

KREBS & LANSING

Consulting Engineers, Inc.

164 Main Street
Suite 201
Colchester, VT 05446
Telephone (802) 878-0375
Fax 878-9618

April 1, 2007

Jim Pease
Water Quality Division
103 South Main Street
10 North
Waterbury, VT 05671-0408

Re: Annual Report MS4 Phase II
General Permit #3-9014
University of Vermont

Dear Jim:

Please find enclosed the annual report for the University of Vermont as required under EPA MS4 Phase II General Permit #3-9014 (Stormwater Discharges from Small Municipal Storm Sewer Systems). The General Permit #3-9014 is the second phase of the Environmental Protection Agency's National Stormwater Program. The 5-year permit requires implementation of practices to prevent or control stormwater runoff from municipal separate storm sewer systems (MS4) located in urbanized areas. There are nine municipalities in Chittenden County that are classified as traditional MS4's (Burlington, Colchester, Essex, Essex Junction, Shelburne, South Burlington, Williston, Winooski and Milton). The University of Vermont, Vermont Agency of Transportation and Burlington International Airport are considered non-traditional MS4's and therefore are required to obtain coverage under General Permit #3-9014.

In summary, the University had another successful year of managing stormwater runoff including;

- continuing strong operation and maintenance program through the Physical Plant Department,
- designing structural and non-structural best management practices into proposed new construction through Architectural and Engineering services, and Campus Planning Services,
- implementing new best management practices, including water quality monitoring through the School of Natural Resources and the Water Resources and Lake Studies Center.

Jim Pease
April 1, 2007
Page Two

Please call if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "William H. Nedde III". The signature is fluid and cursive, with a prominent "W" and "N".

William H. Nedde III

WHN/hir

Enclosure

cc: Bob Vaughan, Director of Capital Planning and Management
Linda Seavey, Campus Planning Services
Bob Penniman, CATMA
Sal Chiarelli, Physical Plant Department
Paula Carlaccini, Architectural and Engineering Services
Ken Bean, Architectural and Engineering Services
Gus Mastro, Physical Plant Department
Luce Hillman, Physical Plant Department
Rose Leland, Physical Plant Department
David Blatchly, Physical Plant Department
Al McIntosh, School of Natural Resources
Rick Paradis, University of Vermont
Jason Devino, Miller Farm Research Facility
Francis Churchill, Environmental Safety

ANNUAL REPORT

EPA MS4 PHSE II – GENERAL PERMIT 3-9014 January 1, 2006 to December 31, 2006

**Prepared by
Krebs & Lansing Consulting Engineers, Inc.
164 Main Street
Colchester, Vermont 05446**

April 1, 2007

Introduction

The University of Vermont first applied for coverage under General Permit #3-9014 on March 10, 2003. The Application was revised and resubmitted on May 9, 2003 after receiving comments from the State of Vermont Agency of Natural Resources. On September 11, 2003 the State of Vermont acknowledged by letter the University's Stormwater Management Plan complies with the terms and conditions of the General Permit. They further indicated that the University's MS4 discharges are eligible for continued coverage under the terms and conditions of the General Permit.

On January 31, 2004, January 31, 2005, and April 1, 2006 the University of Vermont submitted their first three MS4 Annual Reports.

The purpose of this document is to report on the status of the University's implementation of the permit requirements, including compliance with the standard of reducing the discharge of pollutants from the University's MS4 discharges to the Maximum Extent Practicable (MEP).

1. Implementation Status of the Stormwater Management Plan

A. Minimum Control Measure #1 – Public Education and Outreach

The University of Vermont is one of many key members in the Regional Stormwater Education Program.

Measurable Goal	Description of Goal Implementation	Status
Establish a website for stormwater information	<u>Year #1</u> Dr. Al McIntosh has developed through the Vermont Water Resources and Lake Studies Center a website that displays stormwater and campus stream water quality information. Included are virtual tours of Centennial Brook and Tributary III of Potash Brook with field footage.	Complete
Establish a website for stormwater information	<u>Year #2</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under "stormwater".	Complete (Additional items beyond permit requirements)

