

Kentucky Stormwater Survey Results

A Telephone Survey of Residents
in MS4 Phase II Communities and Counties:
Assessing Knowledge, Attitudes, Behaviors,
and Education Venues

Conducted for the Kentucky Transportation Cabinet
by the University of Kentucky Survey Research Center
2008-2009

KENTUCKY STORMWATER SURVEY OVERVIEW

The Kentucky Environmental Education Council and Kentucky Transportation Cabinet designed a telephone survey as part of the Kentucky Municipal Separate Storm Sewer Systems (MS4) Phase II program. The survey, which measured knowledge, attitudes and behaviors of the general public concerning stormwater pollution issues, was administered by the University of Kentucky Survey Research Center. The purpose of the survey was to set baselines for MS4 Phase II permittees to use in measuring the progress of their Public Education and Public Participation Minimum Control Measures over the life of the 2008-2013 permits.

The survey was conducted in a total of 26 different MS4 Phase II regions between June 13, 2008 and January 31, 2009 to a random sample of 4,527 adults. The compiled survey response rate of all 26 regions was 40.2%.

Residents of 88 MS4 Phase II communities or counties were included in the survey. Survey results were reported to a total of 52 permitted communities and counties within the 26 regions surveyed. The results were reported for those communities which had a large enough sample size, based on community population, for the results to be valid.

The Frequency Tables in this report show the compiled results for all 26 regions surveyed. The survey results are categorized by knowledge, attitudes, behavior, and educational venues. Demographic information, a summary of the results, discussion, and a list of communities and counties included in the survey are provided following the survey results.

Each MS4 Phase II community surveyed has a very unique landscape and a very unique set of challenges. Therefore, comparisons between the "compiled" survey results and the individual region or community results are neither helpful nor valid.

The survey questionnaire is proprietary and should not be used without permission by the University of Kentucky Survey Research Center (859-257-4684). The Kentucky Transportation Cabinet is the appropriate agency to credit when citing the survey results.

SURVEY RESULTS – STORMWATER KNOWLEDGE

Frequency Tables

1. On a scale of 1-5, where 1 is NO threat and 5 is a VERY SERIOUS threat, please tell me how serious of a threat **each of the following materials** is to YOUR community's streams, rivers, lakes, or sinkholes:

1A-Sewage from leaky pipes or leaking septic tanks:

	Percent
No threat	39.7
2	19.9
3	16.5
4	10.0
Very serious threat	14.0
Total	100.0

1B-Pesticides and fertilizers:

	Percent
No threat	29.8
2	20.6
3	23.3
4	12.5
Very serious threat	13.8
Total	100.0

1C-Soil from construction sites:

	Percent
No threat	41.6
2	23.1
3	18.9
4	8.4
Very serious threat	7.9
Total	100.0

1D-Pet waste:

	Percent
No threat	44.7
2	22.8
3	16.4
4	7.6
Very serious threat	8.5
Total	100.0

2. Do you think it harms water quality to dispose of **the following materials** into a storm drain?

2A-Motor oil?

	Percent
NO	13.3
YES	86.7
Total	100.0

2B-Soapy water from washing your car or from a washing machine?

	Percent
NO	47.3
YES	52.7
Total	100.0

2C-Leaves or grass from mowing or raking your yard?

	Percent
NO	60.4
YES	39.6
Total	100.0

3. Water that goes down storm drains is typically treated at a wastewater treatment plant before it is released into the nearest river.

	Percent
True	50.6
False	49.4
Total	100.0

4. Do you know who to contact if you wanted to properly dispose of paint, household chemicals, or motor oil?

	Percent
NO	49.0
YES	51.0
Total	100.0

5. Who would you contact? (Q4 above)

	Percent of Cases
City government	20.7%
City sanitation	8.1%
Commercial waste disposal	8.1%
County government	10.5%
Garbage collection services	6.4%
Environmental agency	6.3%
Hazardous - waste management	16.7%
Health department	2.0%
Municipal Sewer Department	0.4%
Phonebook	1.0%
Police	0.8%
Recycling center	8.6%
Retail Store	10.1%
Unspecified agency	0.8%
Water company	5.9%
Miscellaneous	9.9%
Total (Percent figure is greater than 100% because the survey respondents were allowed to give more than one response. The percent figure shown for each response option means that this percentage of respondents gave that response.)	116.1%

6. In your area, water that is flushed down toilets and water that goes down storm drains flow into the same underground pipes.

