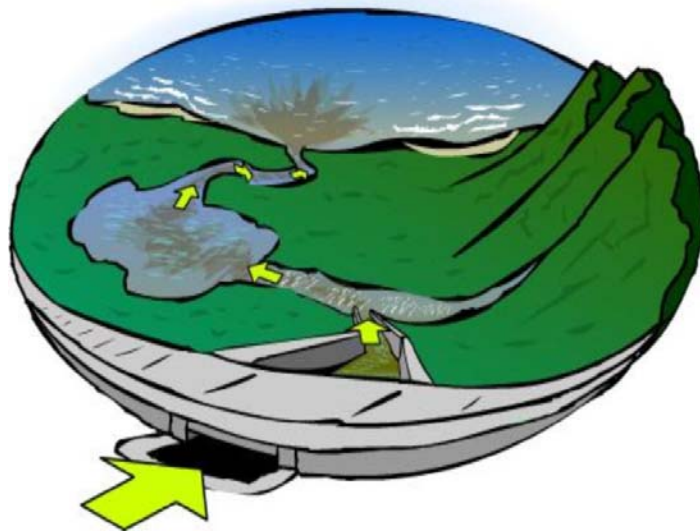


# Stormwater Public Education Survey



**September 2010**

Central New York Regional Planning & Development Board  
126 North Salina Street  
100 Clinton Square, Suite 200  
Syracuse NY 13202

# **Stormwater Public Education Survey**

## **TABLE OF CONTENTS**

**Introduction, *page 3***

**Survey Methodology, *page 3***

**Survey Considerations, *page 4***

**Survey Distribution and Incentive to Participate, *page 5***

**2010 Results and Interpretations, *page 5***

General Response Section, *page 5*

Property Maintenance Habits Section, *page 6*

General Opinion Section, *page 7*

**Comparison and Assessment of the 2007 and the 2010 Survey Results, *page 9***

**Recommendations, *page 12***

### **APPENDICES**

A. 2010 Stormwater Survey

B. 2007 and 2010 Survey Tabulations

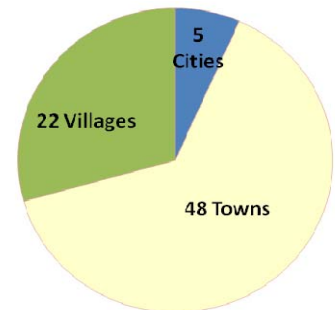
## Introduction

In 2002, the New York State Department of Environmental Conservation issued the SPDES General Permit for Stormwater Discharges from MS4 communities under Permit No. GP-02-02. These municipalities are required to meet six minimum control measures, including one relating to the development and implementation of a public education program. The Central New York Regional Planning and Development Board (CNY RPDB) created and distributed a Stormwater Survey in 2007 to help municipalities define an effective stormwater public education program.

In 2010, CNY RPDB reissued the 2007 survey in order to assess the value of the ongoing public education program. The results of this survey were evaluated in relation to the findings from a similar survey that was distributed in 2007 (Syracuse Urbanized Area Stormwater Public Education Survey, February 2007, CNY RPDB).

The 2007 survey was distributed to Municipal Separate Stormwater Sewer Systems (MS4) regulated municipalities. 864 people completed the 2007 survey, representing MS4 municipalities in the Syracuse Urban Area (SUA). Of the 29 cities, town and villages in the SUA, 14 voluntarily participated. The survey was distributed to an estimated 4,798 residences and had an 18% response rate.

602 individuals from MS4 and non-MS4 communities participated in the 2010 survey. They represented 75 New York State municipalities, including 5 cities, 48 towns, and 22 villages. 30 of these municipalities were MS4 communities.



The following sections of this report describe the survey design and distribution methodology, present an overview of the 2010 findings, and provide a comparison between the 2007 and the 2010 survey results. A list of recommendations is also provided to help municipalities develop and select appropriate education and outreach activities and effective methods to help comply with stormwater goals and permit requirements.

## Survey Methodology

The CNY RPDB developed the survey in order to learn more about public knowledge and overall perceptions regarding stormwater runoff and impacts on their communities. The survey was also designed to assess the effectiveness of stormwater public education programs to-date. Survey responses were analyzed to help influence the type of educational programming for clean water throughout central New York and the method by which the programs are administered. The 2010 survey was presented in three sections:

1. General response questions - These questions were designed to help determine the perceived significance of potential water quality threats in Central New York.

2. Property maintenance habits - This section was designed to help municipalities understand if certain everyday activities are impacting water quality in Central New York and therefore should be targeted for additional education and outreach.
3. General opinion questions - This section was intended to help municipalities improve the level and delivery of stormwater educational messages in Central New York.

The 8-page survey contained 30 questions that were relatively easy to comprehend. The estimated time required for survey completion was approximately ten minutes. All survey responses were kept confidential.

The following question formats were utilized in the survey:

- Most questions allowed only a single answer response (“the overall quality of the streams and lakes in my community is...”)
- Several questions were multiple answer responses whereby the respondent could check all answers that apply, such as the question that asked how people dispose of unwanted household chemicals.
- One question (#1) required a written response for the municipality name.

The respondents were permitted to skip questions. The number of responses for each question therefore varied. Of the 602 that started the survey, 561 (93%) completed it and answered all of the questions.

The survey was presented to the public through an Internet software tool known as Survey Monkey which was relatively easy to design and launch. Additional advantages to using Survey Monkey were cost, design flexibility, the ability to reach an unlimited number of people with minimal additional effort, the ease of distribution, and the relative ease of data collection and analysis.

## Survey Considerations

The 2007 survey was distributed by mail to a targeted group of people living in the Syracuse Urban Area. As such, responses were limited to MS4 residents. The 2010 survey, however, was distributed in electronic format on the CNY RPDB website. The public was also invited to complete the survey through the Onondaga County website, libraries, and special mailings. Survey notices and requests to participate were posted at public use terminals in public libraries throughout the SUA. Distribution of the 2010 survey was widespread and, consequently, included responses from a wider group of people representing both MS4 and non-MS4 communities.

Survey responses may have been influenced by socio economic considerations, as completion of the survey required access to a computer. In addition, questions referring to lawn mowing and soil fertilization would be more applicable to homeowners, as opposed to people living in apartments, condominiums, or college dormitories.