Establish a website for stormwater information	<u>Year #3</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under "stormwater".	Complete (Additional items beyond permit requirements)
Establish a website for stormwater information	<u>Year #4</u> The Regional Stormwater Education Program has established a stormwater educational website at www.smartwaterways.org . The website has added links for educators for stormwaer related curriculum. The Regional Stormwater Education Program won the Governors Award for Environmental Excellence. The news release is attached. The University has posted over 90 website links regarding stormwater or stormwater education. Go to www.uvm.edu and search under "stormwater".	Complete (Additional items beyond permit requirements)

B. Minimum Control Measure #2 – Public Involvement Participation

Measurable Goal	Description of Goal Implementation	Status
Form a citizen stormwater advisory panel	<u>Year #1</u> The advisory panel was formed and met on October 15, 2003 to view a 2-hour presentation on the MS4 permit. The panel includes personnel from the following University Departments: Campus Planning (2) Physical Plant (4) Architectural and Engineering Services (2) School of Natural Resources (1) Natural Area Manager (1) Environmental Safety Facility (1)	Complete
Form a citizen stormwater advisory panel	<u>Year #2</u> The UVM Stormwater Advisory Panel was continued in 2004.	Complete
Form a citizen stormwater advisory panel	<u>Year #3</u> The UVM Stormwater Advisory Panel was continued in 2005.	Complete
Form a citizen stormwater advisory panel	<u>Year #4</u> The advisory panel convened on December 11, 2006 to view a 1.5-hour presentation on the MS4 permit. Agenda items included Southwest Stormwater Facility, East Campus Stormwater Facility, Athletics Paint spill, and testing by Dr. McIntosh. The panel includes personnel from the following University Departments: Campus Planning (2) Physical Plant (4) Architectural and Engineering Services (2) School of Natural Resources (1) Natural Area Manager (1) Environmental Safety Facility (1)	Complete

<p>Establish a water quality monitoring program involving citizen participation</p>	<p><u>Year #1</u> Dr. Al McIntosh has established monitoring protocols for East Campus Watershed, North Campus Watershed, Tributary III of Potash Brook and Southwest Campus Watershed. Strategies for having citizen participation in these monitoring programs will be implemented in Year 2.</p> <p><u>Year #2</u> The University will implement citizen volunteers in stormwater in 2005.</p> <p><u>Year #3</u> Students participated in multiple class projects involving stormwater monitoring at UVM.</p> <p><u>Year #4</u> Students participated in multiple class projects involving stormwater monitoring at UVM.</p>	<p>Complete</p> <p>To be completed in 2005</p> <p>Complete</p> <p>Complete</p>
<p>Institute a public workshop series on stormwater awareness</p>	<p><u>Year #1</u> Two events have already taken place. On May 22, 2003, the University of Vermont hosted a session for vendors of stormwater related services, and on October 24, 2003, the University of Vermont's Water Resources and Lake Studies Center and the Lake Champlain Committee held a half day workshop featuring panel discussions on stormwater education and lessons learned from the stormwater studies and initiatives on Potash Brook.</p> <p><u>Year #2</u> The University has hosted two stormwater events during this two-year period which meets the goal of one workshop per year.</p> <p><u>Year #3</u> The University supported a satellite seminar "stormwater management from a watershed perspective" at Rowell Hall. 10/11/2005</p> <p><u>Year #4</u> Seminars were scheduled in Dewey Hall for "Critical Issues for Transportation in the 21st Century. On October 17, Breck Bowden and Scott Johnstone presented on "Urban Transportation Planning Neighborhood Design/ Stormwater"</p>	<p>Completed 5/22/03 and 10/24/03</p> <p>Complete</p> <p>Complete</p> <p>Complete</p>

