

**West Michigan Residents and Clean Air Action:
The Experiences and Opinions of
Kent, Muskegon, and Ottawa County Residents**

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Introduction

In August, 2011, the Macatawa Area Coordinating Council contracted with the Center for Applied Research and Rural Studies (CARRS) at Central Michigan University to conduct a survey of the residents of Kent, Muskegon, and Ottawa counties. The Great Lakes Institute for Sustainable Systems (GLISS) at CMU serves as a partner and consultant for this contract.

The main goal of the project is to assess residents' awareness of and compliance with the counties' Clean Air Action Days. At issue is the extent to which residents in the three counties are aware of air pollutants and the problems associated with them and are knowledgeable about and actively engaged in Clean Air Action Days and related activities. A subsidiary goal is to determine the extent to which subgroups of the population (e.g., senior citizens, parents) are more or less aware of air pollution problems and more or less actively involved in remediation efforts.

CARRS itself was created through a Michigan Research Excellence Fund grant in 1995. The function of CARRS is to utilize the resources and academic expertise of Central Michigan University to assist social agencies, non-profit organizations, and governmental units in addressing social, economic, environmental, and community development concerns. The Great Lakes Institute for Sustainable Systems at Central Michigan University promotes academic programs, research, community outreach, and campus operations that are dedicated to the advancement of sustainable systems.

Instrument Design and the Sample of Residents

The Interview Schedule

The interview schedule used for this project was developed jointly by CARRS and West Michigan Clean Air Coalition members. The questions are, for the most part, replications of the ones from the 2006 survey instrument administered by the Frost Center at Hope College. Some new questions were added either to focus on opinions about fine particulate matter in the air or to expand the types of information available about the composition of the respondent's household. The complete interview schedule (both the telephone interview version and the print questionnaire) can be found in Appendix A.

Sample Design

The 2010 Census reports the populations of Kent, Ottawa, and Muskegon counties to be 602,622; 263,801; and 172,188, respectively. In order to secure a margin of error of plus or minus five percentage points drawn from populations of this size, it is necessary to have a sample of approximately 400 respondents. This assumes that one is working with a 95 percent confidence level. That is, one can be 95 percent confident that the true population in these counties falls within plus or minus five percentage points from the statistics derived from the sample.

While telephone interviews from a Computer-Assisted Telephone Interviewing (CATI) system were often the survey method of choice in the past for representing this kind of population and telephone interviewing was used in 2006 survey, the increasing number of cell-phone-only households makes this methodology problematic, even if one uses a random-digit dial method for generating samples. In particular, it is virtually impossible without large budgets to find—through screening—cell phone only households when the focus is on

a relatively small geographic area such as three counties in question. Cell phones, unlike landline phones, are not place based, and residents of, for example, Muskegon county may have cell phone numbers from out-of-county or even out-of-state areas.

Consequently, we used a multi-mode survey design for this project, consisting of both a telephone survey using a CATI system and the mailing of print questionnaires.

Telephone Survey of Residents

Genesys Sampling of Fort Washington, Pennsylvania maintains an address-based list of households in the United States. They estimate that their list provides coverage of 98 percent of American households. We purchased a random sample of households from the relevant counties and called households with landline telephones at least six times to find an adult at home willing to complete the telephone interview. Quotas for completed interviews were established to ensure that the numbers of interviews from each of the three counties matched the 2010 Census demographics.

Postcards were mailed to respondents prior to the beginning of the field phase of the telephone interviewing project to alert them to the upcoming call, to ensure confidentiality, and to legitimate further the project. A copy of the postcard is found in Appendix B. The project itself was approved by CMU's Institutional Review Board.

Pretests of the telephone survey instrument and of the CATI system took place on September 7 and September 11, 2011. Interviewing began on September 12 and finished on September 25, 2011. Calls were made to 1,976 households, with the goal of completing 300 interviews. The average household was called 3.95 times, and 33 percent of all households (N = 662) were called six or more times. In the end, completed interviews were secured

from 308 individuals.¹ The median length of the telephone interview was nine minutes, meaning that one half of the interviews were completed in nine minutes or less, and one half took nine minutes or more to finish. Eight percent of interviews were relatively short lasting for at most six minutes,² while 17 percent lasted for 12 minutes or more.

Mail Questionnaire for Residents

We mailed a print questionnaire to the households in our sample for which we are not able to secure telephone numbers. The mail questionnaire helps to ensure that the cell-phone-only households are represented in the final sample. The questions from the telephone interview were formatted into a four-page booklet that could be easily mailed to residents, along with a cover letter and postage-paid, return envelope. Some slight changes in questionnaire order were required to ensure that questions fit into the four-page booklet.

Questionnaires were mailed to residents on September 12, 2011. A postcard was mailed one week later thanking those respondents who had already taken the time to complete the questionnaire and reminding those who had not done so. And, finally, a second mailing of cover letter, questionnaire, and return envelope was posted on October 3, 2011 to households from which we had not received either a completed questionnaire or an indication

¹ However, residents from 608 households refused to take part in the study. Hence, 34 percent of residents who spoke with interviewers completed the interview schedule. Of the remaining households called, 297 were “wrong numbers” or out of service numbers; 101 were “hang ups,” 31 were numbers of individuals who were incapable of speaking on the telephone during the study period; 15 were numbers of individuals who could not communicate effectively in English over the telephone, 4 were numbers of individuals who told interviewers that they were not West Michigan residents. In addition, 591 calls were coded as no answers (either no one answered the phone, the line was “busy,” or the line was answered by an answering machine), and 22 were “not at home” or “call back later” calls. One completed interview was saved without an accurate disposition code; hence, totals reported here are off by one.

² Respondents who were not aware of Clean Air Action Days were asked many fewer questions during the telephone interview and were asked to skip one page of questions in the print questionnaire.

that the address was no longer valid.³ All correspondence to respondents in found in Appendix B. The goal was to secure 100 completed questionnaires; as of October 20, 149 had been returned.

Given the multi-mode method employed here, the analysis that follows will be based on 457 completed surveys. CARRS wishes to thank all of the respondents for the time they spent speaking with our interviewers or completing print questionnaires.

The Demographics of the Sample of Residents

Respondents were asked a variety of questions about themselves and their households. As one would expect, the sample is diverse. These data on the demographics of respondents and their households are summarized with the percentage distributions found in Table A.

Table A: Demographics of the Sample: Percentage Distributions

	Percent of Total Sample
County	
Kent	57.5
Muskegon	17.4
Ottawa	25.1
Years in County	
0-5	9.8
6-15	17.1
16-25	16.2
26-45	26.6
46 or more	30.4

³ The initial mailing was made to 1,000 households. The second mailing included 834 households, because some completed questionnaires had been returned and some envelopes had been returned by the U.S. post office as having an undeliverable address or no forwarding address available. In the end, after the second mailing, there were 196 “bad addresses” of this type. Hence, removing these addresses from the sample leads to a return rate of completed questionnaires of 19 percent.

