

# Report on Options for Municipal Roles and Responsibilities in Stormwater Management

**W.Br.Little River  
Stowe**



**Englesby Brook  
Burlington**



**Moon Brook  
Rutland**



**Muddy Brook  
Williston**



**Stevens Brook  
St.Albans**

**Malletts Bay  
Colchester**



**Lamoille River  
Morristown**



**Bartlett Brook  
S. Burlington**

**Vermont Agency of Natural Resources  
Department of Environmental Conservation  
Water Quality Division  
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# **Report on Options for Municipal Roles and Responsibilities in Stormwater Management**

The following report is submitted at the request of the 2000 Vermont State Legislature (Act #114) and is in response to the mandates set forth by the 1987 Amendments to the Federal Clean Water Act (CWA) of 1972 (CWA 402(p)(5)) otherwise known as the Phase 2 Stormwater Rule, Act #114, and the proposed requirements of the Vermont Agency of Natural Resources (VANR) watershed improvement permits (WIP). As requested by the Legislature to be represented in this report under Act # 114, Sec.5, the parties on page 10 of this report hereby submit to the Legislature a list of municipal needs for stormwater management.

The parties have also provided considerable input to the VANR on the development of the Vermont stormwater management program as defined in Act #114, 1-13.

## **Introduction**

### *The Problem*

Stormwater Runoff has a significant environmental impact because it:

- causes flooding which results in erosion/property damage,
- endangers or destroys aquatic wildlife and wildlife habitats,
- causes unhealthy algal blooms and
- endangers public health via contact recreation sports and by contaminating drinking water.

### *Clean Water Act*

The Federal CWA directs the Environmental Protection Agency (EPA) to address the problems of flooding, water pollution and public health threats caused by stormwater runoff from developed lands or urban areas. This runoff comes from roads, rooftops and other impervious surfaces.

The CWA requires that the Environmental Protection Agency address urban stormwater runoff in a phased approach starting with the largest urban areas in the country (based on population census data).

In 1999 the EPA, and the VANR as the federally delegated authority, began Phase 2 of this approach, which includes the Lake Champlain basin communities of Burlington, South Burlington, Essex, Essex Junction, Colchester, Williston, Shelburne, Winooski and Rutland in Vermont, and Plattsburgh, New York. The Vermont communities must file, by March 10, 2003, a notice of intent with the VANR showing how they intend to comply with the Phase 2 stormwater rule.

There are six minimum measures required of each designated permittee under the Phase 2 rule. These measures are:

- (1) Public Education and Outreach,
- (2) Public Participation/Involvement,
- (3) Illicit Discharge Detection and Elimination,
- (4) Construction Site Runoff Control,
- (5) Post-Construction Runoff Control and,
- (6) Pollution Prevention/Good Housekeeping.

The Phase 2 stormwater rule is administered as a National Pollutant Discharge Elimination System (NPDES) permit and has a 5-year permit life.

## Act 114

In addition to the Federal requirements under the CWA, the State of Vermont has a law affecting stormwater. Act # 114 amends Sec. 3. 10 V.S.A. §§ 1264 and requires the VANR to implement a comprehensive state stormwater program that includes the six minimum measures of the federal Phase 2 stormwater rule (§§ 1264, (b) (5), (6), (9), (10), (13)).

### Additional Regulatory Framework

Stormwater from developed lands is a significant contributor of phosphorus to many receiving waters. A phosphorus total maximum daily load (TMDL) is currently being developed for Lake Champlain and the control of phosphorus in urban runoff has been determined to be one cost effective strategy for reducing eutrophication of the lake.

Public drinking water suppliers are required to adopt source water protection plans as part of a multi-barrier strategy for protection under the EPA Water Supply Rule, Sec. 7.6. Source water protection requires management of stormwater runoff from developed lands. There are over 100,000 Vermonters who receive drinking water from sources that are potentially susceptible to impacts from urban runoff.

### **Status of Stormwater Pollution in Vermont**

In 2000 the VANR published a list of state waters that do not currently meet the Vermont Water Quality Standards. This list is required by the federal CWA and is referred to by VANR as the 303(d) list.

This list includes:

- 25 waters of the state that are impaired due principally to stormwater runoff.
  - 15 of the 25 waterways can be classified as urban or suburban watersheds and are located in the Champlain or Connecticut River Valleys.
  - The remaining 10 are located in more rural or mountainous areas of the state.
- 28 waters of the state that are impaired due principally to agricultural stormwater runoff.
- 2 waters of the state that are impaired due principally to silvicultural stormwater runoff.

In addition to the streams listed as impaired on the VANR 303(d) list there are numerous examples across the state of natural resource degradation and threats to public health due to stormwater runoff. These more localized problems are not restricted to typical urban areas of the state such as Barre or St. Johnsbury; they also occur where growth areas have encircled traditional Vermont towns and villages or where runoff from developments was improperly directed onto unstable soils or slopes. Examples of such problems can be found in villages and towns such as Morristown, Londonderry, Georgia, Bethel and Westminster. Any watershed or subwatershed subject to intensive land development can be degraded by stormwater. Stormwater problems occur more frequently and with more regularity in Chittenden, Rutland and Washington Counties but no town or county in the state is immune from them.

Stormwater has the potential to cause short and long-term source water contamination for public water supplies. Significant increases in source water intake turbidity levels and bacteriological indicator levels have been recorded after stormwater runoff events from developed lands.