## Survey Distribution and Incentive to Participate

The stormwater survey was distributed in the following ways:

- It was posted on the stormwater page of the CNY RPDB web site ([www.cnyrpdb.org/stormwater](http://www.cnyrpdb.org/stormwater));
- It was posted on the Onondaga County website;
- A press release about the survey was printed in the Syracuse Post Standard;
- Information about the survey was sent to municipal contacts throughout the SUA;
- Posters were sent to libraries in Onondaga, Madison, and Cayuga counties;
- The stormwater survey link was added to municipal websites.

To access the survey, respondents were asked to visit the stormwater page of the CNY RPDB web site ([www.cnyrpdb.org/stormwater](http://www.cnyrpdb.org/stormwater)). The deadline for completing the survey was July 31, 2010.

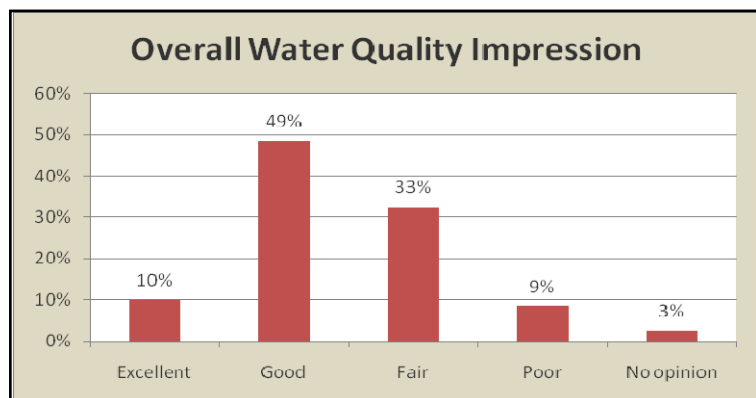
As an incentive to participate, anyone completing the survey was eligible to win a free 55 gallon rain barrel that was donated by Cornell University Cooperative Extension of Onondaga County.

## 2010 Results and Interpretations

### I. General Response Section

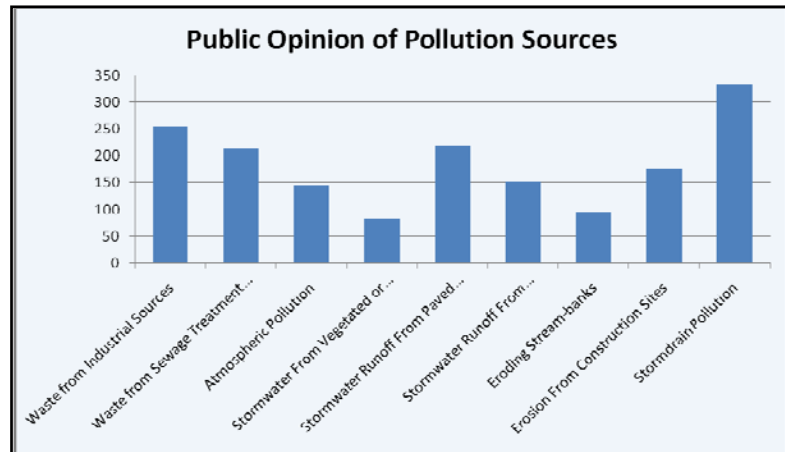
Results and interpretations from the General Response Section are summarized below. These questions were designed to determine the perceived significance of potential water quality threats in Central New York. Comprehensive results for each question are summarized in Appendix B, "2010 Survey Tabulations".

- The majority of respondents (49%) in 2010 considered overall water quality in their community to be good and 10% considered it to be excellent. The remaining 43% had fair or poor impressions or had no opinion.

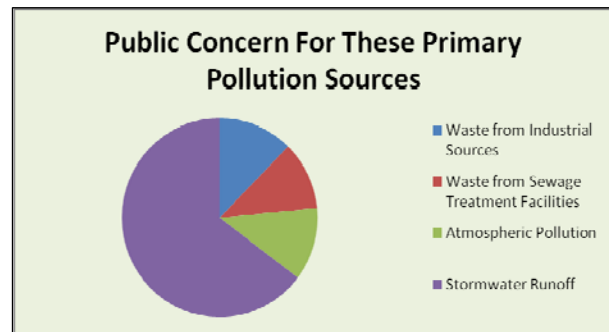


- 79% considered waste discharges from industrial sources significant or very significant source of water pollution and 21% said it was not significant.
- A smaller percentage (71%) considered waste discharges from sewage treatment facilities to be a significant or very significant source of water pollution in their community while 29% said that this was not a significant source.

- 76% considered air pollution either significant or very significant. 24% indicated that atmospheric pollutants were not significant.
- Nearly half (49%) of the respondents felt that stormwater/rainfall runoff from vegetated or forested land to be a significant or very significant source of water pollution.
- 81% consider stormwater runoff from paved surfaces to be a significant or very significant source of water pollution, compared to 19% who did not consider it to be significant.



- When all the categories were evaluated, respondents expressed the greatest concern for the dumping of oil, grease, household chemicals and trash into storm drains.
- A significant majority (72%) considered stormwater runoff from residential neighborhoods to be a major source of water pollution.
- 58% considered eroding stream banks to be a significant or very significant source of water pollution.
- 72% considered active construction sites to be a significant or very significant source of pollution and 28% said this source was not significant.



## 2. Property Maintenance Habits Section

Results and interpretations from the questions in the Property Maintenance Habits Section are found below. This section was designed to help improve understanding of the extent that certain everyday activities are impacting water quality in Central New York. Comprehensive results for each question are summarized in Appendix B, “2010 Survey Tabulations”.