	Percent of Total Sample
Sex	
Male	39.1
Female	60.9
Ethnicity	
White	93.6
African American/Black	2.7
Latino/Hispanic	1.6
American Indian/Native American	0.7
Other	1.4
Age—Year of Birth	
1919-46	27.3
1947-66	39.9
1967-76	15.5
1977-96	17.3
Highest Level of Education	
Less than high school	2.0
High school or GED	18.1
Some college or technical school	33.6
College degree	28.5
Some graduate work	3.5
Graduate degree	14.3
Household income (based on N=370)	
Under \$25,000	18.4
\$25,000 up to \$50,000	29.7
\$50,000 up to \$75,000	23.5
\$75,000 up to \$100,000	14.6
More than \$100,000	13.8

As one would expect, more than one half of the sample lives in Kent County, with one quarter residing in Ottawa County, and slightly less than one fifth in Muskegon county. The average respondent has lived in West Michigan almost 33 years. About 10 percent of respondents have lived in the area for five years or less, and 30 percent have been West Michigan residents for more than 45 years.

In the 2011 survey as in previous surveys, most of the respondents are female. Approximately 94 percent of the sample self-defines as “white,” with only six percent choosing terms such as “black or African American” or Hispanic to define themselves. The average respondent was born in 1958. Slightly more than one quarter of the sample is 65 years of age or older (born in 1946 or earlier), and slightly less than one fifth of the sample is under 35 years of age (born in 1977 or later). The sample is diverse in terms of both educational attainment and income. Almost one half of the sample (46%) has at least a college degree, while 20 percent have a high school education or less. Similarly, while 14 percent of the sample reports a household income of more than \$100,000, 18 percent list their income as under \$25,000.⁴

Additional questions were designed to determine whether household members were especially at risk for the negative health consequences of air pollutions. Children and senior citizens face special health challenges, as do individuals with heart disease or respiratory problems. Similarly, individuals who spend more of their time out of doors, whether because of their occupation or recreational choices, are more at risk for the health difficulties associated with air pollution. Percentage distributions are used in Table B to summarize responses to these questions about at-risk populations.

⁴ 17 respondents said they “don’t know” their household income, and 70 refused to answer the question. Hence, 19 percent of the sample are “missing data” on this question about household income.

Table B: At-Risk Households: Percentage Distributions

	Percent of Total Sample
Number of senior citizens—65 years or older—in household	
None	67.6
One	17.3
Two	14.9
Three or more	0.2
Number of children under the age of 18 in household	
None	67.8
One	13.2
Two	11.2
Three or more	7.8
Anyone suffer from heart disease or respiratory issues	
Yes	33.8
No	66.2
Weekday hours spent outdoors	
0-2	37.7
3-5	31.7
6-8	15.9
9 or more	14.7
Weekend hours spent outdoors	
0-2	16.0
3-5	33.2
6-8	27.2
9 or more	23.6

About one third of the respondents live in a household with at least one senior citizen—65 years and over—and a comparable number live in households with children less than 18 years of age. Fully, 33 percent of respondents report that someone in their household suffers from heart disease or respiratory issues. More than one third of the sample reports spending two or fewer hours a day outside on a typical summer weekday, with 15 percent reporting nine or more hours outside during the summer workweek. Time outdoors is higher during typical summer weekend days, with almost one quarter of respondents noting that

they spend more than eight hours outdoors and only 16 percent reporting two or fewer hours outside.⁵

Findings

The findings from the survey are organized into five main sections. We begin with (1) a discussion of residents' general views about air pollution and environmental issues. This discussion sets the stage for the presentation of specific data on (2) residents' awareness of Clean Air Action Days and (3) residents' compliance with Clean Air Action Days. Next, we highlight (4) the ways in which residents learn about Clean Air Action Days. Finally, we explore (5) the socio-demographic factors related to high levels of awareness of and compliance with the Clean Air Action Day program.

General Views about Air Pollution and Environmental Issues

Five questions were designed to gauge residents' general concerns about air quality and environmental issues. These questions establish the context for understanding respondents' views about and compliance with Clean Air Action Days. Compliance with the specifics of Clean Air Action Days is less likely for individuals who do not perceive a problem or think that environmental issues are not important.

In particular, respondents were asked: "How much of a problem do you think air pollution is in your community?" Parallel questions asked about the extent to which respondents believe that "ground level ozone" and "fine particulate matter" are community problems. ("Fine particulate matter was defined in the question as "fine particles of soot or dirt in the air.") Response options presented to respondents were "major problem," "minor problem," or "not a problem." In addition, they were asked: "Generally speaking, how

⁵ The relatively high number of outliers suggests that some respondents did not understand these questions and answered in terms of total hours spent out-of-doors during a typical weekend, rather than a typical weekend day.

important are environmental issues within your community to you?” Four response options ranged from “very important” to “not at all important.” Finally, respondents were asked whether they believed that “air quality in West Michigan has been improving, declining, or staying about the same” “in the last five years.” Table 1 provides a summary of responses to these questions, using percentage distributions.

Table 1: General Views about Air Pollution Problems and the Importance of Environmental Issues: Percentage Distributions

	Percent of Total Sample
Extent to which air pollution is a problem	
Major problem	22.1
Minor problem	58.3
Not a problem	19.6
Extent to which ground level ozone is a problem	
Major problem	14.8
Minor problem	62.7
Not a problem	22.5
Extent to which fine particular matter is a problem	
Major problem	16.9
Minor problem	56.8
Not a problem	26.3
Importance of environmental issues in your community	
Very important	45.1
Somewhat important	42.9
Not too important	8.8
Not at all important	3.3
Change in air quality levels in the last five years	
Improving	24.7
Staying the same	63.4
Declining	11.9

The table shows that respondents are more likely to see air quality issues as a “minor problem” rather than a major problem. More than one half of the sample chooses this response options when asked the extent to which “air pollution,” “ground level ozone,” and

“fine particulate matter” is a problem. In fact, larger numbers of respondents see two of these three air quality issues as “not a problem” rather than a “major problem.” Most respondents see no change in air quality during the last five years, while about one quarter of the sample believes that air quality has been improving and slightly more than 10 percent see a decline. Nonetheless, almost one half of respondents reports that “environmental issues within your community” are “very important,” and almost as many see environmental issues as “somewhat important.” These data suggest that environmental issues other than air pollution may have greater salience for respondents, making compliance with Clean Air Action Days a more “difficult sell.”

To assess this directly, respondents were asked the extent to which they are aware of Clean Air Action Days. They were reminded that “you might also hear these days referred to as Ozone Action Days or Air Quality Action Days.” Three response options—“very aware,” “somewhat aware,” and “not at all aware” were provided. Respondents with some degree of awareness were then asked whether they knew that the “program recently changed its name from Ozone Action to Clean Air Action.” Then, these aware respondents were asked: “In your own words, what is a Clean Air Action Day?” Response options were not read to the respondent in the telephone interview, and multiple options (definitions) could be recorded. The print questionnaire asked this question with an open-ended format.

