OMB Number: 4040-0004
Expiration Date: 03/31/2012

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received:

4. Applicant Identifier: State of VT Dept. of Environmental Conservation

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier: WET_13-14

8. APPLICANT INFORMATION:

* a. Legal Name: State of Vermont; Envrionmental COnservation

* b. Employer/Taxpayer Identification Number (EIN/TIN): 03-6000274

* c. Organizational DUNS: 809800303

d. Address:

* Street1: 1 National Life Drive
Street2: Main 2
* City: Montpelier
County: Washington
* State: Vermont
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 05620-3520

e. Organizational Unit:

Department Name: Environmental Conservation

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Mr.
* First Name: Alan
Middle Name:
* Last Name: Quackenbush
Suffix:

Title: Wetlands Program Manager

Organizational Affiliation:

* Telephone Number: (802) 490-6179
Fax Number:

* Email: alan.quackenbush@state.vt.us

Application for Federal Assistance SF-424

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.461

CFDA Title:

Regional Wetland Program Development Grants

*** 12. Funding Opportunity Number:**

EPA-REG1-13-14

* Title:

FY13 and FY14 Region 01 Wetland Program Development Grants

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Statewide

*** 15. Descriptive Title of Applicant's Project:**

Vermont Wetland Program Planning, Monitoring and Assessment and Enhancing Wetland Protection

Attach supporting documents as specified in agency instructions.

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant VT-001 * b. Program/Project VT-all

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date: 10/01/2013 * b. End Date: 09/30/2015

18. Estimated Funding ($):

* a. Federal	$ 266,402.00
* b. Applicant	$ 0.00
* c. State	$ 88,801.00
* d. Local	$ 0.00
* e. Other	$ 0.00
* f. Program Income	$ 0.00
* g. TOTAL	$ 355,203.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☒ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☐ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.) Applicant Federal Debt Delinquency Explanation**

☐ Yes ☒ No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☑ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: Mr. * First Name: David

Middle Name: K.

* Last Name: Mears

Suffix:

* Title: Commissioner

* Telephone Number: (802) 828-1556 Fax Number: (802) 828-1541

* Email: david.mears@state.vt.us

* Signature of Authorized Representative: * Date Signed: 8/9/13

OMB Approval No. 0348-0040

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101-6107), which prohibits discrimination of the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VII of the Civil Rights Act of 1968 (42 U.S.C. 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. 276a to 276a-7), the Copeland Act (40 U.S.C. 276c and 18 U.S.C. 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333), regarding labor standards for federally-assisted construction subagreement. 10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more. 11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in flood plains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).		12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 et seq.) Related to protecting components or potential components of the national wild and scenic rivers system. 13. Will assist the awarding agency in assuring compliance will Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.). 14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance. 15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) Pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance. 16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4801 et seq.) Which prohibits the use of lead-based paint in construction or rehabilitation of residence structures. 17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations." 18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE Commissioner
APPLICANT ORGANIZATION VT Department of Environmental Conservation	DATE SUBMITTED 8/9/13

FORM

Approved By OMB: No. 2030-0020 Expires 04-30-2012

Preaward Compliance Review Report for
All Applicants and Recipients Requesting EPA Financial Assistance
Note: Read instructions on other side before completing form.

I. Applicant/Recipient (Name, Address, State, Zip Code).
Vermont Department of Environmental Conservation

DUNS No.
809800303

II. Is the applicant currently receiving EPA assistance?
Yes

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.)
None

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective action taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7. See instructions on reverse side.)
None

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3))
None

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below.
Yes ✓ No

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b). Yes No

b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. § 7.70) applies. Yes No

VII.* Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its programs or activities? (40 C.F.R. § 5.140 and § 7.95) ✓ Yes No

a. Do the methods of notice accommodate those with impaired vision or hearing? Yes ✓ No

b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications? ✓ Yes No

c. Does the notice identify a designated civil rights coordinator? ✓ Yes No

VIII.* Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. § 7.85(a))
Yes

IX.* Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)
Yes

X.* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.
Yes. Barbara Morway, Agency Personnel Officer, 103 South Main

XI* If the applicant/recipient is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet address for, or a copy of, the procedures.
Yes. http://humanresources.vermont.gov/policies

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official	B. Title of Authorized Official	C. Date
	Commissioner	8/9/13

For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized EPA Official	B. Title of Authorized EPA Official	C. Date
See ** note on reverse side		

EPA Form 4700-4 (Rev. 04/2009). Previous editions are obsolete.

United States
Environmental Protection Agency

EPA Project Control Number

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including sub-contracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31 U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

David Mears, Commissioner

Typed Name & Title of Authorized Representative

Signature and Date of Authorized Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460
OMB CIRCULAR A-87 COGNIZANT AGENCY
NEGOTIATION AGREEMENT

State of Vermont
Agency of Natural Resources
Waterbury, VT

Date: June 12, 2013

Filing Ref: June 29, 2012

The indirect cost rates contained herein are for use on grants and contracts with the Federal Government to which Office of Management and Budget Circular A-87 applies, subject to the limitations contained in the Circular and in Section II, A below.

