field visit to survey for *Pityopsis falcata* (sickle-leaved golden aster) and *Aristida tuberculosa* (beach needlegrass) was conducted on July 30th. A second field visit was conducted on August 29th. Biologists walked 10-foot transections within potential *Pityopsis falcata* and *Aristida tuberculosa* habitat areas, as previously identified using aerial photo imagery and as gleaned from prior 2014 site visits (i.e., for the horned lark habitat assessment). Field staff carried a GPS unit in the event the target species were encountered for the purpose of delineating the subpopulations.

2.2.3. *Sporobolus cryptandrus*

A field visit to assess the habitat suitability of the site for this species was conducted on July 30th. A site visit to survey for this species was conducted on August 29, 2014. On August 29th, biologists walked 10-foot transections within potential *Sporobolus cryptandrus* habitat areas, as previously identified using

aerial photo imagery and as gleaned from prior 2014 site visits (i.e., for the horned lark, *Pityopsis falcata*, and *Aristida tuberculosa* habitat assessments). Field staff carried a GPS unit in the event the target species were encountered for the purpose of delineating the subpopulations.

3. Site Description

The landfill site is located on a peninsula surrounded by Long Island Sound to the south, Black Rock Harbor to the west, and Cedar Creek Harbor to the north (see Figure 1 in Appendix A). On the southeast side of Barnum Boulevard are several City-owned beach facilities, playgrounds, open grassy areas, a boat launch, and several large parking areas, collectively known as Seaside Park. The long, sandy beach provides water access to Long Island Sound. A rock jetty connects the peninsula to a small island, Fayerweather Island, which has a light house. To the northeast of the landfill is a large industrial complex with three helipads for Sikorsky helicopters. Captains' Cove Seaport, located across Cedar Creek Harbor, also maintains a helipad for commercial use. There are several marinas within Cedar Creek Harbor and Black Rock Harbor. A private boat ramp is located along an unimproved landfill access-way approximately half a mile from the entrance to the landfill. The waterfront along Cedar Creek has been encroached upon by historic filling and retaining wall construction. The only natural areas remaining, including a strip of upper saline sandy shoreline, are those located toward the southwest end of the peninsula.

The central portion of the landfill site, where solar photovoltaic panels are proposed to be installed, is comprised of a fairly uniform (low biodiversity) herbaceous natural community consisting largely of common reed *(Phragmites australis),* mugwort *(Artemisia vulgaris),* and goldenrod (*Solidago* spp.) (dominants). There are wide swaths of mugwort with cool season grasses found growing underneath. This landscape is dotted, occasionally, by tree of heaven *(Ailanthus altissima*). There are several grassy accessways leading up to the top of the landfill from the northeast, northwest, and south; these accessways are dominated by cool season grasses such as red fescue. (See Figure 1 in Appendix A for a depiction of natural communities within the landfill site.) Soils on the top of the landfill are dominated by fine, loamy soils placed as part of the landfill closure. Along the northern boundary where the landfill meets Cedar Creek Drive, there is a stand of mature trees, whose composition includes quaking aspen *(Populus tremuloides),* red maple *(Acer rubrum),* and black locust *(Robinia pseudoacacia).* Staghorn sumac (*Rhus typhina)* is also found along the gravel roadway. There is also a small patch of shrubby vegetation, which includes blackberry *(Rhus sp.*) and poison ivy *(Toxicodendron radicans).* Invasive species are pervasive on the site and, in addition to common reed and black locust, include Princess Tree (*Paulownia tomentosa*), Japanese knotweed *(Fallopia japonica)* and Asiatic bittersweet *(Celastrus orbiculatus).* The latter two species are particularly found along Cedar Creek Drive. On either side of Cedar Creek Drive, near its southern terminus, are several bat boxes.

Bridgeport Seaside Landfill contains three wetlands. However, only one of these wetlands is within the project area. The landfill site falls within a highly developed portion of Connecticut; much of the soil within the project area has previously been disturbed by human activities. All three wetland areas

identified in or near the project area are anthropogenic in nature, due to historic human activities; all are relatively low in function. According to Natural Resources Conservation Service (NRCS) mapped data, the soils on the landfill site are classified as Dumps, Urban Land, and Udorthents. Dumps are those lands where the native soils are either built upon, mixed with non-native soils, or otherwise disturbed by human activities, typically resulting from purposeful deposition of assorted manmade waste materials. Urban land is land mostly covered by streets, parking lots, buildings, and other structures of urban areas. Udorthents consist of earthy materials that have been shaped or otherwise disturbed by man. There is an area within the landfill site surrounded by a fence and signed for hazardous materials.

Two unimproved dirt and gravel access-ways provide access within the Bridgeport Seaside Landfill site. One access-way climbs the central portion of the landfill and provides access to the crest of the landfill. The second access-way serves the western boundary of the landfill and runs from the northern entrance of the landfill to the public boat launch at the southwestern tip of the peninsula. The land on the west side of this access-way interfaces with Cedar Creek Harbor. This land on the west side of this access-way provides a narrow strip of sandy shoreline and beach habitat, primarily intertidal habitat, interspersed with rocky shores. The upland area provides patches of grasses, as well as lightly wooded stretches. **This sandy beach and the upland area west of this access-way are entirely outside the project area.**

4. Results

Fitzgerald & Halliday, Inc. visited the Bridgeport Seaside Landfill on April 1, 2014; June 16, 2014; July 30, 2014; and August 29, 2014 for the purpose of evaluating the suitability of the habitat for the target listed species and surveying for these species. None of the target species, nor any suitable habitat for these species, were observed during these field investigations within the project area. Those species observed are listed, by date of the field visit, in Table 2.

