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February 14, 2019

VIA ELECTRONIC MAIL
AND UPS NEXT DAY DELIVERY

Mr. James J. Murphy, Vice-Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Petition No. 1354 – Chatfield Solar Fund, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.98-megawatt AC solar photovoltaic electric generating facility located in Killingworth, Connecticut

Dear Vice-Chairman Murphy:

Enclosed please find the original and fifteen (15) copies of Chatfield Solar Fund, LLC's Pre-Hearing Submission in connection with the above-referenced petition.

Please feel free to contact me with any questions concerning this submittal at (203) 772-7787.

Very truly yours,



Bruce L. McDermott

Enclosures

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CONNECTICUT + MASSACHUSETTS + NEW YORK

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**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

Chatfield Solar Fund, LLC, petition for a declaratory ruling, pursuant to Connecticut General Statutes § 4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.98-megawatt AC solar photovoltaic electric generating facility on approximately 25 acres located generally south of Route 80 (North Branford Road) and east of Chestnut Hill Road in Killingworth, Connecticut, and associated electrical interconnection to Eversource Energy's Green Hill Substation located at 775 Green Hill Road, Madison, Connecticut. : Docket No. 1354

February 14, 2019

PRE-HEARING SUBMISSION OF CHATFIELD SOLAR FUND, LLC

Chatfield Solar Fund, LLC ("Chatfield") hereby submits its response to the January 30, 2019, memorandum issued by the Connecticut Siting Council (the "Council") in preparation for the February 21, 2019, hearing before the Council in connection with the above-captioned Petition (the "Project"):

I. Witnesses

Chatfield expects the following individuals will appear before the Council as available witnesses:

- 1) Charles Geppi, Senior Project Manager - Standard Solar Inc., 1355 Piccard Drive, Suite 300, Rockville, MD 21085. Mr. Geppi will provide information on the construction and overall development of the project.
- 2) C.J. Colavito, REP, VP of Engineering - Standard Solar Inc., 1355 Piccard Drive, Suite 300, Rockville, MD 21085. Mr. Colavito will provide information regarding all aspects of engineering, system design, and technical details of the Project.
- 3) Eric D. Partyka, Director of Business Development - Standard Solar Inc., 1355 Piccard Drive, Suite 300, Rockville, MD 21085. Mr. Partyka will provide information on the construction and overall development of the project.
- 4) Brandon Stephens, Project Manager - Standard Solar Inc., 1355 Piccard Drive, Suite 300, Rockville, MD 21085. Mr. Stephens will provide information on the construction and overall development of the Project.

- 5) Jobin Michael, PE, Engineering Manager - Standard Solar Inc., 1355 Piccard Drive, Suite 300, Rockville, MD 21085. Mr. Michael will provide information on the array layout, engineering design and equipment details of the Project.
- 6) Alisa Morrison, PE, PhD, Technical Associate - Loureiro Engineering Associates, Inc., 100 Fort Hill Road, Groton, CT 06340. Dr. Morrison will provide information on environmental review, stormwater management, and erosion control measures. Dr. Morrison's curriculum vitae is attached as Attachment A.
- 7) James McManus, MS, CPSS - JMM Wetland Consulting Services, LLC, 23 Horseshoe Ridge Road, Newtown, CT 06482. Mr. McManus will provide information on wetlands, vernal pool and habitat classifications and assessments. Mr. McManus' résumé is attached as Attachment B.
- 8) George T. Logan, MS, PWS, CSE - REMA Ecological Services, LLC, 164 East Center Street, Suite 2, Manchester, CT 06040. Mr. Logan will provide information on listed species and habitat assessments. Mr. Logan's résumé is attached as Attachment C.

II. Pre-Filed Testimony

At this time, Chatfield does not plan to file pre-filed testimony.

III. Documents to be Administratively Noticed

At this time, Chatfield asks that the Council take administrative notice of (1) the NFPA 1 First Draft Technical Committee FINAL Ballot Results dated March 4, 2016 (https://www.nfpa.org/assets/files/AboutTheCodes/1/1_A2017_FCC_AAA_FD_ballotfinal.pdf) (2) the Council's Decision and Staff Report dated April 3, 2018, and associated record in connection with Petition No. 1339; and (3) any documents contained in the Council's Administrative Notice List.

IV. Exhibits

At this time, Chatfield does not have additional exhibits to submit.