SECTION I: RATES

Type	Effective Period From	Effective Period To	Rate	Base
Fixed:				
Indirect	7/1/2013	6/30/2014	30.72%	(a)

Basis for Application
(a) Direct salaries and wages.

Treatment of Fringe Benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs.

SECTION II: GENERAL

A. LIMITATIONS: The rates in this Agreement are subject to any statutory and administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the department/agency or allocated to the department/agency by an approved cost allocation plan were included in the indirect cost pool as finally accepted; such costs are legal obligations of the department/agency and are allowable under governing cost principles; (2) The same costs that have been treated as indirect costs have not been claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the department/agency which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

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B. CHANGES. The fixed rate contained in this agreement is based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in the organizational structure or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate in this agreement, require the prior approval of the authorized representative of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowances.

C. THE FIXED RATE contained in this agreement is based on an estimate of the cost which will be incurred during the period for which the rate applies. When the actual costs for such a period have been determined, an adjustment will be made in the negotiation following such determination to compensate for the difference between the cost used to establish the fixed rate and that which would have been used were the actual costs known at the time.

D. NOTIFICATION TO FEDERAL AGENCIES: Copies of this document may be provided to other Federal agencies as a means of notifying them of the agreement contained herein.

E. SPECIAL REMARKS: None

ACCEPTANCE

By the State Agency:

Steven A. Chadwick
(Signature)

Steven A. Chadwick
(Name)

ANR Director of Admin. Services
(Title)

Natural Resources
(Agency)

6/19/13
(Date)

By the Federal Agency:

Jacqueline Smith
(Signature)

Jacqueline Smith, Rate Negotiator
Financial Analysis and Oversight
Service Center
U.S. Environmental Protection
Agency
June 12, 2013

Negotiated by: Jacqueline Smith
Telephone: (202) 564-5055

OMB Approval No. 0348-0044

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. **Planning, Monitoring and Assessment FY 13**	**6 6 . 4 6 1**	$ -	$ -	$ 133,201.00	$ 44,400.00	$ 177,601.00
2. **Planning, Monitoring and Assessment FY 14**	**6 6 . 4 6 1**			$ 133,201.00	$ 44,401.00	$ 177,602.00
3.				$ -	$ -	$ -
4.						$ -
5. Totals		$ -	$ -	$ 266,402.00	$ 88,801.00	$ 355,203.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total
	(1) FY 2013	(2) FY 2014	(3)	(4)	(5)
a. Personnel	$ 104,751.00	$ 104,751.00			$ 209,502.00
b. Fringe Benefits	$ 37,614.00	$ 37,615.00			$ 75,229.00
c. Travel	$ 550.00	$ 550.00			$ 1,100.00
d. Equipment	$ -				$ -
e. Supplies	$ 1,353.00	$ 1,353.00			$ 2,706.00
f. Contractual	$ -				$ -
g. Construction	$ -				$ -
h. Other	$ 1,153.00	$ 1,153.00			$ 2,306.00
i. Total Direct Charges *(sum of 6a-6h)*	$ 145,421.00	$ 145,422.00	$ -	$ -	$ 290,843.00
j. Indirect Charges	$ 32,180.00	$ 32,180.00			$ 64,360.00
k. TOTALS *(sum of 6i and 6j)*	$ 177,601.00	$ 177,602.00	$ -	$ -	$ 355,203.00
7. Program Income	$ -	$ -	$ -	$ -	$ -

SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. **Planning, Monitoring and Assessment**	$ -	$ 88,801.00	$ -	$ 88,801.00
9.		$ -		$ -
10.		$ -		$ -
11.				$ -
12. TOTAL *(sum of lines 8-11)*	$ -	$ 88,801.00	$ -	$ 88,801.00

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 133,201.00	$ 33,300.25	$ 33,300.25	$ 33,300.25	$ 33,300.25
14. Non-Federal	$ 44,400.00	$ 11,100.00	$ 11,100.00	$ 11,100.00	$ 11,100.00
15. TOTAL *(sum of lines 13 and 14)*	$ 177,601.00	$ 44,400.25	$ 44,400.25	$ 44,400.25	$ 44,400.25

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. **Planning, Monitoring and Assessment**	$ 177,602.00	$ -	$ -	$ -
17.				
18.				
19.				
20. TOTAL *(sum of lines 16 - 19)*	$ 177,602.00	$ -	$ -	$ -

SECTION F - OTHER BUDGET INFORMATION

21. Direct Charges:	$ 290,843.00	22. Indirect Charges: (salary x rate)	$ 64,360.00	**30.72% Fixed**	$ 355,203.00

23. Remarks

Authorized for Local Reproduction

Planning, Monitoring and Assessment
Detailed Summary Budget
FY2013-2014 Vermont Wetland Program