C. Minimum Control Measure #3 – Illicit Discharge and Elimination

Measurable Goal	Description of Goal Implementation	Status
Year #1 Update Colchester Avenue watershed	<u>Year #1</u> In 2003, Krebs & Lansing Consulting Engineers, Inc. completed the storm system mapping for the Colchester Avenue watershed. Survey field crews reviewed all visible storm catch basins and storm manholes, identified incoming and outgoing pipes and noted pipe sizes and invert elevations.	Complete
Year #2 Update Main Street East Watershed	<u>Year #2</u> In 2004, Krebs & Lansing completed the storm system mapping for the Main Street East watershed. See attached watershed plans.	Complete
Year #3 Miller Research Farm Watershed and Trinity Watershed.	<u>Year #3</u> In 2005, Krebs and Lansing completed the storm system mapping for the Miller Farm Watershed and Trinity Watershed. See attached watershed plans. Trinity has three discharge points and has a 7.25 acre watershed.	Complete
Year #4 Update North Campus Watershed	<u>Year #4</u> In 2006, Krebs and Lansing completed storm system mapping for the North Campus stormwater system including revisions due to the Davis Center Commons building and renaming stormwater structures to assist in operational and maintenance tasks.	Complete
Illicit Discharge Policy		
A. Regulate contribution of pollutants	<u>Year #1</u> The list of acceptable stormwater discharges was issued to all applicable departments of the University on October 15, 2003.	Complete
B. Prohibit Illicit Connections	The correspondence to all applicable departments clearly stated all discharges other than those listed are prohibited to the stormwater system.	Complete
C. Enforcement	The correspondence to all applicable departments clearly stated the enforcement of this provision will be in accordance with current employee and/or student policy.	Complete
	<u>Year #2</u> The University shall publish article in Campus newsletter regarding Illicit Discharge Policy and list only acceptable stormwater flows.	Complete in 2005
	<u>Year #3</u> Met with Athletics employees and completed brief training regarding allowable stormwater discharges.	Complete

<p>Illicit Discharge Policy</p> <p>A. Regulate contribution of pollutants</p> <p>B. Prohibit Illicit Connections</p> <p>C. Enforcement</p>	<p><u>Year #4</u></p> <p>On June 15, 2006, UVM, and Krebs and Lansing joined the City of Burlington installing Watershed signs for Englesby Brook on the University Campus. See attached photograph.</p> <p>On Thursday 21 September, a UVM employee in the Athletic Department disposed of 10-15 gallons of orange field paint by dumping it into the catch basin located outside of the Gutterson Ice Rink. This resulted in a bright orange stream of stormwater through the residential neighborhood on Spear Street and East Terrace. Tom DePeitro (City of So. Burl.) notified UVM who contacted Krebs and Lansing. Francis Churchill of UVM's Environmental Safety Facility investigated the incident. He made sure the new employee was informed of his mistakes well as the proper method for disposing of waste materials. Absorbent rolls were placed in the swales to contain the paint. The City of So. Burlington gave the University a stormwater tablet which was installed on the catch basin by the ice rink.</p>	<p>Complete</p>
--	---	-----------------

Measurable Goal	Description of Goal Implementation	Status
<p>Inspect 20% storm system during dry weather, including all discharges/outfalls</p>	<p><u>Year #1</u></p> <p>Krebs & Lansing conducted dry weather inspections of storm catch basins and storm manholes on September 11 and 12, 2003. The University has approximately 477 storm structures located in the MS4 discharge area. Krebs & Lansing inspected enough storm structures to "clear" 38% of the storm collection area. (11% or 53 storm structures inspected, and additional 129 or 27% of the non-inspected structures were deemed dry as a result). We have designated which structures were inspected by a black circle on the attached maps. The number designation indicates approximate depth of flow. See attached data sheets.</p> <p><u>Year #2</u></p> <p>Krebs & Lansing conducted "dry weather" inspections of the storm catch basin on September 22 and September 23. This year was a very difficult year to inspect the storm system during "dry weather" due to the excessive rainfall. Over 14 inches of rain fell during June and July.</p> <p><u>Year #3</u></p> <p>Identified two areas of concern. Catch basin near Patrick Circle, and intermittent high flow and suds at North Campus. Water main leak found adjacent to Patrick Circle catch basin.</p> <p><u>Year #4</u></p> <p>Variations in flow or suds were not visible in multiple site visits to the North Campus stormwater facility. We will continue to evaluate flows. Possible cause of flow variation includes construction that was active in 2005 but is substantially complete in 2006.</p>	<p>Complete</p> <p>Complete</p> <p>Complete</p> <p>Complete</p>

Complete dry weather ecoli BT testing of all discharge points that have not already been tested	<u>Year #1</u> On September 12, 2003 Krebs & Lansing collected water samples for the East Campus, South Campus, Miller Research Farm Pond and Centennial Field Stormwater Treatment Facility inlet pipes. The results are attached.	Complete
	<u>Year #2</u> Krebs & Lansing conducted dry weather bacteriological testing on the southerly stormwater pond in the Southwest Campus watershed. The results are attached.	Complete
	<u>Year #3</u> See "Campus water quality monitoring 2005 field season" report by Dr. McIntosh.	Complete
	<u>Year #4</u> Bacteriological tests were completed on the seep repair south of the Miller Farm constructed wetlands.	Complete

