

**REPORTING YEAR ONE  
YEAR ENDING MARCH 9, 2004**

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**MS4 Municipal Compliance Certification (MCC)  
and Stormwater Management Program  
Annual Report (SWMPAR)**

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*Submitted To:*

**New York State Department of Environmental Conservation**

Region 9 MS4 Permit Coordinator  
270 Michigan Avenue  
Buffalo, New York 14203-2999

*Submitted By:*



**Buffalo and Fort Erie Public Bridge Authority  
MS4 SPDES No. NYR20A422**

One Peace Bridge Plaza  
Buffalo, NY 14213  
Phone: (716) 884-6744 ext. 242

May 27, 2004



**SPDES General Permit for Stormwater Discharges from  
Small Municipal Separate Storm Sewers (MS4s), Permit No. GP- 02-02  
Municipal Compliance Certification**

<b>Section A. Small MS4 Owner/Operator Information</b>		Annual Report for the year ending: March 9, 2004	
SPDES No.: <b>NYR20A422</b>	MS4 Name: Buffalo and Fort Erie Public Bridge Authority		
Contact Name: Anthony Braunscheidel	Contact Title: Facilities Manager	Phone No.: (716) 884-6744 ext. 242	
Mailing Address:	Street or P.O. Box: One Peace Bridge Plaza	City: Buffalo	
	County: Erie	State: New York	Zip Code: 14213-2494
Is any of this information new or changed since your last certification? (Please circle one answer)      Yes <input checked="" type="radio"/> No			
<b>Section B. Watershed and MS4 Partnership Information</b> (Please circle one answer for each question)			
1. a) Have you received notification from the Department that you are subject to the special conditions in Part III.B. of the permit ?      Yes <input checked="" type="radio"/> No			
b) If you answered yes to 1a), have all necessary changes been made to the Stormwater Management Program (SWMP) to ensure compliance with Part III.B. of the permit?      Yes      No      N/A			
2. a) Have any new MS4 partnerships developed, where another municipality will be responsible for carrying out a portion of your municipality's SWMP? If yes, please specify the municipality and the activity.      Yes <input checked="" type="radio"/> No			
b) Municipality: _____			
c) Activity: _____			
d) Has a legally binding intermunicipal agreement been executed? If yes, please include a copy of the agreement as an appendix to the Stormwater Management Program Annual Report (SWMPAR).      Yes      No      N/A			
<b>Section C. Evaluation of Compliance</b>			
1. For each of the six minimum measures listed below, indicate if your program has made steady progress toward full implementation <i>and</i> has achieved all measurable goals scheduled to be completed this reporting period. (Please circle one answer for each question)			
	<u>Steady Progress</u>	<u>Goals Achieved</u>	
a) Public education	Yes	Yes	
b) Public participation/involvement	Yes	No	
c) Illicit discharge detection and elimination	Yes	No	
d) Construction site stormwater runoff control	Yes	No	
e) Post-construction stormwater management	Yes	No	
f) Pollution prevention/good housekeeping for municipal operation	Yes	Yes	
2. Does your SWMP cover all areas, automatically and additionally designated, pursuant to 40 CFR 122.32(a), under your jurisdiction? <input checked="" type="radio"/> Yes      No			
3. Have adequate resources been allocated to fully implement your SWMP no later than January 8, 2008? <input checked="" type="radio"/> Yes      No			



SPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewers (MS4s), Permit No. GP- 02-02 Municipal Compliance Certification, Page 2

SPDES No.: <b>NYR20A422</b>	MS4 Name: Buffalo and Fort Erie Public Bridge Authority
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**Section D. Explanation of Compliance Evaluation**

If you answered No to question 1b in Section B or to any question in Section C, indicate the question in the small box in the upper left hand corner, and provide a brief explanation, including action being taken to address the problem, in the space provided. With respect to any of the six minimum measures, your attached Stormwater Management Program Annual Report (SWMPAR) must include a detailed explanation of why implementation or compliance is not being achieved and what actions have been taken to ensure compliance with each minimum measure. Indicate where this explanation can be found in the SWMPAR. If necessary, attach extra sheets following the same format.

Question # <b>C 1b</b>	Explanation
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One Year One goal was not completed. This goal was to open Western New York Stormwater Coalition meetings to the public (two meetings/year). The meetings were not opened in Year One because the workgroups were engaged in the research and development of the work products that will be presented at the open meetings. More detailed discussion can be found on Page 8 of the SWMPAR.

Question # <b>C 1c</b>	Explanation
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Two Year One goals were not completed, however steady progress was made toward each:

- 1) Develop written Stormwater Management Program - The Authority began developing a written SWMP, but was not able to complete the document in Year One. The Authority's written SWMP was finalized in May 2004. More detailed discussion can be found on Page 10 of the SWMPAR.
- 2) Erect signage on Authority property prohibiting illicit discharges - This goal was not accomplished in Year One due to the level of effort put into developing the written SWMP. More detailed discussion can be found on Page 10 of the SWMPAR.

Questions # <b>C 1d and 1e</b>	Explanation
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Developing a regulatory mechanism was a Year One goal for both construction and post-construction site runoff control. Methods of regulating each of these are outlined in the Authority's written SWMP, which was finalized in May 2004. Thus, the goal was not accomplished in Year One. More detailed discussion can be found on Pages 12 and 15 of the SWMPAR.

**Section E. Certification**

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

Print Name: Anthony Braunscheidel Title: Facilities Manager

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

The MCC form must be signed by either a principal executive officer or ranking elected official, or duly authorized representative of that person as described in Part VI.I.2. of the permit. Send this form to both the DEC Regional Office (see list of addresses in the instructions) and the DEC Central Office (MS4 Permit Coordinator, 625 Broadway, Division of Water - 4<sup>th</sup> Floor, Albany, NY 12233-3505)

**SPDES General Permit for Stormwater Discharges  
Small Municipal Separate Storm Sewers (MS4s)  
Permit No. GP-02-02**

**ANNUAL REPORT**

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**Small MS4 Owner/Operator Information**

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*SPDES number:*        **NYR20A422**

*MS4 Name:*            Buffalo and Fort Erie Public Bridge Authority

*Contact Name:*        Anthony Braunscheidel

*Contact Title:*        Facilities Manager

*Phone:*                (716) 884-6744 ext. 242

*Mailing Address:*     One Peace Bridge Plaza

*City:*                  Buffalo

*County:*                Erie

*State:*                  New York

*Zip Code:*             14213-2494

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**Annual Report for the Year Ending:**        March 9, 2004

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**Is any of this information new or changed since your last certification?**     Yes     No

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## **Executive Summary**

The Buffalo and Fort Erie Public Bridge Authority (Authority) has focused on developing a written Stormwater Management Program (SWMP) during the first reporting year. The purpose of the written SWMP is to document the Authority's existing stormwater management activities, and clearly define goals for the next five years so that the Authority's stormwater program, as outlined in the Notice of Intent (NOI), will be fully implemented in 2008 in compliance with the Phase II regulations.

The Authority has also actively participated in the Western New York Stormwater Coalition during the Year One. The Western New York Stormwater Coalition (Coalition) is comprised of the regulated Municipal Separate Storm Sewer System (MS4) operators of Erie and Niagara Counties, as well as several non-traditional MS4s and local environmental agencies, such as the Erie County Soil and Water Conservation District and Erie County Health Department. This Coalition has been meeting regularly for the past two years to work cooperatively to meet the requirements of the Phase II Stormwater regulations.

For the first year, the Coalition utilized a workgroup format to examine each of the six minimum controls and local ordinance development. The workgroups developed a better understanding of the requirements and also identified existing programs and mechanisms that would assist with meeting the requirements. The workgroups also determined the Best Management Practices (BMPs) and measurable goals that the Coalition would accomplish collectively. These BMPs and Measurable Goals were identified on the NOIs submitted by the Coalition participants.

The Public Education and Outreach and Public Participation/Involvement controls are addressed by one workgroup that has been developing education and outreach materials and strategies to engage the public. The Illicit Discharge and Detection workgroup has been identifying strategies for illicit discharge detection and control, determining the extent of outfall mapping needed, and has developed an outline for the Coalition's Stormwater Management Plan. Both the Construction Site Runoff and Post-Construction Stormwater Management groups have examined and identified BMPs that reflect local conditions, climate, etc. The P2/Good Housekeeping for Municipal Operations workgroup has identified key BMPs and has prepared an Operations and Maintenance guidance document. The local ordinance development workgroup has researched existing ordinances utilized by Phase I regulated communities and has drafted a model ordinance. The work products listed above can be found in the Appendices.

Since filing the NOI, the Coalition workgroups have been working to attain their respective Year One measurable goals. For details pertaining to the Year One goals met, Year Two activities, implemented BMPs and changes to the program, please see the summaries provided for each minimum control measure.

## **I. Public Education and Outreach on Stormwater Impacts**

### **A. Narrative Overview**

The Authority has developed a SWMP that defines the Authority's public outreach and education program. The public education and outreach program addresses the impacts of stormwater discharges on water bodies through a variety of outreach techniques and management practices. Silt and sediment are the primary pollutants of concern. Additional pollutants of concern are oils and greases, pesticides and fertilizers and chlorine-based compounds. The public education and outreach BMPs include a web page, various printed material, participation in events and programs, and stormwater displays. The Coalition has also developed public education and outreach materials, which the Authority will distribute and promote above and beyond the commitments made in the NOI.

It is not possible to assess the effectiveness of these BMPs at this point in the program, as Year One measurable goals are primarily development oriented. There are no significant changes in the Public Education and Outreach BMPs or measurable goals selected for them.

### **B. Implementation of Best Management Practices**

#### Best Management Practices

1. Plan and conduct an ongoing public education and outreach program
  - The Authority began developing a written public education and outreach program, which has been incorporated in the written SWMP (refer to Section III for further details).
2. Webpage
  - The Authority has not worked on this BMP in Year One. This is a Year Two goal.
  - The stormwater pollution prevention webpage developed on behalf of members participating in the Western New York Stormwater Coalition is housed on the Erie County site:  
[http://www.erie.gov/environment/compliance/pollution\\_sw2](http://www.erie.gov/environment/compliance/pollution_sw2)
3. Printed material
  - The Coalition has made progress toward implementing this BMP in Year One. Work accomplished includes development and printing of the following stormwater pollution prevention brochures: automotive, concrete, construction site waste management, roadwork and paving, lawn care, restaurants and food service, healthcare facilities, mobile cleaners, pools and spas and a general household stormwater pollution prevention guide.
4. Events and Programs
  - The Authority has not worked on this BMP in Year One. This is a Year Five goal.
5. Displays
  - The Coalition has developed a poster for a general household audience (Appendix A).



## Year One Measurable Goals

1. Participate in Western New York Stormwater Coalition (minimum two meetings/year)
  - The Authority has accomplished this Year One goal. The WNY Stormwater Coalition held ten meetings during Year One, scheduled on the second Tuesday of each month, with the exception of July and December. An Authority representative attended the following meetings: March 12<sup>th</sup>, April 9<sup>th</sup>, May 14<sup>th</sup>, June 11<sup>th</sup>, August 13<sup>th</sup>, September 10<sup>th</sup>, October 8<sup>th</sup>, November 12<sup>th</sup>, January 14<sup>th</sup>.

## Additional Coalition Accomplishments

1. Library of Educational Materials
  - The Coalition has started to develop a library of educational materials addressing general/household stormwater pollution prevention, development and distribution of stormwater pollution prevention brochures, development of public education posters and creation of a webpage. Work accomplished includes: researching and obtaining a variety of stormwater pollution public education materials; evaluating the usefulness of those materials; and, assembling a reference package of them.

## ***C. Activities Planned for the Upcoming Year***

### Year Two Measurable Goals

1. Participate in Western New York Stormwater Coalition (minimum two meetings/year)
  - The Authority will continue its participation in the Coalition and assist the Coalition with its public education and outreach goals.
2. Create a stormwater information page on the Peace Bridge website
  - An informational web page will be created on the Authority website devoted to stormwater issues relevant to the community. In addition, links will be created between the Authority's and the Coalition's websites.

## **II. Public Involvement/Participation**

### **A. Narrative Overview**

The Authority has developed a Stormwater Management Program (SWMP) that defines the Authority's public involvement and participation program. This program addresses the impacts of stormwater discharges on water bodies through a variety of involvement techniques and participation activities. Public Involvement and Participation BMPs include public notice and access to documents; public presentation and comments received on the SWMP and the Annual Reports; development of a public participation and involvement program; and, identification of contact persons.

### **B. Implementation of Best Management Practices**

#### Best Management Practices

##### 1. Public notice and access to documents and information

- This has not been accomplished in Year One. Public access to the SWMP and Annual Report is a Year Two through Year Five goal, that will be an ongoing component of the Authority's SWMP.

##### 2. Public presentation and comments received on the SWMP and the Annual Reports

- The Annual Report for Year One is complete. This Annual report follows the outline developed by and provided to Coalition members.
- Public meetings were organized through the Coalition and held April 28<sup>th</sup>, 29<sup>th</sup> and May 5<sup>th</sup> and 6<sup>th</sup>. The MS4s were divided based on shared watersheds, and the Authority participated in the April 28<sup>th</sup> meeting. The meetings consisted of a presentation on stormwater pollution prevention, the Phase II regulations, public education and involvement and the Annual Report presented that evening. An Authority representative was present to discuss details of their Annual Report with interested Western New York residents.
- The Authority representative was asked one question at the public review meeting: why does a bridge need a SWMP? The representative explained that the Authority owns and operates a closed drainage system on the bridge and in the United States Plaza, which lies within an urbanized area. Thus, a SWMP is required under the Phase II regulations.

##### 3. Public involvement/participation program

- The Authority began developing a written public involvement/participation program, which has been incorporated in the written SWMP (refer to Section III for further details).

##### 4. Identification of contact person

- The Authority's stormwater contact is Anthony Braunscheidel, Facilities Manager (716-884-6744, extension 242)
- The stormwater contact has also been clearly identified in Table 2.1 of the Authority's written SWMP.

## Year One Measurable Goals

1. Open Western New York Stormwater Coalition meetings to public (two meetings/year)
  - This goal was not accomplished in Year One. The WNY Stormwater Coalition intends to open its meetings to the public two times per year, in January and August, to enhance public access to information and encourage involvement. The meetings were not opened in Year One because the workgroups were engaged in the research and development of the work products that will be presented at the open meetings. In addition, a small grant obtained from the Great Lakes Commission will be used to conduct several public education meetings. The meetings will take place in various watersheds through Erie County and Niagara County and will be designed to engage the general public/households. Annual reports and public education materials will be available.
  - This measurable goal is changed to a Year Two goal.
2. Make Stormwater Management Program (SWMP) available to the public
  - This goal was accomplished in Year One. A copy of the NOI, which is the Authority's initial SWMP, was made available to the public at the public meeting described in BMP #2 on Page 7.
  - The Authority began developing a written SWMP, but was not able to complete the document in Year One. During Year Two, The Authority's written SWMP will be finalized and posted on the Authority's website in PDF format, where it can be downloaded or printed, and copies will be provided upon written request to the Authority's stormwater contact.
  - This measurable goal is changed to an annual goal.
3. Designate a SWMP contact
  - The Authority has accomplished this Year One goal (refer to BMP #4 on Page 7).

## ***C. Activities Planned for the Upcoming Year***

## Year Two Measurable Goals

1. Open Western New York Stormwater Coalition meetings to public (two meetings/year)
  - The WNY Stormwater Coalition intends to open its meetings to the public two times per year, in January and August, to enhance public access to information and encourage involvement.
2. Make Stormwater Management Program (SWMP) available to the public
  - The Authority's written SWMP and Annual Report will be posted on the Authority's website in PDF format, where they can be downloaded or printed, and copies will be provided upon written request to the Authority's stormwater contact.
3. Make SWMP Annual Report available to the public
  - The draft annual report will be presented at a meeting that is open to the public, where the public attendees are able to ask questions about and make comments on the report. The meeting will be either a Coalition-organized event or a regular meeting of the Authority Board. A summary of comments and intended responses will be included in the annual report and the final report will be made available for public inspection.
  - This measurable goal is changed to an annual goal.
  - Refer to Year Two Measurable Goal #2 for Annual report for distribution information.

### **III. Illicit Discharge Detection and Elimination**

#### ***A. Narrative Overview***

The Authority has made significant progress toward implementing BMPs under this minimum control measure. The Authority has started to develop a written SWMP, completed a base map of its stormwater collection and conveyance system (including outfalls), and actively participated in the Coalition illicit discharge and detection subgroup efforts.

As part of the Coalition's initial research and self-education process, which began in February of 2002, an outline of an Illicit Discharge Detection and Elimination program that met the minimum requirements of the Phase II requirements was developed. A sub group of the Coalition met on a bimonthly basis, researched information regarding illicit discharge programs from material that was available through both the NYSDEC and USEPA storm water websites and from existing municipal storm water programs. The subgroup discussed and identified strategies to accomplish certain appropriate work tasks cooperatively as a coalition and identified work items that the MS4s must implement individually.

The rough outline that was developed as a result of these research efforts was completed in December of 2002 and provided the Coalition members valuable insight into the development of the Illicit Discharge Detection and Elimination measurable goals. During Year One, the Coalition subgroup further developed the outline into a more descriptive plan. This plan has been attached. When additional resources become available a consultant will be hired by the Coalition to further develop the plan into a more user-friendly guidance document.

#### ***B. Implementation of Best Management Practices***

##### Best Management Practices

##### 1. Outfall mapping / System mapping

- The Authority has made progress toward implementing these BMPs in Year One. The Authority has developed a comprehensive outfall and stormwater conveyance system map, which will be updated on an annual basis.
- The Coalition has also made significant progress toward implementing this BMP. In 2003 (Year One), an application was submitted through the Erie County Capital Improvement Projects process to secure \$70,000 in County funds to map all of the storm water outfalls in Erie County. The application was approved and the funding became available in January of 2004.
- The Erie County Office of Geographic Information services aided the Coalition by identifying all of the intersections of county and municipally operated roadways with known water bodies and estimated that there are approximately 2400 outfalls within the regulated U.S. Census defined urbanized area of Erie County that need to be identified and mapped. The Geography Department at Buffalo State College developed a proposal to use students and other technical resources at the college to complete the mapping of all of the outfalls in Erie County.
- Based upon the Buffalo State College proposal Erie County distributed a solicitation for proposals in May of 2004 (Year Two), to secure the services of a qualified contractor (consultant or university program) to do the mapping work. The solicitation included a request for alternative bids for mapping of all of the regulated outfalls in Niagara County also. The Buffalo State College Proposal and a copy of the Erie County Solicitation for proposals are attached to this Annual Report.

## 2. Illicit discharges prohibited

- The Authority has not worked on this BMP in Year One. Methods of prohibiting illicit discharges are outlined in the Authority's written SWMP, which will be finalized in Year Two.
- When prohibiting illicit discharges to the Authority's stormwater conveyance system, the Authority will specifically target illegal dumping that may occur at facility floor drains or catch basins.

## 3. Public, employees, businesses informed of hazards from illicit discharges

- As part of the Public Education and Outreach effort, a series of informational brochures have been developed to accomplish this objective (refer to BMP #3 on Page 5).

## 4. Illicit discharges identified

- The Authority has not worked on this BMP in Year One. This is a Year Three through Five goal.

## 5. Dye testing

- Dye testing is a means for identifying illicit discharges. The Authority has not worked on this BMP in Year One. This is a Year Three goal.

### Year One Measurable Goals

#### 1. Develop written Stormwater Management Program

- This goal was not accomplished in Year One, but significant progress was made toward completing this goal. The Authority began developing a written SWMP, but was not able to complete the document in Year One. During Year Two, The Authority's written SWMP will be finalized (May 2004).
- This measurable goal is changed to a Year Two goal.

#### 2. Erect signage on Authority property prohibiting illicit discharges

- This goal was not accomplished in Year One due to the level of effort put into developing the written SWMP. The Authority intends to erect signage at key locations throughout their property that states that illicit discharges are prohibited and the penalties for a violation.
- This measurable goal is changed to a Year Two goal.

#### 3. Develop outfall and comprehensive system map.

- The Authority has accomplished this Year One goal (refer to BMP #1 on Page 9). A copy of the map will be included in the Authority's written SWMP.

### ***C. Activities Planned for the Upcoming Year***

#### Year Two Measurable Goals

#### 1. Develop written Stormwater Management Program

#### 2. Erect signage on Authority property prohibiting illicit discharges

3. Conduct information stormwater workshop with Authority employees

- The Authority will organize and conduct training sessions for Authority employees on stormwater management. Topics will include, at a minimum, an overview of stormwater and the SPDES permit requirements; the potential impacts of illicit connections and discharges on stormwater and how they can be detected and eliminated; best management practices for stormwater management; review of the Authority's Stormwater Management Program and standard operating procedures.
- This will also be a Year Four measurable goal.

4. Update collection system and outfalls map

- To facilitate mapping updates, a one-day walking field inspection will be completed each year to verify the condition and location of existing stormwater facilities. In addition, information will be gathered on any construction projects completed during the reporting year that have impacted the configuration of the stormwater conveyance system. The information gathered from yearly construction projects and during the field visit will be used to update the electronic stormwater conveyance system map.

## **IV. Construction Site Stormwater Management**

### ***A. Narrative Overview***

The Stormwater Management Program (SWMP) developed by the Authority addresses the impacts of stormwater discharges on waterbodies through a combination of structural and non-structural construction stormwater management techniques. This program is designed to provide effective management practices for construction stormwater runoff from new development or re-development projects that disturb greater than or equal to one acre.

It is not possible to assess the effectiveness of these BMPs in reducing stormwater pollutant loadings at this point in the program, as Year One measurable goals are primarily development oriented. There are no significant changes in the Construction Stormwater Management BMPs or the selected measurable goals.

### ***B. Implementation of Best Management Practices***

#### Best Management Practices

1. Require erosion and sedimentation controls through an ordinance or other regulatory mechanism
2. Provide opportunity for public comment on construction plans
3. Require construction site plan review
4. Require overall construction site waste management
5. Site inspections and enforcement
6. Education and training of construction site operators
  - The Authority began developing a written SWMP, which will incorporate a construction site stormwater runoff control program. This program will address each of the six BMPs required under this minimum control measure (see above). The written SWMP will be finalized during Year Two (May 2004).
  - The New York State Standards and Specifications for Erosion and sediment control will be used as the basis for erosion and sediment controls design.
  - The Coalition construction workgroup developed draft guidelines for construction site plan review.

