Center for
Applied
Research &
Rural
Studies

Central Michigan University

West Michigan Residents and Clean Air Action:

The Experiences and Opinions of Kent, Muskegon, and Ottawa County Residents in 2016

WEST MICHIGAN
CLEAN AIR
ACTION!

Prepared by Mary Senter
January 12, 2017

Table of Contents

Introduction

In August 2016, the Grand Valley Metropolitan 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 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. Particular attention is given to measuring whether they 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) are more or less aware of air pollution problems and are especially involved or uninvolved 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. CARRS completed a similar project for the Grand Valley Metropolitan Council in 2011, and this report follows the same format as the earlier one to facilitate comparisons over time.

Instrument Design and the Sample of Residents

The survey instrument was developed for this project by CARRS in consultation with Grand Valley Metropolitan Council staff. Many of the questions are replications of ones used in the CARRS survey undertaken in 2011. Survey questions for 2016 were reformatted because the 2011 survey was administered both over the telephone and in print form. Further, in 2011, a number of the

survey questions were asked in an open-ended fashion. A number of these questions do appear in the 2016 survey, but they are associated with closed-ended response options developed from coding of the 2011 qualitative responses. The survey was formatted as a four-page print booklet, designed to be delivered to residents through U.S. mail. The first page of the booklet includes a short letter that encourages respondents to complete the questionnaire, guarantees their confidentiality, and informs them that 10 respondents who complete the questionnaire will receive $20 gift certificates from Meijer. A copy of the survey booklet can be found in Appendix A.

The Census estimates that 636,369 people lived in Kent County in 2015; 279,955 people were residents of Ottawa County; and 172,790 people resided in Muskegon County. There are slightly more than 2.5 individuals per household in each of the counties, resulting in 232,961 households in Kent, 96,283 households in Ottawa, and 64,490 households in Muskegon County. The sample used for this project is a sample of households, with the assumption that any individual 18 years or over in the household could report on household characteristics. In order to secure a margin of error of plus or minus five percentage points drawn from populations of (persons or households of) this size, it is necessary to have a sample of approximately 400. This assumes that one is working with a 95 percent confidence level. That is, one can be 95 percent confident that the true characteristics in these counties falls within plus or minus five percentage points from the statistics derived from the sample.

The Genesys sampling unit with the Marketing Systems Groups of Horsham, Pennsylvania maintains an address-based list of households in the United States. They estimate that their list provides close to 100 percent coverage of the 135 million households

in the United States (http://www.m-s-g.com/web/genesys/index.aspx). We purchased a random sample of households from the three relevant counties.

Survey packets including the four-page questionnaire booklet and a postage-paid return envelope were mailed to 3,000 residences between September 19 and September 21, 2016. A second mailing of questionnaire and return envelope was posted on October 12, 2016 to households from which we had not received either a completed questionnaire or an indication that the address was no longer valid.[1] By December 1, 2016, we had received 440 completed questionnaires. We are pleased that we exceeded our goal of 400 usable surveys and thank all of the respondents for the time they spent 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 given the sampling frame, the sample of completed questionnaires is diverse. The 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	53.0
Muskegon	18.9
Ottawa	28.1

[1] The initial mailing was made to 3,000 households. The second mailing included 2,500 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 291 "bad addresses" of this type. Hence, removing these addresses from the sample leads to a return rate of completed questionnaires of 16 percent.

	Percent of Total Sample
Years in County	
0-5 years	8.0
6-15 years	12.7
16-25 years	11.8
26-45 years	29.9
46 or more years	37.6
Gender	
Female	51.0
Male	49.0
Ethnicity	
White	90.0
African American/Black	4.0
Latino/Hispanic	2.1
American Indian/Native American	1.2
Asian American	0.7
Other	2.1
Age—Year of birth	
1918-50 (66 years or older)	32.5
1951-60 (56-65 years old)	26.4
1961-70 (46-55 years olds)	16.0
1971-80 (36-45 years old)	14.1
1981-94 (35 years or less)	11.1
Highest level of education	
Less than high school	1.8
High school or GED	16.1
Some college or technical school	29.7
College degree	31.5
Some graduate work	6.9
Graduate degree	14.0

	Percent of Total Sample
Household income (based on N=370)	
Under $25,000	14.3
$25,000 up to $50,000	28.8
$50,000 up to $75,000	21.8
$75,000 up to $100,000	15.3
$100,000 or more	19.8

As one would expect, more than one half of the sample lives in Kent County, more than one quarter residing in Ottawa County, and slightly less than one fifth in Muskegon county. Slightly less than 10 percent of respondents have lived in West Michigan for five years or less, and 38 percent have been West Michigan residents for more than 45 years. The average number of years that respondents have lived in the area is almost 38 years.