Aware respondents were also asked: “How many Clean Air Action Days do you recall during the past summer (2011)?” Note: The correct answer for Summer, 2011 is eight.

Finally, in this series of questions, respondents were told that “the West Michigan Clean Air Coalition suggests a number of voluntary actions citizens can take on Clean Air

Action Days.” They were then asked to indicate the actions with which they were familiar. Again, respondents’ answers could be coded into multiple categories by the telephone interviewer, while respondents completing the print questionnaire answered this question in their own words (by writing their responses on a series of blank lines).

Table 2 provides the percentage distributions that summarize responses to these questions. Two distributions are presented: the first provides the percentages of “very aware” or “somewhat aware” respondents in each category. The discussion that follows will focus on these respondents who express some level of awareness of Clean Air Action Days. The second distribution provides the percentages of the total sample of respondents. This latter distribution provides a perspective on the levels of awareness of the total population of residents; the percentages will necessarily be lower given that they are based on a larger sample size.

Table 2: Awareness of Clean Air Action Days: Percentage Distributions

	Percent Very/Somewhat Aware (N=398)	Percent of Total Sample (N~457)
Degree of awareness of Clean Air Action Days		
Very aware	--	38.6
Somewhat aware	--	49.7
Not at all aware	--	11.8 ⁶
Aware that program recently changed its name		
Yes	34.8	30.3
No	65.2	69.7

⁶ One respondent answered “don’t know” and 5 refused to answer the question. Hence, the N for this question is 451.

	Percent Very/Somewhat Aware (N=398)	Percent of Total Sample (N~457)
Definition of Clean Air Action Day		
Take voluntary action (don't mow, refuel)	70.9	61.7
Hot, muggy, hazy days	19.8	17.5
Day when air pollution is high	15.8	14.0
Day when ozone or particulate matter is excessive	13.3	11.8
Day when it is unhealthy to be outdoors	9.0	8.3
Day to be aware of "air issues"	3.3	2.8
Thinks that these are clear, "good" days	1.8	1.8
Other	2.5	2.4
Don't know	3.0	2.8
Number of Clean Air Action Days in 2011		
0-2 days	23.0	--
3-6 days	49.7	--
7-9 days (viewed as the accurate response)	6.5	--
10 or more days	20.8	--
Familiarity with actions citizens can take on Clean Air Action Days		
Don't mow/mow after 6:00 p.m.	70.4	61.5
Don't refuel/refuel after 6:00 p.m.	46.5	40.9
Carpool	29.1	25.6
Don't top off gas tank/don't overfill	19.8	17.5
Take a bus	18.1	15.8
Drive less/less (gas) powered tools/less fuel use	13.1	11.6
No burning	6.0	5.3
Bike or walk	5.3	4.8
Use less electricity	3.8	3.5
Stay inside	3.8	3.3
Other	5.3	4.8
Don't know	6.8	5.9

Table 2 demonstrates that the vast majority of respondents are at least somewhat aware of Clean Air Action Days, with almost 40 percent reporting a high degree of awareness (i.e., they are "very aware"), and 50 percent saying that they are "somewhat aware." Throughout the remainder of this report, these respondents will be termed "aware respondents."

Of these 398 aware respondents, however, only about one third were aware that the program had recently changed its name. The tendency is for respondents to underestimate the number of Clean Air Action Days in the past summer, with almost three quarters believing that there were six or fewer days called and only six percent being close to accurate about the number of Clean Air Action Days in 2011 (that is, they are at or within one day of the correct number).

Definitions of Clean Air Action Days vary, with the largest number of aware respondents—about 70 percent—reporting that these are days when you take voluntary action such as not mowing the grass or refueling the car. Between about 10 and 20 percent or aware respondents also define these days as ones when it is hot, muggy, or hazy; when air pollution is high; when ozone or particulate matter in the air is high; or when it is unhealthy to be outdoors.

Because multiple response options are possible, percentages will exceed 100 percent. In fact, aware respondents used on average 1.4 response categories to describe Clean Air Action Days, with 63 percent using one category, 23 percent using two categories, and 8 percent using three or four categories.⁷

Similarly, aware respondents were familiar with a variety of actions that citizens can take on Clean Air Action Days. They were most likely to mention not mowing the grass or mowing after 6:00 p.m., with 70 percent of aware respondents suggesting this voluntary action. Almost one half also noted that one could refrain from refueling one's car or could refuel after 6:00 p.m., and another 20 percent focused on not topping off or overfilling the gas tank. Almost 30 percent of aware respondents mentioned that one could carpool on Clean Air Action Days, and almost 20 percent mentioned taking the bus. There was also

⁷ Five percent provided no description.

recognition among these respondents that using fuel or gasoline-powered equipment is problematic on action days, with 13 percent of respondents noting that one should drive less and/or use less fuel in automobiles and other machines.

Again, percentages will exceed 100 percent because respondents could mention multiple voluntary actions available to residents. While 14 percent of aware respondents could name no action associated with Clean Air Action Days, 11 percent named one, 32 percent named two, 29 percent named three, and 14 percent named four or more voluntary actions available to residents. Aware respondents mentioned, on average, 2.2 voluntary actions that could be taken to support action days.

Compliance with Clean Air Action Days

Respondents who were aware of Clean Air Action Days and who could name one or more action that citizens could take on those days (N=369) were asked how frequently they engaged in “voluntary actions suggested by the Clean Air Action Days program.”⁸ The four response options ranged from “all or almost all of the days” to “none or almost none of the days.” Aware respondents were reminded that “there are a number of reasons why citizens participate in Clean Air Action Days.” They were then asked: “What are the main reasons for taking action?”⁹

Table 3 summarizes responses to these compliance questions, using percentage distributions.

⁸ In the print questionnaire, all aware respondents were asked this question.

⁹ The small number of aware respondents from the telephone interview (N=27) who were not aware of the voluntary actions that could be taken during Clean Air Action Days were asked the “primary reasons” they were not able to take voluntary actions and to indicate how willing they would be to participate if they “knew what low-cost or no-cost actions to take.” The two main reasons for non-participation are “not convenient” with 22% of responses and “wasn’t aware of days” with 37% of responses. Twenty four of these respondents had an opinion about whether they would participate in action days if they were more knowledgeable; 8 percent said they would be “very willing,” 21 percent said they would be “somewhat willing,” 42 percent said they were “neutral,” and 29 percent said they would be “very unwilling” to participate.

