

## **Contract between Arrowwood Environmental, LLC and the Town of Middlebury**

1. **Parties.** This is a contract for personal services between the four town of Middlebury (hereafter “Town”) and Arrowwood Environmental, with the principal business place of 950 Bert White Road, Huntington, Vermont, 05462, (hereafter “Contractor”). The contractor’s form of business is a Limited Liability Company (LLC). The contractor is required by law to have a Business Account Number from the Vermont Department of Taxes. Account number is 134173 AR.
2. **Subject Matter.** The subject matter of this contract is personal services generally on the subject of a Natural Resources Inventory for the Town. Detailed services to be provided by the contractor are described in **Attachment A.**
3. **Payment Provisions.** In consideration of the services to be performed by the contractor, the Towns agree to pay contractor a sum not to exceed \$3,000 per fiscal year. Payments will be made monthly as work is completed. The contractor shall submit monthly invoices to:

Town of Middlebury  
Jennifer Murray  
Director of Planning and Zoning  
77 Main Street  
Middlebury, VT 05753  
(802) 388-8100 x210

4. **Contract Term.** This Agreement shall be effective from its execution by the second signatory until work is deemed complete.
5. **Amendments.** No changes, modifications, or amendments in the terms and conditions of the contract shall be effective unless written, numbered and signed by the duly authorized representative of the Towns and contractor.
6. **Cancellation.** Either party may cancel this contract by giving written notice at least 14 days in advance.
7. **Liability.** In further consideration of Arrowwood Environmental, LLC's performance of its duties under this Agreement, Client agrees to limit any and all claims for professional negligence or breach of contract to the amount of the total fees paid to Arrowwood Environmental, LLC for its services hereunder, and to release Arrowwood Environmental, LLC, and its employees, consultants and agents from liability for such claims in excess of said amount, except in cases of intentional misconduct or gross negligence. This Agreement may be terminated by either party upon fourteen (14) days notice. The term of this Agreement shall commence upon the date by which both parties shall have executed this Agreement and shall end upon termination.

8. Attachments. This contract includes the following attachments that are incorporated herein.

**Attachment A: Arrowwood Environmental Scope of Work and Budget**

9. Authority The persons signing this Agreement on behalf of the parties to this Agreement warrant that they have the requisite authority to make such commitments and undertake such responsibilities as provided for hereunder.

Signed and Agreed to this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_:

WE THE UNDERSIGNED PARTIES AGREE TO BE BOUND BY THIS CONTRACT.

Town of Middlebury

Arrowwood Environmental

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

**Attachment A**  
**Work Proposal**

## Cost Estimate for a Natural Resources Inventory in Middlebury Vermont

April 11, 2018

Arrowwood Environmental (AE) is pleased to present a cost estimate for performing a Natural Resources Inventory in the town of Middlebury, Vermont. AE is a small, Vermont-based company that has been working with towns and conservation organizations for the past 17 years to map and assess natural resources in Vermont. Our team of professionals have extensive experience in botany, wildlife biology, wetland ecology, surface water hydrology, remote sensing and geographic information systems. Using our expertise, we have conducted natural resource assessments in 19 towns across the state, providing land managers with valuable information about significant natural communities, high functioning wetlands and critical wildlife habitat.

A cost estimate along with a brief description of the tasks to be performed are included below. Based on conversations with Jennifer Murray, the work has been spaced out over a period of five years, with a total annual budget of \$3000. The exception to this is the first year (2018) in which the \$3000 budget is available before July 1 and another \$3000 available after July 1. In order to keep each budget under the \$3000 allocated, each yearly deliverable will consist of a data transfer to the town along with a brief memorandum explaining the data and results of that year's work. In addition, for years that involve field work, the Middlebury Conservation Commission will be responsible for obtaining landowner permission for selected parcels. This process is typically more successful if landowners are contacted by local residents instead of an outside consulting firm.

The following proposed yearly task descriptions outline our approach to conducting the inventory over the five-year period. In most cases, each year's work builds on the previous inventory and becomes an integral part of the overall picture of natural resources in the town. Once this initial 5-year inventory is completed, additional field work can help refine the mapping and target areas of interest not addressed in the initial inventory.

**Year One: 2018.** The focus of the first year's inventory will be on updating the wetland map. In Table 1, this task takes up two columns, 2018a and 2018b. The work outlined in the 2018a column will be conducted before July 1, and the work in column 2018b conducted after July 1. The focus on the 2018a work first part of the wetland map update will be to review the existing wetland map and update the mapping to reflect current conditions. This remote update will utilize the more recent higher resolution imagery that is available, as well as updated topographic models, soils maps and surface water data layers. A limited amount of field verification from public access is included in this task. The work after July 1 will

include the field component of this process. The focus on this task will be to conduct targeted field evaluations to assess the boundaries of select wetlands as well as perform functional assessments of these sites. The resulting updated wetland map will be delivered to the town as a GIS layer with attribute information about each mapped wetland.