#### Year One Measurable Goals

1. Develop and update BMPs and incorporate into the SWMP
  - The Authority has accomplished this Year One goal. In preparation of the written SWMP, the Authority's existing BMPs were reviewed and updated. They have been documented in the written SWMP, which will be finalized in year Two (May 2004).
2. Develop regulatory mechanism for construction site runoff control
  - The Authority has not accomplished this Year One goal. Methods of regulating construction site runoff control are outlined in the Authority's written SWMP, which will be finalized in Year Two (May 2004).
  - This measurable goal is changed to a Year Two goal.

*C. Activities Planned for the Upcoming Year*

Year Two Measurable Goals

1. Develop and update BMPs and incorporate into the SWMP
  - The existing BMPs will be evaluated on an annual basis to ensure their appropriateness and effectiveness in reducing stormwater runoff impacts to the maximum extent practicable, and will be updated as necessary to reflect changing conditions at the Peace Bridge and United States Plaza.
2. Develop regulatory mechanism for construction site runoff control
3. Review and update internal construction review process
  - The Authority will review the existing construction site plan review process as it relates to construction site stormwater runoff control, and make changes as necessary to ensure proper erosion and sediment control are being implemented.



## **V. Post-Construction Stormwater Management**

### **A. *Narrative Overview***

The Stormwater Management Program (SWMP) developed by the Authority addresses the impacts of stormwater discharges on waterbodies through a combination of structural and non-structural post-construction stormwater management techniques. This program is designed to provide effective management practices for post-construction stormwater runoff from new development or re-development projects that disturb greater than or equal to one acre. The Post-Construction Stormwater Management component of the SWMP includes assessing the existing conditions and identifying appropriate management practices to reduce pollutant discharge; regulation of post-construction runoff from development through an ordinance or other regulatory mechanism; and development of an inspection and maintenance program for implemented management practices.

The management practices selected for post-construction stormwater management compliment the goals of other minimum control measures. For example, an inspection and maintenance program can be utilized for construction site runoff control as well, and maintenance of post-construction management practices is a good housekeeping measure. It is not possible to assess the effectiveness of these BMPs in reducing stormwater pollutant loadings at this point in the program, as Year One measurable goals are primarily development oriented. There are no significant changes in the Post-Construction Stormwater Management BMPs or the selected measurable goals.

### **B. *Implementation of Best Management Practices***

#### Best Management Practices

1. Assess existing conditions throughout the MS4 and identify appropriate management practices to reduce pollutant discharge to the maximum extent practicable
2. Regulate post-construction runoff from development through an ordinance or other regulatory mechanism
3. Develop management practice inspection and maintenance program
  - The Authority began developing a written SWMP, which will incorporate a post-construction site stormwater runoff control program. This program will address each of the three BMPs required under this minimum control measure (see above). The written SWMP will be finalized during Year Two (May 2004).
  - The post-construction Coalition workgroup developed a list and description of post-construction stormwater management BMPs applicable for use in Western New York. This guidance document was distributed to Coalition members, and a copy is attached.

#### Year One Measurable Goals

1. Develop and update BMPs and incorporate into the SWMP
  - The Authority has accomplished this Year One goal. In preparation of the written SWMP, the Authority's existing BMPs were reviewed and updated. They have been documented in the written SWMP, which will be finalized in year Two (May 2004).

2. Develop regulatory mechanism for post-construction site runoff control
  - The Authority has not accomplished this Year One goal. Methods of regulating construction site runoff control are outlined in the Authority's written SWMP, which will be finalized in Year Two (May 2004).
  - This measurable goal is changed to a Year Two goal.

*C. Activities Planned for the Upcoming Year*

Year Two Measurable Goals

1. Develop and update BMPs and incorporate into the SWMP
  - The existing BMPs will be evaluated on an annual basis to ensure their appropriateness and effectiveness in reducing stormwater runoff impacts to the maximum extent practicable, and will be updated as necessary to reflect changing conditions at the Peace Bridge and United States Plaza.
2. Develop regulatory mechanism for post-construction site runoff control
3. Develop inspection and enforcement program
  - The Authority will review the existing post-construction BMP inspection program, and make changes as necessary to ensure BMPs are being properly maintained and operating as designed. The inspection and enforcement program will be documented in the Authority's written SWMP.

## **VI. Pollution Prevention/Good Housekeeping for Municipal Operations**

### **A. Narrative Overview**

The Authority currently implements several good housekeeping/pollution prevention measures aimed at preventing the discharge of pollutants. In addition, the Coalition's pollution prevention/good housekeeping workgroup has researched the available information concerning best management practices. It is not possible to assess the effectiveness of the BMPs associated with this minimum control measure in reducing stormwater pollutant loadings at this point in the program, as Year One measurable goals are primarily development oriented. There are no significant changes in the Pollution Prevention/Good Housekeeping BMPs or the selected measurable goals.

### **B. Implementation of Best Management Practices**

#### Best Management Practices

1. Prevent the discharge of pollutants from municipal operations
  - The Authority currently implements several good housekeeping/pollution prevention measures aimed at preventing the discharge of pollutants. These include employee training, vehicle maintenance and washing, roadway and bridge maintenance, parking lot and street cleaning, road salt application and storage, and spill response and prevention..
2. Follow DEC NPS Management Practices Catalog, or equivalent
  - The Authority intends to follow the DEC NPS Management Practices Catalog. This will be incorporated into the Authority's written SWMP.
3. Conduct employee pollution prevention training
  - The Authority has not worked on this BMP in Year One. This is a Year Four goal.
  - The Authority intends to conduct training sessions for Authority employees on stormwater management. Topics will include, at a minimum, an overview of stormwater and the SPDES permit requirements; the potential impacts of illicit connections and discharges on stormwater and how they can be detected and eliminated; best management and good housekeeping practices for stormwater management; review of the Authority's Stormwater Management Program and standard operating procedures.

#### Year One Measurable Goals

1. Develop Pollution Prevention/Good Housekeeping Plan
  - This goal was accomplished in Year One.
  - The Coalition Good Housekeeping/Pollution Prevention workgroup developed an outline for each management practice identified in the NOI and deemed appropriate for use in Western New York. The outlines and associated information were compiled into a document entitled *Pollution Prevention/Good Housekeeping for Municipal Operations: A Guidance Document of Best Management Practices*. A copy of the document is attached to this Annual Report, and the Coalition has made the document available to all municipalities through the Coalition website (refer to BMP #2 on Page 5).

- The Authority began developing a written SWMP, which will document the Authority's existing good housekeeping/pollution prevention measures. The written SWMP will be finalized during Year Two (May 2004).

***C. Activities Planned for the Upcoming Year***

Year Two Measurable Goals

1. Audit facilities and practices and identify problem areas

- A one-day walking field inspection will be completed each year to verify the condition and location of existing stormwater facilities. The intent of the field investigation is to identify any noticeable differences between the base map and field locations of storm water conveyance facilities; identify evidence of any illicit connections to the storm sewer system; identify maintenance issues (i.e. debris buildup, deteriorated conditions); observe good housekeeping practices and identify areas for improvement; and, inspect outfall conditions.

**VII. Monitoring and Modeling Results**

No monitoring or modeling results this report period.

**VIII. Summary of Funding and Use of Grant Money**

There is currently no grant funding from NYSDEC.

**IX. Implementation of BMPs and Progress Toward Achieving Measurable Goals**

Refer to the summaries provided for each minimum control measure.

**X. Outline of the Upcoming Year's Activities**

**A. Public Education and Outreach on Storm Water Impacts**

Annual: Participate in Western New York Stormwater Coalition  
(minimum two meetings/year)

Year 2: Create a stormwater information page on the Peace Bridge website

**B. Public Participation/Involvement**

Year 2: Open Western New York Stormwater Coalition meetings to public  
(two meetings/year)

Annual: Make Stormwater Management Program (SWMP) available to the public

Annual: Make SWMP Annual Report available to the public

**C. Illicit Discharge Detection and Elimination**

Year 2: Develop written Stormwater Management Program

Year 2: Erect signage on Authority property prohibiting illicit discharges

Years 2 & 4: Conduct information stormwater workshop with Authority employees

Years 2-5: Update collection system and outfalls map

**D. Construction Site Storm Water Runoff Control**

Annual: Develop and update BMPs and incorporate into the SWMP

Year 2: Develop regulatory mechanism for construction site runoff control

Year 2: Review and update internal construction review process

**E. Post-Construction Storm Water Management in New Development and Redevelopment**

Annual: Develop and update BMPs and incorporate into the SWMP

Year 2: Develop regulatory mechanism for post-construction site runoff control

Year 2: Develop inspection and enforcement program

**F. Pollution Prevention/Good Housekeeping for Municipal Operations**

Year 2: Audit facilities and practices and identify problem areas

**APPENDIX A**  
**PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS**

# Western New York Stormwater Coalition

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**Automotive &  
Related  
Industries...**  
**How to Prevent  
Water & Storm Sewer  
Pollution**

**Best Management Practices  
for:**

- Gas Stations
- Auto Repair Shops
- Mechanics
- Auto Detailers
- Auto Dealerships
- Collision & Paint Shops
- Car Rental Agencies
- Car Wash Shops
- Tire Shops
- Auto Salvage



WNY Stormwater Coalition

## Stormwater Pollution

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### What is the Problem?

Rain and snowmelt wash pollutants from streets, construction sites, and land into storm sewers and ditches. Eventually, the storm sewers and ditches empty the polluted stormwater directly into streams and rivers with no treatment. This is known as *stormwater pollution*.

Polluted stormwater degrades our lakes, rivers, wetlands and other waterways. Nutrients such as phosphorous and nitrogen can cause the overgrowth of algae resulting in oxygen depletion in waterways. Toxic substances from motor vehicles, and careless application of pesticides and fertilizers threaten water quality and can kill fish and other aquatic life. Bacteria from animal wastes and improper connections to storm sewer systems can make lakes and waterways unsafe for wading, swimming and fish consumption. Eroded soil is a pollutant as well. It clouds the waterway and interferes with the habitat of fish and plant life.

Fortunately, stormwater pollution can be prevented or minimized by implementing Best Management Practices which are procedures or activities that reduce or eliminate pollutants in stormwater.

County of Erie  
Department of Environment & Planning  
Environmental Compliance Services

Joel A. Giambra, County Executive



## How to Prevent Pollution from Automotive & Related Industries

Pollutants from automotive-related activities that enter municipal storm drain systems will harm aquatic life and impair our drinking water supplies. Floating materials, such as debris and automotive fluids, also pollute our lakes and streams and reduce the natural beauty of our waterways. This results in a negative impact on the aesthetics of our natural resources and on tourism/recreation opportunities.

### Best Management Practices

- Employee training is essential to reinforce proper disposal practices.
- Minimize use of water to clean floors. A damp mop or wet vac should be used instead. Use kitty litter to clean up an oil spill and dispose of as hazardous waste.
- Tanks, pumps, fittings, pipes and containers should be inspected routinely for integrity and leaks.
- Never hose down bays into storm drains. Contain wash water and dispose of through sanitary sewer.
- Recycle grease and oil—DON'T pour into sinks, floor drains or parking lots.
- Identify the nearest storm drain and keep fluids away from it.
- Use high volume, low pressure spray paint equipment to achieve high transfer efficiency.
- Dispose of solvent only when it loses its effectiveness, not just because it looks dirty.
- Use mechanical stripping methods instead of paint removers. Give leftover paint to customers or donate to trade schools.

## Best Management Practices (continued)

- Combine transmission and brake fluid. It is not cost effective to recycle these separately.
- Keep used oil separate from parts cleaning solvents, antifreeze and fuel.
- Recycle oil, antifreeze, tires and batteries.
- Fit all storage tanks with spill containment and overfill prevention system.
- Never pour liquids or dry materials down a storm drain.
- Use drip pans to capture fluids. Use absorbent cleaning agents instead of water to clean work areas.
- Collect bulk grease in containers and contact a firm to recycle waste into a useful by-product.
- Flush parts with dirty solvent first and then rinse clean with virgin solvent.
- Pour wash water into a janitorial sink—NOT outside in a parking lot, alley or sidewalk/street.
- To prevent storm water discharge, avoid working in outdoor areas. If this isn't possible, grade, pave or berm outdoor areas to collect discharge in a sanitary sewer drain.
- Eliminate the use of chlorinated solvents, which are highly toxic and hard to dispose of. Use detergents or water based parts cleaners.
- Capture crusher fluids to prevent spillage. Do not allow fluids to drain into the ground.



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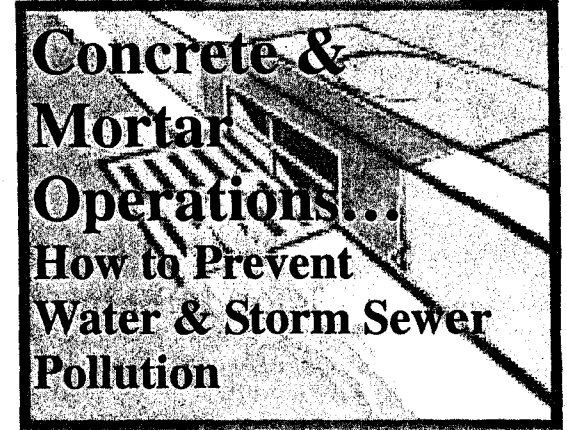
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## Best Management Practices for:

- Masons & Bricklayers
- Home Builders
- General Contractors
- Developers
- Concrete Providers
- Sidewalk Construction Crews
- Patio
- Construction Crews



WNY Stormwater Coalition

## Stormwater Pollution

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Environmental Compliance Services

Joel A. Giambra, County Executive



## How to Prevent Pollution from Concrete & Mortar Work

Fresh concrete and mortar that washes into lakes and streams via stormwater are toxic to fish and the aquatic environment.

### Best Management Practices

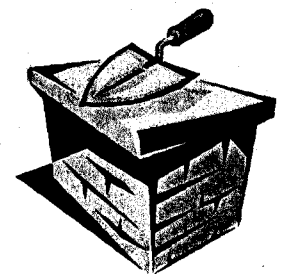
#### General Practices

- Identify concrete mixer washout areas in your yard, away from storm sewers, ditches and waterways. Allow washwater to flow into a temporary waste pit; dispose/recycle hardened concrete.
- Do not use diesel fuel as a lubricant on concrete forms, tools or trailers.
- Secure open bags of cement and keep cement powder away from streets, gutters, storm sewers, rainfall and runoff.
- Protect both dry and wet materials from rainfall and runoff by storing under cover. Avoid storing materials near storm sewers, ditches and waterways.

## Best Management Practices

### Operational Practices

- Mix only enough concrete or mortar for a two hour period.
- Use tarps or heavy plastic under mixers.
- Protect fresh applications from rainfall and runoff until material is dry.
- When cleaning, sweep or wash fines onto a dirt area, not a street, gutter or storm sewers.
- Never dispose or washout into the street, gutter, storm sewers, ditch or waterways.
- Wash chutes onto dirt areas to prevent contaminated water from flowing into streets, gutters, storm sewers or ditches.
- Block nearby storm sewers with sandbags if necessary.



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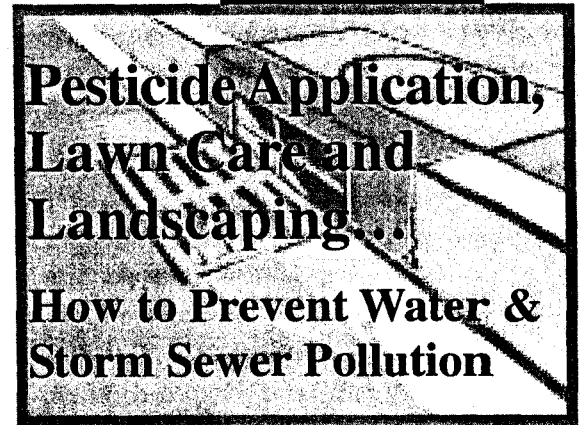
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## Best Management Practices for:

- Landscapers
- Pesticide Applicators
- Lawn Maintenance Crews
- Developers
- Home Builders
- Patio & Deck Contractors
- Homeowners
- Construction Inspectors



WNY Stormwater Coalition

## Stormwater Pollution

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### What is the Problem?

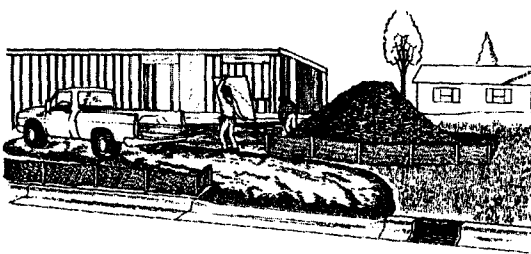
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## How to Prevent Pollution from Landscaping and Lawn Care

### Best Management Practices

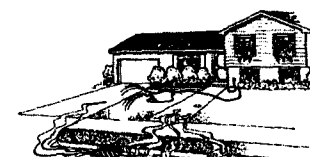
- Cover and contain topsoil and mulch during installation
- Plant rain gardens of native drought- and pest-resistant plants to collect and filter rainwater
- Plant vegetated filter areas or swales to trap pollutants along streets and driveways
- Install pervious pavement and gravel driveways to reduce stormwater runoff
- Do not drain swimming pools to storm drains or road ditches
- Install vegetative buffers along streams and drainage pathways
- Compost or mulch leaves and yard debris rather than hauling to dumps
- Direct downspouts away from driveways or storm drains, or install rain barrels to collect roof runoff
- Maintain septic systems to prevent failure and inspect every 3 years
- Sweep up litter and debris from driveways and parking lots rather than hosing debris into storm drains
- Install and maintain sediment and erosion control measures during soil disturbing activities

## How to Prevent Pollution from Pesticide Applications

*Everything you apply to the lawn can potentially contaminate surface and ground waters.*

### Best Management Practices

- Triple rinse and recycle empty pesticide and fertilizer containers
- Use proper spray notification signage and comply with neighbor notification regulations
- Comply with NYS Department of Environmental Conservation pesticide application regulations
- Use Integrated Pest Management (IPM) to avoid runoff or leaching from excess chemical applications
- Avoid using chemicals near waterways or storm drains
- Dispose of unused or excess pesticides in accordance with NYS DEC and US EPA regulations
- Clean up spills immediately and properly dispose of cleanup materials
- Fill tanks on a gravel surface, away from storm drains, sewers or ditches
- Avoid spraying in windy conditions or when rain is forecast
- Provide spill containment at storage facilities and store chemicals away from floor drains



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**Hospitals, Medical Treatment Centers & Healthcare Facilities...**

**How to Prevent Water & Storm Sewer Pollution**

### Best Management Practices for:

- Hospitals
- Satellite Medical Centers
- Blood Collection Labs
- Dentists & Dental Labs
- Clinical Laboratories
- Veterinarians



WNY Stormwater Coalition

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## How to Prevent Pollution from Medical Waste

Medical and hospital waste, like household waste, is largely recyclable. Only 10-15% is regulated medical waste and less than 5% is hazardous waste.

### Best Management Practices

#### *Recommended Practices*

- Whenever possible, use mercury-free medical products and cleaning agents, which don't contribute to increasing levels of mercury in streams and watersheds. Do not place mercury-containing products (thermometers) in medical waste containers. Products containing mercury should be collected in a single dedicated area and recycled or eliminated as hazardous waste.
- Sink and hopper traps should collect chemicals and other medical waste. They should be opened, cleaned and any combination of water and chemicals should be consolidated (depending on nature of compounds) and recycled.



## Best Management Practices

### *Operational Practices*

- Do not mix x-ray fixer with developer. Waste developer may normally be flushed down the drain; but if fixer and developer are mixed, the resulting solution cannot be flushed. Some x-ray film processing units automatically mix fixer and developer; the vendor can provide information on adapter kits that keep fixer separated from the developer.
- Support the development and use of environmentally safe materials, technology and products. Eliminate unnecessary "red bagging."
- Eliminate non-essential incineration of medical waste. Recycle mercury.
- Waste amalgam caught in plumbing traps must be shipped off to a permitted recycler. If amalgam must be sterilized before shipment to recycler, no method that utilizes heat should be used. The heat will cause the mercury to volatilize and be released to the environment.
- Phase out use of mercury, PVC plastics and persistent toxic chemicals in healthcare.

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Western New York Stormwater Coalition  
c/o Erie County DEP  
Room 1077  
95 Franklin Street  
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**Mobile Cleaners:  
Carpet, Upholstery  
Cleaners, Janitorial  
Service Providers...**

**How to Prevent  
Water & Storm Sewer  
Pollution**

**Best Management Practices  
for:**

- Carpet Cleaners
- Upholstery Cleaners
- Drapery Cleaners
- Window Washers
- Janitorial & Housekeeping Service Providers
- High Pressure, Steam Cleaners



WNY Stormwater Coalition

## Stormwater Pollution

### What is Stormwater?

Stormwater is water from rain or melting snow that does not soak into the ground. It flows from rooftops, over paved areas, bare soil, and sloped lawns. As it flows, stormwater runoff collects and transports soil, animal waste, salt, pesticides, fertilizers, oil and grease, debris and other potential pollutants.

### What is the Problem?

Rain and snowmelt wash pollutants from streets, construction sites, and land into storm sewers and ditches. Eventually, the storm sewers and ditches empty the polluted stormwater directly into streams and rivers with no treatment. This is known as *stormwater pollution*.

Polluted stormwater degrades our lakes, rivers, wetlands and other waterways. Nutrients such as phosphorous and nitrogen can cause the overgrowth of algae resulting in oxygen depletion in waterways. Toxic substances from motor vehicles, and careless application of pesticides and fertilizers threaten water quality and can kill fish and other aquatic life. Bacteria from animal wastes and improper connections to storm sewer systems can make lakes and waterways unsafe for wading, swimming and fish consumption. Eroded soil is a pollutant as well. It clouds the waterway and interferes with the habitat of fish and plant life.

