Central Wisconsin Stormwater Survey
A Summary of Residents' Knowledge and Practices

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Executive Summary

The Survey Research Center (SRC) at the University of Wisconsin, working with the North Central Wisconsin Storm Water Coalition, surveyed residents from the cities of Merrill, Mosinee, Schofield, Stevens Point, Wausau, and Wisconsin Rapids, the villages of Kronenwetter, Rothschild and Weston, and the town of Rib Mountain to:

- determine their understanding of stormwater issues
- understand their current behaviors that can affect stormwater quality and quantity
- determine how they access information about stormwater issues

The SRC received 459 of the 1,270 surveys sent to a random selected set of households in Central Wisconsin. This 36 percent response rate should provide estimates that are accurate to within plus or minus 4.55 percent with 95 percent confidence.

The following are key observations from the survey results:

1. There is a good deal of **confusion about where stormwater goes** once it enters the stormwater system. In particular, significantly higher numbers of **women, those with less formal education, and older residents** said that they don't know where stormwater goes once it enters the system, suggesting these groups **would be key targets for educational campaigns**.

2. **Residents' understanding of stormwater issues appears to be relatively high**. More than 70 percent knew that drain spouts should not flow onto hard surfaces, that water treatment facilities do not remove pollutants and pesticides, that stormwater is an important contributor to sedimentation in local waterways, and that plant nutrients carried in stormwater can deplete oxygen levels in the water. They were **somewhat less clear that stormwater run-off per acre in urban areas is typically greater than in rural ones and much less clear about the negative consequences of thermal shock** caused by stormwater run-off on hot summer days. **Women, again, appear to be a key educational target.**

3. Residents of Central Wisconsin generally report that they live on lots with 50 percent or more in green space, less than half of which is in lawn. **Few determine fertilizer needs based on a soils test**. In most other dimensions of lawn care, **residents generally use practices that appear to be environmentally sensitive**.

4. Similarly, their **practices with respect to vehicle maintenance (washing and changing the oil) appear to be environmentally sensitive**. Not surprisingly, men tend to be a more important target for educational efforts aimed at reducing adverse impacts from stormwater contaminated with wastes from automotive maintenance because they are more likely to wash their cars and/or change the oil at home than are women.

5. A primary source of information about the environment for half of the residents in Central Wisconsin is network television. Gaining access to this conduit of information may not be feasible for the North Central Wisconsin Storm Water Coalition. The second most commonly accessed sources of information for this area are brochures and mailings. **To reach specific demographic groups, the Committee will need to use different communication strategies** (e.g. the web for younger audiences, newspapers for older ones).

Survey Purpose

The purpose of this study was to determine Central Wisconsin residents' understanding of stormwater issues, their current yard and vehicle maintenance practices, and their preferred means of accessing information about stormwater issues. The results of this survey will be used to both guide educational programming and as a baseline against which the public's understanding of and practices affecting stormwater can be measured in future surveys. The following jurisdictions were involved in this survey:

- Cities of Merrill, Mosinee, Schofield, Stevens Point, Wausau, and Wisconsin Rapids
- Villages of Kronenwetter, Rothschild and Weston
- Town of Rib Mountain

Survey Methods

In May 2008, the Survey Research Center (SRC) at the University of Wisconsin – River Falls mailed surveys to 1,270 randomly selected households in the participating jurisdictions. After two weeks, the SRC mailed postcards to those from whom a completed questionnaire had not been received. The SRC received a total of 459 completed questionnaires from residents for a 36 percent response rate. In the 2000 Census, there were 50,811 occupied housing units in these 10 jurisdictions. Based on that number of households and the number of returned surveys, the estimates provided in this report are expected to be accurate to within plus or minus 4.55 percent with 95 percent confidence.

Any survey has to be concerned with "non-response bias". Non-response bias refers to a situation in which people who don't return a questionnaire have opinions that are systematically different from the opinions of those who return their surveys. **Based upon a standard statistical analysis described in Appendix A, the Survey Research Center (SRC) concludes that non-response bias is not a concern for this survey.**

In addition to the numeric responses, respondents provided additional written comments, which were compiled by the SRC. As appropriate, selected quotes will be used in some sections of this report to illustrate these comments. **Appendix B to this report contains the complete compilation of comments.**

Appendix C contains a copy of the survey questionnaire with a quantitative summary of responses by question.

Profile of Respondents

Table 1 summarizes the demographic profile of respondents to the survey. Where comparable data were available from the 2000 Census, they were included to indicate the degree to which the sample represents the underlying adult population in Central Wisconsin. The data in Table 1 show that there are some distinct differences between the demographic profile of the sample and that of the underlying population. Given that the Census data are nearly 10 years old, some of the differences (notably in income) may be explained by the passage of time. Figure 1 illustrates the geographic distribution of responses; the dots included in Figure 1 are randomly located within a given zip code and do not indicate the precise location of respondents