Stormwater runoff problems and the costs to remedy them often result from traditional civil engineering approaches for providing adequate storm drainage and to prevent on-site flooding. Vermonters have achieved a high level of success in controlling nuisance flooding in developed areas. However, in the past there has been little concern for the impact of this approach on the state's water quality and stream channel integrity. As a result the cumulative effect of past practices has and will continue to result in stormwater problems and more water quality degradation each year in Vermont. A significant part of the cost associated with restoring water quality in the twenty-five impaired waterways involves retrofitting older drainage networks for water quality and channel protection treatment.

The cumulative effect in developed areas of providing rapid drainage without recognition of the need for stream channel protection can also create significant problems. The net result of channel widening and

channel instability causes culvert surcharging, property damage and significant sediment loading or erosion to waters and lands of the state. Between 1995 and 1998 Vermont experienced \$60 million dollars in flood damages and since 1989 six of the thirteen federally declared disaster areas were in developed areas of the state.

Another cost associated with improving the condition of our stormwater-impaired streams involves correcting years of neglected infrastructure maintenance. In the last five years many municipalities have begun to address water quality impacts from new development. In addition many of these municipalities have aggressively maintained basic infrastructure through activities such as catch basin cleaning and street sweeping. Stormwater infrastructure inventories conducted by VANR indicate however that more sophisticated systems such as infiltration basins, sedimentation basins, and detention ponds are failing and that this is primarily due to a lack of maintenance. Stormwater infrastructure (which includes but is not limited to catch basins, storm drainage piping, road ditches, flood control basins, ponds, dry basins and swales) historically has been considered “orphan” infrastructure, meaning there are normally no fees associated with use of the infrastructure except when included in the original purchase price of a residential or commercial lot. The majority of stormwater permittees in Vermont are not aware of or do not recognize their responsibilities under their state permit. VANR is largely responsible for the failure to follow up on compliance with these permits. Annual maintenance fees or assessments of public or private stormwater infrastructure are only rarely required.

The lack of concern for surface water quality exhibited by the traditional engineering approach to stormwater runoff, the lack of required maintenance for private stormwater systems by VANR, and a lack of funds for addressing preexisting stormwater problems has led to a significant financial crisis for stormwater management in Vermont. The recent Vermont Water Resources Board decision (August 2001) involving the Lowes Home Improvement Co. and Potash Brook in South Burlington has only accelerated the arrival of this crisis.

### **A Brief Timeline of Stormwater Management in Vermont**

The VANR began regulating stormwater discharges to waters of the state in the mid 1970's. There are approximately 2000 existing stormwater permits statewide of which about 1000 are located in the more urbanized municipalities of the state. The VANR's policy for the collection of stormwater, as administered by the DEC Wastewater Management Division and now the DEC Water Quality Division, has been to minimize the collection of runoff. This policy attempts to discourage the need for creating extensive collection systems and therefore minimizes the need for maintenance, while still providing adequate drainage for a site. This "low impact" approach has achieved significant results when followed and has allowed stormwater to be sufficiently treated by overland flow across terrain to vegetated areas. Unfortunately this policy has often come in conflict with municipal regulations and developer's desires for curb and catch basin drainage and has not been implemented as frequently as it could have been in developing areas of the state.

In the early 1970's stormwater pollution became recognized as a problem at the municipal level in Chittenden County. Starting in 1972 in South Burlington, and now including all of the towns with significant surface waters surrounding Burlington, undisturbed and vegetated buffer zones along streams and lakes have been created through town zoning regulations to protect surface waters from runoff and encroachment by development. These buffer zones can provide effective treatment for stormwater runoff that is released as overland flow. The creation of stream buffer zones is a very cost effective stormwater best management practice. This practice in conjunction with the VANR's policy of infrastructure minimization has undoubtedly prevented the creation of many stormwater problems.

In 1984 South Burlington adopted the first watershed based municipal ordinance regulating stormwater. A stormwater flood control ordinance was proposed for a watershed in the City of Winooski in the late 1980's but never adopted. Communities such as Rockingham, Stowe, Westmore, Brandon, Brattleboro, and St. Albans Town have adopted stormwater standards in their zoning to protect their water resources from stormwater-associated damages. Municipal stormwater programs are currently under development in Colchester and Essex.

In 1999 the City of Burlington received funds as part of the Pine Street Barge Canal Superfund settlement to implement the restoration of the Englesby Brook watershed, one of the twenty-five impaired watersheds. This project has a five-year time span and includes a long term monitoring component to assess the effects of the phased restoration on water quality of the brook and Lake Champlain. This watershed restoration will be a model for other areas of the state as well as provide scientific documentation for restoration projects.

In August 2001, the Vermont Water Resources Board released the Memorandum of Decision on the Hannaford Bros. Co. and Lowes Home Centers, Inc. request to discharge stormwater to Potash Brook in South Burlington.

### **Watershed Improvement Permits**

As a result of the Hannaford/Lowes decision the VANR is preparing to issue General Permits for stormwater discharges in the twenty-five stormwater impaired waters of the state. These Watershed Improvement Permits will require that for each impaired water:

- (1) all existing state stormwater permits be in substantial compliance with their existing permit conditions,
- (2) a selected set of existing stormwater discharges will be modified to improve the quality and reduce the impact of the discharge and that,
- (3) all new development comply with the new state stormwater management manual.