In the 2016 survey, the split between males and females closely approximates that existing in the populations of the counties, with slightly more females than males. Fully 90 percent of the sample self-defines as "white," with 10 percent choosing terms such as "black or African American" or Hispanic to define themselves. The average respondent was born in 1959. About one third of the sample is 66 or older (born in 1950 or earlier), and slightly more than one tenth are 35 or younger (born in 1981 or later). The sample is diverse in terms of both educational attainment and income. Slightly more than one half of the sample (52%) has at least a college degree, while about 20 percent have a high school education or less. Sizeable numbers of respondents are found in each income category presented to respondents, with 20 percent of the sample reporting a yearly household income of more than

$100,000 and 14 percent indicating that their household income is under $25,000.[2] The median income is in the $50,000 to $74,999 category, consistent with Census data.

When compared to Census data, we find that the sample over-represents older people, white people, people with higher education, and people in the highest income group. The sample of these counties from 2011 shows the same under-representation of, for example, the youngest adults and those with the least amount of schooling. Studies of responses rates from national samples show both a decline in survey response rates over time and the difficulty of securing responses from the younger and poorly educated adults.

Additional questions were designed to determine whether household members were especially at risk for the negative health consequences of air pollution. 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 outdoors, 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.

[2] 41 additional respondents or 9.3% of the total sample are "missing data" on this question about household income, either because they did not know their household income or refused to answer the question.

Table B: At-Risk Households: Percentage Distributions

	Percent of Total Sample
Number of senior citizens—65 years or older—in household	
None	53.1
One	23.0
Two	22.0
Three or more	1.9
Number of children under the age of 18 in household	
None	66.1
One	10.6
Two	13.8
Three or more	9.5
Anyone suffer from heart disease or respiratory issues	
Yes	31.4
No	68.6
Hours spent outdoors on a Monday-Friday day	
0-2 hours	38.8
2.1-5 hours	34.9
5.1-8 hours	16.7
8.1 or more hours	9.5
Hours spend outdoors on a weekend day	
0-2 hours	14.8
2.1-5 hours	38.6
5.1-8 hours	28.5
8.1 or more hours	18.1

More than 45 percent of respondents live in a household with at least one senior citizen—65 years and over—and one third live in households with children less than 18 years of age. More than 30 percent of respondents report that someone in their household suffers from heart disease or respiratory issues. While almost 40 percent of the sample reports spending two or fewer hours a day outside on a typical weekday, 10 percent report more than

eight hours outside during a day in the summer workweek. Time outdoors is higher during typical summer weekend days, with almost 20 percent of respondents noting that they spend more than eight hours outdoors and only 15 percent reporting two or fewer hours outside.[3]

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 also community issues. ("Fine particular matter was defined in the question as "small particles of

[3] The difference in means is statistically significant at $p \leq .001$. That is, average hours spent outside on weekend days is higher than average hours spent outside during the Monday through Friday workweek.

dirt or soot in the air.") Response options presented to respondents were "major problem," "minor problem," "not a problem," or "don't know." In addition, they were asked: "Generally speaking, how 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. Percentages are calculated both for the total sample and for those respondents who did have an opinion on the issues—that is, they provided a response other than "don't know."

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

	Percent of Total Sample	Percent of Sample with Opinion (N=300-395)
Extent to which air pollution is a problem		
Major problem	18.9	20.8
Minor problem	39.2	43.0
Not a problem	32.9	36.2
Don't know	9.0	--
Extent to which ground level ozone is a problem		
Major problem	11.7	16.7
Minor problem	28.8	41.0
Not a problem	29.7	42.3
Don't know	29.7	--
Extent to which particular matter is a problem		
Major problem	12.8	15.5
Minor problem	33.1	40.2
Not a problem	36.4	44.3
Don't know	17.7	--

	Percent of Total Sample	Percent of Sample with Opinion (N=300-395)
Importance of environmental issues in your community		
Very important	45.2	--
Somewhat important	44.1	--
Not too important	8.4	--
Not at all important	2.3	--
Change in air quality levels in the last five years		
Improving	21.2	25.8
Staying the same	47.7	58.1
Declining	13.2	16.1
Don't know	17.8	--

The table shows that relatively small numbers of respondents report that air quality issues are a "major problem." In each of the three cases, the most common (or modal) response for those with an opinion (far right column) is to indicate that air pollution, ground level ozone, or fine particulate matter is a "minor problem" or "not a problem." Only 15 percent of respondents with an opinion report that particulate matter is a "major problem," only 17 percent see ground level ozone as a "major problem," and only 21 percent indicate that air pollution is a "major problem." However, when one looks at the total sample, one finds that reasonably high numbers of respondents indicate that they "don't know." That is, nine percent of respondents report that they "don't know" whether air pollution is a problem, 18 percent "don't know" whether particulate matter is a problem, and fully 30 percent of the sample does not know whether ground level ozone is a problem.

Almost one half of the total sample of respondents sees no change in air quality during the last five years, while slightly more than 20 percent of the sample believes that air quality has been improving and 13 percent of respondents see a decline. Eighteen percent of respondents indicate that they "don't know" how air quality has changed in the region over

the last five years. Among those with an opinion about change in air quality during the last five years (far right column), almost 60 percent see no change.