D. Minimum Control Measure #4 – Construction Site Runoff Control

Measurable Goal	Description of Implementation	Status
Draft and adopt an erosion control policy in Year #1	<u>Year #1</u> Krebs & Lansing has completed the draft erosion control policy. As University Departments comments are received, they will be inserted into the policy.	Drafted, not adopted. Awaiting comments from Departments
	<u>Year #2</u> The University has adopted an Erosion Prevention and Sediment Control Policy. See attached policy.	Complete
	<u>Year #3</u> UVM has included the erosion control policy in their standard bid forms.	Complete
	<u>Year #4</u> UVM has included the erosion control policy in their standard bid forms.	Complete

Identify 1 acre and 5 acre construction projects, and contact ANR	<u>Year #1</u> From March 10, 2003 to December 31, 2003 the University did not have any construction activities that disturbed more than 1 acre.	Complete
	<u>Year #2</u> The University had the following projects that disturbed more than 1 acre: East Campus Stormwater Facility Upgrade, Gutterson Garage, Residential Learning Center, All Purpose Athletic Field, and Miller Research Farm Compost Facility.	Complete
	<u>Year #3</u> The University had the following projects that disturbed more than 1 acre: <ol style="list-style-type: none"> 1. Residential Learning Center. 2. Davis Student Center. 3. Farm Compost Facility. 	Complete
	<u>Year #4</u> The University had the following projects that disturbed more than 1 acre: <ol style="list-style-type: none"> 1. Residential Learning Center. 2. Davis Student Center. 3. Farm Compost Facility. 4. Southwest Stormwater Facility. 	

Measurable Goal	Description of Goal Implementation	Status
Erosion control plans for projects that disturb more than 5,000 s.f. but less than 1 acre and weekly inspections	<u>Year #1</u> - Trinity Sidewalks/Lighting - Simpson Steam Line Either the project manager or project engineer visited the site weekly.	Complete
	<u>Year #2</u> No projects between 5,000 s.f. and 1 acre.	Complete
	<u>Year #3</u> Wing Davis Wilks - either the project manager or project engineer visited the site weekly.	Complete
	<u>Year #4</u> Wing Davis Wilks - either the project manager or project engineer visited the site weekly. Chiller Plant - either the project manager or project engineer visited the site weekly. Steam Line Improvements - either the project manager or project engineer visited the site weekly.	Complete

E. Minimum Control Measure #5 – Post Construction Runoff Control

<p>List projects that exceed 1 acre of impervious cover threshold.</p>	<p><u>Year #3</u> For 2005, the following projects were under construction; Gutterson Garage/Residential Learning Center and Dudley Davis Center (Commons).</p> <p><u>Year #4</u> For 2006, the following projects were under construction; Gutterson Garage/Residential Learning Center and Dudley Davis Center (Commons).</p>	<p>Complete</p>
<p>Establish stakeholder committee to draft stormwater policy for projects that disturb more than 1 acre but have less than 1 acre of impervious</p>	<p><u>Year #1</u> The Stormwater Committee met on October 15, 2003 to discuss stormwater policy for projects that disturb more than 1 acre but have less than 1 acre of impervious. Final adoption of policy shall be in Year #2.</p> <p><u>Year #2</u> All projects completed by the University drain to stormwater detention facilities that are either in compliance with the 2002 Stormwater Manual or are in the process of being permitted to the 2002 State Stormwater Manual.</p> <p><u>Year #3</u> All projects completed by the University drain to stormwater detention facilities that are either in compliance with the 2002 Stormwater Manual or are in the process of being permitted to the 2002 State Stormwater Manual.</p> <p><u>Year #4</u> All projects that disturb more than 1 acre but have less than 1 acre of impervious drain to stormwater detention facilities that are either in compliance with the 2002 Stormwater Manual. (East Campus, Southwest Campus, North Campus stormwater facility.</p>	<p>Complete</p> <p>Complete</p> <p>Complete</p>