Table 1: Demographic Profile of Respondents

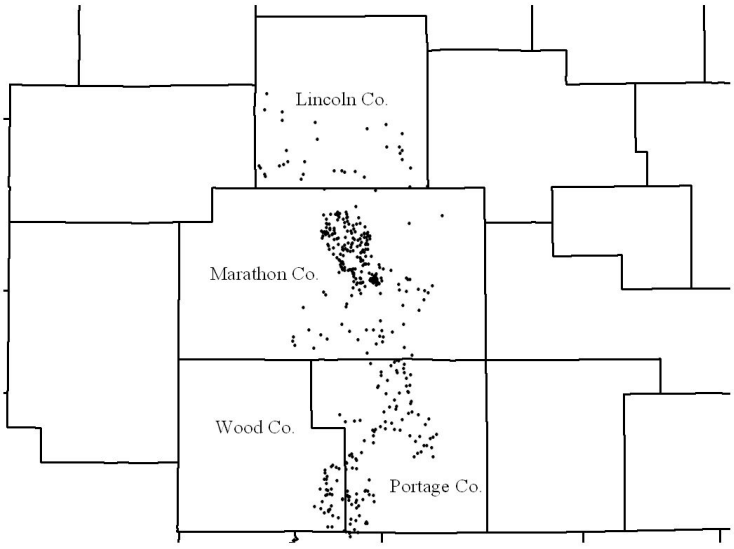
Gender	**Count**	**Male**	**Female**				
Sample	448	66%	34%				
2000 Census	127,712	48%	52%				
Age 18+	**Count**	**18-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65+**
Sample	450	2%	6%	16%	27%	22%	28%
2000 Census	96,990	18%	17%	19%	16%	10%	19%
Children in household	**Count**	**0**	**1**	**2**	**3+**		
Sample	442	69%	12%	13%	6%		
2000 Census	15,870	69%	31%				
Housing	**Count**	**Own**	**Rent**				
Sample	453	98%	2%				
2000 Census	50,811	65%	35%				

Educational Level	**Count**	**High School or Less**	**Some College/ Tech**	**2-Year Degree**	**4-Year Degree**	**Grad/ Professional Degree**
Sample	442	26%	29%	12%	19%	14%
2000 Census	80,260	51%	19%	9%	14%	7%

Household income range	**Count**	**<$25,000**	**$25-$49,999**	**$50-$74,999**	**$75-$99,999**	**$100,000+**
Sample	382	12%	29%	27%	16%	16%
2000 Census	50,895	31%	33%	21%	9%	7%

The proportion of males in the sample was substantially higher than the percentage of males in the total population, and the sample had a higher proportion of respondents over age 55. The sample had higher educational levels than the underlying population. The sample also had more households in the higher income brackets, although comparisons to the 2000 Census data are tenuous due to the age of the data and the growth of incomes since the 2000 Census. Throughout the report, we will note when demographic groups (e.g. men versus women) have statistically significant differences of opinion.

Figure 1: Geographic Distribution of Respondents, Central Wisconsin Stormwater Survey, 2008



Current Understanding of Stormwater Issues

This survey is part of a larger project to gauge citizens' current understanding of stormwater issues, develop and implement an educational campaign about stormwater, and do a subsequent survey to determine how effective the campaign was. In this section of the report, we summarize current understanding of stormwater issues.

Understanding Where Stormwater Goes

Residents of Central Wisconsin were asked if stormwater in their local community drains to a natural body of water (lake or stream) or to a water treatment plant; they were also given a "don't know" option. Slightly more than half (52%) said that stormwater drains to a lake or stream, 17 percent said it drains to a treatment facility, and nearly one-third (31%) said they don't know. Thus, while half got the "right" answer, there is clearly a need for additional educational efforts on this topic.

Women were significantly more likely to say that they don't know where stormwater goes than were men (25% men vs. 40% women). The proportion saying that stormwater drains to a treatment facility generally fell with increasing levels of formal education. Interestingly, older residents of Central Wisconsin were significantly more likely to say that they don't know where this water goes or that it drains to a treatment facility than were residents in their 30s – 50s.

Nearly half of the sample either said they didn't know to where stormwater drains once it enters the system or that it goes to a water treatment facility. Significantly **higher percentages of women, those with less formal education and older residents said that they didn't know where stormwater goes once it goes down the drain. This suggests that educational efforts should be targeted at these groups.**

Factual Knowledge about Stormwater

Residents were asked a series of questions to measure their factual knowledge of stormwater issues. Their responses are summarized in Table 2. The bolded answer is the "correct" option. The Table indicates that, for most questions, the "class average was a C." Between 70 and 80 percent of respondents knew that drain spouts carrying stormwater off roofs should not flow onto hard surfaces, that water treatment plants do not remove pollutants and pesticides from stormwater before it is released into natural bodies of water, that stormwater is an important contributor to sedimentation of local bodies of water, and that stormwater carries plant nutrients to local bodies of water which reduce dissolved oxygen levels. For these four questions there tended to be more "don't know" responses than responses that were incorrect. Finally, respondents were asked to identify the type of surface onto which water from their drain spouts flows. Nearly 90% said that their drain spouts drain, directly or indirectly, to greenspaces and most of the remaining respondents said that this question was not applicable to them.

Respondents' understanding that run-off per acre is greater in urban than rural areas (because of more impermeable surfaces) was less impressive; only 60 percent answered this question correctly and more than one in four respondents said they didn't know the answer to this question.

Respondents were very uncertain about the impact of stormwater run-off on hot summer days (thermal shock to local waterways) with nearly half (47%) saying they didn't know if this was a problem. It is also clear that relatively few respondents know if their local community has stormwater quality requirements.