	Percent
Agree	49.6
Disagree	50.4
Total	100.0

7. Litter and trash that go down the storm drains get filtered out before they are released into streams and rivers.

	Percent
Agree	37.9
Disagree	62.1
Total	100.0

8. Most stormwater pollution comes from a few big polluters.

	Percent
Agree	45.7
Disagree	54.3
Total	100.0

9. Shrubs and trees left along the banks of creeks, streams and lakes protect water quality.

	Percent
Agree	71.2
Disagree	28.8
Total	100.0

10. I'm not sure what I personally can do to prevent pollution from going down storm drains.

	Percent
Agree	60.7
Disagree	39.3
Total	100.0

SURVEY RESULTS – STORMWATER POLLUTION ATTITUDES

Frequency Tables

1. On a scale of 1-5, with 1 being NOT AT ALL concerned and 5 being EXTREMELY concerned, how concerned are you about the water quality in your local area?

	Percent
Not at all concerned	39.3
2	15.7
3	17.6
4	10.6
Extremely concerned	16.6
Total	100.0

2. On a scale from 1 to 5 where 1 is NO problem and 5 is a SEVERE problem, how much of a problem do you think polluted stormwater is in YOUR community?

	Percent
No problem	32.8
2	26.5
3	21.4
4	11.3
Severe problem	8.1
Total	100.0

3. Would you be willing to pay a small monthly fee to help solve stormwater pollution problems in your community?

	Percent
Yes	44.5
No	55.5
Total	100.0

4. About how much would you be willing to pay per month?

	Percent
\$1.00 - \$2.00	40.8
\$3.00 - \$4.00	14.0
\$5.00 - \$6.00	26.9
\$7.00 - \$8.00	1.3
\$9.00 - \$10	10.0
More than \$10	7.0
Total	100.0

SURVEY RESULTS – STORMWATER PREVENTION BEHAVIOR

Frequency Tables

1. Do you typically do any of the following activities, or does the activity not apply to you:

1A-Compost grass clippings, leaves, and/or food waste

	Percent
NO	59.4
YES	40.6
Total	100.0

1B-Dispose of used motor oil, paint cans or household chemicals at a recycling center or city/county clean up event

	Percent
NO	34.2
YES	65.8
Total	100.0

1C-Follow label directions when applying fertilizers and pesticides

	Percent
NO	9.9
YES	90.1
Total	100.0

1D-Pick up dog waste outside

	Percent
NO	47.6
YES	52.4
Total	100.0

1E-Direct downspouts from roof onto lawn, garden, or into a rain barrel

	Percent
NO	37.0
YES	63.0
Total	100.0

1F-Wash your car on paved driveway

	Percent
NO	49.7
YES	50.3
Total	100.0

2. Within the past year have you volunteered, or are you currently volunteering for **any of the following activities:**

2A-Stream monitoring

	Percent
NO	98.6
YES	1.4
Total	100.0

2B-River or lake clean up

	Percent
NO	95.2
YES	4.8
Total	100.0

2C-Storm drain stenciling

	Percent
NO	99.3
YES	0.7
Total	100.0

2D-Stormwater advisory committee

	Percent
NO	99.2
YES	0.8
Total	100.0

SURVEY RESULTS – STORMWATER EDUCATION VENUES

Frequency Tables

1. During the PAST 12 MONTHS, have you seen, read or heard anything about ways you can personally prevent pollution of water that flows into storm drains, streams, rivers, lakes, or sinkholes?