Table 2: Species Observed during 2014 Site Visits

SPECIES	4/1/14	6/16/13	7/30/14	8/29/14
AVIAN				
Order Ciconiiformes				
Great Blue Heron *(Ardea herodias)* (flying over water and/or on west side of bay)		X	X	X
Great Egret *(Ardea alba)* (flying over water)			X	X
Snowy Egret *(Egretta thula)* (west side of bay)			X	X
Black-crowned Night Heron *(Nycticorax nycticorax)* (flying over water and/or on west side of bay)			X	X
Yellow-crowned Night Heron *(Nycticorax violacia)* (west side of bay)			X	
Order Falconiformes				
Coopers hawk *(Accipiter cooperii)*	X			X
Osprey *(Pandion haliaetus)* (flying over water)			X	X
Red-tailed hawk *(Buteo jamaicensis)*	X			X
American kestrel *(Falco sparverius)*				X
Order Charadriiformes				
Killdeer *(Charadrius vociferous)* (east side of bay)				X

SPECIES	4/1/14	6/16/13	7/30/14	8/29/14
Herring gull *(Larus argentatus)* (flying over site and water)	X	X		X
Laughing gull *(Leucophaeus atricilla)* (west side of bay)				X
Ring-billed gull *(Larus delawarensis)* (flying over site and water)	X			X
Great Black-backed gull *(Larus marinus)* (flying over site and water)				X
Order Piciformes				
Downey woodpecker *(Picoides pubescens)*				X
Northern flicker *(Colaptes auratus)*			X	
Order Anseriformes				
Canada goose *(Branta canadensis)* (flock, flying over site)				X
Mallard duck *(Anas platyrhynchos)* (wading in water)	X			X
Red-breasted Merganser *(Mergus merganser)*	X			
Order Galliformes				
Wild turkey *(Meleagris gallopavo)*			X	X
Order Pelecaniformes				
Double-crested cormorant (flying over water) *(Phalacrocorax auritus)*	X		X	X
Order Columbiformes				
Rock dove *(Columba livia)*	X			X
Mourning dove *(Zenaida macroura)*				X
Order Passeriformes				
Willow Flycatcher *(Empidonax traillii)*			X	
American Crow *(Corvus brachyrhynchos)*	X	X		
Fish Crow (*Corvus ossifragus)*				X
Tree Swallow *(Tachycineta bicolor)*	X			
Barn Swallow *(Hirundo rustica)*		X	X	
Carolina Wren *(Thyrothorus ludovicianus)*	X			
Grey Catbird *(Dumetella carolinensis)*		X	X	X
Northern Mockingbird *(Mimus polyglottos)*	X	X	X	
Yellow Warbler *(Dendroica petechia)*			X	
European Starling *(Sturnus vulgaris)*	X		X	X
Common Yellowthroat *(Geothlypis trichas)*				X
Song Sparrow *(Melospiza melodia)*	X		X	X
Northern Cardinal *(Cardinalis cardinalis)*	X			
Red-winged Blackbird *(Agelaius phoeniceus)*	X	X	X	
Common Grackle *(Quiscalus quiscula)*			X	X
American Robin *(Turdus migratorius)* including several nests	X	X	X	
Brown-headed Cowbird *(Molothrus ater)*				X
MAMMAL				
White-tailed deer (*Odocoileus virginianus*)	X			X
Meadow vole (*Microtus pennsylvanicus*) (dead)	X			
Fox *(Vulpes vulpes)* (possible breeding pair)			X	
Unidentified Lagomorph; possibly Eastern cottontail (*Sylvilagus floridanus*)			X	
REPTILE				
Brown snake *(Storeria d. dekayi)*		X		

Note that several Connecticut listed avian species observed were flying over or wading in the waters of Cedar Creek, but not encountered on the landfill property itself. These include Great egret (State Threatened), Snowy egret (State Threatened) and Yellow-crowned Night Heron (State Species of Special Concern). During the August 29th site visit, an American kestrel (State Threatened) was observed perching on a snag located at the southern tip of the landfill property. The snag was inspected and several holes capable of providing potential nesting locations for American kestrel were observed. **This snag is on landfill property, but is outside of the project area.**

Scat of a canine species, possibly fox or coyote, was also observed during the April 1st site visit. While walking within the tidal zone on the east side of Cedar Creek Harbor during the July 30th site visit, several dead horseshoe crab shells, an abandoned whelk shell, raccoon tracks, white-tailed deer tracks, and mink tracks were observed.

4.1. *Eremophila alpestris* (Horned Lark)

The landfill site does not provide suitable breeding or nesting habitat for *Eremophila alpestris* (horned lark). This avian species prefers breeding and nesting in large, open areas that are barren, sandy, stony, or have sparse grass cover. The central area atop the landfill, where the solar panel array is proposed to be installed, contains a fairly uniform, dense herbaceous natural community dominated largely of common reed (*Phragmites australis*), mugwort (*Artemisia vulgaris*), and goldenrod (*Solidago* spp.) with occasional tree of heaven (Ailanthus altissima). Cool season grasses, such as red fescue, is found growing under some of the wide swaths of mugwort.

The horned lark is not likely to be found in areas with substantial vegetated cover such as the project site. Any small sparsely vegetated areas are not of adequate size to provide suitable breeding or nesting grounds for the horned lark.

The site does not provide suitable habitat for breeding/nesting of horned lark. No horned larks were observed during FHI's site visits in April, June, July, or August 2014.

4.2. *Pityopsis Falcata* (Sickle-leaved Golden Aster)

The Bridgeport Seaside Landfill does not provide suitable habitat for *Pityopsis falcata*. *Pityopsis falcata* prefers sandy soils near the coast, like the areas immediately upland of beaches, dunes, or inland sandplains. This habitat is not present on the landfill site. According to Natural Resources Conservation Service (NRCS) mapped soil data, the soils present on the project site consist of: Dumps, Urban Land, and Udorthents.

No suitable habitat for *Pityopsis falcata* was found within the project area. No *Pityopsis falcata* plants were detected on the site.