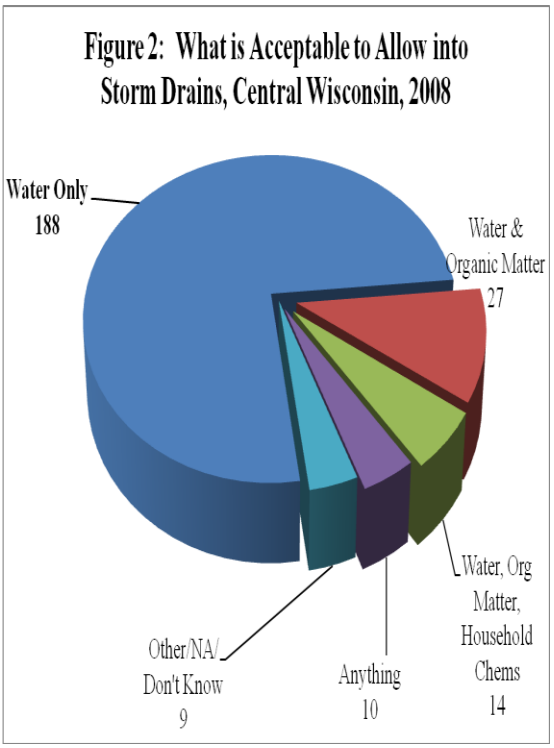
A gender gap is again apparent in these data. Women were significantly more likely than men to say that they don't know if stormwater runoff on hot summer days poses a particular challenge, if run-off is associated with sedimentation in local bodies of water, or if pollutants and pesticides are removed from run-off prior to this water being released into local waters.

Table 2: Residents Knowledge of Stormwater Issues

	Count	Yes	No	Don't Know
Stormwater on hot summer days are a concern	460	**24%**	29%	47%
There is more stormwater in rural areas	458	12%	**60%**	28%
Drain sprouts should flow onto hard surfaces	461	18%	**71%**	11%
Water treatment facilities remove pollutants/pesticides	462	6%	**71%**	23%
Stormwater impact on sedimentation is minimal	463	10%	**76%**	14%
Stormwater carries plant nutrients which reduce oxygen in the water	462	**80%**	3%	16%
My community has stormwater quality requirements	460	19%	12%	69%

What Is Acceptable to Allow Into Storm Drains

Residents were asked, in an open-ended question, to identify the sorts of things that are acceptable to allow to run into storm drains. A complete listing of their responses is included in Appendix B of this report. The SRC classified their responses into five categories and our results are summarized in Figure 2.



As shown in the Figure, about three-quarters of the 248 people who responded to this question said that only water (snowmelt, rainwater, etc.) should flow into the storm drains.

The 11 percent (27 responses) that said water and organic matter are acceptable things to allow into the storm drains are a mixed bag. Some indicated that a certain amount of organic materials (sand, small stones, leaves, etc.) were inevitably going to enter the storm system. Others said that organic materials such as grass clippings were acceptable.

Relatively few respondents equated the storm drains with a catchall refuse disposal system – only 10 respondents or 4 percent of the total said that anything could be allowed into the storm drains.

A final factual question asked residents if there is a stormwater drain on their street. We are unable to verify the accuracy of their responses but only 8 percent said they didn't know, 48 percent said there is a drain, and 44 percent said there isn't one.

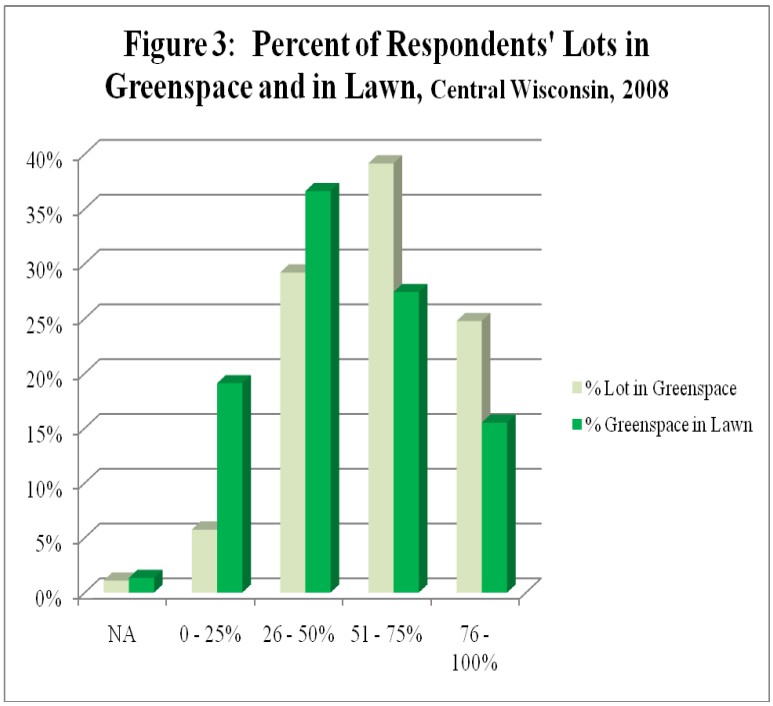
These results suggest that educational efforts should focus on issues associated with thermal shock, the importance/impact of imperiable surfaces, and community stormwater quality requirements. Most people seem to know what is acceptable to allow into storm drains. Women, again, appear to be a key educational target.

Current Activities Affecting Stormwater

Certain activities around the home can adversely affect stormwater quality. We asked respondents to tell us about their current practices with respect to these activities.

Yard Care

How we maintain our properties can have a significant affect on stormwater quality. According to this survey, the overwhelming majority (94 percent) of people in Central Wisconsin maintain their own yards. Of the remaining 6 percent, 4 percent hire an individual to maintain their yard and 2 percent report hiring a company to do so. This suggests that, to the extent that changes in yard care practices are desired, the target audience is the general public rather than yard maintenance businesses.