**Table 3: Compliance with Clean Air Action Days:
Percentage Distributions**

	Percent
Frequency of Engagement in Voluntary Actions (N=369)	
All or almost all days	31.7
Most of the days	28.2
Some of the days	21.1
None or almost none of the days	19.0
Reasons for Participation for Aware Respondents (N=398)	
Environmental-related issues	65.3
General health reasons	14.8
Respiratory/breathing health	11.6
Concern for children	7.8
Concern for the elderly	2.5
Economic impact/regulatory issues	4.3
Easy/right thing to do	3.5
Awareness – make people notice	1.5
Other	5.8
Don't know	5.0

The sample of aware respondents is split approximately 60/40 between those who report engaging in voluntary actions on Clean Air Action Days on most, almost all, or all of the days and those who report taking action on none, almost none, or only some of the days. By far the most commonly mentioned reason for taking part in Clean Air Action Days focused on issues related to the environment, with almost two thirds of respondents making this argument. Between 10 and 15 percent of aware respondents also noted that citizens participate in action days because of a concern with general health or, more specifically, with respiratory and breathing health.

Sources and Timing of Information on Clean Air Action Days

Aware respondents were asked a number of questions about the information they receive about Clean Air Action Days. Specifically, they were asked where they have

“received information about Clean Air Action Days,” and how they learn that a Clean Air Action Day has been called.” Respondents answered in their own words. They were not read a list of categories as possible responses to these two questions, and they could possibly mention more than one information source. Aware respondents were also asked the number of years that they had been aware of Clean Air Action Days and the timing of first hearing that a specific day has been designated a Clean Air Action Day.

Near the end of the interview, all respondents were asked “their preferred way of getting information about west Michigan issues.” Only one response was possible for this item. Table 4 provides the percentage distributions summarizing responses to these questions.

Table 4: Sources and Timing of Information about Clean Air Action Days: Percentage Distributions

	Percent Very/Somewhat Aware (N=398)
Sources of information about Clean Air Action Days	
Local television news	67.8
Local radio	27.1
Local newspapers	17.6
Other	5.0
Internet	4.8
Word of mouth	4.0
Don't know	2.5
School	2.0
Billboard	2.0
On-line streaming radio	2.0
Work	1.5
Mail	1.0
Facebook/Tweet	0.8
Public Service announcement	0.8
Display booth	0.8
Clean Air website	0.5
Telephone hotline	0.3

	Percent Very/Somewhat Aware (N=398)
Ways of learning when a Clean Air Action Day has been called	
Local television news	69.1
Local radio	28.1
Local newspapers	8.5
Other	4.8
Internet website	4.5
Don't know	3.5
Electronic highway sign	2.5
Word of mouth	1.5
On-line streaming radio	0.8
Social media	0.5
Telephone hotline	0.3
Work	0.3
EnviroFlash	0.3
Timing of learning that it is a Clean Air Action Day	
Day before	35.9
Morning of	53.7
Evening of	5.4
Don't know	4.9
Years aware of Clean Air Action Days	
0-3 years	16.4
4-5 years	21.0
6-15 years	48.4
More than 15 years	14.2
Percent of Total Sample	
Preferred ways of getting information about West Michigan issues	
Television	43.8
Newspaper	21.3
Internet news sources (e.g.,MLive, WOOD TV)	7.4
Radio	7.2
E-mail	6.9
Other	6.7
Other Internet	4.9
Friends/relatives	1.4
Social media	0.5

Aware respondents report that they are most likely to receive information about Clean Air Action Days and are most likely to learn that a day has been called through local television news (almost 70 percent of aware respondents) or local radio (more than 25 percent of them). Electronic sources of information and social media are not sources of information for large numbers of respondents. In fact, none of these sources is mentioned by more than five percent of the aware group.

More than one half of respondents learn about a Clean Air Action Day on the morning of the day itself, and about 35 percent learn of the day the day before. Only five percent of respondents report learning that a day has been called on the “evening of” the day, when the day—by definition—is almost over. The average aware respondents has known about Clean Air Action Days for 10 years, with 16 percent of these respondents aware of action days for three or fewer years and 14 percent for more than 15 years.

Even in 2011, residents tell us that they prefer to receive information about West Michigan issues through traditional forms of media. More than 40 percent of residents report that television is their preferred information source, and more than 20 percent choose the newspaper. Nonetheless, if we combine response categories, we see that almost 20 percent of residents indicate they prefer to receive information about West Michigan issues from either Internet news sources, other Internet sites, or e-mail.

Factors Predicting Clean Air Action Awareness and Compliance

Understanding the factors that encourage awareness about Clean Air Action and compliance with the program is useful in evaluating the success of past educational campaigns and in structuring future endeavors. This section of the report highlights the socio-demographic factors that are associated with both Degree of Awareness of Clean Air

Action Days and Frequency of Engaging in Actions suggested by the program. Table 5 presents those factors that have a statistically significant relationship with Awareness (at the $p \leq .05$ level), and Table 6 presents the factors that have such a relationship with Frequency of Engaging in Voluntary Actions (also at the $p \leq .05$ level). Recall that only aware respondents were asked this latter question.

Table 5: Predictors of Degree of Awareness of Clean Air Action Days: Percentages

Awareness by Ethnicity

	Minorities	Whites
Very aware	21.4	39.7
Somewhat aware	50.0	50.0
Not at all aware	28.6	10.3

Awareness by Birth Year

	1919-46	1947-66	1967-76	1977-96
Very aware	42.9	46.9	42.0	13.0
Somewhat aware	42.0	45.7	52.2	68.8
Not at all aware	15.1	7.4	5.8	18.2

Awareness by Income

	Less than \$25,000	\$25,000 or more
Very aware	34.3	35.9
Somewhat aware	44.8	55.0
Not at all aware	20.9	9.1

Awareness by Years in West Michigan

	0 - 5 Years	6 - 15 Years	16 - 25 Years	26 - 45 years	45 - 87 Years
Very aware	28.6	30.3	35.6	43.3	44.1
Somewhat aware	40.5	52.6	57.5	50.0	46.3
Not at all aware	31.0	17.1	6.8	6.7	9.6

Awareness by Importance of Environmental Issues

	Environment Issues Very Important	Environment Issues Somewhat Important	Environment Issues Not too/Not at All Important
Very aware	44.8	36.6	22.6
Somewhat aware	46.8	51.5	54.7
Not at all aware	8.4	11.9	22.6

Awareness by Importance of Air Pollutions Issues

	All 3 are Major Problems	None of 3 is a Problem
Very aware	33.3	30.0
Somewhat aware	63.3	46.0
Not at all aware	3.3	24.0

Table 5 indicates that whites are more likely than members of ethnic minority groups to be aware of Clean Air Action Days, with almost 40 percent of whites and less than 20 percent of minority group members reporting that they are “very aware.” Younger people (those born in or after 1977) are much less likely to be “very aware” of Clean Air Action Days; only 13 percent express high awareness compared to more than 40 percent of the other birth cohorts listed. Similarly, people from low income households are less likely to be aware of Clean Air Action Days: about 20 percent of residents from households with incomes under \$25,000 compared to about 10 percent of higher income residents are “not at all aware” of action days. In addition, respondents who have lived in West Michigan for a short period of time—five years or less—are especially likely to report that they are “not at all aware” of action days: more than 30 percent of new residents choose this low awareness category compared to less than 10 percent of respondents who have been in the community more than 15 years.

