



STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

To: James Reardon, Commissioner of Finance & Management
From: Nathan Lavery, Fiscal Analyst
Date: April 18, 2012
Subject: JFO #2555, #2559, #2560

No Joint Fiscal Committee member has requested that the following items be held for review:

JFO #2555 – \$790,018 grant from the U.S. Department of Health and Human Services to the Vermont Department of Mental Health. This grant will be used to provide regular crisis counseling services to survivors of Tropical Storm Irene in Addison, Bennington, Caledonia, Chittenden, Franklin, Lamoille, Orange, Rutland, Washington, Windham and Windsor Counties.

[JFO received 3/19/12]

JFO #2559 – \$503,055 grant from the U.S. Department of Agriculture, passing through six Vermont farms, to the Vermont Agency of Agriculture, Food and Markets. This grant will be used to purchase water quality monitoring equipment for use in evaluating the effectiveness of agricultural best management practices for controlling runoff. Funding for the design of water quality monitoring stations was previously approved by the Joint Fiscal Committee (JFO #2537).

[JFO received 4/04/12]

JFO #2560 – \$350,000 grant from the Lake Champlain Basin Program to the Vermont Agency of Agriculture, Food and Markets. This grant will be used as matching funds for the water quality monitoring program to evaluate the effectiveness of agricultural best management practices for controlling runoff. Funding for the design of water quality monitoring stations was previously approved by the Joint Fiscal Committee (JFO #2537).

[JFO received 4/04/12]

The Governor's approval may now be considered final. We ask that you inform the Secretary of Administration and your staff of this action.

cc: Patrick Flood, Commissioner
Chuck Ross, Secretary



STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

To: Joint Fiscal Committee Members
From: Nathan Lavery, Fiscal Analyst
Date: April 6, 2012
Subject: Grant Requests

Enclosed please find two (2) items that the Joint Fiscal Office has received from the administration.

JFO #2559 – \$503,055 grant from the U.S. Department of Agriculture, passing through six Vermont farms, to the Vermont Agency of Agriculture, Food and Markets. This grant will be used to purchase water quality monitoring equipment for use in evaluating the effectiveness of agricultural best management practices for controlling runoff. Funding for the design of water quality monitoring stations was previously approved by the Joint Fiscal Committee (JFO #2537). **Expedited review has been requested. Joint Fiscal Committee members will be contacted by April 16 with a request to waive the balance of the review period and approve acceptance of these funds.**

[JFO received 4/04/12]

JFO #2560 – \$350,000 grant from the Lake Champlain Basin Program to the Vermont Agency of Agriculture, Food and Markets. This grant will be used as matching funds for the water quality monitoring program to evaluate the effectiveness of agricultural best management practices for controlling runoff. Funding for the design of water quality monitoring stations was previously approved by the Joint Fiscal Committee (JFO #2537). **Expedited review has been requested. Joint Fiscal Committee members will be contacted by April 16 with a request to waive the balance of the review period and approve acceptance of these funds.**

[JFO received 4/04/12]

Please review the enclosed materials and notify the Joint Fiscal Office (Nathan Lavery at (802) 828-1488; nlavery@leg.state.vt.us) if you have questions or would like an item held for legislative review. Unless we hear from you to the contrary by April 13 we will assume that you agree to consider as final the Governor's acceptance of these requests.

MEMORANDUM

TO: Nathan Lavery
Fiscal Analyst

FROM: Laura DiPietro
Agency of Agriculture, Food & Markets

DATE: March 27, 2012

SUBJECT: Request to Expedite Grant Acceptance

JFO 2560

This request is to expedite the grant approval for phase 2 of the AGO Agricultural Practice Monitoring Project. A major piece of the project is the monitoring equipment that will be installed on the individual sites, which is in phase 2. This equipment takes 4-6 weeks to be delivered after the initial purchase order is placed. A PO cannot be submitted until these funds have been approved by the State and a contract executed with the contractor. The project aims to collect surface water runoff from farm fields and should include a full year of practice implementation for increased statistical power. In order to get data for the full year including the spring practices, we are trying to shorten the time frame until the equipment can be ordered and installed on site. If we are unable to get the spring data, the project may need to be extended another year which would cost more time and money.

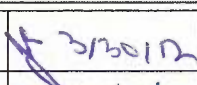
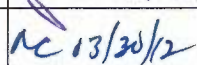
State of Vermont
 Department of Finance & Management
 109 State Street, Pavilion Building
 Montpelier, VT 05620-0401

Agency of Administration

[phone] 802-828-2376
 [fax] 802-828-2428

540 2560

STATE OF VERMONT FINANCE & MANAGEMENT GRANT REVIEW FORM

Grant Summary:		This is one of three grants to provide federal capital investments in monitoring and evaluation of agricultural field best management practices. The first grant from the U.S. Natural Resources Conservation Services (JFO # 2537) was approved 12/13/2011 for \$70,000. This new grant request is from the Lake Champlain Basin Program (LCBP) and the New England Interstate Water Pollution Control Commission (NEIWPC) for \$350,000. This grant covers additional work by Stone Environmental on implementation of this project. The second new grant being submitted at the same time as this grant is for the assignment of \$503,055 in federal funds (that were received by local farmers) to Agency of Agriculture Food and Markets to purchase needed equipment for the project.			
Date:		3/27/2012			
Department:		Agriculture, Food and Markets			
Legal Title of Grant:		AGO Contract for Monitoring Water Quality Improvements in Lake Champlain Watershed			
Federal Catalog #:		N/A			
Grant/Donor Name and Address:		Lake Champlain Basin Program, 54 West Shore Road, Grand Isle, VT 05458			
Grant Period:		From:	To:		
		3/31/2012	12/31/2015		
Grant/Donation		\$350,000			
	SFY 1	SFY 2	SFY 3	Total	Comments
Grant Amount:	\$350,000	\$	\$	\$350,000	
Position Information:		# Positions	Explanation/Comments		
		0			
Additional Comments:					
Department of Finance & Management				 (Initial)  (Initial)	
Secretary of Administration					

RECEIVED

APR 04 2012

JOINT FISCAL OFFICE



STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

BASIC GRANT INFORMATION					
1. Agency:		Vermont Agency of Agriculture			
2. Department:		Agricultural Resource Management			
3. Program:		Water Quality			
4. Legal Title of Grant:		AGO Contract for Monitoring and Evaluation of BMP Implementation for Water Quality			
5. Federal Catalog #:		N/A			
6. Grant/Donor Name and Address: NEIWPC- Lake Champlain Basin Program 54 West Shore Road Grand Isle, VT 05458					
7. Grant Period:		From:	3/31/2012	To:	12/31/2015
8. Purpose of Grant: Agricultural Water Quality Improvements in Lake Champlain Watershed					
9. Impact on existing program if grant is not Accepted: This grant provides federal capital investments in the monitoring and evaluation of agricultural field best management practices to determine phosphorus reduction potentials which will help Vermont farmers to meet their obligations under the Clean Water Act and future requirements of the Lake Champlain TMDL from the Environmental Protection Agency.					
10. BUDGET INFORMATION					
	SFY 1	SFY 2	SFY 3	Comments	
Expenditures:	FY 2012	FY	FY		
Personal Services	\$350,000	\$	\$	Contract with Stone Environmental Inc.	
Operating Expenses	\$	\$	\$		
Grants	\$	\$	\$		
Total	\$350,000	\$	\$		
Revenues:					
State Funds:	\$	\$	\$		
Cash	\$	\$	\$		
In-Kind	\$	\$	\$		
Federal Funds:	\$	\$	\$		
(Direct Costs)	\$	\$	\$		
(Statewide Indirect)	\$	\$	\$		
(Departmental Indirect)	\$	\$	\$		
Other Funds:	\$	\$	\$		
Grant (source LCBP GLFC)	\$350,000	\$	\$		
Total	\$350,000	\$	\$		
Appropriation No:	2200040000	Amount:	\$350,000		
			\$		
			\$		

MAR 29 2012

STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

		Total	\$350,000
PERSONAL SERVICE INFORMATION			
11. Will monies from this grant be used to fund one or more Personal Service Contracts? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If "Yes", appointing authority must initial here to indicate intent to follow current competitive bidding process/policy. Appointing Authority Name: Jolinda LaClair Agreed by: <u>JL</u> (initial)			
12. Limited Service Position Information:	# Positions	Title	
Total Positions			
12a. Equipment and space for these positions:		<input type="checkbox"/> Is presently available.	<input type="checkbox"/> Can be obtained with available funds.
13. AUTHORIZATION AGENCY/DEPARTMENT			
I/we certify that no funds beyond basic application preparation and filing costs have been expended or committed in anticipation of Joint Fiscal Committee approval of this grant, unless previous notification was made on Form AA-1PN (if applicable):	Signature: <u>Jolinda LaClair</u>	Date: <u>3-27-12</u>	
	Title: Deputy Secretary of Agriculture		
	Signature: _____	Date: _____	
	Title: _____		
14. SECRETARY OF ADMINISTRATION			
<input checked="" type="checkbox"/>	Approved:	(Secretary or designee signature) <u>[Signature]</u> Deputy	Date: <u>03/30/12</u>
15. ACTION BY GOVERNOR			
<input type="checkbox"/>	Check One Box: Accepted	(Governor's signature)	Date:
<input type="checkbox"/>	Rejected	<u>[Signature]</u>	<u>4/4/12</u>
16. DOCUMENTATION REQUIRED			
Required GRANT Documentation			
<input type="checkbox"/> Request Memo <input type="checkbox"/> Dept. project approval (if applicable) <input type="checkbox"/> Notice of Award <input type="checkbox"/> Grant Agreement <input type="checkbox"/> Grant Budget		<input type="checkbox"/> Notice of Donation (if any) <input type="checkbox"/> Grant (Project) Timeline (if applicable) <input type="checkbox"/> Request for Extension (if applicable) <input type="checkbox"/> Form AA-1PN attached (if applicable)	
End Form AA-1			
(*) The term "grant" refers to any grant, gift, loan, or any sum of money or thing of value to be accepted by any agency, department, commission, board, or other part of state government (see 32 V.S.A. §5).			

STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

BASIC GRANT INFORMATION				
1. Agency:	Vermont Agency of Agriculture			
2. Department:	Agricultural Resource Management			
3. Program:	Water Quality			
4. Legal Title of Grant:	AGO Contract for Monitoring and Evaluation of BMP Implementation for Water Quality			
5. Federal Catalog #:	N/A			
6. Grant/Donor Name and Address:	NEIWPCCLake Champlain Basin Program 54 West Shore Road Grand Isle, VT 05458			
7. Grant Period:	From:	3/31/2012	To:	12/31/2015
8. Purpose of Grant:	Agricultural Water Quality Improvements in Lake Champlain Watershed			
9. Impact on existing program if grant is not Accepted:	This grant provides federal capital investments in the monitoring and evaluation of agricultural field best management practices to determine phosphorus reduction potentials which will help Vermont farmers to meet their obligations under the Clean Water Act and future requirements of the Lake Champlain TMDL from the Environmental Protection Agency.			
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Expenditures:	FY 2012	FY	FY	
Personal Services	\$350,000	\$	\$	Contract with Stone Environmental Inc.
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Federal Funds:	\$	\$	\$	
(Direct Costs)	\$	\$	\$	
(Statewide Indirect)	\$	\$	\$	
(Departmental Indirect)	\$	\$	\$	
Other Funds:	\$	\$	\$	
Grant (source LCBP GLFC)	\$350,000	\$	\$	
Total	\$350,000	\$	\$	
Appropriation No:	2200040000	Amount:	\$350,000	
			\$	
			\$	

MAR 29 2012



**Lake Champlain
Basin Program**

54 West Shore Road
Grand Isle
Vermont 05458

(802) 372-3213
1-800-468-LCBP
www.lcbp.org

Mr. Charles Ross, Secretary of Agriculture
Vermont Agency of Agriculture, Food and Markets
116 State Street
Montpelier, VT 05620

February 14, 2012

Dear Secretary Ross, *chuck*

This letter is to confirm to you that the Lake Champlain Basin Program (LCBP) intends to provide \$350,000 to the Vermont Agency of Agriculture, Food and Markets for the implementation of the America's Great Outdoors initiative. These funds are provided to us by the Great Lakes Fishery Commission and can serve as matching funds required for the use of the USDA-NRCS funds. This LCBP support will take the form of a contract between the New England Interstate Water Pollution Control Commission (NEIWPCC) and the Agency.

This America's Great Outdoors initiative, slated to commence April 1, 2012 will evaluate the effectiveness of selected agricultural best management practices (BMP's) for a period of at least 3 years. Water quality monitoring stations will be installed at the edge of fields prior to BMP implementation to collect baseline data. Samples will continue to be collected for a number of years following practice implementation (e.g., cover crops, soil aeration on hay land, and water and sediment control basin) to evaluate their effectiveness in trapping or removing sediments and nutrients prior to entering surface waters. This project will require Quality Assurance Project Plan approval prior to any data collection.

The resulting data on the effectiveness of these BMPs will allow us to better focus our resources on those conservation systems that are most effective in addressing runoff and associated nutrient and sediment losses. These data are needed to strategically align conservation planning and financial assistance programs with those practices that provide the greatest benefit to water quality.

Overall funding for this project will be a combination of Architectural and Engineering funding from the USDA Natural Resource Conservation Service and Best Management Practice funds from the Vermont Agency of Agriculture, farmer funding provided through NRCS Environmental Quality Incentive Program contracts, as well as this LCBP funding. In-kind services such as farm management practice data collection, laboratory analysis, and limited water sample collection will be provided by the State of Vermont. The project will be managed by a contractor chosen by the State of Vermont through an RFP process. The total project costs are estimated to be \$900,000.

Please direct any questions regarding our support to me at my office in Grand Isle, VT.

With Best Regards,



William G. Howland, Manager
Lake Champlain Basin Program

cc: Clair Ryan, NEIWPCC



STATE OF VERMONT
FINANCE & MANAGEMENT GRANT REVIEW FORM

Sent To Joint Fiscal Office		Date
		4/4/12



Edge of Field Monitoring
NEI Job Code: 0100-306-020
Project Code: L-2012-005

AGREEMENT
between
NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION
and
VERMONT AGENCY OF AGRICULTURE, FOOD AND MARKETS

This contract is entered into on March 23, 2012, by the New England Interstate Water Pollution Control Commission (the "Commission"), represented by the Commission's Executive Director as the Contracting Officer, and having its usual place of business at Boott Mills South, 116 John Street, Lowell, MA 01852-1224 (Tel: 978-323-7929; Fax: 978-323-7919), and Vermont Agency of Agriculture, Food & Markets (the "Contractor"), 116 State Street, Montpelier, VT 05602; (Tel: 802-828-1289; Email: laura.dipietro@state.vt.us), Contact: Laura DiPietro.

WHEREAS, the Edge of Field Monitoring are projects approved by the Great Lakes Fishery Commission (GLFC), and

WHEREAS, the accomplishment of the following described work and services is authorized by an agreement between the Commission and the GLFC, and

WHEREAS, it is in the best interest of the Commission to obtain the assistance of the Contractor in connection with said work and services, and

WHEREAS, the Contractor represents that it is qualified to perform and/or oversee said work and services and possesses the ability to perform successfully under the terms and conditions of this agreement,

NOW THEREFORE, the parties mutually agree as follows:

ARTICLE I. SERVICES BY AND RESPONSIBILITIES OF THE CONTRACTOR

A. Work Products

- (1) **Work**. The Contractor is responsible for overseeing and managing all the work that is to be completed for the project. The work and services to be performed are more fully described in the scope of work, reporting schedule and budget entitled, *Attachment A*, attached hereto and made a part hereof (hereafter "Work").

The Work shall meet and comply with all standards heretofore or hereafter promulgated by the Federal or State of Vermont's Environmental Protection Agencies or such other State or Federal agency or agencies as shall have jurisdiction over the Project. Contractor assumes full responsibility for having familiarized himself or herself with the nature and extent of the contract documents (as hereafter defined), work, locality, and local conditions that may in any manner affect the work to be done.

Contractor will provide competent, suitably qualified personnel to survey and lay out and perform the Work as required by this agreement and the workplan ("contract documents"). Contractor or subcontractor will furnish all materials, equipment, labor,

transportation, machinery, tools, appliances, fuel, power, light, heat, telephone, water, and sanitary facilities and all other facilities and incidentals necessary for the completion of the Work. All materials to be supplied or used by the Contractor or subcontractor in connection with the Work will be appropriate for the work and consistent with industry standard for the work.