Knowledge about how air quality has changed is related to both the age of the respondent and to the length of time that the respondent has lived in the area. For example, 36 percent of the youngest as opposed to only eight percent of the oldest respondents report not knowing about the nature of air quality change in the last five years. As expected, younger respondents have less experience in West Michigan: 30 percent of the youngest respondents have lived in the three counties for five or fewer years as opposed to only five percent of the oldest respondents.

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." Alternatively, the question about the importance of environmental issues is broader in scope allowing respondents to consider a wide range of environmental issues when crafting their response to the question.

Awareness of Clean Air Action Days

A key question for the survey is the extent to which respondents are aware of Clean Air Action Days. They were asked this directly, having been reminded that sometimes these days are called Air Quality Alert Days or formerly Ozone Action Days. Three response options were provided: "very aware," "somewhat aware," and "not at all aware." "Not at all aware" respondents were instructed to skip the questions on the next two pages of the questionnaire booklet, given that these questions assumed familiarity with Clean Air Action

Days. Respondents who indicated that they were "very aware" or "somewhat aware" were also asked: "How many Clean Air Action Days do you recall during the past summer (2016)?" 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. Response options were "very familiar," "somewhat familiar," and "not at all familiar."

Table 2 provides the percentage distributions that summarize responses to these questions. Two distributions are presented: the first provides the percentages of "very aware," "somewhat aware," or "not at all aware" respondents for the total sample. The subsequent discussion focuses only on these respondents who express some level of awareness of Clean Air Action Days.

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

	Percent of Total Sample
Degree of awareness of Clean Air Action Days	
Very aware	44.6
Somewhat aware	46.5
Not at all aware	8.9

	Percent of Aware Respondents (N=350)
Number of Clean Air Action Days in 2016	
0-3 days	34.0
4-7 days	37.1
8-12 days (viewed as the accurate response)	22.0
13 or more days	6.9

	Percent of Aware Respondents (N=386-94)		
Familiarity with actions citizens can take on Clean Air Action Days			
	Very familiar	**Somewhat familiar**	**Not at all familiar**
Don't top off gas tank/don't overfill	68.0	20.8	11.2
Don't burn trash or yard waste	65.6	25.3	9.2
Carpool	65.3	23.3	11.4
Reduce use of fuels	64.7	26.6	8.7
Don't mow/mow after 6:00 p.m.	62.7	25.4	11.9
Don't refuel/refuel after 6:00 p.m.	60.2	22.3	17.5
Don't idle vehicle	57.7	30.9	11.5
Take a bus	56.3	24.5	19.1
Free bus rides in Grand Rapids and Holland	31.0	19.2	49.7

Table 2 shows that the vast majority of respondents are at least somewhat aware of Clean Air Action Days, with about 45 percent reporting a high degree of awareness (i.e., they are "very aware"), and another 47 percent saying that they are "somewhat aware." Throughout the remainder of this report, these respondents will be termed "aware respondents." The tendency is for respondents to underestimate the number of Clean Air Action Days in the past summer, with more than 70 percent believing that there were seven or fewer days called and only 22 percent being close to accurate about the number of Clean Air Action Days in 2016 (that is, they are at or within two days of the correct number which was 10). This number of days in 2016 was higher than in recent years, and it may be especially difficult for respondents to keep track of the number of Clean Air Action Days when the number is greater than "a few." Note that this percentage distribution is based on 350 aware respondents: 48 respondents (12% of the aware group) either left the question

blank or provided a response other than a number. These data also suggest lack of knowledge about the number of action days called in 2016.

The table also demonstrates that majorities of respondents report being "very familiar" with eight of the nine actions presented in the questionnaire that citizens may take. For these eight actions, the percent "not at all familiar" never exceeds 20 percent. The only item suggesting a lack of familiarity focused on the free bus rides available in Grand Rapids and Holland; here only 31 percent expressed high familiarity, and fully one half of the sample indicated that they are "not at all familiar" with this action. It is instructive to note that respondents living in Kent and Ottawa counties (where the service is offered) are more likely to be familiar with this free ride service than respondents in Muskegon County. More than three quarters of Muskegon County residents (77%) report being "not at all familiar" with the bus rides, compared to 39 percent of Kent County and 50 percent of Ottawa County residents.

Then, these aware respondents were asked: "In your own words, what is a Clean Air Action Day?" and were given blank lines on which to record their answers. CARRS's staff coded these open-ended responses into a number of discrete categories. The categories used by CARRS are replications of the ones available from similar coding in 2011. Verbatim responses organized in code categories can be found in Appendix B. Note that the percentages provided in Table 3 are based on the total sample size of 440. Percentages will not equal 100 because not all respondents answered this open-ended question and because any one response may be coded into more than one category. All responses were coded, including a handful of respondents who answered the question even though they reported earlier that they were not aware of Clean Air Action Days.