Fortunately, stormwater pollution can be prevented or minimized by implementing Best Management Practices which are procedures or activities that reduce or eliminate pollutants in stormwater.

County of Erie  
Department of Environment & Planning  
Environmental Compliance Services

Joel A. Giambra, County Executive



## How to Prevent Pollution from Commercial Cleaning Agents

Although mobile cleaners and pressure washers discharge waste water at various locations, the following practices are recommended to eliminate discharge into storm sewers.

### Best Management Practices

#### General Practices

- Waste resulting from cleaning activities cannot be discharged into a storm drain.
- Mobile cleaners should have the equipment, materials and personnel to handle a spill. Take preventative action to act quickly to reduce illegal discharge.
- If a spill occurs, use environmentally-friendly products (e.g. kitty litter) to contain the spilled materials. Protect storm drains. Report all spills and discharges that cannot be contained to local authorities for their help.

## Best Management Practices

### Operational Practices

- All water and detergents, even those that are labeled “nontoxic” or “biodegradable,” should be filtered first to remove any solids before discharging into a sanitary sewer. Solids may clog pipes. The solids may be thrown into the garbage, unless they have been contaminated with hazardous materials.
- Washwater from carpet, drapery or furniture cleaning must be discharged into a sink, toilet or other drain connected to a sanitary sewer.
- Never throw washwater into a street, gutter, parking lot or storm drain.
- Dry cleanup first, then wash without soap and then with soap to reduce contaminated runoff.
- Avoid power washing surfaces that may contain lead paint.





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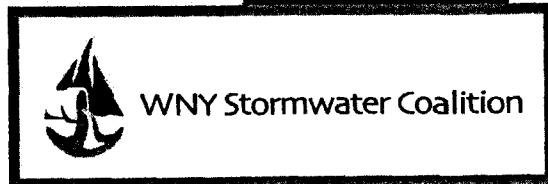
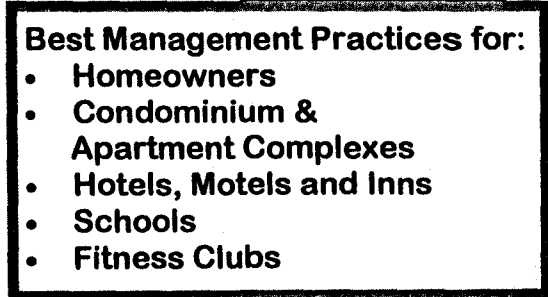
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Fortunately, stormwater pollution can be prevented or minimized by implementing Best Management Practices which are procedures or activities that reduce or eliminate pollutants in stormwater.

## How to Prevent Pollution from Pools, Spas & Fountains

Although we enjoy the fun and relaxing times in them, the water used in swimming pools, spas and fountains can cause problems for our creeks and lakes if not disposed of properly. Draining your pool, spa or fountain improperly can result in chlorine, suspended solids and nutrients entering surface water (streams and lakes).

### Best Management Practices

Best Management Practices or BMPs are procedures that help to prevent pollutants like chlorine and sediment from entering storm drains.

#### Draining Pools, Spas and Fountains:

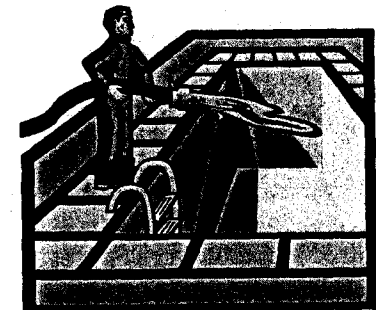
- Never discharge pool, spa, or fountain to a street or storm drain; discharge to a sanitary sewer cleanout.
- If possible, when emptying a pool, spa or fountain, let chlorine dissipate for a few days and then recycle/reuse water by draining it gradually onto a landscaped area.
- Drain pools, spas and fountains slowly, using a low volume pump or siphon.

## Best Management Practices (continued)

- Make sure water used to acid wash pool, spa or fountain is neutralized prior to discharge. Soda ash can be used to keep the pH between 6.0 and 7.0 before discharging.
- Do not use copper-based algaecides. Control algae with alternatives such as sodium bromide.

#### Filter Cleaning:

- Never clean a filter in the street or near a storm drain. Rinse cartridge and diatomaceous earth filters onto a dirt area and spade filter residue into soil. Dispose of spent diatomaceous earth in the garbage.
- If there is no suitable lawn area, call your local wastewater treatment plant for instructions on discharging filter backwash or rinse water to the sanitary sewer.



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- Best Management Practices for:**
- Restaurants
  - Delis and Bakeries
  - Grocery Stores
  - Convenience Stores
  - Food Stands
  - Institutional & Workplace Cafeterias



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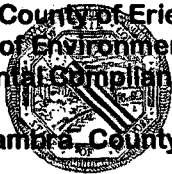
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## How to Prevent Pollution from Food & Restaurant Industries

Fats, oil, grease, floor solvents, cleaning agents, cigarette butts, food waste, paper napkins and styrofoam all contribute to the pollution of our creeks and waterways. By implementing proper cleaning and waste management practices the introduction of these pollutants to our waterways can be avoided.

Food and restaurant-related pollutants invade storm drain systems and increase bacteria levels, which harm aquatic life, cause beach closures and impair our drinking water supplies. Floating materials also pollute our lakes and streams and reduce the natural beauty of our waterways. This results in a negative impact on aesthetics of our natural resources and tourism/recreation opportunities.

## Best Management Practices

### General Cleaning Operations

- Clean floor mats, filters and garbage cans in a slop sink, floor drain or proper outside area—NOT the parking lot, alley or sidewalk/street.
- Pour wash water into a janitorial sink—NOT outside in a parking lot, alley or sidewalk/street.
- Use the least toxic cleaning products available, and use cleaning products sparingly.
- Dispose of cleaners (solvents, floor cleaners and detergents) and cleaning rags properly
- Use dry methods for spill clean-up—SWEEP instead of hosing. Use cat litter to absorb spills.

## Best Management Practices (continued)

### Solid Waste Handling & Storage

- Keep dumpster lids closed and the areas around them clean. Do not fill them with liquid waste or hose them out.
- Use plastic bags, tied off, to keep dumpsters free of food debris. Never place liquid waste or leaky garbage bags into a dumpster.
- Have clean-up materials readily accessible near the dumpster and loading dock areas in case of an accidental spill.
- Keep dumpster and dumpster enclosures locked to prevent illegal dumping.
- Keep outdoor litter from accumulating by providing trash receptacles and encourage employees and patrons to use them.
- Sweep outside areas regularly and put the debris into the garbage instead of sweeping/hosing into the parking lot or street.

### Grease Management

- Install pretreatment equipment, such as a grease interceptor.
- Clean grease traps regularly.
- Collect bulk grease in containers and contact a firm to recycle waste into a useful by-product.
- Don't pour grease into sinks, floor drains, trash bins, street gutters, or parking lots.
- Inform employees about these Best Management Practices and include this information in training programs.



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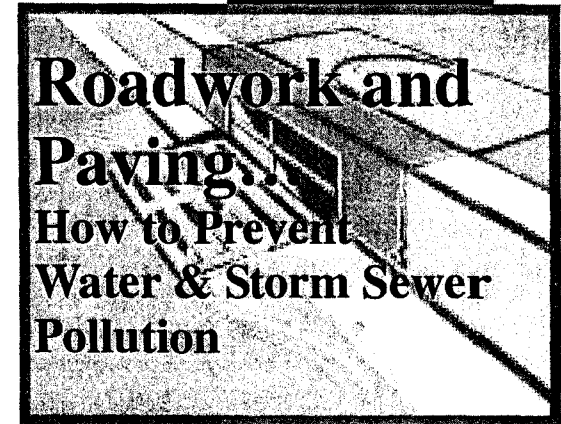
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Best Management Practices  
for:

- Asphalt Paving Providers
- General Contractors
- Developers



WNY Stormwater Coalition

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## How to Prevent Pollution from Roadwork and Paving

Road paving, surfacing and pavement removal activities contribute to stormwater pollution because they take place on roads where stormwater runoff can be contaminated with asphalt, saw-cut slurry or excavated material.

## Best Management Practices

### General Practices

- Protect both dry and wet materials from rainfall and runoff by storing under cover. Avoid storing materials near storm sewers, ditches and waterways.
- Schedule excavation and grading work for dry weather.
- Implement NYSDEC approved erosion and sediment control BMPs for embankments.
- Recycle used oil, concrete and waste asphalt.

### Equipment Maintenance

- Maintain all vehicles and heavy equipment regularly; inspect frequently for leaks.
- Conduct all vehicle and equipment maintenance and refueling at one location, away from storm drains.
- Perform major vehicle and equipment repairs and washing off site.
- Do not use diesel oil to lubricate equipment or parts.

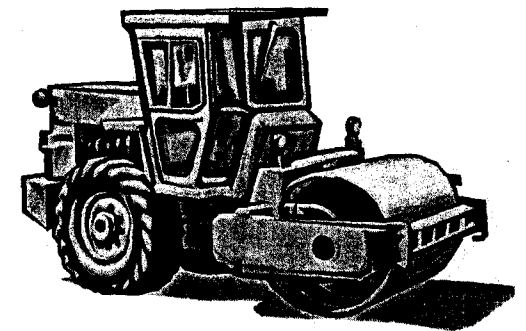
## Best Management Practices

### Asphalt and Concrete Removal

- After breaking up paving, be sure to remove all chunks and pieces. Recycle them at a crushing company.
- Shovel or vacuum saw-cut slurry and remove from site.
- Cover or barricade storm drain inlets during saw-cutting.

### During Construction

- Cover catch basins and maintenance access points when applying seal coat, slurry seal and fog seal.
- Use check dams, ditches or berms to divert runoff around excavations.
- Never wash excess materials into a street, gutter or storm drain.
- Avoid over-application by water trucks for dust control.



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**Construction Site  
Stormwater  
Runoff Control...  
How to Prevent  
Water & Storm Sewer  
Pollution**

**A Summary of Best  
Management Practices for:  
The Construction Industry**



WNY Stormwater Coalition

## BMPs for All Construction Sites

Basic pollution prevention practices can significantly reduce the amount of pollution leaving construction sites. When exposed to the elements, construction materials, debris, trash, fuel, paint and stockpiles become pollution sources when it rains. The following practices should be implemented on site:

- Keep potential sources of pollution out of the rain to the maximum extent possible (e.g. inside a building, under a tarp, sealed in containers).
- Clearly identify a protected, lined area for concrete truck washout. This area should be located away from streams, storm drain inlets or ditches and clean out periodically.
- Park, refuel and maintain vehicles and equipment in a designated area on the site to minimize the area exposed to possible spills and fuel storage. Keep spill kits close by and clean up spills and leaks immediately, including those on pavement and earth surfaces.
- Practice good housekeeping. Keep the construction site free of litter, construction debris and leaking containers.
- Never hose down paved surfaces to clean dust, debris or trash as the water could wash directly into storm drains or streams. Sweep up materials and dispose in the trash. Never bury trash or debris.
- Dispose of hazardous materials promptly and properly.

## Stormwater and the Construction Industry

As stormwater flows over a construction site, it picks up pollutants such as sediment, debris and chemicals. High volumes of stormwater can also cause streambank erosion and have a negative impact on aquatic habitat. Preventing stormwater pollution is an important responsibility at all construction sites.

### Best Management Practices

The following information provides a summary of guidance on a variety of BMPs typically used on construction sites.

#### Construction Phasing

- Sequence construction activities so that soil is not exposed for long periods of time.
- Schedule or limit grading to small areas.
- Immediately seed areas that will be exposed for 7 days or longer with annual rye
- Install sediment control practices before any soil disturbance begins.
- Schedule site stabilization activities immediately after the land has been graded to its final contours.

#### Storm Drain Inlet Protection

- Use appropriate methods to protect the storm drain to filter out trash and debris
- If inlet filters are used, maintain them regularly.

#### Silt Fence

- Inspect silt fences after each rainstorm and weekly
- Make sure the bottom of the silt fence is buried in the ground 6 inches.
- Make sure stormwater does not flow around the silt fence during storm events.
- Don't place silt fence in the middle of a waterway.
- Attach fence securely to stakes. Stakes should be on the downslope side of the fence.

#### Protect Natural Features

- Identify and protect areas where existing vegetation, such as trees, should not be disturbed by construction activities.
- Protect streams, stream buffers, wild woodlands, wetlands or other sensitive areas from any disturbance or construction activity with



#### Vegetative Buffers

- Protect and install vegetative buffers along waterbodies to slow and filter stormwater runoff.
- Maintain buffers by replanting periodically to ensure their effectiveness (mowing discourages growth of woody vegetation, which actually takes up more runoff).

#### Slopes

- Rough grade or terrace slopes.
- Break up long slopes with sediment barriers or under drain.
- Divert stormwater away from slopes.

#### Dirt Stockpiles

- Cover or seed all dirt stockpiles.

#### Construction Entrances

- Remove mud and dirt from the tires of construction vehicles before exiting the construction site onto paved roadways, but do not use water.
- Inspect construction entrance to ensure it does not become buried in soil (Entrance should be maintained with gravel to retain soil on-site).

#### Site Stabilization

- Vegetate, mulch or otherwise stabilize all exposed areas as soon as land alterations have been completed.





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Aurora (T)  
Blasdell (V)  
Boston (T)  
Buffalo (C)  
Cheektowaga (T)  
Clarence (T)  
Depew (V)  
East Aurora (V)  
Eden (T)  
Elma (T)  
Evans (T)  
Grand Island (T)  
Hamburg (V)  
Hamburg (T)  
Kenmore (V)  
Lackawanna (C)  
Lancaster (V)

Lancaster (T)  
Newstead (T)  
Orchard Park (V)  
Orchard Park (T)  
Sloan (V)  
Tonawanda (C)  
Tonawanda (T)  
West Seneca (T)  
Williamsville (V)

### **Niagara County**

Cambria (T)  
Lewiston (T)  
Lewiston (V)  
Niagara (T)  
Niagara Falls (C)  
North Tonawanda (C)  
Pendleton (T)  
Porter (T)  
Wheatfield (T)  
Youngstown (V)

### **Agencies & Consultants**

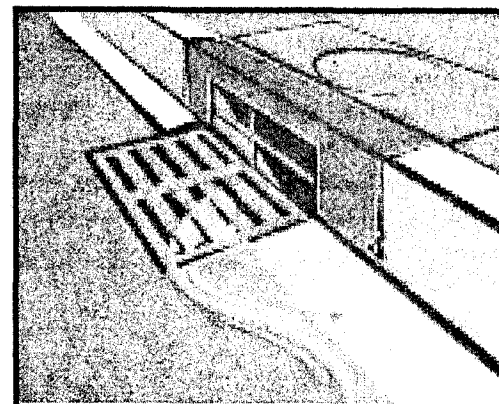
Buffalo State College  
Peace Bridge Authority  
Erie County DEP  
Erie County DPW  
Erie County Health Dept.  
Erie County Soil & Water Conservation District  
Niagara County DPW  
NYS Dept. of Transportation  
Connie D. Miner & Co.,  
Grant Consultant  
O'Brien and Gere  
Parsons  
Wendel Duchscherer  
R & D Engineering  
URS Corp  
Malcolm Pirnie  
Foit Albert  
Acres International  
Metzger Civil Engineering

Western New York Stormwater Coalition  
c/o Erie County Department of Environment & Planning  
Environmental Compliance Services  
95 Franklin Street  
Buffalo, New York 14202  
(716) 858-6370

[www.erie.gov/environment/compliance/pollution\\_sw2](http://www.erie.gov/environment/compliance/pollution_sw2)

*Joel A. Giambra, County Executive*

# Household Guide to Preventing Stormwater Pollution



A practical guide to help you reduce stormwater pollution and protect our waterways.



WNY Stormwater Coalition

## What is Stormwater?

Stormwater is water from rain or melting snow that doesn't soak into the ground and eventually runs off into waterways. It flows from rooftops, over paved areas and bare soil, and through sloped lawns while picking up a variety of materials on its way. As it flows, stormwater runoff collects and transports soil, animal waste, salt, pesticides, fertilizers, oil and grease, debris and other potential pollutants.

## What is the Problem?

Rain and snowmelt wash pollutants (pesticides, motor oil, bacteria, nitrogen, lead, chemicals, sediments and litter) from streets, construction sites, and land into storm sewers and ditches. Eventually, the storm sewers and ditches empty the polluted stormwater directly into streams and rivers with no treatment. This is known as **stormwater pollution**.

Polluted stormwater degrades our lakes, rivers, wetlands and other waterways. Nutrients such as phosphorus and nitrogen can promote the overgrowth of algae and deplete oxygen. Toxic substances from automobiles, and careless application of pesticides, herbicides and fertilizers threaten water quality and can kill fish and other aquatic life. Bacteria from animal wastes and improper connections to sewerage systems can make lakes and waterways unsafe for wading, swimming and fish consumption. Eroded soil is a pollutant as well. It clouds the waterway and interferes with the habitat of fish and plant life.

According to an inventory conducted by the United States Environmental Protection Agency (EPA), half of the impaired waterways are affected by urban/suburban and construction sources of stormwater runoff.

## Things You Can Do To Prevent Stormwater Pollution

### General Household

Some household products, such as cleaners, insect spray and weed killers, can cause pollution if allowed to drain into a storm sewer. Buy household products labeled "nontoxic" whenever possible.

### Paint & Solvents

Clean water-based paints from rollers, pans and brushes in sinks that go into the sanitary sewer system. Use paint thinner to remove oil-based paint from brushes and rollers but do not rinse down sinks or drains.

### Automotive

Keep your autos in good repair and watch for possible leaks. Take leftover or used fluids to a household hazardous waste collection. Clean up leaks and spills with an absorbent material such as kitty litter.

### Swimming Pool and Spa

Water containing chlorine is harmful to aquatic life. Whenever possible, drain water into the sanitary sewer system. There are established guidelines on the amount of residual chlorine, acceptable pH range, coloration, filter media and acid cleaning wastes when draining into the storm sewer system, and some areas may require a permit. Check with your municipality.

### Lawn and Garden

Follow directions carefully when using pesticides and fertilizers. Don't over water or use before a rain. Pesticides and fertilizers may adversely impact our waterways.

### Pet Care

Pick-up pet waste as soon as possible and put it in the trash. Pet waste has harmful bacteria that can get into our waterways.

Contact Erie County's Household Hazardous Waste program (858-6800) for disposal recommendations on the products listed above.



## WNY Stormwater Coalition

### **WHAT IS STORMWATER?**

Stormwater is water from rain or melting snow that does not soak into the ground and eventually runs off into waterways.

### **WHAT'S THE PROBLEM?**

Stormwater runoff can collect pollutants such as animal waste, salt, pesticides, fertilizers, oil or grease, and debris from streets, sewer drains, rooftops, and sloped lawns.

## **THINGS YOU CAN DO TO PREVENT STORMWATER POLLUTION**

**General Household:** Whenever possible, use nontoxic products.



Do **not** dispose of chemicals in household drains or stormdrains.

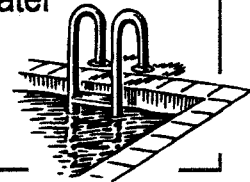
**Paint and Solvent:** Water based paint is best, but when using oil based paint, dispose of properly, not down the sink drain or at the curb.



**Automotive:** Keep an eye on any possible leaks your automobile may have. Take any extra fluids to the household hazardous waste collection.



**Swimming Pool and Spa:** Check with the municipality before draining water with chlorine into a storm sewer or ditch.



**Lawn and Garden:** Use the proper amount of water listed in the directions when using pesticides or fertilizers. Dispose of the chemicals properly.



**Pet Care:** Pet waste can contaminate the water supply if not picked up as soon as possible.



Contact Erie County's Household Hazardous Waste Program for disposal recommendations on the products listed above.

**858-6800**

[www.erie.gov/environment/compliance/pollution\\_sw2](http://www.erie.gov/environment/compliance/pollution_sw2)

Joel A. Giambra, Erie County Executive

**APPENDIX B**  
**PUBLIC INVOLVEMENT / PARTICIPATION**

**Erie County Department of Environment & Planning  
Division of Environmental Compliance Services  
Household Hazardous Waste Drop-Off Summary  
Data on Participation 2003**

		May-03	Jun-03	Jul-03	Sep-03		
<i>Location of Drop-off</i>		Amherst (estimated)	Orchard Park	Tonawanda	Buffalo	Total 2003	Average
<b>Total Cars Participating</b>		1,104	911	956	479	3,450	863
<b>Cost of Management</b>		\$28,000.00	\$ 25,385.00	\$26,000.00	\$20,000.00	\$99,385.00	\$24,846.25
<b>Cost of Disposal</b>		\$26,000.00	\$ 25,385.00	\$24,000.00	\$18,000.00	\$93,385.00	\$23,346.25
<b>Total Quantity of Pesticides Collected (pounds)</b>		2,638	3,836	3,597	2,878	12,949	3237
<b>Total Quantity of Waste Oil/Antifreeze/Gas (gallons)</b>	<b>Oil</b>	1,100	700	1,260	350	3,410	853
	<b>Antifreeze</b>	330	450	220	125	1,125	281
	<b>Gas</b>	220	250	220	100	790	198
<b>Total Quantity of Oil Base Paint Recycled (gallons)</b>		1,584	2,640	1,375	704	6,303	1576
<b>Total Quantity of Oil Base Paint Bulk (gallons)</b>		1,815	1,540	1,408	880	5,643	1411
<b>Total Quantity of Standard Sized Propane Tanks</b>		348	536	348	200	1,432	358
<b>Total Drums of Propane Cylinders</b>		6	2	4	2	14	4
<b>Total Drums of Drycell Batteries</b>		1	2	1	2	6	2
<b>Total Quantity of Aerosols (gallons)</b>		660	550	495	330	2,035	509
<b>Total Quantity of Resins/Adhesives (gallons)</b>		1,408	704	880	704	3,696	924
<b>Total Quantity of Labpack Acids/Oxidizers (gallons)</b>		275	440	440	2,878	4,033	1008
<b>Total Quantity of Lead Acid Batteries</b>		323	219	250	146	938	235
<b>Tires</b>		1,500	1,200	1,000	1,000	4,700	1175

Revised 11/01

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF SOLID & HAZARDOUS MATERIALS  
HOUSEHOLD HAZARDOUS WASTE  
COLLECTION DAY REPORT

Please read and follow all instructions on the back before completing this report form.