- (2) **Written Submissions.** The Contractor shall prepare and submit appropriate documentation as described below for work being conducted by Contractor's staff. The Contractor is also responsible for ensuring that all subcontractors prepare and submit the following reports and other documentation:
- (a) Brief (1-2 page) quarterly written reports shall be submitted for each task by the 15th day after the end of each calendar quarter (March, June, September, December) to the Commission's oversight project officer designated in Article II. The quarterly reports shall describe progress to date, completed outputs, problems encountered and anticipated, and the means of responding to those problems. Payment of contractual invoices is contingent upon the Commission's timely receipt of quarterly reports.
 - (b) The final report is due no later than **December 30, 2014**.
 - (c) The Contractor and/or its subcontractor (s) is responsible for preparing a Quality Assurance Project Plan (QAPP). The QAPP is to be reviewed and approved by NEIWPC and other organizations (such as US Environmental Protection Agency (EPA), or state environmental agencies), as necessary. QAPPs are required in support all environmental data operations in accordance with the Commission's and US EPA Quality Assurance Policy and Standards. The term "environmental data operations" refers to activities involving the collection, generation, compilation, analysis, evaluation, and use of environmental data. The Contractor must forward the QAPP to Commission's Quality Assurance Project Manager. The Commission, as the lead organization, will submit the QAPP to any other pertinent organizations for their approval. The QAPP must be fully-approved by all governing organizations (Commission, EPA, state agencies, etc.) before any data collection and/or generation activities begin. No contractual invoices will be paid for any environmental data operations begun prior to the Commission's receipt of a fully-approved QAPP.
 - (d) The Contractor agrees to use recycled paper for all reports which are prepared as a part of this Agreement and delivered to the Commission, GLFC, or the person with oversight responsibility named in Article II.
- (3) The Commission's or GLFC's approval of work products, reports, and incidental work or materials furnished hereunder shall not in any way relieve the Contractor of responsibility for the technical adequacy of his Work. Neither the Commission's nor GLFC's review, approval, acceptance, or payment for any of the services shall be construed as a waiver of any rights under this contract, including but not limited to the right to reject "defective" work (as hereinafter defined) or material or work or material not in conformance with the requirements of the contract documents.
- (4) The Contractor or its subcontractor(s) shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in his/her work products, reports, and other services. The contract price constitutes the total compensation payable to contractor for performing the Work. All duties, responsibilities, and obligations assigned

to or undertaken by Contractor shall be at his or her expense without change in the contract price.

(5) **Additional Work or Revisions to the Work.** Without invalidating the agreement, the Commission may, at any time or from time to time, order additions, deletions, or revisions in the Work; these will be authorized by the Commission in writing. If the Contractor is requested by the Commission to perform work not included within the scope of the Work described in the original contract documents and if Contractor believes that the performance of such additional work involves him in additional expense or entitles him to an extension of the contract time, Contractor may make a claim for such additional expense or extension of the contract time as provided in Article V. Contractor shall not undertake any additional work which he contends entitles him to additional payment or time without written authorization by the Commission as provided for in Article V. Additional work performed by Contractor without written authorization will not entitle him to an increase in the contract price or an extension of the contract time. Upon receipt of such written authorization, contractor will proceed with the work involved.

(6) **Inspections.** The Contractor and/or its subcontractor(s) is responsible for performing or having performed all inspections and tests necessary to substantiate that the Work furnished under this contract conform to contract requirements. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Commission during contract performance and for as long afterwards as the contract requires. The Commission has the right to inspect and test the Work, to the extent practicable, at all places and times, and in any event before acceptance. The Commission shall perform inspections and tests in a manner that will not unduly delay the Work. The Commission assumes no contractual obligation to perform any inspection and test for the benefit of the Contract. The right to review, whether exercised or not, does not relieve the Contractor of the obligations under this contract.

If, as a result of any such inspection, any of the Work does not conform to contract requirements, the Commission may require the Contractor to perform the Work again in conformity with contract requirements, at no increase in contract price. When the defects in the Work cannot be corrected by reperformance, the Commission may (1) require the Contractor to take necessary action to ensure that future performance conforms to contract requirements and (2) reduce the contract price to reflect the reduced value of the Work performed. If the Contractor fails to promptly perform the services again or take the action necessary to ensure future performance in conformity with contract requirements, the Commission may (1) by contract or otherwise, perform the Work and reduce the contract price by an amount that is equitable under the circumstances and (2) terminate the contract for default as set forth in Article VII.

(7) **Contractor's Warranty.** Contractor warrants and guarantees to the Commission that all materials will be appropriate for the work and consistent with industry standard for the work as described in the contract documents.

(8) **Rejecting Defective Work.** The Commission will have authority to disapprove or reject work that is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty, or defective, or does not conform to the requirements of the contract documents). Prompt notice of all defects shall be given to Contractor. All defective work may be rejected, corrected or accepted as provided herein. If required by

Commission, Contractor will promptly, without cost to the Commission and as specified by the Commission, correct or replace any defective Work. If Contractor does not correct or replace such defective Work within a reasonable time, all as specified in a written notice from the Commission, the Commission may have the deficiency corrected or replaced. All direct or indirect costs of such correction or replacement, including compensation for additional professional services, shall be paid by Contractor. If, instead of requiring correction or replacement of defective work, the Commission prefers to accept such work, it may do so. In such case, if acceptance occurs prior to approval of final payment, there shall be an appropriate reduction in the contract price; or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by Contractor to the Commission.

- (9) **Neglected Work by Contractor.** If Contractor should neglect to prosecute the Work in accordance with the contract documents, the Commission, after ten (10) days' written notice to Contractor may, without prejudice to any other remedy it may have, make good such deficiencies and the cost for making good such deficiencies (including compensation for additional professional services) shall be charged against Contractor. If the payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor will pay the difference to the Commission.

B. Responsibilities and Requirements

- (1) **Final Invoicing.** The final reports must be approved before final payment is issued. (The approval process may include peer review.) The final invoice for payment shall be labeled as "final invoice" by the Contractor and shall be received by the oversight project officers designated in Article II by the completion date of each task. If additional time is needed for project completion and the approval process, the Contractor shall request, in writing, a no-cost extension contract amendment. The amendment request shall be sent as per Article II.
- (2) **Administrative Regulatory Compliance.** The Contractor agrees that it will give all notices and comply with all applicable federal laws and regulations in effect on the date of execution of the assistance agreement for this project. Such laws include the Federal Clean Water Act, Safe Drinking Water Act, Comprehensive Environmental Response, Compensation, and Liability Act, Toxic Substances Control Act, Administrative Procedures Act, and other relevant environmental statutes and regulations. Procurement requirements covered include, but are not limited to: prohibition of contracting with a suspended or debarred party and appropriate requirements for subcontractors.
- (3) **Performance.** The Contractor shall be, and shall remain liable in accordance with applicable law for all damages to the Commission or GLFC caused by the Contractor's negligent performance of any of the services furnished under this contract, except for errors, omissions or other deficiencies to the extent attributable to the Commission, Commission-furnished data or any third party. The Contractor shall not be responsible for any time delays in the project caused by circumstances beyond the Contractor's control.
- (4) **Access to and Retention of Records for Audit Purposes.** The Contractor shall maintain books and records and supporting documentation (such as cancelled checks, paid bills, payrolls, time and attendance records), in accordance with generally accepted accounting principles and practices consistently applied. The Contractor shall allow

access by the Commission, the federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives, including any independent auditor retained by any of them, to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purpose of making audit, examination, excerpts and transcriptions without any direct charge. Retention of all such items is required for three years after the Commission makes final payment and all other pending matters are closed. If any litigation, claim, negotiation, audit or other action involving the records has been started before the expiration of the 3-year period, the records must be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular 3-year period, whichever is later.

(5) **Equal Employment Opportunity.** In connection with the execution of this contract, the Contractor shall not discriminate against any employee or applicant for employment because of age, race, religion, color, sex, or nation of origin and shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin.

(6) **Affirmative Action.** The Contractor agrees and is required to use the following affirmative steps to assure that minority firms, women's business enterprises, labor surplus area firms, and small businesses in rural area (SBRAs) are used when possible. Affirmative steps include:

(a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(b) Assuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority business, and women's business enterprises;

(d) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women's business enterprises;

(e) Using the services and assistance of the Small Business Administration, and the Minority Business Development Agency of the Department of Commerce.

The Contractor shall report to the Commission on any applicable invoices the following information: name, address and type (MBE or WBE) of businesses used and amount of funds to each MBE or WBE business included in the period of services submitted for payment.

(7) **Indemnification.** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Commission, its members, officers, and employees from and against all claims, damages, demands, payments, suits, actions, recoveries, judgments, losses and expenses, including attorneys' fees, arising out of any omission or act of the Contractor, its agents, employees, or subcontractors in the performance of this contract, provided that any such claim, damage, loss or expense is caused in whole or in part by any negligent act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable,

regardless of whether or not it is caused in part by a party indemnified hereunder. The Commission may retain such monies from the amount due the Contractor as may be necessary to satisfy any claim for damages, costs and the like, which is asserted against the Commission. The provisions of this Article shall survive the expiration or earlier termination of this Agreement or any license issued thereunder.

This indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for contractor or any subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

(8) **Insurance and Bond.**

(a) If work under this contract involves construction, or any risk to property, the environment, or public health from actions of the Contractor, then, prior to commencement of the Work, the Contractor shall furnish to the Commission a certificate or certificates of insurance in a form satisfactory to the Commission showing compliance with this section. The certificate(s) shall provide that the policies shall not be changed or canceled or allowed to expire until at least thirty (30) days prior written notice has been given by the insurer or its agent to the Commission.

(b) The Contractor shall, at its sole expense, obtain and maintain in force, and shall require any subcontractor or assignee to obtain and maintain in force, both for the benefit of the Commission, the following kinds and amounts of insurance:

- (i) Workers' Compensation Insurance. The policy shall cover the obligations of the Contractor in accordance with the Workers' Compensations Law and Disability Benefits Law covering all operations under the Contract, whether performed by it, or by its subcontractor.
- (ii) Liability and Property Damage Insurance. Unless otherwise specified, each policy shall have limits not less than: \$1,000,000 combined (Bodily Injury & Property Damage); \$2,000,000 aggregate, single limit per occurrence.

(c) Coverage for all damages arising during the policy period shall be furnished in the following types specified:

- (i) Contractors' Liability Insurance issued to and covering the liability (a) for damages imposed by law upon the Contractor, and (b) including in such liability insurance policy the related provisions in the specifications with regard to indemnifying and holding the Commission harmless to the fullest extent permitted by law from any suits, actions, damages and costs of every name and description, with respect to all work performed by the Contractor and his/her subcontractor under the Agreement.
- (ii) Contractual Liability Insurance issued to and covering the liability for damages imposed by law upon each Contractor with respect to all work performed by said Contractor under the Agreement.

- (iii) Contractors' Protective Liability Insurance issued to and covering the liability for damages imposed by law upon the Contractor with respect to all work under the Agreement performed for the Contractor by subcontractors.

(9) **Matching Funds.**

The Contractor shall provide a minimum of **Fifty Two Thousand Nine Hundred Eighty-Six Dollars (\$52,986)** in non-federal matching funds or in-kind services and resources. The Contractor shall meet all federal requirements for matching funds including ensuring that these non-federal funds are expended concurrently with the expenditure of federal funds from the GLFC/NEIWPCC grant or cooperative agreement and within the approved project period of that cooperative agreement. The Contractor shall document the use of matching funds on a form provided by the Commission. All match documentation shall be routed for approval as per Article II. The Contractor shall maintain records in accordance with federal requirements, including, but not limited to, those records which show how the value placed on in-kind contributions was derived. The Contractor shall resolve any and all disputes with GLFC over the qualification of funds submitted as match.

ARTICLE II. OVERSIGHT

- A. Technical and administrative oversight of all work performed under this contract shall be provided by the following individual. The Contractor shall receive direction from and shall submit all invoices, reports, data or other deliverables for work performed to:

Clair Ryan
NEIWPCC
Boott Mills So., 116 John Street
Lowell, MA 01852
Tel: 978-323-7929; Fax: 978-323-7919
Email: cryan@neiwppcc.org

Eric Howe
Lake Champlain Basin Program
54 West Shore Road
Grand Isle, VT 05458
Tel: 802-372-3213; Fax: 802-372-3233
Email: ehowe@lcbp.org

- B. The final invoice for payment shall be received by the Commission by the completion date of each task. All questions regarding invoice payment should be directed to Clair Ryan. If additional time is needed for project completion and the approval process, the oversight officer shall process the Contractor's request for a no-cost extension contract amendment.

ARTICLE III. DURATION OF THE CONTRACT

- A. Contractor will start the work on March 23, 2012 and delivered, or on such other date, if any, as may be specified in the contract documents. No work shall be done prior to the date on which the work is to start and no work shall be commenced until the Contractor has delivered to the Commission all Certificates of Insurance required by Article I, section B(8).
- B. The contract period shall commence to run on the date when the Work is to start as provided in Paragraph A of this Article.
- C. The Contractor shall complete all work and services by **February 28, 2015**.

- D. The contract time may only be changed by a written modification to the contract signed by the Commission. Any claim for an extension in the contract time, shall be in writing delivered to the Commission within thirty (30) days of the occurrence of the event giving rise to the claim. The contract time will be extended in an amount equal to time lost due to delays beyond the control of contractor if he makes a claim for such extension(s). Such delays shall include, but not be restricted to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.

ARTICLE IV. COMPENSATION TO THE CONTRACTOR

- A. The Commission's obligation under this contract is for a total amount not to exceed **Three Hundred Fifty Thousand Dollars (\$350,000)** within the contract period for the Work Product of the Contractor.
- B. Payments for work performed shall be made from approved original invoices, pending receipt of one W-9 Form and one MBE/WBE reporting form, completed by the Contractor, if appropriate. Invoices are to be submitted by the Contractor to the Commission's oversight project officer designated in Article II according to the following schedule. Invoices must include (i) the name and address of the Contractor, (ii) the invoice date, (iii) the contract identification number, if any, (iv) the time period of work invoiced, (v) a description of the Work performed, (vi) shipping and payment terms, (vii) the address where payment is to be sent, (viii) the person to be notified in the event of a defective invoice, and shall (1) provide itemized documentation of costs related to work performed, (2) be accompanied by a brief written progress report and (3) be supported by such data as the Commission may reasonably require.

\$315,000	on a reimbursement basis upon receipt of approved original invoices and quarterly reports in accordance with Article I.A.(2).(a);
<u>\$ 35,000</u>	upon completion and approval of all work products.
\$350,000	Total

- C. The contract price constitutes the total compensation payable to Contractor for performing the work. All duties, responsibilities, and obligations assigned to or undertaken by Contractor shall be at his or her expense without change in the contract price. The contract price includes all applicable Federal, State and local taxes and duties. The contract price may only be changed by written modification to this contract signed by the Commission. Any claim for an increase in the contract price shall be in writing delivered to Commission within 30 days of the occurrence of the event giving rise to the claim. All claims for adjustments in the contract price shall be determined by the Commission in accordance with Article V.
- D. The Commission will pay invoices within 30 days of receipt and approval by the project officer in Lowell, MA
- E. The Commission may refuse to approve the whole or any part of any payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously approved, to such extent as may be necessary in his or her opinion to protect owner from loss because:

- (1) the work is defective;
- (2) claims have been filed or there is reasonable evidence indicating the probable filing of such

claims;

(3) the contract price has been reduced because of modifications;

(4) owner has been required to correct defective work or complete the work; or

(5) there has been unsatisfactory prosecution of the work.

- F. Upon satisfactory completion of the Work performed under this contract, the Contractor shall label the final payment request as "final invoice", and, in so doing, shall deliver to the Commission a complete and legally effective release of all claims against the Commission. Final payment under this contract shall not constitute a waiver of the Commission's claims against the Contractor under this contract.
- G. Any billings incurred for this project must be received by the oversight project officer in the Commission's main office in Lowell, by April 28, 2015. Any billing invoices received after April 28, 2015 will not be processed and payment due will be lost. The Commission may extend these deadlines at the request of the Contractor but only if the Commission has been able to obtain a similar extension of the time within which it must liquidate its obligations under the funding award.

ARTICLE V. CHANGES TO THE CONTRACT

- A. The Commission may at any time, by mutually agreeable written amendments, make changes within the general scope of this contract in the services or work to be performed, including time of performance, changes in the workplan, and/or budget. If such changes cause an increase or decrease in the Contractor's cost or time required to perform any services under this contract, the Contractor must assert a claim for adjustment under this clause in writing delivered to the Commission within thirty (30) days from the date it receives the Commission's notification of change; provided, that, if the Commission decides the facts justify the action, the Commission may receive and act upon a claim submitted at any time before final payment under this contract. If the Contractor has shown to the Commission's satisfaction that there is an increase or decrease in the Contractor's cost or time, the Commission shall make an equitable adjustment and modify this contract in writing.
- B. No services for which the Contractor will charge an additional compensation shall be furnished without the written authorization of the Commission.

ARTICLE VI. TITLE TO PROPERTY and DATA; COPYRIGHTS and PATENTS

- A. During the term of this contract, the title to any and all equipment and accessories purchased by or charged to funds provided by the contract shall be in the name of the Commission. All such property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Commission. Upon termination of this contract, the title to and possession of all rights to such equipment and accessories shall be conveyed to the Commission. Contractor shall label, maintain and dispose of the Commission's property according to the Commission's written direction. The Contractor shall adequately safeguard the property while in its possession and shall be responsible for all loss or damage to the Commission's property in Contractor's possession.
- B. This contract is supported with federal funding awarded to the Commission. The federal government has an unrestricted right to use any data or information generated using assistance funds or specified to be delivered to GLFC in the Commission's assistance agreement.