Marginal habitat for *Pityopsis falcata* was found on the southwest side of the peninsula, well outside the project area. However, no *Pityopsis falcata* plants were observed there.

4.3. *Aristida tuberculosa* (Beach Needlegrass)

The Bridgeport Seaside Landfill does not provide suitable habitat for *Aristida tuberculosa*. *Aristida tuberculosa* prefers dry, sterile soils, and dunes. This habitat is not present on the landfill site. According to Natural Resources Conservation Service (NRCS) mapped soil data, the soils present on the project site consist of: Dumps, Urban Land, and Udorthents.

No suitable habitat for *Aristida tuberculosa* was found within the project area. No *Aristida tuberculosa* plants were detected on the site.

Marginal habitat for *Aristida tuberculosa* was found on the southwest side of the peninsula, well outside the project area. However, no *Aristida tuberculosa* plants were observed there.

4.4. *Sporobolus cryptandrus* (Sand Dropseed)

Similar to *Pityopsis falcata* and *Aristida tuberculosa*, *Sporobolus cryptandrus* grows best on sandy soils, such as areas immediately upland of coastal beaches. *Sporobolus cryptandrus* also grows on coarse, gravelly soils, like those found in patches along the northwest accessway leading up to the central portion of the landfill site. However, no *Sporobolus cryptandrus* plants were detected along the accessway or anywhere on the site. These gravelly soils on the accessway provide marginal habitat for *Sporobolus cryptandrus.*

Marginal habitat for *Sporobolus cryptandrus* was also found on the southwest side of the peninsula, well outside the project area. However, no *Sporobolus cryptandrus* plants were observed there either.

5. Potential Project Impacts and Proposed Mitigation Strategies

The project site does not provide suitable habitat for *Eremophila alpestris, Pityopsis falcata*, or *Aristida tuberculosa*. Furthermore, no individuals of these species were observed on the project site during the course of five site visits which occurred between April 1st and August 29th in 2014. ***Therefore, no impacts to these species are anticipated from the project and no mitigation is proposed.***

Sporobolus cryptandrus grows on coarse, gravelly soils, like those found in patches along the northwest gravel accessway leading up to the central portion of the landfill site (see Figure 2 in Appendix A and photo in Appendix B). Periodic, including construction phase vehicular traffic along the accessway is unlikely to impact this marginal habitat. Rather, periodic vehicular traffic will keep the accessway in an early successional stage and possibly break up pavement, creating more gravelly patches of habitat. As *Sporobolus cryptandrus* was not detected on the site, and no impacts are anticipated to potential marginal habitat during the construction period, no mitigation or temporary construction period measures are proposed.

During the August 29th site visit, an American kestrel (State Threatened species) was observed perching on a snag located at the southern tip of the landfill property. It is important to note that no American

kestrels were observed by FHI during previous 2014 site visits which took place during the breeding season (early April to late July). Although it is highly likely the individual American kestrel observed on August 29th was simply using the snag for perching, FHI visually inspected the snag and found it contains several holes capable of providing potential nesting locations for American kestrel. Although outside the project area, the snag will be noted on project plans and periodically monitored during construction in the breeding/nesting period, between late March and mid-August. If American kestrels are found using the snag for breeding and nesting purposes, a 500-foot protection zone will be established around the snag in order to minimize temporary construction period disturbance.

6. Summary

In summary, the Bridgeport Seaside Landfill does not provide suitable breeding or nesting habitat for *Eremophila alpestris* (horned lark), which prefers breeding and nesting in large, open areas that are barren, sandy, stony, or have sparse grass cover. The central area atop the landfill, where the solar panel array is proposed to be installed, in contrast to the conditions preferred by the horned lark, contains a fairly uniform, dense herbaceous natural community which is not suitable breeding or nesting habitat for the horned lark. Given the biological requirements of *Eremophila alpestris*, this species is not likely to be present on the project site. Therefore, no impacts are anticipated from the project, and no mitigation is proposed.

The Bridgeport Seaside Landfill site also does not provide suitable growing conditions for *Pityopsis falcata* or *Aristida tuberculosa*. These species prefer exposed sandy soils, like the areas immediately upland of beaches, dunes, or inland sandplains, none of which are present on the landfill site. According to Natural Resources Conservation Service (NRCS) mapped soil data, which was verified during field work, the soils present on the project site consist of: Dumps, Urban Land, and Udorthents. Given the biological requirements of *Pityopsis falcata* and *Aristida tuberculosa*, these species are not likely to be present on the project site. Therefore, no impacts are anticipated from the project, and no mitigation is proposed.

Sporobolus cryptandrus grows on coarse, gravelly soils, like those found along the northwest accessway leading up to the central portion of the landfill site. Periodic, including construction phase vehicular traffic along the accessway is unlikely to adversely impact and may actually create more of this marginal habitat. As *Sporobolus cryptandrus* was not detected on the site, and no adverse impacts are anticipated to potential marginal habitat during the construction period, no mitigation or temporary construction period measures are proposed.

If any of these species are present in the vicinity of the landfill site, they may utilize the open, beach habitat on the south side of Soundview Drive where the land meets Long Island Sound. This area is well outside the landfill and the UI project limits.

During the August 29th site visit, an American kestrel (State Threatened species) was observed perching on a snag located at the southern tip of the landfill property. The snag contained several holes capable

of providing potential nesting locations for American kestrel. Although outside the project area, the snag will be noted on project plans and periodically monitored during construction in the breeding/nesting period, between late March and mid-August. If American kestrels are found using the snag for breeding and nesting purposes, a 500-foot protection zone will be established around the snag in order to minimize temporary construction period disturbance. Other listed avian species observed during the field surveys were not within the project area, nor are they expected to utilize the project area as habitat.