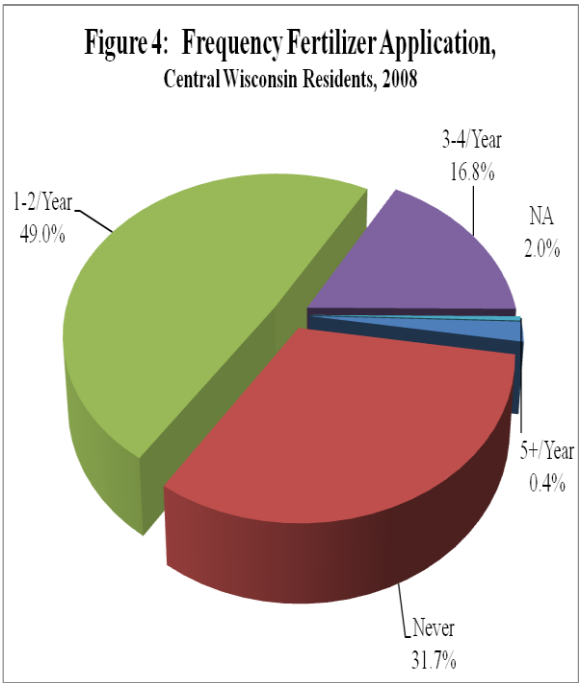


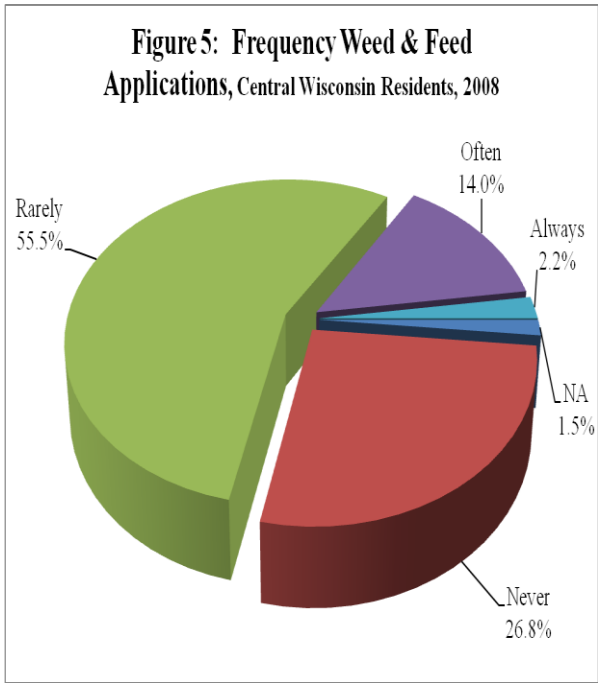
Greenspace was defined in the questionnaire as lawn, garden and undeveloped areas of the lot. Figure 3 indicates that more than half of the typical lot for a resident in Central Wisconsin is in greenspace. Only 35 percent of respondents said that less than half of their lot was in greenspace. The darker bars in Figure 3 show the estimated proportion of the greenspace that respondents said is in lawn. Lawns accounted for more than half of the greenspace in only 43 percent of respondents; the largest proportion (37 percent) said that lawns make up between one-quarter and one-half of their greenspace.

Respondents with higher levels of formal education and higher family incomes tended to have more greenspace than those with less education and lower incomes. For those with more formal education, lawns tend to occupy a lower percentage of their greenspace.

With respect to maintaining the lawns described in Figure 3, only 11 percent of residents of Central Wisconsin said they use a soil test to determine fertilizer needs for their lawns, 7 percent said this was not applicable to them and **81 percent said they do not base fertilizer applications on soil test recommendations**. Women were significantly more likely to say they don't use a soil test to determine fertilizer needs for their lawn.

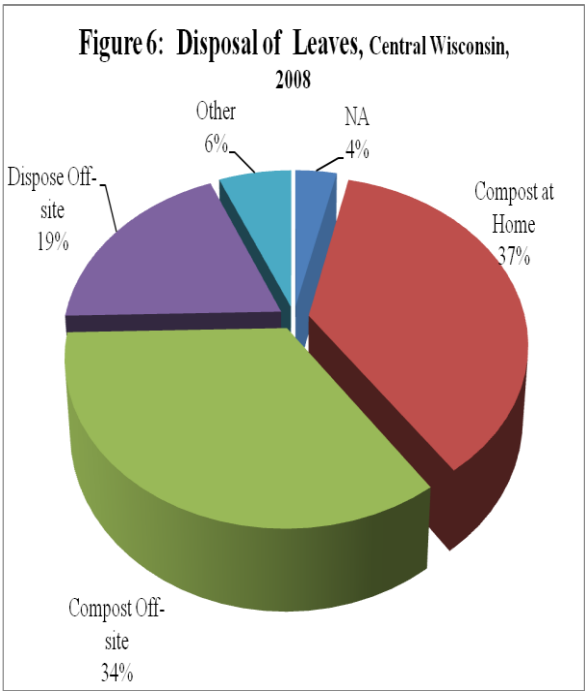
As Figure 4 illustrates, most residents of Central Wisconsin either never fertilize their lawns (31%) or do so once or twice a year (49%). Similar proportions say they never (27%) or rarely (55%) apply "weed and feed" products to their lawn (Figure 5). Interestingly, there were no differences with respect to the use of fertilizer or weed and feed products among demographic groups (men and women, education level, etc.).





Mowing is another aspect of lawn maintenance that can affect stormwater quality. In particular, the plant nutrients in grass clippings can adversely affect water quality if they are washed into local bodies of water. Nearly two thirds of the respondents (64 percent) said that they use a mulching mower when cutting their lawn, suggesting that for most residents, the clippings are left on the lawn. This should reduce the impact of clippings on water quality.

Residents were also asked what they typically do with grass clippings when they mow their lawn. A slightly higher proportion of residents than those using a mulching mower report leaving their clippings on the grass (71 percent). An additional 23 percent report that they collect and compost their grass clippings and only 3 percent say they either bag their clippings for collection or sweep them to their gutter.



More than two-thirds of residents of Central Wisconsin report that they compost their leaves, either on their own property (37 percent) or somewhere off of their property (34 percent). The 6 percent in "Other" are people who say they burn or mulch their leaves (Figure 6).