- C. The federal awarding agency reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish or otherwise use, and to authorize others to use, for federal government purposes:
- (1) The copyright or patent in any work developed under this contract which is supported by federal funds; and
 - (2) Any rights of copyright or patent to which the Contractor purchases ownership with funds from this contract.
- D. The Commission reserves the right to copyright or patent any work, discovery, or invention which arises or is developed in the course of or under this contract. The Commission shall, as required, report such activity to the Federal awarding agency. The Contractor agrees to make application for such letters patent on any inventions as requested by the Commission or Federal awarding agency if/they may deem necessary, desirable or useful, and to sign and execute any and all papers incident to the filing, prosecution and perfection of said applications and the letters patent issued thereon.
- E. The Contractor shall promptly disclose to the Commission or the Federal awarding agency, in writing if requested, any and all inventions, discoveries and improvements conceived or made by Contractor which arose or were developed under this contract.
- F. The termination of this contract will not relieve the Contractor of the obligation to assign and execute any papers necessary to enable the Commission and/or Federal awarding agency to obtain for its own use, patent protection on said inventions. The Contractor's obligations hereunder shall be binding upon his assigns, executors, administrators and other legal representatives.

ARTICLE VII. TERMINATION OF CONTRACT

- A. The Commission may terminate this contract or any part for convenience by giving written notice to the Contractor and specifying the effective date, such date to be at least fourteen (14) calendar days from the date of notice.
- B. Upon receipt of a termination notice, the Contractor shall (1) promptly discontinue all affected work (unless the notice directs otherwise), and (2) deliver or otherwise make available to the Commission all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the Contractor in performing this contract whether completed or in process.
- C. In the event of termination for convenience, the Contractor shall be paid for services rendered and expenses incurred up to the date of termination, presuming charges are reasonable and customary. In the event of termination for cause (due to the Contractor's default), payment due to the Contractor at the time of termination may be adjusted to cover any additional costs to the Commission because of the Contractor's default.
- D. If Contractor (1) is adjudged a bankrupt or insolvent, (2) makes a general assignment for the benefit of creditors, (3) files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, (4) repeatedly fails to supply sufficient skilled workers or

suitable materials, (5) repeatedly fails to make prompt payments to subcontractors or for labor, materials, or equipment, (6) disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction, (7) disregards the authority of the Commission, or (8) fails to (i) perform the Work within the time specified in this contract or any extension, (ii) make progress, so as to endanger performance of this contract, or (iii) perform any other provision of the contract documents, then such will constitute a default by the Contractor and the Commission may, without prejudice to any other right or remedy and after giving Contractor the notice required by paragraph C above, terminate this agreement. In that event the Contractor shall comply with paragraph B above and the Commission may finish the Work by whatever method it may deem expedient. In such case Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the contract price exceeds the direct and indirect costs of completing the project, including compensation for additional professional services, such excess shall be paid to Contractor. If such costs exceed such unpaid balance, Contractor will pay the difference to the Commission.

- E. The Commission's right to terminate this contract for default under paragraph D (8)(ii) and (iii) above may be exercised if the Contractor does not cure such failure within 10 days (or more if authorized in writing by the oversight project officer designated in Article II) after receipt of the notice from the oversight project officer designated in Article II specifying the failure.

ARTICLE VIII. REMEDIES

- A. The rights and remedies afforded to either party pursuant to any part or provision of this contract are in addition to any other rights and remedies afforded by any other parts or provisions of the contract documents, by law or otherwise.
- B. Unless otherwise provided in this contract, all claims, counterclaims, disputes and other matters in question between the Commission and the Contractor arising out of, or relating to, this contract or the breach of it will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the Commission is located.

ARTICLE IX. MISCELLANEOUS

- A. **Waiver and Severability.** The failure or delay of either party to insist on performance of any provision of this contract, or to exercise any right or remedy available under this contract, shall not be construed as a waiver of that provision, right or remedy in any later instance. Further, if any provision of this contract is or becomes void or unenforceable by operation of law, the remaining provisions shall be valid and enforceable.
- B. **Choice of Law.** The contract documents shall be governed by the laws of the Commonwealth of Massachusetts, except that any provision in this contract that refers to any federal law or agency rule or regulation shall be construed and interpreted according to the federal common law of government contracts as enunciated and applied by federal judicial bodies and quasi-judicial agencies of the federal Government.
- C. **Integration and Merger.** The contract documents constitute the entire agreement between the parties and supersedes all prior representations, agreements, understandings, and communications between Buyer and Seller related to the subject matter of this contract. No amendment or modification of this contract shall be binding upon either party unless it is set forth in a written instrument signed by authorized representatives of the parties.

D. **Subcontracting.** Neither the whole nor any part of this contract may be further subcontracted by Contractor without the prior written consent of the Commission.


E. **No Employment.** The Contractor acknowledges and agrees that he is not an employee of the Commission but is an independent contractor.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first written above.

NEW ENGLAND INTERSTATE WATER
POLLUTION CONTROL COMMISSION

VERMONT AGENCY OF
AGRICULTURE, FOOD AND MARKETS

Ronald F. Poltak
Executive Director



Chuck Ross
Commissioner

Vermont Agricultural Best Management Practice Monitoring and Evaluation Project Work Plan

Under the America's Great Outdoors Initiative (AGO) NRCS Vermont is working with farmers and partners to establish seven edge of field water quality monitoring stations. The purpose of the monitoring is to evaluate the effectiveness of selected agricultural best management practices (BMP's) for a period of at least 3 years. Using this new practice standard, water quality monitoring stations will be installed at the edge of fields prior to BMP implementation to collect baseline data. Samples will continue to be collected for a number of years following practice implementation (e.g., cover crops, soil aeration on hayland, and water and sediment control basin) to evaluate their effectiveness in trapping and/or removing sediments and nutrients prior to entering surface waters.

Data on the effectiveness of these BMPs will allow us to better focus our resources on those conservation systems that are most effective in addressing runoff and associated nutrient and sediment losses. This data is needed to strategically align conservation planning and financial assistance programs with those practices that provide the greatest benefit in our landscape. The information could also be used as input into phosphorus tracking systems, TMDL formulation, and for future computer modeling.

Study Design: For this monitoring study there will be six sites with paired watershed designs, and one site with an in-line sampling design. At every site total event discharge, event mean concentration, and event export data will be collected and/or computed for each monitored event. At the start of the treatment period, a change in management is applied to the treatment watershed, while the control watershed remains in the original management. The basis of the paired-watershed approach is that there is a quantifiable relationship (i.e., a linear regression model) between paired data from the watersheds (calibration) and that this relationship is valid until a change is made in one of the watersheds (treatment). At that time, a new relationship will exist. The difference between the calibration and treatment relationships is used to evaluate and quantify the effect of treatment. For in the in-line treatment, no experimental treatment will be applied to the watershed draining into the WASCoB, instead sampling will be performed at the inlet and outlet of the structure to test the before and after treatment conditions.

QAPP Development and Approval: A QAPP will be developed using the Environmental Protection Agency Requirements for QA Project Plans (QA/R-5). The contractor submitted a response to the Request for Proposals (RfP) posted for the Agricultural Practice Monitoring and Evaluation Project, the QAPP should include all elements from the RfP. The QAPP should be sent to VAAFM and the Lake Champlain Basin Program for approval. The QA Project Plan is divided into four basic element groups: Project Management; Data Generation and Acquisition; Assessment and Oversight; and Data Validation and Usability. Each group consists of standard elements, 24 in all, that pertain to various aspects of the project. A QA Project Plan that addresses the basic elements will define and describe the following:

- who will use the data;
- what the project's goals/objectives/questions or issues are;
- what decision(s) will be made from the information obtained;
- how, when, and where project information will be acquired or generated;
- what possible problems may arise and what actions can be taken to mitigate their impact on the project;

- what type, quantity, and quality of data are specified;
- how "good" those data have to be to support the decision to be made; and
- how the data will be analyzed, assessed, and reported.

Site Characterization: Basic characterization data will be collected for each field/watershed. A topographic survey will be done using an autolevel and stadia rod. Surface elevation data will be tied to a temporary benchmark with an assumed elevation. The drainage boundary of each field will be delineated with a sub-meter GPS. Where available, LIDAR-based topographic data will be used as an ancillary dataset to refine drainage boundaries and set benchmarks in the field.

The general physical and chemical properties of soils in the selected fields will be evaluated through laboratory analysis. Soil samples from the 0-15 cm depth will be collected in each field at nodes in a sampling grid. Samples will be analyzed for pH and available P, K, Mg, Ca, Fe, Mn, and Zn following extraction in modified Morgan solution. Organic matter will be quantified by the loss on ignition method and reported in Walkley-Black method equivalents. Soil particle size will be analyzed by wet sieving and the hydrometer method.

Using the drainage areas, soils data, topographic data, and known rainfall frequencies and depths, rainfall-runoff modeling will be performed for each field using standard NRCS methods (i.e., TR-55 model). Predicted runoff volumes will be used to guide monitoring station construction, primarily to size flumes.

Agronomic Practice Documentation: It is assumed that for each study watershed, a record of agricultural management practices with dates applied will be developed and maintained by the Vermont Association of Conservation Districts (VACD) under separate direction from AAFM. It will be essential that VACD collects agricultural management information on a regular basis and shares it promptly with the Project Team.

In addition, the Project Team will be recording onsite observations and discussions with the farmer and capturing still images using time-lapse cameras. Taken together, these datasets will allow the Project Team to develop a chronology for each study field that includes descriptions and dates of planting, tillage, aeration, corn harvest or hay mowing, manure application/injection (source, rate, and date), mineral fertilizer application (type, rate, and date), and other important events, as appropriate. Field condition images recorded at least daily by the time-lapsed cameras will be used to verify management actions and dates where there are any questions and will aid in interpretation of the flow and pollutant transport data.

Monitoring Facility Design and Construction: The contractor will use commercially available monitoring systems manufactured and sold by companies that will be able to provide robust and ongoing technical support.

A simple meteorological station (Onset HOB0®) will be installed at each participating farm for the continuous monitoring of rainfall and air temperature. Precipitation and temperature data will be used to characterize and contrast hydrologic events across monitoring stations and seasons. Temperature data will be used to establish whether recorded precipitation likely fell as rain or snow.

Air temperature will be recorded as hourly and daily, minimum, maximum and average values throughout the study period. The temperature sensor will be housed in an appropriate solar radiation shield. A tipping bucket rain gage will be installed above the maximum crop canopy level. Every tip, marking accumulation of 0.2 mm of rainfall, will be recorded in memory with a time stamp. Continuous

precipitation monitoring will be supplemented by an inexpensive, manual rain gage located at each site as a backup.

The primary hydraulic device used at each runoff monitoring station will be an appropriately-sized H-flume manufactured by Tracom, unless potential tailwater problems are anticipated based on topographic survey at the watershed outlet. If tailwater problems (which can result in submergence of the flume and invalidation of stage data) cannot be avoided through optimum flume placement and through trenching below the flume outlet, a flume more tolerant of submerged conditions will be installed, such as the HXL flume recently developed by researchers at the University of Wisconsin-Platteville. Each flume will be bolted to a manifold made from a $\frac{3}{4}$ -inch plywood sheet, which will be partially buried such that the flume entrance is level with the ground. Plywood wingwalls will be installed as needed to direct flow into the flume. Through the life of the monitoring phase, the flume will be kept level using a system of threaded adjustable rods and shims.

An ultrasonic water level sensor (ISCO 2110 Ultrasonic Flow Module) will be installed in each flume to continuously measure stage (water level). Level data will be converted to flow rate based on the established hydraulic properties of the flume. These data will be used for generation of runoff event hydrographs and in calculation of pollutant transport rates. Averaged level data will be logged at approximately three-minute intervals on a connected Interface Module (ISCO 2105-Ci Interface Module).

Also connected to the ISCO 2105-Ci Interface Module will be an ISCO 6712 autosampler. The autosampler will be programmed to pump runoff water on a flow proportional basis into bulk (12 L) sample containers. To minimize the occurrence of under-sampling and overfilling, a two-part program will be used whereby the autosampler pumps sample to two containers at different intervals of accumulated flow. One bottle is intended to capture a representative runoff sample from small to medium sized events and a second bottle is intended to capture the medium to large events. The second bottle will be filled at approximately $1/10^{\text{th}}$ the frequency of the first bottle. If the capacity of bottle 1 is exceeded, the sample will be rejected and bottle 2 will be used instead. If the capacity of bottle 1 is not exceeded, bottle 1 will be used and any sample in bottle 2 will be discarded. To double the container volume available for very large runoff events, a third bottle may be filled at the same flow pacing interval as bottle 2 after bottle 2 is filled. If this overflow bottle is used, samples from both bottles 2 and 3 will be submitted for analysis to allow calculation of event mean concentrations at a later date. Using this sampling program, most small storms will provide sufficient sample (approximately 1.5 L is required) to perform the requested analyses and most large storms will not exceed the container capacity; runoff events varying in size by more than a factor of 100 can be representatively and automatically sampled.

In addition to optimizing the autosampler program as described above, sampler pacing settings will be adjusted seasonally and in advance of major predicted storms, with the intent of representatively sampling every runoff-producing storm. Adjustment to the program to increase or decrease the sampling frequency will be made either by direct connection or via remote access.

After each monitored storm event, field technicians will collect subsamples from the appropriate bulk sample bottle for delivery to the Vermont DEC laboratory. The entire volume of collected sample in bottle 1 or bottle 2 will be poured into a 14-L polyethylene churn splitter, a device that consistently agitates the water to deliver representative subsamples from a spigot. A dedicated churn splitter will be stored in each instrument shelter and will be decontaminated after each use. The subsamples will be

collected in containers provided by the DEC laboratory.

Using the ISCO 2105-CI Interface Module with integral IP modem, we expect that two-way remote communication will be possible at all monitoring locations. The hydrologic and sampling data from each station will not need to be called up and downloaded but will rather be pushed at approximately 15-minute intervals to a common server maintained by the Contractor, at which point the data will be directly viewable on a customized web site. Battery voltage data will also be pushed to the server. The ability to view station status and monitoring data in near-real time, on any computer with internet access, will enhance both the scientific quality of the data (by enabling earlier detection of instrument malfunctions and power losses and remote changes in instrument programming) and the dissemination of data to all approved parties. The 2105-CI units will also be programmed to send text messages to each sampling team to notify them that a runoff event is in progress, which will improve staff response time. Finally, we will have the capability of changing nearly any part of the instrument programming from our offices, which will be particularly useful in adjusting sampler pacing based on weather forecasts and resolving instrument malfunctions.

Based on the Verizon cellular telephone reception found at five of the sites, we expect two-way remote communications will be possible at five of the farms with no additional hardware and a relatively inexpensive data plan (\$10/month per station). However, cellular telephone reception at the Franklin site is very poor. We expect to be able to establish reliable communication despite the poor reception at the field and WASCoB (water and sediment control basin) stations in Franklin by using powerful antennas. If this is insufficient, a combination of a network extender and repeaters may be needed. As a backup, logged data at any station may be downloaded to a laptop computer using a data cable.

Each station will be powered by a Kyocera KD135GX 135-Watt solar panel and two 12-volt deep cycle marine batteries connected in parallel. The autosampler, ultrasonic level module, interface module, solar power charge controller, batteries, samples bottles, and churn splitter will be housed in a secure instrument shelter.

To measure water temperature and conductivity of the runoff stream, a HOB0^o Conductivity meter will be used. The Data Logger will be installed in a trough in the runoff channel below the flume. These data will be downloaded onsite using a waterproof shuttle device and brought into the project database.

Monitoring will occur on up to 20 runoff events (weather permitting) each year of the study. An effort will be made to extend the traditional monitoring (ice-free) season to April 1 - November 30, weather depending, by covering flumes and sample lines in an insulated housing. At the WASCoB (Franklin), reduced tillage/manure Injection (Franklin and Williston), and cover crop-only (Pawlet) treatment sites, a limited program of winter/early spring thaw event sampling will be undertaken. These practices were identified for winter and early spring monitoring because of the interest in quantifying reductions in sediment and nutrient export attributable to these practices outside of the growing season. At these sites, flow monitoring will be continued through the winter months and a three-bottle, multi-stage, passive siphon sampler array will be placed adjacent to each flume. The siphon samplers will draw water from intake tubes secured at three levels on the sidewall of each flume. These winter and early spring data will be used to assess the magnitude of nutrient and sediment transport during this period relative to the other eight months of the year, but they will not be used together in statistical models with the composite sample data.

Study Implementation: Farms are under contract through NRCS to participate in the project for a

three-year period. The conservation and monitoring practices will be implemented in a manner consistent with current NRCS practice standards. A monitoring station will be constructed at the outlet of each paired field/watershed. To evaluate the effectiveness of the WASCoB, similar monitoring stations will be installed above and below the WASCoB.