	Percent
Yes	31.9
No	68.1
Total	100.0

2. Where did you see, read, or hear this information (Q1 above)?

	Percent of Cases
TV	41.0%
Radio	7.4%
Community events	4.4%
Newsletter from a community organization that you belong to	10.4%
Advertisement shown with previews at the movie	0.5%
Website	8.4%
Storm drain stencil	0.5%
Child-School Material	2.5%
Road Signage-Billboard	2.2%
Local business i.e. car wash, auto repair shop	7.2%
City Hall	2.0%
Local newspaper	44.0%
Other	17.4%
Total (Percent figure is greater than 100% because the survey respondents were allowed to give more than one response. The percent figure shown for each response option means that this percentage of respondents gave that response.)	147.8%

3. Which **of the following means of communication** about how you can improve water quality would be useful to you:

3A-TV advertisement or program

	Percent
NO	21.6
YES	78.4
Total	100.0

3B-Newspaper	
	Percent
NO	29.2
YES	70.8
Total	100.0
3C-Newsletter	
	Percent
NO	37.6
YES	62.4
Total	100.0

3D-Advertisement shown with previews-movies	
	Percent
NO	64.7
YES	35.3
Total	100.0

4. Have you ever seen a stormwater logo or slogan in your community?

	Percent
NO	90.6
YES	9.4
Total	100.0

4. Do you recall what the stormwater logo or slogan is? (Q3 above)

	Percent
Duck	6.0
Fish	15.0
Statement: Don't pollute	6.7
Picture: boiling water	2.9
Statement: keep drains clean	2.3
Picture: animal-beaver	0.8
Statement: Don't dispose of toxic materials	4.6
Statement: Record spills	2.1
Miscellaneous	59.7
Total	100.0

5. Has your child ever come home after school and told you something they learned about stormwater or stormwater pollution?

	Percent
NO	86.0
YES	14.0
Total	100.0

SUMMARY OF STORMWATER SURVEY RESULTS

Knowledge

1. The highest level of knowledge evidenced on the survey, as measured by the responses of the greatest percentage of respondents, was knowledge that:
 - a. disposing of oil in a storm drain harms water quality (86.7% of respondents)
 - b. shrubs and trees left along the banks of creeks streams, and lakes protect water quality (71.2 %)
 - c. litter and trash that go down storm drains do not get filtered out before being released into streams (62.1%)
2. Respondents were much less knowledgeable about other stormwater pollution problems, as indicated by the percentage who reported knowing:
 - a. the following materials pose a threat to streams, lakes, or sinkholes:
 - i. Pesticides and fertilizers (26.3% of respondents)
 - ii. Sewage from leaky pipes or leaking septic tanks (24%)
 - iii. Soil from construction sites (16.3%)
 - iv. Pet waste (16.3%)
 - b. disposing of the following materials in a storm drain harms water quality:
 - i. Soapy water from washing your car or from a washing machine (52.7%)
 - ii. Leaves or grass from mowing or raking your yard (39.6%)
 - c. water that goes down storm drains is not typically treated at a wastewater treatment plant before it is released into the nearest river (50.6%)
 - d. water that is flushed down toilets and water that goes down storm drains does not flow into the same underground pipes (50.4%)
 - e. most stormwater pollution does not come from a few big polluters (54.3%)
 - f. who to contact if they wanted to properly dispose of paint, household chemicals, or motor oil (51%)
 - g. what they personally can do to prevent pollution from going down storm drains (39.3%)

Attitudes

3. 44.5% of respondents were willing to pay a stormwater fee for the purpose of helping solve stormwater pollution problems in their communities. The stormwater fee amount that respondents were willing to pay was:
 - a. \$1.00 - \$2.00 (40.8% of respondents)
 - b. \$3.00 - \$4.00 (14%)
 - c. \$5.00 - \$6.00 (26.9%)
 - d. \$7.00 - \$8.00 (1.3%)
 - e. \$9.00 - \$10 (10%)
 - f. More than \$10 (7%)

4. 55.1% of respondents reported that they were not concerned with water quality in their local area, while 27.2% were concerned and 17.6% were undecided.
5. 59.3% of respondents think that polluted stormwater is not a problem in their community, while 19.4% thought polluted stormwater is a problem and 21.4% were undecided.