Table 3: Definition of Clean Air Action Days and Final Comments: Code Categories, Frequency and Percentage Distributions

Category	Number	Percent Based on N=440
Day to take voluntary action (don't mow, refuel)	154	35.0
Day when weather is hot and/or humid	111	25.2
Day when air pollution is high/Air quality is low	89	20.2
Day when ozone is excessive	48	10.9
Day when it is unhealthy to be outdoors	31	7.1
Other	20	4.6
Don't know	11	2.5
Day to be aware of "air issues"	10	2.3

The largest number of respondents—more than one third of the total sample—indicated that Clean Air Action Days are days when residents should take voluntary actions to improve air quality. Some of these comments focus on general efforts to reduce air pollution, while others mentioned specific ways in which people can enhance air quality. Examples of comments included in this category are the following:

Day to observe good clean air habits

A day to have a positive impact to air quality through a change in regular behavior.

A day to reduce your carbon footprint on the world

A day to avoid driving

Days that you need to change daily habits to reduce pollutants in the air

A day where you observe no mowing, filling gas, etc.

One quarter of the total sample make explicit reference to weather conditions when defining Clean Air Action Days. In particular, they note that actions days are days when it is hot or humid. The following comments are included in this code category.

It is usually a very hot day when a LOT of pollution blows over from Milwaukee and Chicago.

High temps and high humidity

Hot humid days

A day when weather conditions will not adequately disperse air pollution

Hot, humid day with little or no wind

Days when due to weather, the pollutants we produce stay in the air we breathe

Twenty percent of the sample defined Clean Air Action Days as days when air pollution is high or air quality is low. These comments may also have focused more specifically on ozone levels (and, if so, are coded in this additional category as well). Illustrative comments founds in this code category include:

A day on which conditions are such that air pollution is likely to be a problem.

Air pollution is higher than average

Clean Air Action Day is when the ozone may be affected and pollution is high

Taking steps to reduce air pollution.

Days in which pollution in the air is above acceptable safe levels for health. Therefore, any measures to help reduce 'controllable' pollution is encouraged.

Air quality is less than good—use practices that reduce air pollution.

Ten percent of the sample explicitly mentioned "ozone" when defining a Clean Air Action Day. The following comments are typical of those coded in the category "Day when ozone is excessive."

A day Ozone is high

A day where ozone particles are high and could be an issue for sensitive groups—so steps were introduced to help with the ozone concentration on such days (i.e.: less driving, carpooling, etc.)

Don't do anything that will add to harming the ozone as it is more impacted on these action days

During summer ozone pollution can accumulate to unhealthy levels.

It is important to note that no respondents provided responses to the question asking for a definition of Clean Air Action Days that was clearly wrong or suggested a misunderstanding about the intent of the action days initiative. For example, no one noted that Clean Air Action Days are days when the air is especially good or "clean."

The very last question on the survey provided space for respondents to "add any additional comments about the environment in your community." Eighty two respondents chose to do so. Verbatim comments coded into categories created by CARRS's staff are also found in Appendix B. The largest number of these comments—40 of them—provided specific suggestions about ways to improve air quality in mid-Michigan, provided ideas about the action days campaign, or provided comments on the survey itself. Examples of these specific comments include:

Tell Chicago to clean up its act. We don't have a problem originating here. Chicago is the root cause.

Like the idea of Clean Air Action days, but for those not online, maybe a mailer would work? I just don't know when they are scheduled.

For the most part I feel the environment in our community is fair. New construction makes dusty fine particles deposit all over. But I feel that air quality is far better than bigger city.

What do the above 5 questions [those focusing on the demographic characteristics of respondents] have to do with Clean Air Action Day?

Another 23 comments were positive about the Clean Air Action Day program or this research effort. They included the following comment (presumably from a Central Michigan University graduate):

Thank you for continuing to research and improve this very important topic! Fire up chips!

Compliance with Clean Air Action Days

Respondents who were aware of Clean Air Action Days were asked to consider "all Clean Air Action Days this year." They were then asked "how frequently did you voluntarily change your behavior in ways suggested by the Clean Air Action Days program?" The four response options ranged from "all or almost all of the days" to "none or almost none of the days." A summary of responses to this question is found in Table 4a. Respondents who indicated that they changed their behavior on none or almost none of the days, were asked: "How willing would you be to participate in Clean Air Action Days if you knew what no-cost or low-cost actions to take?" All aware respondents were reminded that "there are a number of reasons why citizens participate in Clean Air Action Days." They were then asked to "indicate whether each of the following is a major reason, moderate reason, minor reason, or not a reason for taking action." Table 4b summarizes responses to these latter two questions, using percentage distributions. Note that the numbers of respondents on which these two percentage distributions are based differ considerably, because relatively few respondents changed their behavior on none or almost none of the Clean Air Action Days.