Respondents who view environmental issues as “very important” are more likely than those who view environmental issues as “not at all important” to be very aware of Clean Air

Action Days. Further, fewer than 10 percent of the high environmental salience respondents are “not at all aware” of action days compared to more than 20 percent of those who view environmental issues as unimportant.

The three questions asking about the extent to which air pollution, ground level ozone, and particulate matter are problems correlate well with one another and can appropriately be combined into a scale (Cronbach’s alpha = .85). Very few respondents (only three percent) who see all three air quality issues as major problems are “not at all aware” of Clean Air Action Days, while about 25 percent of those who see all three air quality issues as “not a problem” are unaware of action days.

Interestingly, awareness is not affected by household composition or location. That is, respondents in households with children, with seniors, or with individuals with heart disease or respiratory challenges are not more likely than others to be aware of Clean Air Action Days. Similarly, respondents who spend more time out-of-doors on either weekdays or weekends are not more likely than other respondents to be aware of action days. Likewise, there are no significant differences in awareness across the three West Michigan counties that are the focus of our analysis.

Table 6: Predictors of Frequency of Engaging in Voluntary Actions: Percentages

Frequency of Engaging in Voluntary Actions by Gender

	Male	Female
All or almost all of the days	24.8	36.1
Most of the days	21.3	32.6
Some of the days	24.8	18.9
None or almost none of the days	29.1	12.3

Frequency of Engaging in Voluntary Actions by Birth Year

	1919-46	1947-66	1967-76	1977-96
All or almost all of the days	35.6	38.3	30.6	11.9
Most of the days	31.0	27.9	29.0	25.4
Some of the days	18.4	16.9	22.6	32.2
None or almost none of the days	14.9	16.9	17.7	30.5

Frequency of Engaging in Voluntary Actions by Importance of Environmental Issues

	Environment Issues Very Important	Environment Issues Somewhat Important	Environment Issues Not too/Not at All Important
All or almost all of the days	44.1	26.3	10.8
Most of the days	31.4	28.8	10.8
Some of the days	18.3	25.0	18.9
None or almost none of the days	9.1	19.9	59.5

Frequency of Engaging in Voluntary Actions by Importance of Air Pollution Issues

	All 3 are Major Problems	None of 3 is a Problem
All or almost all of the days	35.7	11.4
Most of the days	32.1	17.1
Some of the days	25.0	17.1
None or almost none of the days	7.1	54.3

Aware women are more likely than aware men to report that they engage in voluntary actions on at least most of the days: more than two thirds of these women and less than one half of these men report such a high level of Clean Air Action Day engagement. Aware respondents who are younger are less likely to frequently engage in voluntary action day activities: while two thirds of the oldest aware respondents engage in voluntary activities at least “most of the days,” almost two thirds of the youngest aware respondents are engaged “some of the days” or less often.

Aware respondents who view environmental issues as “very important” are more likely than those who view environmental issues as “not at all important” to frequently

engage in voluntary actions in support of Clean Air Action Days. Less than 10 percent of the those who see environmental issues as “very important” compared to almost 60 percent of those who see environmental issues as “not at all” or “not too important” are found in the lowest category of voluntary action engagement, taking part in action on none or almost none of the Clean Air Action Days.

Most respondents (54 percent) who think that air pollution, ground level ozone, and particulate matter are not problems are engaged in voluntary actions on none or almost none of the Clean Air Action Days. Such a low participation rate is found in only seven percent of respondents who think that all three air quality issues are major problems.

Conclusions

This report summarizes data from 457 respondents from Kent, Ottawa, and Muskegon counties in West Michigan, who completed either telephone interviews or print questionnaires focused on Clean Air Action Days and air pollution issues. Data were gathered by the Center for Applied Research and Rural Studies of Central Michigan University during September and October, 2011. Key findings include:

- The largest number of respondents see air quality issues as a “minor problem” rather than a major problem.
- Most respondents see no change in air quality during the last five years, while about one quarter of the sample believes that air quality has been improving.
- Almost one half of respondents reports that “environmental issues within your community” are “very important,” and almost as many see environmental issues as “somewhat important” (rather than “not too” or “not at all important”).

- Almost 40 percent of respondents report that they are “very aware” and 50 percent say that they are “somewhat aware” of Clean Air Action Days.
- Only about one third of aware respondents know that the program has recently changed its name to Clean Air Action Days (from Ozone Action Days).
- The largest number of “aware” respondents—about 70 percent—define Clean Air Action Days as days when you take voluntary action such as not mowing the grass or refueling the car.
- Aware respondents can name a variety of voluntary actions that can be taken on Clean Air Action Days, and they were most likely to mention not mowing the grass or mowing after 6:00 p.m. (70 percent) and refraining from refueling one’s car or refueling after 6:00 p.m. (almost 50 percent).
- About 60 percent of the sample of aware respondents engage in voluntary actions on Clean Air Action Days on most, almost all, or all of the days, and 40 percent take action on none, almost none, or only some of the days.
- By far the most commonly mentioned reason for taking part in Clean Air Action Days focused on issues related to the environment, with almost two thirds of respondents mentioning this reason for participation.
- Aware respondents are most likely to receive information about Clean Air Action Days and are most likely to learn that a day has been called through local television news (almost 70 percent of aware respondents) or local radio (more than 25 percent).
- More than one half of respondents learn about a Clean Air Action Day on the morning of the day itself, and about 35 percent learn of an action day on the previous day. The average aware respondent has known about Clean Air Action Days for 10 years.

- Television and radio are the preferred way of gaining information about West Michigan for the total sample of aware and not aware respondents.
- Awareness of Clean Air Action Days is highest among whites and older respondents. Respondents from low income households and those who have lived in West Michigan for a relatively short period of time (five years or less) are more likely to be “not at all aware” of the Clean Air initiative. Those who see environmental issues as not important and those who see (three) air quality issues as *not* problems are more likely to be unaware of action days.
- Frequency of engagement in Clean Air Action Day voluntary actions is lowest among men and younger respondents. Respondents who view environmental issues as not especially important and those who are not concerned with air quality issues are least likely to participate in voluntary actions supporting Clean Air Action Days.

Recommendations

While awareness of Clean Air Action Days in West Michigan counties is reasonably high, the data presented above suggest that additional educational efforts should focus on some specific groups.