Initial Calibration Period: Calibration of the paired watersheds is required to develop the quantitative relationship between the control and treatment areas that will permit subsequent detection of treatment effects at a known level of confidence. Furthermore, monitoring during the calibration period of one to two years (depending on weather), will allow quantification of pollutant loads in runoff under current management practices. The calibration period will be considered complete when statistical analysis demonstrates reasonably strong regression relationships between paired sediment and nutrient concentration and export data, with regression error small enough to permit detection of anticipated changes in concentration and export. See Statistical Analysis, below, for more information. Adequacy of calibration will be assessed using statistical techniques of the paired-watershed analysis (Grabow et al. 1998). After this point, the land treatments may be implemented.

Treatment Application: The effects of three field conservation practices (or "treatments") will be evaluated using the paired watershed design, while the effect of the WASCoB (NRCS Practice 638, national version) will be evaluated by comparing pollutant concentrations and mass transport entering and leaving the structure. Evaluation of the field practices, but not of the WASCoB, will necessitate a prescribed change in management of one field in each pair while management of the remaining field remains consistent for the duration of the study. When the Project Team has sufficient data to develop an acceptable statistical relationship between each watershed pair, they will inform the project partners and participating farmer that the treatment phase may begin.

Overall, the calibration period is expected to be complete within one to two years from the start of monitoring and the treatment period to be the balance of the planned three-year study. This timeframe assumes relatively normal rainfall patterns without extended droughts. Insufficient rainfall and/or problems implementing the conservation treatments may necessitate extending the monitoring period at any given site beyond three years to obtain adequate data for meaningful evaluation.

AAFM will be responsible for ensuring conservation practices are implemented per the appropriate NRCS practice standards. The field practices that will be evaluated are as follows:

- Three paired watershed projects testing soil aeration on hayland with manure applications. The three farms are located in Shoreham and Ferrisburg in Addison County, and Shelburne in Chittenden County.
- Two paired watershed projects testing reduced tillage with manure injection. One of these farms is in the town of Franklin in Franklin County and the other is in the town of Williston in Chittenden County.
- One paired watershed projects testing cover cropping. This farm is in the town of Pawlet in Rutland County.
- One in line project testing a water and sediment control basin. This project is the only one that is not anticipated to be a paired watershed design and instead will sample above and below the treatment area. This project is in Franklin County on the same farm that is testing reduced tillage with manure injection.

No aeration will be performed in the treatment fields until calibration has been achieved. During the treatment period, aeration will be performed in the treatment watersheds prior to each manure application. In certain cases the Project Team will recommend which field in a watershed pair should be aerated. If there is not a scientific reason to select one watershed for treatment, AAFM or the farmer

may choose based on their own considerations.

Conventional tillage, surface manure application, and no fall-seeded cover crop are assumed to be the typical management practices on the study cornfields Pawlet. These practices will be continued through the calibration period. During the treatment period, the Pawlet farm will continue to practice conventional tillage and surface manure application, but will plant a cover crop shortly following corn harvest. Given the time necessary to instrument monitoring stations and the need to collect all data in accordance with an approved QAPP, it may be necessary to delay planting of a cover crop until after harvest in 2013, in order to obtain data in both spring and fall periods without a cover crop present. The Project Team may need to continue the monitoring program through the late fall of 2014 to provide sufficient post-treatment data for the cover crop treatment.

The existing practices at the Williston and Franklin sites are assumed to include conventional tillage, surface manure application, and no cover cropping of corn land. The Vermont version of the reduced tillage practice standard (NRCS Practice 329) indicates that a cover crop must be planted if the crop residue level is low. The standard specifically requires: "Low residue row crops such as silage corn must have a winter cover crop established." Therefore, the applicable experimental treatment at the Franklin and Williston sites is a combination of reduced tillage, manure injection, and a winter cover crop. Evaluation will include the combined effect of these practices; no data will be produced at these sites on the individual effectiveness of the component practices. It is possible that adequate calibration will be achieved in 2012. Reduced tillage/manure injection treatments could then be implemented in spring 2013, although beginning the treatment period following the 2013 growing season is more likely.

In quantifying the effectiveness of conservation practices, timing is more critical for the reduced tillage/manure injection and the cover cropping treatments than for the hayland aeration treatment. The periods when the cover cropping and reduced tillage/manure injection practices are expected to be most effective are during the critical erosion periods before a crop canopy develops in the spring and after corn harvest in the fall. Conversely, the effectiveness of the hayland aeration treatment can be successfully assessed from approximately late May through November. Because evaluation of the cover cropping and reduced tillage/manure injection treatments is more constrained, there may need to be an extended monitoring period at the Franklin, Williston, and Pawlet sites.

No experimental treatment will be applied in the watershed draining to the WASCob. Agricultural management of the WASCob drainage area will be documented in the same way as the field treatment watersheds, however management will not be prescribed beyond requesting that the drainage area continue to receive typical agronomic rates of manure and/or mineral fertilizer application through the study period and that these actions be fully documented.

Sample Collection and Routine Facility Maintenance: There are considerable challenges in meeting the demands of operating monitoring stations sampling transient events across a wide geographic area. The Project Team includes four, location-specific monitoring teams, each with an experienced, dedicated team leader. The team leader will be responsible for ensuring that someone is always available for sample collection, drawing on VACD staff and Project Team staff as appropriate. Each team will be responsible for sample collection and routine facility maintenance for their assigned stations. Routine maintenance will include:

- downloading the HOBO® data loggers (precipitation / air temperature and conductivity / water temperature)
- checking/cleaning the tipping bucket funnel, the solar panel, and the sample intake tubing and screen

- cleaning the ultrasonic level sensor and conductivity sensor and recalibrating if necessary
- checking/replacing instrument desiccant
- checking/servicing batteries
- verifying that the flume is level
- clearing vegetation from around the stations
- checking for erosion and rodent holes near the flume approach and wingwalls

Occasionally station maintenance needs will be beyond that which the team leader can provide. The contractor will be available throughout the duration of the project to assist team leaders in ensuring that significant issues are addressed as they arise and facilities are brought back online after any upsets as soon as is practicable.

The contractor will coordinate the efforts of and collaboration between the location-specific monitoring teams in order to achieve a consistent, coordinated effort. The contractor will also be responsible for ensuring that each team leader has access to the necessary staff resources and for coordinating the periodic delivery of samples to the Vermont DEC laboratory.

Sample Analysis: Water samples from both the regular and the winter/early spring monitoring periods will be split in the field using a churn splitter to provide subsamples for analysis by the DEC laboratory. Using sample containers provided by the DEC laboratory, sample splits will be made for the following parameters: TP, TDP, TN, TDN, TSS, and chlorides. A minimum of 10% additional field QC samples will be added. Subsamples intended for TDP and TDN analyses will be filtered (0.45- μ m pore size membrane) immediately in the field. Appropriate preservatives will be added as necessary and the samples will be stored on ice or refrigerated until transfer to the laboratory within seven days of collection (seven days is the shortest holding time among the analytes after the field processing steps described). These steps will simplify the logistics of delivery of samples to the laboratory, particularly from events that are sampled outside of normal business hours. The DEC laboratory will use their approved methods and QA/QC procedures to perform the required analyses, at no cost to the Project Team. Samples will typically be delivered to the laboratory by courier service.

Data Management and Analysis

Database Development: In order to facilitate effective and efficient analysis, a database will be built that manages all pertinent field data. A single relational database (Microsoft Access or similar) will be designed and used for the storage and management of farm management practice data, weather data (temperature and rainfall), hydrologic data (runoff level and flow rate), runoff temperature and specific conductance, autosampler logs, and analytical results. Automated routines will be developed within the database for importing continuously collected records (air temperature, rainfall, water temperature, specific conductance, runoff level, and flow rate) to the greatest extent possible.

Statistical Analysis: The data set used for the primary statistical analyses will include total event discharge (m^3), event mean concentration (mg/L), and total event load (kg) for each monitored constituent for each event at each monitored location. Basic descriptive statistics, pair-wise comparisons, and exploratory data analysis will be conducted on this data set.

For the paired-watershed sites, changes in event discharge, event mean concentration, and event mass export in response to treatment will be tested using analysis of covariance (ANCOVA). ANCOVA compares two groups of data (e.g., calibration and treatment) while adjusting for changes in explanatory

variables using a combination of analysis of variance and regression. In the paired-watershed design, data from the control watershed are used to account for the effects of year-to-year weather variations on the variables of interest, in this case event discharge and TP, TDP, TN, TDN, CI, and TSS concentration and export. For a given variable of interest in a treatment watershed, the explanatory variable (covariate) is the same variable observed concurrently in the control watershed. Calibration and treatment period regressions between treatment and control watersheds will be tested for significant differences in slope, intercept, or both by analysis of variance of regression coefficients; differences in water quality data between the calibration and treatment periods will be deemed significant if the slope and/or intercept of the regressions differ at $P < 0.10$. The magnitude of treatment effect (e.g., the percent reduction due to the application of the new management) is assessed by comparing the value (e.g., event TP export) predicted from the calibration regression to that predicted from the post-treatment regression at the mean or median value observed in the control watershed during the post-treatment period.

For the WASCoB site, effects of treatment will be evaluated based on an input/output comparison (e.g., t-Test), both for individual events and over the entire monitoring period.

Project Communication and Reporting: The scope, scale, and anticipated level of interest in the project will necessitate a high level of routine communication between all involved parties.

Landowners: Because each project site will receive approximately 40 project-related visits annually, regular communication with the farm owner will be essential. Monitoring team leaders will be in regular contact with landowners, keeping them apprised of project progress. Further, having a dedicated team leader for each site means that the landowner will always know "who to call" if questions or concerns about the project should arise.

Current and ongoing information about farm management activities (e.g., tillage, planting, and manure application rate and timing) is essential to the overall monitoring effort. It is especially critical that BMP implementation activities in the treatment watershed and the continuation of conventional management in the control watershed are well-documented. This background information will be collected by the Project Team. Once project sites are established and monitoring systems installed, it is anticipated that it will be simplest for the monitoring team leaders to periodically discuss farm management activities as needed with the landowner while on site.

Project Team: Contractors are required to notify the State of changes to the project team (additions or deletions); resumes for the new project team members must be submitted within two weeks of such a change.

Project Advisory Committee: The Project Team will work with AAFM to establish a Project Advisory Committee (PAC). It is anticipated that the PAC will include personnel from NRCS, USGS, AAFM, ANR, the Lake Champlain Basin Program, landowners, and others with an expressed interest in the project. The PAC will provide advice on major project decisions or proposed modifications, such as: reviewing final fine-scale site selection; monitoring facility design and sampling plan; developing strategies for managing the implementation of management practices; and evaluating contingencies and specific problems as they arise. PAC meetings will be scheduled approximately semi-annually, with more frequent meetings likely at the beginning of the project. A final PAC meeting will be held to convey results and conclusions. It is also anticipated that PAC members will play an important role in disseminating and communicating project results to the public.

The Project Team will also make itself available for an annual presentation to the Lake Champlain Basin

Program Technical Advisory Committee.

Practice Evaluation and Site Decommissioning

Practice Evaluation: In consultation with AAFM and NRCS, the Project Team will suggest any potential modifications to conservation practice implementation requirements, based on the efficacy of the practices as implemented on the participating farms. Where the same practice is implemented on more than one farm, pollutant reductions due to treatment may be compared and contrasted.

Site Decommissioning: At the conclusion of the study, the Project Team will work with the farm owner and AAFM to determine whether the monitoring stations should be decommissioned or left in place to support future study. Should the farm owner wish to decommission the monitoring site(s), the Project Team will remove the equipment and return it to the farmer and restore the monitoring sites to their pre-project condition.

Annual and Final Reports: A succinct annual report will be prepared and delivered to AAFM which will be shared with LCBP by February 15th of each year. The annual report will focus on the evaluation and interpretation of data collected during the preceding field season.

A more detailed final report covering all aspects of the monitoring effort will be prepared. This will include site characterization, data collection and analysis, challenges faced, lessons learned and an evaluation of the effectiveness of the BMPs in reducing P and sediment losses. Maps and figures will be developed to assist AAFM in sharing project results with the public in a manner that also protects the privacy of the participating farms.

Project Timeline and Deliverables

Description	Timeline	Deliverable
Study Design and Site Characterization	March 31, 2012	Plan for which fields will be included in study and specific locations of monitoring stations based on field assessments
QAPP	March 31, 2012	Approved QAPP from NEIWPC
Agronomic Practice Documentation	March 31-December 15 each year (2012,2013,2014)	Recorded details about the farm field management practices and the implementation of the conservation practices.
Monitoring Facility Design and Construction	April 30, 2012	Complete installation of all monitoring equipment at each of the 7 field locations.
Initial Calibration and Treatment Application	April 30, 2012-December 2014	When statistics are sufficient for calibration, the treatment applications will begin for the paired watershed sites, expected to be ready in year 2.

		Treatment applications will be continued throughout the project.
Sample Collection and Facility Maintenance	April 30, 2012-December 2014	Sample collections will occur on at least 20 events each year and maintenance will be as needed throughout the monitoring period.
Sample Analysis	April 30, 2012-December 2014	Samples will be collected and sent to the DEC laboratory throughout the monitoring period.
Data Management and Analysis	April 30, 2012-December 2014	A database to track all pertinent monitoring system information will be developed and utilized throughout the monitoring period. The results will be looked at periodically to ensure the monitoring system is operating as intended. At the completion of the monitoring period each year and at the end of the 3 years the data collected will be analyzed to determine the effectiveness of the BMPs in relation to the variables that were tested.
Reporting	April 30, 2012-December 2014	The contractor will provide annual and a final report demonstrating the BMP effectiveness findings, and provide a presentation to the LCBP TAC.

Project Budget: The \$350,000 LCBP funding will be matched with \$491,166 which will include USDA NRCS Architectural and Engineer funding, farmer funds directly appropriated from the USDA NRCS Environmental Quality Incentives Program contracts, the Vermont DEC and Agency of Agriculture match assistance for laboratory analysis and data collection.

AGO Agricultural Water Quality Monitoring Project					
	Total Costs	PHASE 1	PHASE 2		
	All 3 years	A&E	Direct Assignments	LCBP	In-kind
monitoring design by paired site - includes site characterization and study design, soil sampling, drainage area delineation, and flow prediction modeling	\$ 28,258	\$ 26,858			\$ 1,410
quality assurance plan development	\$ 6,397	\$ 6,397			
equipment and materials (including maintenance) - includes equipment purchase, monitoring supplies, non-routine maintenance, mileage, and incidentals	\$ 221,893		\$ 221,893		
Installation (A&E)- includes project kick-off meeting with landowner, monitoring facility design, and construction oversight	\$ 36,745	\$ 36,745			
Installation - monitoring facility construction	\$ 32,106		\$ 32,106		
decommissioning - includes removing all equipment and any necessary site restoration	\$ 11,352		\$ 5,876	\$ 5,456	
monitoring costs (data collection and sample delivery) , includes sample collection and routine maintenance of the monitoring facility	\$ 401,233		\$ 243,180	\$ 58,043	
sample analysis				\$ 63,000	\$ 51,576
watershed and practice data collection	\$ 20,300			\$ 20,300	
database development	\$ 5,242			\$ 5,242	
data management - includes data entry, analysis, and QA/QC	\$ 88,024			\$ 88,024	
meetings - semi-annual meetings with PAC	\$ 16,189			\$ 16,189	
meetings - annual presentations to TAC	\$ 7,975			\$ 7,975	
practice evaluation	\$ 8,261			\$ 8,261	
reporting - includes project communication, preparation of annual and final reports	\$ 77,510			\$ 77,510	
total project costs	\$ 841,166	\$ 70,000	\$ 503,055	\$ 350,000	\$ 52,986

MEMORANDUM

TO: Jeb Spaulding
 Agency of Administration

FROM: Laura DiPietro
 Agency of Agriculture, Food & Markets

DATE: March 24, 2012

SUBJECT: AGO Agricultural Practice Monitoring Project

This project is to install agricultural best management practices which will be monitored in the field to determine the beneficial water quality impacts the practices are capable of. This project has been broken into 2 phases. Phase 1 has been approved by JFO (#2537) and is contracted with the help of BGS between Vermont Agency of Agriculture, Food & Markets (VAAFAM) and Stone Environmental Inc. This request is to accept the funding for phase 2 which will also be awarded to Stone Environmental Inc. Stone was selected through a RFP process that included both phases.

Contracted

Phase 1: Architectural & Engineering (A&E) Contract to develop a Quality and Assurance Project Plan (QAPP), do the site characterization, design the water quality monitoring stations and oversee the construction of the stations (NOTE construction cannot begin until Phase 2 is contracted because the funds to purchase the equipment are in P2). The total of this phase is \$71,410. A grant of \$70,000 has already been provided to VAAFAM from the USDA Natural Resource Conservation Service (NRCS), which included approval by the Governor's office, Joint Fiscal Committee and the Office of Finance and Management. The remaining \$1,410 will come from the VAAFAM Best Management Practices fund.