A final yard maintenance practice about which we asked is what residents do with pet waste. Only 51 percent of the sample said this was relevant to them. Sixty-three percent of households with a pet, flush wastes down the toilet. Families with children were both more likely to have a pet and to report flushing wastes down the toilet.

Residents of Central Wisconsin generally live on lots that contain 50 percent or more green space, less than half of which is in lawn. **They rarely use a soil test to determine fertilizer needs** but appear to apply fertilizer relatively infrequently and rarely use weed and feed products. **Residents appear to handle grass clippings, leaves, and pet waste in environmentally sensitive ways.**

Vehicle Maintenance

Other potential sources of stormwater contamination include what homeowners do on their properties with respect to vehicle maintenance – washing them and/or changing the oil.

Two thirds of respondents to this survey said that they usually take their cars to the car wash (Table 3). Further, when cars are washed on their property, only 15 percent say that the water (and detergents) drains to the gutter compared to 35 percent who said they never wash their cars at home and nearly half who report that wash water drains to green space.

Table 3: Vehicle Maintenance Practices

	Count	NA	On Own Property	Car Wash	
Where do you usually wash your vehicle?	441	3%	30%	67%	
	Count	NA	To Gutter	Green Space	Other
Where does water used to wash cars on property go?	431	35%	15%	49%	2%
	Count	NA	Own Property	Recycle	Have Done at Auto Center
Where do you usually dispose of used motor oil?	448	6%	0%	25%	68%

Similarly, slightly more than two-thirds say that they have the oil in their cars changed at an auto center. Only two of the 448 respondents said that they disposed of used oil on their own property and 25 percent take used oil to a recycling center.

Women and men, again, differ in their practices with respect to vehicle maintenance. Women are significantly more likely to report that they wash their car at a car wash and have their oil changed at an auto center than are men. Because they are more likely to take their car to the car wash, women are more likely to say that where wash water ends up is not applicable to them; men are significantly more likely to report that their wash water drains to greenspace.

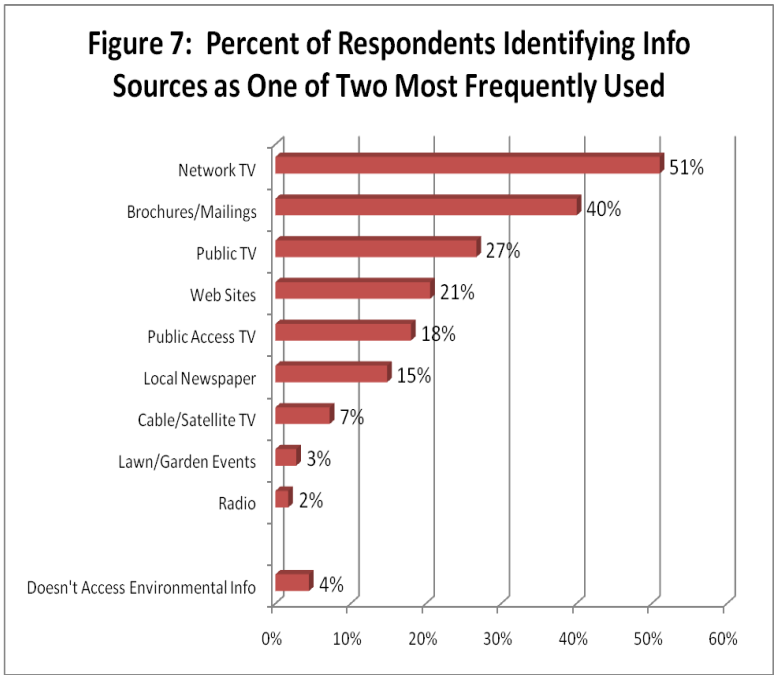
Those with higher levels of income and formal education are significantly more likely to report that they take their cars to the car wash and to the auto center for oil changes.

Residents 25 – 44 years of age are significantly more likely to report taking used oil to a recycling center.

As was true with lawn maintenance, **residents of Central Wisconsin report vehicle maintenance practices that are, largely, environmentally sensitive**. Most wash their cars at the car wash or in places that drain to green space rather than into storm drains. Most take their car to an auto center for oil changes or recycle used oil. **Men are more likely to report washing cars on their property and recycling their oil**. While they are largely doing the proper things with respect to these activities, men might be a target for an educational campaign to reinforce their current practices.

Information Sources

The final goal of this survey was to determine where residents of Central Wisconsin go for information about environmental issues. We asked respondents to identify two sources they most frequently use for information about the environment. In Figure 7, we show the percentage that picked each of the nine alternatives as one of their top two sources of information. Clearly, network television is the most commonly consulted source of environmental information for this set of respondents. Brochures and mailings are also significant sources of information for many Central Wisconsin residents. Public television and websites are key sources of information for 20 percent or more of the population in the area. Finally, public access television and local newspapers are important to 15 percent or more.



While network TV may not be a practical means by which the North Central Wisconsin Storm Water Coalition could disseminate information about stormwater, the other key information sources are likely to be available to one degree or another.

Different demographic groups are significantly more likely to use particular sources of information. For example, the proportion of people who say that they use the local newspaper as a key source of environmental information increases with the age of the respondent. Therefore, the local paper is likely going to be a good vehicle for reaching those 55 years of age and up. Not surprisingly, the web is a significantly more important source of information to the young, more highly educated and higher income groups. Given the significant gender differences identified in this report, it is unfortunate that there were no information sources that appealed to women disproportionately.