			Budget Period	From: 10/01/13	To: 09/30/15
Position Number	**Position Title**	**Annual Salary**	**% to Grant**	**Salary Expense**	**Fringe Benefits**
660045	Env Analyst VII AC General	137,529.60	60%	84,165.12	32,613.98
660038	Env Scientist V AC: General	121,950.40	29%	36,394.76	14,102.97
660247	Env Scient IV AC General	100,838.40	24%	24,685.44	9,565.61
660216	Env Scient IV AC General	88,753.60	24%	19,748.35	7,652.49
665073	Environmental Scientist II	78,208.00	24%	19,139.33	1,464.16
665032	Environ Tech III AC: Admin	78,208.00	24%	19,828.22	7,683.44
660999	Management / Administrative Support	88,753.60	6%	5,540.45	2,145.92
		Total FTEs --->	1.91		

Personnel *(listed above)*		subtotal	**$ 209,502**
Fringe Benefits *(based on department average)* (incl. FICA, retirement, health insurance & workers' comp)	Rate 38.75%	subtotal	**$ 75,229**
Travel *(does not include fleet lease payments; see "Other")*			
~ In-State Travel (site inspections, monitoring activities, local meetings)		1,100	
~ Out-of-State Travel (regional meetings, national conferences)		0	
		subtotal	**$ 1,100**
Equipment *(Items with a unit cost of less than $5,000 are deemed to be supplies.)*			
		0	
		0	
		subtotal	**$ -**
Supplies			
~ IT Equipment & Software Replacement / Upgrades (divisional allocation)		1,306	
~ IT & Data Processing Supplies		704	
~ Miscellaneous Material & Supplies		400	
~ Office Supplies		296	
		subtotal	**$ 2,706**
Contractual			
		0	
		0	
		subtotal	**$ -**
Other			
~ Fee-for-Space		1,064	
~ Fleet Lease Payments		623	
~ Telephone & Internet Services		457	
~ Other Services (printing, insurance, repairs & maint., postage, etc.)		164	
		subtotal	**$ 2,307**
Indirect Charges *(based on % of personnel costs)*	Rate 30.72%	subtotal	**$ 64,359**
GRAND TOTAL		Total	**$ 355,203**
	Federal Share	75%	**$ 266,402**
	Non-Federal Share	25%	**$ 88,801**

FY2013-2014 Vermont Wetland Program
Detailed Itemized Budget Yr 2 FY 2013

			Budget Period	From: 10/01/14	To: 09/30/15
Position Number	Position Title	Annual Salary	% to Grant	Salary Expense	Fringe Benefits
660045	Env Analyst VII AC General	140,275.20	30%	42,082.56	16,306.99
660038	Env Scientist V AC: General	124,384.00	15%	18,197.38	7,051.48
660247	Env Scient IV AC General	102,856.00	12%	12,342.72	4,782.80
660216	Env Scient IV AC General	82,284.80	12%	9,874.18	3,826.24
665073	Environmental Scientist II	79,747.20	12%	9,569.66	732.08
665032	Environ Tech III AC: Admin	82,617.60	12%	9,914.11	3,841.72
660999	Management / Administrative Support	88,753.60	3%	2,770.22	1,072.46
		Total FTEs --->	0.96		

Personnel *(listed above)*		subtotal	$ 104,751
Fringe Benefits *(based on department average)* (incl. FICA, retirement, health insurance & workers' comp)	Rate 38.75%	subtotal	$ 37,614
Travel *(does not include fleet lease payments; see "Other")*			
~ In-State Travel (site visits, monitoring activities, local meetings)		550	
~ Out-of-State Travel (2 staff - National Wetland Conference/Workshop)		0	
		subtotal	$ 550
Equipment *(Items with a unit cost of less than $5,000 are deemed to be supplies.)*			
		0	
		0	
		subtotal	$ -
Supplies			
~ IT Equipment & Software Replacement / Upgrades (divisional allocation)		653	
~ IT & Data Processing Supplies		352	
~ Miscellaneous Material & Supplies		200	
~ Office Supplies		148	
		subtotal	$ 1,353
Contractual			
		0	
		0	
		subtotal	$ -
Other			
~ Fee-for-Space		532	
~ Fleet Lease Payments		311	
~ Telephone & Internet Services		228	
~ Other Services (printing, insurance, repairs & maint., postage, etc.)		82	
		subtotal	$ 1,153
Indirect Charges *(based on % of personnel costs)*	Rate 30.72%	subtotal	$ 32,180
GRAND TOTAL		Total	$ 177,601
	Federal Share	75%	$ 133,201
	Non-Federal Share	25%	$ 44,400