Requested

Phase 2: This phase will be a change order to the first A&E contract with the same contractor selected from the primary RFP process. This phase will span 3 years and includes agronomic practice documentation, purchasing equipment to install the water quality monitoring stations, calibration of the installed equipment, water sample and site specific data collection, treatment application, routine facility maintenance, sample analysis, database development, statistical analysis and data interpretation, project communication, practice evaluation, site decommissioning, and reporting. There are 2 sources of funding that still need approval by the Governor's office, Joint Fiscal Committee and the Office of Finance and Management. One source is \$350,000 from the Great Lakes Fishery Commission (GLFC) funding from the Lake Champlain Basin Program (LCBP) and the New England Interstate Water Pollution Control Commission (NEIWPC), and the other is \$503,055 coming directly out of farmer federal Environmental Quality Incentive Program (EQIP) contracts through direct assignments.

The total cost of the project is expected to be \$976,042. The total funding available for the project is \$923,055 cash and \$52,987 in in-kind matches from VAAFMM and the Vermont Department of Environmental Conservation (DEC). There is an opportunity for VAAFMM and the DEC to provide an additional \$100,000 in in-kind matches through laboratory sample analysis and data collection tasks should there be cost-overruns or changes in the scope of work.

AGO Agricultural Water Quality Monitoring Project

	Total Costs	PHASE 1	PHASE 2		
	All 3 years	A&E	Direct Assignments	GLFC	In-kind
monitoring design by paired site - includes site characterization and study design, soil sampling, drainage area delineation, and flow prediction modeling	\$ 28,268	\$ 26,858			\$ 1,410
quality assurance plan development	\$ 6,397	\$ 6,397			
equipment and materials (including maintenance) - includes equipment purchase, monitoring supplies, non-routine maintenance, mileage, and incidentals	\$ 221,893		\$ 221,893		
installation (A&E) - includes project kick-off meeting with landowner, monitoring facility design, and construction oversight	\$ 36,745	\$ 36,745			
installation - monitoring facility construction	\$ 32,106		\$ 32,106		
decommissioning - includes removing all equipment and any necessary site restoration	\$ 11,332		\$ 5,876	\$ 5,456	
monitoring costs (data collection and sample delivery) includes sample collection and routine maintenance of the monitoring facility	\$ 301,223		\$ 243,180	\$ 58,043	
sample analysis	\$ 114,576			\$ 62,999	\$ 51,577
watershed and practice data collection	\$ 20,300			\$ 20,300	
database development	\$ 5,242			\$ 5,242	
data management - includes data entry, analysis, and QA/QC	\$ 88,024			\$ 88,024	
meetings - semi-annual meetings with PAC	\$ 16,189			\$ 16,189	
meetings - annual presentations to TAC	\$ 7,975			\$ 7,975	
practice evaluation	\$ 8,261			\$ 8,261	
reporting - includes project communication, preparation of annual and final reports	\$ 77,510			\$ 77,510	
total project costs	\$ 976,042	\$ 70,000	\$ 503,055	\$ 350,000	\$ 52,987

Vermont Agricultural Best Management Practice Monitoring and Evaluation Project Work Plan

Under the America's Great Outdoors Initiative (AGO) NRCS Vermont is working with farmers and partners to establish seven edge of field water quality monitoring stations. The purpose of the monitoring is to evaluate the effectiveness of selected agricultural best management practices (BMP's) for a period of at least 3 years. Using this new practice standard, water quality monitoring stations will be installed at the edge of fields prior to BMP implementation to collect baseline data. Samples will continue to be collected for a number of years following practice implementation (e.g., cover crops, soil aeration on hayland, and water and sediment control basin) to evaluate their effectiveness in trapping and/or removing sediments and nutrients prior to entering surface waters.

Data on the effectiveness of these BMPs will allow us to better focus our resources on those conservation systems that are most effective in addressing runoff and associated nutrient and sediment losses. This data is needed to strategically align conservation planning and financial assistance programs with those practices that provide the greatest benefit in our landscape. The information could also be used as input into phosphorus tracking systems, TMDL formulation, and for future computer modeling.

Study Design: For this monitoring study there will be six sites with paired watershed designs, and one site with an in-line sampling design. At every site total event discharge, event mean concentration, and event export data will be collected and/or computed for each monitored event. At the start of the treatment period, a change in management is applied to the treatment watershed, while the control watershed remains in the original management. The basis of the paired-watershed approach is that there is a quantifiable relationship (i.e., a linear regression model) between paired data from the watersheds (calibration) and that this relationship is valid until a change is made in one of the watersheds (treatment). At that time, a new relationship will exist. The difference between the calibration and treatment relationships is used to evaluate and quantify the effect of treatment. For in the in-line treatment, no experimental treatment will be applied to the watershed draining into the WASCoB, instead sampling will be performed at the inlet and outlet of the structure to test the before and after treatment conditions.

QAPP Development and Approval: A QAPP will be developed using the Environmental Protection Agency Requirements for QA Project Plans (QA/R-5). The contractor submitted a response to the Request for Proposals (RfP) posted for the Agricultural Practice Monitoring and Evaluation Project, the QAPP should include all elements from the RfP. The QAPP should be sent to VAAFM and the Lake Champlain Basin Program for approval. The QA Project Plan is divided into four basic element groups: Project Management; Data Generation and Acquisition; Assessment and Oversight; and Data Validation and Usability. Each group consists of standard elements, 24 in all, that pertain to various aspects of the project. A QA Project Plan that addresses the basic elements will define and describe the following:

- who will use the data;
- what the project's goals/objectives/questions or issues are;
- what decision(s) will be made from the information obtained;
- how, when, and where project information will be acquired or generated;
- what possible problems may arise and what actions can be taken to mitigate their impact on the project;

- what type, quantity, and quality of data are specified;
- how “good” those data have to be to support the decision to be made; and
- how the data will be analyzed, assessed, and reported.

Site Characterization: Basic characterization data will be collected for each field/watershed. A topographic survey will be done using an autolevel and stadia rod. Surface elevation data will be tied to a temporary benchmark with an assumed elevation. The drainage boundary of each field will be delineated with a sub-meter GPS. Where available, LiDAR-based topographic data will be used as an ancillary dataset to refine drainage boundaries and set benchmarks in the field.

The general physical and chemical properties of soils in the selected fields will be evaluated through laboratory analysis. Soil samples from the 0-15 cm depth will be collected in each field at nodes in a sampling grid. Samples will be analyzed for pH and available P, K, Mg, Ca, Fe, Mn, and Zn following extraction in modified Morgan solution. Organic matter will be quantified by the loss on ignition method and reported in Walkley-Black method equivalents. Soil particle size will be analyzed by wet sieving and the hydrometer method.

Using the drainage areas, soils data, topographic data, and known rainfall frequencies and depths, rainfall-runoff modeling will be performed for each field using standard NRCS methods (i.e., TR-55 model). Predicted runoff volumes will be used to guide monitoring station construction, primarily to size flumes.

Agronomic Practice Documentation: It is assumed that for each study watershed, a record of agricultural management practices with dates applied will be developed and maintained by the Vermont Association of Conservation Districts (VACD) under separate direction from AAFM. It will be essential that VACD collects agricultural management information on a regular basis and shares it promptly with the Project Team.

In addition, the Project Team will be recording onsite observations and discussions with the farmer and capturing still images using time-lapse cameras. Taken together, these datasets will allow the Project Team to develop a chronology for each study field that includes descriptions and dates of planting, tillage, aeration, corn harvest or hay mowing, manure application/injection (source, rate, and date), mineral fertilizer application (type, rate, and date), and other important events, as appropriate. Field condition images recorded at least daily by the time-lapsed cameras will be used to verify management actions and dates where there are any questions and will aid in interpretation of the flow and pollutant transport data.

Monitoring Facility Design and Construction: The contractor will use commercially available monitoring systems manufactured and sold by companies that will be able to provide robust and ongoing technical support.

A simple meteorological station (Onset HOBO®) will be installed at each participating farm for the continuous monitoring of rainfall and air temperature. Precipitation and temperature data will be used to characterize and contrast hydrologic events across monitoring stations and seasons. Temperature data will be used to establish whether recorded precipitation likely fell as rain or snow.

Air temperature will be recorded as hourly and daily, minimum, maximum and average values throughout the study period. The temperature sensor will be housed in an appropriate solar radiation shield. A tipping bucket rain gage will be installed above the maximum crop canopy level. Every tip, marking accumulation of 0.2 mm of rainfall, will be recorded in memory with a time stamp. Continuous

precipitation monitoring will be supplemented by an inexpensive, manual rain gage located at each site as a backup.

The primary hydraulic device used at each runoff monitoring station will be an appropriately-sized H-flume manufactured by Tracom, unless potential tailwater problems are anticipated based on topographic survey at the watershed outlet. If tailwater problems (which can result in submergence of the flume and invalidation of stage data) cannot be avoided through optimum flume placement and through trenching below the flume outlet, a flume more tolerant of submerged conditions will be installed, such as the HXL flume recently developed by researchers at the University of Wisconsin-Platteville. Each flume will be bolted to a manifold made from a $3/4$ -inch plywood sheet, which will be partially buried such that the flume entrance is level with the ground. Plywood wingwalls will be installed as needed to direct flow into the flume. Through the life of the monitoring phase, the flume will be kept level using a system of threaded adjustable rods and shims.

An ultrasonic water level sensor (ISCO 2110 Ultrasonic Flow Module) will be installed in each flume to continuously measure stage (water level). Level data will be converted to flow rate based on the established hydraulic properties of the flume. These data will be used for generation of runoff event hydrographs and in calculation of pollutant transport rates. Averaged level data will be logged at approximately three-minute intervals on a connected Interface Module (ISCO 2105-Ci Interface Module).

Also connected to the ISCO 2105-Ci Interface Module will be an ISCO 6712 autosampler. The autosampler will be programmed to pump runoff water on a flow proportional basis into bulk (12 L) sample containers. To minimize the occurrence of under-sampling and overfilling, a two-part program will be used whereby the autosampler pumps sample to two containers at different intervals of accumulated flow. One bottle is intended to capture a representative runoff sample from small to medium sized events and a second bottle is intended to capture the medium to large events. The second bottle will be filled at approximately $1/10^{\text{th}}$ the frequency of the first bottle. If the capacity of bottle 1 is exceeded, the sample will be rejected and bottle 2 will be used instead. If the capacity of bottle 1 is not exceeded, bottle 1 will be used and any sample in bottle 2 will be discarded. To double the container volume available for very large runoff events, a third bottle may be filled at the same flow pacing interval as bottle 2 after bottle 2 is filled. If this overflow bottle is used, samples from both bottles 2 and 3 will be submitted for analysis to allow calculation of event mean concentrations at a later date. Using this sampling program, most small storms will provide sufficient sample (approximately 1.5 L is required) to perform the requested analyses and most large storms will not exceed the container capacity; runoff events varying in size by more than a factor of 100 can be representatively and automatically sampled.

In addition to optimizing the autosampler program as described above, sampler pacing settings will be adjusted seasonally and in advance of major predicted storms, with the intent of representatively sampling every runoff-producing storm. Adjustment to the program to increase or decrease the sampling frequency will be made either by direct connection or via remote access.

After each monitored storm event, field technicians will collect subsamples from the appropriate bulk sample bottle for delivery to the Vermont DEC laboratory. The entire volume of collected sample in bottle 1 or bottle 2 will be poured into a 14-L polyethylene churn splitter, a device that consistently agitates the water to deliver representative subsamples from a spigot. A dedicated churn splitter will be stored in each instrument shelter and will be decontaminated after each use. The subsamples will be

collected in containers provided by the DEC laboratory.

Using the ISCO 2105-Ci Interface Module with integral IP modem, we expect that two-way remote communication will be possible at all monitoring locations. The hydrologic and sampling data from each station will not need to be called up and downloaded but will rather be pushed at approximately 15-minute intervals to a common server maintained by the Contractor, at which point the data will be directly viewable on a customized web site. Battery voltage data will also be pushed to the server. The ability to view station status and monitoring data in near-real time, on any computer with internet access, will enhance both the scientific quality of the data (by enabling earlier detection of instrument malfunctions and power losses and remote changes in instrument programming) and the dissemination of data to all approved parties. The 2105-Ci units will also be programmed to send text messages to each sampling team to notify them that a runoff event is in progress, which will improve staff response time. Finally, we will have the capability of changing nearly any part of the instrument programming from our offices, which will be particularly useful in adjusting sampler pacing based on weather forecasts and resolving instrument malfunctions.

Based on the Verizon cellular telephone reception found at five of the sites, we expect two-way remote communications will be possible at five of the farms with no additional hardware and a relatively inexpensive data plan (\$10/month per station). However, cellular telephone reception at the Franklin site is very poor. We expect to be able to establish reliable communication despite the poor reception at the field and WASCoB (water and sediment control basin) stations in Franklin by using powerful antennas. If this is insufficient, a combination of a network extender and repeaters may be needed. As a backup, logged data at any station may be downloaded to a laptop computer using a data cable.

Each station will be powered by a Kyocera KD135GX 135-Watt solar panel and two 12-volt deep cycle marine batteries connected in parallel. The autosampler, ultrasonic level module, interface module, solar power charge controller, batteries, samples bottles, and churn splitter will be housed in a secure instrument shelter.

To measure water temperature and conductivity of the runoff stream, a HOBO® Conductivity meter will be used. The Data Logger will be installed in a trough in the runoff channel below the flume. These data will be downloaded onsite using a waterproof shuttle device and brought into the project database.

Monitoring will occur on up to 20 runoff events (weather permitting) each year of the study. An effort will be made to extend the traditional monitoring (ice-free) season to April 1 - November 30, weather depending, by covering flumes and sample lines in an insulated housing. At the WASCoB (Franklin), reduced tillage/manure injection (Franklin and Williston), and cover crop-only (Pawlet) treatment sites, a limited program of winter/early spring thaw event sampling will be undertaken. These practices were identified for winter and early spring monitoring because of the interest in quantifying reductions in sediment and nutrient export attributable to these practices outside of the growing season. At these sites, flow monitoring will be continued through the winter months and a three-bottle, multi-stage, passive siphon sampler array will be placed adjacent to each flume. The siphon samplers will draw water from intake tubes secured at three levels on the sidewall of each flume. These winter and early spring data will be used to assess the magnitude of nutrient and sediment transport during this period relative to the other eight months of the year, but they will not be used together in statistical models with the composite sample data.

Study Implementation: Farms are under contract through NRCS to participate in the project for a

three-year period. The conservation and monitoring practices will be implemented in a manner consistent with current NRCS practice standards. A monitoring station will be constructed at the outlet of each paired field/watershed. To evaluate the effectiveness of the WASCoB, similar monitoring stations will be installed above and below the WASCoB.

Initial Calibration Period: Calibration of the paired watersheds is required to develop the quantitative relationship between the control and treatment areas that will permit subsequent detection of treatment effects at a known level of confidence. Furthermore, monitoring during the calibration period of one to two years (depending on weather), will allow quantification of pollutant loads in runoff under current management practices. The calibration period will be considered complete when statistical analysis demonstrates reasonably strong regression relationships between paired sediment and nutrient concentration and export data, with regression error small enough to permit detection of anticipated changes in concentration and export. See Statistical Analysis, below, for more information. Adequacy of calibration will be assessed using statistical techniques of the paired-watershed analysis (Grabow et al. 1998). After this point, the land treatments may be implemented.

Treatment Application: The effects of three field conservation practices (or "treatments") will be evaluated using the paired watershed design, while the effect of the WASCoB (NRCS Practice 638, national version) will be evaluated by comparing pollutant concentrations and mass transport entering and leaving the structure. Evaluation of the field practices, but not of the WASCoB, will necessitate a prescribed change in management of one field in each pair while management of the remaining field remains consistent for the duration of the study. When the Project Team has sufficient data to develop an acceptable statistical relationship between each watershed pair, they will inform the project partners and participating farmer that the treatment phase may begin.

Overall, the calibration period is expected to be complete within one to two years from the start of monitoring and the treatment period to be the balance of the planned three-year study. This timeframe assumes relatively normal rainfall patterns without extended droughts. Insufficient rainfall and/or problems implementing the conservation treatments may necessitate extending the monitoring period at any given site beyond three years to obtain adequate data for meaningful evaluation.

AAFM will be responsible for ensuring conservation practices are implemented per the appropriate NRCS practice standards. The field practices that will be evaluated are as follows:

- Three paired watershed projects testing soil aeration on hayland with manure applications. The three farms are located in Shoreham and Ferrisburg in Addison County, and Shelburne in Chittenden County.
- Two paired watershed projects testing reduced tillage with manure injection. One of these farms is in the town of Franklin in Franklin County and the other is in the town of Williston in Chittenden County.
- One paired watershed projects testing cover cropping. This farm is in the town of Pawlet in Rutland County.
- One in line project testing a water and sediment control basin. This project is the only one that is not anticipated to be a paired watershed design and instead will sample above and below the treatment area. This project is in Franklin County on the same farm that is testing reduced tillage with manure injection.