Table 4a: Compliance with Clean Air Action Days: Percentage Distributions for Aware Respondents

	Percent of Aware Respondents (N=396)
Frequency of changing behavior on Clean Air Action Days	
All or almost all days	14.4
Most of the days	32.3
Some of the days	29.8
None or almost none of the days	23.5

Table 4b: Compliance with Clean Air Action Days: Percentage Distributions for Aware Respondents

	Percent of Aware Respondents who participated in none or almost none of the days (N=93)
Willingness to participate if knowledgeable about no-cost or low-cost actions	
Very willing	43.5
Somewhat willing	40.0
Not at all willing	16.5

	Percent of Aware Respondents (N=390-95)			
Reasons for taking action on Clean Air Action Days	Major reason	Moderate reason	Minor reason	Not at reason
Environmental-related issues	60.6	26.3	9.7	3.3
General health reasons	57.7	27.0	9.9	5.4
Respiratory/breathing health	57.4	25,1	11.3	6.2
Concern for health of children	60.3	27.7	7.9	4.1
Concern for the elderly	57.2	28.4	9.6	4.8

Table 4a shows that the sample of aware respondents is split approximately 50/50 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. It is worth noting that only 14 percent of these aware respondent report changing their behavior on all or almost all of the days, while almost one quarter report changing behavior on none or almost none of the days.

The vast majority of those who report the lowest levels of behavior change on Clean Air Action Days—81 percent—indicate that they would be very or somewhat willing to participate if they knew of no-cost or low-cost actions they could take. Nonetheless, Table

4b shows that almost 20 percent report that they would not be willing to participate even in these circumstances.[4]

As shown in Table 4b, majorities of aware respondents indicate that issues related to the environment and to health constitute the major reasons that citizens take action on Clean Air Action Days. At least 50 percent of these aware respondents choose the "major reason" response when asked whether each of these five environmental and health-related reasons were reasons for participating in Clean Air Action Days. In no case do even 20 percent of aware respondents indicate that the environmental/health reason in question is "not a reason" or "a minor reason" for taking action.

Sources and Timing of Information on Clean Air Action Days

Aware respondents were asked a number of questions about the information they receive. In particular, they were asked: "What are the main ways you get information about Clean Air Action Days?" In addition, they were asked: "When a Clean Air Action Day has been called, what are the ways that you learn that it has been called?" Respondents were asked to indicate up to three ways they secure information (rather than on every possible way that they may have learned something about the Clean Air Action Day program). 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. Table 5 provides the percentage distributions summarizing responses to these questions.

[4] Note that the N becomes very small here, only 18 respondents.

Table 5: Sources and Timing of Information about Clean Air Action Days: Percentage Distributions for Aware Respondents

	Percent of Aware Respondents (N=387-98)
Sources of information (up to three requested) about Clean Air Action Days	
Local television news	77.1
Local radio	54.8
Internet or social media	31.9
Local newspapers	18.8
Word of mouth	16.8
Billboards	16.3
Local festival or event	1.5
Ways of learning when a Clean Air Action Day has been called (up to three requested)	
Local television news	75.1
Local radio	55.3
Internet or social media	22.9
Word of mouth	15.3
Billboards	13.6
Local newspapers	13.3
Enviroflash	3.0
Local festival or event	0.3
Timing of learning that it is a Clean Air Action Day	
Day before	33.1
Morning of	59.9
Evening of	4.9
Don't know	2.1
Years aware of Clean Air Action Days	
Less than one year	4.6
1-5 years	34.4
6-10 years	35.6
More than 10 years	25.4

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 (at least 75 percent of aware respondents) or local radio (more than 50 percent of them). The Internet and social media are sources of information about Clean Air Action Days for more than 30 percent of aware respondents; however, only 23 percent learn that a day has been called this way. Newspapers are sources of information about action days for more than 19 percent of aware respondents; however, only 13 percent learn that a day has been called this way. Word of mouth is both a source of information and a way of learning that a day has been called by about one respondent in six. Billboards provide information to comparable numbers of aware respondents (16%), although slightly fewer (14%) learn that a day has been called through these highway signs. The Enviroflash email system is top-three information source for very few of these respondents, and few secure information about Clean Air Action Days from local festivals or events. (Of course, respondents may have secured some information from these sources, although these sources may not have been among the three sources indicated.)

More than one half of respondents learn about a Clean Air Action Day on the morning of the day itself, and about one third 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. One quarter of aware respondents indicate that they have known about Clean Air Action Days for more than 10 years, although about 40 percent indicate this level of awareness for five or fewer years. For point of reference, the West Michigan Clean Air Coalition was formed in 1995.

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 6 presents those factors that have a statistically significant relationship with Awareness (at the $p \leq .05$ level), and Table 7 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 6: Predictors of Degree of Awareness of Clean Air Action Days: Percentages

Awareness by Birth Year

	1918-50	**1951-60**	**1961-70**	**1971-80**	**1981-94**
Very aware	46.7	43.2	49.3	46.7	29.8
Somewhat aware	47.4	48.6	44.8	45.0	46.8
Not at all aware	5.8	8.1	6.0	8.3	23.4

Awareness by Years in West Michigan

	0 - 5 Years	**6 - 15 Years**	**16 - 25 Years**	**26 – 45 years**	**46 or more**
Very aware	32.4	35.2	40.0	46.0	50.6
Somewhat aware	44.1	48.1	50.0	46.8	46.2
Not at all aware	23.5	16.7	10.0	7.1	3.2