FY2013-2014 Vermont Wetland Program
Detailed Itemized Budget Yr 2 FY 2014

		Budget Period		From: 10/01/14	To: 09/30/15
Position Number	Position Title	Annual Salary	% to Grant	Salary Expense	Fringe Benefits
660045	Env Analyst VII AC General	140,275.20	30%	42,082.56	16,306.99
660038	Env Scientist V AC: General	124,384.00	15%	18,197.38	7,051.48
660247	Env Scient IV AC General	102,856.00	12%	12,342.72	4,782.80
660216	Env Scient IV AC General	82,284.80	12%	9,874.18	3,826.24
665073	Environmental Scientist II	79,747.20	12%	9,569.66	732.08
665032	Environ Tech III AC: Admin	82,617.60	12%	9,914.11	3,841.72
660999	Management / Administrative Support	88,753.60	3%	2,770.22	1,073.46
		Total FTEs --->	0.96		

Personnel *(listed above)*		subtotal	$ 104,751
Fringe Benefits *(based on department average)* (incl. FICA, retirement, health insurance & workers' comp)	Rate 38.75%	subtotal	$ 37,615
Travel *(does not include fleet lease payments; see "Other")*			
~ In-State Travel (site visits, monitoring activities, local meetings)		550	
~ Out-of-State Travel (2 staff - National Wetland Conference/Workshop)		0	
		subtotal	$ 550
Equipment *(Items with a unit cost of less than $5,000 are deemed to be supplies.)*			
		0	
		0	
		subtotal	$ -
Supplies			
~ IT Equipment & Software Replacement / Upgrades (divisional allocation)		653	
~ IT & Data Processing Supplies		352	
~ Miscellaneous Material & Supplies		200	
~ Office Supplies		148	
		subtotal	$ 1,353
Contractual			
		0	
		0	
		subtotal	$ -
Other			
~ Fee-for-Space		532	
~ Fleet Lease Payments		311	
~ Telephone & Internet Services		228	
~ Other Services (printing, insurance, repairs & maint., postage, etc.)		82	
		subtotal	$ 1,153
Indirect Charges *(based on % of personnel costs)*	Rate 30.72%	subtotal	$ 32,180
GRAND TOTAL		Total	$ 177,602
	Federal Share	75%	$ 133,201
	Non-Federal Share	25%	$ 44,401

Cover Page

Funding Opportunity Title: FY13 and FY14 Region 01 Wetland Program Development Grants
Funding Opportunity Number: EPA-REG1 -13-14

1. **Project Title: Continued Development of Core Elements of Vermont's Comprehensive Wetlands Program from the EPA-Approved 2011-2015 Wetland Program Plan (WPP)**
2. **Track One applicant**
3. **Core Elements: Monitoring and Assessment; Regulatory Activities including 401 Certification; Restoration and Protection; Water Quality Standards for Wetlands**
4. **Proposed Actions: monitor and assess wetlands in the rotational basin assessment; refine assessment methods (pages 5, 6 of WPP); identify, assess and map significant wetlands; develop new outreach and education materials, such as new fact sheets on web site; participate in In-lieu fee program and evaluate progress (pages 8-11); work with partners to identify wetland restoration sites, provide technical assistance and assess selected sites for success (pages 12-13); refine definitions of high quality and very high quality as they relate to wetlands and the Water Quality Standards (page 14).**
5. **Applicant: Wetlands Program, Watershed Management Division, Vermont Department of Environmental Conservation, Agency of Natural Resources, State of Vermont DUNS: 809800303**
6. **Contact Information: Alan Quackenbush, Wetlands Program Manager**
   alan.quackenbush@state.vt.us
   802-490-66179
   Watershed Management Division, VT DEC
   1 National Life Drive, Main 2
   Montpelier, VT 05620-3522
   103 S. Main St., Waterbury, VT 05671
7. **Geographic Location: Vermont, statewide**
8. **Total Project Cost: $355,203; Federal dollars requested: $266,402**
   State match: $88,801

Abstract: The main objective of this proposal is to continue to refine and build upon on-going actions from the approved Vermont Wetland Program Plan for each of the Core Elements in order to further strengthen and develop the overall Vermont Wetlands Program. **Monitoring and Assessment** tasks will be focused on level 2. Rapid Assessment Methods, Floristic Quality assessments; reference condition; long-term monitoring sites; and rotational basin assessments. **Regulatory** tasks will focus on continued outreach and education activities; strengthening compliance monitoring; and improving the wetland mapping process with improved and updated maps. **Restoration and Protection** tasks include working with partners to leverage funding, project development and site identification, providing technical assistance, and assessing completed restoration projects. **Water Quality Standards** tasks will include drafting language to be added to the Vermont Water Quality Standards and the anti-degradation policy; and clarifying the connection between wetlands, the Standards, and the anti-degradation policy.

B. Project Description:

Program Priorities: This proposal meets the National Priority area: multi-year Wetland Program Plans; and is a **Track One** proposal.