7. References

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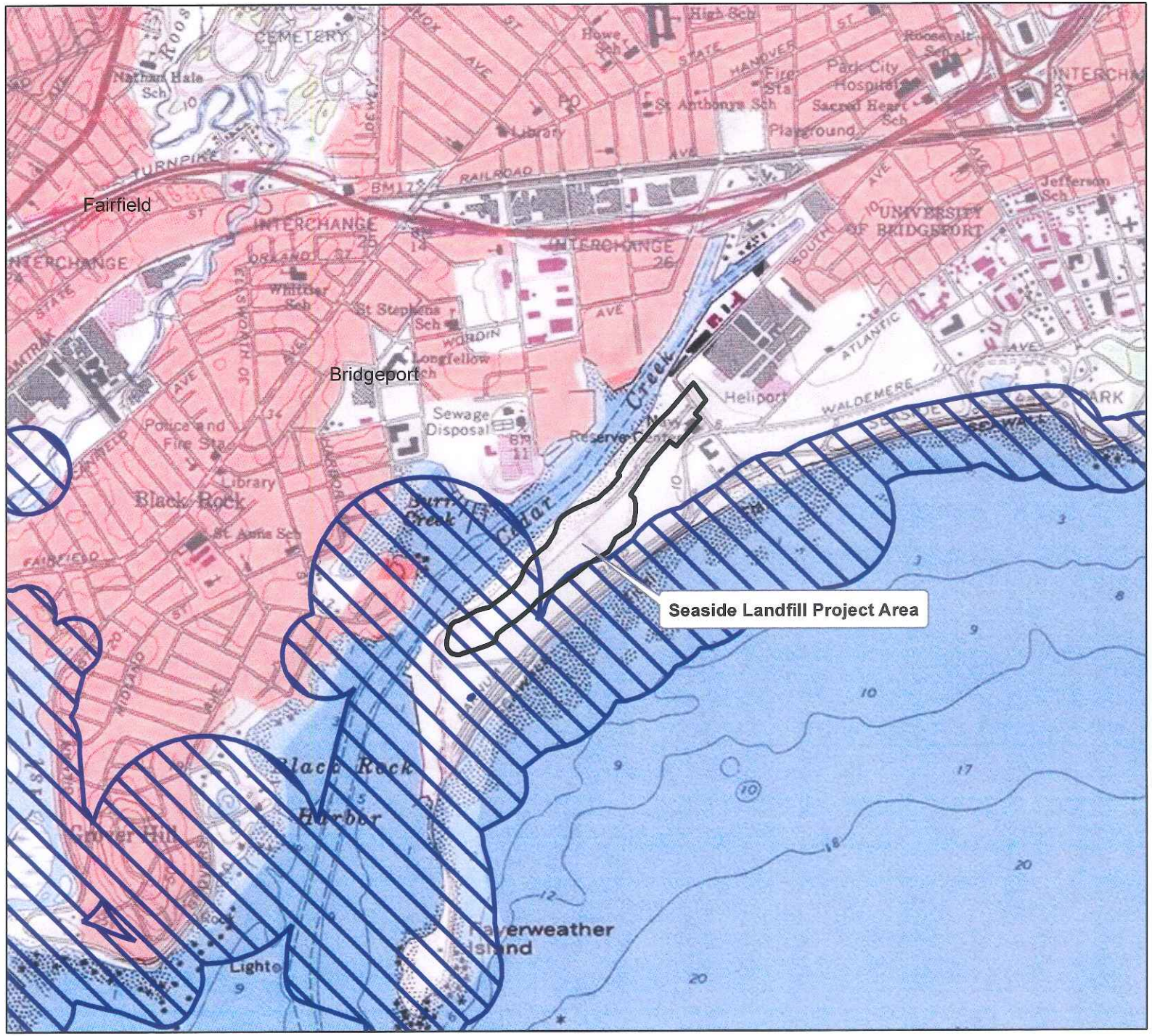
Appendix A

Map-Graphics



The United Illuminating Company Bridgeport Seaside Landfill Solar Photovoltaic & Fuel Cell Project

Figure 1

Project Area

Natural Diversity Database June 2014

USGS Quadrangle: Bridgeport

1:18,000

0 375 750 1,500 Feet

Original in Color - FHI - 8/15/2014

The United Illuminating Company
Bridgeport Seaside Landfill
Solar Photovoltaic & Fuel Cell Project

Rare and Endangered
Species Habitat Assessment
Figure 2

Legend

- Land Available for Development
- Project Limits
- Shrub
- Beach
- Herbaceous Vegetation
- Rocky Shorefront
- Lightly Wooded
- Tidal Marsh
- Gravel Accessway
- Sandy (Upper Saline) Shore
- Approximate Hazardous Materials Area
- Delineated Wetland Line (Not Surveyed)
- Natural Diversity Database (June 2014)
- Grass Accessway
- Potential *Sporobolus Cryptandrus* Habitat
- Fill Piles
- Dune

Original in Color - FHI - 9/2/2014

Appendix B

Representative Photographs

Photo 1: Atop of the landfill, in the center of the project area, looking south.

Photo 2: From the south-central portion of the site, looking north.

Photo 3: Looking northwest from the west side of the landfill. Cedar Creek Harbor in the background.

Photo 4: Looking northwest from the east side of the landfill.

Photo 4: Lightly wooded area on either side of driveway west of the landfill, facing northeast.

Photo 5: American Kestrel observed on snag in fill/dump area on southwest side of landfill (facing north).

Photo 6: Marginal *Sporobolus cryptandrus* habitat found in course gravelly patches along accessway in northwest, central portion of the site.