Respectfully submitted,
Chatfield Solar Fund, LLC

By:



Bruce L. McDermott
Samuel R. Volet
Murtha Cullina LLP
265 Church Street
New Haven, CT 06510
Tel: 203-772-7787
bmcdermott@murthalaw.com

CERTIFICATION

This is to certify that on this 14th day of February, 2019, a copy of the foregoing has been electronically delivered to all other known parties and intervenors.



Bruce L. McDermott

Attachment A

Alisa C. Morrison, P.E, PhD
62 Palmer St
Pawcatuck, CT 06379
Alisa.morrison@yahoo.com
860-235-6765 (c)

Education

Tufts University- Medford, MA
BSCE, 1984
MS, 1988

University of Rhode Island-Kingston, RI
PhD Environmental Science August 2013

Work Experience

2018-Present – Technical Director/Loureiro Engineering Associates, Plainville, CT

- Director of a newly created GIS department within the company in charge of all aspects of GIS within the Company. Responsible for eight GIS technicians.
- Managed the GIS portion of numerous projects from small sites to Superfund remediation projects. Responsible for assigning tasks and tracking progress, analyzing and reviewing data and results, QA/QC of field data, and tracking budgets.
- Created several on-line applications for data collection such as boring tracking, water level readings and property surveys.
- Coordinated with the Database Manager to develop methods for recording field data for compatibility with database program to aid in analytic analysis of contaminants.
- In charge of all aspects of GIS mapping, data storage and maintenance, GIS analysis and map production for reports.
- Management responsibilities include proposal preparation for GIS work, budget tracking, company-wide training in GIS capabilities, software and hardware updates and maintenance, and personnel management.

2016-2018 – GIS Coordinator/City of Pawtucket, Rhode Island

- Responsible for entire GIS program. This has included many different projects and tasks; from creating a list of needed assets to be acquired to field locating structures to digitizing plans to implementing a database structure.

- Streamlined procedures for recording subdivisions and lot mergers as well as creating new addresses. Created an ArcOnline application to allow staff to perform these tasks more efficiently.
- Performed allocation/service area analyses for the relocation of a new fire station as well as finding polling places for elections.
- Mapped the city's sewer system (both combined and separate) and created a utility network for use in asset management.
- Headed a team to determine the extent of the storm sewer system and its contributing watersheds, which involved field surveys, plan and database research and GIS analysis of the topography, street and pipe connectivity and land uses.
- Launched a web mapping application through a GIS host to allow public access to parcel and zoning data.
- Redesigned Public Works web page to facilitate easily access to popular maps, such as trash/recycling days, voting locations and snow plow routes.
- Created several story maps to highlight City assets, such as park facilities, points of interest and memorial tree locations.
- As Data Manager, responsible for maintaining numerous databases to organize plans and information for the Public Works Department as well as devising a digital record keeping system according to the state archiving requirements.
- Developed and implemented an on-line data collection application using Collector for the storm sewer and sanitary sewer systems, allowing the field maintenance crews to keep track of work performed.
- Day-to-day tasks have included updating and modernizing databases, creating maps and data for Public Works, Police, Fire, Planning, and the Mayor's office as requested, and helping clients with GIS requests and questions.

2010-2016 Research Hydrologist/Post-Doctoral Fellow – USEPA ORD AED

- Headed research project in the Chesapeake Bay Watershed entitled “Stormwater BMP Effectiveness Assessment Toolkit” evaluating effectiveness of existing low impact development and stormwater best management practices in maintaining habitat components and biotic integrity of streams in the CBW. Project involved:
 - Researching, creating, gathering and preparing a variety of data from multiple sources and formats to use in modeling stream temperature analysis.
 - Use of gridded and vector data to determine watershed characteristics.
 - Performing modeling studies using both ArcGIS tools and other statistical software (R and SAS).

- Writing and performing QA/QC procedures on methods and results to ensure repeatability.
 - Preparing maps, figures and reports of model inputs and results.
 - Writing reports, papers and presentations documenting methods and results.
- Worked on a decision support system titled “Watershed Management Optimization Support Tool” (WMOST), a public-domain, efficient, and user-friendly tool for local water resources managers and planners to screen a wide-range of potential water resources management options such as stormwater, water supply, wastewater and water-related resources for cost-effectiveness as well as environmental and economic sustainability. This project involved a suite of GIS-base tools such as FEMA’s HAZUS hazard prediction model, HEC-RAS and ArcHydro.