Project Need: activities are included in an EPA-approved WPP, and are as described below with each Core Element.

Monitoring and Assessment:

Project need: Vermont needs to understand the ecological condition of its wetlands and to report this in the state's 305(b) reports and watershed strategic plans. To provide information on the condition of the state's wetlands, we need to assess their condition on a basin by basin or watershed by watershed basis using methods developed over the past several years. We continue to revise and improve on these methods as we gather more data, score more sites and calibrate our scores. We will also incorporate proven methods from other states that have been presented at New England Biological Assessment of Wetlands Working Group workshops. This will include continued development and refinement of a Floristic Quality Assessment tool.

Outputs: Revised Vermont Rapid Assessment Method (VRAM); site reports on wetland condition assessment; 305(b) report with wetland section for 2014. Revised level 3 assessment methods to include floristic quality metrics.

Outcomes: Increased understanding of the ecological health or condition of Vermont's wetlands on a watershed scale; increased understanding of the role of stressors to wetland function and condition. Preliminary list of reference, best condition/least disturbed wetlands; list of best examples of wetland community types.

Project Tasks:

Vermont Rapid Assessment Method -Review VRAM scores for wetlands sites from 2012 and 2013 field seasons as compared to condition assessment (level 3) ranking; make changes as necessary to scoring matrix; review and revise scoring instructions.

Sampling protocols – revise based on experience of the 2012 and 2013 field seasons, and past sampling practices; amend QAPP as needed (QAPP needs pre-sampling season approval in 2014).

Rotational Basin Assessment – select sites in the basin(s) of interest, following the Water Quality Monitoring Plan and Strategy. Sample and assess sites. Compile information for 305(b) report.

Compile list of reference sites and best examples of specific community types – add functional and condition site assessments to existing documentation from the Natural Heritage Program.

Floristic Quality Index – review scoring of flora from New England Interstate Water Pollution Control Commision (NEWIPCC) FQAI project. Apply agreed upon scores to plants identified in previous assessments. Choose appropriate plants metrics for a Floristic Quality Index. Revise Level 3 sampling and assessment protocols.

Regulatory:

Project need: With the passage of a new wetland statute and new Vermont Wetland Rules in 2010, there is a continuing need for the Wetland Program to revise educational materials, guidance documents, and technical information; as well as to more fully develop Best Management Practices (BMP's) that are referenced in the new Rules. While this has been an on-going task before and after the Rules were adopted, there is a long-term need to continue replacing outdated materials, and developing new guidance, especially with respect to BMP's. Outreach efforts also need to continue with workshops for the general public, for consultants, partners and colleagues. The Wetland General Permit has been evaluated and revisions will be made; some outreach needs to accompany the changes to the GP . Compliance monitoring for approved projects needs to be strengthened. The process for creating improved wetland maps needs to be reviewed and refined. The In-lieu fee program is relatively new and needs to be assessed as to its effectiveness so far from a state perspective.

Outputs: New fact sheets and guidance documents posted on the Wetlands Program websites. Workshops held with towns, consultants, and other interested groups. Wetland map revisions and updates.

Outcomes: Improved understanding of the new statute, and new Rules for wetland protection. Expanded knowledge of wetland identification and wetland functions. Improved guidance on avoidance and minimization of impacts though the use of BMP's. Improved wetland protection efforts leading to less wetland loss. Improved wetland mitigation.

Project Tasks:
Guidance Documents - Prepare a prioritized list of both documents that need revision, and new documents that need to be developed. Assign to program staff. Technical and legal review of draft documents. Final documents posted on the ANR website.
Revised and updated maps: develop detailed process and procedures for revising maps.
Workshop program development - Outreach to towns and interested groups of Wetland Program staff availability for training and workshops. Workshops developed according to target audience. Workshops as assigned.
General Permit (state) Track/monitor projects authorized under the General Permit.
In-lieu fee program: participate on technical review committee; evaluate program and wetland mitigation projects completed.

Restoration and Protection:

Project need: The Watershed Management Division has added a new program, the Ecosystem Restoration Program (ERP). This program was formerly the Agency's Center for Clean and Clear, with a focus on the Lake Champlain Total Maximum Daily Load (TMDL) implementation. The stream, wetland, and shoreline restoration and enhancement projects that contribute to the lake cleanup will continue to be the program's focus. Wetland Program staff will need to work cooperatively with partners to

provide outreach and technical assistance on these projects. Staff will also need to identify candidate sites, not only in the Champlain Basin but around the state. The Natural Resources Conservation Service (NRCS) had significant financial resources through the farm bill's Wetland Reserve Program (WRP) for wetland restoration and protection through easements or purchase. If the new farm bill includes funding to continuing the WRP Wetlands Program staff need to assist the NRCS staff with program outreach, project identification and technical assistance.

Outputs: Coordination among partners; restoration sites identified; outreach to willing participants; interested parties matched with appropriate funders; technical assistance provided; projects recommended for funding.