Please type or Print clearly

GENERAL INFORMATION

1 Sponsor Name: <b>Niagara County</b> Street: <b>175 Hawley Street</b> City/State/Zip: <b>Lockport NY 14094</b> Contact: <b>Richard P. Pope</b> Telephone #: <b>(716) 434 6568</b>		2 Contractor Name: <b>Clean Harbors Envir Services Inc.</b> Street: <b>221 Sutton St</b> City/State/Zip: <b>North Andover MA 01845</b> Contact: <b>Orcela Leonardo</b> Telephone #: <b>(978) 683-1002</b>	
3 Co-Sponsor, if any: Telephone #: ( )		4 Location of Collection: <b>Niagara Falls</b> Date of Collection: <b>July 26, 2003</b>	
5 Total Population of Area Served: <b>210,000</b> # of Participants: Households: <b>448</b>		Farmers: _____ CESQGS: _____	

CESQGS = Conditionally exempt small quantity generators

HOUSEHOLD HAZARDOUS WASTE COLLECTION/DISPOSAL DETAILS

6 Antifreeze <u>0</u> Gallons	7 Used Oil <u>0</u> Gallons
8 Automotive Batteries <u>0</u> # of Batteries	9 Household Batteries <u>0</u> Pounds
10 Latex Paint <u>0</u> Gallons	11 Oil Base Paint <u>2070</u> Gallons
12 Pesticides (Solids) <u>800</u> Pounds	13 Pesticides (Liquids) <u>92</u> Gallons
14 Fluorescent Bulbs <u>100</u> Pounds	15 Asbestos <u>0</u> Pounds
16 Mercury Containing Devices/Waste <u>50</u> Pounds	17 Bulk Mercury (liquid) <u>0</u> Pounds
18 Other Household Hazardous Waste (Solids) <u>6500</u> Pounds	19 Other Household Hazardous Waste (Liquids) <u>117</u> Gallons
20 Misc. Solid Waste _____ Pounds	21 Total Drums <u>63</u> # of Drums
22 # CRT's <u>0</u> , # TV's <u>0</u> Total Wt. <u>0</u> Pounds	23 Other Electronics <u>0</u> Pounds

PLEASE NOTE: Attach copies of all manifests or shipping papers to this form for submittal to Regional Office and submit a copy of this form to Central Office

OTHER INFORMATION/DATA

24 Disposal Costs, including Contractor Fees: <b>17,410.00</b>	25 Other Costs: _____
26 Publicity and Educational Costs: <b>2,149.05</b>	27 Total Cost (24 + 25 + 26): <b>19,559.05</b>
28 Comments: # 18) Aerosols, Resins + Adhesives # 19) Acid, Aik, Ox, Cyanide labpacks	

**RECEIVED**

APR 29 2004

NIAGARA CO. PUBLIC WKS. DEPT.

PREPARER'S INFORMATION AND SIGNATURE

Name (Printed/Typed): <b>Richard P. Pope</b>	Title (Printed/Typed): <b>Director</b>	Signature: 	Date: <b>7/5/03</b>
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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
DIVISION OF SOLID & HAZARDOUS MATERIALS  
HOUSEHOLD HAZARDOUS WASTE  
COLLECTION DAY REPORT

Please read and follow all instructions on the back before completing this report form.

Please type or Print clearly

GENERAL INFORMATION

1 Sponsor Name: <b>Niagara County</b>		2 Contractor Name: <b>Clean Harbors Envir Services Inc.</b>	
Street: <b>175 Hawley</b>		Street: <b>221 Sutton St</b>	
City/State/Zip: <b>Lockport NY 14094</b>		City/State/Zip: <b>North Andover MA 01845</b>	
Contact: <b>Richard P. Pope</b>		Contact: <b>Brende Leonardo</b>	
Telephone #: <b>(716) 434-6510</b>		Telephone #: <b>(978) 683-1002</b>	
3 Co-Sponsor, if any:		4 Location of Collection: <b>758 Erie Ave</b>	
Telephone #: ( )		Date of Collection: <b>08/23/03</b>	
5 Total Population of Area Served: <b>210,000</b>		Town: <b>North Tonawanda</b>	
# of Participants: <b>Households: 454</b>		Farmers: _____	
		CESQGS: _____	

CESQGS - Conditionally exempt small quantity generators

HOUSEHOLD HAZARDOUS WASTE COLLECTION/DISPOSAL DETAILS

6 Antifreeze <u>0</u> Gallons	7 Used Oil <u>0</u> Gallons
8 Automotive Batteries <u>0</u> # of Batteries	9 Household Batteries <u>0</u> Pounds
10 Latex Paint <u>0</u> Gallons	11 Oil Base Paint <u>2200</u> Gallons
12 Pesticides (Solids) <u>800</u> Pounds	13 Pesticides (Liquids) <u>170</u> Gallons
14 Fluorescent Bulbs <u>10</u> Pounds	15 Asbestos <u>0</u> Pounds
16 Mercury Containing Devices/Waste <u>10</u> Pounds	17 Bulk Mercury (liquid) <u>0</u> Pounds
18 Other Household Hazardous Waste (Solids) <u>5800</u> Pounds	19 Other Household Hazardous Waste (Liquids) <u>138</u> Gallons
20 Misc. Solid Waste _____ Pounds	21 Total Drums <u>59</u> # of Drums
22 # CRT's <u>0</u> # TV's <u>0</u> Total WL <u>0</u> Pounds	23 Other Electronics <u>0</u> Pounds

PLEASE NOTE: Attach copies of all manifests or shipping papers to this form for submission to Regional Office and submit a copy of this form to Central Office

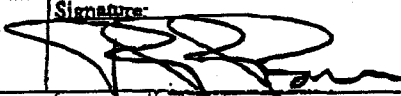
18,832.58 OTHER INFORMATION/DATA

24 Disposal Costs, including Contractor Fees: <b>\$17,582.58</b>	25 Other Costs:
26 Publicity and Educational Costs: <b>653.19</b>	27 Total Cost (24 + 25 + 26): <b>18,335.70</b>
28 Comments: # 18) aerosols + resins + adhesives # 19) Acid, Lab pack, Alkaline Labpack, Oxidizer Labpack	

RECEIVED

APR 29 2004

PREPARER'S INFORMATION AND SIGNATURE

Name (Printed/Typed): <b>Richard P. Pope</b>	Title (Printed/Typed): <b>Director</b>	Signature: 	Date: <b>9/8/03</b>
-------------------------------------------------	-------------------------------------------	----------------------------------------------------------------------------------------------------	------------------------

NIAGARA CO. PUBLIC WORKS DEPT

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 DIVISION OF SOLID & HAZARDOUS MATERIALS  
**HOUSEHOLD HAZARDOUS WASTE  
 COLLECTION DAY REPORT**

Please read and follow all instructions on the back before completing this report form.

Please type or Print clearly

**GENERAL INFORMATION**

1 Sponsor Name: <u>Niagara County</u>		2 Contractor Name: <u>Clean Harbors Envir. Services Inc.</u>	
Street: <u>175 Hawley Street</u>		Street: <u>221 Sutton St</u>	
City/State/Zip: <u>Lockport NY 14094</u>		City/State/Zip: <u>North Andover MA</u>	
Contact: <u>Richard P. Pope</u>	Telephone #: <u>(716) 434-10568</u>	Contact: <u>Brento Leonardo</u>	Telephone #: <u>(978) 683-1002</u>
3 Co-Sponsor, if any:		4 Location of Collection: <u>100 Davison Rd</u>	
Telephone #: ( ) -		Date of Collection: <u>Sept. 27, 2003</u>	
5 Total Population of Area Served: <u>210,000</u>		Town: <u>Lockport NY</u>	
# of Participants: Households: <u>435</u>		Farmers: _____	
		CESQGS: _____	

CESQGS = Conditionally exempt small quantity generators

**HOUSEHOLD HAZARDOUS WASTE COLLECTION/DISPOSAL DETAILS**

6 Antifreeze	<u>0</u> Gallons	7 Used Oil	<u>0</u> Gallons
8 Automotive Batteries	<u>0</u> # of Batteries	9 Household Batteries	<u>0</u> Pounds
10 Latex Paint	<u>0</u> Gallons	11 Oil Base Paint	<u>2464</u> Gallons
12 Pesticides (Solids)	<u>1000</u> Pounds	13 Pesticides (Liquids)	<u>294</u> Gallons
14 Fluorescent Bulbs	<u>100</u> Pounds	15 Asbestos	<u>0</u> Pounds
16 Mercury Containing Devices/Waste	<u>10</u> Pounds	17 Bulk Mercury (liquid)	<u>0</u> Pounds
18 Other Household Hazardous Waste (Solids)	<u>5700</u> Pounds	19 Other Household Hazardous Waste (Liquids)	<u>184</u> Gallons
20 Misc. Solid Waste	_____ Pounds	21 Total Drums	<u>76</u> # of Drums
22 # CRT's <u>0</u> # TV's <u>0</u> Total Wt. <u>0</u> Pounds		23 Other Electronics	<u>0</u> Pounds

PLEASE NOTE: Attach copies of all manifests or shipping papers to this form for submission to Regional Office and submit a copy of this form to Central Office

**OTHER INFORMATION/DATA**

24 Disposal Costs, Including Contractor Fees:	<u>19,963.20</u>	25 Other Costs:	
26 Publicity and Educational Costs:	<u>1,529.37</u>	27 Total Cost (24 + 25 + 26):	<u>21,492.57</u>

28 Comments:  
#18) Aerosols, Resins + Adhesives  
#19) Acid, alkaline, oxidizing, lab packs

**RECEIVED**  
 APR 29 2004  
 NIAGARA CO. PUBLIC WKS. DEPT.

**PREPARER'S INFORMATION AND SIGNATURE**

Name (Printed/Typed): <u>Richard P. Pope</u>	Title (Printed/Typed): <u>Director</u>	Signature: 	Date: <u>10/9/03</u>
-------------------------------------------------	-------------------------------------------	----------------------------------------------------------------------------------------------------	-------------------------



Revised (1/01)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 DIVISION OF SOLID & HAZARDOUS MATERIALS  
 HOUSEHOLD HAZARDOUS WASTE  
 COLLECTION DAY REPORT

Please read and follow all instructions on the back before completing this report form.

Please type or Print clearly

GENERAL INFORMATION			
1	Sponsor Name: <b>Niagara County</b>	2	Contractor Name: <b>Clear Harbors Envir Services Inc.</b>
	Street: <b>175 Hawley Street</b>		Street: <b>221 Sutton St</b>
	City/State/Zip: <b>Lockport NY 14094</b>		City/State/Zip: <b>North Andover MA 01845</b>
	Contact: <b>Richard P. Pope</b>		Contact: <b>Brenda Leonardo</b>
	Telephone #: <b>(716) 431-6568</b>		Telephone #: <b>(978) 683-1002</b>
3	Co-Sponsor, if any:	4	Location of Collection: <b>3542 Wreck Rd</b>
			Date of Collection: <b>10/25/03</b>
5	Total Population of Area Served: <b>210,000</b>		Town: <b>Hartland NY</b>
	# of Participants: <b>211</b>		
	Households:	Farmers:	CSQGS:

CSQGS= Conditionally exempt small quantity generators

HOUSEHOLD HAZARDOUS WASTE COLLECTION/DISPOSAL DETAILS


6	Airfreze	_____ Gallons	7	Used Oil	<b>110</b> Gallons
8	Aerosol/Batteries	<b>0</b> # of Batteries	9	Household Batteries	<b>0</b> Pounds
10	Latex Paint	<b>0</b> Gallons	11	Oil Base Paint	<b>1463</b> Gallons
12	Pesticides (Solids)	<b>2200</b> Pounds	13	Pesticides (Liquids)	<b>126</b> Gallons
14	Fluorescent Bulbs	<b>40</b> Pounds	15	Asbestos	<b>0</b> Pounds
16	Mercury Containing Devices/Waste	<b>20</b> Pounds	17	Bulk Mercury (Liquid)	<b>0</b> Pounds
18	Other Household Hazardous Waste (Solids)	<b>3700</b> Pounds	19	Other Household Hazardous Waste (Liquids)	<b>115</b> Gallons
20	Misc. Solid Waste	_____ Pounds	21	Total Drums	<b>51</b> # of Drums
22	# CRT's <b>0</b> # TV's <b>0</b> Total Wt. <b>0</b> Pounds		23	Other Electronics	_____ Pounds

PLEASE NOTE: Attach copies of all manifests or shipping papers to this form for submittal to Regional Office and provide a copy of this form to Control Office

OTHER INFORMATION/DATA

24	Disposal Costs, Including Contractor Fees: <b>\$14656.60</b>	25	Other Costs:
26	Publicity and Educational Costs: <b>857.05</b>	27	Total Cost (24 + 25 + 26): <b>15513.65</b>
28	Comments: #18) Resins, Adhesives, Aerosols #19) Acid, Alkaline, oxidizer Labpacks	<b>RECEIVED</b> <b>APR 29 2004</b> <b>NIAGARA CO. PUBLIC WKS. DEPT</b>	

PREPARER'S INFORMATION AND SIGNATURE

Name (Printed/Typed): <b>Richard P. Pope</b>	Title (Printed/Typed): <b>Director</b>	Signature: 	Date: <b>11/5/03</b>
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**APPENDIX C**

**ILLCIT DISCHARGE DETECTION AND ELIMINATION**

## SECTION 3 - Illicit Discharge Detection and Elimination

### 1. Outfall Mapping

#### a. Description

As one of the minimum requirements and mandated best management practices MS4s must map all of their storm sewer outfalls.

*At a minimum*, each regulated MS4 must develop a map that identifies all of the locations in their stormwater system where there is a discharge to either a water body (lake, river, stream) or a storm water system owned or operated by another MS4. In other words the map must identify any point where stormwater leaves their system.

#### b. Proposed WNY Coalition Approach

Erie County has secured 2004 capital budget resources to initiate a coordinated GIS mapping effort. Through a series of proposed phases, all of the regulated storm sewer outfalls for all of the Coalition MS4s will be located, and mapped in a GIS format. Depending upon the MS4s individual needs and technical capabilities, the electronic information will either be provided directly or on printed maps. The resources currently available through the 2004 Erie County Capital Budget are adequate to accomplish the first two phases (items i. (1. & 2.)) described below. The remaining resources to complete the entire mapping objective have been requested as part of the Coalition's grant application to the New York State Environmental Protection Fund.

The Geography and GIS Department at Buffalo State College has provided Erie County with a written cost proposal to accomplish the objectives of the mapping project in an economically efficient fashion using students and other resources at the College.

#### i. Mapping Phases

1. Map Erie County managed outfalls first (Capital Budget request)
2. Municipally managed outfalls in Erie County
3. Niagara County outfalls
4. Municipally managed outfalls in Niagara County
5. Non-Traditional MS4's
  - a. School districts
  - b. Other Coalition members

#### ii. Develop Procedures for updates and additions

##### 1. Distribution of Maps

- a. At the conclusion of each phase of the mapping effort, the contractor will provide the final outfall maps to Erie County DEP

and the Niagara County \_\_\_\_\_ for distribution to the MS4s.

- b. MS4s with GIS capabilities will be provided the outfall map for their system electronically to add to their existing GIS system
- c. MS4s that do not have GIS capabilities will be provided a printed version of their map.

## 2. Updating Maps

- a. The Erie County DEP and Niagara County \_\_\_\_\_ will be responsible for distributing, maintaining and updating the electronic outfall map(s).
- b. Each MS4 will utilize the paper map or electronic map information provided to track and record the development of any new outfalls as well as to monitor illicit discharge activities.
- c. At least once per year, each municipality will conduct a review of their respective outfall map (paper or electronic) and forward any changes or updates to the Erie County DEP and Niagara County \_\_\_\_\_
- d. Upon request, MS4s will be provided updated maps annually if any changes are made.

## 2. Outfall Information Management

### a. Description

In addition to a map, a database will be developed and either linked electronically to the GIS map or printed for municipalities that do not have GIS. The database will include the following information for each mapped outfall:

#### i. Identification/ number

The Coalition will develop a descriptive numbering system for all of the outfalls. The numbering system will describe the MS4 and the watershed where the outfall is located. The Coalition will examine the numbering system NYSDEC uses for SPDES permits to create a consistent numbering system.

#### ii. Location

The exact longitude and latitude of every outfall will be located using a hand held GPS unit. In addition, a written description of the location that refers to a street address, intersection of two roads, receiving water body

or tributary MS4 system into which it empties will also be recorded.

iii. Detailed Description

A physical description of each outfall, the type of culvert or conveyance it serves, and any other information that may be useful in locating, identifying, or monitoring the outfall will be included in the database.

iv. Photograph

During the initial mapping effort, the contractor will take a digital photograph of each mapped outfall.

v. Complaint Log

The database will provide a format for the MS4 to track complaints and problems associated with the outfall.

vi. Inspection Information

The database will provide a format for the MS4 to track and record routine inspection information.

### 3. Outfall Surveillance

a. Description

At a minimum, each MS4 must develop, implement and enforce a surveillance program. The minimum program involves three basic elements: detection, source identification, and elimination of illicit discharges.

b. Illicit Discharge Detection

i. Active routine outfall inspections/ shoreline surveys

1. Description:

Visually inspect every mapped outfall once per year during a dry weather event.

2. Who will do the inspections?

a. Municipal inspectors and other staff

A. During routine maintenance

B. While overseeing contractual work

b. Volunteers

A. Adopt-an-Outfall Program

1. Businesses and groups

2. Additional signage

B. Schools/ Community Groups

1. Public Education opportunity

2. Coalition to provide help recruiting volunteer groups

- c. Combination of both municipal staff and volunteers
  - A. Ability to expand resources
  - B. More remote locations and difficult to access outfalls would be inspected by municipal employees
  - C. Easier to access outfalls would be inspected by volunteers

- ii. Passive hotline /complaint response approach
  - 1. Requires additional signage at outfall
    - a. Hotline number, contact information
    - b. When and why someone should call
  - 2. Promote as part of the public education effort
  - 3. County managed hotline
    - a. Develop a system for referrals to the local MS4
    - b. Define the relationship between local storm water complaint response and referrals to State Emergency Spill Response
    - c. Develop Local response procedures

- iii. Reporting forms and documentation

A standard inspection/reporting form would be developed for distribution to the municipal staff and/or volunteers conducting the visual inspections

  - a. Develop an inspection checklist.
  - b. Include day, time, location, weather conditions
  - c. Customize forms for each MS4

- iv. Training

The coalition will develop training specifically for conducting visual inspections.

  - a. Training will be for employees and volunteers
  - b. To be coordinated with the Pollution Prevention /Good Housekeeping training for municipal employees.

#### 4. Investigation Procedures to Identify Sources of Pollutants

- a. Description

In order to address non-storm water discharges, each MS4 must have procedures in place to investigate and confirm the source of

contamination when a water quality problem is identified at an outfall or within the storm water system.

b. Problem Identification

- i. Complaint filed regarding a specific outfall
- ii. Complaint filed against a specific company or resident
- iii. Result of an inspection
- iv. Evidence of impacted water quality in a receiving body
- v. Evidence of storm flow or outfall during a dry weather period

c. Identify Potential Sources Of the Problem in the Storm Water System

- i. Characterize the nature and magnitude of the problem
  1. Color, amount, other notable visual aspects
  2. Potential contaminants (oils, odors, floatables)
  3. Sampling and analysis may be required
- ii. Define the storm sewer shed or drainage area that the outfall serves
  1. Inventory land uses within the storm sewer shed
  2. Brief survey of the types of industry, businesses and other activities in the sewer shed
- iii. Matching potential contaminants of concern with possible sources within the sewer shed
  1. Utilize knowledge of standard industrial practices, waste records and environmental permits
  2. Problem may be facility specific or from a collection of similar types of businesses

d. Monitoring and Sampling to Confirm Sources

It may be necessary to monitor and sample the Stormwater flow immediately downstream of a facility that is suspected to have caused a water quality problem. Sampling should be targeted to confirm the suspicion and provide adequate evidence to force the facility to correct or remedy the problem.

- i. Each municipality should include mechanisms for recouping any costs associated with tracking down and confirming the source of the identified problem in the new municipal ordinances they will have to adopt to meet the Phase II permit requirements.
- ii. Utilize laboratory facilities available at municipal sewage treatment plant if available

e. Elimination of Specific Confirmed Source

- i. Types
  1. Business
  2. Residential
  3. Municipal operations
  4. Continued action vs. accident/spill
- ii. Actions

1. Formal request
  2. Referral for technical assistance/outreach visit
  3. Legal referral and enforcement
- f. **Group of Similar Sources**
- i. **Types**
    1. Industry or business groups
    2. Residential
      - a. Septic systems
      - b. Oil changes/ other dumping
    3. Municipal operations
      - a. Sanitary sewer overflows (SSO's)
      - b. Floor drains
  - ii. **Actions**
    1. Outreach/ training for targeted sources
    2. referral for technical assistance/outreach visit
    3. Legal referral and enforcement

5. **Addressing categories of non stormwater discharges**

- a. **Description**  
As part of the minimum permit requirements, MS4s must determine which categories of storm water discharges are significant contributors of pollutants to their storm water system.
- b. **Determining Targets**
- i. Historical information and data
  - ii. Inspection and /or response records
  - iii. Review the list of categories provided by NYSDEC
  - iv. Develop a list of specific target categories for each MS4
- c. **Develop a strategy and measurable Goal(s) to address each priority non stormwater discharge category**
- i. Referral to technical assistance programs
  - ii. Incorporate priority targets Into other stormwater Program Elements
    1. Public Outreach and education efforts
      - a. Brochure /flyer
      - b. Training session(s)
    2. O&M program and BMP's
    3. Inspection priorities/ enforcement actions
    4. Referrals to technical assistance programs



**APPENDIX D**

**POST-CONSTRUCTION STORMWATER MANAGEMENT**

# REVIEW OF BEST MANAGEMENT PRACTICES (BMPs) FOR POST-CONSTRUCTION RUNOFF CONTROL

## Introduction

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This handout summarizes the results of the Erie County Stormwater Phase II Coalition post-construction runoff control workgroup. It is intended to serve as a guidance document for Western New York municipalities and other governmental officials seeking coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

The post-construction runoff control workgroup reviewed the BMPs contained in the United States Environmental Protection Agency (USEPA) Menu of BMPs, in the NYSDEC Stormwater Management Design Manual, and in the required Notice of Intent (NOI) for suitability in the Western New York area. Based upon our review, the structural and non-structural BMPs were assigned to the following categories: *Recommended*, *Adequate*, *Adequate/Caution*, and *Not Recommended*. Each category is described as follows:

- Recommended – Are commonly used in this area and will function year round.
- Adequate – Not as common, but will work in this area.
- Adequate/Caution – These BMPs have maintenance needs associated with them that if not performed, the functionality of the BMP will be compromised.
- Not Recommended – Not typically used in this area, and will not work year round.