Requirements (1) and (2) of the General Permit will create significant and at the present unplanned for and unfunded costs for many of the municipalities and private landowners in watersheds impaired by stormwater.

### **Estimating Costs for Implementing the Watershed Improvement Permits and the Phase 2 Stormwater Rule**

Although no comprehensive cost estimates have been prepared to date for the waters of the state impaired by stormwater there is some information available indicative of the potential total cost.

The Englesby Brook watershed restoration project in Burlington is estimated to cost \$737,500 for stormwater retrofits and stream channel restoration.

The VANR has estimated that current permit holders will need to spend \$425,000 to achieve a maintained condition (a condition required in all state stormwater permits) for 95 stormwater structures in the Potash Brook watershed of South Burlington. This cost may have to be shared by the municipality since many developments contain public roads and public stormwater infrastructure.

The cost to retrofit an existing 10 acre storm sewer in the Bartlett Brook watershed of South Burlington will be about \$250,000.

A study prepared for the Lake Champlain Basin Program/New England Interstate Water Pollution Control Commission estimated that the cost to provide stormwater treatment for existing untreated stormwater discharges in the Potash Brook watershed sufficient to restore the stream to the Class B water quality standard would cost about \$ 0.6 million dollars. This study estimated that the cost to restore six of the twenty-five state waters impaired by stormwater would be approximately \$2.2 million dollars. This estimate did not include land or right-of-way acquisition costs. In the event that municipalities are unable to find suitable public lands for treatment systems this cost estimate could easily increase two fold. However, the actual total annualized cost (30 years @ 5%) for these six impaired waterways would be \$129,500/yr or \$260,000/yr if land acquisition estimates were included.

Based on EPA estimates the implementation of the Phase 2 stormwater rule requirements will annually cost communities with a demographic structure similar to the Greater Burlington area between \$320,000 - \$865,000. However approximately one-third of this cost assumes the development of a post-construction runoff control program. The VANR is currently developing this program and there is no need for the development of a separate municipal program, unless a municipality deems it necessary.

*A Regional Plan for Implementing the Watershed Improvement Permits and Phase 2 Stormwater Rule in Chittenden County, Vermont*

The VANR and the listed municipalities subject to the requirements of the Watershed Improvement Permits and the Phase 2 stormwater rule believe that the most effective means to clean up stormwater pollution is through a cooperative and collaborative process.

- It is economically efficient and environmentally effective for the greater Burlington area communities to:
- undertake a regional stormwater education plan,
  - undertake a study to define alternatives for managing stormwater and analyze which solution will work best to address long term municipal needs.

The VANR has supported this effort and recognizes that streamlining the Phase 2 requirements so that a regional approach can successfully address them is critical. The VANR believes that in Chittenden County there are many existing municipal and private programs already in place that need only to be directed and/or financially supported to achieve compliance with the Phase 2 rule.

In addition, because watersheds and property lines cross municipal boundaries, municipalities will need to coordinate and cooperate with each other to address the requirements of the Watershed Improvement Permits.

**A Regional Strategic Plan for Stormwater Management?**

Municipalities believe that five questions need to be answered in order to develop a regional strategic plan for stormwater management.

**First**, *how can the Phase 2 communities undertake a regional public education and outreach program most efficiently?*

The consensus among the communities is that a regional approach to public education would be superior to a local one. The need to provide the public with a thorough understanding of existing stormwater problems and solutions is preliminary to and essential for development of successful stormwater management programs.

The VANR agrees with their assessment. The Lake Champlain Committee has presented an outline of a regional stormwater education program that the VANR believes would be effective both economically and environmentally and meet requirements #1 and #2 under Phase 2.

The VANR further believes that the communities can meet requirement #3, Illicit Discharge Detection and Elimination, through a regional approach.

The estimated cost for the first 5 years of a regional education and outreach program is \$670,000.

**Second**, *what are the options for setting up and funding local, regional or intermunicipal stormwater utilities?*

A thorough, professional evaluation of the potential ways of providing sustainable stormwater utility services in Phase 2 communities is critical. Such evaluation should include the potential to use existing regional utilities as service providers. A utility study should also look at the potential to integrate Phase 2 permittees, and other towns if they desire, into a regional utility or maintenance system and provide a potential “phasing plan”, to incorporate individual local utilities under a regional umbrella over time as they deem appropriate.

**Third**, *what legal tools are needed to implement regional and local stormwater management programs?*

A thorough evaluation of the state and local legal situation is crucial to ensure that municipalities have the legal basis for implementing stormwater impact fees. It would be most cost effective to answer the generic legal issues through a regional study, and then evaluate individual communities’ charters and bylaws for specific issues.

**Fourth**, *what other resources and steps are needed before a long term stormwater management strategy can be initiated?*

The Phase 2 communities and local utility providers need an idea of the funding, staff and equipment requirements necessary for a regional stormwater strategy. The sooner the communities can identify the capital purchases or assessments and the local bylaw changes needed to start a utility or maintenance program, the sooner they can build political support for these investments.

The estimated cost of responding to questions 2,3 and 4 is \$300,000.

**Fifth**, *what is the inventory of the current local storm drainage and stormwater permits?*

The communities need to have a complete geographic information systems inventory of local storm drainage systems and a database of existing stormwater permits and plans.