Appendix C

Resumes of Key Staff

Fitzgerald & Halliday, Inc.
Innovative Planning – Better Communities

Daniel A. Hageman, NHCWS, PSS
Project Manager

OVERVIEW

Mr. Hageman is a Principal Planner and Project Manager with over 21 years of professional experience in the environmental field related to a broad range of projects including infrastructure improvements, utility projects, transportation rehabilitation and construction, site development, dredging activities, airport improvements, and conservation projects. His responsibilities include project management, field investigations and document preparation as well as QA/QC of deliverables. His technical areas of expertise include environmental planning and permitting, wetland investigations, wildlife habitat assessment, conservation planning, vernal pool assessments, plant and animal monitoring and surveys, forest fragmentation analyses, and biological assessments for threatened and endangered species. He has been involved in a broad array of public participation in planning efforts including public information meetings and hearings, project charrettes, advisory committee meetings, and stakeholder meetings. This experience includes extensive regulatory agency coordination and interface with engineers in order to avoid, minimize, and mitigate project impacts using best management practices and low impact development methods, and mitigation design. The preparation of compensatory mitigation plans and construction specifications for wetland and wildlife mitigation are integral to this work.

EDUCATION
- Bachelor of Science in Natural Resource Management and Engineering, University of Connecticut, 1993

CERTIFICATIONS
- New Hampshire Certified Wetland Scientist No. 275, 2010
- OSHA 40-Hour HAZWOPER
- TWIC Security Card Holder

PROFESSIONAL AFFILIATIONS
- Society of Soil Scientists of Southern New England
- Society of Wetland Scientists
- Soil Science Society of America

TRAINING
- Amtrak Safety Trained
- Metro-North Safety Trained

YEARS EXPERIENCE
- 3 Year with firm
- 21 Years in Industry

ECOLOGICAL STUDIES AND CONSERVATION MANAGEMENT

Mr. Hageman conducts wetland/habitat assessments, natural resource inventories, vernal pool assessments, essential fish habitat studies, plant and animal monitoring and surveys, and forest fragmentation analyses. His work also includes biological assessments and field surveys for threatened and endangered wildlife and vegetation species. He also prepares conservation management plans, forest management plans and urban forest management plans for public parks and forests, and other open space and conservation lands. Field surveys have included a large variety of wildlife, including avian, reptile, amphibian, invertebrate, and mammal species.

ENVIRONMENTAL PERMITTING & REGULATORY COMPLIANCE

Mr. Hageman specializes in environmental permitting and regulatory compliance related to a broad range of projects including infrastructure improvements, utility projects, transportation rehabilitation and construction, site development, dredging activities, and airport projects. He has undertaken environmental permitting pursuant to the Clean Water Act, Coastal Zone Management Act, National Pollutant Discharge Elimination System, National Historic Preservation Act, and state wetland protection acts, Mr. Hageman has become very familiar with environmental permitting and environmental mitigation requirements. This experience includes extensive regulatory agency coordination and interface with engineers in order to avoid, minimize, and mitigate project impacts using best management practices and low impact development methods. The preparation of compensatory mitigation plans and construction specifications for wetland creation, restoration and enhancement are integral to this work. His experience also includes delineation of wetlands under federal and state regulations, transect documentation using the federal method, and jurisdictional determinations.

Representative Projects

Ecological Studies and Conservation Management

- Igor I. Sikorsky Airport Avian, Vegetation and Invertebrate Listed Species Surveys, Stratford (CT)
- New Haven-Hartford-Springfield Rail Program Vernal Pool and Listed Species Surveys (CT)
- Routes 82/85/11 DEIS/MIS & FEIS Biological Studies and Listed Species Surveys, Salem, Montville, East Lyme, and Waterford (CT)*
- Cove Island Park Important Bird Area (IBA) Conservation Plan, Stamford (CT)*
- Salt Meadow Unit IBA Conservation Plan, Westbrook (CT)*
- Good Hill Farm IBA Conservation Plan, Woodbury/Roxbury (CT)*
- Rentschler Field Grassland Bird Monitoring, East Hartford (CT)*
- Marine Corps Reserve Center Integrated Natural Resource Management Plan and EA, Syracuse (NY)*
- Port Ivory Intermodal Transportation Facility - PANYNJ, Staten Island (NY)*
- WASS Meadow Pumpfield Habitat Assessment, Leominster (MA)*
- Biological Assessment for the Short-nose Sturgeon in the Connecticut River (CT/MA)*
- White Mountain National Forest Monitoring Report, White Mountain National Forest (NH)*
- Urban Forest Management Plan, Camp Rell, East Lyme (CT)*
- Forest Management Plan, Stones Ranch Military Reservation, East Lyme (CT)*
- New London Waterfront Revitalization Plan/Opsail 2000, New London (CT)*
- Naval Air Station Brunswick Hangar 6 EA Grassland Bird Surveys, Brunswick (ME)*

Environmental Permitting & Regulatory Compliance

- New Haven-Hartford-Springfield Rail Program Permitting and Mitigation (CT)
- New Britain – Hartford Busway Permitting and Mitigation (CT)
- Route 113 Roadway Improvements Tidal Wetland Permits and Mitigation, Stratford (CT)
- Sikorsky Airport Tidal Gate and Driveway Improvement COP Permits, Stratford (CT)
- Franklin Avenue CSO Separation, MDC, Hartford (CT)
- Shelton WWTF upgrades Tidal Wetlands Permitting, Shelton (CT)*
- Opsail Pier Reconstruction Tidal Wetland Permitting, New London (CT)*
- Port Ivory Intermodal Trans. Facility Coastal Permitting, PANYNJ, Staten Island (NY)*
- 8th Street Bridge Rehabilitation COP Permitting, Norwich (CT)*
- Major Land and Water Coastal Zone Management Permit and Environmental Assessment Report (EAR) for Pier Nos. 2 and 8 Improvements at HOVENSA LLC, St. Croix, USVI*
- Town of East Hampton CTDEP Diversion Permit Application, East Hampton (CT)*
- CTARNG Geothermal Well Diversion Permit Application, East Lyme (CT)*
- Town of East Lyme Well No. 5 CTDEP Diversion Permit Application, East Lyme (CT)*
- Reservoir 1 Diversion Permit, Bristol (CT)*
- Reconstruction of State Route 66, Middlefield (CT)*
- Talredi Road Construction and Realignment, Plainfield (CT)*
- CENTECH Park Industrial Road Environmental Permits, Shrewsbury (MA)*
- Stones Ranch Military Reservation Phased Roadway Reconstruction, East Lyme (CT)*