Measurable Goal	Description of Goal Implementation	Status
Design complete upgrade of Southwest Campus Stormwater Treatment Facility to meet 2002 Stormwater Manual	<u>Year #1</u> The stormwater design was completed in September 2003 and submitted to the Agency of Natural Resources with drawings and stormwater calculations.	Complete
	<u>Year #2</u> The draft stormwater permit for the Southwest Stormwater Facility is expected to be signed on February 1, 2005.	Complete
	<u>Year #3</u> Permit issued for Southwest Stormwater Facility.	Complete
	<u>Year #4</u> The Southwest Stormwater Facility was substantially completed in the 2006 construction season. Base line testing being completed on East Campus instead of Southwest Campus facility due to the order of construction.	Complete
Start complete redesign of East Campus Stormwater Treatment Facility to meet 2002 Stormwater Manual	<u>Year #2</u> The facility has already been designed, permitted and is 90% complete construction.	Complete
	<u>Year #3</u> The facility is complete and operating in compliance with the 2002 State Manual.	Complete
	<u>Year #4</u> The facility is complete and operating in compliance with the 2002 State Manual. Start base line testing by Dr. Alan McIntosh. Raw data attached. Analysis of data ongoing.	Complete

F. Minimum Control Measure #6 – Pollution Prevention/Good Housekeeping

Measurable Goal	Description of Goal Implementation	Status
Inspect all catch basins annually	<u>Year #1 through Year #4</u> Physical Plant has inspected all catch basins.	Complete
Limit salt use. Establish Master Plan policy to restrict use of salt.	<u>Year #1</u> The University now has in place a master plan and policy that restricts salt use on Campus. See attached excerpt from Campus Master Plan.	Complete

Sweep all sidewalks and pavements in spring. Identify location of sand disposal.	<u>Year #1</u> From April 2004 to June 2004 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete
	<u>Year #2</u> From April 2004 to June 2004 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete
	<u>Year #3</u> From April 2005 to June 2005 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete
	<u>Year #4</u> From April 2006 to June 2006 the University contracted to sweep pavements and walks. The contractor removed the sands from the University Campus and recycled it in a crushed gravel batch plant for road subbase. (A. Marcelino and Company)	Complete

Visually inspect outlet devices once per week and remove debris as required.	<u>Year #1</u> Physical Plant has reviewed the trash racks weekly. See attached letter from Physical Plant.	Complete
	<u>Year #2</u> Physical Plant has reviewed the trash racks weekly. See attached letter from Physical Plant.	Complete
	<u>Year #3</u> Physical Plant has reviewed the trash racks weekly.	Complete
	<u>Year #4</u> Physical Plant has reviewed the trash racks weekly. Krebs and Lansing also frequently inspect storm facilities when meeting on that portion of the University Campus.	Complete

Measurable Goal	Description of Goal Implementation	Status
Restrict the application of fertilizer to athletic fields only (Stormwater monitoring of runoff from athletic fields shall be tested for phosphorus at a minimum)	Dr. Al McIntosh attempted to sample runoff from an outdoor track infield following fertilizer application in late September 2003. Despite a substantial rainfall, no runoff from the field was detected. Runoff from the entire athletic field area along Spear Street was clear. He will try to sample this area again if conditions permit following spring and fall fertilizer applications.	Complete
Visually inspect for winter damage	<u>Year #1</u> This was completed last spring close to the adoption of this permit. It is an event that the University has completed every year regardless of requirements of MS4.	Complete
	<u>Year #2</u> This was completed last spring. It is an event that the University has completed every year regardless of requirements of MS4.	Complete
	<u>Year #3</u> This was completed last spring. It is an event that the University has completed every year regardless of requirements of MS4.	Complete
	<u>Year #4</u> This was completed last spring. It is an event that the University has completed every year regardless of requirements of MS4.	Complete

Physical Plant shall document all activities	Physical Plant is recording stormwater related activities in the MS4 permit area.	Complete
Semi-annual reviews of stormwater treatment facilities	<u>Year #1</u> The spring inspection was completed prior to the adoption of this permit. The fall review sheets for the stormwater treatment facilities are enclosed.	Complete
	<u>Year #2</u> Spring and fall inspections were completed on the North, Southwest, and Main Street stormwater facilities. The East Campus facility was under construction.	Complete
	<u>Year #3</u> Spring and fall inspections were completed on the North, Southwest, East Campus, and Main Street stormwater facilities.	Complete
	<u>Year #4</u> Spring and fall inspections were completed on the North, East Campus, and Main Street stormwater facilities. Southwest facility was under construction.	