In reading this document, please remember that each municipality has the flexibility to implement the quantity and type of BMPs that are best suited to the fulfilling the needs of the local community. The selection of any particular BMP should be based upon a consideration of a number of factors, including treatment desired, storage desired, land area available, topography, cost, and maintenance. The list of BMPs below is by no means complete, but should be used as a starting point for interpreting and completing the NOI.

## List of BMPs

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The following is a compilation of Post-Construction Storm Water Management in New Development and Redevelopment BMPs, as listed in Section C.5 of the NOI. Each BMP is described on the page number given below, and examples of measurable goals are provided for each Recommended BMP:

<u>Page</u>		<u>Page</u>	
6	Alternate turnarounds	4	Infiltration trench
7	Alternative pavers	4	Infiltration basin
7	Alum injection	6	Infrastructure planning
3	Bioretention	3	Manufactured products for storm water inlets
6	Management practice inspection and maintenance	7	Narrower residential streets
5	Buffer zones	6	On-lot treatment
4	Catch basin	6	Open space design
7	Conservation easements	5	Ordinances for postconstruction runoff
2	Dry extended detention ponds	4	Porous pavement
7	Eliminating curbs and gutters	4	Sand and organic filters
3	Grassed swales	2	Storm water wetland
3	Grassed filter strips	6	Urban forestry
7	Green parking	2	Wet ponds
4	In-line storage	5	Zoning and Site Plan Review

## Recommended

### Dry extended detention ponds

A dry extended detention pond is designed to temporarily detain runoff during storm events. Dry extended detention ponds are among the most commonly used runoff control measures. They are also one of the cheapest methods. The dry extended detention pond does not work well in ultra-urban areas because they require a large amount of open land.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_9.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_9.cfm)

#### **Example Measurable Goals:**

- The reduction in runoff quantity.
- Changes in water quality of effluent from the dry pond outlet.
- The number of new dry ponds installed.
- The acreage of land drained by dry ponds.

### Wet Ponds

The primary functions of a wet pond are to detain storm water and facilitate pollution removal through settling and biological uptake. Cold climates present a variety of challenges, mainly due to salt runoff in the winter and the winter melt increasing the concentration of pollutants in the spring.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_26.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_26.cfm)

#### **Example Measurable Goals:**

- The reduction in runoff quantity.
- Changes in water quality.
- The number of wet ponds installed.
- The acreage of impervious surface that drains to wet ponds.

### Storm Water Wetland

Storm water wetlands are similar to wet ponds, and allow for biological uptake and settling of contaminants. Storm Water Wetlands can be used in any climate except arid climates, but many challenges exist in cold weather climates, including the problems of the spring snowmelt bringing in large amounts of chloride, and water while the wetland may still be frozen and unable to treat the runoff. Storm water wetlands also provide aesthetic value to the area.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_27.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_27.cfm)

#### **Example Measurable Goals:**

- The reduction in runoff quantity.
- Changes in water quality.
- The number of stormwater wetlands created.
- The acreage of impervious surface that drains to storm water wetlands.

## STRUCTURAL BMPs (CONT.)

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### Grassed Swales

Grassed swales are rows of open, vegetated channels designed to allow runoff water to filter through the ground. Swales are well suited for land next to roads, and can be used in any climates. To keep grass growing the area may have to be irrigated. The Swales in cold climate areas should use chloride resistant vegetation, and can be used for snow storage in the winter.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_24.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_24.cfm)

#### **Example Measurable Goals:**

- The number of new grassed swales installed.
- The miles of streets with grassed swales.
- The reduction in runoff quantity.
- The reduction in runoff velocity.
- Changes in water quality of runoff from areas with grassed swales.
- The number of acres drained by grassed swales.

### Grassed Filter Strips

Grassed filter strips are vegetated surfaces that treat by filtering sediments by slowing down velocity of runoff flow and encouraging infiltration. They can be used in any area, but vegetation must be kept growing through irrigation if needed.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_11.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_11.cfm)

#### **Example Measurable Goals:**

- The number of new grassed filter strips installed.
- The miles of streets with grassed filter strips.
- The reduction in runoff quantity.
- The reduction in runoff velocity.
- Changes in water quality of runoff from areas with grassed filter strips.
- The number of acres drained by grassed filter strips.

### Manufactured Products for Storm Water Inlets

Products such as swirl separators have been developed. Swirl separators require frequent cleaning, and only settle solids out of the water, leaving dissolved pollutants in the water.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_17.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_17.cfm)

#### **Example Measurable Goals:**

- Whether or not an inventory of areas where installation of manufactured products would be appropriate was completed.
- Whether or not a review was conducted to identify which products would be best for each inlet.
- The number of manufactured products installed in storm water inlets.
- Changes in water quality.

## **Adequate**

### Bioretention

Bioretention areas are landscaping features adapted to collect and filter water in areas such as parking lots. They work well in any climate, and also work well in urban areas. Salt-tolerant species can be used in cold-weather climates.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_4.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_4.cfm)

## Adequate/Caution

### Catch Basin/Catch Basin Inserts

Catch basins are designed to settle some solids in water. The catch basin insert is designed to make the catch basin more efficient and can help catch floating solids, oils and grease. Even the best-designed catch basin is not as effective a treatment option as other methods such as wet ponds or sand filters. Catch Basins are unable to treat soluble pollutants. Also, catch basins must be properly maintained to be effective.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_7.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_7.cfm)

### In-line Storage

Inline storage is storing flows within the storm drain system to detain flows. This does not improve water quality and can cause flooding if improperly designed.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_16.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_16.cfm)

## Not Recommended

### Infiltration Basin

Infiltration basins are designed to collect storm water from impervious areas and provide pollutant removal benefits through detention and filtration. Infiltration basins have relatively high failure rates compared to other runoff control measures are not often used.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_13.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_13.cfm)

### Infiltration Trench

Infiltration trenches allow water to sit in the void spaces between rocks in the trench, and then filter through the soil. Infiltration trenches have sharply restricted use due to potential ground water contamination, soils and clogging.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_14.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_14.cfm)

### Porous Pavement

Porous Pavements allows water to drain through pavement and filter through soils. There are several challenges in cold weather climates, particularly with frost heave, and preventing chloride from road salt contaminating the ground water.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_21.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_21.cfm)

### Sand and Organic Filters

A two chambered filter system where particles settle in the first chamber and are filtered in the second using sand or organic matter such as peat. The filters work well in urban settings as they do not take up much space, and can be designed as underground units. They do not let the runoff water reach the groundwater. Some problems are associated with water freezing, but design alterations can help prevent this problem.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_23.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_23.cfm)

**Recommended**

Buffer Zones

Buffers are placed along lakes, streams or shores and are designed to prevent runoff water from directly entering the protected water. Buffers can be made of vegetation, such as trees and bushes, or can be engineered as structures to separate water. The buffer zones can be very effective at removing pollutants traveling in storm water or ground water.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_6.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_6.cfm)

**Example Measurable Goals:**

- Whether or not development codes were changed to require buffer zones.
- The acreage of land conserved as buffers.
- The acreage of land converted to buffers.
- Changes in water quality of runoff leaving buffer areas.
- Changes in the physical characteristics of streams downstream from areas with buffer zones.
- The frequency of inspections and maintenance activities in buffer zones.
- The acreage that drains to buffer zones.

Ordinances for Postconstruction Runoff

An ordinance promotes the public welfare by guiding, regulating, and controlling the design, construction, use, and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth on land. The goal of a storm water management ordinance for post construction runoff is to limit surface runoff volumes and reduce water runoff pollutant loading.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_22.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_22.cfm)

**Example Measurable Goals:**

- Whether or not an ordinance was developed to address post-construction runoff.
- The projected amount of impervious cover reduced under the new ordinance.
- The number of enforcement actions that occur as a result of the new ordinance.

Zoning

Zoning is a classification scheme for land use planning. Zoning can serve numerous functions and can help mitigate storm water runoff problems by facilitating better site designs.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_28.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_28.cfm)

**Example Measurable Goals:**

- Whether or not development codes were modified.
- The amount of open space protected with new zoning codes.
- The projected number of new storm water treatment areas expected under the new zoning codes.
- The projected number of upgrades to existing storm water facilities expected as a result of changes in expected development density.

## NON-STRUCTURAL BMP'S (CONT.)

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### Alternate Turnarounds

Alternate turnarounds take the inner impervious circle of a cul-de-sac and replace it with a pervious ground cover, such as trees or other vegetation, which will decrease the amount of impervious land.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_2.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_2.cfm)

#### **Example Measurable Goals:**

- The reduction in impervious cover.
- The number of turnarounds modified.
- Whether or not development codes were changed to allow alternate turnarounds.
- The reduction in runoff quantity.
- Changes in the physical characteristics of streams downstream from modified areas.

### Management Practice Inspection and Maintenance

To maintain the effectiveness of post-construction storm water control best management practices (BMPs), regular inspection of control measures is essential.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_5.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_5.cfm)

#### **Example Measurable Goals:**

- The frequency of inspection and maintenance activities.
- The number of problems that were identified and remedied.
- The change in the proportion of BMPs that are well-maintained as a result of inspection and maintenance.
- Whether or not an inventory of BMPs requiring maintenance was completed and is updated regularly.
- Changes in water quality of effluent from BMPs.

## **Adequate**

### Open Space Design

Open Space design is when development is clustered and open space is left. This practice may require special permits or new ordinances, but can be implemented anywhere. The common open space in the development will have to be maintained.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_20.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_20.cfm)

### On-Lot Treatment

On-lot treatment collects water from mostly rooftops, but also driveways and sidewalks sometimes, and sends the water to a rock filled trench for infiltration, or the water can be collected for landscaping uses.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_19.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_19.cfm)

### Urban Forestry

Urban forestry is planting trees in cities. The trees will break up impervious ground and absorb water. They also add aesthetic value to an area. Trees will also consume carbon dioxide and add economic value to the land.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_25.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_25.cfm)

### Infrastructure Planning

Infrastructure planning is better planning to prevent urban sprawl, and thus preventing the increase in impervious area.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_15.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_15.cfm)

## NON-STRUCTURAL BMP'S (CONT.)

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### **Not Recommended**

#### Alum Injection

Alum injection adds alum to storm water. The alum causes coagulation of the particles and they settle in the water. The process works well at removing soluble phosphorous and suspended solids, but has a high cost and requires maintenance to remove the settled particles.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_3.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_3.cfm)

#### Conservation Easements

A conservation easement is when a person gives their land to a private company to manage. Although assumed to improve water quality, it hasn't been proven.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_10.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_10.cfm)

#### Narrower Residential Streets

Narrower residential streets are designed to decrease the amount of impervious road area.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_18.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_18.cfm)

#### Eliminating Curbs and Gutters

Curbs and Gutters are designed to quickly move water from the street to the storm drain, which does not allow for any pollution elimination. By eliminating curbs and gutters and replacing the area with grass swales, pollutants are decreased by the time they reach the storm drain.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_8.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_8.cfm)

#### Green Parking

Green parking refers to several techniques applied together to reduce the contribution of parking lots to the total impervious cover in a lot.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_12.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_12.cfm)

#### Alternative Pavers

Alternative pavers are permeable surfaces that can replace asphalt and concrete and can be used for driveways, parking lots, and walkways. The two broad categories of alternative pavers are paving blocks and other surfaces, including gravel, cobbles, wood, mulch, brick, and natural stone.

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post\\_1.cfm](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/post_1.cfm)

## Resources

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USEPA National Menu of BMPs for Storm Water Phase II:

<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm>

USEPA Storm Water Phase II Final Rule Fact Sheet Series:

[http://cfpub1.epa.gov/npdes/stormwater/swfinal.cfm?program\\_id=6](http://cfpub1.epa.gov/npdes/stormwater/swfinal.cfm?program_id=6)

USEPA Measurable Goals Guidance for Phase II Small MS4s:

<http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm>

USEPA Stormwater Phase II Compliance Assistance Guide:

<http://www.epa.gov/npdes/pubs/comguide.pdf>

NYSDEC Stormwater Phase II Permits:

<http://www.dec.state.ny.us/website/dow/PhaseII.html>



**Resources (Cont.)**

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NYSDEC Stormwater Management Design Manual, October 2001:  
<http://www.dec.state.ny.us/website/dow/swmanual/swmanual.html>

NYSDEC Stormwater Management Practice "Toolbox":  
<http://www.dec.state.ny.us/website/dow/toolbox.htm>

**APPENDIX E**

**POLLUTION PREVENTION / GOOD HOUSEKEEPING FOR  
MUNICIPAL OPERATIONS**

## **STORMWATER INTRODUCTION**

This group of (14) Pollution Prevention/Good Housekeeping Practices outlines that relate to stormwater and its interactions within municipal operations have been developed and assembled by a group of municipal officials that have a wealth of experience pertaining to operations and maintenance within municipalities. The outlines that have been formulated as guidance materials for implementation of the Stormwater Phase II Municipal Separate Storm Sewer System Permit **have not** been designed to be comprehensive in all aspects of each topic. Municipalities should be “flexible” in their use of these outlines as they pertain to their own unique municipal operations. Reference sources to obtain additional information have been provided.

## **STORMWATER REFERENCE INFORMATION**

Many sources of information concerning stormwater are available. The sources listed below were used to develop the Pollution Prevention/ Good Housekeeping Practices outlines:

Environmental Handbook for Transportation Operations – New York State Environmental Analysis Bureau – (<http://www.dot.state.ny.us>)

Select *NYS DOT Departments*  
Click on *Environmental Programs*  
Click on *Operations*  
Click on *Environmental Guidance* (at bottom of page)  
Click on *Environmental Handbook for Transportation Operations*

Cornell University Dept. of Horticulture (<http://www.cornell.edu>)

Click on *CU A to Z*  
Click on *Horticulture, Department of*  
Click on *Gardening Resources*  
Search for *landscaping and lawn care*

National Menu of Best Management Practices (BMPs) for NPDES Storm Water Phase II –

U.S. Environmental Protection Agency (<http://www.epa.gov>)

Click on *Wastes*  
Click on *Alphabetical list of all topics*  
Go to *Storm Water*  
Click on *Water > Storm Water*  
Click on *National Pollutant Discharge Elimination System (NPDES)*  
Click on *Storm Water Education Materials*  
Click on *EPA Guidance Documents*  
Go to *National Menu of Best Management Practices for NPDES Storm Water Phase II*  
Click on <http://www.epa.gov/npdes/menuofbmps/menu/htm>  
Click on *Pollution Prevention/Good Housekeeping for Municipal Operations*

## STORMWATER GLOSSARY OF TERMS

Biochemical oxygen demand – Depletion of dissolved oxygen in water caused by decomposition of chemical or biologic matter.

Catch Basin – A unit that is installed to capture and retain debris, particulate matter, or other solid materials, but allows stormwater to “flow through” to its discharge location

Drip Irrigation – irrigation via a perforated device (i.e. hose) that allows for a slow watering method with reduced evaporation and runoff losses

Hydraulic – Referring to water

(IPM) Integrated Pesticide Management – An environmentally sensitive approach to pest management (not elimination) that uses the least toxic control method – a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.

Loading – Term used in conjunction with *sediment* and *hydraulic* to describe excessive amounts (of the term that is described)

Naturescaping – An alternative landscaping technique that incorporates native plants and creates beneficial wildlife habitat – also conserves water and energy, reduces soil/water pollution.

Oil/Water Separator – A unit that is installed “in line” to a wastewater discharge pipe which is devised to capture petroleum derived materials that float on water

Pesticides – Products that are toxic and are used to kill pests - can be classified as insecticides, herbicides, rodenticides, biocides, aquacides.

POTW – Publicly Owned Treatment Works - - a municipal wastewater treatment plant

Scupper – an opening (in a bridge deck) to allow water drainage – it does not capture debris, particulate matter, or other solid materials

Sediments - Small particles of matter that settle to the bottom of a body of water

Silt – Material consisting of mineral soil particles ranging in diameter from 0.02 millimeters to 0.002 millimeters

Stormwater - *rainwater runoff or snow melt waters – these waters can interact with different types of materials, transporting contaminants to surface waters (i.e. streams, creeks, rivers)*

Toxicity –The relative degree of being poisonous

Xeriscaping – An alternative landscaping technique that conserves water and protects the environment.

Zero input, low input (lawns) - have minimal need for care (i.e. addition of fertilizers/pesticides, water, etc.)

Rick\StWtrOutlineInfo -

**LANDSCAPING AND LAWN CARE**  
**POLLUTION PREVENTION /GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Nutrient loading (nitrogen and phosphorous) from fertilizer runoff can cause excessive aquatic plant growth

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Biochemical Oxygen Demand

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Purchase only enough lawn care products necessary for one year – store properly to avoid waste generation (spills, leaks)
- Use slow release or naturally derived (organic) fertilizers
- Train employees in the proper application of lawn care products
- Develop zero input/low input lawns
- Consider alternative landscape techniques (i.e. naturescaping, xeriscaping)
- Plant trees away from sewer lines or other underground utilities
- Use drip irrigation techniques for landscaping

4. **INSPECTION PROCEDURES**

- Routinely monitor lawns to identify problems during their early stages
- Identify nutrient/water needs of plants, inspect for problems by testing soils

5. **MAINTENANCE PROCEDURES**

- Minimize/eliminate fertilizer application
- Leave grass clippings on lawn, or mulch clippings into lawn
- Limit watering as necessary to supplement rainwater (1 inch/week is adequate)
- Mow with sharpened blades set high (3 inches) – remove only the top 1/3 of the leaves
- Water plants in the early A.M.

6. **ADVISORY**

- Refer to the Cornell University website (Dept of Horticulture)

**SPILL RESPONSE AND PREVENTION**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY MATERIALS THAT IMPACT STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Liquids associated with vehicle/equipment maintenance products (oils, fuels, antifreeze, etc.)
- Rock salt
- Chemicals (fertilizers, pesticides)

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Toxicity
- Biochemical oxygen demand

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Keep all materials properly stored in closed, labeled containment systems
- Use secondary containment systems where appropriate
- Obtain spill recovery materials for immediate response to a spill

4. **INSPECTION PROCEDURES**

- Inspect: containers for leaks, areas near storm receiver inlets and outlets, floor drains for indications of spills
- Inspect secondary containment systems, oil/water separators periodically

5. **MAINTENANCE PROCEDURES**

- Pump out oil water separators as needed
- Protect drains with oil absorbent materials
- Clean out receivers on regular schedule
- Remove spilled salt from salt loading area

6. **ADVISORY**

- Report petroleum spills (as necessary) to the NYSDEC (851-7220 or 1-800-457-7362)
- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)



**PEST CONTROL**  
**POLLUTION PREVENTION /GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Runoff of pesticides may harm aquatic life, may contaminate water/sediment

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Toxicity to aquatic plants and animals

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Purchase only enough pesticides necessary for one year – store properly to avoid waste generation (spills, leaks)
- Minimize/eliminate pesticide application, use lowest toxicity pesticides
- Do not apply pesticides immediately prior to or during rain events
- Ensure that employees are properly trained and certified in pesticide application techniques and safety
- Develop zero input, low input lawns
- Eliminate food, water, and shelter for pests
- Adopt integrated pest management (IPM) techniques
- Adopt alternatives to pesticides use (i.e. physical, mechanical, or biological controls)

4. **INSPECTION PROCEDURES**

- Identify pests – are levels acceptable or must action be taken to control pests?
- Inspect pesticide inventory – properly dispose of out-of-date pesticide materials

5. **MAINTENANCE PROCEDURES**

- Inspect pest traps (i.e. bait boxes) regularly – remove (and properly dispose of) dead pests
- Block/eliminate access to buildings/structures for pests
- Remove pests (insects) by hand

6. **ADVISORY**

- Abide by NYSDEC regulations (6NYCRR Part 325) pertaining to this topic
- Refer to the Cornell University website

**PET WASTE COLLECTION**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Municipal animal shelters

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Biochemical oxygen demand
- Solids loading

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Locate all animals in an enclosed, roofed structure
- ID/utilize "permitted" waste disposal facilities for animal wastes

4. **INSPECTION PROCEDURES**

- Inspect shelter regularly for necessary cleanup/removal of wastes

5. **MAINTENANCE PROCEDURES**

- Remove spilled food, animal wastes on a regular basis

6. **ADVISORY**

- None

**SEPTIC SYSTEM MANAGEMENT**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Ponding of improperly treated wastewaters (on the surface of a leach field or a sand filter system) can increase the biochemical oxygen demand of receiving waters.
- Excessive amounts of disinfectant (i.e. chlorine) applied to a wastewater discharge from a sand filter system can cause toxicity to aquatic plants and animals

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Biochemical oxygen demand

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Divert stormwater runoff (roof drains)
- Divert groundwater (sump pump) discharges
- Locate swimming pools away from the septic system (at least 20' from the septic tank, at least 35' from the closest edge of the leach field or sand filter system)
- Prevent problems caused by vegetation - growth of woody plants on the system
- Prevent hydraulic loading - "Spread out" the use of devices which use large volumes of water across the entire day - clothes washing, dish washing, bathing, repair leaky fixtures
- Minimize water usage by using flow restrictors on potable water distribution devices (i.e. shower heads, water faucets)

4. **INSPECTION PROCEDURES**

Physical evidence of problems:

- "back up" of wastewater in sewer lines
- sewage odors
- leach field/sand filter - wetness/ponding on surface
- overflow of wastes from system components
- heavy vegetation (woody plants) growth on system components

5. **MAINTENANCE PROCEDURES**

- "Pump out" the septic tank as needed (NYSDEC recommends once/year)
- Mow surface vegetation regularly

- Prevent “heavy equipment” from driving on top of the system components

6. ADVISORY

- Obtain site plan/site sketch of system, and retain for reference.