No aeration will be performed in the treatment fields until calibration has been achieved. During the treatment period, aeration will be performed in the treatment watersheds prior to each manure application. In certain cases the Project Team will recommend which field in a watershed pair should be aerated. If there is not a scientific reason to select one watershed for treatment, AAFM or the farmer

may choose based on their own considerations.

Conventional tillage, surface manure application, and no fall-seeded cover crop are assumed to be the typical management practices on the study cornfields Pawlet. These practices will be continued through the calibration period. During the treatment period, the Pawlet farm will continue to practice conventional tillage and surface manure application, but will plant a cover crop shortly following corn harvest. Given the time necessary to instrument monitoring stations and the need to collect all data in accordance with an approved QAPP, it may be necessary to delay planting of a cover crop until after harvest in 2013, in order to obtain data in both spring and fall periods without a cover crop present. The Project Team may need to continue the monitoring program through the late fall of 2014 to provide sufficient post-treatment data for the cover crop treatment.

The existing practices at the Williston and Franklin sites are assumed to include conventional tillage, surface manure application, and no cover cropping of corn land. The Vermont version of the reduced tillage practice standard (NRCS Practice 329) indicates that a cover crop must be planted if the crop residue level is low. The standard specifically requires: "Low residue row crops such as silage corn must have a winter cover crop established." Therefore, the applicable experimental treatment at the Franklin and Williston sites is a combination of reduced tillage, manure injection, and a winter cover crop. Evaluation will include the combined effect of these practices; no data will be produced at these sites on the individual effectiveness of the component practices. It is possible that adequate calibration will be achieved in 2012. Reduced tillage/manure injection treatments could then be implemented in spring 2013, although beginning the treatment period following the 2013 growing season is more likely.

In quantifying the effectiveness of conservation practices, timing is more critical for the reduced tillage/manure injection and the cover cropping treatments than for the hayland aeration treatment. The periods when the cover cropping and reduced tillage/manure injection practices are expected to be most effective are during the critical erosion periods before a crop canopy develops in the spring and after corn harvest in the fall. Conversely, the effectiveness of the hayland aeration treatment can be successfully assessed from approximately late May through November. Because evaluation of the cover cropping and reduced tillage/manure injection treatments is more constrained, there may need to be an extended monitoring period at the Franklin, Williston, and Pawlet sites.

No experimental treatment will be applied in the watershed draining to the WASCoB. Agricultural management of the WASCoB drainage area will be documented in the same way as the field treatment watersheds, however management will not be prescribed beyond requesting that the drainage area continue to receive typical agronomic rates of manure and/or mineral fertilizer application through the study period and that these actions be fully documented.

Sample Collection and Routine Facility Maintenance: There are considerable challenges in meeting the demands of operating monitoring stations sampling transient events across a wide geographic area. The Project Team includes four, location-specific monitoring teams, each with an experienced, dedicated team leader. The team leader will be responsible for ensuring that someone is always available for sample collection, drawing on VACD staff and Project Team staff as appropriate. Each team will be responsible for sample collection and routine facility maintenance for their assigned stations. Routine maintenance will include:

- downloading the HOBO® data loggers (precipitation / air temperature and conductivity / water temperature)
- checking/cleaning the tipping bucket funnel, the solar panel, and the sample intake tubing and screen

- cleaning the ultrasonic level sensor and conductivity sensor and recalibrating if necessary
- checking/replacing instrument desiccant
- checking/servicing batteries
- verifying that the flume is level
- clearing vegetation from around the stations
- checking for erosion and rodent holes near the flume approach and wingwalls

Occasionally station maintenance needs will be beyond that which the team leader can provide. The contractor will be available throughout the duration of the project to assist team leaders in ensuring that significant issues are addressed as they arise and facilities are brought back online after any upsets as soon as is practicable.

The contractor will coordinate the efforts of and collaboration between the location-specific monitoring teams in order to achieve a consistent, coordinated effort. The contractor will also be responsible for ensuring that each team leader has access to the necessary staff resources and for coordinating the periodic delivery of samples to the Vermont DEC laboratory.

Sample Analysis: Water samples from both the regular and the winter/early spring monitoring periods will be split in the field using a churn splitter to provide subsamples for analysis by the DEC laboratory. Using sample containers provided by the DEC laboratory, sample splits will be made for the following parameters: TP, TDP, TN, TDN, TSS, and chlorides. A minimum of 10% additional field QC samples will be added. Subsamples intended for TDP and TDN analyses will be filtered (0.45- μ m pore size membrane) immediately in the field. Appropriate preservatives will be added as necessary and the samples will be stored on ice or refrigerated until transfer to the laboratory within seven days of collection (seven days is the shortest holding time among the analytes after the field processing steps described). These steps will simplify the logistics of delivery of samples to the laboratory, particularly from events that are sampled outside of normal business hours. The DEC laboratory will use their approved methods and QA/QC procedures to perform the required analyses, at no cost to the Project Team. Samples will typically be delivered to the laboratory by courier service.

Data Management and Analysis

Database Development: In order to facilitate effective and efficient analysis, a database will be built that manages all pertinent field data. A single relational database (Microsoft Access or similar) will be designed and used for the storage and management of farm management practice data, weather data (temperature and rainfall), hydrologic data (runoff level and flow rate), runoff temperature and specific conductance, autosampler logs, and analytical results. Automated routines will be developed within the database for importing continuously collected records (air temperature, rainfall, water temperature, specific conductance, runoff level, and flow rate) to the greatest extent possible.

Statistical Analysis: The data set used for the primary statistical analyses will include total event discharge (m^3), event mean concentration (mg/L), and total event load (kg) for each monitored constituent for each event at each monitored location. Basic descriptive statistics, pair-wise comparisons, and exploratory data analysis will be conducted on this data set.

For the paired-watershed sites, changes in event discharge, event mean concentration, and event mass export in response to treatment will be tested using analysis of covariance (ANCOVA). ANCOVA compares two groups of data (e.g., calibration and treatment) while adjusting for changes in explanatory

variables using a combination of analysis of variance and regression. In the paired-watershed design, data from the control watershed are used to account for the effects of year-to-year weather variations on the variables of interest, in this case event discharge and TP, TDP, TN, TDN, CI, and TSS concentration and export. For a given variable of interest in a treatment watershed, the explanatory variable (covariate) is the same variable observed concurrently in the control watershed. Calibration and treatment period regressions between treatment and control watersheds will be tested for significant differences in slope, intercept, or both by analysis of variance of regression coefficients; differences in water quality data between the calibration and treatment periods will be deemed significant if the slope and/or intercept of the regressions differ at $P < 0.10$. The magnitude of treatment effect (e.g., the percent reduction due to the application of the new management) is assessed by comparing the value (e.g., event TP export) predicted from the calibration regression to that predicted from the post-treatment regression at the mean or median value observed in the control watershed during the post-treatment period.

For the WASCoB site, effects of treatment will be evaluated based on an input/output comparison (e.g., t-Test), both for individual events and over the entire monitoring period.

Project Communication and Reporting: The scope, scale, and anticipated level of interest in the project will necessitate a high level of routine communication between all involved parties.

Landowners: Because each project site will receive approximately 40 project-related visits annually, regular communication with the farm owner will be essential. Monitoring team leaders will be in regular contact with landowners, keeping them apprised of project progress. Further, having a dedicated team leader for each site means that the landowner will always know "who to call" if questions or concerns about the project should arise.

Current and ongoing information about farm management activities (e.g., tillage, planting, and manure application rate and timing) is essential to the overall monitoring effort. It is especially critical that BMP implementation activities in the treatment watershed and the continuation of conventional management in the control watershed are well-documented. This background information will be collected by personnel from VACD, with communication and feedback from the Project Team. Once project sites are established and monitoring systems installed, it is anticipated that it will be simplest for the monitoring team leaders to periodically discuss farm management activities as needed with the landowner while on site.

Project Team: Contractors are required to notify the State of changes to the project team (additions or deletions); resumes for the new project team members must be submitted within two weeks of such a change.

Project Advisory Committee: The Project Team will work with AAFM to establish a Project Advisory Committee (PAC). It is anticipated that the PAC will include personnel from NRCS, USGS, AAFM, ANR, the Lake Champlain Basin Program, landowners, and others with an expressed interest in the project. The PAC will provide advice on major project decisions or proposed modifications, such as: reviewing final fine-scale site selection; monitoring facility design and sampling plan; developing strategies for managing the implementation of management practices; and evaluating contingencies and specific problems as they arise. PAC meetings will be scheduled approximately semi-annually, with more frequent meetings likely at the beginning of the project. A final PAC meeting will be held to convey results and conclusions. It is also anticipated that PAC members will play an important role in disseminating and communicating project results to the public.

The Project Team will also make itself available for an annual presentation to the Lake Champlain Basin Program Technical Advisory Committee.

Practice Evaluation and Site Decommissioning

Practice Evaluation: In consultation with AAFM and NRCS, the Project Team will suggest any potential modifications to conservation practice implementation requirements based on the efficacy of the practices as implemented on the participating farms. Where the same practice is implemented on more than one farm, pollutant reductions due to treatment may be compared and contrasted.

Site Decommissioning: At the conclusion of the study, the Project Team will work with the farm owner and AAFM to determine whether the monitoring stations should be decommissioned or left in place to support future study. Should the farm owner wish to decommission the monitoring site(s), the Project Team will remove the equipment and return it to the farmer and restore the monitoring sites to their pre-project condition.

Annual and Final Reports: A succinct annual report will be prepared and delivered to AAFM which will be shared with LCBP by February 15th of each year. The annual report will focus on the evaluation and interpretation of data collected during the preceding field season.

A more detailed final report covering all aspects of the monitoring effort will be prepared. This will include site characterization, data collection and analysis, challenges faced, lessons learned and an evaluation of the effectiveness of the BMPs in reducing P and sediment losses. Maps and figures will be developed to assist AAFM in sharing project results with the public in a manner that also protects the privacy of the participating farms.

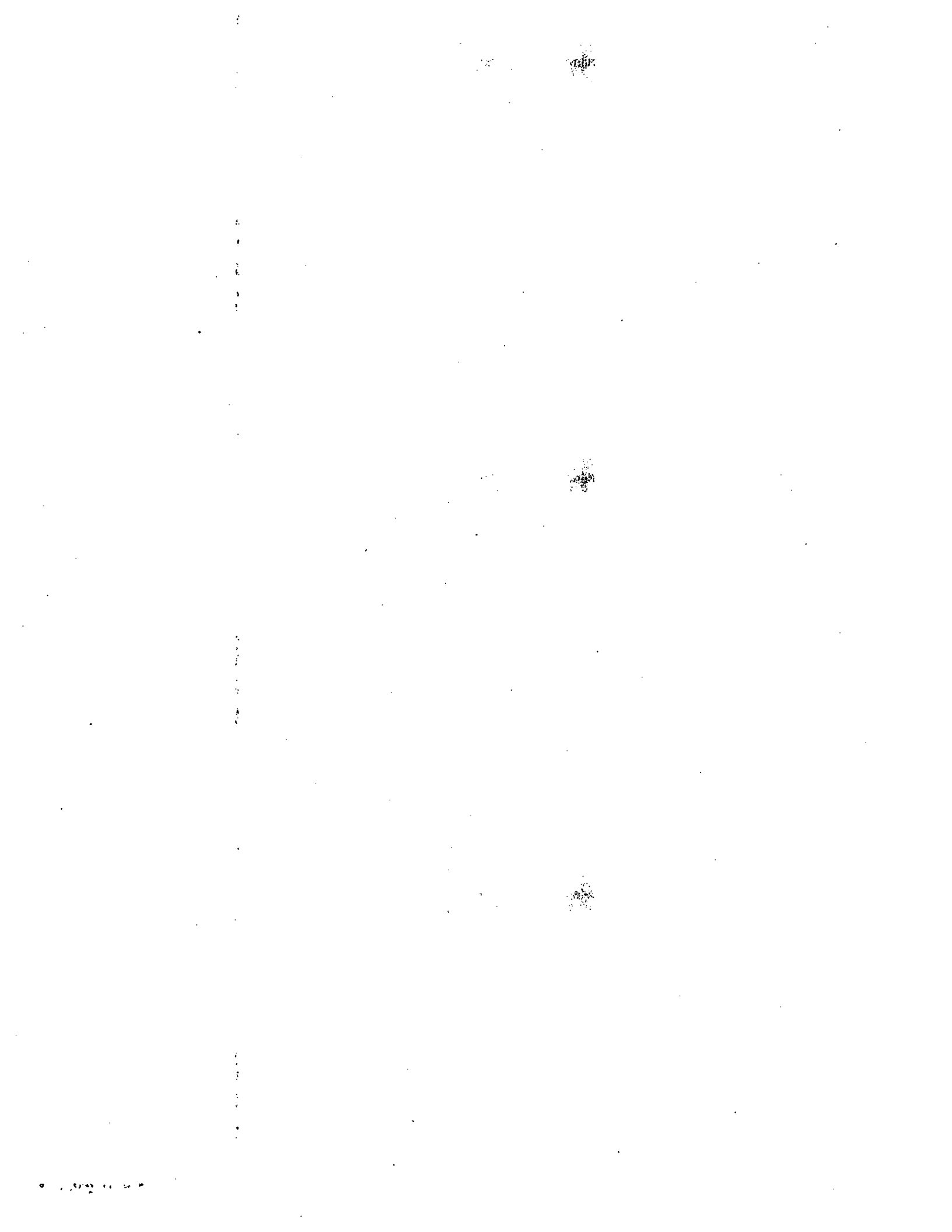
Project Timeline and Deliverables

Description	Timeline	Deliverable
Study Design and Site Characterization	March 31, 2012	Plan for which fields will be included in study and specific locations of monitoring stations based on field assessments
QAPP	March 31, 2012	Approved QAPP from NEIWPCC
Agronomic Practice Documentation	March 31-December 15 each year (2012,2013,2014)	Recorded details about the farm field management practices and the implementation of the conservation practices.
Monitoring Facility Design and Construction	April 30, 2012	Complete installation of all monitoring equipment at each of the 7 field locations.
Initial Calibration and Treatment Application	April 30, 2012-December 2014	When statistics are sufficient for calibration, the treatment applications will begin for the paired watershed sites,

		expected to be ready in year 2. Treatment applications will be continued throughout the project.
Sample Collection and Facility Maintenance	April 30, 2012-December 2014	Sample collections will occur on at least 20 events each year and maintenance will be as needed throughout the monitoring period.
Sample Analysis	April 30, 2012-December 2014	Samples will be collected and sent to the DEC laboratory throughout the monitoring period.
Data Management and Analysis	April 30, 2012-December 2014	A database to track all pertinent monitoring system information will be developed and utilized throughout the monitoring period. The results will be looked at periodically to ensure the monitoring system is operating as intended. At the completion of the monitoring period each year and at the end of the 3 years the data collected will be analyzed to determine the effectiveness of the BMPs in relation to the variables that were tested.
Reporting	April 30, 2012-December 2014	The contractor will provide annual and a final report demonstrating the BMP effectiveness findings, and provide a presentation to the LCBP TAC.

Project Budget: The \$350,000 GLFC funding will be matched with \$491,166 which will include USDA NRCS Architectural and Engineer funding, farmer funds directly appropriated from the USDA NRCS Environmental Quality Incentives Program contracts, the Vermont DEC and Agency of Agriculture match assistance for laboratory analysis and data collection.