2013-Present GIS Analyst University of Rhode Island

- Involved with several projects as part of the Environmental Data Center at URI
 - Obtained a grant from USGS to conduct a pilot study for the Blackstone River Watershed to upgrade the NHD for this area to local resolution NHD at 1:5,000.
 - Conflated the 24k NHD to the 1:5,000 hydrography database which was compiled from 1997 1:5,000 orthophotography using specialized software developed by the USGS. The results will include an accurate hydrographic framework for adding event databases that represent impacts on water.
 - Performed QA/QC on all RI streams and rivers to ensure connectivity and flow direction.
 - Prepared Surface Water Protection Plans as directed by the RIDEM
 - Analyzed wellhead protection areas for past pollution loading issues as well as studying the areas for potential problems such as increased impervious area and septic systems.

1990-2010 Three Rivers Community College, Norwich, CT.

My responsibilities included teaching all courses in the Civil Engineering Technology department, including Surveying, Site Design and Development, Structural Mechanics, Hydraulics, Hydrology, Stormwater Management, Basic Computer Applications, Soil Mechanics, Engineering Materials and Geographic Information Systems (GIS). As the only full time faculty member in this

department, I was responsible for all phases of coursework, including course development and syllabus, lecture and lab content and preparation.

My administrative duties included managing the department budget, hiring and evaluating adjunct instructors, as well as stocking and maintaining labs. Other responsibilities included participation on school-wide committees, advising students and course development. I also began the student chapter of American Society of Civil Engineers at the college and served as their advisor, planning annual dinner meeting and lectures as well as serving as Program Coordinator for the Civil Engineering Department. I was responsible for program marketing and outreach, attending high school college fairs and other outreach campaigns.

As part of this job, I designed and developed an introductory GIS course that was intended to be taught across academic disciplines. I worked with many different departments to devise a course that could be integrated in areas such as criminal justice, environmental science and sociology. I worked with the IT staff to implement the software as well as gave various demonstrations of GIS to the different program coordinators to highlight various applications across disciplines.

1990-2015 Consulting Engineer/Project Manager

Over the past years, I worked for both a variety of companies and as an independent consultant as a consulting project engineer. Projects have involved managing the site design and development for projects ranging from 0.5 acre site plans to 100 lot subdivisions. I have worked on all aspects of site design including road layout and design, site grading, drainage and stormwater management design, and septic system design. I have taken these projects from the conceptual stage through permitting and construction which included working with and presenting projects to various town boards and commissions, including Planning and Zoning, Inland Wetlands, Conservation, Zoning Board of Appeals and Conservation Commissions. These projects involved managing all aspects of the project from drafters to engineers to surveyors.

Other consulting experience includes all phases of geotechnical engineering, such as boring and test pit inspection, soils lab testing and environmental site assessments. I am proficient in all aspects of field and laboratory soils testing and inspection. I managed a soils and concrete testing lab for 5 years with a staff of 25 technicians and field inspectors. This job involved maintaining daily schedules for the field inspectors and monitoring as well as maintaining the lab equipment, budgeting and supplies. This job entailed working with a wide range of construction trades to determine monitoring and inspection requirements on a daily basis.

I have extensive experience in stormwater management and drainage systems as well as NPDES Phase II permitting requirements. I have additional experience in dam repair and permitting, small bulkhead designs, DEEP permitting, grant, technical report and specification writing.

For the past 10 years, I have done GIS consulting work for a variety of different companies. Projects have involved determining average wind speed and wind speed variations for wind power generation, performing build-out analyses for town planners, analyzing potential flood impacts due to climate change for coastal towns, as well designing maps for publications and presentations. In addition, I am currently working on a tool to help municipalities map both total impervious area and directly connected impervious area to aid them in complying with the new State of Connecticut DEEP Stormwater requirements.

In addition to my extensive work experience in stormwater hydrology and management, I served on the Planning and Zoning Commission in Stonington for 10 years as well as the Inland Wetlands Commission.

DiCesare-Bentley Engineers, Groton, CT
Heynen-Teale Engineers – Guilford, CT
Total Technology – New London, CT
Cherenzia & Associates – Westerly, RI
Connecticut Property Engineering – South Windsor, CT
ACM Mapping and Consulting – Stonington, CT
American Wind Capital – Essex, CT
Landmark Development – Los Angeles, CA
Everest Energy – Pittsburgh, PA

Doctoral Dissertation

The title of my doctoral dissertation was “Sustaining Environmental Flows in Southern New England Rivers: Effects of Watershed Factors and Land Use”. Using HEC-HMS, I modelled the effects of LID installations on summer flows to small headwater streams. I also investigated the effects of watershed factors, such as land use and land cover on low flows and examined the efficacy of different methods of determining environmental flow by comparing current stream conditions with predicted stream conditions based on existing flows.