Outcomes: Increased quantity and quality of wetlands through restoration and enhancement; permanent protection of wetlands through non-regulatory means.

Project Tasks:
Convene meeting of partners and hold quarterly meetings throughout grant period; Prioritize watershed area and identify potential restoration sites; develop outreach packet to interest landowners; provide technical assistance; identify projects for funding.

Water Quality Standards:

Project need: The current Water Quality Standards for Vermont are silent on wetlands, except by reference as waters of the United States. This makes it difficult to include wetlands in Sec. 401 Water Quality Certification for Sec. 404 Individual Permits or other federal permits. A strategy to move forward on this is needed. Currently we are working on a draft anti-degradation procedure that includes wetlands, and draft water quality standards for wetlands. Although not specifically identified in the WPP as a 2013 activity, continued development and refinement of standards as they relate specifically to wetlands will continue during the grant period. The focus will shift more to the definitions of high quality and very high quality as they relate to wetlands; the relationship between functions and designated and existing uses; and the use of these terms in the anti-degradation procedure.

Outputs: Guidance or policy statement on the applicability of the Water Quality Standards to wetlands; guidance or policy statement on the relationship between wetlands and the anti-degradation policy. Definition of high quality and very high quality as it relates to wetlands.

Outcomes: Ensures that wetlands are clearly included as waters of the state covered by the Water Quality Standards and the state anti-degradation policy.

Project Tasks: Review documents and notes from the Association of State Wetland Managers webinar series and workshops on wetland water quality standards and Sec. 401 Water Quality Certification. Continue discussion with Watershed Management Division staff on the need to address wetlands in the Water Quality Standards; continue participation in anti-degradation policy development workgroup; work with other

programs in the Agency for coordinated 404/401 review; continue to refine assessment methods to discriminate between levels of condition.

Links to EPA Strategic Plan Goal: The Outputs and Outcomes listed above tie into Goal 2 and Objective 2.2 of EPA's Strategic Plan and the Sub-objective: By 2015, working with partners, achieve a net increase in wetland acres, with an additional focus on assessment of wetland condition with biological and functional measures. The Monitoring and Assessment tasks will lead to a better understanding of the condition Vermont's wetlands; the Regulatory tasks will lead to fewer wetland losses; the Restoration tasks, with partners, will significantly increase wetland acres; and clarification of the Water Quality Standards and Anti-degradation Policy will also strengthen wetland protection.

Regional priorities: Identification of wetlands with high ecological value in blocks of un-fragmented habitat will be identified in the **Monitoring and Assessment** and **Water Quality Standards outputs.**

Tracking Outputs and Outcomes: Tracking progress will be accomplished in each of the four core areas by monthly review of the project tasks and the schedule listed below:

Milestone Schedule:

Monitoring and Assessment:

- VRAM review/revise 10/13- 4/14
- Sampling protocols review/revise 1-4/14
- Revise QAPP for approval 1/14
- Select Rotating Basin sites 1/14 1/15
- Landowner contact 3/14 and 3/15
- FQA development 10/13 to 9/15
- Sample and assess 6-9/14 and 6-9/15
- 305(b) report 2014 (Note: 2014 305(b) report will include 2012-2013 data)

Regulation:

- Prioritize tasks and assign 10/13
- Revise/ Develop documents 10/13- 9/15
- Legal and Technical review 10/13 – 9/15
- Final 9/15
- GP evaluation 5-6/14-15
- Workshops on-going
- Assess status of compliance 5-9/15
- Review/update compliance Procedures 11-12/13

Restoration and Protection:

- Coordinate meetings 10/13-9/15
- Outreach 3-5/14 and 3-5/15
- Identify sites 5-9/14 and 5-9/15
- Tech assistance as requested 10/13 to 9/15

Water Quality Standards:

- Monthly meetings 1/2014 to 9/2015
- Develop draft documents 12/2014 to 3/2015
- Legal review 4/2014 to 9/2015

Partnership Information: Partner Agencies are mentioned in the tasks as outlined above. The US Natural Resources Conservation Service and the US Fish and Wildlife Service are essential partners in Voluntary Restoration and Protection coordination. EPA and the Army Corps of Engineers are interested partners all of the Core Elements. The Vermont Fish and Wildlife Department, including the Heritage Program are partners in identifying and evaluating wetlands of high ecological value. The staff of the Green Mountain National Forest are partners for wetland assessment and monitoring activities on Forest Service lands. The Wetlands Workgroup of the Vermont Climate Change planning committee is assisting with sentinel site selection, monitoring protocols and protection priorities for wetlands most susceptible to climate change; and wetlands that may be resilient to climate change. Wetland Program staff are responsible for coordinating with, and providing technical assistance to, existing restoration and protection programs.