AGO Agricultural Water Quality Monitoring Project					
	Total Costs	PHASE 1	PHASE 2		
	All 3 years	A&E	Direct Assignments	GLFC	In-kind
monitoring design by paired site - includes site characterization and study design, soil sampling, drainage area delineation, and flow prediction modeling	\$ 28,268	\$ 26,858			\$ 1,410
quality assurance plan development	\$ 6,397	\$ 6,397			
equipment and materials (including maintenance) - includes equipment purchase, monitoring supplies, non-routine maintenance, mileage, and incidentals	\$ 221,893		\$ 221,893		
installation (A&E)- includes project kick-off meeting with landowner, monitoring facility design, and construction oversight	\$ 36,745	\$ 36,745			
installation - monitoring facility construction	\$ 32,106		\$ 32,106		
decommissioning - includes removing all equipment and any necessary site restoration	\$ 11,332		\$ 5,876	\$ 5,456	
monitoring costs (data collection and sample delivery), includes sample collection and routine maintenance of the monitoring facility	\$ 301,223		\$ 243,180	\$ 58,043	
sample analysis				\$ 63,000	\$ 51,576
watershed and practice data collection	\$ 20,300			\$ 20,300	
database development	\$ 5,242			\$ 5,242	
data management - includes data entry, analysis, and QA/QC	\$ 88,024			\$ 88,024	
meetings - semi-annual meetings with PAC	\$ 16,189			\$ 16,189	
meetings - annual presentations to TAC	\$ 7,975			\$ 7,975	
practice evaluation	\$ 8,261			\$ 8,261	
reporting - includes project communication, preparation of annual and final reports	\$ 77,510			\$ 77,510	
total project costs	\$ 841,166	\$ 70,000	\$ 503,055	\$ 350,000	\$ 52,986





STATE OF VERMONT
JOINT FISCAL OFFICE

MEMORANDUM

FOR REFERENCE
Only -

To: James Reardon, Commissioner of Finance & Management
From: Nathan Lavery, Fiscal Analyst
Date: December 13, 2011
Subject: JFO #2535, #2536, #2537, #2538

- Background -

No Joint Fiscal Committee member has requested that the following items be held for review:

JFO #2535 – One limited service position in the Department of Health. This position will develop, organize and optimize a variety of Geographic Information System (GIS) applications and data sets. Funding for this position has already been approved (JFO 2022, 2406), but the duties were performed by a contractor. Approving this request would convert this contracted position to a limited service position.
[JFO received 11/10/11]

JFO #2536 – One limited service position in the Agency of Administration. This position will provide administrative support for the Exchange Planning grant. Funding for this position has already been approved (JFO 2468).
[JFO received 11/10/11]

JFO #2537 – \$70,000 grant from the U.S. Department of Agriculture to the Vermont Agency of Agriculture, Food & Markets. These funds will be used to contract for the design of water quality monitoring stations on 5-10 farm sites, and to provide construction inspection services, as part of the Water Quality Monitoring project.
[JFO received 11/10/11]

JFO #2538 – \$75,365 grant from the U.S. Centers for Disease Control and Prevention (CDC) to the Vermont Department of Health. These funds will be used to contract with the Coalition for a Tobacco Free Vermont and the Center for Public Health and Tobacco Policy at New England Law to expand Vermont's Tobacco Control Program. The contractors will provide training, research-based communication tools, and a statewide assessment of tobacco retail outlet numbers, as well as helping the department secure voluntary participation by state funded colleges/universities in a 100% smoke-free campus policy. This grant is awarded under the Affordable Care Act (ACA).
[JFO received 11/10/11]

The Governor's approval may now be considered final. We ask that you inform the Secretary of Administration and your staff of this action.

cc: Harry Chen, Commissioner
Chuck Ross, Secretary
Michael Clasen, Deputy Secretary

State of Vermont
 Department of Finance & Management
 109 State Street, Pavilion Building
 Montpelier, VT 05620-0401

Agency of Administration

[phone] 802-828-2376
 [fax] 802-828-2428

**STATE OF VERMONT
 FINANCE & MANAGEMENT GRANT REVIEW FORM**

Grant Summary:		This U.S. Natural Resources Conservation Service (NRCS) grant is for capital investments in design and construction inspection services for water quality field monitoring stations to be installed on participant landowners' farms.			
Date:		10/31/2011			
Department:		Agriculture, Food and Markets			
Legal Title of Grant:		AGO A&E Contract for Design & Construction Inspection Services for Water Quality Monitoring Stations.			
Federal Catalog #:		10.912			
Grant/Donor Name and Address:		USDA Natural Resources Conservation Service, 356 Mountain View Drive, Suite 105, Colchester, VT 05446			
Grant Period:		From:	To:		
		8/9/2011	2/9/2013		
Grant/Donation		\$70,000			
	SFY 1	SFY 2	SFY 3	Total	Comments
Grant Amount:	\$70,000	\$	\$	\$70,000	
Position Information:		# Positions	Explanation/Comments		
		0			
Additional Comments:		There is no match required with this grant.			
Department of Finance & Management		[Signature]		(Initial)	
Secretary of Administration		[Signature]		(Initial)	
Sent To Joint Fiscal Office				Date 11/8/11	



STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

BASIC GRANT INFORMATION				
1. Agency:	Vermont Agency of Agriculture			
2. Department:	Agricultural Resource Management			
3. Program:	Water Quality			
4. Legal Title of Grant:	AGO A&E Contract for Design & Construction Inspection Services for Water Quality Monitoring Stations			
5. Federal Catalog #:	10.912			
6. Grant/Donor Name and Address:	USDA Natural Resource Conservation Service 356 Mountain View Drive, Suite 105 Colchester, VT 05446			
7. Grant Period:	From:	8/9/2011	To:	2/9/2013
8. Purpose of Grant:	Agricultural Water Quality Improvements in Lake Champlain Watershed			
9. Impact on existing program if grant is not Accepted:	This grant provides federal capital investments in the design and planning of agricultural best management practice field monitoring to determine phosphorus reduction potentials which will help Vermont farmers to meet their obligations under the Clean Water Act and future requirements of the Lake Champlain TMDL from the Environmental Protection Agency.			
10. BUDGET INFORMATION				
	SFY 1	SFY 2	SFY 3	Comments
Expenditures:	FY 2012	FY	FY	
Personal Services	\$	\$	\$	
Operating Expenses	\$	\$	\$	
Grants	\$70,000	\$	\$	
Total	\$70,000	\$	\$	
Revenues:				
State Funds:	\$	\$	\$	
Cash	\$	\$	\$	
In-Kind	\$	\$	\$	
Federal Funds:	\$	\$	\$	
(Direct Costs)	\$70,000	\$	\$	
(Statewide Indirect)	\$	\$	\$	
(Departmental Indirect)	\$	\$	\$	
Other Funds:	\$	\$	\$	
Grant (source)	\$	\$	\$	
Total	\$70,000	\$	\$	
Appropriation No:	2200040000	Amount:	\$70,000	
			\$	
			\$	
			\$	

STATE OF VERMONT REQUEST FOR GRANT (*) ACCEPTANCE (Form AA-1)

		\$
		\$
		\$
	Total	\$70,000

PERSONAL SERVICE INFORMATION

11. Will monies from this grant be used to fund one or more Personal Service Contracts? Yes No
 If "Yes", appointing authority must initial here to indicate intent to follow current competitive bidding process/policy.

Appointing Authority Name: Charles Ross Agreed by: CRR (initial)

12. Limited Service Position Information:	# Positions	Title
Total Positions		

12a. Equipment and space for these positions: Is presently available. Can be obtained with available funds.

13. AUTHORIZATION AGENCY/DEPARTMENT

I/we certify that no funds beyond basic application preparation and filing costs have been expended or committed in anticipation of Joint Fiscal Committee approval of this grant, unless previous notification was made on Form AA-1PN (if applicable):	Signature: <u>Claude R. P...</u>	Date: <u>10-27-11</u>
	Title: <u>Secretary</u>	
	Signature: <u>[Signature]</u>	Date: <u> </u>
	Title: <u> </u>	

14. SECRETARY OF ADMINISTRATION

<input checked="" type="checkbox"/> Approved:	(Secretary or designee signature) <u>[Signature]</u>	Date: <u>11/3/11</u>
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15. ACTION BY GOVERNOR

<input checked="" type="checkbox"/> Accepted	(Governor's signature) <u>[Signature]</u>	Date: <u>11/8/11</u>
<input type="checkbox"/> Rejected		

16. DOCUMENTATION REQUIRED

Required GRANT Documentation

<input type="checkbox"/> Request Memo	<input type="checkbox"/> Notice of Donation (if any)
<input type="checkbox"/> Dept. project approval (if applicable)	<input type="checkbox"/> Grant (Project) Timeline (if applicable)
<input type="checkbox"/> Notice of Award	<input type="checkbox"/> Request for Extension (if applicable)
<input type="checkbox"/> Grant Agreement	<input type="checkbox"/> Form AA-1PN attached (if applicable)
<input type="checkbox"/> Grant Budget	

End Form AA-1

(*) The term "grant" refers to any grant, gift, loan, or any sum of money or thing of value to be accepted by any agency, department, commission, board, or other part of state government (see 32 V.S.A. §5).

DUPLICATE
ORIGINAL

U.S. Department of Agriculture
Natural Resources Conservation Service

NRCS-ADS-093
3/2011

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number 69-1644-11-03	2. Amendment No. N/A	3. Award/Project Period 09/01/2011 - 03/31/2013	4. Type of Award Instrument Cooperative Agreement
5. Agency (Name and Address) Natural Resources Conservation Service Vermont State Office 356 Mountain View Drive Colchester, VT 05446		6. Recipient Organization (Name and Address) Vermont Agency of Agriculture, Food, and Markets 116 State Street Montpelier, VT 05620 DUNS: 80-9376718 EIN: 03-6000264	
7. NRCS Program Contact: Kip Potter Vicky M. Drew Jim Wood	8. NRCS Administrative Contact: Pat Pickett	9. Recipient Program Contact: Laura DiPietro	10. Recipient Administrative Contact: Mary Morrison
11. CFDA Number 10.912 EQIP	12. Authority <small>Environmental Quality Incentives Program, (EQIP) 16 USC 3839aa-3829aa-9, 3841, 7CFR Part 1466</small>	13. Type of Action New Agreement	14. Project Director

15. Project Title/Description:
AGO A&E Contract for Design & Construction Inspection Services for Water Quality Monitoring Stations

16. Entity Type: Profit Nonprofit Higher Education Federal State/Local Indian/Native American
 Other

17. Funding:	18. Accounting and Appropriation Data																				
<table style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="text-align: center;"><u>Federal</u></td> <td style="text-align: center;"><u>Non-Federal</u></td> </tr> <tr> <td>Previous Total</td> <td></td> <td></td> </tr> <tr> <td>Current Total</td> <td style="text-align: right;">\$70,000</td> <td></td> </tr> <tr> <td>Grand Total</td> <td style="text-align: right;">\$70,000</td> <td></td> </tr> </table>		<u>Federal</u>	<u>Non-Federal</u>	Previous Total			Current Total	\$70,000		Grand Total	\$70,000		<table style="width: 100%;"> <tr> <td style="text-align: center;"><u>Financial Code</u></td> <td style="text-align: center;"><u>Amount</u></td> <td style="text-align: center;"><u>Fiscal Year</u></td> <td style="text-align: center;"><u>Treasury Symbol</u></td> </tr> <tr> <td style="text-align: center;">1176T50</td> <td style="text-align: center;">\$70,000</td> <td style="text-align: center;">2011</td> <td style="text-align: center;">1211004</td> </tr> </table>	<u>Financial Code</u>	<u>Amount</u>	<u>Fiscal Year</u>	<u>Treasury Symbol</u>	1176T50	\$70,000	2011	1211004
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1176T50	\$70,000	2011	1211004																		

APPROVED BUDGET

Personnel	\$		Fringe Benefits	\$	
Travel	\$		Equipment	\$	
Supplies	\$		Contractual	\$	70,000
Construction	\$		Other	\$	
Total Direct Cost	\$	_____	Total Indirect Cost	\$	_____
Total Federal Funds Awarded	\$	70,000	Total Non-Federal Funds	\$	_____
Total Approved Budget	\$	_____			

This agreement is subject to applicable USDA NRCS statutory provisions and Financial Assistance Regulations. In accepting this award or amendment and any payments made pursuant thereto, the undersigned represents that he or she is duly authorized to act on behalf of the awardee organization, agrees that the award is subject to the applicable provisions of this agreement (and all attachments), and agrees that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by NRCS to have been overpaid, will be refunded or credited in full to NRCS.

ACCEPTED BY

Name and Title of Authorized Government Representative VICKY M. DREW STATE CONSERVATIONIST	Signature 	Date 8/19/11
Name and Title of Authorized Recipient Representative CHARLES R. ROSS, SECRETARY VAAFM	Signature 	Date 8-8-11

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NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal; or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

PRIVACY ACT STATEMENT

The above statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. Section 522a).

INSTRUCTIONS FOR NOTICE OF GRANT/AGREEMENT AWARD

1. Award Identifying Number:
Agreement number
2. Amendment No.:
Amendment number (if applicable)
3. Award/Project Period:
Start and end date of project
4. Type of Award Instrument:
Cooperative, Grant, or Contribution
5. Agency:
Name, Address, City, State, ZIP Code
6. Recipient Organization:
Name, Address, City, State, ZIP Code, DUNS (Data Universal Numbering System), and EIN (employee identification number)
7. NRCS Program Contact:
Name and contact information of person to be contacted on matters involving the programmatic aspects of the agreement
8. NRCS Administrative Contact:
Name and contact information of person to be contacted on matters involving the administrative aspects of the agreement
9. Recipient Contact:
Name and contact information of person to be contacted on matters involving the technical aspects of the agreement
10. Recipient Administrative Contact:
Name and contact information of person to be contacted on matters involving the administrative aspects of the agreement
11. CFDA Number:
The Catalog of Federal Domestic Assistance number under which assistance is requested
12. Authority:
Authority under which the agreement is entered into
13. Type of Action:
Select one type of action:
 - i. New Agreement.—Agreement awarded for the first time
 - ii. Amendment/Revision.—Any change in financial obligation or deliverables
 - iii. Extension.—Extend performance period
14. Project Director:
Name and contact information of recipient's project director or principal investigator (if applicable)
15. Project Title/Description:
Brief description of the purpose of the agreement
16. Entity type:
Type of recipient
17. Funding:
Federal amount of the award and the non-Federal amount to be contributed to the project
18. Accounting/Appropriation Date:
Provide the following:
 - i. Financial Code.—Accounting classification code
 - ii. Amount.—Self explanatory
 - iii. Fiscal Year.—Self explanatory
 - iv. Treasury symbol.—Self explanatory
19. Approved Budget:
Totals for each budget category

STATEMENT OF WORK FOR COOPERATIVE AGREEMENT

BETWEEN THE

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

AND

THE VERMONT AGENCY OF AGRICULTURE, FOOD & MARKETS

Relative to: America's Great Outdoors Water Quality Projects

This agreement is entered into by and between the USDA, Natural Resources Conservation Service hereinafter referred to as the "NRCS" and "The Vermont Agency of Agriculture, Food & Markets", hereinafter referred to as "VAAFMM".

I. PURPOSE

This award is for The Vermont Agency of Agriculture, Food & Markets hereafter referred to as "VAAFMM", to solicit and administer a contract for Architect and Engineering Services as part of their role in providing coordination of all Partners contributing funds and/or staff time to accomplish the Water Quality Monitoring project primarily funded through the NRCS America's Great Outdoors Initiative.

II. AUTHORITY

Environmental Quality Incentives Program (EQIP), 16 U.S.C. 3839aa-3839aa-9; 3841, 7 CFR Part 1466 (CFDA 10.912)

III. OBJECTIVES

The America's Great Outdoors initiative encourages NRCS to engage partners in accomplishing projects. Many Partner agencies in Vermont have enthusiastically participated in planning/strategy development meetings, and have indicated willingness to contribute funds and/or staff time to accomplish the Water Quality Monitoring Projects in Vermont. This agreement provides funding for the VAAFMM to contract with an Architect and Engineering Firm to design and provide construction inspection services for the water quality monitoring stations to be installed on participating landowner's farms. Implementation of these stations will be coordinated between the landowner, VAAFMM, and the A&E firm, with partial funding for construction available in landowner contracts. VAAFMM will also work with the A&E firm in sampling, monitoring, and report writing, however funding for these activities is not included in this agreement.

IV. RESPONSIBILITIES OF THE PARTIES

A. NRCS will:

1. Provide funding in the amount not to exceed \$70,000 towards the work described under the expected accomplishment and deliverables of this agreement.
2. Provide any necessary guidance and direction to the VAAFM to ensure deliverables are accomplished in a timely manner.
3. Review project deliverables for proper format and acceptable documentation.
4. Upon review and approval of the accomplishments and deliverables along with proper documentation submit payment for the costs attributable to the completion of the work set forth in this agreement.
5. Provide the following as contacts:

	<u>Technical Contact</u>	<u>Administrative Contact</u>
Name:	Kip Potter	Pat Pickett
Address:	356 Mountain View Dr. Colchester, VT 05446	356 Mountain View Dr. Colchester, VT 05446
Phone:	(802) 951-6796 X 238	(802) 951-6796 X224
Fax:	(802) 655-0638	(802) 655-0638
Email:	kip.potter@vt.usda.gov	pat.pickett@vt.usda.gov

B. VAAFM will:

1. Accomplish the deliverables on time according to the milestones outlined in this agreement.
2. Contact the NRCS technical contact for any needed clarification or guidance throughout the project.
3. Submit all deliverables with sufficient time for review and necessary revision prior to the final approval.
4. Comply with the attached General Terms and Conditions.
5. Submit an accrual report to NRCS by the 11th day of the month before close of the Federal fiscal year quarter, i.e., March 11, June 11, September 11, and December 11 to NRCS administrative contact.
6. Submit a progress report with each request for advance or reimbursement (SF-270) documenting the activities accomplished during the billing period.
7. Provide the following as contacts:

	<u>Technical Contact</u>	<u>Administrative Contact</u>
Name:	Laura DiPietro	Mary Morrison
Address:	116 State Street Montpelier, VT 05620	116 State Street Montpelier, VT 05620
Phone:	(802) 828-1289	(802) 828-3567
Fax:	(802) 828-1410	(802) 828-1410
Email:	laura.dipietro@state.vt.us	mary.morrison@state.vt.us

V. EXPECTED ACCOMPLISHMENTS AND DELIVERABLES

The following items are defined deliverables for this agreement and will be completed by VAAFM:

1. Issue a Request for Proposals, negotiate, sign, and administer a contract for Architect and Engineering Services to design water quality monitoring stations on 5-10 farm sites, and to provide construction inspection services during implementation.
2. Make payment to the A&E contractor in three phases: upon completion and acceptance of preliminary design, final design, and construction inspection services.
3. Ensure design and construction oversight on each site meets specifications for NRCS Practice Standard 799, Monitoring and Evaluation.