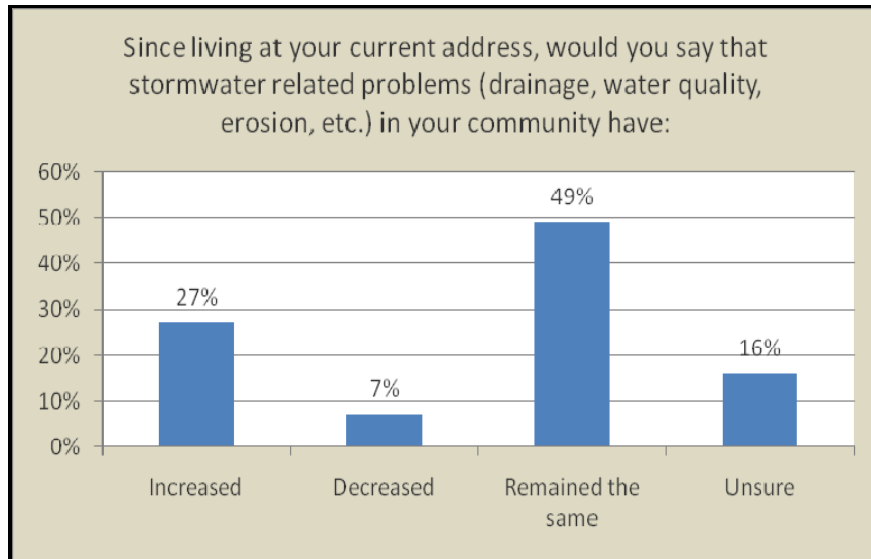
- 96% of the respondents that have a lawn take responsibility for mowing it. The majority leaves the clippings on the lawn (85%) and/or composts them (23%). 2% said they dispose of the clippings with their other household garbage.

- Most people (68%) don't apply fertilizer to their lawns. Of the ones that do, 79% apply fertilizer once or twice a year.
- Nearly 90% had never tested their soil and about 30% didn't know that lawn soil can be tested to determine fertilizer needs.
- Of the respondents that have vehicles, the majority (70%) washes their cars in a commercial car wash, 31% wash their cars on a paved surface (driveway or road), and 7% wash them on the lawn.
- Of the respondents that change their car oil, 95% take the used oil to a recycling facility. Just over 2% pour it either down the storm drain, on the grass, soil, or gravel. Nearly 4% dispose of the oil in a sealed container along with their other household trash.
- Over 82% of survey responders take household chemical waste (such as cleaners, paint thinner, pesticides) to a local household hazardous waste center/collection event. 25%, however, occasionally or routinely dispose of household chemical waste with other household trash, dilute them with water and pour them on the ground, or pour them down the sink or toilet.
- Of the respondents that have a dog, over 43% pick up the waste either all or most of the time. Over 11% rarely or never pick up the waste.

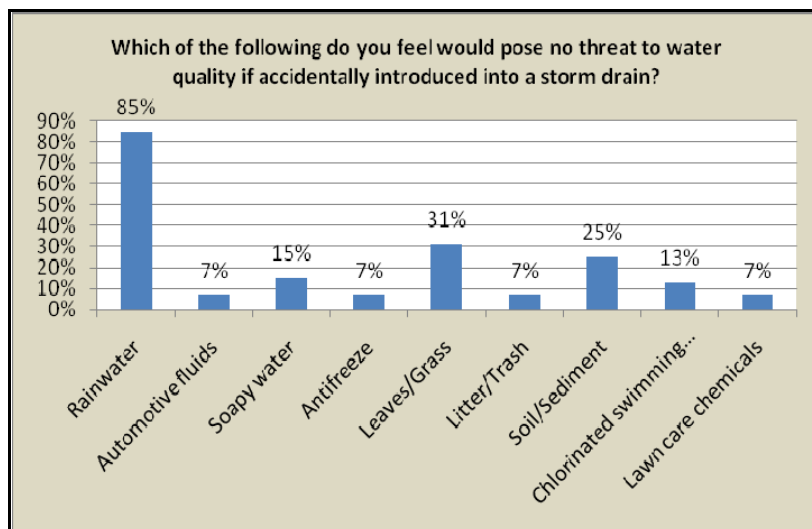
### **3. General Opinion Section**

Results and interpretations of the General Opinion Section are found below. This section was designed to help municipalities improve the level and delivery of stormwater educational messages in Central New York. As with the two previous sections, comprehensive results for each of these questions are summarized in Appendix B, "2010 Survey Tabulations".

- Most of the survey respondents (97%) felt that their actions either directly (58%) or indirectly (39%) influence water quality in Central New York.
- 49% believe that stormwater runoff flows into nearby lakes and streams. The remainder thought that it flowed to a sewage, wastewater, or stormwater treatment facility or to nearby fields and yards.
- Most respondents (97%) know that people throughout the watershed (not just those who live alongside streams, rivers and lakes) need to be mindful of how land use affects water quality. 2% feel that only people that live alongside streams, rivers, and lakes need to worry about how they are affecting water quality.
- Survey respondents felt that stormwater related problems in their community had either stayed the same (49%) or had gotten worse (27%). 16% were unsure and 7% thought that stormwater issues had improved.



- The majority of respondents (85%) felt that rainwater poses no threat to water quality when introduced to the storm drain.



- The majority of respondents (91%) expressed an interest in learning more about stormwater and water quality.
- Web-based resources (78%) and newspaper articles (50%) are the outreach methods that most people rely on for information. The lowest percentage of responses (32%) listed municipal newsletters and publications as an effective form of communication. 76% read daily newspapers. The lowest percentage of respondents (27%) read direct mail advertisements.
- Most people were interested in learning more about landscaping for water quality (75%) and general topics on water quality (73%).

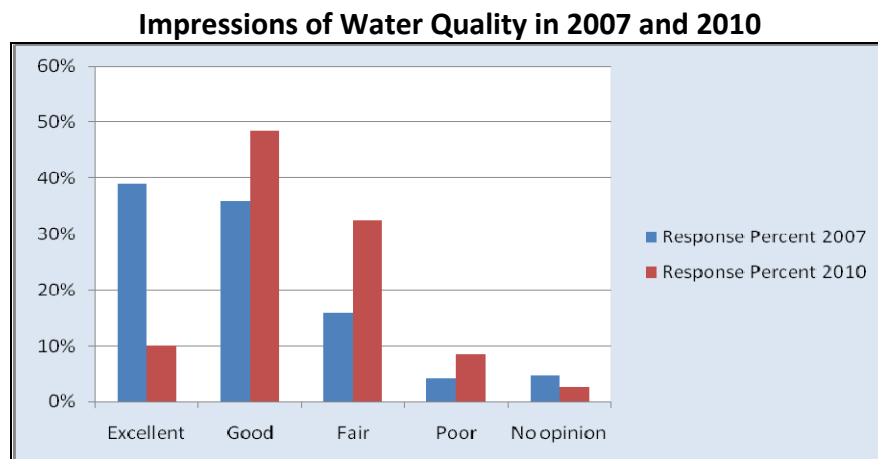




## Comparison and Assessment of the 2007 and the 2010 Survey Results

The primary objective of this report was to make recommendations for improving the regional stormwater public education program. An assessment of the current program’s overall ability to increase awareness and change public behavior was based on a comparison of the 2007 and 2010 survey results. The following section summarizes these comparisons.