The estimated cost for completing such an inventory is \$150,000.

**Existing Funding Resources**

The VANR and the Federal Emergency Management Agency (FEMA) have provided over the past five years approximately \$500,000 in funds to investigate the impact of stormwater from developed lands, to assist urbanizing towns with the development of watershed or stormwater management plans and, to provide water quality treatment for selected stormwater discharges in impaired watersheds. FEMA has created a new three year pre-disaster mitigation program that could provide financial assistance to municipalities who are able to integrate stormwater planning with riparian channel protection and hazard mitigation.

There are currently few additional sources of funding available to assist Vermont municipalities with the development of a regional stormwater management plan. The Vermont Department of Housing and Community Affairs (DHCA) can provide Municipal Planning Grants up to a maximum of \$15,000/yr. DHCA also provides larger Community Block Grants that may be potentially accessible to communities for stormwater management and infrastructure but projects must meet specific national and state objectives to qualify.

The Vermont Agency of Transportation (VTTrans) Enhancement Program provides grants for transportation enhancement projects, including but not limited to, mitigation of water pollution impacts from highway runoff. Municipal stormwater projects are potentially eligible; grants range in size from \$10,000-\$400,000. However, these funds cannot be accessed for compliance with a federal or state environmental permit requirement.

**Municipal Needs for Stormwater Management**

As Vermont continues to grow, stormwater management will take an increasingly important role if the state is to protect its surface waters from degradation and maintain a healthy and safe environment for the large percentage of the Vermont population that resides in the more urban or developed areas of the state. The authors of this report ask that the Legislature help the urbanizing municipalities of Vermont achieve this goal by implementing the following:

- (1) Provide funding for the regional strategic plan for stormwater:

Task	Detailed Scope of Services	Time Line of Service	Requested Funds	Local Match	Total
1	Appendix A	5 year	<b>\$550,000</b>	\$120,000	\$670,000
2,3,4	Appendix B	2 year	<b>\$240,000</b>	\$ 60,000	\$300,000
5		2 year	<b>\$150,000</b>		\$150,000
Total			<b>\$940,000</b>	\$ 180,000	\$1,120,000

- (2) Provide funding assistance for addressing the costs of implementing statewide the twenty-five Watershed Improvement Permits (WIP) by creating a new revolving loan fund for stormwater or by creating more flexibility in the existing fund and enabling the use of the State Revolving Fund (SRF) loans for urban stormwater management.
- (3) Support the VANR's stormwater utility enabling legislation so that any municipality may adopt, if it deems necessary, the means to establish a secure funding base for stormwater management and infrastructure maintenance.

## REPORT PARTICIPANTS

Herb Durfee	Town of Essex
Tim Fluck	Chittenden County Regional Planning Commission
Dana Farley	Town of Shelburne
Brent Rakowski	Dufresne-Henry Engineers
Bob Penniman	Chittenden County Regional Planning Commission
Mike Barsotti	Champlain Water District
Tim Grover	City of Winooski
Tony Barbagallo	Chittenden County Solid Waste District
Jan Mueller	National Wildlife Federation
Nelson Hoffman	Vermont Agency of Transportation
Jim Jutras	Village of Essex Junction
Kevin McMahan	Trout Unlimited
Mike Winslow	Lake Champlain Committee
Bill Nedde	Krebs & Lansing Engineers
Bill Patrick	Town of Milton
Dick Hosking	Vermont Agency of Transportation
Steve Roy	City of Burlington
Genie Soboslai	Town of Colchester
Wanda Atkins	City of Winooski
John Forcier	Forcier Aldrich Engineers
Dennis Lutz	Town of Essex
Dan Dutcher	Vermont Water Resources Board
Lori Fisher	Lake Champlain Committee
Laurie Adams	City of Burlington
Andrew Flagg	Vermont Department of Housing and Community Affairs
John Daly	Vermont Department of Environmental Conservation
Jim Pease	Vermont Department of Environmental Conservation
Sam Mathews	Greater Burlington Industrial Council
Pete LaFlamme	Vermont Department of Environmental Conservation
Glen Gross	Vermont Department of Environmental Conservation
Justin Johnson	Vermont Department of Environmental Conservation
Juli Beth Hoover	City of South Burlington
Carol Duncan	City of Burlington
Jim Condos	City of South Burlington
Lew Wetzel	Chittenden County Regional Planning Commission
Alan Shelvey	City of Rutland
Michael Crane	Chittenden County Regional Planning Commission
Jack Myers	Dufresne-Henry Engineers
Mike Coates	SD Ireland Corporation
Karen Kerin	Associated Industries of Vermont
John Narowski	Vermont Agency of Transportation
Micheal Munson	Town of Williston
Jim Simonds	City of Rutland
Chuck Mitchell	USDA-Natural Resources Conservation Service
Jeff Padgett	Engineered Solutions, Inc.
Neil Boyden	Town of Williston
Heather Kendrew	Burlington International Airport
Bryan Osborne	Town of Colchester

## APPENDIX A



## **Take the Watershed Pledge: A Stormwater Runoff Education Campaign**

### **I. Problem Statement**

The greater Burlington area is experiencing significant growth and development, with a corresponding increase in the amount of impervious surface covering the landscape. This change in land use extracts a particularly heavy toll on water quality. Urbanization has paved over previously open land with roads, driveways and parking lots, increasing the amount of stormwater runoff and other non-point source pollutants entering waterways. There are at least 13 streams in rapidly developing portions of Chittenden County on Vermont's list of impaired waterways because of stormwater pollution.