VI. PERIOD OF PERFORMANCE

Project timeline will begin with the date of the last signature on the agreement and shall remain in effect for 18 months.

This Grant Agreement may be suspended or cancelled by either party by giving written notice at least 30 days in advance. Upon cancellation VAAFV will reimburse NRCS the remaining amounts unpaid and unobligated to the A&E contractor.

No changes, modification, or amendments in the terms and conditions of the Grant Agreement shall be effective unless reduced to writing, numbered, and signed by the duly authorized representative of the USDA and Grantee.

VII. MILESTONES

Task	Date for Completion
1. Issue a Request for Proposals	September 1, 2011
2. Negotiate and sign contract	November 1, 2011
3. Receive preliminary designs	October, 2011 – February, 2012
4. Receive final design	November, 2011 – March, 2012
5. Oversee Construction	November, 2011 – June 30, 2012

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

VERMONT AGENCY OF AGRICULTURE,
FOOD & MARKETS

By: James C. Wood, acting

By: Charles R. [Signature]

Title: State Conservationist

Title: Secretary Ag Food + Mkts

Date: 8/9/11

Date: 8-8-11

**NATURAL RESOURCES CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE**

**GENERAL TERMS AND CONDITIONS
GRANTS AND COOPERATIVE AGREEMENTS**

I. APPLICABLE REGULATIONS

- a. The recipient, and recipients of any subawards under this award, agree to comply with the following regulations, as applicable. (The full text of Code of Federal Regulations references may be found at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>.)
- (1) 7 CFR Section 3015.205, "General Provisions for Grants and Cooperative Agreements with Institutions of Higher Education, Other Nonprofit Organizations, and Hospitals"
 - (2) 7 CFR Part 3016, "Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments"
 - (3) 7 CFR Part 3017, "Governmentwide Debarment and Suspension (Nonprocurement)"
 - (4) 7 CFR Part 3018, "New Restrictions on Lobbying"
 - (5) 7 CFR Part 3019, "Uniform Administrative Requirements for Grant and Other Agreements with Institutions of Higher Education, Hospitals, and Nonprofit Organizations"
 - (6) 7 CFR Part 3021, "Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)"
 - (7) 7 CFR Part 3052, "Audits of States, Local Governments, and Nonprofit Organizations"
 - (8) 2 CFR Part 215, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations"
 - (9) Office of Management and Budget (OMB) Circular No. A-102, "Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments" (including Indian Tribal governments)
 - (10) 2 CFR Part 25, "Universal Identifier and Central Contractor Registration"
 - (11) 2 CFR Part 170 "Reporting Subaward and Executive Compensation Information"
- b. The recipient, and recipients of any subawards under this award, assures and certifies that it will comply with the following regulations, as applicable. (The full text of Code of Federal Regulations references may be found at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>.)
- (1) 7 CFR Part 3017, "Governmentwide Debarment and Suspension (Nonprocurement)"
 - (2) 7 CFR Part 3018, "New Restrictions on Lobbying"
 - (3) 7 CFR Part 3021, "Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)"
 - (4) 7 CFR Part 3052, "Audits of States, Local Governments, and Nonprofit Organizations"
 - (5) Public Law 109-282, "Federal Funding Accountability and Transparency Act of 2006"
 - (6) 2 CFR Section 175, "Award Term for Trafficking in Persons"

- c. Allowable project costs will be determined in accordance with the authorizing statute, the purpose of the award, and to the extent applicable to the type of organizations receiving the award, regardless of tier. The following portions of the Code of Federal Regulations are hereby incorporated by reference (the full text of Code of Federal Regulations references may be found at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1>):

- (1) 2 CFR Part 220, "Cost Principles for Institutions of Higher Education"
- (2) 2 CFR Part 225, "Cost Principles for State and Local Governments (Including Certain Indian Tribal Governments)"
- (3) 2 CFR Part 230, "Cost Principles for Nonprofit Organizations"
- (4) 48 CFR Part 31, "Contract Cost Principles and Procedures"

II. UNALLOWABLE COSTS

The following costs are not allowed:

- a. Costs above the amount authorized for the project
- b. Costs incurred after the expiration of the award including any no-cost extensions of time
- c. Costs that lie outside the scope of the approved project and any amendments thereto
- d. Compensation for injuries to persons or damage to property arising from project activities

This list is not exhaustive. Questions about the allowability of particular items of costs should be directed to the NRCS administrative contact identified in the award.

III. CONFIDENTIALITY

- a. Activities performed under this award may involve access to confidential and potentially sensitive information about governmental and landowner issues. The term "confidential information" means proprietary information or data of a personal nature about an individual, or information or data submitted by or pertaining to an organization. This information must not be disclosed without the prior written consent of NRCS.
- b. The recipient's personnel will follow the rules and procedures of disclosure set forth in the Privacy Act of 1974, 5 U.S.C. Section 552a, and implementing regulations and policies with respect to systems of records determined to be subject to the Privacy Act. The recipient's personnel must also comply with privacy of personal information relating to natural resources conservation programs in accordance with section 1244 of Title II of the Farm Security and Rural Investment Act of 2002 (Public Law 107-171).

IV. PRIOR APPROVAL REQUIREMENTS

The following are the most common situations requiring prior approval. However, the recipient is also bound by any other prior approval requirements of the applicable administrative provisions and Federal cost principles.

- a. Purpose or Deliverables.—When it is necessary for the recipient to modify the purpose or deliverables, the recipient must submit a written request and justification for the change along with the revised purpose or deliverables of the award to the NRCS administrative contact. The request should contain the following:
 1. Grant or agreement number
 2. Narrative explaining the requested modification to the project purpose or deliverables
 3. A description of the revised purpose or deliverables
 4. Signatures of the authorized representative, project director, or both
- b. Subcontractual Arrangement.—The recipient must submit a justification for the proposed subcontractual arrangements, a statement of work to be performed, and a detailed budget for

the subcontract to the NRCS administrative contact. Subcontractual arrangements disclosed in the application do not require additional postaward approval.

c. Absence or Change in Project Leadership.—When a project director or the person responsible for the direction or management of the project—

1. Relinquishes active direction of the project for more than 3 consecutive months or has a 25 percent or more reduction in time devoted to the project, the grantee must notify the NRCS administrative contact in writing, identifying who will be in charge during the project director's absence. The notification must include the qualifications and the signature of the replacement, signifying his or her willingness to serve on the project.
2. Severs his or her affiliation with the grantee, the grantee's options include—
 - i. Replacing the project director. The grantee must request written approval of the replacement from the NRCS administrative contact and must include the qualifications and the signature of the replacement signifying his or her willingness to serve on the project.
 - ii. Subcontracting to the former project director's new organization. The grantee must request approval from the administrative contact to replace the project manager and retain the award, and to subcontract to the former project director's new organization certain portions of the project to be completed by the former project director.
 - iii. Relinquishing the award. The grantee must submit to the NRCS administrative contact a signed letter by the grantee and the project director that indicates that the grantee is relinquishing the award. The letter must include the date the project director is leaving and a summary of progress to date. A final Standard Form (SF) 425 reflecting the total amount of funds spent by the recipient must be attached to the letter.
3. Transfers the award to his or her new organization, the authorized organization's representative at the new organization must submit the following to the NRCS administrative contact as soon as the transfer date is firm and the amount of funds to be transferred is known:
 - i. The forms and certifications included in the application package
 - ii. A project summary and work statement covering the work to be completed under the project (deliverables and objectives must be the same as those outlined in the approved proposal)
 - iii. An updated qualifications statement for the project director showing his or her new organizational affiliation
 - iv. Any cost-sharing requirements under the original award transfer to the new institution; therefore, cost-sharing information must be included in the proposal from the new organization

Note: The transfer of an award from one organization to another can take up to 90 days to accomplish, which may result in a delay in the project director resuming the project at the new organization.

- d. Budget Revisions.—Budget revisions will be in accordance with 7 CFR Section 3015.115.
- e. No-Cost Extensions of Time.—When a no-cost extension of time is required, the recipient must submit a written request to the NRCS administrative contact no later than 30 days before the expiration date of the award. The request must contain the following:
- The length of additional time required to complete the project and a justification for the extension
 - A summary of progress to date

- An estimate of funds expected to remain unobligated on the scheduled expiration date
- A projected timetable to complete the portions of the project for which the extension is being requested
- Signature of the grantee and the project director
- A status of cost sharing to date (if applicable)

Note: An extension will not exceed 12 months. Only in exceptional cases will more than one extension be granted. Requests for no-cost extensions received after the expiration of the award will not be granted.

V. PAYMENTS

- a. Payment by NRCS to the entity will be made monthly or quarterly (whichever is mutually agreed upon by both parties) on a reimbursable or advanced basis upon completion of work outlined herein. Payment will be executed upon the submission of a properly executed form SF-270. The SF-270 must cite the agreement number, remittance address, and billing period. The SF-270 must be sent to the NRCS program contact at the address identified in block 7 of the Notice of Grant/Agreement Award.
- b. Unless otherwise specified in the award, the recipient must receive payments through electronic funds transfers.
- c. Recipients requesting advances should request payments in amounts necessary to meet their current needs pursuant to procedures contained in the Federal administrative provisions and 31 CFR Part 205.
- d. The method of payment between the recipient and its contractors will be in accordance with the policies and procedures established by the recipient except that the contractors may not use the USDA Office of Financial Management/National Finance Center method to request payments. If the grantee makes advance payments to contractors, the grantee must ensure that the timing of such payments is designed to minimize elapsed time between the advance payment and the disbursement of funds. Payment requests from the grantee's contractors will not be sent to NRCS for review or approval.
- e. Accounting records for all costs incurred under this award must be supported by source documentation. Such documentation includes, but is not limited to, canceled checks, paid bills, payroll records, and subcontract award documents. Labor cost charges to this award must be based upon salaries actually earned and the time actually worked on this award. All project costs must be incurred within the approved project period of this award, including any approved no-cost extension of time. Costs that cannot be supported by source documentation or that are incurred outside of the approved project period and budget may be disallowed and may result in award funds being returned to the Federal Government by the recipient.

VI. FINANCIAL REPORTING

- a. Recipients must submit a Federal Financial Report (FFR), SF 425 and 425A, in accordance with the following schedule (recipients may download the applicable form at <http://www.forms.gov>):

<u>Quarterly Schedule</u>	<u>Report Due Date</u>
October 1 to December 31	January 31
January 1 to March 31	April 30
April 1 to June 30	July 30
July 1 to September 30	October 30

Reports must be submitted on an accrual accounting basis. Failure to submit reports in accordance with the above schedule may result in suspension or termination of award.

- b. A final Report must be submitted no later than 90 days after the completion of the award. For final FFRs, reporting end date must be the end date of the project or agreement period. The reports should be submitted to the NRCS administrative contact identified in award notifications.

VII. PERFORMANCE MONITORING AND REPORTING

- a. The recipient is responsible for monitoring day-to-day performance and for reporting to NRCS. If the project involves subcontractual arrangements, the recipient is also responsible for monitoring the performance of project activities under those arrangements to ensure that approved goals and schedules are met.
- b. Every 6 months the recipient must submit a written progress report. Each report must cover—
 - 1. A comparison of actual accomplishments with the goals and objectives established for the reporting period and, where project output can be quantified, a computation of the costs per unit of output.
 - 2. The reasons why goals and objectives were not met, if appropriate.
 - 3. Additional pertinent information including, where appropriate, analysis and explanation of cost overruns or high unit cost.
- c. The recipient must submit a final performance report within 90 days after completion of project.

VIII. SPECIAL PROVISIONS

- a. The recipient assures and certifies that it will comply with the minimum-wage and maximum-hour provisions of the Federal Fair Labor Standards Act.
- b. Employees of NRCS will participate in efforts under this agreement solely as representatives of the United States. To this end, they may not participate as directors, officers, employees, or otherwise serve or hold themselves out as representatives of the recipient. They also may not assist the recipient with efforts to lobby Congress or to raise money through fundraising efforts. Further, NRCS employees must report to their immediate supervisor any negotiations with the recipient concerning future employment and must refrain from participation in efforts regarding such parties until approved by the agency.
- c. Employees of the recipient will not be considered Federal employees or agents of the United States for any purposes under this agreement.

IX. PATENTS, INVENTIONS, COPYRIGHTS, AND ACKNOWLEDGMENT OF SUPPORT AND DISCLAIMER

- a. Allocation of rights of patents, inventions, and copyrights must be in accordance with 7 CFR Section 3019.36. This regulation provides that small businesses normally may retain the principal worldwide patent rights to any invention developed with USDA support.
- b. In accordance with 37 CFR Section 401.14, each subject invention must be disclosed to the Federal agency within 2 months after the inventor discloses it in writing to contractor

personnel responsible for patent matters. Invention disclosure statements pursuant to 37 CFR Section 401.14(c) must be made in writing to:

Acquisitions Division
Grants and Agreements Team
1400 Independence Avenue, SW.
Room 5221 South Building
Washington, DC 20250

- c. USDA receives a royalty-free license for Federal Government use, reserves the right to require the patentee to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must manufacture it domestically.
- d. The following acknowledgment of NRCS support must appear in the publication of any material, whether copyrighted or not, and any products in electronic formats (World Wide Web pages, computer programs, etc.) that is substantially based upon or developed under this award:
 - “This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number [recipient should enter the applicable award number here].”

In addition, all publications and other materials, except scientific articles or papers published in scientific journals, must include the following statement:

- “Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.”

The recipient is responsible for ensuring that an acknowledgment of NRCS is made during news media interviews, including popular media such as radio, television, and news magazines, that discuss in a substantial way work funded by this award.

X. COST-SHARING REQUIREMENTS

- a. If the award has specific cost-sharing requirements, the cost-sharing participation in other projects may not be counted toward meeting the specific cost-share requirement of this award, and must come from non-Federal sources unless otherwise stated in the applicable program announcement.
- b. Should the recipient become aware that it may be unable to provide the cost-sharing amount identified in this award, it must—
 1. Immediately notify the NRCS administrative contact of the situation.
 2. Specify the steps it plans to take to secure replacement cost sharing.
 3. Indicate the plans to either continue or phase out the project in the absence of cost sharing.
- c. If NRCS agrees to the organization's proposed plans, the recipient will be notified accordingly. If the organization's plans are not acceptable to NRCS, the award may be subject to termination. NRCS modifications to proposed cost sharing revisions are made on a case-by-case basis.
- d. Failure by the recipient to notify NRCS in accordance with paragraph (b) above may result in the disallowance of some or all the costs charged to the award, the subsequent recovery by NRCS of some of the NRCS funds provided under the award, and possible termination of the

award, and may constitute a violation of the terms and conditions of the award so serious as to provide grounds for subsequent suspension or debarment.

- e. The recipient must maintain records of all project costs that are claimed by the recipient as cost sharing as well records of costs to be paid by NRCS. If the recipient's cost participation includes in-kind contributions, the basis for determining the valuation for volunteer services and donated property must be documented.

XI. PROGRAM INCOME

Income derived from patents, inventions, or copyrights will be disposed of in accordance with the recipient's own policies. General program income earned under this award during the period of NRCS support must be added to total project funds and used to further the purpose and scope of this award or the legislation under which this award is made.

XII. NONEXPENDABLE EQUIPMENT

Recipients purchasing equipment or products with funds provided under this award are encouraged to use such funds to purchase only American-made equipment and products. Title to nonexpendable equipment purchased with award funds will vest in the recipient upon completion of the award project and acceptance by NRCS of required final reports. When equipment is no longer needed by the recipient and the per-unit fair market value is less than \$5,000, the recipient may retain, sell, or dispose of the equipment with no further obligation to NRCS. However, if the per-unit fair market value is \$5,000 or more, the recipient must submit a written request to the NRCS administrative contact for disposition instructions.

XIII. LIMIT OF FEDERAL LIABILITY

The maximum financial obligation of NRCS to the recipient is the amount of funds indicated in the award as obligated by NRCS. However, in the event that an erroneous amount is stated on the approved budget, or any supporting document relating to the award, NRCS will have the unilateral right to make the correction and to make an appropriate adjustment in the NRCS share of the award to align with the Federal amount authorized.

XIV. MODIFICATIONS AND TERMINATIONS

NRCS may amend or modify the award through an exchange of correspondence between authorized officials of the recipient and NRCS. The award is subject to termination if NRCS determines that the recipient has failed to comply with the terms and conditions of the award. In the event that the award is terminated, the financial obligations of the parties will be those set forth in 7 CFR Part 3015, Subpart N.

XV. AWARD CLOSEOUT

Award closeout is the process by which NRCS determines that all required project activities have been performed satisfactorily and all necessary administrative actions have been completed.