Respondents in 2010 had a lower impression of water quality (58% felt that it was excellent or good) than in 2007, when 75% indicated that it was excellent or good. In the absence of water quality monitoring data, the change in public perceptions may be attributed to a growing awareness of local water quality in general. One reason for the increased negative perceptions might be related to the increased number of public education messages stressing the need to improve and protect water quality.



Impressions of the Overall Water Quality of the Streams and Lakes				
Answer Options	Response Percent in 2007		Response Percent in 2010	
Excellent	39%	75%	10%	58%
Good	36%		48%	
Fair	16%	24%	32%	42%
Poor	4%		8%	
No opinion	4%		2%	

When responding to different types of stormwater pollution, there was a greater awareness of the importance of vegetated land cover in 2010 than in 2007. This increase may also be attributed to public education efforts since 2007 as several publications and targeted outreach efforts focused specifically on this topic.

**Public Concern for Stormwater Pollution Sources as Being “Significant” or “Very Significant”**

	Stormwater From Vegetated or Forest Land	Stormwater Runoff From Paved Surfaces	Stormwater Runoff From Residential Neighborhoods	Eroding Stream-banks	Erosion From Construction Sites	Storm Drain Pollution
<b>2010 Survey</b>	47%	80%	71%	57%	72%	83%
<b>2007 Survey</b>	73%	77%	68%	64%	70%	80%

Survey results from the two years show an improvement with the manner in which homeowners deal with grass clippings from their lawns. Success with educational literature and web-based information since 2007 may have helped to strengthen public awareness of landscaping techniques that protect water resources. A greater percentage in 2010 either left the clippings on the lawn or composted them. About the same percentage of people leave the clippings on the lawn but many more are now using a compost pile. In 2007, 6% of the respondents put the clippings in the compost, but in 2010 that number rose to 23%. About the same percentage said they bag the clippings and dispose of them with other household garbage.

<b>What Do You Do With Your Grass Clippings?</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>
<b>Leave them on the lawn</b>	<b>82%</b>	<b>85%</b>
<b>Bag and throw them away with other household garbage</b>	<b>1%</b>	<b>2%</b>
<b>Compost them</b>	<b>6%</b>	<b>23%</b>

Most of respondents from both years have never tested their soil but do apply fertilizer. However, there was a decrease in the number of people applying fertilizer in 2010 (32%) and those that applied it in 2007 (47%). Educational programming since 2007, such as literature and web-based information, improved homeowner awareness of nutrient loading, phosphorus impacts on local waters, and natural soil fertility levels that support healthy lawns without the need for fertilizers.

More people (70%) use a commercial car wash in 2010 than they did in 2007 (56%). Of the respondents that wash their cars at home, fewer people wash them on the driveway (31% in 2010 compared to 41% in 2007) and more people use the lawn (7% in 2010 and 2% in 2007). It is not clear if this change can be directly attributed to stormwater education efforts or the rise in the number of customer friendly commercial car washing establishments offering a range in services and price points.

Of the people that change their own car oil, the majority in both surveys took the oil to a recycling facility (95% in 2010 and 76% in 2007). This improvement can be attributed to effective educational programming between 2007 and 2010. Nearly 6% in 2010 disposed of the oil with other household trash, poured it on the grass or soil, or poured it down a storm drain. A smaller percentage (0.9%) did the same in 2007.

A greater percentage of respondents in 2010 (82%) took their household wastes (paint thinner, cleaners, pesticides, etc.) to hazardous waste collection centers or to a collection event. Only 76% disposed of their waste in this manner in 2007.

Although public awareness regarding illicit disposal practices of both motor oil and other household waste is encouraging, the impacts of these negative actions, coupled with the fact that they are still ongoing to some degree, warrants additional educational outreach.

What do you do with leftover household chemicals such as cleaners, paint thinner, pesticides, etc.? Check all that apply.		
	2007 Response Percent	2010 Response Percent
Pour them in the sink, toilet or other indoor drain	3%	5%
Take them to a local household hazardous waste center/collection event	76%	82%
Dilute them with water and pour on the ground outdoors	1%	1%
Dispose of them with other household trash	17%	17%

A smaller percentage of respondents in 2010 (43%) are picking up after their dogs “always” or “often” than in 2007 (84%). This was surprising, considering the increasing presence of local laws in addition to neighbor perception and expectations. This difference may have been influenced by the increased number of respondents in 2010 that live in rural communities where dogs are more often allowed to roam freely. Over the past two years, dog owners have been a primary target audience for the public education program. The current results suggest that past efforts have been ineffective and should be revised and continued.

If you have a dog, how often do you pick up its waste?				
	2007 Response Percent		2010 Response Percent	
<b>Always</b>	57%	84%	31%	43%
<b>Often</b>	27%		12%	
<b>Occasionally</b>	11%	15%	6%	10%
<b>Never</b>	4%		4%	

## Recommendations

The following recommendations for the Stormwater Education Program were developed after reviewing the 2010 survey results and comparing them to responses from the 2007 survey. After a review of both surveys, it appears that the overall stormwater education program is working, but there are areas that still need to be addressed, such as:

- illicit discharges to storm sewer systems;
- the path and fate of stormwater;
- the contribution of pollutants resulting from stormwater vs. permitted industrial and wastewater treatment plants
- the benefits of maintaining vegetated and forested lands;

- the impacts of sediment on water quality and the importance of stream bank buffers; and
- the responsibilities of pet owners to clean-up after their pets.