Many of the ways in which residents of Central Wisconsin prefer to get environmental information (brochures, web sites, public access TV, newspapers) are likely to be available to the North Central Wisconsin Storm Water Coalition. To reach specific demographic groups, different communication vehicles will need to be employed.

Conclusions

The results of this survey indicated that residents of Central Wisconsin have a surprisingly high level of understanding of many stormwater quality issues. With respect to their factual knowledge, residents of Central Wisconsin are more likely to respond that they "don't know" the correct answer than to give an incorrect one. This is a very encouraging outcome in that the North Central Wisconsin Storm Water Coalition doesn't, for the most part, have to overcome people's misunderstandings. The Coalition's task is the somewhat easier job of informing the relatively small percentage of people who don't know very much about the stormwater system. The primary target for this sort of awareness campaign should be women, who were significantly more likely to say that they don't know the answer to a series of questions about stormwater issues. Men are a secondary target because they are more likely to report having responsibility for yard maintenance and any vehicular maintenance done at home.

In addition, there are specific stormwater quality issues that should be priorities for educational campaigns. Specifically, the potentially adverse impacts of thermal shocks to surface water resulting from a rainstorm on hot summer days and the impact of impermeable surfaces on the volume of stormwater run-off are two topics that seem to need educational efforts.

Respondents' yard care practices, based on the answers they gave in this survey, tend to be quite environmentally sensitive. Most appear to understand that grass clippings, leaves and pet wastes should not be allowed to enter the storm water system. The one area in which additional educational efforts might pay dividends is with respect to basing lawn fertilizer applications on soil tests; currently very few Central Wisconsin residents have soil tests done.

Likewise, residents of Central Wisconsin appear to follow environmentally sensitive practices with respect to vehicle maintenance. Few dispose of used motor oil on their property and most report that wash water from cleaning their vehicles drains to green space rather than to storm drains.

To reinforce the importance of continuing to use the practices they identified in this survey, men are an important target audience since they report doing most of the lawn and vehicle maintenance for their households.

Educational efforts conducted by the Committee should use a "smorgasbord" approach. The most important overall sources of information about environmental topics are network TV, brochures/mailings, public TV, web sites, public access TV and newspapers (in that order). Some of these information conduits are going to be more effective with certain demographic groups. A high quality, easy-to-navigate web site will be more likely to reach younger adults, those with higher incomes, and those with more formal education. Older audiences are more likely to be reached via articles in local papers. Stories on local TV news are likely to reach a broad audience.

Appendix A – Non-Response Bias Test

Any survey has to be concerned with "non-response bias." Non-response bias refers to a situation in which people who don't return a questionnaire have opinions that are systematically different from the opinions of those who return their surveys. For example, Question 2 of the survey asked the respondent where stormwater in their community drains with possible answers of "a lake or stream," "a waste water treatment plant," or "don't know." Suppose, a majority of non-respondents don't know the answer to this question whereas most of those who returned their questionnaire said it drains to a lake or stream. In this case, non-response bias would exist and the raw results would overstate the amount of knowledge residents of Central Wisconsin have about the ultimate destination of their stormwater.

The standard way to test for non-response bias is to compare the responses of those who return the first mailing of a questionnaire to those who return the second mailing. Those who return the second questionnaire are, in effect, a sample of non-respondents (to the first mailing), and we assume that they are representative of that group. In this survey, 302 people responded to the first mailing and 170 responded to the second mailing.

We found only three variables with statistically significant differences between the mean responses of these two groups of respondents (Table A1) out of 35 tested. Compared to respondents to the first mailing, second mailing respondents were statistically more likely to say that they do not access environmental information, to say that stormwater drains to a wastewater treatment facility, and have a slightly lower percentage of their house lot in green space. As Table A1 shows, the differences in mean values between the first and second mailings are generally quite small and, in no instance do the differences change the interpretation of the results. **The Survey Research Center (SRC) concludes that non-response bias is not a concern for this sample.**

Table A1 – Statistically Significant Differences Between Responses of First and Second Mailings

Variable	Mean First Mailing	Mean Second Mailing	Statistical Significance
Q1j Don't access environmental information	0.03	0.08	.011
Q2 Stormwater in my community drains to	1.71	1.94	.007
Q18 Approx % of house lot that's green space	3.87	3.69	.016

Appendix B – Stormwater Survey Written Comments

Question 14 When I cut the lawn, the clippings are usually?
-Other
-city yard waste
-fed to cattle
-mulching mower
-Picked up by lawn mowing company (3X)
-recycling center

Question 15 What do you currently do with your leaves?
-Other
-Burn (3X)
-City yard waste
-Let them take care of themselves
-Mulch (3X)
-Mulch & leave on ground
-Rake or dump in our lot next door.

Question 16 What do you usually do with pet waste?
-Other
-Put in our rhubarb
-Put in the Woods (2X)
-Throw in garbage

Question 17 My yard/lawn is mostly maintained by?
-Other
-Grandson (2X)
-Husband
-Mom
-Spouse (2X)

Question 21 If you wash your vehicles on your own property, does the water?
-Other
-Drains on driveway
-Runs down driveway (3X)
-out to gravel road

Question 23 Drain spouts from your roofs mostly drain onto?
-Other
-gravel
-underground to rock area

Question 29 Housing
-Other
-not your business

Question 33 What is your Zip Code

-54401 (158X)
-54403 (2X)
-54452 (36)
-54455 (36)
-54474 (52)
-54476 (15)
-54481 (63)
-54494 (76)
-54497
-54952

Question 34 What is the name of your Community?