**VEHICLE/EQUIPMENT MAINTENANCE**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Trace amounts of metals/hydrocarbons are found in materials (i.e. fuels, antifreeze, batteries, motor oils, grease, parts cleaning solvents) that are typically used in maintenance operations

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Toxicity
- Biochemical oxygen demand

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)**

- Conduct maintenance work indoors – if work must be performed outside and liquid spills could occur, guard against discharges to storm receivers
- Seal floor drains that discharge directly to the environment, if possible
- Initiate single purpose use of vehicle bays – dedicate one (or more) bays for repairs/maintenance that have no (or sealed) floor drains
- Clean up spilled materials immediately, using “dry” methods
- Install pretreatment systems (oil/water separators) where necessary in sewer lines to capture contaminants (oil, grit), and maintain as needed
- Never leave vehicles unattended while refueling
- Identify appropriate recycling/disposal options for wastes

4. **INSPECTION PROCEDURES**

- Inspect (for maintenance purposes) floor drain systems, oil/water separators
- Monitor “parked” vehicles/equipment for leaks

5. **MAINTENANCE PROCEDURES**

- Maintain a clean work area – remove contaminants from floors, drains, catch basins, using “dry” methods
- Use non-hazardous cleaners. Use non chlorinated solvents instead of chlorinated solvents
- Repair or replace any leaking containers
- Use steam cleaning /pressure washing instead of solvent for parts cleaning
- Store waste fluids in properly capped, labeled storage containers
- Store batteries in leak-proof, compatible (i.e. non reactive) containers
- Rinse grass from lawn care equipment on permeable (grassed) areas

- Protect against pollution if outside maintenance is necessary (cover storm receivers, use secondary containment vessels, etc.)

6. ADVISORY

- Report petroleum spills (as necessary) to the NYSDEC (851-7220 or 1-800-457-7362)
- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

**VEHICLE/EQUIPMENT WASHING**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**
  - Nutrients (biodegradable soaps)
  - Metals
  - Hydrocarbons
  
2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**
  - Biochemical oxygen demand from nutrient sources
  - Toxicity
  - Hydraulic loading
  
3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)**
  - Initiate single purpose use of vehicle bays - dedicate only one bay for washing (with floor drain system)
  - Perform cleaning with pressurized cold water, without the use of soaps, if wastewaters will flow to a **storm sewer** system
  - Use minimal amounts of biodegradable soaps **only** if wastewaters will discharge to a **sanitary sewer** system
  - Rinse with hoses that are equipped with automatic shutoff devices and spray nozzles
  - Steam clean (without soap) where wastes can be captured for proper disposal
  
4. **INSPECTION PROCEDURES**
  - Inspect floor drain systems regularly - use only those that discharge to a sanitary sewer, identify the need for cleaning of catch basins
  
5. **MAINTENANCE PROCEDURES**
  - Map storm drain locations accurately to avoid illegal discharges
  - Perform steam cleaning or pressure washing where wastes can be captured for proper disposal
  - Take precautions against excess use of/spillage of detergents
  
6. **ADVISORY**

- Require all facilities to connect floor drain systems to sanitary sewers (if available)
- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)



**ROADWAY AND BRIDGE MAINTENANCE**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Road salt components - sodium, calcium, and chloride
- Hydrocarbons
- Particulates – such as dry paint or abrasive compounds
- Debris

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Particulate matter
- Toxicity

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)**

- Incorporate preventive maintenance and planning for regular operations & maintenance activities
- Pave in dry weather only.
- Stage road operations and maintenance activity (patching, potholes) to reduce spillage. Cover catch basins and manholes during activity.
- Clean up fluid leaks or spills from paving equipment/materials immediately
- Restrict the use of herbicides/pesticide application to roadside vegetation
- Use porous asphalt for pothole repair and shoulder work
- Sweep and vacuum paved roads and shoulders to remove debris and particulate matter
- Maintain roadside vegetation; select vegetation with a high tolerance to road salt
- Control particulate wastes from bridge sandblasting operations
- Use calcium magnesium acetate for deicing around bridges to minimize corrosion
- Clean out bridge scuppers and catch basins regularly
- Direct water from bridge scuppers to vegetated areas
- Mechanically remove (i.e. sweep) debris from bridge deck and structure prior to washing

4. **INSPECTION PROCEDURES**

- Inspect paving, sweeping, vacuuming, and all other maintenance vehicles/equipment as appropriate
- Inspect roads and bridges for implementation of applicable BMP's

5. MAINTENANCE PROCEDURES

- Clean bridge scuppers routinely and keep free of debris
- Direct runoff water from bridges to vegetated areas
- Install catch basins in place of bridge scuppers
- Use tarps, booms, and vacuums during painting or blasting activities (refer to reference information to control/capture particulate matter)
- Repair leaking/defective containers or equipment on application trucks

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

## ALTERNATIVE DISCHARGE OPTIONS FOR CHLORINATED WATER POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

### 1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Discharge of chlorinated (i.e. swimming pool, POTW) waters to surface waters can injure or kill aquatic life

### 2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Toxicity
- Hydraulic loading

### 3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)

- Dechlorinate pool water before any discharge, be it over land or to the sanitary sewer, or allow the “disinfectant” to dissipate with sunlight, use, etc. prior to discharge
- Use ultraviolet radiation or osmosis to disinfect water/wastewater
- Backwash water should be discharged to the sanitary sewer, if available – if not available, discharge water over vegetated areas, not to surface waters

### 4. INSPECTION PROCEDURES

- Check chlorine residuals prior to discharge. Refrain from any discharge during high flow periods in the sanitary sewer system.

### 5. MAINTENANCE PROCEDURES

- Maintain proper levels of chlorine residuals in pool.
- Allow disinfectant to dissipate prior to discharge of pool waters.

### 6. ADVISORY

- Obtain permission from the municipal POTW prior to discharging any chlorinated pool waters to a sanitary sewer system.

**HAZARDOUS AND WASTE MATERIALS MANAGEMENT**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Lube oils
- Coatings and their compatible solvents (paints, thinners, etc.)
- Anti freeze
- Cleaning agents
- Fuels (gas, diesel, kerosene)

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife
- Particulate loading

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Ensure that all materials are stored in closed, labeled containers – if stored outside, drums should be placed on pallets, away from storm receivers – inside storage areas should be located away from floor drains
- Eliminate floor drain systems that discharge to storm drains, if possible
- Use of pretreatment system prior to discharge
- Reduce stock of materials “on hand” – use “first in/first out” management technique
- Use the least toxic material (i.e. non hazardous) to perform the work
- Install/use secondary containment devices where appropriate
- Eliminate wastes by reincorporating coating/solvent mixtures with the original coating material for reuse
- Recycle materials if possible, or ensure proper disposal of wastes

4. **INSPECTION PROCEDURES**

- Physical on-site verification of sealing floor drains (or redirecting to sanitary sewer)
- Regular inspection of material storage areas (inside and outside)
- Regular inspection and cleaning of oil/grease water separators by qualified contractor (is this addressed elsewhere?)
- Inspect stormwater discharge locations regularly (for contaminants, soil staining, plugged discharge lines)

5. MAINTENANCE PROCEDURES

- Repair or replace any leaking/defective containers, and replace labels as necessary
- Maintain aisle space for inspection of products/wastes

6. ADVISORY

- Abide by NYSDEC regulations (6NYCRR Part 372) and OSHA regulations (29 CFR Part 1910) pertaining to these topics
- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

**OPERATIONAL BY PRODUCTS/WASTES**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Potential for leaching of toxic and biologic contaminants to receiving waters

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Toxicity
- Biochemical oxygen demand

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Post “no dumping” signs
- Illuminate area if possible
- Prevent access – erect barriers
- Identify the by products/wastes that should be recycled (i.e. paper, cardboard) or can be legally disposed of on municipal lands (i.e. deer carcasses) by referencing NYSDEC regulations (6NYCRR PART 360)

4. **INSPECTION PROCEDURES**

- Regularly scheduled inspections - for maintenance concerns
- Unscheduled patrolling of areas by police

5. **MAINTENANCE PROCEDURES**

- Clean area
- Clean up and dispose of “illegally dumped” materials, trash/debris in accordance with environmental regulations
- Cut and remove vegetation

6. **ADVISORY**

- Abide by NYSDEC regulations (6NYCRR Part 360) pertaining to this topic
- Refer to NYSDOT guidance information (**Environmental Handbook for Transportation Operations**)

## CATCH BASIN AND STORM DRAIN SYSTEM CLEANING POLLUTION PREVENTION/ GOOD HOUSEKEEPING PRACTICES

### 1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Catch basins capture grit and debris, which, if not removed in a timely fashion, can discharge toxic and biological pollutants during rain and/or snow melt events
- Storm drainage systems, while not designed for capture of solid materials, can perform in the same manner with similar results. Also, if storm ditches are stripped of vegetation during cleaning, silt deposition in receiving waters can occur.

### 2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Toxicity – heavy metals, organic compounds, etc.
- Biochemical oxygen demand
- Sediment loading

### 3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Address:
  - storm drain receivers and (below grade) storm sewer systems
  - parking lot receivers
  - open ditches
  - floor drains inside of buildings should be either:
    - sealed to prevent discharge
    - “permitted” by NYSDEC
    - discharged to sanitary sewers
- No untreated wastewaters are allowed to be discharged to a catch basin/street receiver
- More frequent cleaning, as necessary

### 4. INSPECTION PROCEDURES

- Physical inspection – prioritize storm drain systems and catch basins – catch basins on steep grades may need more frequent cleaning
- Clean catch basin when depth of deposits are  $>1/3$  the depth from the bottom of the basin to the invert of the lowest pipe/opening into or out of basin – Institute temporary street parking bans to facilitate access to catch basins
- Ditch inspections – ID problems while traveling to job site
- Storm event inspection – identify pollution problems (i.e. sediments) to determine the need for additional protective measures
- Post storm event inspection – ID problems (i.e. blockages)

### 5. MAINTENANCE PROCEDURES

- Catch basins/storm sewer pipe – cleaning in spring to remove sand/grit/salt from winter road maintenance, cleaning in fall to remove leaves/debris
- Established ditch:
  - Maintain proper slope
  - Maintain vegetation by cutting (to capture sediment) – Do not allow vegetation to grow to a height that would impair sight lines of drivers of motor vehicles
  - Remove obstacles/ debris – (i.e. trash, tree branches, brush, cut vegetation)
  - Excavation/ditch scraping – if necessary, use devices (i.e. hay bales, silt fence) to capture sediment prior to stormwater discharge in receiving waters, reseed ditch
- New installation – capture particulate matter – install sediment basins/other devices in ditch
- Proper disposal of debris

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)



**STREET CLEANING AND MAINTENANCE**  
**POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATER (SURFACE WATERS)**

- Poorly maintained streets allow for a “build up” of trash, grit, and debris, from which sediment and toxic/biological pollutants can be “washed out” during rain and /or snow melt events.
- Street repair/paving processes use materials that can contaminate receiving waters if they interact with stormwater.

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Particulate matter – can cause sediment loading
- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Street sweeping/vacuuming - at regular intervals, and “as needed”
- Perform operations such as paving in dry weather only.
- Prior to road reconstruction, consider/evaluate the use of “shouldered roads” instead of “curbed roads”
- Maintain roadside vegetation; select plants/trees that can withstand the action of road salt. Direct runoff to these areas.

4. **INSPECTION PROCEDURES**

- Inspect streets, and plan (as needed) for maintenance/repairs
- Prioritize – some streets (i.e. those on flat grades or with many trees) may need more frequent cleaning

5. **MAINTENANCE PROCEDURES**

- Spring sweeping/vacuuming – remove salt/sand residues
- Fall sweeping, collection of leaves at appropriate time intervals
- Dry sweep or vacuum streets during dry weather
- Initiate temporary street by street parking bans to allow access for cleaning
- Maintain equipment - check for/ repair fluid leaks
- Stage road operations and maintenance activity (patching, potholes) to reduce spillage of materials. Cover catch basins and manholes during activity

6. **ADVISORY**

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

**ROAD SALT STORAGE AND APPLICATION**  
**GOOD HOUSEKEEPING/POLLUTION PREVENTION PRACTICES**

1. **IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)**

- Salt is very soluble in water, and, in high concentrations, can have a deleterious effect on plants and aquatic life.

2. **PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE**

- Toxicity

3. **IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)**

- Require covered facility for salt storage (prevents lumping and run-off loss), and size properly for seasonal needs
- Store salt on highest ground elevation to mitigate contact with stormwater
- Calibrate salt spreaders as necessary
- Consider alternative deicing materials (i.e. calcium chloride, magnesium chloride)
- Use a wetting agent with salt to minimize “bouncing” during application
- Cover salt loading area, or build into storage shed
- Unload salt deliveries directly into storage facility, or if not possible, move inside immediately

4. **INSPECTION PROCEDURES**

- Physical evidence of a problem:
- Inspect salt storage shed for leaks, other problems
- Inspect salt application equipment
- Lumps of salt in the shelter, on the ground, or in spreaders
- Salt stained ground near and around the shelter – evidence of run-off contamination of the stored salt
- Concentrations of salt in storm water conveyances
- Visual evidence of excessive salt on road
- Overdue services and calibrations on trucks and salt spreaders

5. **MAINTENANCE PROCEDURES**

- Inspect stored salt regularly for lumping and/or water contamination
- Inspect ground areas for evidence of run-off

- Service trucks and calibrate spreaders regularly to ensure accurate efficient distribution
- Educate and train operators on hazards of oversalting to roads and environment
- Repair salt storage shed (leaks)

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

**APPENDIX F**  
**REVISED MEASURABLE GOALS**

# Section D. Initial Identification of Measurable Goals

Notice of Intent for Coverage Under an SPDES General Permit for  
Storm Water Discharges From SMALL MUNICIPAL SEPARATE STORM SEWER  
SYSTEMS

## ATTACHMENT

### DEFINITION OF START AND END DATES

Year 1 (March 2003 – March 2004)  
Year 2 (March 2004 – March 2005)  
Year 3 (March 2005 – March 2006)  
Year 4 (March 2006 – March 2007)  
Year 5 (March 2007 – March 2008)  
Annual (March 2003 – March 2008)

### MEASURABLE GOALS

#### D1. Public Education and Outreach on Stormwater Impacts

Annual: Participate in Western New York Stormwater Coalition  
(minimum two meetings/year)

Year 2: Create a stormwater information page on the Peace Bridge website

Years 3-5: Make Erie County brochures available at the Administration Building

Years 4-5: Display Erie County stormwater poster in Administration Building

Year 5: Participate in presentations to community groups (i.e. Presentations organized  
by Western New York Stormwater Coalition)

## **D2. Public Involvement/Participation**

- Annual: Make Stormwater Management Program (SWMP) available to the public
- Annual: Make annual SWMP report available to the public
- Year 1: Designate a SWMP contact
- Year 2: Open Western New York Stormwater Coalition meetings to public (two meetings/year)

## **D3. Illicit Discharge Detection and Elimination**

- Year 1: Develop outfall and comprehensive system map
- Year 2: Develop written Stormwater Management Program
- Year 2: Erect signage on Authority property prohibiting illicit discharges
- Years 2 & 4: Conduct informational stormwater workshop with Authority employees
- Years 2-5: Update collection system and outfalls map
- Year 3: Dye testing of storm sewer system
- Years 3-5: Identify illicit connections

## **D4. Construction Site Stormwater Runoff Control**

- Annual: Develop and update Best Management Practices (BMPs) and incorporate into the SWMP
- Year 2: Develop regulatory mechanism for construction site runoff control
- Year 2: Review and update internal construction review process
- Year 3: Develop inspection checklist
- Years 3-5: Inspect sites for compliance with regulatory mechanism and BMPs
- Years 3-5: Issue standards to construction site operators during bidding process

#### **D5. Post-Construction Stormwater Management in New Development and Redevelopment**

- Annual: Develop and update Best Management Practices (BMPs) and incorporate into the SWMP
- Year 2: Develop regulatory mechanism for post-construction runoff control
- Years 2-4: Develop inspection and enforcement program
- Years 3-5: Implement inspection and enforcement program

#### **D6. Pollution Prevention/Good Housekeeping for Municipal Operations**

- Year 1: Develop Pollution Prevention/Good Housekeeping Plan
- Year 2: Audit facilities and practices and identify problem areas
- Year 3: Revise operations and maintenance (O&M) practices and standard operating procedures (SOPs)
- Year 4: Train employees
- Year 5: Implement new O&M practices and SOPs



**APPENDIX G**  
**COALITION ATTENDANCE RECORD**

<b>Phase II Storm Water Coalition</b>		
<b>Attendance Records</b>		
<b>March 12, 2003</b>		
<b>Name</b>	<b>MS4 Represented</b>	<b>Affiliation (if different)</b>
Patrick Blizniak	Town of Aurora	
Arthur F Kroening	Town of Wheatfield	
Gerard Kapsiak	Town of Hamburg	
Terri Benson	Town of Orchard Park	Parsons
John S Wojcik	Village of Depew	
John Whitney	Town of Grand Island	
Dan Seider	Cambria, Evans, Newstead	Wendel Duchscherer
Tim Walck	Town of Wheatfield	Wendel Duchscherer
Connie Miner	Town of Boston	
Donna Chesnut	Town of Amherst	
Steve Reiter	Town of Lewiston	
Gary Bommer	Town of West Seneca	
Rick Eakin	Niagara County	
Bill Pugh	Cheektowaga	
Mark Passuite	Niagara County	
Ken Pokorski	Village of Sloan	
Phil Pulk	Village of Sloan	
Mike Kaiser	Town of Tonawanda	
Jeff Kaminski	Village of Angola	
Jerry Knoll	Village of Hamburg	
Stephen Waldvogel	Town of Aurora	R & D Engineering
Jason Zdrojewski	City of Tonawanda	
Jamie Davidson	Peace Bridge Authority	Parsons
John Goeddertz	Youngstown, Buffalo	URS
Lynn Dingey	Town of Grand Island	
David Miller	Buffalo State College	
Michael Metzger	Town of Alden	
Paul Bowers	Town of Amherst	
Jennifer Coughlin	Town of Amherst	
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>April 9, 2003</b>		
Mike Marino	Lewiston (V), Porter, Aurora	R & D Engineering
Dave Britton	Lewiston (T), Niagara, Williamsville	O'Brien & Gere
Michael Wymer	Village of Blasdell	Malcolm Pirnie
Stephen Waldvogel	Town of Aurora	R & D Engineering
Janet Piarr	Village of Blasdell	
Connie Miner	Boston, Elma, Sloan	Grant Consultant
David Miller	Buffalo State College	
Jeff Kaminski	Village of Angola DPW	
Art Kroening	Town of Wheatfield	
Dan Seider	Cambria, Evans, Newstead	Wendel Duchscherer
Lynn Dingey	Town of Grand Island	
James Cornelius	Town of Wheatfield	
Doug Flankie	Pendleton	
Neil Gunn	Peace Bridge Authority	
Rick Eakin	Niagara County	Niagara County DPW
Jennifer Coughlin	Town of Amherst	
Ellen Ilardo		Erie County SWCD
Dennis A Snyder	Village of Lancaster	
Garry J Smith	Village of Lancaster	
Michael Metzger	Town of Alden	Metzger Engineering
Brian Smith		Citizen's Campaign for the Environn
Richard Roll	City of Niagara Falls	
Charles Sottile	Village of Kenmore	
Scott Henry	Town of Eden	
Tim Lavocat	Town of Clarence	
Bill Pugh	Town of Cheektowaga	
Terri Benson	Peace Bridge	Parsons

Jamie Davidson	Peace Bridge	Parsons
Richard Mrugalski	Town of Orchard Park	
Philip E Pulk	Sloan	
Ken Pokorski	Sloan	
Gary Bommer	Town of West Seneca	
Bob Labenski	Town of Lancaster	
Tom Plotar		Pratt & Huth Associates
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>May 14, 2003</b>		
Jason Zdrojewski	City of Tonawanda	
Jennifer Coughlin	Amherst	
David Miller	Buffalo State College	
Bob Labenski	Town of Lancaster	
John S Wojcik	Village of Depew	
Ellen Hahn Ilardo		Erie County SWCD
Tom Plotar		Pratt & Huth Associates
Jeff Kaminski	Village of Angola	
Connie Miner	Town of Boston, Elma, Blasdell	Grant Consultant
Paul Bowers	Town of Amherst	
Charles Sottile	Village of Kenmore	
Michael Kaiser	Town of Tonawanda	
Leslie Sedita	Buffalo Sewer Authority	
Paul Drof	City of N. Tonawanda	
John Kelly	Village of East Aurora	
Matthew Hoeh	Village of East Aurora	
Tim Lavocat	Town of Clarence	
Bill Pugh	Town of Cheektowaga	
Michael Wymer	Village of Blasdell	Malcolm Pirnie
Jerry Knoll	Village of Hamburg	
Richard Roll	City of Niagara Falls	
Tim Walck	Wheatfield, Cambria, Evans, Newstead	Wendel Duchscherer
Jamie Davidson	Peace Bridge	Parsons
Gary Bommer	Town of West Seneca	
Scott Kinsman	Town of Boston	Foit-Albert
Lynn Dingey	Town of Grand Island	
John Whitney	Town of Grand Island	
Mike Marino	Aurora, Lewiston (V), Porter	R & D Engineering
Rick Eakin	Niagara County	Niagara County DPW
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>June 11, 2003</b>		
Scott Henry	Town of Eden	
Phillip Pulk	Sloan	
Ken Pokorski	Sloan	
Tom Plotar		Pratt & Huth
Michael Wymer	Village of Blasdell	Malcolm Pirnie
Gary Bommer	Town of West Seneca	
Mike Kaiser	Town of Tonawanda	
Dale Rodgers	North Tonawanda	North Tonawanda
Scott Kinsman	Town of Boston	Foit Albert
Rick Eakin	Niagara County	Niagara County DPW
Jerry Knoll	Village of Hamburg	
Art Kroening	Town of Wheatfield	
Tim Walck	Town of Wheatfield	Wendel Duchscherer
James Cornelius	Town of Wheatfield	
Jaime Davidson	Peace Bridge	Parsons
Joel Merrill	City of Tonawanda	
David Miller	Buffalo State College	
Gerard Kapsiak	Town of Hamburg	
Mike Marino	Aurora, Porter, Lewiston (V)	R & D Engineering
Bill Pugh	Cheektowaga	