Reinforcement of these messages will help to emphasize the importance of controlling the quality and quantity of stormwater pollution, while encouraging the general public homeowner to make lifestyle changes that can improve water quality.

Over the past several years, CNY RPDB has worked with municipalities on stormwater education projects such as newspaper inserts, posters, fact sheets, and brochures. Seasonal literature was distributed to specific target audiences such as gardeners, homeowners with swimming pools, school students, and dog owners. Stormwater PowerPoint presentations were also developed for planning board members and other municipal officials.

A comparison of the 2007 and 2010 survey results support the need to maintain a focused public stormwater education program. Four-page Syracuse newspaper inserts have the potential to reach the largest number of homes and 76% of 2010 survey respondents indicated that they rely on daily newspapers for information. Inserts should be printed on a biannual or quarterly basis in order to raise and maintain public awareness of water quality issues and to encourage homeowner participation in reducing stormwater runoff.

Phosphorus and sediment continue to be the primary pollutants of concern throughout Central New York and should be the focus of nonpoint source pollution information. A comprehensive selection of stormwater control material is available on the Internet and can be used for local projects. The CNY RPDB stormwater website (<http://www.cnyrpdb.org/stormwater/>) contains reports, PowerPoint slide shows, brochures, posters, and fact sheets that can be downloaded and customized for specific target audiences.

A summary of specific recommendations is presented below.

- A higher percentage of respondents in the 2010 survey (41%) indicated that water quality was either fair or poor than in the 2007 survey (20%). Without knowing what the basis for that perceived change is, it is assumed that respondents are more aware of water quality, possibly as a result in an increased number of water quality protection messages being delivered through this program and others, such as the Onondaga County's "Save the Rain" campaign.

As water quality monitoring is beyond the scope of the stormwater education program, efforts should continue to be made to keep the water quality in the consciousness of the general public. Public awareness of water quality needs is the first step toward changing public behaviors.

- A continued focus should be placed on teaching the public that stormwater leads directly to local waterways. Nearly 54% in 2010 and 31% in 2007 thought that stormwater is treated

before being discharged into local waterways. Homeowner education programs should continue to emphasize the harm in dumping household chemicals into stormdrains and the potential damage to water quality in lakes and streams.

- The recent statewide ban on the phosphorus content of lawn fertilizers will greatly help reduce the amount of phosphorus in stormwater runoff resulting from incorrect lawn fertilization practices. Phosphate fertilizer will still be available for establishing new lawn on barren soil. Encourage homeowners to test their soil before applying fertilizer. Homeowners can save time and money by applying fertilizer based on nutrient needs. Homeowners should be encouraged to maintain the correct soil pH to improve the efficiency of nutrient absorption, and never apply fertilizer before a rainstorm as this can cause fertilizer to flow into lakes and streams. This type of message should be reinforced in household waste collection schedules, on posters placed on municipal bulletin boards, and in fact sheets displayed on the counters of home and garden stores.
- Soil test kits are currently available at county Cooperative Extension offices and home and garden centers. Municipalities should work with these businesses as well as local garden clubs to promote better landscaping practices and the benefits of maintaining dense ground cover. Demonstration projects such as rain gardens planted in public areas such as parks are also an effective way to share information about how effective landscaping methods can control stormwater runoff.
- Provide information to the public on ways to reduce erosion and on the damaging impacts of sediment runoff. Provide specific guidelines for the installation of shoreline buffer strips, along with a list of native plants and nurseries where they can be purchased.
- Provide guidance about correct methods for the disposal of yard and household waste and automotive chemicals. All gardening products, pet waste, pesticides, oil, and gasoline should be kept out of the storm drains.

Responses in both surveys show that the disposal of household waste into storm drains remains a significant concern. County agencies and municipalities should work together to schedule and promote collection events for household waste. Understanding that there are limitations on where such events can be safely held, efforts should be made to hold them in convenient locations so that people are more inclined to participate. Posters and brochures placed in libraries and other public locations can provide a continual reminder that household and yard waste should never be placed down storm drains.

- A lower percentage of respondents in 2010 (43%) “always” or “often” pick up after their dogs, compared to the 84% response rate in 2007. Fact sheets and information on proper disposal methods should be distributed when dog licenses are purchased and should be available at veterinary offices and dog shelters. Educational posters and pet waste stations (with plastic bags and waste receptacle) in local parks should be encouraged.

- 2010 Survey results show that 25% occasionally or routinely dispose of household chemical waste with other household trash, dilute them with water and pour them on the ground, or pour them down the sink or toilet. This implies that the public needs a better understanding of how these disposal methods could impair groundwater while transmitting toxic material to local waterways. Provide stormwater educational literature and programs that incorporate groundwater characteristics and the importance of proper disposal of toxic materials.
- Survey respondents are interested in receiving additional information about stormwater and a high percentage in 2010 indicated that they rely on websites and daily newspapers for information. Implement education opportunities through creative, colorful websites, brochures, and newspaper inserts to have the greatest impact and to reach a widest target audience.
- Syracuse newspaper inserts have the potential to reach a large number of homes. Inserts with stormwater information should be printed several times each year in order to raise public awareness of water quality issues and to encourage homeowner participation in reducing stormwater runoff on their properties and within their communities.
- Encourage water quality education programming for school students in order to shape environmental perception. Creative, colorful publications such as brochures and book marks can also reach a secondary group – the parents and families of the students. Encourage school districts to pursue opportunities to incorporate stormwater information in well-established school programs such as Project WET and Project Watershed.
- Survey results show that websites are the most preferred form of communication. The CNY RPDB stormwater website (<http://www.cnyrpdb.org/stormwater/>) should be updated in order to enhance the manner in which stormwater information is conveyed. Bright, colorful, simple messages and links to additional resources should be clearly displayed and made available for varied audiences such as children, gardeners, and municipal representatives.
- Public spaces should be more fully utilized as a means of conveying general stormwater messages to the public.

- END -

## Appendix A

# **2010 STORMWATER SURVEY**



**2010 Stormwater Survey**  
**Central New York Regional Planning and Development Board**

**Part 1. General Response Questions**

This section is designed to determine the perceived significance of potential water quality threats in Central New York.