* Projects prior to joining FHI or supplemental to FHI

LAUREL STEGINA, AICP

PROJECT MANAGER

OVERVIEW

Ms. Stegina has over 20 years of professional experience in environmental planning and public involvement. She specializes in coordinating with regulatory agencies and environmental documentation, serving as project manager and/or principal planner for environmental permitting and National Environmental Policy Act (NEPA) and Connecticut Environmental Policy Act (CEPA) documentation. She contributed to a wide range of public sector projects, including airports, rail yard and station facilities, commuter and high speed rail lines, bus maintenance facilities, intermodal transportation centers, and roadway and highway improvements. Ms. Stegina has conducted impact analyses for a broad range of resources/topics, including threatened and endangered species, water resources, floodplains, and coastal resources land use, community resources, and visual/aesthetic effects. She has a solid understanding the NEPA process, as well as CEPA public scoping and public hearing requirements. In April 2011, Ms. Stegina completed advanced NEPA training, where such topics as Mitigated Findings of No Significant Impact, how to address Climate Change in documentation, and how to write more concise documents were covered in detail.

EDUCATION

- Master of Forestry, Yale University, 1999
- B.A. Science in Society Program (interdisciplinary program with Environmental Science, Planning, Political Science, Sociology, and Philosophy), Wesleyan University, 1990

PROFESSIONAL AFFILIATIONS

- Women's Transportation Seminar
- American Planning Association

YEARS EXPERIENCE

- 9 Years with firm
- 21 Years in industry

HABITAT ASSESSMENTS & LISTED SPECIES SURVEYS

Ms. Stegina has managed and participated in a variety of wildlife habitat assessments and biological surveys ranging from amphibian, reptile, avian, and invertebrate species.

WETLANDS ASSESSMENTS & WETLANDS MITIGATION PLANNING

Ms Stegina managed the wetland mitigation planning process for two major Connecticut public transportation investment projects for FHI. Further, she has conducted wetland function and value assessments and contributed to detailed wetland mitigation plans for a variety of projects. Ms. Stegina has also contributed to invasive species plans, and prepared municipal and state environmental permit applications, including natural diversity database requests, stormwater construction; inland wetland and watercourse; flood management certification; structures, dredging, fill, tidal wetlands; coastal consistency reviews.

PUBLIC INVOLVEMENT

Ms. Stegina has a passion for and extensive public involvement experience with a variety of environmental and transportation projects, including greenways, recreational facilities, waste water treatment plants, and a major State of Connecticut study on the rest area and service plaza system. She has also been involved with public outreach related to federally-funded airport noise studies. Ms. Stegina has worked with advisory committees; coordinated planning for public information meetings, focus groups, and workshops; conducting user surveys and stakeholder interviews; facilitated public hearings; and developed content for presentations, newsletters, websites, and posters.

REPRESENTATIVE ENVIRONMENTAL PERMITTING & REGULATORY COMPLIANCE PROJECTS

NEW HAVEN-HARTFORD-SPRINGFIELD PROGRAM MANAGEMENT | NEW HAVEN, CT TO SPRINGFIELD, MA | 2011-ONGOING

Ms. Stegina is managing the listed species coordination and biological surveys for this high-profile project. She is interfacing with regulatory agencies, coordinating with species specialists, and both overseeing and participating with survey work in the field. She conducted habitat assessments with species specialists and surveys which have included Jefferson salamander, Eastern box turtle, Eastern hog-nosed snake, and numerous invertebrate species. Ms. Stegina worked with species specialists on preparation of survey reports. She was the primary author of an Incidental Take Report for the project.

Ms. Stegina prepared Certificates of Permission (COP) to permit cable plowing to be installed over three water crossings along the New Haven-Hartford-Springfield rail corridor: Quinnipiac River, Farmington River, and Connecticut River. She also assisted with several field surveys for the project including: vernal pools, invasive species, wetland functions and values. Ms. Stegina is contributing to several of the CTDEEP Inland Water Resource Division Permit Application attachments, including the Mitigation Report (Attachment L) and the Wildlife and Fisheries sections of the Environmental Report (Attachment K).

METROPOLITAN DISTRICT COMMISSION PERMITTING NEEDS ASSESSMENT | GREATER HARTFORD AREA, CT | 2010-ONGOING

Ms. Stegina has prepared environmental permitting needs assessment memorandum for several of the MDC combined sewer separation projects, including the Farmington River Area in Hartford and West Hartford, and the Park River Area in Hartford. The permit needs assessments included natural diversity database review and state and local permits potentially triggered by impacts to water resources, floodplains, and wetlands.

SIKORSKY MEMORIAL AIRPORT RE-ALIGNMENT OF ROUTE 113 | STRATFORD, CT | 2012-2013

Ms. Stegina participated in an avian survey for this project and prepared an Incidental Take Report to inform state regulators of the project's potential to impact two state-listed endangered plant species and two state special concern species. The report included a description of project activities, existing plant subpopulations, anticipated impacts, proposed mitigation, and a long-term monitoring plan. The ITR was approved by Connecticut's Office of Policy and Management (OPM) in 2013.

UNIVERSITY OF HARTFORD DAM REMOVAL | HARTFORD, CT | 2011-ONGOING

Ms. Stegina authored a pre-application meeting request with the CTDEEP for the project, which included a summary of existing conditions at the site. The summary included a description of water bodies, wetlands, floodplains, and fish and wildlife habitat and an evaluation of potential project impacts to natural resources, both beneficial and adverse. She also prepared portions of the CTDEEP Inland Water Resources Division Dam Construction permit application for the project.