Measurable Goal	Description of Goal Implementation	Status
University shall develop a checklist for stormwater treatment facility review	<u>Year #1</u> The University has utilized a comprehensive checklist as shown in the fall site visits of the storm facilities described above.	Complete
	<u>Year #2</u> Checklist still being used for storm basin reviews.	Complete
	<u>Year #3</u> Checklist still being used for storm basin reviews.	Complete
	<u>Year #4</u> Checklist still being used for storm basin reviews. The data sheet form was revised in 2006 to reflect revised naming of storm structures and the retrieval of more detailed information.	Complete

<p>Dr. McIntosh has already established a chemical monitoring protocol for the East Campus watershed and the North Campus watershed. Biological and chemical baseline information has been established, and shall be compared with subsequent dry weather and event related testing.</p>	<p><u>Year #1</u> The 2003 field season included the following activities at these sites:</p> <p>a. Inputs to and outflow from the East Campus basin were sampled during a small storm on July 21, 2003. Bacteria, TSS, TP and TKN were measured.</p> <p>b. Inputs to and outflow from the North Campus basin was measured over a period of 62 hours for a small storm on August 29, 2003.</p> <p>c. Low flow and storm flow were monitored on Centennial Brook for a storm event on September 23, 2003. In addition, inputs to and outflow from North Campus ponds were monitored. In addition to routine parameters, trace metals and PAHs were measured in Centennial Brook samples.</p>	<p>Complete</p>
	<p><u>Year #2</u> Dr. McIntosh continues to monitor adjacent streams in 2004. The results of the testing will be published in early 2005. A report will be forwarded to ANR when complete.</p>	<p>Complete in 2005</p>
	<p><u>Year #3</u> Dr. McIntosh continues to monitor adjacent streams in 2005. The results are attached.</p>	<p>Complete</p>
	<p><u>Year #4</u> Dr. McIntosh tested water quality in the East Campus Stormwater Facility in 2006. The raw data is enclosed.</p>	<p>Complete</p>

<p>Dr. Al McIntosh shall evaluate the University owned section of Centennial Brook samples</p>	<p>On September 3, 2003 Centennial Brook was walked from the pipe under Catamount Drive to a point below the discharge from the North Campus basin to identify areas suitable for biological monitoring. Only two areas about 30 meters apart contain sufficient habitat to support routine biological monitoring. Observations from past years suggest that areas downstream of the North Campus basin are unlikely to support significant biological populations.</p>	<p>Complete</p>
--	---	-----------------

<p>Dr. Al McIntosh shall establish a chemical and/or biological monitoring program for Southwest Campus watershed, Main Street East watershed, Potash Brook and athletic fields. The program shall establish a baseline and follow up with both dry weather and event-related testing.</p>	<p>Year #1 The 2003 field season included the following activities at these sites:</p> <ul style="list-style-type: none"> a. Low flow and storm flow in Tributary III of Potash Brook above and below Miller Farm were sampled on July 21, 2003 for bacteria, TSS, TP and TKN. b. Inputs to and outflow from the Southwest Campus basin were sampled two hours after a small storm on August 1, 2003 and analyzed for bacteria, TSS, TP and TKN. c. Bacteria were measured above and below the Miller Farm on Tributary III of Potash Brook during low flow conditions on three consecutive days from September 7 to September 9, 2003. d. Low flow and storm flow were sampled on Tributary III of Potash Brook on September 23, 2003. In addition to routine parameters, trace metals and PAHs were measured. In addition, inputs into and outflow from the Southwest Campus basin were sampled and analyzed for bacteria, TSS, TP and TKN. e. Following a strong storm event on September 28, 2003 inputs were sampled and analyzed for bacteria, TSS, TP and TKN. f. Following a storm event on October 27, 2003 discharge from a basin behind the Miller Farm was sampled for bacteria, TSS, TP and TKN. 	<p>Complete</p>
--	--	-----------------