Awareness by Importance of Environmental Issues

	Environment Issues Very Important	Environment Issues Somewhat Important	Environment Issues Not too/Not at All Important
Very aware	55.1	36.8	32.6
Somewhat aware	36.4	55.4	52.2
Not at all aware	8.6	7.8	15.2

Awareness by Importance of Air Pollutions Issues (N=276)

	Scale score 3-5	Scale score 6-7	Scale score 8-9
Very aware	63.2	37.9	46.0
Somewhat aware	31.6	54.0	46.9
Not at all aware	5.3	8.0	7.1

Awareness by Hours Spent Outside on a Weekday and on a Weekend Day

	0-2 hours weekday	2.1 or more hours weekday	0-5 hours weekend day	5.1 or more hours weekend day
Very aware	36.1	49.8	36.9	50.8
Somewhat aware	53.6	42.9	50.2	43.1
Not at all aware	10.2	7.3	10.1	6.2

First, it is important to note that there are no differences in awareness by county. That is, respondents of no one county stand out as especially aware or not aware of Clean Air Action Days. Males and females also do not differ in their levels of awareness. Similarly, ethnic minority respondents are as aware as whites. Poorly educated respondents are not at a disadvantage in terms of awareness, nor are low income respondents. These, of course, are positive findings, because one wants knowledge of Clean Air Action Days to be widespread across the counties and across demographic groups.

Table 6 does indicate, however, that younger people (those born in or after 1980) are much less likely to be "very aware" of Clean Air Action Days; only 30 percent express high awareness compared to more than 40 percent of the other birth cohorts listed. 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: almost one quarter of new residents choose this low awareness category compared to 10 percent or fewer 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. Fifty five percent of those who see environmental problems as very important are very aware of the action days, while only 33 percent of those who view environmental issues as not too or not at all important report being very aware of the action days.

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 = .90). The scale ranges from 3, for respondents who see all three types of pollution (that is, "air pollution," ground-level ozone, and particulate matter) as major problems, to 9 for respondents who view all three as not a problem. Note that the scale was constructed only for respondents who expressed an opinion other than "don't know" on each of these three questions about air pollution. Given the number of "don't know" responses, the N for the scale is much smaller than for the total sample. Respondents' scale score does relate to their awareness of action days. In particular, more than 60 percent (63%) of respondents with scale scores of 3 to 5 are very aware of

Clean Air Action Days, compared to only 46 percent of respondents with scale scores of 8 or 9 (seeing air quality as not a problem).

Interestingly, awareness is not affected by household composition. 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. Respondents who spend more time outdoors on either weekdays or weekends are, however, more likely than other respondents to be aware of action days. About 50 percent of those who spend more than two hours outside on a typical Monday through Friday workday are very aware of Clean Air Action Days, compare to only 36 percent of those who spend two or fewer hours outside. Similarly, about 50 percent of respondents who spend more than five hours out of doors on a weekend day are very aware compared to 37 percent of those who spend fewer hours outside.

Table 7: Predictors of Frequency of Engaging in Voluntary Actions: Percentages

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	21.7	9.0	5.3
Most of the days	35.0	35.4	5.3
Some of the days	25.0	33.1	36.8
None or almost none of the days	18.3	22.5	52.6

Frequency of Engaging in Voluntary Actions by Importance of Air Pollution Issues (N=255)

	Scale score 3-5	Scale score 6-7	Scale score 8-9
All or almost all of the days	23.9	12.5	9.6
Most of the days	38.0	30.0	28.8
Some of the days	28.2	32.5	27.9
None or almost none of the days	9.9	25.0	24.3

Frequency of Engaging in Voluntary Actions on a Weekday and on a Weekend Day

	0-5 hours weekday	5.1 or more hours weekday	0-5 hours weekend day[5]	5.1 or more hours weekend day
All or almost all of the days	11.8	22.0	10.8	18.7
Most of the days	31.8	36.0	33.0	32.4
Some of the days	32.5	20,0	30.0	27.5
None or almost none of the days	23.9	22.0	26.1	21.4

Table 7 shows that aware respondents who view environmental issues as "very important" are more likely than those who view environmental issues as not too or not at all important to frequently engage in voluntary actions in support of Clean Air Action Days. More than 50 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 action on none or almost none of the Clean Air Action Days, compared to fewer than 20 percent of the those who see environmental issues as "very important."

About one quarter of respondents who have high air pollution scale scores (of 8-9 of 9, with 9 being the view the air pollution is <u>not</u> a problem) are engaged in voluntary actions

[5] Not statistically significant.

on none or almost none of the Clean Air Action Days compared to only 10 percent of those who view air pollution as a problem (low air pollution scale scores of 3-5 out of 9).

Respondents who spend more time out of doors are more likely to change their behavior on Clean Air Action Days: 22 percent of those who spend more than five hours outside on Monday through Friday workday report involvement on all or almost all Clean Air Action Days, compared to 12 percent of those who spend fewer workweek day hours outside. The same pattern holds for those who spend high numbers of hours outside on the weekend, although the relationship is not statistically significant. Twenty two percent of those who spend more than eight hours outside on a weekend day do report Clean Air Action Day compliance on all or almost all days.