Land development has the potential for adversely affecting the quality of stormwater for three reasons. First, development can result in increased amounts of stormwater runoff, which increases erosion and transports greater quantities of sediment. Second, development typically results in increased levels of pollutants that are washed from impervious surfaces by stormwater into waterbodies. Third, development can reduce the availability of pervious surfaces that filter and reduce the volume of stormwater before it enters waterbodies.

Polluted stormwater typically is transported and discharged into local waterbodies without treatment. Common pollutants include oil and grease from roadways, pesticides and fertilizers from lawns, sediment from construction sites, and carelessly discarded litter. Discharge of stormwater pollutants discourages recreational use, makes water undrinkable, and degrades the habitat of aquatic species. Impairments can become severe enough to violate the standards of the Clean Water Act.

In 1990, the U.S. Environmental Protection Agency promulgated Phase I of the National Pollutant Discharge Elimination System (NPDES) stormwater program to require large municipalities and land developments to undertake certain actions to reduce the pollution associated with stormwater runoff. In late 1999, EPA extended the NPDES program to certain "small" municipalities through the Phase II program, including all municipalities located in "urbanized areas" designated by the Census Bureau. Urbanized areas were included regardless of whether they contain impaired waterways. There are eight municipalities in Chittenden County Vermont that must meet the Phase II requirements (the cities of Burlington, South Burlington, and Winooski, the towns of Colchester, Essex, Shelburne, and Williston, and the village of Essex Junction).

Phase II requires these municipalities to have a plan in place by March 2003 for a program that is designed to reduce the discharge of pollutants to the "maximum extent practicable", protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act. Each community's program must contain "best management practices" (BMPs) and "measurable goals" for six "required control measures": (1) Public Education and Outreach, (2) Public Participation/Involvement, (3) Illicit Discharge Detection and Elimination, (4) Construction Site Runoff Control, (5) Post-Construction Runoff Control, and (6) Pollution Prevention/Good Housekeeping. This proposal

addresses the first and second control measures. Components of the proposal may also be used to meet the sixth measure.

The great political and economic challenges that municipalities face in managing stormwater are accompanied by a general lack of public awareness about the problem. Development and implementation of municipal programs or ordinances must be preceded by support from a broad population well informed about the issue, hence the ‘public education and outreach’ and ‘public participation/involvement’ components of Phase II. In addition to raising awareness about stormwater pollution, a well designed public education campaign will help make citizens aware of their own contributions to the problem and the steps they can take as individuals to reduce pollutant loading and improve water quality.

While some aspects of stormwater management are best tackled at the local level, affected municipalities in Chittenden County widely agree that others, including education and training initiatives, are better managed at a regional scale. It would be inefficient and redundant if each municipality prepared their own informational fliers or produced their own public service announcements each of which would run on media outlets that citizens in the other municipalities would be likely to access.

The purpose of the proposed grant is to undertake a region-wide stormwater education and training program. If funded, the program would inform local citizens of the importance of successfully addressing problems caused by stormwater and their role in contributing to clean-up of stormwater impaired local waterbodies. The program could also serve as a model for other communities or regions of the state facing stormwater problems. Increasing citizen understanding of the issue would help municipalities when they need to fund stormwater management initiatives, empower citizens to help clean-up impaired waters, and prevent further pollution of water in developed areas.

## **II. Organizations Proposing the Project**

Lake Champlain Committee	Chittenden County Regional
106 Main St., Suite 200	Planning Commission
Burlington, VT 05401	66 Pearl St.
802-658-1414	Essex Junction, VT 05453
	802-872-1600

## **III. Capacities and Experience of Proposers**

The **Lake Champlain Committee** (LCC) is a non-profit environmental organization with a nearly forty-year track record of water quality protection and restoration work. LCC has extensive experience collaborating with citizens and municipal leaders and has developed and implemented both local and regional educational campaigns throughout the Lake Champlain watershed.

As one of Vermont’s 12 Regional Planning Commissions, the **Chittenden County Regional Planning Commission** has the statutory mission to promote the mutual cooperation of its municipalities and assist and advise municipalities. It has the ongoing function of serving as a clearinghouse of information and data, routinely conducts

educational events for municipal officials and staff, and is widely experienced in public outreach initiatives.

#### **IV. Project Purpose and Objectives**

This project's principal objective is to enable the eight participating Chittenden County towns to meet the 'education and outreach' and 'public participation/involvement' requirements of the federal Phase II program in a cost efficient and effective manner. In particular, we will produce a region-wide education program that generates community support for municipal stormwater improvements, promotes awareness of individual responsibility for stormwater pollution, discourages behaviors that have negative impacts on water quality, and encourages alternatives. The *Take the Watershed Pledge* proposal will both establish and strengthen collaborative efforts amongst the participating communities, the Lake Champlain Committee and the Chittenden County Regional Planning Commission, leading to ongoing relationships that will help sustain water quality protection work into the future.