TWEED NEW HAVEN REGIONAL AIRPORT RUNWAY 02-20 REHABILITATION | NEW HAVEN, CT | 2010

Ms. Stegina served as FHI's Project Manager, responsible for overseeing the preparation of a Categorical Exclusion for the runway rehabilitation project, conducting noise and visual effects analyses and evaluating impacts to coastal resources, floodplains, land use, community resources, threatened and endangered species, water resources and water quality. Ms. Stegina prepared Connecticut Department of Environmental Protection Stormwater Construction registration forms and oversaw the development of a stormwater pollution control plan for the runway rehabilitation project. Ms. Stegina also served as a project representative at open houses held at the airport for the purpose of sharing details about the runway re-paving project with nearby residents.

ANTHONY J. ZEMBA, CHMM

ENVIRONMENTAL SPECIALIST

OVERVIEW

Mr. Zemba has over 25 years of professional experience. Areas of expertise include environmental impact statements/assessments; environmental permitting; fish and wildlife inventories and monitoring; fish and wildlife habitat assessments/characterizations, management, planning, and restoration; wetland functions and values assessments; conservation planning; property assessments for hazardous material impact, environmental compliance monitoring for hazardous and regulated materials handling. Currently, Mr. Zemba is working on a variety of projects involving rare species assessment, environmental permitting, conservation planning, and habitat enhancement/restoration. During his professional career, Mr. Zemba has gained notable experience in forest health issues (as a former employee with USDA Forest Service), natural resource management planning (as senior ecologist with a full service engineering firm), and NEPA policy (as adjunct professor at the University of New Haven Graduate Program in Environmental Science).

EDUCATION

- B.S., 1987, Biology/Ecology, - Eastern CT State University
- M.S., 1996, Ecology/Environmental Science - University of New Haven
- Regional Soil Science Certificate Program, 2006 - University of Massachusetts

PROFESSIONAL AFFILIATIONS

- Certified Ecologist (Ecological Society of America)
- Certified Soil Scientist (New England Land Grant Universities)
- Certified Hazardous Materials Manager (Institute of Hazardous Materials Management)
- OSHA 40-Hr. Hazardous Waste Operations and Emergency Response Certification
- Transportation Worker Identity Certification (TWIC)
- PADI Open Water Diver No. 87126484
- CT Safe Boating Certification

YEARS EXPERIENCE

- <1 Years with firm
- 25 Years in industry

PROJECT EXPERIENCE*

BIOLOGICAL SURVEYS FOR EA, STATE ROUTE 66 – MERIDEN TO MIDDLETOWN, CT

Co-managed, coordinated, and conducted biological surveys along a 3-mile proposed corridor widening project. Composed target survey species lists, identified and negotiated appropriate survey protocols for target taxa and state and federal regulators (USEPA, USFWS, USACOE, FHWA, CTDEEP). Organized and managed multidisciplinary team of scientist/naturalists, to conduct multi-taxa seasonal surveys for the Connecticut Department of Transportation. Surveys including breeding bird surveys and rare flora survey.

AVIAN SURVEY AND SMALL MAMMAL TRAPPING AT FRY FARM NATIONAL HISTORIC SITE | EAST GREENWICH, RI

Provided seasonal point count avian surveys and small mammal trapping of five wetland habitats within a 40-acre farm to determine the impact of groundwater withdrawal associated with hazardous waste remediation efforts being proposed at an up-gradient site.

LAGOMORPH SURVEY | SRMR EAST LYME, CT

Conducted a survey for white-tailed deer at Stones Ranch Military Reservation (SRMR) in order to survey all suitable habitats within the study area for the presence of New England Cottontails (*Sylvilagus transitionalis*), characterize all habitats occupied by cottontails, and assess potential susceptibility of cottontails to impacts associated with on-site activities.

FLORA AND FAUNA COMMUNITY CHARACTERIZATION | CATHOLE MOUNTAIN, MERIDEN, CT

Conducted flora and fauna surveys along a traprock ridge in order to provide an ecological characterization of the

site. Provided expert witness testimony on the natural resources of the ridge on behalf of the client who had requested CTDEEP intervention to stop the illegal quarrying activity and resultant destruction of wetland resources on the mountain.

IMPORTANT BIRD AREA (IBA) CONSERVATION PLANNING | AUDUBON (NATIONAL AUDUBON SOCIETY)
Provided conservation planning services for Audubon's state office in Southbury, CT, and Audubon's National Science Office in Ivyland, PA. Audubon administers Birdlife International's Important Bird Area Program in the United States. Prepared IBA plans for the following CT IBAs:

- **STAMFORD, CT**

The plan documented the existing environment within the City's Cove Island Park, and outlines a plan for the management and conservation of habitats and resources within the park which are important to migratory and resident avifauna.

- **WOODBURY/ROXBURY, CT**

The plan identified ways to reduce the impact of agricultural practices on nesting grassland birds at Good Hill Farm, a 170 acre Roxbury Land Trust preserve.

- **WESTBROOK, CT**

The plan identified special habitat attributes and addressed conservation measures associated with nine CT "listed" (i.e., CT Special Concern, Threatened, or Endangered) species of avifauna and other species of conservation concern. This site included federally-owned land that is part of the Stewart B. McKinney National Wildlife Refuge (Salt Meadow Unit).

- **STRATFORD, CT**

The plan identified special habitat attributes and addressed conservation measures associated with 11 CT "listed" species of avifauna, 5 CT listed plant species and other species of conservation concern. This site included federally-owned land that is part of the Stewart B. McKinney National Wildlife Refuge (Great Meadow Unit) and the Bridgeport Municipal (Sikorsky) Airport.