Professional Licenses

Professional Engineer, Connecticut

Software Proficiencies

Microsoft Office

Word

Excel

Powerpoint

Access

Publisher

ESRI ArcInfo-Through Version 10.2

Spatial Analyst

Network Analyst

ArcHydro

ModelBuilder

Python

NHD-Horizon

BasinDelineator

CA3T

River Modelling

HEC-HMS/HEC-GeoHMS (USACE)

HEC-RAS/HEC-GeoRAS(USACE)

MIKE 11/SHE(DHI)

Statistical Software (Programming)

SAS

R

Miscellaneous Programs

MOFLOW

HAZUS-MH

Dreamweaver

ERDAS Imagine

Earthsoft EQuIS

Publications

Morrison, Alisa, Arthur Gold, Marguerite Pelletier, "Evaluating key watershed components of low flow regimes in New England streams" Journal of Environmental Quality" <https://dl.sciencesocieties.org/publications/jeq/first-look>, doi: 10.2134/jeq2015.08.0434, posted 12/8/15

Detenbeck, Naomi, Alisa Morrison, Ralph Abele, "Spatial Statistical Network Models for Stream and River Temperature in New England, USA" Water Resources Research, In Review

Morrison, Alisa, "Sustaining Environmental Flows in Southern New England Rivers: Effects of Watershed Factors and Land Use" (2013). *Open Access Dissertations*. Paper 61. http://digitalcommons.uri.edu/oa_diss/61

Morrison, Alisa et al. "Approaches for calculating aggregate BMP contributions at a watershed scale" *PLOS One*, (2015) In review

Smucker, Nathan J., Naomi E. Detenbeck, and Alisa C. Morrison. "Diatom responses to watershed development and potential moderating effects of near-stream forest and wetland cover." *Freshwater Science* 32.1 (2013): 230-249.

Smucker, Nathan J., Mary Becker, Naomi E. Detenbeck, and Alisa C. Morrison. "Using algal metrics and biomass to evaluate multiple ways of defining concentration-based nutrient criteria in streams and their ecological relevance." *Ecological Indicators* 32 (2013): 51-61.

Presentations

Geoconflating the RI 1:5k Hydrography, Lower Blackstone River Watershed: A case study. *Alisa Morrison, University of Rhode Island, NEARC, November 2015, Burlington, VT.*

Predicting thermal regimes of stream networks across the Chesapeake Bay Watershed: Natural and anthropogenic influences. *Alisa Morrison, Naomi Detenbeck, Ralph Abele, USEPA Atlantic Ecology Division, AFS, August 2015, Portland, OR.*

Incorporating retention time to refine models predicting thermal regimes of stream networks across New England -Naomi Detenbeck, Alisa Morrison, Ralph Abele, USEPA Atlantic Ecology Division, NEAEB, March 2014, Burlington, VT.

Evaluating Key Watershed Components of Low Flow Regimes in New England Streams
- *Alisa Morrison, University of Rhode Island, Kingston, RI (co-authors: A.J. Gold, M. C. Pelletier) AWRA June 2013, Hartford, CT*

Evaluating the Efficacy of Low Flow Thresholds for Southern New England - Alisa Morrison, University of Rhode Island, Kingston, RI (co-authors: A. J. Gold, K. L. Addy)
AWRA June 2013, Hartford, CT.

Evaluating effectiveness of green infrastructure application of stormwater best management practices in protecting stream habitat and biotic condition in New England US-IALE April 2012 Newport, RI.

References:

Arthur J. Gold
Chair, Department of Natural Resources
University of Rhode Island, Kingston, RI
401-874-2903

Diba Khan-Bureau
Professor, Civil/Environmental Technology
Three Rivers Community College, Norwich, CT
860-84-6764

Joe Bragaw, PE
Director of Public Works
East Lyme, CT
860-739-6931

PROFESSIONAL RESUME

James M. McManus, MS, CPSS

Principal Soil Scientist

EDUCATION: M.S., Plant and Soil Science, University of Connecticut, Storrs, CT
B.S., Agronomy (Soils), University of Connecticut, Storrs, CT

CERTIFICATIONS: (ARCPACS) Certified Professional Soil Scientist (CPSS #15226)
Registered Professional Soil Scientist, Society of Soil Scientists of
Southern New England
OSHA HAZWOPER Certification Title 29 CFR 1910.120

EXPERIENCE: Mr. McManus is a Registered Certified Professional Soil Scientist (CPSS #15226) with primary expertise in wetland and hydric soil assessment and delineations. Mr. McManus has over 18 years professional experience and has conducted nearly 1,600 wetland delineations throughout New England as well as Alabama, Florida, Georgia, New York, New Jersey, Minnesota and Tennessee.