Measurable Goal	Description of Goal Implementation	Status
<p>Dr. Al McIntosh shall establish a chemical and/or biological monitoring program for Southwest Campus watershed, Main Street East watershed, Potash Brook and athletic fields. The program shall establish a baseline and follow up with both dry weather and event-related testing.</p>	<p>Note: Severn-Trent Laboratories, Inc. analyzed all samples for TSS, TP, TKN, trace metals and PAHs, while the Vermont Department of Health Laboratory measured colonies of ecoli.</p> <p><u>Year #2</u> Dr. McIntosh continues to monitor adjacent streams in 2004. The results of the testing will be published in early 2005. A report will be forwarded to ANR when complete.</p> <p><u>Year #3</u> Dr. McIntosh continues to monitor adjacent streams in 2005. The results are enclosed.</p> <p><u>Year #4</u> Dr. McIntosh tested water quality in the East Campus Stormwater Facility in 2006. The raw data is enclosed.</p>	<p>Complete</p> <p>Complete</p> <p>Complete</p>
<p>Participate in MCAP program at Centennial Field and Fort Ethan Allen "Industrial activities"</p>	<p><u>Year #1</u> The MCAP program visited the University property twice last fall to complete their inspection and recommendations of the vehicle maintenance and salt storage operations at the University.</p>	<p>Complete</p>
<p>Meet with CWD and City of Burlington to review source protection plan and stormwater management plan</p>	<p><u>Year #1</u> Krebs & Lansing Consulting Engineers met with CWD in December 2003 and reviewed the University's MS4 stormwater plan. CWD copied their source protection plan for the University to review and coordinate activities within the MS4 permit to the source protection plan. Krebs & Lansing met with Steve Roy, City of Burlington. Steve provided the City of Burlington source protection plan and their MS4 stormwater management plan. The University is reviewing both to coordinate activities between the two stormwater management plans.</p>	<p>Complete</p>

2. Assessment of Stormwater Management Plan Success in Year 4

Even though the University of Vermont historically has prioritized the management of its stormwater, the institution has had a very successful 4th year of the MS4 permit.

- We feel the stormwater issue has become much more public and with that exposure the public has become more knowledgeable.
- Department meetings and campus newsletters reinforced the awareness of stormwater that is needed by all University employees to successfully implement the permit.
- Water quality testing is ongoing and assessments made on performance of existing facilities. We in the process of testing the East Campus Treatment Facilities since they have been upgraded to the 2002 Stormwater Manual. The Southwest Facility upgrade was nearly completed in 2006. Water quality testing could start as early as 2008.
- The construction of a new compost pad and irrigation pond will provide a responsible way for UVM to both recycle manure and not impact waters of the State. One of the two compost pads is complete. The second compost pad was completed in 2006 and the facility was turned over to the Miller Research Farm.
- Two projects were subject to the 5-acre General Permit for Construction Sites; Davis Student Center and Residential Learning Center. All parties involved learned a lot of design and implementation of a detailed erosion control plan.
- The University had invested in mapping a majority of its storm system prior to the MS4 permit. The Physical Plant Department of the University of Vermont started a Utility mapping program in 2006. The storm system had been mapped previously, but it was very helpful to map water and wastewater lines as part of the investigation for cross connection. Accurate mapping also ensures a future cross connection is not made inadvertently. Recent discovery of a water leak at Patrick circle may be the cause of dry weather flow in that area.
- Although a tremendous amount of work is being completed by Physical Plant as part of the implementation of this permit, they historically have been very proactive in prioritizing stormwater management.

3. Year 5 Activities

The activities scheduled for completion in Year 5 are identified in the Stormwater Management Plan.

4. Proposed Changes to the University's Stormwater Management Plan (SWMP)

Year #4

We anticipate testing the East Campus Stormwater Facility instead of the Southwest Stormwater Facility due to the order of construction.

Year #2

We anticipate completing construction of the East Campus storm facility in 2005, not the Southwest stormwater facility.