Behaviors

6. Stormwater pollution prevention behaviors that respondents engaged in were:
 - a. Follow label directions when applying fertilizers and pesticides (90.1% of respondents)
 - b. Dispose of used motor oil, paint cans or household chemicals at a recycling center or city/county clean up event (65.8%)
 - c. Direct downspouts from roof onto lawn, garden, or into a rain barrel (63%)
 - d. Pick up dog waste outside (52.4%)
 - e. Do not wash car on driveway (49.7%)
 - f. Compost grass clippings, leaves, and/or food waste (40.6%)
7. Very few respondents were engaged in volunteer activities within the past year, as evidenced by the following results:
 - a. Stream or lake clean up (4.8% of respondents)
 - b. Stream monitoring (1.4%)
 - c. Stormwater advisory committee (0.8%)
 - d. Storm drain stenciling (0.7%)

Education Venues

8. There were 31.9% of respondents who reported seeing, reading, or hearing about ways to personally prevent pollution of water that flows into storm drains, streams, rivers, lakes, or sinkholes. These respondents identified the following venues that carried the message they saw, read, or heard:
 - a. Local newspaper (44% of respondents)
 - b. Television (41%)
 - c. Community organization newsletter (10.4%)
 - d. Website (8%)
 - e. Radio (7.4%)
 - f. Local business (7.2%)
9. The most useful means of communication about how water quality can be improved, as identified by the respondents, were:
 - a. Television (78.4% of respondents)
 - b. Local newspaper (70.8%))
 - c. Newsletter (62.4%)
10. 9.4% of respondents reported that they had seen a stormwater logo or slogan in their community.

DISCUSSION

1. The survey results provide baseline information for MS4 Phase II Communities. The results of this survey will be used to plan and prioritize stormwater public education and public participation goals and strategies.
2. The Kentucky Stormwater Survey is a descriptive study, indicating the levels of knowledge, attitudes, and behavior of the public in regard to stormwater runoff pollution issues. The survey also indicates the effectiveness of varying types of educational venues, as reported by the survey respondents.
3. There is a prevalent lack of general knowledge and concern about water quality and stormwater runoff pollution.
4. “Effective” education is needed for the purposes of developing understanding of stormwater runoff pollution issues, developing positive attitudes toward stormwater pollution prevention, raising the concern about water quality, and increasing involvement of the general public in stormwater pollution prevention efforts.

RESPONDENT UNDERSTANDING OF SURVEY QUESTIONS
(as interpreted by the interviewer)

	Percent
Excellent	65.3
Good	32.6
Fair	1.8
Poor	0.4
Total	100.0

SURVEY DEMOGRAPHIC INFORMATION

RESPONDENT GENDER

	Percent
Male	39.3
Female	60.7
Total	100.0

COMMUNITY SIZE

	Percent
Rural area-farm	6.8
Rural area-nonfarm	10.8
Small town	55.0
Suburb	17.6
City	9.8
Total	100.0

YEAR BORN

	Percent
1917	0.1
1918	0.1
1919	0.2
1920	0.4
1921	0.2
1922	0.4
1923	0.6
1924	0.7
1925	0.7
1926	0.7
1927	0.9
1928	0.9
1929	0.8
1930	1.0

1931	1.0
1932	1.5
1933	1.3
1934	1.5
1935	1.6
1936	1.5
1937	1.8
1938	1.7
1939	1.9
1940	1.9
1941	1.9
1942	1.7
1943	2.0
1944	1.9
1945	2.2
1946	2.7
1947	2.6
1948	2.2
1949	2.4
1950	2.6
1951	2.3
1952	2.4
1953	2.9
1954	2.5
1955	2.5
1956	2.2
1957	2.2
1958	2.1
1959	2.2
1960	2.0
1961	2.0
1962	2.2
1963	1.6
1964	2.2
1965	2.0
1966	1.3
1967	1.4
1968	1.3
1969	1.5
1970	1.3
1971	1.2
1972	1.3
1973	0.9
1974	1.2
1975	1.1

1976	0.8
1977	0.9
1978	0.7
1979	0.8
1980	0.9
1981	0.7
1982	0.6
1983	0.6
1984	0.4
1985	0.5
1986	0.3
1987	0.3
1988	0.3
1989	0.3
1990	0.5
Total	100.0