Other areas of expertise include USACE wetland resource area determinations, wetland inventories and evaluations, reporting and permit assistance, vernal pool investigations, construction and erosion control monitoring, surface water quality sampling, as well as natural resource surveys utilizing a global positioning system (GPS).

Mr. McManus has conducted numerous natural resource surveys along proposed linear right-of-ways, which include natural gas pipelines overhead power lines, and fiber optic lines, many of which he was team leader. Responsibilities included wetland and ecological surveys and the identification of rare and endangered plant and animal species.

Mr. McManus performs wetland delineations throughout New England in accordance with local, state, and federal procedures. Mr. McManus has specific expertise in soil test pit descriptions to determine the morphology and suitability of soils for septic system design.

Mr. McManus has conducted hydric soil determinations on a number of sites and construction monitoring and sediment erosion inspections on various sites throughout Connecticut, New York, and Massachusetts. He has performed post-construction surface water quality sampling and report preparation from inlet and outlet structures associated with stormwater treatment systems at several retail development sites, and surface water and groundwater sampling on various golf courses.

Professional Resume: (continued)

James M. McManus, MS, CPSS

Principal Soil Scientist

PROFESSIONAL AFFILIATIONS:

Society of Soil Scientists of Southern New England
American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS)
New England Hydric Soil Technical Committee (NEHSTC)
Connecticut Association of Wetland Scientists (CAWS)
Association of Massachusetts Wetland Scientists (AMWS)
Soil Science Society of America (SSSA)
Soil & Water Conservation Society
International Erosion Control Association
Rotary International

WORKSHOPS & CONFERENCES:

Massachusetts-DEP Training Program for the new Bordering Vegetative Wetland regulations (Soil Science Instructor, (1996).

Surficial Geologic Field Trip: Review soil and geologic setting along various landscapes in eastern Massachusetts (Soil Science Instructor 11/00).

Soil Scientist of Southern New England Workshop: Soils of Litchfield County Connecticut (8/02).

Sedimentation and Erosion Control Review Session. USDA. Natural Resource Conservation Service and CPESC (Certified Professionals in Erosion Control), Concord NH (10/01).

Tracking and Sign Workshop: A workshop to review and study various types of tracks and sign in New England (10/99).

Mean Annual High Water Line Determination Workshop for MA-DEP Riverfront Area Determinations. (10/00).

Mass-DEP and USGS Workshop: StreamStat and the MA-DEP Riverfront Area Regulation updates (2/03).

PUBLICATIONS:

Fieldler, P.L., C. Duncan, K. Fetherston, J. Gaskin, G. Hollands, L. C. Lee, J. Mason, J. McManus, W. L. Nutter, M. C. Rains, D. Schall and S. Smyers. 1998. Development of a Draft Guidebook to HGM Functional Assessments for Riverine Waters/Wetlands in Eastern Massachusetts. Society of Wetland Scientists, 19th Annual Meeting, Anchorage Alaska, June 8-12, 1998.

Professional Resume: (continued)

JAMES M. McMANUS, MS, CPSS

Principal Soil Scientist

WORK HISTORY:

2000 to present

JMM Wetland Consulting Services, LLC
Principal Soil Scientist, Owner

- Performs wetland and resource area delineations in accordance with State and Federal Statutes and guidelines.
- Performs resource inventories, including those of wetlands, watercourses, and vernal pool habitats.
- Conducts soil resource inventories and characterizations including High Intensity Soil Surveys (HISS), soil pit descriptions, and assessments of soil suitability for individual sewage disposal systems (ISDS).
- Performs inspections and monitoring of erosion and sedimentation controls for new construction.
- Performs monitoring and evaluations of surface water quality.
- Prepares a variety of environmental permitting and compliance documents.
- Performs GPS-assisted natural resource surveys including those of wetlands and watercourses.

1994 to 2000

ENSR International/Fugro East, Inc.
Senior Soil and Wetland Scientist

- Conducted wetland and resource area delineations in accordance with the Massachusetts Wetland Protection Act and Connecticut Inland Wetland and Watercourse Regulations.
- Performed wetland delineations in conjunction with the federal wetland delineation procedures utilizing the Corps of Engineers Wetland Delineations Manual (1987).
- Conducted hydric soil investigations and wetland classification and mapping.
- Collected storm water, surface water, and ground water samples from various sites throughout Massachusetts, New York, and Connecticut.
- Conducted soil and sedimentation control monitoring on various construction sites throughout Massachusetts and Connecticut.