**1. Do you currently reside in a**

- Do you currently reside in a City
- Town
- Village

City, town or village name (please specify)

**2. The overall water quality of the streams, and lakes in my community is**

- The overall water quality of the streams, and lakes in my community is Excellent
- Good
- Fair
- Poor
- No opinion

**3. How significant do you consider waste discharges from industrial sources to be as a source of water pollution in your community?**

- How significant do you consider waste discharges from industrial sources to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**4. How significant do you consider waste discharges from sewage treatment facilities to be as a source of water pollution in your community?**

- How significant do you consider waste discharges from sewage treatment facilities to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**5. How significant do you consider pollutants from the atmosphere, such as acid rain, to be as a source of water pollution in your community?**

- How significant do you consider pollutants from the atmosphere, such as acid rain, to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**6. How significant do you consider stormwater/rainfall runoff from vegetated or forested land to be as a source of water pollution in your community?**

- How significant do you consider stormwater/rainfall runoff from vegetated or forested land to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**7. How significant do you consider stormwater/rainfall runoff from paved surfaces, such as parking lots and roads, to be as a source of water pollution in your community?**

- How significant do you consider stormwater/rainfall runoff from paved surfaces, such as parking lots and roads, to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**8. How significant do you consider stormwater/rainfall runoff from residential neighborhoods to be as a source of water pollution in your community?**

- How significant do you consider stormwater/rainfall runoff from residential neighborhoods to be as a source of water pollution in your community? Very Significant
- Significant
- Not significant

**9. How significant do you consider eroding stream banks to be as a source of water pollution in your community?**

- How significant do you consider eroding stream banks to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**10. How significant do you consider erosion from active construction sites to be as a source of water pollution in your community?**

- How significant do you consider erosion from active construction sites to be as a source of water pollution in your community? Very significant
- Significant
- Not significant

**11. How significant do you consider the dumping of oil, grease, household chemicals and trash into stormdrains to be as a source of water pollution in your community?**

- How significant do you consider the dumping of oil, grease, household chemicals and trash into stormdrains to be as a source of water pollution in your community? Very Significant
- Significant

- Not significant

## Part 2. Property Maintenance Habits

This section is designed to better understand if certain common activities are impacting water quality in Central New York.

### 12. If you have a lawn, do you mow it?

- If you have a lawn, do you mow it? Yes
- No
- I don't have a lawn (skip to question 18)

### 13. If you mow your lawn, what do you do with the grass clippings?

- If you mow your lawn, what do you do with the grass clippings? Leave them on the lawn
- Bag and throw them away with other household garbage
- Compost them

Other (please specify)

### 14. Do you apply fertilizer to your lawn?

- Do you apply fertilizer to your lawn? Yes
- No

### 15. If you apply fertilizer to your lawn, about how often?

- If you apply fertilizer to your lawn, about how often? Once a year
- Twice a year
- Three or more times a year

### 16. Are you aware that soil from your lawn can be tested to determine your lawn's actual fertilizer needs?

- Are you aware that soil from your lawn can be tested to determine your lawn's actual fertilizer needs? Yes
- No

### 17. Have you ever had your soil tested?

- Have you ever had your soil tested? Yes
- No

**18. If you have a car, where do you wash it?**

- If you have a car, where do you wash it? At home in the driveway or road
- At home on the lawn
- At a commercial car wash
- I don't have a car (skip to question 20)

**19. If you change your car's oil yourself, how do you dispose of the used oil?**

- If you change your car's oil yourself, how do you dispose of the used oil? Transfer to a container, seal, and dispose of it with other household trash
- Pour it on grass, dirt or gravel
- Pour it into a storm drain
- Take it to a Recycling facility
- Pour it into an indoor sink, toilet or drain

Other (please specify)

**20. What do you do with leftover household chemicals such as cleaners, paint thinner, pesticides, etc.? Check all that apply.**

- What do you do with leftover household chemicals such as cleaners, paint thinner, pesticides, etc.? Check all that apply. Pour them in the sink, toilet or other indoor drain
- Take them to a local household hazardous waste center/collection event
- Dilute them with water and pour on the ground outdoors
- Dispose of them with other household trash

Other (please specify)

**21. If you have a dog, how often do you pick up its waste?**

- If you have a dog, how often do you pick up its waste? Always
- Often
- Occasionally
- Never
- I don't have a dog

**Part 3. General Opinion Questions**

This section is designed to improve the level and delivery of stormwater educational messages in Central New York. Please check the responses that most closely match your opinions and preferences.

**22. Do you feel that your everyday actions affect water quality in Central New York:**

- Do you feel that your everyday actions affect water quality in Central New York: Directly
- Indirectly
- Not at all

**23. Where do you think stormwater goes after it enters a stormdrain?**

- Where do you think stormwater goes after it enters a stormdrain? A sewage/wastewater treatment facility
- A separate stormwater treatment facility
- Nearby fields and yards
- Nearby lakes and streams

**24. Only people who live alongside streams, rivers and lakes need to worry about how they are affecting water quality.**

- Only people who live alongside streams, rivers and lakes need to worry about how they are affecting water quality. Agree
- Disagree

**25. Since living at your current address, would you say that stormwater related problems (drainage, water quality, erosion, etc.) in your community have:**

- Since living at your current address, would you say that stormwater related problems (drainage, water quality, erosion, etc.) in your community have: Increased
- Decreased
- Remained the same
- Unsure

**26. Which of the following do you feel would pose no threat to water quality if accidentally introduced into a storm drain? (Check all that apply)**

Which of the following do you feel would pose no threat to water quality if accidentally introduced into a storm drain? (Check all that apply) Rainwater

- |  |  |
|--|--|
| <input type="checkbox"/> Automotive fluids | <input type="checkbox"/> Litter/Trash                    |
| <input type="checkbox"/> Soapy water       | <input type="checkbox"/> Soil/Sediment                   |
| <input type="checkbox"/> Antifreeze        | <input type="checkbox"/> Chlorinated swimming pool water |
| <input type="checkbox"/> Leaves/Grass      | <input type="checkbox"/> Lawn care chemicals             |

**27. Are you interested in learning more about how you can protect water quality in Central New York?**

- Are you interested in learning more about how you can protect water quality in Central New York? Yes
- No