Berlin
Biron (4X)
Carson
City of Wausau
Corning
Dewey (3X)
Emmet
Grand Rapids (25X)
Grant (4X)
Guenther Township (2X)
Hull (5X)
Kellner-(Grand Rapids) (2X)
Knowlton (2X)
Kronenwetter (13X)
Leona
Lincoln-Merrill
Live in Stevens Point
Maine (7X)
Marathon Co. (5X)
Merrill (30X)
Mosinee (17X)
Park Ridge (3X)
Pine River (2X)
Pine River
Portage Co. Township of Stockton
Rib Mountain (51X)
Rothchild (52)
Saratoga (5x)
Schofield (3x)
Stettin (8x)
Stevens Point (41x)
Stockton
The Hollow
Town of Weston
Town of Bergen (2X)
Wausau (86X)
Weston (10X)
Whiting (5X)
WI Rapids (33X)

Question 25 - Things that Are Acceptable to Allow to Run Down Storm Drains

Water Only (188 Comments)

Variations on water only (72X)

Variations on rain water only (57X)

Variations on storm water (28X)

Variations on rain and snow (17X)

Clean & natural contents/water

Clean water (rain) only, all that water runs into the Wisconsin River and it is polluted enough

clean-unpolluted

H2O and minimal plant and animal residue-unavoidable with normal care. NOthing should be dumped down storm drain

It should be only water, we live on a hill, and sand and branches and leaves all run down into the storm sewer and who knows what people dump in there.

nothing but rain water-City is quick to sweep up winter salt and debri before the first rain.

only water, no chemicals are acceptable

purified water

rain and snow

rain water off the roads

Rain water, natural flood waters

rain water, rain from snow

rain water/snow runoff (so we should not be allowing salt on the roads in the winter

Rain, city water, sprinkler system run off.

rainwater from green places, but what can be done with road and parking lot water?

Rainwater only. No oil, no engine cleaners, no fertilizers, no animal droppings, no weed killers, etc.

rain-water surface

snow melt/rain water note: I asked Alderman to ask city why they dumped all the salty/dirty snow into the WI River right off the truck I do believe they stopped doing it, it was in a good fishing spot glad they stopped!

storm water winter melt off

Storm water, leaves from tress

storm water, snow melt (not all the salt that used in winter. Excessive amounts used)

Stormwater/rainwater only, Marathon Co. CP2 needs a better understanding of stormwater issues overall if they are going to be the coordinating agency. A start would be for them to realize a stormwater detention facility and a recreational pond are inherently different and need to be regulated that way.

water & snow slush

water and snow melt

water that is free of herbicides, pesticides and fertilizer

Water with no harmful chemicals in it..i.e. pesticides, herbicides, oil, etc.

water, pretty sure thats all

water, some sediment is inevitable

Water-All kinds

Water & Organic Matter (27 Comments)

any refuse from environment

Clean & natural contents/water

H2O and minimal plant and animal residue-unavoidable with normal care. NOthing should be dumped down storm drain

leaves and grass clippings

leaves grass water

Leaves, grass, water

Leaves, sand.

Leaves, tree droppings.

natural stuff: water, melting snow, leaves, small sticks, small stones, etc.

organic material

organic materials in small amounts

rainwater leaves grass

sand dirt water

Silt

some leaves, twigs, grass clippings, sand

Storm water, leaves from tress

stormwater leaves grass

The rain water, sand, etc. that normally accumulates in the street.

water and natural material leaves, grass, etc

water rocks sand

Water, dirt & sand partices, some grass clippings.

Water, dirt, leaves, small branches, grass

water, leaves

water, leaves and other organic material (not treated stuff)

Water, organic material

water, some sediment is inevitable

Water. Small amounts of natural things..Sand, leaves..

Water, Org Matter, Household Chemicals (14 Comments)

any "green" cleaners

car soapy water

clean natural water/or woth biodegradable cleaning agents.

Only non-industrial, non-commercial, non-high phosphorus/phosphate, natural chemicals and inadvertent flows from storms of extreme rainfalls. Is there a method to divert storm water into a sediment

marsh system that is cycled for removal of input?
rain water and home waste water
Rain water and I thing gray water
Rain water, main flush water, runoff from watering lawn, washing cars, etc.
rain water, soils and sediments from rain water, fire hydrant testing/use of water, hose water from house (soaps, waxes, etc.), fertilizers/grass seed that washed off because of rain water
Rain, snow melt, car wash/parking lot runoff
rainwater, melting snow, run off (sprinklers), car wash water
storm water, water from basement bilge pump (not sewage), water from casual washing of vehicles, run off from sprinklers
water from the pool at the end of the season. Usually all the chlorine has been used and filtered out when I drain teh pool. I would say 75%-85% I will put on the green space of my property.
Water, rain water, grey water.
water, as few chemicals as possible. Also, why does the Town of Rib Mt. salt the side streets like they were I-39? This must have an impact on water quality.

Anything (10 Comments)
all products of nature-no foreign liquid or chemicals
Anything non-toxic or petroleum based.
Anything without chemicals or as we now know medications
every thing on the street from other yards
Everything-Mostlt littered with garbage, brush, leaves, branches- City of Stevens Point does not maintain..even though its been called to their attention.
Grass, liquid, sticks, paper, leaves.
Petroleum products.
Rain water. Anything on road. After all the city planners put them there. As in the storm drains.
Rain water. Car washing water. No restrictions.
snow, water, leaves, sticks paper cups

Other/NA/Don't Know (9 Comments)
culverts
don't know
Ducks
I live in the country
N/A
NA
Nothing
we don't have any storm drains

What nature provides

Appendix C: Quantitative Summary of Responses by Question

CENTRAL WISCONSIN STORMWATER SURVEY
Please return by May 23, 2008

Using blue or black ink, please fill the circle that most closely matches your response to the following questions or statement. Please fill the circle: Like this: ● Not like this: ✓ ✗ /

1. Of the following sources of information, which **two** do you most frequently use as sources for information about the environment?

a.	Public TV	27%	b.	Lawn/Garden Events	2%
c.	Public Access TV	3%	d.	Brochures/Mailings	7%
e.	Network TV	18%	f.	Radio	21%
g.	Cable/Satellite TV	40%	h.	Web Sites	15%
i.	Local Newspaper	51%	j.	I don't access environmental info	4%

The following questions ask about stormwater in your local community.