Budget: The budget as detailed in this proposal is largely self-explanatory. There are no contractual or "other" categories. Tasks will be completed with existing staff with the addition of a temporary employee. Grant related tasks are tracked bi-weekly.

Restoration Demonstration Project information: N/A

Programmatic Capability/Technical Experience/Qualifications: Resumes of Wetlands Program staff are attached; Alan Quackenbush, Program Manager, MS Botany; Julie Foley, MS Environmental Science; Shannon Morrison, MS Botany; Rebecca Chalmers, MS Wildlife; Danielle Owczarski, MS Field Naturalist.

Transfer of Results: All final reports and work products will be available on the Agency of Natural Resources website. Hard copies will be available on request. Presentations of results of these projects will be made at appropriate meetings and conferences including: the New England Biological Assessment of Wetlands Working Group (NEBAWWG), Society of Wetland Scientists (SWS), and the Association of State Wetland Managers (ASWM). Workshops, trainings, and other presentations will be made on request.

Past Performance: The Vermont Wetlands Program has been awarded Wetland Program Development Grants (WPDG) in the past several years; a 3-yr pilot demonstration grant, and FY09, FY10 and FY11WPDG's. We have successfully managed and completed these agreements (FY12) is in process and on track). Our last report (a 5-yr program, status and trends report) was late. This was due to some large projects requiring key staff time for review, and family medical leave for the program manager. For the three-year project, we kept on track, completed the required tasks, and met the reporting requirements.

Quality Assurance/Quality Control: This project has an EPA approved Quality Assurance Project Plan (2009). Proposed amendments and revisions will be submitted for review and approval by the project manager to EPA for the five-year re-authorization, before the 2014 sampling season.

Invasive species control: All projects proposed or approved by the Wetlands Program require control of invasive species. If an invasive species problem should occur, an Agency of Natural Resources team is available to review and approve a plan for dealing with the problem. The team consists of the Wetlands Program manager, an Aquatic Nuisance analyst, an Aquatic Biologist, the State Botanist, the State Entomologist, and a Forest Entomologist.

ALAN L. QUACKENBUSH

282 Marshall Road
Duxbury, Vermont 05676
244-7512 (Home) 338-4879 (Work)

PROFESSIONAL EXPERIENCE

1989 - Present **Vermont Department of Environmental Conservation**, Waterbury, Vermont.

Wetlands Program Manager (2005-present)

Environmental Scientist, Wetlands Program. (1996-2005)

- Review wetland projects under federal and state jurisdiction including: the Vermont Wetland Rules, Act 250, and the Federal Clean Water Act.
- Coordinate training for Wetlands Program staff.
- Provide technical assistance and training to other state departments, towns, regional planning commissions, Act 250 district commissions, loggers, realtors, and contractors.
- Serve as Vermont representative to the New England Biological Assessment of Wetlands Working Group.

Aquatic Biologist, Environmental Sciences Section. (1989-1996)

- Completed aquatic plant surveys.
- Participated in milfoil control projects and watershed water quality monitoring.
- Sampled and analyzed lakes and ponds sensitive to acid rain.
- Conducted whole effluent toxicity testing and analysis, lotic macroinvertebrate and fish sampling.
- Specialized in Plecoptera and Odonata taxonomy, periphyton and phytoplankton analysis.
- Served on Non-Point Pollution sub-committee of the Lake Champlain Basin Program, Technical Advisory Committee; and Ecological Work Group for the Pine Street Barge Canal Superfund site.

1986 - 1989 **University of Vermont**, Burlington, Vermont

Graduate Teaching Fellow

- Taught introductory Biology laboratory.
- Assisted in teaching Plant Ecology, Economic Botany, and Evolution of Vascular Plants.

1985 **Department of Forests, Parks, and Recreation**, Waterbury, Vermont

Park Naturalist - Lake Carmi State Park

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Springfield, VT 05156
phone: (802) 885-8851
e-mail: rebecca.chalmers@state.vt.us

Rebecca Chalmers

Education

M.S., Ecology and Environmental Science, University of Maine, Orono, 2004
B.A., Biology, Marlboro College, Marlboro, Vermont, 1998

Relevant Experience

Department of Environmental Conservation, Springfield, Vermont
District Wetlands Ecologist, 2007 – Present

Antioch University New England, Keene, New Hampshire
Adjunct Faculty, Herpetology, 2008 – 2009

Department of Natural Resources, Annapolis, Maryland
Natural Resources Biologist, 2005 – 2006

Appalachian Mountain Club, Mt. Desert, Maine
Instructor, Acadia Science Camp, September – October 2001

Acadia National Park, Bar Harbor, Maine
Biological Technician, March – August 2001 and May – September 1999
Air & Water Technician, April – August 2000

Mountain Lake Biological Station, Pembroke, Virginia
National Science Foundation Research Experience for Undergraduates, 1997

Maine Forest Biodiversity Project, throughout Maine
Botany Technician, contractor, The Nature Conservancy, June – August 1996

Selected Publications

Chalmers, R. and C. Loftin. 2006. Wetland and microhabitat use by nesting four-toed salamanders (*Hemidactylium scutatum*) in Maine. *Journal of Herpetology* 40(4):478-485.