- In particular, the messages about groups especially at risk for health-related problems associated with air pollution are not prompting members of those groups to be especially active in the Clean Air initiative. It might be well advised to target educational campaigns to parents, to seniors, to those facing specific health challenges, and to those who spend large amounts of time out-of-doors.
- Attention should also be given to the effectiveness of messages targeted to young people and to new residents to the West Michigan area. There is, of course, overlap

between these groups, as 23 percent of those born in 1977 or later have lived in West Michigan for five years or less. Perhaps educational materials could be included with the “welcome packets” that some realtors, apartment complexes, and community groups prepare for new residents. In addition, while electronic media are not relied upon heavily by the total sample of respondents for information about West Michigan, the youngest respondents are most likely to express a preference for learning about West Michigan through these sources. In fact, 17 percent of the youngest residents (the 1977-96 cohort) state a preference for receiving such information through Internet news sources or other Internet sources and an additional 15 percent report wanting to receive West Michigan information through social media or e-mail.

- Similarly, respondents from the lowest income groups and residents who are ethnic minorities are less aware than others of Clean Air initiatives. One approach to more effective communication may be to develop partnerships with existing groups that serve these communities or that disproportionately draw their membership from these groups.
- Finally, it is clear that people who believe that environmental issues are important to their community are more likely than others to be aware of and compliant with Clean Air Action Days. Coalitions between environmental groups to spread specific messages about air quality along with more general messages about sustainability might enhance both the quality of life and the quality of health for residents of Kent, Ottawa, and Muskegon counties.

APPENDIX A

Interview Schedule

Telephone and Print Survey

Telephone Interview

Question HELLO

Hello, I am calling from Central Michigan University on behalf of the West Michigan Clean Air Coalition. You should have received a postcard from us about the survey we are conducting about air quality issues.

INTERVIEWER: PRESS ANY KEY TO CONTINUE,
IF NO, CNTL/END TO QUIT

Question IRB

I want to assure you that all of your responses will remain confidential. Your participation is completely voluntary. If you don't want to answer any particular question, just tell me and we'll move on. If you decide to stop at any time, you can do so without penalty. Your participation will not affect your relationship with CMU, and there are no risks to you for participating.

The interview will take about 10 minutes.

YOU MUST CLICK HERE TO CONTINUE, THEN NEXT

Question CHECKAGE

Just to verify: are you at least 18 years of age?

YES

NO

IF (ANS = 2) SKP NOTQAL (This means is the second answer—NO—is chosen, skip to the question named "NOTQAL.")

Question COUNTY

In which county do you currently live?

- Kent County
- Muskegon County
- Ottawa County
- don't know
- none of these
- refusal

IF (ANS = 5) SKP NOTQAL

Question AWARE

How aware are you of Clean Air Action Days? You might also hear these days referred to as Ozone Action Days or Air Quality Action Days.

Would you say that you are very aware, somewhat aware, or not at all aware of these days?

- VERY AWARE
- SOMEWHAT AWARE
- NOT AT ALL AWARE
- don't know
- refusal

IF (ANS = 3) SKP RESIDE

Question NAMECHG

Were you aware that the program recently changed its name from Ozone Action to Clean Air Action?

- YES
- NO
- don't know
- refusal

Question DESCRB

In your own words, what is a Clean Air Action Day?

INTERVIEWERS: Let respondent provide answers. Do not read list to respondent. Mark ALL that apply.

- day when you undertake voluntary actions (don't mow, refuel after 6 pm)
- day when air pollution is high
- day when it is unhealthy to be outdoors
- hot, muggy, hazy days
- exceeding of acceptable ozone or particulate matter levels

- other - specify
- don't know
- refusal

Question NUMDAY

How many Clean Air Action Days do you recall during the past summer (2011)?

INTERVIEWERS: USE 88 for don't know and 99 for refusal

DAYS

Question VOLACT

The West Michigan Clean Air Coalition suggests a number of voluntary actions citizens can take on Clean Air Action Days. Please tell me which ACTIONS you are familiar with.

INTERVIEWERS: Do not read list to respondent. Select ALL that apply.

- don't refuel or refuel after 6 pm
- don't top off gas tank or don't overfill gas tank
- don't mow grass or mow after 6 pm
- carpool
- take a bus
- Other -- Specify 
- don't know/names NO ACTION to take
- refusal

IF (ANS = 7) SKP REASNO

Question FREQ

Considering all Clean Air Action Days this summer, how frequently did you engage in voluntary actions suggested by the Clean Air Action Days program -- all or almost all of the days, most of the days, some of the days, or none or almost none of the days?

- ALL OR ALMOST ALL OF THE DAYS
- MOST OF THE DAYS
- SOME OF THE DAYS
- NONE OR ALMOST NONE OF THE DAYS
- don't know
- refused

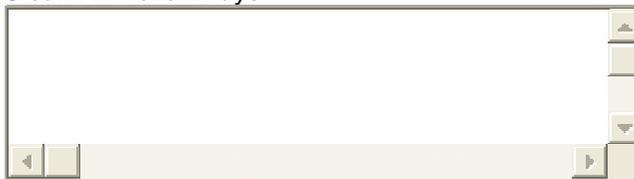
Question REASNO

What are the primary reasons you were NOT able to take voluntary actions during all of the Clean Air Action Days?

INTERVIEWERS: Do not read list to respondent. Select all that apply.

- not convenient
- don't agree with it
- not a problem
- believe that one person's actions don't make a difference
- don't care
- wasn't aware of Clean Air Action Days

Other -- Specify



- don't know
- refusal

IF (VOLACT <> 7) SKP

Question DOPART

There are a number of reasons WHY citizens participate in Clean Air Action Days. What are the main reasons for taking action?

INTERVIEWERS: Do not read list to respondent. Select all that apply.

- general health reasons (not good for me)
- health reasons related to respiratory tract/breathing
- concern for children
- concern for elderly
- environmental-related issues, including air quality issues
- economic impact, avoid regulatory measures, avoid non-attainment status

Other -- Specify



- don't know/respondent names NO action to tke

refusal

Question COST

How willing would you be to participate if you knew what no-cost or low-cost actions to take -- very willing, somewhat willing, neutral, somewhat unwilling, or very unwilling?

- VERY WILLING
- SOMEWHAT WILLING
- NEUTRAL
- SOMEWHAT UNWILLING
- VERY UNWILLING
- don't know
- refused

IF (VOLACT <> 7) SKP

Question YEARS

For how many years have you been aware of Clean Air Action Days?

INTERVIEWERS: USE 88 for don't know and 99 for refusal

YEARS

Question RCDINFO

Where have you received information about Clean Air Action Days?

INTERVIEWERS: Do not read list to respondent.

Select all that apply. Note two types of radio (PROBE)

- local television news
- on-line streaming radio
- local radio
- local newspapers
- work
- school
- word of mouth
- West Michigan Clean Air Coalition website
- Facebook/Twitter
- public service announcement
- display booth
- telephone hotline

Other -- Specify

- don't know
- refusal

Question CALLED

When a Clean Air Action Day has been called, how do you learn that it has been called?

INTERVIEWER: Do not read list to respondent. Select ALL that apply.