#### **V. Project Plan**

The Lake Champlain Committee, working with participating municipalities and CCRPC, will develop a multi-pronged regional campaign with eye-catching images and memorable phrases that focuses attention on four pertinent themes – general water quality, car maintenance, lawn care, and pet waste management. The campaign has been developed based on extensive national research on other stormwater educational campaigns and LCC's past experience running outreach programs. The *Take the Watershed Pledge* program adapts the lessons learned and successful programs from around the country to Chittenden County. We will utilize a variety of means – direct mail, radio and television public service announcements, bus advertising, posters in public spaces, and web pages – to ensure that the message about stormwater reaches and engages a broad, diverse audience.

The campaign will take place over a five-year period with peaks of activity between the spring and fall. Running the campaign over five years will reinforce the message and themes of the campaign and enable us to reach a larger audience. A spring through fall program increases the effectiveness of our message regarding lawn care and other outdoor activities, while also engaging citizens at a time when they are most likely to be thinking about water quality issues. Within each participating municipality education efforts and materials will be focused upon local water bodies to further reinforce the relevancy of the message.

The following components (many of which will overlap in timing) are included in this campaign:

**A) A Watershed Pledge program** will be the cornerstone of the campaign. Each of the 40,000 households in participating Phase II communities will receive a color booklet that will reinforce campaign themes and outline actions citizens can take to improve water quality. Actions will center on four key areas: car maintenance, lawn and garden care, pet waste management, and general water quality. Booklets will include a tear-off form to be returned by those households willing to commit to reducing their personal impacts on water

quality. Households that take pledge will receive individualized refrigerator magnets and a token gift symbolic of clean water to remind them of their pledge, thank them for their participation, and trigger inquiries about the program from neighbors and friends. Prior to the release of the booklet we will solicit community and business leaders to take the pledge to build greater local awareness of the program and get people enthused about participating. The pledge program empowers citizens to make voluntary personal commitments to improving water quality.

A similar pledge program was initiated in Whatcom County, Washington with great success. Post-campaign surveys revealed behavior changes leading to less water pollution even in households that did not officially take the pledge.

The pledge program will continue beyond the initial release of booklets. It will be promoted throughout the five-year campaign and all outreach materials will reference it. Bus and media advertisements, the campaign video, posters and the clean water tips will all encourage citizens to “take the watershed pledge”. Participants in the program will be reminded of their commitment to improve water quality through brief annual reports on the program mailed to their home. In year three of the campaign an additional release of the booklets will be made to all schools in the Phase II communities along with examples produced by LCC of how stormwater and the Watershed Pledge can be incorporated into their curriculum. Church groups, service clubs, and middle and high school student councils will all be sent information on the program in years three through five to raise awareness and encourage them to get involved in the *Take the Watershed Pledge* program as service projects.

**B) Pre- and post-campaign surveys** will be conducted by an independent polling firm. Pre-campaign surveys will guide the specific development of the campaign by gauging understanding of stormwater issues and identifying the best advertising times and venues for our message. Post-campaign surveys will measure success of the program. LCC will also conduct informal surveys at the town meetings and other events to gain critical feedback from participants throughout the campaign. The web site will provide an online survey where people can provide feedback on campaign elements when they view the site.

Post campaign surveys will take place after the first year of the program. Survey results will guide the development of the education and outreach efforts for subsequent years. Our goal is for the surveys to demonstrate measurable differences in citizen’s understanding about stormwater and what they can do to prevent it.

**C) An advertising campaign** on buses, television, and radio will spread information about stormwater throughout the county. Thirty and sixty second public service announcements (PSAs) on **television** and **radio** will diversify the audience for our message. Four PSAs will be produced to correspond with the four themes presented in the Watershed Pledge booklet, posters, and website. PSAs will run on the major local networks and radio stations. We will use the results from the survey to identify the best advertising times and venues for our message. **Buses** will serve as “mobile billboards”. We will produce two posters for each of our four themes plus two posters urging viewers to “Take the Watershed Pledge”. In subsequent years, newspaper ads in local papers will be added to further disseminate the message.

**D) Posters** dealing with the Watershed Pledge, lawn care, pet waste, car maintenance, and general water quality, will be placed in public offices, libraries, schools,

town halls, and other public buildings throughout the five years of the campaign. The posters are designed to reach a wide audience and will use eye-catching graphics and simple slogans to reinforce the messages from the Watershed Pledge program and public service announcements. At the same time posters on appropriate themes will be distributed to target audiences likely to have specific stormwater impacts (for example: posters and related tips on managing pet waste to pet stores and veterinarians; posters on lawn care to plant nurseries and gardening supply centers; posters on car-related issues to automotive facilities, car dealerships, and car washes). LCC will distribute 2,000 copies of each poster.

LCC will produce **clean water tips** to accompany each poster and guidance materials for poster placement. To facilitate distribution and encourage greater community involvement in the campaign, LCC will seek to have service organizations such as Rotary Clubs and Boy and Girl Scouts distribute the posters. Distributing materials door-to-door through a network of local children, parents and business would secure greater business involvement in and support for the campaign.

**E)** Prior to the launching of the Pledge program CCRPC and LCC will host a **meeting of relevant municipal leaders** to brief the communities on the outline of the education campaign; recruit advocates for the campaign and the watershed pledge initiative from within the communities, and provide an opportunity to collectively discuss necessary refinements to the campaign.