NUMBER IN HOUSEHOLD

	Percent
1	22.8
2	39.4
3	16.2
4	13.1
5	5.7
6	1.6
7	0.5
8	0.3
9	0.1
10	0.1
11	0.0
21	0.1
22	0.0
23	0.0
31	0.0
44	0.0
52	0.0
53	0.0
Total	100.0

CHILDREN UNDER 18 IN HOUSEHOLD

	Percent
NONE	62.0
1	16.3
2	14.3
3	5.4
4	1.4
5	0.4
6	0.1
8	0.1
88	0.2
Total	100.0

RACIAL, ETHNIC BACKGROUND

	Percent
White	92.2
African American	4.7
Hispanic	0.4
American Indian	0.6
Multiracial	0.7
Asian	0.7
Pacific Islander	0.1
Some other race	0.6
Total	100.0

LAST GRADE IN SCHOOL COMPLETED

	Percent
Grade school only	3.3
Some high school	7.2
Graduated high school	29.9
GED	2.3
1 or 2 years college, no degree	14.2
Graduated junior or community college	4.4
Vocational-technical degree	3.4
3 or 4 years of college, no degree	3.8
Bachelors degree	15.5
Some graduate school work	1.4
Graduate degree ex: MA, MS, Ph.D., JD	14.6
Total	100.0

TOTAL HOUSEHOLD INCOME 2007

	Percent
Under \$5,000	2.6
\$5-\$7,500	1.9
\$7,500-\$10,000	1.9
\$10-\$12,500	2.8
\$12,500-\$15,000	2.6
\$15,000-\$20,000	4.3
\$20-\$25,000	5.2
\$25-\$30,000	6.3
\$30-\$40,000	9.2
\$40-\$50,000	10.5
\$50-\$70,000	16.5
\$70-\$90,000	12.6
\$90-\$120,000	12.5
Over \$120,000	11.1
Total	100.0

Communities and Counties Surveyed					
County	MS4 Community	Results Reported	County	MS4 Community	Results Reported
Barren	Glasgow	X	Franklin	Frankfort	X
				Franklin County	X
Bell	Middlesborough	X			
			Graves	Mayfield	X
Boone	Florence	X			
	Union	X	Greenup	Greenup County	X
				Bellefonte	
Boyd	Ashland	X		Flatwoods	X
	Boyd County	X		Raceland	
	Cattlettsburg	X		Russell	
				Worthington	
Boyle	Danville	X		Wurtland	
				Greenup	
Bullitt	Bullitt County	X			
	Fox Chase		Hardin	Hardin County	X
	Hillview	X		Elizabethtown	X
	Hebron Estates			Radcliff	X
	Hunters Hollow			Vine Grove	X
	Mount Washington	X		West Point	
	Pioneer Village				
	Shepherdsville	X	Hopkins	Madisonville	X
Calloway	Murray	X	Jessamine	Jessamine County	X
				Nicholasville	X
Campbell	Campbell County	X			
	Alexandria	X	Kenton	Kenton County	X
	Bellevue			Bromley	
	Cold Spring			Covington	X
	Crestview			Crescent Springs	
	Dayton			Crestview Hills	
	Fort Thomas	X		Edgewood	X
	Highland Heights	X		Elsemere	
	Melbourne			Erlanger	X
	Newport	X		Fort Mitchell	X
	Silver Grove			Fort Wright	X
	Southgate			Independence	X
	Wilder			Kenton Vale	
	Woodlawn			Lakeside Park	
				Ludlow	
Christian	Hopkinsville	X		Park Hills	
	Oak Grove			Ryland Heights	
				Taylor Mill	X
Clark	Winchester	X		Villa Hills	
Daviess	Owensboro	X			

County	MS4 Community	Results Reported
Madison	Richmond	X
McCracken	Paducah	X
Meade	Muldraugh	
Nelson	Bardstown	X
Oldham	Oldham County	X
	Orchard Grass	
	Peewee Valley	
	Park Lake	
	Goshen	
	Crestwood	X
Pulaski	Somerset	X
Scott	Georgetown	X
Shelby	Shelbyville	X
Taylor	Campbellsville	X
Warren	Warren County	X
	Bowling Green	X