Frequency of participation in Clean Air Action Days is not affected by the standard demographic variables under analysis here. That is, gender, ethnicity, age, years in West Michigan, education, and income do not affect the number of days in which respondents report changing their behavior in ways suggested by the Clean Air Action Days program. Similarly, respondents in households with children and with seniors are no more likely than those without to participate in Clean Air Action Days. Respondents who report a household member with heart disease or respiratory issues are not more likely than other respondents to report frequent involvement in the action day program.

Conclusions

This report summarizes data from 440 respondents from Kent, Ottawa, and Muskegon counties in West Michigan, who completed 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, October, and November, 2016. Key findings include:

- The largest number of respondents see air quality issues as a "minor problem" or as "not a problem" rather than as a major problem. Only between 15 and 20 percent of respondents see air quality issues as a "major problem."
- The largest number of respondents sees no change in air quality during the last five years, while more than 20 percent of the sample believes that air quality has been improving.
- Forty five percent of respondents report 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").
- Forty five percent of respondents report that they are "very aware" and 47 percent say that they are "somewhat aware" of Clean Air Action Days.
- The largest number of define Clean Air Action Days as days when you take voluntary action to reduce air pollution, days when the weather is hot and humid, or days when air pollution levels are high.
- More than 70 percent of respondents underestimate the number of Clean Air Action Days that have been called.
- Majorities of aware respondents are "very familiar" with eight of the nine "actions citizens can take" on Clean Air Action Days. By contrast, only 31 percent of respondents are "very familiar" with the free bus rides available in Grand Rapids and Holland.
- Slightly less than 50 percent of the aware respondents change their behavior on all, almost all, or most Clean Air Action Days. Almost one quarter of the sample reports making such changes or none or almost none of the days.

- Aware respondents indicate that environmental and health-related reasons are major reasons for participating in Clean Air Action Days.
- 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 (more than 75 percent of aware respondents) or local radio (more than 50 percent). The Internet and social media are a source of information for almost one third of respondents and a way of learning when a day has been called by more than 20 percent of respondents.
- Sixty percent of respondents learn about a Clean Air Action Day on the morning of the day itself, and 33 percent learn of an action day on the previous day. One quarter of aware respondents indicate that they have been aware of Clean Air Action Days for more than 10 years.
- Awareness of Clean Air Action Days is highest among older respondents and those who have lived in West Michigan the longest. Those who see environmental issues as important and those who see (three) air quality issues as problems are more likely to be ware of action days. Similarly, respondents who report more time working or engaged in recreational activities out of doors are more likely than other to be aware of the Clean Air Action Days program.
- Frequency of engagement in Clean Air Action Day voluntary actions is lowest among respondents who view environmental issues as not especially important and those who are not concerned with air quality issues. Time spent out of doors has a modest effect on frequency of engagement in the program.

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, and to those facing specific health challenges. Greater emphasis could be given to providing information to patients through doctors' offices and to employers who require staff to spend time out of doors. Presentations to senior centers might also be advisable, if these are not already taking place.
- 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 we have seen, 30 percent of those born in 1981 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, 62 percent of the youngest residents (the 1981-94 cohort) report

learning about Clean Air Action Days through the Internet or social media compared to 22 percent of those born in 1960 or before. Younger respondents are also more likely to use highway billboards to receive action day information (at least 20% of those born in 1961 or later receive information through highway billboards, compared to 10 percent of those born in in 1960 or earlier).

- In emphasizing electronic media, it is important, however, not to neglect the more traditional forms of communication—namely, television, radio, and newspapers—because these continue to be the major sources of information about Clean Air Action Days especially for some subgroups of respondents. Fully 29 percent of those born in 1918-50 and 23 percent of those born in 1951-60 use newspapers as information sources, while only four percent of the youngest respondents indicate that they have received information about action days through this traditional print medium. Similarly, while 77 percent of those born in 1951-60 rely on television as action day information sources and 82 percent of those born in 1950 or earlier use television for information, only 32 percent of those born after 1980 do so.[6] Similar patterns are found when looking at the information source used to learn when an action day has, in fact, been called.
- 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. It is also clear that reasonably high numbers of

[6] Age does not affect use of radio, word of mouth, or local festivals as information sources.

respondents would benefit from additional education about the problems associated with ozone and particulate matter. Respondents are more likely to have an opinion about "air pollution," generally, than to be able to articulate an opinion about the specifics of particulate matter or ozone in the air.

APPENDIX A

Print Questionnaire

CMU
CENTRAL MICHIGAN UNIVERSITY

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 learn the views of West Michigan residents about air quality and related issues. The goal is to help promote the health of your community. Your household was selected **randomly** to participate in this project. While your participation in this research is **voluntary,** your views are important to make this a successful scientific study! Please ask an adult in your household 18 years of age or older to complete this survey, which will only take 5-10 minutes.