**Year Two: 2019.** The focus on the second year of the inventory will be to perform base mapping of the entire town in two components. This task will include the remote mapping of upland natural communities in the forested portions of town, and mapping of landcover conditions elsewhere. This map will be based on ortho imagery, known natural community occurrences, soils and topographic data layers. Community nomenclature will use the most recent natural community classification adopted by the Vermont Natural Heritage program. The natural community and landcover mapping will form the basis for the wildlife habitat modeling in Year Three.

**Year Three: 2020.** Year Three will focus on modeling wildlife habitat in the town. The product of this task will be the identification of “Contiguous Habitat Units” (CHU). Each CHU is an assemblage of individual wildlife habitat features important to specific species or guilds of wildlife, such as deer wintering areas, ledge and cliff habitat, wetland habitats, mast stands, and grasslands. Together these function as a unit of diverse and relatively continuous wildlife habitat. CHUs, their wildlife habitat components, along with any available field data will form the foundation for preliminary mapping of potential wildlife corridors and road crossings throughout the town. These corridors can function as the starting place for understanding likely patterns of wildlife movement between CHUs within the town, as well as a foundation for future in-depth field-based studies and assessments of wildlife corridors. As part of this assessment process, AE ecologists will conduct up to two sessions of “Rapid Road Tracking” aimed at identifying areas favorable to winter travel by a general suite of larger mammal wildlife species. Concentrations of road-crossing wildlife tracks are a useful verification tool for initial wildlife corridor mapping. AE has developed a methodology for rapid road tracking that includes traveling all public roads within a town during the best available winter tracking conditions and mapping wildlife crossing points with custom designed GPS based data entry tools.

**Year Four: 2021.** The inventory during Year Four will focus on further field work in support of the wildlife habitat assessment. AE ecologists will conduct an additional session of “Rapid Road Tracking” to augment the data collected in the previous winter. AE ecologists will also conduct targeted field site visits to confirm and characterize the remotely mapped wildlife habitat elements and to document wildlife sign and use in the field.

**Year Five: 2022.** The inventory during Year Five will focus on targeted field work for wildlife and upland natural communities. The wildlife field work will continue to confirm and characterize wildlife habitat elements in the town as well as document the presence of species within those habitats. The natural community field work will target potentially significant communities to assess the ecological condition of these sites and confirm mapped boundaries.

A detailed cost estimate for each of these yearly inventories is presented below.



	Year 1		Year 2	Year 3	Year 4	Year 5
	2018a	2018b	2019	2020	2021	2022
<b><i>Task 1. Remote inventory and landscape analysis</i></b>	Hours					
a. Wildlife Habitat Landcover Mapping			22			
b. Wildlife Habitat Modeling				10		
c. Wetlands	34					
d. Upland Natural Communities			11			
e. Remote Inventory Data mgmt/processing	2		2			
<b>Remote Inventory Subtotal:</b>	<b>36</b>	<b>0</b>	<b>35</b>	<b>10</b>	<b>0</b>	<b>0</b>
<b><i>Task 2. Field Evaluations</i></b>						
a. Wildlife Rapid Road Tracking				12	7	
b. Wetland Public Access Surveys	9					
c. Site Specific Field Evaluations		30			14	26
d. Wildlife Road Tracking Data Integration				5	5	
e. Field Evaluations Data Integration	2	4			2	2
f. Field Evaluation Permission data management					2	2
<b>Field Evaluation Subtotal:</b>	<b>11</b>	<b>34</b>	<b>0</b>	<b>17</b>	<b>30</b>	<b>30</b>
<b><i>Task 3. Final Report Development</i></b>						
a. Data Analysis	3		3	5	3	2
b. Cartography/Graphics		3	3	3	3	2
c. Report Writing		10	10	10	9	9
<b>Reporting Subtotal:</b>	<b>3</b>	<b>13</b>	<b>16</b>	<b>18</b>	<b>15</b>	<b>13</b>
<b><i>Task 4. Project Administration</i></b>						
General Project Administration	3	3	3	3	3	3
<b>Admin Labor Subtotal:</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>
Mileage expenses	85	250	30	120	100	240
<b>Expense Subtotal:</b>	<b>85</b>	<b>250</b>	<b>30</b>	<b>120</b>	<b>120</b>	<b>240</b>
<b>Yearly TOTAL</b>	<b>\$3000</b>	<b>\$3000</b>	<b>\$3000</b>	<b>\$3000</b>	<b>\$3000</b>	<b>\$3000</b>