**F)** **Town meetings** in each community will be conducted to launch the *Take the Watershed Pledge* campaign and build enthusiasm for program elements. LCC will work with CCRPC, local conservation commissions, local civic groups, and pertinent watershed associations to organize these public forums. Food and or entertainment will be included at each meeting to attract the largest possible turnout. Families will be encouraged to attend and meetings will include elements geared to engage kids, gain their feedback and get them excited about participating.

**G)** LCC will produce annual **water quality articles** for local newspapers to provide a local link to campaign messages. These articles will highlight local examples of stormwater pollution in each community. The first articles will appear prior to the campaign's town meetings while subsequent articles will provide reviews of progress toward managing stormwater pollution and highlight particular campaign themes such as car maintenance, lawn care, and pet waste management.

**H)** A **power point presentation** on stormwater and the watershed pledge campaign will be developed for the town meetings and will be modified for future use other interested groups and municipal officials. Examples of potentially interested groups include public works employees (to partially satisfy the "Good Housekeeping" minimum control measure of the Phase II rule) businesses (in anticipation of a future "Business pledge" campaign parallel to the Watershed Pledge), and school and civic groups interested in participating in the poster distribution.

**I)** A **video** promoting campaign themes will be produced for distribution to area schools, neighborhood groups, and libraries. The video will explain the *Take the Watershed Pledge* program and provide visual examples of what individuals can pledge to do. Several copies of the video will be available to each town so citizens and students can check it out of

the school or community library and town officials can use it as an educational tool. For the schools, the video will be accompanied by specific ideas of how to incorporate it into a standard curriculum.

**J)** Educational material associated with the *Take the Watershed Pledge* campaign will be posted on the LCC **website** with links to the material from the websites of CCRPC and the participating towns. In addition to repeating the four themes of the Pledge program, the web site will include links to additional stormwater educational materials and resources. The number of hits to the web links will serve as one measure of success for the program.

**K)** To further involve citizens, we will continue our already successful **stormdrain stenciling project** which will encourage public involvement in stormwater control. Studies clearly indicate that stenciling stormdrains raises citizen awareness of polluted runoff flowing to rivers and lakes. LCC will oversee stenciling programs in all eight communities beginning in the second year of the campaign with a goal that stenciling be taken over by local citizens' groups or service clubs in subsequent years. Stormdrains in residential neighborhoods will be stenciled with a simple message *Don't Dump – Drains to Lake Champlain* to help people understand the connection between stormdrains and waterways. In the final year of the project, several thousand curbside stencils will be given to participating municipalities for use in future stenciling efforts.

**L)** We will endeavor to involve municipalities through **inter-municipal meetings** and **update memos**. Inter-municipal meetings will be coordinated and led by CCRPC at various times during the campaign, but at least once a year. These meetings will extend the general public outreach campaign to relevant town leaders, homeowner associations, developers, and maintenance and landscape contractors as appropriate. Additionally, meetings will provide a formal opportunity for feedback on the effectiveness of the campaign and identify necessary changes in it.

Three times a year throughout the five-year campaign, LCC will provide municipal officials and community leaders with an update memo that outlines progress to date, upcoming media ads, what materials are being distributed, and other key program elements so that community staff are fully apprised of activities and can facilitate the distribution of information and serve as local ambassadors for the clean water campaign.

## **VI. Project Budget**

The **five-year budget** for the comprehensive regional education and outreach campaign is **\$550,000**. Annual costs for running the campaign are \$150,000 in year one and \$100,000 for years two through five. The higher costs for the first year of the campaign are due to one time expenses for the pre-campaign survey, production of posters, and the video and bus signs which will be used throughout the five years of the campaign. Wherever possible we have endeavored to gain time and budget efficiencies by producing materials upfront in volume rather than on an annual basis. A certain amount of flexibility is built into the budget for years three through five so that the program can be modified in response to community feedback and municipal needs.

The *Take the Watershed Pledge* campaign is a highly coordinated, energetic outreach program designed to raise the environmental literacy on stormwater. The campaign offers ongoing opportunities for individual and group involvement and utilizes local media, community gathering places, businesses and schools to vigorously reinforce its message. This effort is by nature labor intensive and extremely difficult for municipalities to undertake.

Most towns lack sufficient personnel and resources for such programs. As a result too much of the available stormwater education material consists of hastily produced, ineffectual brochures. We offer an economy of scale by running the program at a regional level with materials produced once for all the participating Phase II communities. Additionally, benefits are likely to accrue to towns outside the Phase II communities whose citizens view the same media outlets.

The program budget will be leveraged further by the annual in-kind services match that each municipality will provide valued conservatively at \$24,000 annually (\$3,000 per community per year). Local officials and leaders will participate in community meetings and inter-municipal forums to help shape the campaign, serve as local resources on the program elements, and disseminate information (estimated at \$16,000 total or a minimum of 80 hours per community per year). Communities will also provide meeting space (\$4,000 total per year) and website links (\$4,000 total per year) for other aspects of the campaign.

Acceptance of this proposal will give Chittenden County one of the premier stormwater education campaigns in the country.