Keith Sitzman	Village of Alden	
Jennifer Coughlin	Town of Amherst	
Tim Lavocat	Town of Clarence	
Donna Chesnut	Town of Amherst	
Rich Mrugalski	Town of Orchard Park	
Dan Seider	Cambria, Evans, Newstead	Wendel Duchscherer
Connie Miner	Boston, Elma, Blasdell	Grant Consultant
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>August 13, 2003</b>		
Gerard Palumbo		NYSDEC
Joel Merrill	City of Tonawanda	
Jaime Davidson	Peace Bridge	Parsons
Jennifer Coughlin	Town of Amherst	
Leslie Sedita	Buffalo	BSA
Ken Pokorski	Sloan	
Phil Pulk	Sloan	
Jeff Kaminski	Village of Angola	
Gary Bommer	Town of West Seneca	
Rick Eakin	Niagara County	Niagara County DPW
Charles Sottile	Village of Kenmore	
Michael Wymer	Village of Blasdell	Malcolm Pimie
Mike Marino	Aurora, Lewiston, Porter	R & D Engineering
John Whitney	Town of Grand Island	
Tim Walck	Newstead, Wheatfield, Evans, Cambria	Wendel Duchscherer
Donna Chesnut	Town of Amherst	
Ellen Hahn Ilardo		Erie County SWCD
Dan Bavitz	Town of Boston	Foit-Albert
Bill Pugh	Town of Cheektowaga	
Dale Rodgers	No. Tonawanda	
Terri Benson	Peace Bridge	Parsons
Rich Mrugalski	Town of Orchard Park	
Jerry Knoll	Village of Hamburg	
John Wojcik	Village of Depew	
Keith Sitzman	Village of Alden	
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>September 10, 2003</b>		
Rick Eakin	Niagara County	Niagara County DPW
Tim Walck	Wheatfield, Cambria	Wendel Duchscherer
Gerard Kapsiak	Town of Hamburg	
Dave Britton	Williamsville, Niagara, Pendleton, Lewiston	O'Brien & Gere
Bill Pugh	Town of Cheektowaga	
Gary Bommer	Town of West Seneca	
Leslie Sedita	Buffalo	BSA
Rich Mrugalski	Town of Orchard Park	
Dave Rodgers	City of N Tonawanda	
Terry Ruh	WNY Erie Schools	Erie 1 Boces
Charlie Sottile	Village of Kenmore	
Donna Chesnut	Town of Amherst	
Lynn Dingey	Town of Grand Island	
John Whitney	Town of Grand Island	
Jerry Knoll	Village of Hamburg	
Jaime Davidson	Peace Bridge	Parsons
Dan Seider	Evans	Wendel Duchscherer
Jennifer Coughlin	Town of Amherst	
Michael Wymer	Village of Blasdell	Malcolm Pimie
Ken Pokorski	Sloan	
Phillip Pulk	Sloan	
Mike Kaiser	Town of Tonawanda	
Joel Merrill	City of Tonawanda	
Mike Marino	Lewiston (V), Aurora, Porter	R & D Engineering

Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>October 8, 2003</b>		
Gary Bommer	Town of West Seneca	
Tim Lavocat	Town of Clarence	
Lynn Dingey	Town of Grand Island	
John Whitney	Town of Grand Island	
James Cornelius	Town of Wheatfield	
Gerard Kapsiak	Town of Hamburg	
Jerry Knoll	Village of Hamburg	
Tom Plotar	Pratt & Huth	
Phillip Pulk	Village of Sloan	
Ken Pokorski	Village of Sloan	
Art Kroening	Town of Wheatfield	
Dan Seider	Wheatfield, Cambria, Evans	Wendel Duchscherer
Dave Britton	Lewiston Niagara Williamsville Pendleton	O'Brien & Gere
Michael Metzger	Town of Alden	Metzger Civil Engineering
Rich Eakin	Niagara County	Niagara County DPW
Dale Rogers	N Tonawanda	
Scott Henry	Town of Eden	
Connie Miner	Village of Bladell, T Boston, Elma	
Donna Chesnut	Town of Amherst	
Rich Mrugalski	Town of Orchard Park	
Jeff Kaminski	Village of Angola	
Leslie Sedita	Buffalo	BSA
John Wojcik	Village of Depew	
Scott Kinsman	Town of Boston	
Ellen Hahn		Erie County SWCD
David Miller	BSC	
Joel Merrill	City of Tonawanda	
Mike Kaiser	Town of Tonawanda	
Bill Pugh	Town of Cheektowaga	
Charles Sottile	Village of Kenmore	
Mike Marino	Lewiston (V), Aurora, Porter	R & D Engineering
Keith Sitzman	Village of Alden	
Terri Benson	Peace Bridge Authority	Parsons
Jennifer Coughlin	Town of Amherst	
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>November 12, 2003</b>		
Rich Mrugalski	Town of Orchard Park	
Donna Chesnut	Town of Amherst	
Leslie Sedita	Buffalo	BSA
Ken Pokorski	Sloan	
Phil Pulk	Sloan	
Michael Wymer	Blasdell	Malcolm Pirnie
Gary Bommer	Town of West Seneca	
Scott Henry	Town of Eden	
Dale Rogers	City of N Tonawanda	
Mike Marino	Williamsville, Porter, Lewiston (T)	R & D Engineering
Jennifer Coughlin	Town of Amherst	
Dave Britton	Lewiston (V), Pendleton	O'Brien & Gere
Ellen Hahn		Erie County SWCD
John Wojcik	Village of Depew	
Keith Sitzman	Village of Alden	
Bill Pugh	Town of Cheektowaga	
Rick Eakin	Niagara County	Niagara County DPW
Ben Dodge	Town of Aurora	
Lynn Dingey	Town of Grand Island	
John Whitney	Town of Grand Island	
James Cornelius	Town of Wheatfield	
Art Kroening	Town of Wheatfield	

Mike Kaiser	Town of Tonawanda	
Jaime Davidson	Peace Bridge	Parsons
David Miller	Buffalo State College	
Tim Walck	Wheatfield, Cambria, Evans	Wendel Duchscherer
Dan Seider	Wheatfield, Cambria, Evans	Wendel Duchscherer
Connie Miner	Blasdell, Elma, Boston	Grant Consultant
Gerry Knoll	Village of Hamburg	
Janet Piarr	Village of Blasdell	
<b>January 14, 2004</b>		
Jaime Davidson	Peace Bridge	Parsons
Mike Kaiser	Town of Tonawanda	
Dan Bavitz	Town of Boston	Foit-Albert
Charles Sottile	Village of Kenmore	
Donald Dehn	Village of Williamsville	
Scott Henry	Town of Eden	
Matt Salah	EC Sewer District #6	DEP
Joel Merrill	City of Tonawanda	
Keith Sitzman	Village of Alden	
Carl Dimmig	Erie County	Erie County DPW
Donna Chesnut	Town of Amherst	
Dale Rodgers	N Tonawanda	
Ken Pokorski	Sloan	
Phillip Pulk	Sloan	
Connie Miner	Boston, Elma, Blasdell	Grant Consultant
Tim Walck	Wheatfield, Cambria, Evans	Wendel Duchscherer
Art Kroening	Town of Wheatfield	
Rich Mrugalski	Town of Orchard Park	
David Miller	Buffalo State College	
Gary Bommer	Town of West Seneca	
Mike Marino	Williamsville, Porter, Aurora, Lewiston (V)	R & D Engineering
Ellen Hahn	ECSWCD	
Janet Piarr	Village of Blasdell	
John Wojcik	Village of Depew	
Paul M Bowers	Town of Amherst	
Rick Eakin	Niagara County	Niagara County DPW
Lynn Dingey	Town of Grand Island	
Leslie Sedita	Buffalo	BSA
Jeff Kaminski	Village of Angola	
Jerry Knoll	Village of Hamburg	
Bill Pugh	Town of Cheektowaga	
Bob Labenski	Town of Lancaster	
Mike Jurkowski		Nussbaumer & Clarke
Jennifer Coughlin	Town of Amherst	
Jill Jedlicka		Friend of Buffalo Niagara Rivers
Julie O'Neill		Friend of Buffalo Niagara Rivers
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
<b>February 11, 2004</b>		
Mike Marino	Williamsville, Porter, Aurora, Lewiston (V)	R & D Engineering
Mike Wymer	Village of Blasdell	Malcolm Pirnie
Dan Seider	Wheatfield, Cambria, Evans	Wendel Duchscherer
Matt Salah	EC Sewer District #6	DEP
Leslie Sedita	Buffalo	Buffalo Sewer Authority
James Cornelius	Town of Wheatfield	
Art Kroening	Town of Wheatfield	
Jerry Knoll	Village of Hamburg	
Ken Pokorski	Sloan	
Phil Pulk	Sloan	
Joel Merrill	City of Tonawanda	
Rich Mrugalski	Town of Orchard Park	
Rick Eakin	Niagara County	Niagara County DPW
Scott Henry	Town of Eden	
Bill Pugh	Town of Cheektowaga	

Bob Labenski	Town of Lancaster	
Michael Kaiser	Town of Tonawanda	
Brad Sendlak		Watts Engineers
Alan Motricardi		Watts Engineers
Donna Chesnut	Town of Amherst	
Jennifer Coughlin	Town of Amherst	
David Britton	Lewiston (T), Pendleton	O'Brien & Gere
Mark Seider		Niagara County SWCD
Lynn Dingey	Town of Grand Island	
Ellen Hahn		Erie County SWCD
Connie Miner	Boston, Elma Village of Blasdell	
Charles Sottile	Village of Kenmore	
Mary Rossi	Erie County	Erie County DEP
Tom Hersey	Erie County	Erie County DEP
Rick Rutkowski	Erie County	Erie County DEP
Dale Rogers	City of North Tonawanda	
Bob Labenski	Town of Lancaster	
Bill Pugh	Town of Cheektowaga	
John Wojcik	Village of Depew	
Jeff Kaminsky	Village of Angola	

**APPENDIX H**  
**PUBLIC REVIEW MEETING DOCUMENTATION**



## Davidson, Jaime

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**From:** Janet Cocksedge [jc@peacebridge.com]  
**Sent:** Tuesday, April 27, 2004 7:31 AM  
**To:** Pba\_everyone; Mark MacVittie (E-mail); Michael Comerford (E-mail); Peter Morocco (E-mail); Graham S. Noseworthy (E-mail); Brenda K. Santelman (E-mail); Carol Bechtel (E-mail); CATARACT CUSTOMHOUSE BROKERS (Business Fax); Cecelia Madigan (E-mail); Dan Harlach (E-mail); Darlene Liskiewicz (E-mail); David Odden (E-mail); Don Miller (E-mail); George Hartson (E-mail); Gerry Hagmier (E-mail); Jacqueline Klahn (E-mail); Jennifer Gregorie (Business Fax); Jim Nowotny (Business Fax); JoAnne Purgarich (Business Fax); Joe Molisani (Business Fax); Joseph Zaffran (E-mail); Kathleen Burns (E-mail); Linda Lexo (Business Fax); Lorita Schlopsnies (E-mail); Margaret Cala (E-mail); Margarete Druz bik (Business Fax); Marina Burke (E-mail); Paul MacLeod (E-mail); Paul Nocera (E-mail); Rhonda Augustine (E-mail); RUSSELL FARROW (Business Fax); Sam Lombardo (E-mail); Sherry Reif (Business Fax); Thomas Kopolinski (E-mail); Tony Sambrotto (Business Fax); Alan Schmidt (E-mail); Chuck Loewen (E-mail); Dale Schaeffer (E-mail); Darlene Ziegler (E-mail); Dawn Roberts (E-mail); Doris Knox (E-mail); Janice Sherk (E-mail); Karen Bredin (E-mail); Keith Ratcliffe (E-mail); Paul Weaver (E-mail); Penny Adams (E-mail); Shelley Brilla-Noble (E-mail); Wende Downing (E-mail); Yvonne Lauder (E-mail); cdipirro@amherst.org; fortvilla@sympatico.ca; gerlew@localnet.com; johnlo@niagara.com; kenneth.schoetz@oag.state.ny.us; Kimberlee A. Benders; Margaret McCarthy; marilyn.hartley@oag.state.ny.us; mmm531@aol.com; laser@vaxxine.com; paulkoessler@msn.com; pcap@iaw.on.ca; rmcdowell@computan.com; Ron Rienas; susieirwin@hotmail.com

**Subject:** Review Meeting - Storm Water Annual Report



Annual Report  
Meeting Flyer.pd...

An annual review meeting will be held tomorrow to discuss ways to reduce storm water impacts on the Niagara River. Please see the attached notice for further information.

If you have any questions regarding the meeting, please feel free to contact Anthony Braunscheidel at 716-818-4182.

<<Annual Report Meeting Flyer.pdf>>



# Stormwater Annual Report Public Review Meeting

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Presented By:



WNY Stormwater Coalition

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**When:** Wednesday, April 28, 2004  
7:00 PM

**Where:** ECC North Campus  
Auditorium – Gleasner Hall  
6205 Main Street  
Williamsville, NY 14221

**Background:** The Buffalo and Fort Erie Public Bridge Authority (Authority) owns and maintains a storm sewer system. Owners of municipal separate storm sewer systems (MS4s) must comply with stormwater regulations developed under the Clean Water Act, which include implementing a program to reduce silt and sediment in stormwater runoff.

**Purpose:** Have you ever wondered:

- What is stormwater? Can stormwater be a problem?
- What is the Authority doing to reduce stormwater impacts on the Niagara River?
- What can I do to help?

These questions and more will be answered at this meeting! The meeting will include a general presentation followed by a question and answer period, and will be attended by representatives of eleven WNY municipalities.

The Authority has developed a stormwater management plan and is looking for public feedback on how we can improve the program.

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- **04/27/04** [Stormwater Annual Report Public Review Meeting](#)
- 04/16/04** [Truck Configurations Determined Acceptable to Cross the Peace Bridge](#)
- 07/23/03** [Peace Bridge Expansion Project to Host Workshop #5](#)
- 07/18/03** [Alternatives at Existing Site and Adjacent Northern Property Recommended for In-Depth Study in Next Phase of the Project](#)
- 07/3/03** [Peace Bridge General Manager of Operations Resigns](#)
- 06/6/03** [Peace Bridge Board of Directors Announce Management Change](#)
- 05/23/03** [Part of Canadian Border Infrastructure Funding Granted to the Peace Bridge Border Crossing](#)
- 05/13/03** [Special NEXUS Enrollment Opportunity at the Peace Bridge](#)
- 05/6/03** [2003 Peace Bridge Annual Maintenance Plan](#)
- 01/29/03** [NEXUS Lane Opening January 2003 at the Peace Bridge](#)
- 01/3/03** [Have you mailed your NEXUS application?](#)
- 12/18/02** [No Tolls On Christmas Day At The Peace Bridge](#)
- 12/11/02** [Commercial Traffic Delays at the Lewiston-Queenston & Peace Bridges](#)
- 08/5/02** [Peace Bridge Celebrates its 75th Anniversary](#)
- 05/29/02** [Executive Director of E-ZPass Interagency Group to speak](#)
- 05/14/02** [Peace Bridge Construction Work Announced for Early June](#)
- 04/16/02** [Peace Bridge Annual Maintenance Plan](#)
- 03/4/02** [Archaeological Find on Peace Bridge Property Authenticates Existence of 9,000 Year Old Encampment along Ontario's Niagara River Coastline](#)
- 01/20/02** [Peace Bridge Extends Use Of Tokens Indefinitely](#)
- 12/4/01** [Axle-Based and One-Way Tolls to Ease Congestion at Niagara River Crossings](#)
- 12/4/01** [Peace Bridge To Launch E-ZPass Electronic Toll Collection](#)

- 10/12/01** [Slumping Economy Hits Bridge Revenues](#)
- 10/12/01** [Earl Rowe, CO-CEO and General Manager leaves Peace Bridge](#)
- 10/5/01** [Peace Bridge Traffic Volumes Down -- Duty Free Stores Open](#)
- 09/13/01** [Peace Bridge Border Crossing Assisting Relief Efforts](#)
- 07/31/01** [Niagara River Bridges Adopt One-Way Commercial Toll Collection](#)
- 07/2/01** [Better Travel on the Way - Border Management Initiatives Will Increase Efficiency on the Peace Bridge](#)
- 11/15/00** [Peace Bridge Authority Begins Bi-National Integrated Environmental Process](#)
- 07/28/00** [Peace Bridge Economic Study Completed](#)
- 07/1/00** [PBA Air Quality Remarks](#)
- 06/30/00** [Peace Bridge Authority Air Quality Fact Sheet](#)
- 06/15/00** [Peace Bridge Work Completed 10 days Ahead of Schedule](#)

**CUSTOMS - CANADA: 905.994.6330 - USA: 716.881.5225 | IMMIGRATION - CANADA: 905.871.5660 - USA: 716.881.5225**

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## 04/27/04 -- Stormwater Annual Report Public Review Meeting

### Stormwater Annual Report Public Review Meeting

[View/Download .PDF](#)

**Presented By:** WNY Stormwater Coalition

**When:**

Wednesday, April 28, 2004  
7:00 PM

**Where:**

ECC North Campus  
Auditorium – Gleasner Hall  
6205 Main Street  
Williamsville, NY 14221

**Background:** The Buffalo and Fort Erie Public Bridge Authority (Authority) owns and maintains a storm sewer system. Owners of municipal separate storm sewer systems (MS4s) must comply with stormwater regulations developed under the Clean Water Act, which include implementing a program to reduce silt and sediment in stormwater runoff.

**Purpose:**

Have you ever wondered:

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- What is the Authority doing to reduce stormwater impacts on the Niagara River?
- What can I do to help?

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### **Stormwater Coalition meetings set**

The Western New York Stormwater Coalition, representing 41 participating municipalities in Erie and Niagara counties, will host a series of public meetings addressing storm water pollution.

The meetings, which start at 7 p.m., will include a short presentation on why polluted storm water is a problem and what households can do to reduce its impact.

The meetings will be held:

- Wednesday at Erie Community College North Campus, Administrative Building, 6505 Main St., Amherst.
- Thursday in Erie County Fire Training Center Auditorium, 3359 Broadway, Cheektowaga.
- May 5 at Erie Community College South Campus, Building 5 — Room 5101, 4041 Southwestern Blvd., Orchard Park.
- And May 6 at Lockport County Public Safety Training Facility, 5526 Niagara St., Lockport.

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### ERIE-NIAGARA COUNTIES

## New stormwater rules to be discussed in hearings

By THOMAS J. PROHASKA  
News Niagara Bureau  
5/3/2004

LOCKPORT - New federal regulations on how water that runs off land must be treated will be discussed at a public meeting Wednesday in Hamburg and here Thursday.

The Western New York Stormwater Coalition, which was set up by Erie and Niagara counties to discuss the impact of the new rules on 41 municipalities in the two counties, held two sessions in Erie County last week.

Wednesday's meeting will be held at 7 p.m. at Erie Community College's South Campus. The Thursday session will be offered at 7 p.m. in the Niagara County Public Safety Training Facility, 5574 Niagara St. Extension.

Richard Eakin, Niagara County's deputy public works commissioner for engineering, said farmers are exempt from the new regulations, which he said aim to reduce the amount of potential pollutants that could leach off the surface of the ground into waterways.

Everything from fertilizers and pesticides to soapy car wash water and animal waste could be carried into the drainage systems, and storm water is not usually treated by sewer plants before it goes into local streams. Storm sewers are supposed to be separate from sanitary sewers, which handle discharges from household and industrial plumbing.

The new regulations from the Environmental Protection Agency don't apply to all municipalities, just those in which the population density is more than 1,000 people per square mile.

In Niagara County, the affected communities are in the western part of the county only: the cities of Niagara Falls and North Tonawanda; the villages of Lewiston and Youngstown; and the towns of Cambria, Lewiston, Niagara, Pendleton, Porter and Wheatfield. In Erie County, most of the communities in the northern two-thirds of the county are affected.

Mary Rossi, environmental project manager for the Erie County Department of Environment and Planning, said the imposition of the rules has nothing to do with whether the communities have had any reported trouble with polluted stormwater runoff.

The rules require any landowner or contractor who is doing a project that "disturbs" more than one acre of land to file a pollution prevention plan and obtain a state discharge permit from the Department of Environmental Conservation.

"It's an unfunded mandate," said Rossi. However, no one knows yet exactly how much compliance with the rules will cost.

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Rossi added that the rules require all affected municipalities to detect and prevent illegal discharges into drainage ditches and streams, while compiling a map of every "outfall point" where ditches intersect with streams, sewer receivers or some other municipality's sewer system.

Not all the communities affected have their own sewer systems, but those that do will have to compile their own pollution reduction plans.

"This is a five-year program to implement, and we're just entering Year Two," Eakin said.

Rossi and Eakin said the regulations will order municipalities to post signs at discharge points that would allow those who saw evidence of pollution to report the location easily.

e-mail: [tprohaska@buffnews.com](mailto:tprohaska@buffnews.com)

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WNY Stormwater Coalition

**April 28, 2004**

**Erie Community College  
North Campus  
6205 Main Street  
Williamsville, New York**

## **AGENDA**

**1. Welcome and Introductions**

**2. Presentation: Stormwater Pollution Prevention**

- what it is; how it occurs; why it is a problem; what can be done
- Phase II regulations
- WNY Stormwater Coalition
- Public Involvement Opportunities

**4. Questions and Comments**

**5. Resident/Municipal Representative Interaction**

- MS4 representatives present to meet residents, answer questions, receive comments on draft Annual Reports

PUBLIC MEETING  
FOR

**Western New York Stormwater Coalition  
Annual Report**

April 28, 2004 7:00 P.M.