Professional Resume: (continued)

James M. McManus, MS, CPSS
Principal Soil Scientist

WORK HISTORY (continued):

1994	Town of East Windsor, CT Inland Wetlands Officer <ul style="list-style-type: none">• Enforced state and local inland and wetland and watercourse regulations. Acted as staff to the town's Inland Wetland Agency.• Conferred with public officials, property owners and developers regarding proposed development and existing violations.• Performed site inspections for proposed development and on-going construction and reported status to the Commission at monthly meetings.
1994	USDA-NRCS Windsor, CT Soil Scientist Volunteer <ul style="list-style-type: none">• Assisted soil conservationists in preparing conservation plans.• Assisted soil scientists with soil survey activities.
1990 to 1992	University of Connecticut, Storrs, CT Teacher Assistant <ul style="list-style-type: none">• Taught undergraduate students practical application of lecture material.• Conducted laboratory experiments.• Ensured the proper use of laboratory facilities.
1988 to 1990	EnviroTech, Putnam, CT Soil and Wetland Scientist <ul style="list-style-type: none">• Identified wetlands at proposed developed locations relative to the State of Connecticut definition of wetlands.• Analyzed soil pits profiles for color, consistency, and drainage characteristics for suitability for individual sewage disposal systems.• Evaluated and delineated field sites for upland and wetland soil areas.

Professional Resume: *(continued)*

James M. McManus, MS

Principal Soil Scientist

WORK HISTORY *(continued)*:

1987 to 1988

Town of Tolland, CT
Soil Scientist/Town Planner Intern

- Reviewed erosion control plans with commercial developers assuring that the plans complied with town regulations.
- Assisted in the planning and enforcement of erosion and sediment control. Conferred with contractors to insure that deficiencies were controlled in a timely manner.

PROFESSIONAL RESUME

George T. Logan, MS, PWS, CSE

Principal Environmental Scientist/Senior Ecologist

EDUCATION:

M.S. Natural Resources, *Wildlife Management & Conservation Biology*, University of Rhode Island, Kingston, R.I., 1989.

B.S. Natural Resources, *Wildlife Management & Wetlands Ecology*, University of Rhode Island, Kingston, R.I., 1986.

Continuing Education

The Transportation Project Development Process: Training in the PennDOT Environmental Impact Statement Handbook, Harrisburg, PA, January 1994

Rapid Bioassessment Protocols of Aquatic Systems (EPA Protocols), Wetland Training Institute, Williamsport, PA, August 3-6, 1993

CERTIFICATIONS:

(current)

Certified Senior Ecologist (2005, 2014) - Ecological Society of America

Certified Professional Wetland Scientist (No. 581) (1994) - Society of Wetland Scientists

Registered Soil Scientist (1989) - Society of Soil Scientists of Southern New England

Certified Associate Wildlife Biologist (1989) – The Wildlife Society

EXPERIENCE:

Mr. Logan is the Co-Owner and *Principal Environmental Scientist* and *Senior Ecologist* for Rema Ecological Services, LLC. He specializes in tidal and inland wetland delineations and evaluation, permitting, wetland mitigation design, implementation and monitoring, and the preparation of environmental compliance documents in accordance with national (NEPA), state (e.g., CEPA, MEPA), and local criteria and guidelines. He also provides design, construction supervision and implementation for a wide variety of habitat restoration and enhancement projects. Mr. Logan performs watershed-wide and surface water quality evaluations and provides guidance in the design of stormwater Best Management Practices (BMPs), including stormwater wetlands and bioretention basins, as well as for LID (low impact development) practices.

Mr. Logan has over 30 years of experience as a wildlife biologist/ecologist conducting wildlife habitat evaluations and focused avian, mammalian, invertebrate, and herpetofaunal surveys using both active and passive methods. He frequently conducts targeted surveys for sensitive, rare, and “listed” species (i.e. endangered, threatened, special concern), and aquatic biosurveys to assess the biodiversity and biotic health of ponds, lakes, vernal pools, rivers, and streams. Mr. Logan has extensive experience in performing herpetological surveys, including over 230 vernal pool investigations and evaluations.

Mr. Logan has participated in nearly 2,600 individual projects in New England and the Mid-Atlantic States and in 160 of 169 municipalities in Connecticut.