**28. If you answered yes, what is the best way to supply information to you? (Check all that apply)**

- If you answered yes, what is the best way to supply information to you? (Check all that apply) Websites
- Informational brochures available at public places
- Newspaper articles
- Municipal newsletters and publications
- T.V and radio announcements

Other (please specify)

**29. Do you read the following? Check all that apply.**

- Do you read the following? Check all that apply. Daily newspapers
- Direct mail advertisements
- Free local newspapers
- Town or village newsletters

Other (please specify)

**30. What informational topics are of interest to you?**

- What informational topics are of interest to you? Lawn care and management
- Household hazardous waste disposal
- Erosion control for homeowners
- General water quality awareness/education
- Landscaping for water quality

Other (please specify)

Appendix B

**2007 and 2010  
SURVEY TABULATIONS**

<b>1. Do you currently reside in a</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
City	N/A	27.9%	168
Town	N/A	58.6%	353
Village	N/A	14.5%	87
City, town or village name (please specify)			541
<i>answered question in 2010 survey</i>			<b>602</b>
<i>skipped question in 2010 survey</i>			<b>0</b>

<b>2. The overall water quality of the streams, and lakes in my community is</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Excellent	39.0%	10.0%	60
Good	36.0%	48.5%	291
Fair	16.0%	32.5%	195
Poor	4.3%	8.5%	51
No opinion	4.8%	2.5%	15
<i>answered question in 2010 survey</i>			<b>600</b>
<i>skipped question in 2010 survey</i>			<b>2</b>

<b>3. How significant do you consider waste discharges from industrial sources to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	47%	42.8%	254
Significant	33%	36.7%	218
Not significant	19%	21.4%	127
<i>answered question in 2010 survey</i>			<b>594</b>
<i>skipped question in 2010 survey</i>			<b>8</b>

<b>4. How significant do you consider waste discharges from sewage treatment facilities to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>Response Percent</b>	<b>Response Count</b>
Very significant	46.9	36.2%	216
Significant	33.3	34.8%	208
Not significant	19.8	29.5%	176
<i>answered question in 2010 survey</i>			<b>597</b>
<i>skipped question in 2010 survey</i>			<b>5</b>



<b>5. How significant do you consider pollutants from the atmosphere, such as acid rain, to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	31.1%	24.3%	145
Significant	50.5%	51.8%	309
Not significant	18.4%	24.6%	147
<i>answered question in 2010 survey</i>			<b>597</b>
<i>skipped question in 2010 survey</i>			<b>5</b>

<b>6. How significant do you consider stormwater/rainfall runoff from vegetated or forested land to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	26.0%	13.8%	82
Significant	47.0%	34.8%	207
Not significant	26.0%	51.9%	309
<i>answered question in 2010 survey</i>			<b>595</b>
<i>skipped question in 2010 survey</i>			<b>7</b>

<b>7. How significant do you consider stormwater/rainfall runoff from paved surfaces, such as parking lots and roads, to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	27.4%	36.9%	218
Significant	50.0%	44.1%	260
Not significant	22.6%	19.5%	115
<i>answered question in 2010 survey</i>			<b>590</b>
<i>skipped question in 2010 survey</i>			<b>12</b>

<b>8. How significant do you consider stormwater/rainfall runoff from residential neighborhoods to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very Significant	20.8%	25.6%	152
Significant	48.1%	46.9%	278
Not significant	31.0%	28.3%	168
<i>answered question in 2010 survey</i>			<b>593</b>
<i>skipped question in 2010 survey</i>			<b>9</b>

<b>9. How significant are eroding stream banks to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	20.0%	15.9%	95
Significant	44.0%	42.4%	253
Not significant	36.0%	42.4%	253
<i>answered question in 2010 survey</i>			<b>596</b>
<i>skipped question in 2010 survey</i>			<b>6</b>

<b>10. How significant do you consider erosion from active construction sites to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very significant	27.2%	29.4%	175
Significant	43.3%	43.2%	257
Not significant	29.5%	28.1%	167
<i>answered question in 2010 survey</i>			<b>595</b>
<i>skipped question in 2010 survey</i>			<b>7</b>

<b>11. How significant do you consider the dumping of oil, grease, household chemicals and trash into storm drains to be as a source of water pollution in your community?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Very Significant	53.0%	55.9%	332
Significant	27.0%	28.1%	167
Not significant	20.0%	16.2%	96
<i>answered question in 2010 survey</i>			<b>594</b>
<i>skipped question in 2010 survey</i>			<b>8</b>

<b>12. If you have a lawn, do you mow it?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Yes	98.2%	96.0%	554
No	1.8%	1.6%	9
I don't have a lawn (skip to question 18)		2.6%	15
<i>answered question in 2010 survey</i>			<b>577</b>
<i>skipped question in 2010 survey</i>			<b>25</b>

<b>13. If you mow your lawn, what do you do with the grass clippings?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Leave them on the lawn	82.0%	85.9%	471
Bag and throw them away with other household garbage	1.6%	2.4%	13
Compost them	6.7%	23.2%	127
Other (please specify)			27
<i>answered question in 2010 survey</i>			<b>548</b>
<i>skipped question in 2010 survey</i>			<b>54</b>

<b>14. Do you apply fertilizer to your lawn?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Yes	47.5%	32.0%	181
No	52.5%	68.9%	390
<i>answered question in 2010 survey</i>			<b>566</b>
<i>skipped question in 2010 survey</i>			<b>36</b>

<b>15. If you apply fertilizer to your lawn, about how often?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Once a year	38.5%	42.5%	79
Twice a year	53.0%	36.6%	68
Three or more times a year	8.5%	22.0%	41
<i>answered question in 2010 survey</i>			<b>186</b>
<i>skipped question in 2010 survey</i>			<b>416</b>

<b>16. Are you aware that soil from your lawn can be tested to determine your lawn's actual fertilizer needs?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Yes	73.0%	69.5%	392
No	27.0%	30.5%	172
<i>answered question in 2010 survey</i>			<b>564</b>
<i>skipped question in 2010 survey</i>			<b>38</b>

<b>17. Have you ever had your soil tested?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Yes	14.7%	10.3%	58
No	85.3%	89.7%	507
<i>answered question in 2010 survey</i>			<b>565</b>
<i>skipped question in 2010 survey</i>			<b>37</b>