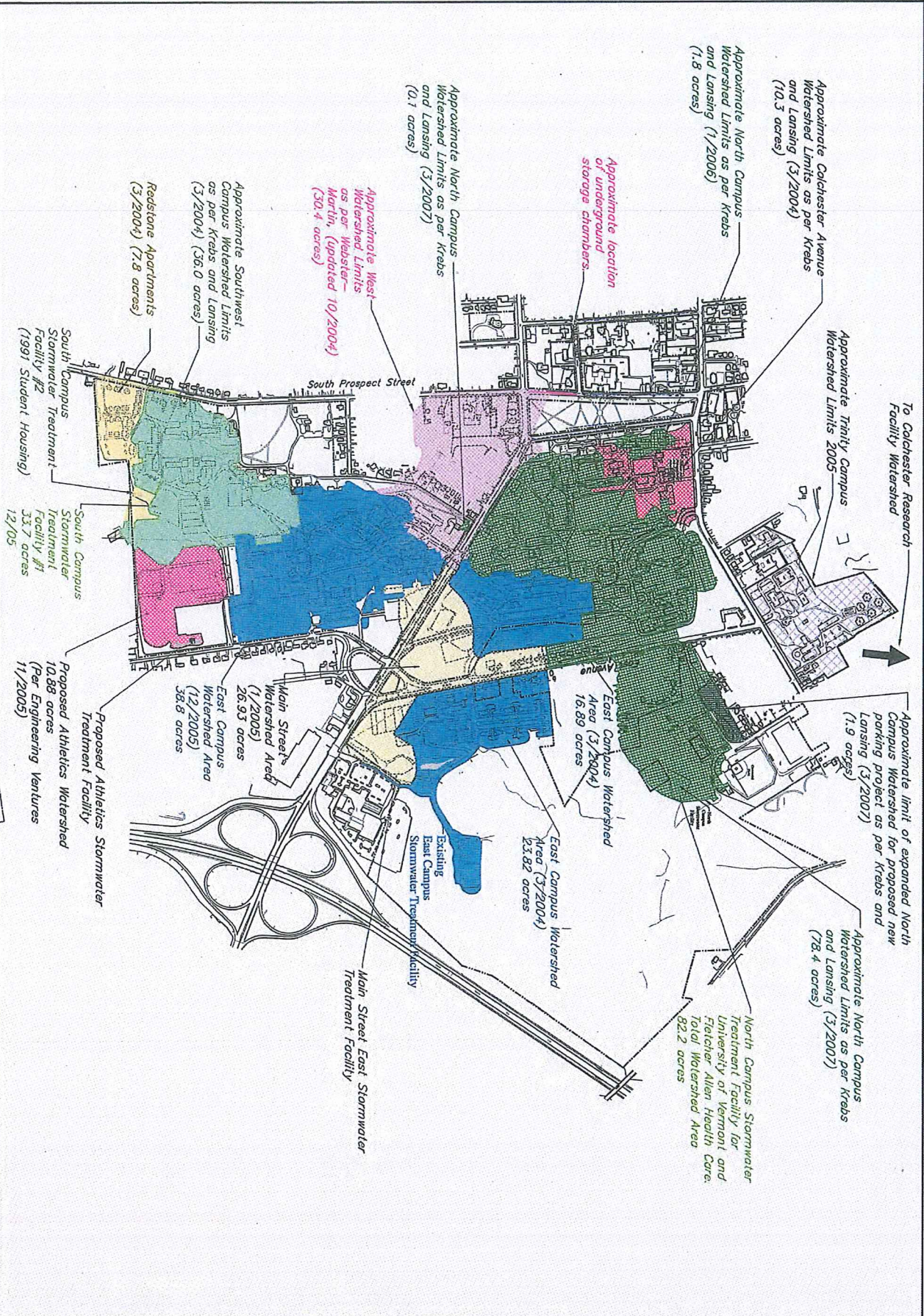
Year #1


No changes in this year.

5. Shared Permit Obligations

The University of Vermont is one of many key members in the Regional Stormwater Education Program.

END OF REPORT



 <p>The University of Vermont UVM</p>	<p>University of Vermont CAMPUS PLANNING 100 SOUTH PROSPECT BURLINGTON, VERMONT 05405 (802) 655-2088</p>	<p>Consultants</p> <p>CIVIL ENGINEER <i>John A. Hering Consulting Engineers, Inc.</i> 100 SOUTH PROSPECT BURLINGTON, VERMONT 05405 (802) 655-2088</p>	<p>Project: UNIVERSITY of VERMONT</p> <p>Project No. _____ Scale 1" = 800' Drawn by TML/2005 Checked by TML Date 3/29/2007</p> <p>Revisions</p> <table border="1"> <tr><td>No.</td><td>Date</td><td></td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table> <p>Drawing Title OVERALL CAMPUS WATERSHED PLAN</p> <p>Drawing No. WS-1</p>	No.	Date													
No.	Date																	