ECOLOGICAL SERVICES, LLC, 164 EAST CENTER STREET, SUITE 8, MANCHESTER, CT 06040 • 860.649.7362

Professional Resume: (continued)

George T. Logan, MS, PWS, CSE

PROFESSIONAL AFFILIATIONS:

Society of Soil Scientists of Southern New England
Society of Wetland Scientists
Association of Massachusetts Wetland Scientists
Ecological Society of America
The American Birding Association
The Wildlife Society
Soil & Water Conservation Society
Connecticut Association of Wetland Scientists (CAWS) (*Past-President, Charter member*)

PUBLICATIONS: (selected)

Logan, G.T. & S.N. Gadwa. 1999. Quinnipiac River Watershed Association Stream Study. Water Quality in the Quinnipiac River. Proceedings of a Symposium on the Impact of Nonpoint Source Pollution in the Quinnipiac River Watershed, pp. 66-70.

Logan, G.T. & S.N. Gadwa. 1998. Stream Biosurveys: A *Primer*. Quinnipiac River Watershed Association Educational Series for the Adopt-the-River Programs.

Pawlak, E.M. & G.T. Logan. 1996. Town of Cromwell Wetland Evaluation Project. Connecticut Association of Conservation and Inland Wetlands Commissions. *The Habitat*, Vol. 10:1

Logan, G.T., F.B. Titlow & D.G. Schall. 1995. The Scientific Basis for Protecting Buffer Zones. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Pawlak, E.M. & G.T. Logan. 1995. Town of Cromwell Wetland Buffer Zone Designation Methodology. Proceedings of the 16th Annual Meeting of the Society of Wetland Scientists.

Logan, G.T., J.H. Brown, Jr., T.P. Husband & M.C. Nicholson. 1994. Conservation Biology of the Cretan Agrimi (*Capra aegagrus cretensis*). *Biologia Gallo-Hellenica*, Vol. 21, pp. 51-57.

Nicholson, M.C., T.P. Husband, J.H. Brown, Jr. and G.T. Logan. 1994. Implications of behavior on the management of the Cretan Agrimi (*Capra aegagrus cretensis*). *Biologia Gallo-Hellenica*, Vol. 21, pp. 45-50.

WORKSHOPS & CONFERENCES: (selected)

Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. Corps Training Workshop. May 2011. (*sponsor, participant*)

Vernal Pools: *The Jewels of the Forest*. Technical Workshop for the Town of Southwick Conservation Commission. January 2005. (*Guest Lecturer*)

Professional Resume: (continued)

George T. Logan, MS, PWS, CSE

WORKSHOPS & CONFERENCES: (selected)

The Importance of Habitat Edges. Riverside Landscaping Conference. The Rivers Alliance of Connecticut. June 1998. (*Guest Lecturer*)

Riparian Buffer Function, Performance & Limitations. Urban Riparian Buffers Conference & Technical Training Session. April 1999. (*Guest Lecturer*)

Sedimentation and Erosion Control Review Session. USDA. Natural Resource Conservation Service and CPESC (Certified Professionals in Erosion Control), Concord, NH. September 2001.

Buffer Strips as Storm Water Quality Controls. EnviroExpo, Boston. May 1999. (*Guest Speaker*)

Identifying Wetland Soils, Fauna and Flora. Municipal Inland Wetland Staff Technical Workshops. June 1999. (*Guest Speaker*)

Water Quality in the Quinnipiac River: A Symposium on the Impact of Non Point Source Pollution in the Quinnipiac River Watershed. November 1998. (*Presenter*)

Our Hidden Wetlands: Vernal Pools in Connecticut. Co-sponsored by CT DEP and the Center for Coastal and Watershed Systems. November 1997 and January 1998 (*Workshop Leader*)

Aquatic Invertebrate & Stream Ecology Workshop. Quinnipiac River Watershed Association Workshop Series. September 1997, May 1998, June 1999, January 2000 (*Workshop Leader*)

The Massachusetts Association of Conservation Commissions Third Annual Conference: Wetland Buffer Zones, March 1996 (*Guest Lecturer*)

16th Annual Conference of the Society of Wetland Scientists: Wetland Understanding, Wetland Education, May 1995 (*Presenter*)

Quinnipiac River Watershed Association Forum on Non-Point Pollution: Significance of Wetlands and Wetland Buffers, October 1992 (*Guest Lecturer*)

The Massachusetts Association of Conservation Commissions Second Annual Conference, April 1995 (*Guest Lecturer*)

The Society of Soil Scientists of Southern New England Riparian Buffer Zone Conference, November 1994 (*Presenter*)