## APPENDIX B

**REQUEST FOR PROPOSALS**  
**CHITTENDEN COUNTY REGIONAL PLANNING COMMISSION**  
DEVELOPMENT OF A STORMWATER MANAGEMENT PROGRAM  
ANALYSIS OF ALTERNATIVES

1. **Issued by:** Chittenden County Regional Planning Commission
2. **Date of Issuance:** XXXXX XX, 2002
3. **Proposal Deadline:** XXXXX XX, 2002 (1 month from Date of Issuance)
4. **Background**
  - a. Regulations
    - i. NPDES Phase II
    - ii. Vermont Stormwater Statutes
    - iii. Vermont Stormwater Rules
    - iv. Vermont Stormwater Plan
    - v. Development within Impaired Watersheds (Lowes decision)  
Historical local & State involvement
  - b. Study area includes all municipalities within Chittenden
5. **Scope of Services**
  - Task 1. Identify the Existing Environment
    - i. Assemble formal Steering Committee (5 to 7 members) and a larger informal Advisory/Stakeholders Committee
    - ii. Review existing information
      1. GIS stormwater asset inventory – from CCRPC
        - a. Asset Inventory (This information currently does not exist or is not complete and will be developed as a precursor project to this one. The level of information desirable is not anticipated to be detailed enough for watershed modeling.)
          - i. Type of asset (e.g. detention pond, 36” culvert, catch basin)
          - ii. Size (acres, linear feet)
          - iii. Location of asset (GPS coordinates)
          - iv. Condition of asset (e.g. scale of 1 to 5)
          - v. Owner of asset (both land owner and responsible party)
        - b. Inventory of State stormwater permits – from VT Stormwater Program (This information currently does not exist in database form; ANR anticipates completing this work prior to initiation of this project)
      2. Local plans and ordinances – from each municipality
      3. Existing watershed models – from VT Stormwater Program
      4. Existing regional organizations, their organizational structures and potentially relevant programs (i.e. CCRPC, CSWD, CWD, MPO)
      5. Model ordinances and utility organizational structures (nation-wide search of similarly sized metro areas)

- 6. Model programs (cold-climate search only)
- iii. Meet with each municipality
  - 1. Present overview of project and reasons for project
  - 2. Determine municipality's general knowledge of and support for the stormwater situation
  - 3. Determine municipality's general attitude toward regulatory compliance and environmental protection (e.g. is more than the minimum desired)
  - 4. Determine municipality's desire for regional solutions and programs
- Task 2. Identify the Problem
  - i. Determine the best method for Chittenden County municipalities to:
    - 1. Design and implement an effective stormwater management program
    - 2. Come into compliance with State and Federal stormwater management requirements (Phase II and General Permits)
  - ii. Identify deficiencies in existing programs
  - iii. Identify deficiencies in existing data
  - iv. Identify deficiencies of existing watershed models
- Task 3. Identify Alternative Solutions
  - i. Programs – Available options for each of the six components
  - ii. Organizational structures
  - iii. Funding sources
  - iv. Utilize Public Involvement
    - 1. Conduct 4 meetings around the County (brainstorming sessions)
    - 2. Advisory Committee develops recommendation to Steering Committee
    - 3. Steering Committee determines specific Alternatives to be analyzed
- Task 4. Analyze Alternative Solutions
  - i. Estimated capital and O&M costs
  - ii. Political viability (local vs. regional control)
  - iii. Statute/plan/ordinance/charter changes required
  - iv. Menu driven approach (re: municipal vs. regional program components)
  - v. Depth of program (e.g. data updates, modeling capability)
  - vi. Develop preliminary draft report w/o conclusion or recommendations
- Task 5. Recommend Alternative
  - i. Present report to Advisory Committee
  - ii. Revise Analysis as required
  - iii. Develop preliminary conclusions, recommendations & implementation schedule
  - iv. Present report to Advisory Committee
  - v. Revise final report as required
  - vi. Present at county-wide public informational meetings
    - 1. General public meeting (taped & aired by Channel 17)
    - 2. CCRPC Commissioners meeting
    - 3. Chamber meeting

**6. Duration**

Task 1. Identify the Existing Environment	3 months
Task 2. Identify the Problem	1 month
Task 3. Identify Alternative Solutions	2 months
Task 4. Analyze Alternative Solutions	3 months
Task 5. Recommend Alternative	<u>2 months</u>
Total	11 months

**7. Contact:** Tim Fluck, Senior Planner  
Chittenden Regional Planning Commission  
66 Pearl Street, P.O. Box 108  
Essex Junction, Vermont 05453  
(802) 872-1600 X104  
[tfluck@ccrpcvt.org](mailto:tfluck@ccrpcvt.org)

**8. Proposal Requirements**

- a. Qualifications of firm
- b. Qualifications of key personnel assigned to project
- c. Detailed scope of services
- d. Man-hour matrix - by person by Task
- e. Cost breakdown by task
- f. Fully loaded hourly rates
- g. Location of office
- h. 3 professional references
- i. Submit 5 copies of Proposal

**9. Basis of Selection**

- a. Qualifications of firm
- b. Qualifications of key personnel
- c. Cost
- d. Proposed scope of services
- e. Knowledge of local conditions
- f. Ability to complete the project on time

**10. Deadline for Receipt of Proposals**

**11. Mandatory Pre-Proposal Meeting** (should attendance be required?)

**12. Limitations of Liability** (boilerplate CYA statements)

**13. Insurance Requirements** (boilerplate, requirements to be determined by CCRPC)

**14. Method of Payment**

- a. Monthly invoices and payments
- b. Payments not to exceed cost breakdown by Task