Chalmers, R. and C. S. Loftin. 2006. *Hemidactylium scutatum* morphology and phenology. *Herpetological Review* 37(1):69-71.

Chalmers, R. and S. Droege. 2002. Leaf litter bags as an index to populations of northern two-lined salamanders (*Eurycea bislineata*). *Wildlife Society Bulletin* 30:71-74.

Ballenger, E. and R. Chalmers. 2000. Evaluation of ultraviolet radiation attenuation in relation to water chemistry, habitat characterization and amphibian populations of wetlands at Acadia National Park. National Park Service, Acadia National Park, Maine.

(W) 802-527-5732
e-mail: julie.foley@state.vt.us

Julie Foley

Relevant Experience

2006-Present VT Dept. of Environmental Conservation Waterbury, VT

District Wetlands Ecologist

Protect Vermont's wetlands through regulation, restoration, education, and enforcement. Identification and protection of state-regulated wetlands, including project review, permitting, compliance review, outreach and education.

2004-2007 University of Vermont, Rubenstein School Burlington, VT

Research Assistant

Developed three statistical and GIS-based models to assist the State of Vermont in cleaning up stormwater impaired streams. Thesis title: *Stormwater Management in Vermont: Linking Hydrologic and Land Use Assessment in a Practical Framework for Permitting.*

2006 Lake Champlain Land Trust Burlington, VT

Stewardship Intern

Assisted the Director of Land Protection with the development and maintenance of public lands for conservation and protection; reviewed grant proposals to acquire and generate funds for various conservation projects.

2005 VT Dept. of Environmental Conservation Waterbury, VT

Stream Assessment Field Staff

Supervised a crew of undergraduate students in a field initiative to extensively survey the geomorphic condition of Chittenden County streams in accordance with State protocols

2001-2004 AKRF, Inc. New York, NY

Project Manager/Geologist

Specialized in environmental site assessments and investigations, hazardous materials planning studies and site remediation. Fieldwork oversight for the installation of groundwater monitoring wells and soil borings, conducted groundwater and soil sampling and directed environmental remediation projects.

2000-2001 Vertex Engineering Brooklyn, NY

Environmental Scientist

Conducted site investigations including soil and groundwater sampling and health and safety oversight.

Education

1995-1999 Colgate University Hamilton, NY

B.A. in Geology, Minor in Environmental Studies

2004-2007 University of Vermont Burlington, VT

M.S. in Natural Resources, Aquatic Ecology and Watershed Science

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Waterbury, VT 05676

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(W) 802-241-3762
e-mail: shannon.morrison@anr.state.vt.us

Shannon Morrison

Relevant Experience

2000-2010 VT Dept. of Environmental Conservation Waterbury, VT

District Wetlands Ecologist

Protected Vermont's wetlands through regulation, education, and enforcement:

- Interpreted and regulated the Vermont Wetlands Rules, Act 250 Land Use Permits, and Section 401 of the Clean Water Act;
- Investigated violations of the Vermont Wetland Rules, coordinated wetland restorations, and compiled expert testimony for investigators and attorneys;
- Assisted in creating and implementing an education and outreach program for promoting the importance of wetlands in Vermont, including a website, multimedia presentations, posters, and field days;
- Coordinated with land owners, businesses, environmental consultants, loggers, municipalities, state agencies, and federal agencies on diverse projects, ranging from boardwalks to shopping centers. Negotiated with these clientele to successfully avoid and minimize environmental impacts;
- Developed and clarified policies on enforcement procedure, Conditional Use Determination (CUD) fees and procedures, and CUD amendment procedures; and,
- Analyzed data, and authored reports for the wetlands section of the 305b report and for the Annual Reports for the Vermont Wetlands Section 2000 – 2003.

1999 VT Dept. of Environmental Conservation Waterbury, VT

Purple Loosestrife Coordinator

Planned, organized and expanded the Purple Loosestrife Bio-Control Program for Vermont:

- Coordinated public outreach, education, scientific research, and mapping aspects of the program;
- Developed an Access data-base and corresponding GIS maps for populations of purple loosestrife and biological control releases; and,
- Analyzed three years of data, and compiled a comprehensive report for the program.

1998 University of Vermont Burlington, VT

Research Technician

Assisted in developing experimental designs and strategies for NSF funded ecological research:

- Collected, measured and harvested test materials;
- Assisted in tending experimental plants in greenhouse experiments; and,
- Provided on-site problem solving for field experiments.

Education

1989-1995 Old Dominion University Norfolk, VA

- B.S in Biology, Minor in Oceanography

1995-1998 University of Vermont Burlington, VT

- M.S. in Botany