Professional Resume: (continued)

George T. Logan, MS, PWS, CSE

SUPPLEMENTARY INFORMATION:

1996 to present

Rema Ecological Services, LLC
Principal Environmental Scientist/Ecologist, Co-Owner

- Founded the company to provide natural resources management, environmental planning, compliance and permitting services, and client advocacy throughout the Northeast.
- Has participated in over 2,100 individual projects since the company's inception, including six gas-fired, combined-cycle power plant projects, 7 utility-scale solar projects, over 30 bridge projects, numerous municipal projects, including over 20 new schools, several higher education projects, numerous wetland replacement projects, several new golf courses, and many large residential, industrial and commercial endeavors.
- Was the Interim Environmental Planner for the Town of Waterford, Connecticut, during a ten-month tenure. Responsibilities included providing procedural and technical support to the town's Conservation Commission (a.k.a. Inland Wetlands and Watercourses Agency), and working closely with Planning Department staff.

1994 to 1996

Fugro East, Inc. (Currently AECOM)
Senior Project Manager/Environmental Scientist

- Office Manager for the firm's Connecticut office, responsible for day-to-day operations, marketing, and business development.
- Wetland delineations in accordance with state and federal criteria.
- Natural resource inventories of upland, wetland and aquatic ecosystems, specializing in wildlife habitat assessments.
- Preparation of environmental compliance documentation for over 100 projects including large-scale commercial development.

1993 to 1994

A.D. Marble & Company, Inc.
Senior Environmental Planner/Wildlife Biologist

- Participated in the management of major transportation improvement projects and in the preparation of environmental documents in accordance with the National Environmental Policy Act (NEPA) while continuing involvement in the collection of baseline field data.
- Application of the Pennsylvania Department of Environmental Resources (PADER) hierarchical methodology for the selection of suitable wetland replacement sites.
- Field verification of Threatened, Endangered or Special Concern species listed by the Pennsylvania Game Commission.
- Wetland boundary identification in accordance with the unified PADER and U.S. Army Corps of Engineers (USACOE) methodology.
- Participated in nearly 30 projects, mostly for major transportation corridors, such as the rehabilitation of the I-95 corridor in PA.

Professional Resume: (continued)

George T. Logan, MS, PWS, CSE

SUPPLEMENTARY INFORMATION (continued):

1989 to 1993

Soil Science & Environmental Services, Inc.

Wildlife Biologist-Ecologist & Soil Scientist

- Project Manager responsible for field operations and report preparation for nearly 300 individual projects in over 75 towns in New England, including one town-wide wetland mapping, inventory and evaluation project (Town of Cromwell).
- Wetland boundary delineation according to state and federal criteria (e.g., Connecticut and Massachusetts Statutes, U.S. Army Corps of Engineers methodologies).
- Ecosystem analyses and biological inventories of upland areas, tidal and inland wetlands, estuaries, streams, rivers, ponds and lakes.
- Environmental impact evaluations, including site plan review, analyses of proposed impacts and design of mitigation strategies.
- Local, state and federal permitting for impacts to natural resources, including wetlands.
- Implementation of water quality monitoring programs for streams and rivers.
- Design, construction supervision, and monitoring of wetland enhancement, restoration and creation.
- Aquatic biosurveys of streams and rivers utilizing standardized methods (e.g. EPA Rapid Bioassessment Protocols).
- Detailed faunal surveys and censuses using both active and passive methods (e.g. direct and indirect observation, live-trapping, point count avian censuses, pellet counts, etc.).
- Expert witness testimony for court and administrative proceedings.

1988 to 1989

Independent Contracts

Soil & Wetland Scientist

- Summer of 1988: Was hired by the Town of Canton, CT to identify, inventory, and evaluate wetlands and watercourses within the entire municipality. Was responsible for amending the municipality's *Official Wetland and Watercourses Map*.
- Spring of 1988: Was hired by the Connecticut Chapter of the Nature Conservancy to determine and report on the historic expansion of invasive plants (*Phragmites australis*, *Lythrum salicaria*) on eight TWC preserves. Scope included site visits, remote sensing using archived aerial photographs, and report.

TECHNICAL REPORTS:

Mr. Logan has completed several hundred comprehensive studies (e.g. Wetlands Assessments, Ecological Evaluations, Environmental Impact Analyses/Statements, Vernal Pool Investigations, Listed-Species Surveys & Management Plans, aquatic vegetation surveys, and a variety of other specialized studies. A representative list of these technical reports can be provided upon request.