IDENTIFICATION OF GLOBALLY IMPORTANT BIRD AREAS IN 3 EASTERN STATES – AUDUBON'S NATIONAL SCIENCE OFFICE
Identified sites in the states of Rhode Island, Alabama, and West Virginia that meet Audubon and Birdlife International's criteria in support a Global Importance designation. Prepared reports that included site descriptions of the resources and documented species criteria, ownership, habitat, threats, and land use. Results of planning process identified approximately 19 coastal IBAs of global significance in Rhode Island, 19 IBAs in Alabama (including sites along the Mobile, Tensaw, Tombigbee, Tennessee, and Perdido Rivers), and approximately 26 sites in West Virginia (including sites along the New River, Greenbrier River, and Big Coal Creek).

MONITORING AND FEASIBILITY ANALYSIS FOR GRASSLAND BIRD HABITAT ENHANCEMENT/RESTORATION INITIATIVE | WALLINGFORD, CT
Assessed the feasibility of grassland bird habitat enhancement and restoration at five Town-owned Open Space or Farmland Lease Program lands. Determined habitat parameters and characterized existing environmental attributes/features, land use, evidence of disturbance, vegetation data and avian data (species present and evidence of breeding). Identified potential opportunities and constraints to grassland bird habitat enhancement, restoration, and preservation planning efforts. Addressed appropriate conservation measures at each site such as conservation mowing, conservation grazing, the removal of windows between fields, invasive plant species control, and modifications to agricultural practices to improve the grassland bird habitat on all sites.

**Project work performed prior to employment at Fitzgerald & Halliday, Inc.*

Biographical Sketch

William H. Moorhead III
486 Torrington Road
Litchfield, Connecticut 06759

(a) Professional Preparation

Middlesex Community College	AS, Environmental Science	1983
Charter Oak College	BS, Chemistry (Biology concentration)	1986

(b) Appointments

Independent Consulting Field Botanist & Ecologist **2000-Present**

Connecticut Natural Diversity Data Base, Connecticut Department of Environmental Protection **1996-2005**
Contract Inventory Botanist & Ecologist

Virginia Natural Heritage Program, Virginia Department of Conservation and Recreation, Division of Natural Heritage **1994-1996**
Ecologist

Western Highlands Consulting, Woodbury, CT **1993-1994**
Independent Consulting Field Ecologist

Office of Long Island Sound Programs (OLISP), Connecticut Department of Environmental Protection **1991-1993**
Environmental Analyst & Biologist

Western Highlands Consulting, Woodbury, CT **1983-1990**
Independent Consulting Field Biologist & Ecologist

(c) Products

i. Publications most relevant to current proposal.

Moorhead, W.H. III, C. Chadwick, S. Prisloe, J. Barrett, and N.E. Barrett. 2009. The Vegetation Mosaic of Ragged Rock Creek Tidal Marsh, Connecticut River, Old Saybrook, Connecticut. A final report to Department of Environmental Protection, State of Connecticut. 39 p. Available at: http://web2.uconn.edu/seagrant/publications/coastalres/raggedrock.pdf.

Moorhead, W.H. III. 2006. Eightmile River Watershed Biodiversity Report. Prepared for the Eightmile River Wild and Scenic Study Committee. 138 p. Available at: http://www.ct.gov/csc/lib/csc/pendingproceeds/docket_409/inlandwetland/409-iw_exh80-84.pdf.

ii. Other significant publications.

Moorhead, W.H. III. 2010. A Survey for Rare Plants at Aton Forest: Results of Moorhead Field Surveys 2005-2010. 31 pp. plus appendices, including digital GIS products. Available at: http://www.atonforest.org/Aton2005-2010rareplantsurvey.pdf.

Moorhead, W. H. III and E. J. Farnsworth. 2004. *Floerkea proserpinacoides* Willd. (False mermaid-weed) Conservation and Research Plan for New England. New England Wild Flower Society, Framingham, Massachusetts, USA. 76 pp.

Moorhead, W.H. III. 2003. Farmington River Watershed Association 2002 Biodiversity Project. Rare Plant and Natural Community Inventory. Summary Report. 22 p. Available at: http:// www.lowerfarmingtonriver.org/wp-content/uploads/appendix-3-summary-report-frwa-2002-rare-plant-and-community-survey-read-only.pdf.

Van Alstine, N.E., W.H. Moorhead, III, Allen Belden, Jr., T.J. Rawinski, and J.C. Ludwig. 1996. Recently discovered populations of small whorled pogonia (*Isotria medeoloides*) in Virginia. Banisteria 7:3-10.

Additional Technical Expertise:

- Descriptive and interpretive biological and ecological investigations:
  - Inventory for Rare/Threatened/Endangered plant species and communities
  - Mapping of vegetation/habitat/natural communities using both traditional and modern tools and techniques (including ARCVIEW software)
  - Classification and mapping of vegetation/habitat/natural communities using existing models, including CT CWCS Critical Habitat classification, Metzler & Barrett's Vegetation of Connecticut classification, Metzler's Natural Community Classification for CT, TNC-ABI National Vegetation Classification, other state natural community classifications, USF&W NWI and Golet & Larson wetland classifications
  - Various methods for sampling vegetation
  - Avian Inventory
  - Sampling, identification, and analysis of freshwater aquatic macro-invertebrate communities for water quality evaluation
- Monitoring & management of rare plant populations and special natural communities
- Federal Jurisdictional Wetlands delineation
- Wetland evaluation: trained and experienced in various methods, including W.E.T. II, CT-DEP Bulletin No.9, and the Golet Wildlife Model
- Tidal wetlands and "high tide line" delineation per Connecticut General Statutes Sections 22a-29 and 22a-359
- Interpretation of aerial photographic imagery
- Lecturer in field and laboratory techniques in Ecology and Biology, at secondary school, college undergraduate, graduate school, and professional adult levels
- Wetland restoration and mitigation planning, implementation, and monitoring
- Review and technical critique of wetlands permit applications