Note two types of radio (probe)

- local television news
- on-line streaming radio
- local radio
- local newspapers
- word of mouth
- electronic highway sign

- work
 - EnviroFlash (environmental e-mail communication)
 - Social media (tweet/blog)
 - Internet websites
 - telephone hotline
-
- Other -- Specify
 - don't know
 - refusal

Question WHEN

When do you first hear it is a Clean Air Action Day -- the day before the Clean Air Action Day, the morning of the day, or the evening of the day?

- DAY BEFORE
- MORNING OF
- EVENING OF
- don't know
- refused

Question RESIDE

How many years have you lived in Kent, Muskegon, or Ottawa counties?

INTERVIEWERS: USE 88 for don't know and 99 for refusal

YEARS

Question PROBAIR

How much of a problem do you think air pollution is in your community -- a major problem, a minor problem, or not a problem?

- MAJOR PROBLEM
- MINOR PROBLEM
- NOT A PROBLEM
- don't know
- refusal

Question PROBOZON

How much of a problem do you think ground level ozone is in your community -- a major problem, a minor problem, or not a problem?

- MAJOR PROBLEM
- MINOR PROBLEM
- NOT A PROBLEM
- don't know
- refused

Question PROBPM

Fine particulate matter consists of small particles of dirt or soot in the air.
How much of a problem do you think fine particulate matter is in your community -- a major problem, a minor problem, or not a problem?

- MAJOR PROBLEM
- MINOR PROBLEM
- NOT A PROBLEM
- don't know
- refused

Question PROBENVIR

Generally speaking, how important are environmental issues within your community to you -- very important, somewhat important, not too important, or not at all important?

- VERY IMPORTANT
- SOMEWHAT IMPORTANT
- NOT TOO IMPORTANT
- NOT AT ALL IMPORTANT
- don't know
- refused

Question CHANGE

In the last five years, would you say that air quality in west Michigan has been improving, declining, or staying about the same?

- IMPROVING
- DECLINING
- STAYING ABOUT THE SAME
- don't know/have not lived here that long
- refusal

Question BIRTHYR

These last questions ask you about your background. This information is used for summary purposes only.

In what year were you born?

INTERVIEWERS: USE 99 for refusal

19

Question EDUC

What is the highest level of education you have completed?

- LESS THAN HIGH SCHOOL
- HIGH SCHOOL OR GED
- SOME COLLEGE OR TECHNICAL SCHOOL, including Associate's degree
- COLLEGE DEGREE
- SOME GRADUATE WORK
- GRADUATE DEGREE
- don't know
- refused

Question NUMKIDS

How many children under the age of 18 live in your household?

- NONE
- ONE
- TWO
- THREE
- FOUR
- FIVE
- SIX
- SEVEN
- EIGHT OR MORE
- refusal

Question NUMSENR

How many senior citizens 65 years or older -- including yourself -- live in your household?

- NONE
- ONE
- TWO
- THREE
- FOUR
- FIVE
- SIX
- SEVEN
- EIGHT OR MORE
- refusal

Question HEALTH

Does anyone in your household suffer from heart disease or respiratory issues such as asthma, emphysema, or other breathing difficulties?

- YES
- NO
- refusal

Question BESTINFO

What is your PREFERRED way of getting information about west Michigan issues? (Just in your own words.)

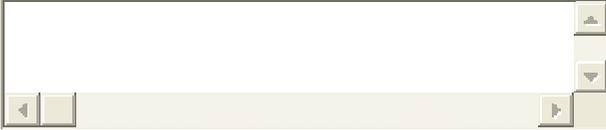
INTERVIEWER: DO NOT READ CATEGORIES UNLESS NECESSARY
CLICK APPROPRIATE CODE BELOW OR
CLICK "OTHER" AND ENTER A RESPONSE

- radio
- television
- newspaper
- internet news sources -- MLive, WOOD TV, WZZM 13

- other internet--specify 
- social media (Facebook/Twitter/You Tube)
- e-mail
- friends/relatives
- other--specify 
- don't know
- refusal

Question ETHNIC

What is your race or ethnicity?

- AFRICAN AMERICAN/BLACK
- ASIAN AMERICAN
- LATINO/HISPANIC
- AMERICAN INDIAN/NATIVE AMERICAN
- WHITE
- other: specify 
- don't know
- refused

Question WORKOUT

On a typical summer day during the Monday through Friday workweek, how many hours per day do you spend outdoors -- whether for recreation or as part of your job?

INTERVIEWERS: USE 88 for don't know and 99 for refusal

HOURS

How about on a typical weekend day? (How many hours do you spend outdoors --

whether for recreation or as part of your job?)

HOURS

Question INCOME

What is your annual household income?

INTERVIEWER: READ CATEGORIES

- CATEGORY A: UNDER \$25,000
- CATEGORY B: \$25,000 UP TO \$50,000
- CATEGORY C: \$50,000 UP TO \$75,000
- CATEGORY D: \$75,000 UP TO \$100,000
- CATEGORY E: MORE THAN \$100,000
- don't know
- refusal

Question SEX

INTERVIEWER: NOTE SEX

- MALE
- FEMALE

Question THANKS

That's all the questions that I have for you.
Thanks for your time.

INTERVIEWER: PRESS ANY KEY TO CONTINUE

Question NOTQAL

Thanks anyway. We need to speak to residents 18 years of age or older from Kent, Muskegon, or Ottawa counties.

INTERVIEWER: PRESS ANY KEY

Views of West Michigan Residents

In which county do you currently live? *(check one box)*

Kent	Muskegon	Ottawa
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very Aware	Somewhat Aware	Not at All Aware
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How aware are you of Clean Air Action Days— <i>formerly called Ozone Action Days or Air Quality Days?</i> <i>(check one box)</i>	CONTINUE WITH NEXT QUESTION	CONTINUE WITH NEXT QUESTION	SKIP TO TOP OF PAGE 3

Just in your own words, what is a Clean Air Action Day? _____

How many Clean Air Action Days do you recall during the past summer (2011)? _____ **Days**

	Yes	No
Were you aware the program recently changed its name from Ozone Action to Clean Air Action? <i>(check one box)</i>	<input type="checkbox"/>	<input type="checkbox"/>

Just in your own words, why did the program change its name from Ozone Action to Clean Air Action? _____

The West Michigan Clean Air Coalition suggests a number of voluntary actions citizens can take on Clean Air Action Days. Please tell me which actions you are familiar with.

If you are NOT familiar with actions to take: How willing would you be to participate if you knew what no-cost or low-cost actions to take? *(check one box)*

- Very Willing**
- Somewhat Willing**
- Neutral**
- Somewhat Unwilling**
- Very Unwilling**

	All or Almost All of the Days	Most of the Days	Some of the Days	None or Almost None of the Days
Considering all Clean Air Action Days this summer, how frequently did you engage in voluntary actions suggested by the Clean Air Action Days program? <i>(check one box)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What are the primary reasons you or people you know were NOT able to take voluntary actions during all of the Clean Air Action Days?

There are a number of reasons why citizens participate in Clean Air Action Days. What are the main reasons for taking action?