		A lake or stream	**The waste water treatment plant**	**I don't know**
2.	Stormwater in my local community drains to:	52%	17%	31%

For each of the following statements, please indicate if you agree, disagree or don't know.

		Yes, I agree	**No, I disagree**	**I don't know**
3.	The amount of stormwater run-off per acre is much greater in a rural area than in a city or village.	12%	60%	28%
4.	Drain spouts from roofs should flow onto hard surfaces rather than green spaces (lawn, garden, undeveloped).	18%	71%	11%
5.	Stormwater run-off on a hot summer day negatively impacts local water quality.	24%	29%	47%
6.	The impact of stormwater run-off on the amount of sediment in local rivers, streams and lakes is unimportant/minimal.	10%	76%	14%
7.	Stormwater carries plant nutrients (e.g. fertilizers) into local rivers, streams and lakes, which reduces dissolved oxygen level in the water.	80%	3%	16%
8.	Pesticides and other pollutants are removed from stormwater before it is released into rivers, streams or lakes.	6%	71%	23%
9.	My local community currently has stormwater quality requirements	19%	12%	69%

In the following questions, we are going to ask about activities around your home.

	Not applicable	Yes	No	Don't know
10. Do you use a soil test to determine fertilizer needs for your lawn?	7%	11%	81%	0%
11. Do you use a mulching lawn mower to cut your lawn?	0%	64%	34%	1%

	Not applicable	Never	1 – 2 times	3 – 4 times	5+ times
12. How frequently do you apply fertilizer to your lawn each growing season?	2%	32%	49%	17%	0%

	Not applicable	Never	Rarely	Often	Always
13. How frequently do you use "weed and feed" products (contain herbicide & fertilizer)?	2%	27%	55%	14%	2%

	Not applicable	Collect & Compost	Left on Lawn	Bagged for Garbage/ Swept to Gutter	Other See Appendix B
14. When I cut the lawn, the clippings are usually:	0%	23%	71%	3%	3%

	Not applicable	Collect & Compost on Own Property	Collect for pick-up & compost off site	Collect and take off own property	Other See Appendix B
15. What do you currently do with your leaves	4%	37%	34%	19%	6%

	Not applicable	Collect & Compost	Leave on Ground	Put in Garbage or Toilet	Other See Appendix B
16. What do you usually do with pet waste?	49%	8%	9%	32%	2%

	Not applicable	Myself	A hired person	A company	Other See Appendix B
17. My yard/lawn is mostly maintained by:	0%	92%	4%	2%	2%

	Not applicable	0 – 25%	26 – 50%	51 – 75%	75+%
18. Approximately what percentage your house lot is green space (lawn, garden, undeveloped)?	1%	6%	29%	39%	25%
19. Of the green space (lawn, garden, undeveloped) approximately what percentage of your lot is lawn?	1%	19%	37%	27%	16%

	Not applicable	Do it on own property	Take to car wash	Other See Appendix B
20. When you wash your vehicles, do you usually:	3%	30%	67%	0%

	Not applicable	Drain to gutter	Drain to lawn/ green space	Other See Appendix B
21. If you wash vehicles on your own property, does the water:	35%	15%	49%	2%

	Not applicable	Dispose of oil on own prop.	Take oil to recycling center	Have it done at auto service center	Other See Appendix B
22. When you change the oil in your car, do you:	6%	0%	25%	68%	0%

	Not applicable	Hard surface & street gutter	Hard surface & green space	Green space	Other See Appendix B
23. Drain spouts from your roofs mostly drain onto:	10%	2%	27%	60%	1%

	Yes	No	Don't Know
24. Is there a stormwater drain on your street?	48%	44%	8%

25. What sorts of things are acceptable to allow to run down a storm drain? **See Appendix B**

26. Which of the following is <u>your most preferred way</u> of receiving information about stormwater issues (select a maximum of 1 leave blank if you don't want information on this topic by any means)

a. Local workshop on landscaping alternatives? 6%

b. Web site on stormwater issues in central Wisconsin? 27%

c. Pamphlets or other written materials on stormwater issues in central Wisconsin? 67%

Finally, we'd like you to tell us a bit about yourself. Your answers are voluntary and will be confidential. Your name will never be linked to your responses

27. Gender — Male 66% Female 34%

28. Age — 18-24 2% 25-34 6% 35-44 16% 45-54 27% 55-64 22% 65+ 28%

29. Housing — Own 98% Rent 2% Other 0%

30. Children in household (under 18) — 0 69% 1 12% 2 13% 3+ 6%

31. My education level is: — 26% High school or less; 29% Some college/ tech school; 12% 2-year college/ tech degree; 19% 4-year college degree; 14% Grad or professional degree

32. Household Income Range — 12% Under $25,000; 29% $25 - $49,999; 27% $50 - $74,999; 16% $75 - $99,999; 16% $100,000+

33. What is your zip code? **See Appendix B**

34. What is the name of your community **See Appendix B**

North Central Wisconsin Stormwater Coalition thanks you for completing the survey!

Please return your survey in enclosed postage-paid envelope by **May 23, 2008** to:
Survey Research Center - University of Wisconsin - River Falls
410 S. Third St. 124 Regional Development Institute
River Falls, WI 54022-5001