PLEASE PRINT

NAME	ADDRESS
DON KUHN CPESC	102 BROOKDALE WMSUL 14221
JOHN S WOTCİK	VILLAGE OF DEFEED
Joel A. Merrill	City of Tonawanda
Kim Powell	Town of Tonawanda
Mark Mruk	Acres
Tom Frant	225 Village of Williamsport West
Dean Goodson	TWA Consultant, Elm Dr.
Mike Marice	TWA Consultant
BILL PUGH	(T) CHEEKWAGA
MIKE KAISER	TOWN TONAWANDA
CHARLES J SETTLE	V/O KENMURE
MIKE PATTERSON	ENVIRONMENT 21, LLC
Jaime Davidson	Parsons, Buffalo and Fort Erie Public Bridge Authority



# BUFFALO AND FORT ERIE PUBLIC BRIDGE AUTHORITY

One Peace Bridge Plaza  
Buffalo, New York 14213-2494

## Stormwater Management Program

For additional information on the Authority's Stormwater Management Program (SWMP), or to provide comments or suggestions on the Authority's SWMP or Annual Report:

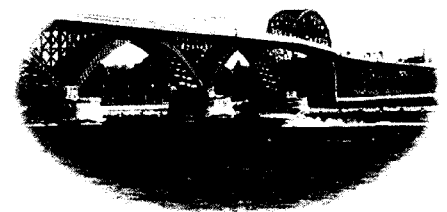
1. Visit the stormwater page on our website:

[www.peacebridge.com](http://www.peacebridge.com)

Coming  
Soon!

2. Contact the Authority's Stormwater Contact:

Anthony Braunscheidel, Facilities Manager  
(716) 884-6744 ext. 242  
[adb@peacebridge.com](mailto:adb@peacebridge.com)



4/28/04 Meeting Handout



# BUFFALO AND FORT ERIE PUBLIC BRIDGE AUTHORITY

One Peace Bridge Plaza  
Buffalo, New York 14213-2494

## Stormwater Management Program

For additional information on the Authority's Stormwater Management Program (SWMP), or to provide comments or suggestions on the Authority's SWMP or Annual Report:

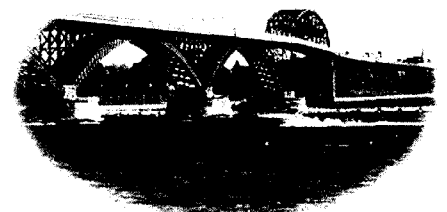
1. Visit the stormwater page on our website:

[www.peacebridge.com](http://www.peacebridge.com)

Coming  
Soon!

2. Contact the Authority's Stormwater Contact:

Anthony Braunscheidel, Facilities Manager  
(716) 884-6744 ext. 242  
[adb@peacebridge.com](mailto:adb@peacebridge.com)



**APPENDIX I**

**COALITION DRAFT STORMWATER MANAGEMENT PLAN OUTLINE**

# Western New York Storm Water Phase II Regional Coalition

## Storm Water Management Plan

### OUTLINE

#### SECTION 1 - General Definitions and Requirements

1. References to the adopted Local Ordinance (Attach Ordinance)
2. Definitions
3. Contact Information
4. General Description of Responsibilities
  - a. Individual Municipalities
  - b. Coalition
5. Types of MS4's
  - a. Traditional
  - b. Non-traditional
  - c. Large
  - d. Small

#### SECTION 2 - Public Education Plan (Insert Public Education Group)

#### SECTION 3 - Illicit Discharge Detection and Elimination (Insert Illicit Discharge Group)

#### SECTION 4 Construction Site Runoff Control

##### A. Municipally Owned and Managed Projects

1. Small Construction and Maintenance Projects

(< 1 Acre)

- a. Refer to O&M / Pollution Prevention Manual
2. Construction Requiring a Permit (> 1 Acre)
  - a. Permit Application and Pollution Prevention Plan
  - b. Implement Plan and Comply with Permit Conditions during Construction

## B. Privately Developed Projects

1. Ordinance Requirements (Minimum)
  - a. Implementation of Soil Erosion and Sediment Control Practices
  - b. Implement Controls regarding Other Wastes Generated Onsite
  - c. Ability to Impose Sanctions
  - d. Outline Relationship Between Local Program and the NYSDEC Construction Storm water Permit Requirements
    - i. Require copies of Permit (NOI) and Pollution Prevention Plan
    - ii. Determine Enforcement mechanisms
      1. Referral to DEC
      2. Self Enforcement
2. Public Review of Construction Projects
  - a. What Projects Already Receive Review?
  - b. What Projects Need to be added to the Review Process?
  - c. Developing Process to Receive and Respond to Citizen Concerns
    - i. Inform Public of the Availability of Permit and Plans for Review
      1. Municipality Posting List of Storm water permit Projects

2. Require Developer Post Notices of Individual Projects
  - a. Provide Standard Language for Posting, Time Period for Comments
3. Town Board Or Planning Board Meetings with Posted Agendas
3. Require Construction Site Plan Review
  - a. Define What projects need to be Reviewed
    - i. Consistent with Storm Water Permit Requirements (1 Acre or larger)
    - ii. Include Outreach and Description information in Standard Information Package for Developers
  - b. Who Determines the Technical Acceptability of the Plan and Issues Permit Approval
    - i. Limited Expertise and Resources within the Municipality
    - ii. Coordinating with NYSDEC for concerns and Approval
    - iii. Incorporate into Existing Process or Municipal Program
      1. Site Plan Review Process
      2. SEQR Review Process
      3. Planning Board Review
      4. Including Management Practices for Other Onsite Wastes
    - iv. Providing a minimum Review of Storm Water Permit Application
      1. Resource Needs
      2. Training Needs
4. Site Inspection and Enforcement of Permit Conditions and Poll. Prevention Plan
  - a. Incorporate into existing onsite inspection programs



- b. Responsibility of Developers through Certification Program
  - i. Services of a consultant to Certify Compliance
    - 1. Qualifications
    - 2. Certification Process
- c. Training for Either Private or Municipal Inspectors
  - i. Development of Appropriate forms and Guidance Materials

## **SECTION 5**

### **Post Construction Storm Water Management**

#### **1. Assess Existing Storm Drainage Facilities**

- a. Identification of Problem Areas
  - i. High Maintenance Areas
  - ii. Capacity Flooding
  - iii. Erosion Areas
  - iv. Water Quality Problems
  - v. Specific Land Use concerns
    - 1. Commercial/ Industrial Use
    - 2. Parking Lots
- b. Identifying and Prioritizing Problem Areas
  - i. Quantity Concerns
    - 1. Flood Complaints from Citizens
    - 2. Input from Highway crews
    - 3. Drainage Committees
    - 4. Information from new development
    - 5. FEMA Flood maps
    - 6. U.S. and State Wetland maps
  - ii. Quality Concerns

1. Complaint/ Illicit Discharge referrals
      2. Water Quality Testing Data
      3. Industrial Storm Water Permit Information
      4. Other Industrial Use information
    - iii. Develop a Ranked list of Problems
      1. Area Specific
      2. Basin wide issues
  - c. Selecting Strategies to Address priority concerns
    - i. Utilizing Design Standards and Criteria
      1. New Development
      2. Change in Land Use
      3. Evaluate and Select the appropriate BMP's
        - a. Utilize guidance compiled by Coalition
    - ii. Develop Specific BMP's or Lists of BMP's for Priority Concerns
      1. Place the responsibility on Developers and/or Land owners
      2. Develop goals and schedules for area wide concerns
2. Regulate Post Construction Run-off Through Local Ordinance
    - a. Define What the Ordinance needs to accomplish
    - b. Assess Existing Ordinances
      - i. Most relate only to Quantity
      - ii. Meeting the General Requirements of the Erie –Niagara Planning Board Guidance
    - c. Update Any existing Ordinance to reference current NYS Storm water Design Manual

- i. Include provisions for protecting Water Quality
    - d. Ordinance should link Post Construction Design to the Construction Permit Process
      - i. Long term design done prior to new construction
      - ii. Reference Back To SECTION 4
      - iii. Assuring Long Term Maintenance of new facilities
        - 1. Retention Facilities
          - a. Public or Private
          - b. Municipally operate vs. Homeowners Assoc.
        - 2. Development of Drainage Districts
          - a. Taxable entity
          - b. Address special needs
          - c. Based upon the actual increased costs in an drainage area
          - d. District commissions the Municipality or a consultant to do work
3. Develop management practice inspection and maintenance Program
  - a. Refer to P2 and Good Housekeeping Section for municipal storm facilities
  - b. Make sure design and permit requirements include plans for long term maintenance and operation
4. Recommend the Use of the New York State Storm water Management Design Manual

**SECTION 6**      **Pollution Prevention / Good House Keeping Practices  
(Insert From Other Group)**

**SECTION 7**      **Measurable Goals**

**1. Coalition Goals**

- a. List**
- b. Coalition Support**
- c. Individual Responsibilities**

**2. Individual or Modified Goals**

- a. Minimum requirements**
- b. Limiting scope for Small and Non traditional MS4's**

**APPENDIX J**

**BUFFALO STATE COLLEGE OUTFALL MAPPING PROPOSAL**



April 10, 2003

Mr. Thomas Hersey  
County of Erie  
Department of Environment and Planning  
95 Franklin St.  
Buffalo, NY 14202

Dear Mr. Hersey

As discussed, I am pleased to provide the following cost estimate for database development and GIS mapping related to the County's stormwater runoff initiative. This cost estimate strictly is for the first phase of the project in which discharge points associated with County roads are inventoried and mapped.

Several points of clarification also need to be made here. First, Mary Perrelli and I believe that it is worthwhile to digitally photograph each site and hotlink these photos to the GIS. This will aid the inspection process and we have included this effort in our estimate. Based on our understanding that you identified 1800 total potential sites where a County road crossed a waterway, we adjusted this down to 1200 to account for areas outside of the urban/suburban designation subject to the EPA regulations. This number of sites (1200) was used to estimate our time of effort for the field component of the project. We will use two field crews of two students to conduct the field surveys. We expect that the work actually will take more than the 40 days allotted to pay the student crews and to cover this each student also will do a three credit internship with us. The internships are not charged to the County.

We have identified a student, Mr. Paul Speich, who will undertake an unpaid internship with us, starting immediately. Paul's task, under our guidance, will be to develop an SOP that can be used at each site to guide the data collection process (e.g. use of GPS, interface of the GPS with GIS, digital photography and annotation of photographs) and develop an appropriate database structure.

**Buffalo State**  
*State University of New York*

## Buffalo State Budget

Line Item	Cost
Two crews of students, two students per crew to conduct GPS and GIS inventory of discharge points	
- 4 students x 40 days x 8 hrs/day x \$10/hr	\$12,800
- fringe benefit (6% of salary)	768
- indirect cost (22.1% of salary)	2,828.80
Mary Perrelli, GIS and database development, student supervision, report writing, meetings	
- 208 hours x \$17.42/hour	3,623.36
- fringe benefit (34% of salary)	1,231.94
- indirect cost (22.1% of salary)	800.76
Kim Irvine, Project supervision, report writing, meetings	
- 40 hours x \$31/hour	1,240
- fringe benefit (34% of salary)	421.60
- indirect cost (22.1% of salary)	274.04
Mileage for field crews	3,840
Supplies (e.g. field books, differential correction service, report reproduction, etc.)	1,100
<b>GRAND TOTAL</b>	<b>\$28,928.50</b>

- Buffalo State will conduct all GPS, database development, and GIS work (in consultation with Erie County) and upon completion will deliver the database and GIS layers to the County.
- Timeline: Spring, 2004 through Fall, 2004; exact dates to be determined.

If you have any further questions regarding this matter, please do not hesitate to contact me at 878-6204. Thank you for this opportunity and we look forward to working with you.

Sincerely,

Kim Irvine, Professor and Chair  
Geography/Planning

## GIS Capital Equipment Budget for Stormwater Management Program

Item	Number	Cost/ Unit	Cost
Tablet Computers for locating outfalls in the field and data entry (similar to Compaq Tablet PC TC1000)	2	\$ 2,000.00	\$ 4,000.00
Desktop Computer for long-term maintenance of geographic database	1	\$ 2,200.00	\$ 2,200.00
ArcGIS software for computers	3	\$ 1,500.00	\$ 4,500.00
GPS units for tablet computers (similar to Trimble Pathfinder Pocket receiver)	2	\$ 500.00	\$ 1,000.00
GPS differential correction software (similar to GPSCorrect for ArcPAD)	2	\$ 500.00	\$ 1,000.00
<b>TOTAL GIS Capital Budget</b>			<b>\$ 12,700.00</b>

Note: This budget assumes that 2 teams will be used for data collection. Add \$4,500 for each additional team used.

### Issues:

1. Can Buffalo State install ArcGIS software on Tablet PCs for this project, and remove it at project end- to reduce costs to County?
2. Can Buffalo State use their differential correction subscription for this project, or does the County also need to include this as a cost? If so, how much?



**APPENDIX K**

**ERIE COUNTY SOLICITATION FOR OUTFALL MAPPING SERVICES**

## **REQUEST FOR PROPOSALS**



### **ERIE COUNTY DEPARTMENT OF ENVIRONMENT & PLANNING**

### **STORM SEWER OUTFALL IDENTIFICATION AND GIS MAPPING SERVICES**

#### **BACKGROUND**

The Erie County Department of Environment and Planning (ECDEP) is seeking proposals for Storm Sewer Outfall Identification and GIS Mapping services.

The New York State Department of Environmental Conservation, in accordance with Federal Clean Water Act legislation, has issued regulations regarding municipal stormwater management. These regulations referred to as the "Phase II" Stormwater regulations, establish significant new requirements for municipalities that own and manage separate storm sewer systems. Each of the identified regulated municipalities must file a notice of intent under the New York State Pollutant Discharge Elimination System (SPDES) General Permit. One of the requirements associated with the General Permit is to develop an inventory and to map all storm sewer outfalls. A storm sewer outfall is defined as any point in a storm sewer system where stormwater enters a water body or enters another municipality's storm sewer system.

There are 31 Municipal Separate Storm Sewer Systems (MS4's) in Erie County and 10 MS4's in Niagara County that are subject to the regulations due to their location within a designated U.S. Census-defined Urbanized Areas. These municipalities established a Western New York Stormwater Coalition and are working cooperatively to meet the Stormwater Phase II requirements. A map showing the urbanized areas in Erie and Niagara Counties is attached (Attachment 1). A list of the regulated municipalities along with an identified storm water contact person is also attached (Attachment 2).

A rough estimate of the number of Erie County stormwater outfalls that enter a waterbody that will have to be inventoried and mapped was produced using a GIS generated map illustrating the intersection of all roadways and waterbodies. This initial effort identified approximately 2,000 potential outfalls to waterbodies in Erie County that will need to be field verified, inventoried and mapped as part of this effort. Please note this is only an estimate of the outfalls to waterbodies and does not include the outfalls from one MS4's system to another's. Consultants are encouraged to determine their own estimates regarding the number of outfalls (both to waterbodies and between MS4 systems) before preparing their Base proposal and bid alternates in their proposals.

Funding is currently available for the first phase of the mapping effort (Part I) as described below. It is anticipated that the resources for the remaining phases will become available by June

2004. The County is requesting that perspective bidders include separate alternate bid proposals to include the work for each of the additional phases along with a base bid for Phase I.

The four phases that should be addressed in the proposal are described as follows:

**Baseline Proposal**

**Part I**, inventory and map all *Erie County* owned and/or operated outfalls in the 31 U.S. Census defined Urbanized Areas in Erie County;

**Alternate Proposal A (Part II work in addition to Baseline Proposal)**

**Part II**, inventory and map all *municipally* owned and/or operated outfalls in the 31 U.S. Census defined Urbanized Areas in Erie County.

**Alternate Proposal B (Part III work in addition to Baseline Proposal)**

**Part III**, inventory and map all *Niagara County* owned and/or operated outfalls in the 10 U.S. Census defined Urbanized Areas in Niagara County.

**Alternate Proposal C (Part IV work in addition to Baseline Proposal)**

**Part IV**, inventory and map all *municipally* owned and/or operated outfalls in the 10 U.S. Census defined Urbanized Areas in Niagara County.

**WORK PROGRAM**

The following is a general framework of inventory and mapping services to be provided by the consultant:

- Develop a Standard Operating Procedure for Storm Sewer Outfall Identification and GIS Mapping to include services listed below. A second list of contacts from both Erie and Niagara County Highway departments, as well as several of the municipal highway departments has been attached (Attachment 3) to provide an additional resource to the consultants for proposal development. These contacts have agreed to assist the consultants in determining the nature and availability of existing plans, maps and other data related to their specific storm water systems.
- Identification of all of the stormwater outfall discharge points within U.S. Census-defined Urbanized Areas subject to Federal Stormwater Phase II regulations.
- Conduct a review of existing maps and storm sewer plans for each regulated County and municipality to determine the approximate location of the regulated outfalls from one MS4 system to another MS4 system as well as any outfalls to waterbodies. A complete list of the contacts for each of the municipalities will be provided to the Contractor.
- Field surveys to obtain Global Positioning System (GPS) coordinates and digital images for each outfall discharge point. The contractor will use GPS to locate the manhole at which the outfalls occur from one MS4 system to another. Under no circumstances will the Contractor need to open or enter a manhole to verify outfall locations. If the outfall location cannot be identified from existing records it will be the responsibility of the municipalities involved to conduct any additional investigation.
- Interface GPS with Geographic Information System (GIS) mapping; all GIS work should be delivered in ESRI Shapefiles in the New York State Plane Coordinate System, NAD83, West Zone, Feet.

- Link digital photographs to the GPS locations of outfalls.
- Development of attributes and appropriate database will be accomplished by contractor with assistance from the ECDEP
- The county will purchase one Trimble GeoXT handheld device with submeter GPS and Arcpad Software, which will be available for the contractor to use for the duration of the contract work. Therefore, the contractor should consider the use of two or more field investigation crews to conduct the field surveys, one equipped with the GPS tools provided by the county and at least one fully equipped by the contractor.

### **PROPOSAL FORMAT**

Proposals shall be structured in the following manner:

- Cover letter
- Statement of understanding of the project
- Proposed methodology and project schedule
- Qualifications
  - Overall qualifications
  - Description of project team, including resumes
  - An organizational chart indicating staff and their responsibilities
  - Relevant project experience
- References
- Cost to complete:
  - Base Proposal : Part I
  - Alternate Bid #1: Include Part II work in addition to the Base proposal (Phase I)
  - Alternate Bid #2: Include Part III work in addition to the Alternate Bid #1 proposal (Part I & II)
  - Alternate Bid #3: Include Part IV work in addition to the Alternate Bid #2 proposal (Part I, II & III)

### **EVALUATION**

The Consultant Selection Committee will evaluate all Proposals to select a firm. The Proposals will be comparatively evaluated based upon the requirements stated in the body of this RFP. Interviews will be conducted only if deemed necessary.

The selected firms will be invited by the ECDEP to enter into a Storm Sewer Outfall Identification and Mapping Services Agreement.

The contract(s) will be specific to the Part of the project undertaken and will include the services listed above. It should be noted that the consultant will be selected based on experience, qualifications and cost.

The Storm Sewer Outfall Identification and GIS Mapping Services Agreement for each phase will be valid for a period of one year. The County reserves the option to renew them periodically thereafter.

SUBMISSION

Proposal Due: May XX, 2004

Contract Term: One year to complete the base proposal, along with a maximum of one additional year to complete the additional phases.

Location: Erie County

Contact: Thomas R. Hersey, Jr.  
Erie County Department of Environment and Planning  
95 Franklin Street  
Buffalo, NY 14202  
(716) 858-6370  
(716) 858-7713 FAX

Submit to: Same As Above

Submit three (3) bound copies of your proposal to Thomas R. Hersey, Jr. Room 1077, Erie County Department of Environment and Planning, 95 Franklin Street, Buffalo, New York, 14202, on or before 2:00 p.m. on April XX, 2004.

The Proposal shall not exceed twenty-five (25) pages, double sided (printed on both sides) or fifty (50) pages, single sided (printed on one side). Sectional dividers may be used; they will not be counted toward the maximum number of pages allowed. A one-page cover letter may also be included which will not be counted towards the maximum number of pages allowed. The proposal shall include a clear table of contents addressing all the requirements of the RFP. These requirements will be strictly enforced.

MISCELLANEOUS

The ECDEP reserves the right to reject any or all of the Proposals. This invitation does not commit the ECDEP to accept any Proposals and does not obligate ECDEP for any costs associated with the preparation of the same.

The ECDEP reserves the right to review, comment, and request modifications to the proposed project team.

The selected consultant will be required to comply with any insurance requirements stipulated by Erie County.

If you have questions regarding this RFP, please call Thomas R. Hersey, at (716) 858-6370, Monday through Friday, between 9:00 a.m. and 3:00 p.m.

Reference your submittals as: **Proposal for Storm Sewer Outfall Identification and GIS Mapping Services for the County of Erie.**

**ATTACHMENT 1**

Map of U.S. Census-defined Urbanized Areas for Erie and Niagara Counties

**ATTACHMENT 2**

List of Regulated Municipalities Participating in the Coalition

**ATTACHMENT 3**

List of Highway Department and Other Municipal Contacts to Assist Contractors with proposal  
Development

Karl Dimmig, Erie County Division of Highways, phone: (716) 858-8371  
Richard Eakin, Niagara County Highway Department, phone: (716) 439-7251  
Harry Milligan, (T) Alden, Highway Department, phone: (716)  
Bruce Sitzman, (V) Alden, Highway Department, phone: (716)  
Jennifer Coughlin, (T) Amherst, Engineering Department, phone: (716) 631-7154  
Ronald Maggs, (T) Eden, Highway Department, phone: (716) 992 - 3823  
John Whitney, (T) Grand Island, Engineering Department, Phone: (716) 773 – 9600 ext. 629