<b>18. If you have a car, where do you wash it?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
At home in the driveway or road	41.5%	31.9%	182
At home on the lawn	2.0%	7.0%	40
At a commercial car wash	56.6%	70.7%	403
I don't have a car (skip to question 20)		1.1%	6
<i>answered question in 2010 survey</i>			<b>570</b>
<i>skipped question in 2010 survey</i>			<b>32</b>

<b>19. If you change your car's oil yourself, how do you dispose of the used oil?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Transfer to a container, seal, and dispose of it with other household trash	0.5%	3.8%	9
Pour it on grass, dirt or gravel	0.2%	1.7%	4
Pour it into a storm drain	0.2%	0.4%	1
Take it to a recycling facility	76.0%	95.8%	229
Pour it into an indoor sink, toilet or drain	NA	0.0%	0
Other (please specify)			69
<b><i>answered question in 2010 survey</i></b>			<b>239</b>
<b><i>skipped question in 2010 survey</i></b>			<b>363</b>

<b>20. What do you do with leftover household chemicals such as cleaners, paint thinner, pesticides, etc.? Check all that apply.</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Pour them in the sink, toilet or other indoor drain	3.9%	5.8%	31
Take them to a local household hazardous waste center/collection event	76.0%	82.5%	442
Dilute them with water and pour on the ground outdoors	1.5%	1.7%	9
Dispose of them with other household trash	17.8%	17.5%	94
Other (please specify)			44
<b><i>answered question in 2010 survey</i></b>			<b>536</b>
<b><i>skipped question in 2010 survey</i></b>			<b>66</b>

<b>21. If you have a dog, how often do you pick up its waste?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Always	57.5%	31.1%	177
Often	27.1%	12.3%	70
Occasionally	11.2%	6.7%	38
Never	4.1%	4.7%	27
I don't have a dog		45.8%	261
<b><i>answered question in 2010 survey</i></b>			<b>570</b>
<b><i>skipped question in 2010 survey</i></b>			<b>32</b>

<b>22. Do you feel that your everyday actions affect water quality in Central New York:</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Directly	50.5%	58.2%	324
Indirectly	35.9%	39.0%	217
Not at all	13.6%	4.1%	23
<b><i>answered question in 2010 survey</i></b>			<b>557</b>
<b><i>skipped question in 2010 survey</i></b>			<b>45</b>

<b>23. Where do you think stormwater goes after it enters a storm drain?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
A sewage/wastewater treatment facility	24.3%	44.4%	248
A separate stormwater treatment facility	10.8%	9.5%	53
Nearby fields and yards	7.55%	6.8%	38
Nearby lakes and streams	57.3%	49.1%	274
<i>answered question in 2010 survey</i>			<b>558</b>
<i>skipped question in 2010 survey</i>			<b>44</b>

<b>24. Only people who live alongside streams, rivers and lakes need to worry about how they are affecting water quality.</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Agree	4.85%	2.3%	13
Disagree	95.2%	97.7%	544
<i>answered question in 2010 survey</i>			<b>557</b>
<i>skipped question in 2010 survey</i>			<b>45</b>

<b>25. Since living at your current address, would you say that stormwater related problems (drainage, water quality, erosion, etc.) in your community have:</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Increased	29.9%	27.1%	151
Decreased	8.25%	7.2%	40
Remained the same	47.0%	49.6%	276
Unsure	15.6%	16.5%	92
<i>answered question in 2010 survey</i>			<b>557</b>
<i>skipped question in 2010 survey</i>			<b>45</b>

<b>26. Which of the following do you feel would pose no threat to water quality if accidentally introduced into a storm drain? (Check all that apply)</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Rainwater	77.1%	85.5%	377
Automotive fluids	3.98%	7.9%	35
Soapy water	16.6%	15.4%	68
Antifreeze	4.4%	7.3%	32
Leaves/Grass	28.6%	31.7%	140
Litter/Trash	4.1%	7.0%	31
Soil/Sediment	23.4%	25.6%	113
Chlorinated swimming pool water	23.3%	13.6%	60
Lawn care chemicals	5.23%	7.3%	32
<i>answered question in 2010 survey</i>			<b>441</b>
<i>skipped question in 2010 survey</i>			<b>161</b>

<b>27. Are you interested in learning more about how you can protect water quality in Central New York?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Yes	80.0%	91.3%	506
No	20.0%	9.2%	51
<i>answered question in 2010 survey</i>			<b>554</b>
<i>skipped question in 2010 survey</i>			<b>48</b>

<b>28. If you answered yes, what is the best way to supply information to you? (Check all that apply)</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Websites	37.9%	78.5%	397
Informational brochures available at public places	15.0%	32.2%	163
Newspaper articles	27.1%	50.8%	257
Municipal newsletters and publications	19.6%	32.0%	162
T.V and radio announcements	0.4%	42.7%	216
<b>Other (please specify)</b>			<b>37</b>
<i>answered question in 2010 survey</i>			<b>506</b>
<i>skipped question in 2010 survey</i>			<b>96</b>

<b>29. Do you read the following? Check all that apply.</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Daily newspapers	84.9%	76.4%	383
Direct mail advertisements	50.4%	27.1%	136
Free local newspapers	72.0%	57.3%	287
Town or village newsletters	90.5%	59.1%	296
<b>Other (please specify)</b>			<b>60</b>
<i>answered question in 2010 survey</i>			<b>501</b>
<i>skipped question in 2010 survey</i>			<b>101</b>

<b>30. What informational topics are of interest to you?</b>			
<b>Answer Options</b>	<b>2007 Response Percent</b>	<b>2010 Response Percent</b>	<b>2010 Response Count</b>
Lawn care and management	53.6%	51.4%	266
Household hazardous waste disposal	21.0%	52.5%	272
Erosion control for homeowners	4.8%	34.2%	177
General water quality awareness/education	18.1%	73.9%	383
Landscaping for water quality	2.4%	75.7%	392
<b>Other (please specify)</b>			<b>19</b>
<i>answered question in 2010 survey</i>			<b>518</b>
<i>skipped question in 2010 survey</i>			<b>84</b>