For how many years have you been aware of Clean Air Action Days? _____ **Years**

Where have you received information about Clean Air Action Days? _____

When a Clean Air Action Day has been called, how do you learn that it has been called? _____

	Day Before	Morning of the Day	Evening of the Day
When do you first hear it is a Clean Air Action Day? <i>(check one box)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FOR ALL RESPONDENTS – PLEASE CONTINUE

How many years have you lived in Kent, Muskegon, or Ottawa counties? _____ **Years**

What is your preferred way of getting information about West Michigan issues? _____

The next questions ask you about some community issues. *(check one box for each row)*

	Very Important	Somewhat Important	Not Too Important	Not at All Important
Generally speaking, how important are environmental issues within your community to you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Major Problem	Minor Problem	Not a Problem	
How much of a problem do you think air pollution is in your community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
How much of a problem do you think ground level ozone is in your community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Particulate matter consists of small particles of dirt or soot in the air. How much of a problem do you think particulate matter is in your community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Improving	Declining	Stay the Same	
In the last five years, would you say that air quality in West Michigan has been improving, declining, or staying about the same?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

PLEASE CONTINUE TO THE LAST PAGE

FOR ALL RESPONDENTS

These last questions focus on your background. This information is used for summary purposes only. Your responses will, of course, remain confidential.

What is the highest level of education you have completed? *(check one box)*

- | | |
|--|--|
| <input type="checkbox"/> LESS THAN HIGH SCHOOL | <input type="checkbox"/> COLLEGE DEGREE |
| <input type="checkbox"/> HIGH SCHOOL OR GED | <input type="checkbox"/> SOME GRADUATE WORK |
| <input type="checkbox"/> SOME COLLEGE OR TECHNICAL SCHOOL, including Associate's degree | <input type="checkbox"/> GRADUATE DEGREE |

How many children under the age of 18 live in your household? _____ **Children**

How many senior citizens 65 years or older -- including yourself -- live in your household? _____ **Seniors**

On a typical summer day during the Monday through Friday workweek, how many hours per day do you spend working outdoors – whether for recreation or as part of your job? _____ **Hours**

On weekends in the summer, how many hours per day do you spend outdoors? _____ **Hours**

	Yes	No
Does anyone in your household suffer from heart disease or respiratory issues such as asthma, emphysema, or other breathing difficulties? <i>(check one box)</i>	<input type="checkbox"/>	<input type="checkbox"/>

What is your sex? **Male** **Female**

In what year were you born? **19** _____

What is your race or ethnicity? *(check one box)*

- AFRICAN AMERICAN**
- ASIAN AMERICAN**
- LATINO/HISPANIC**
- AMERICAN INDIAN/NATIVE AMERICAN**
- WHITE**
- Other:** Please specify _____

Please check the category that best describes your yearly household income. *(check one box)*

- | | |
|---|--|
| <input type="checkbox"/> LESS THAN \$25,000 | <input type="checkbox"/> \$75,000 UP TO \$100,000 |
| <input type="checkbox"/> \$25,000 UP TO \$50,000 | <input type="checkbox"/> \$100,000 OR MORE |
| <input type="checkbox"/> \$50,000 UP TO \$75,000 | <input type="checkbox"/> don't know |

Thank you for your participation.
Please return completed survey in the postage-paid envelope provided

APPENDIX B
Communications

September 12, 2011

Dear West Michigan Resident:

The Center for Applied Research and Rural Studies at Central Michigan University is working with the West Michigan Clean Air Coalition to conduct a scientific survey to learn your views about air pollution, Clean Air Action Days, and related issues in your community.

Enclosed you will find a survey and a postage-paid return envelope. Your household was selected **randomly** to participate in this project. While your participation in this research study is, of course, **voluntary**, we hope we can count on your participation! The views and experiences of all residents 18 years and over are important to us. Be assured that your decision to participate or not to participate will in no way affect your relationship with Central Michigan University, and there are no risks to you for participating. The survey will take you 5 to 10 minutes to complete.

The number that you will find on the back page of the survey is to keep track of in-coming and out-going mail only. All of your survey responses will remain **confidential**. Your name will never be associated with your responses to the questions in the survey.

Please call us at 989-774-2572 if you have any questions about this important research project. Thank you very much.

Sincerely,



Mary S. Senter
Director

If you are not satisfied with the manner in which this study is being conducted, you may report, anonymously if you choose, any complaints to the Institutional Review Board: 251 Foust Hall, Central Michigan University, Mount Pleasant, MI 48859; or call 989-774-6401.

HELLO, AGAIN!

It has been almost three weeks since we mailed you a survey about air pollution, Clean Air Action Days, and related issues in your community. We are sending you a second copy of the survey because we are concerned that we have not yet received your completed questionnaire. The responses of everyone who randomly falls into the sample are critical if we are to represent the opinions and experiences of West Michigan residents!

We would appreciate it if someone 18 years of age or older in your household completes the questionnaire. As we mentioned before, all responses will remain **confidential**, and the survey **takes just a few minutes to complete**. A pre-paid, self-addressed envelope is included for your convenience. You will see no identifying information on the questionnaire or the return envelope.

Please call us at 989-774-7415 if you have any questions about this research project, which is being sponsored by the West Michigan Clean Air Coalition.

If you have already completed the questionnaire (printed on white paper), please do NOT complete this second one (printed on yellow paper).

Thank you for your time and your insights.

Sincerely,



Mary S. Senter, Director

Postcard reminder for print survey:

Dear West Michigan Resident:

Last week we mailed you a questionnaire to learn your views about air pollution, Clean Air Action Days, and related issues in your community. If you have already returned the completed questionnaire, please accept our thanks and appreciation.

If you have not yet returned the survey, please take a few minutes to do so. It is important that we have a large sample of West Michigan residents to understand all viewpoints and experiences. If you would like us to send you another copy of the questionnaire or if you would like to complete the survey over the telephone, please call us at 989-774-2572.

We hope we can count on your participation! Please feel free to call us if you have any questions about this research project, sponsored by the West Michigan Clean Air Coalition.

Thank you for your time and input.



Mary S. Senter, Director
Center for Applied Research and Rural Studies



Postcard for telephone interviewing:

Dear West Michigan Resident:

The Center for Applied Research and Rural Studies at Central Michigan University is working with the West Michigan Clean Air Coalition to conduct a scientific survey of residents in your area. The project focuses on residents' views about air pollution, Clean Air Action Days, and related issues in your community.

In the next couple of weeks, we will be calling to conduct a short telephone interview with an adult member of your household. This call will be used only for the purposes of gathering information about your views and experiences. Your answers will be kept strictly confidential, and the interview will not take long to complete. If we call at a bad time, just tell us and we will be happy to call back at a time that is convenient for you.

We hope we can count on your participation! Please call us at 989-774-2572 if you have any questions about this research project. Thank you.



Mary Senter
Director
Center for Applied Research & Rural Studies