The number on the back page of the survey is to keep track of in-coming and out-going mail. We will randomly choose 10 households that complete the survey to receive $20 gift certificates from Meijer. Do be assured that all of your survey responses will remain **confidential;** responses from individuals will never be identified.

Please call us at 989-774-2572 or email us at carrs@cmich.edu if you have any questions about this important research project. Thank you very much.

Mary Senter, Director
Center for Applied Research and Rural Studies

Section 1—Views about the Environment

These first questions focus on your views about the environment. Please indicate how much of a problem each of the following is in your community. *(check one box for each row)*

	Major Problem	Minor Problem	Not a Problem	Don't Know
Air pollution	☐	☐	☐	☐
Ground level ozone	☐	☐	☐	☐
Particulate matter which consists of small particles of dirt or soot in the air	☐	☐	☐	☐

In the last five years, would you say that air quality in West Michigan has been improving, staying the same, or declining? *(check one box)*

- ☐ **Improving**
- ☐ **Staying the same**
- ☐ **Declining**
- ☐ **Don't Know**

Generally speaking, how important are environmental issues in your community to you? *(check one box)*

- ☐ **Very important**
- ☐ **Somewhat important**
- ☐ **Not too important**
- ☐ **Not at all important**

How aware are you of Clean Air Action Days—sometimes called Air Quality Alert Days and formerly called Ozone Action Days? *(check one box)*

- ☐ **Very aware** — **CONTINUE WITH NEXT PAGE [Section 2]**
- ☐ **Somewhat aware** — **CONTINUE WITH NEXT PAGE [Section 2]**
- ☐ **Not aware** — **SKIP TO BACK PAGE [Section 3]**

Section 2—Views about Clean Air Action Days

The West Michigan Clean Air Coalition suggests a number of voluntary actions citizens can take on Clean Air Action Days. Please tell me how familiar you are with each of the following actions. *(check one box for each row)*

	Very Familiar	Somewhat Familiar	Not at all Familiar
Don't mow or mow after 6:00 pm	☐	☐	☐
Don't refuel or refuel after 6:00 pm	☐	☐	☐
Carpool	☐	☐	☐
Don't top off gas tank or don't overfill	☐	☐	☐
Take a bus	☐	☐	☐
Reduce use of fuels (for cars or tools)	☐	☐	☐
Don't idle your vehicle	☐	☐	☐
Don't burn trash or yard waste	☐	☐	☐
Free bus rides in Grand Rapids and Holland	☐	☐	☐

How many Clean Air Action Days do you recall between May and September, 2016?
(Enter number of days in box.) ☐ **Days**

Considering all Clean Air Action Days this year, how frequently did you voluntarily change your behavior in ways suggested by the Clean Air Action Days program? *(check one box)*

- ☐ **All or Almost all of the days**
- ☐ **Most of the days**
- ☐ **Some of the days**
- ☐ **None or Almost none of the days** →

If you answered NONE or ALMOST NONE
How willing would you be to participate in Clean Air Action Days if you knew what no-cost or low-cost actions to take? *(check one box)*

- ☐ **Very willing**
- ☐ **Somewhat willing**
- ☐ **Not at all willing**

There are a number of reasons why citizens participate in Clean Air Action Days. Please indicate whether each of the following is a major reason, moderate reason, minor reason, or not a reason for taking action? *(check one box for each row)*

	Major Reason	Moderate Reason	Minor Reason	Not a Reason
Environmental-related issues	☐	☐	☐	☐
General health issues	☐	☐	☐	☐
Respiratory or breathing health	☐	☐	☐	☐
Concern for the health of children	☐	☐	☐	☐
Concern for the health of the elderly	☐	☐	☐	☐

For how many years have you been aware of Clean Air Action Days? (*check one box*)

- ☐ **Less than one year**
- ☐ **1-5 years**
- ☐ **6-10 years**
- ☐ **More than 10 years**

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

The next questions focus on how you learn about Clean Air Action Days. Please focus on UP TO THREE SOURCES of information.

What are the main ways you get information about Clean Air Action Days?
(*check ONE, TWO, or THREE boxes*)

- ☐ **Local television news**
- ☐ **Local radio**
- ☐ **Local newspaper**
- ☐ **Local festival or community event**
- ☐ **Word of mouth**
- ☐ **Internet or social media**
- ☐ **Billboards (message signs on highways)**

When a Clean Air Action Day has been called, what are the ways that you learn that it has been called?
(*check ONE, TWO, or THREE boxes*)

- ☐ **Local television news**
- ☐ **Local radio**
- ☐ **Local newspaper**
- ☐ **Local festival or community event**
- ☐ **Word of mouth**
- ☐ **EnviroFlash (email or text message)**
- ☐ **Internet or social media**
- ☐ **Billboards (message signs on highways)**

When do you first hear it is a Clean Air Action Day? *(check one box)*

- ☐ **Day before**
- ☐ **Morning of the day**
- ☐ **Afternoon of the day**
- ☐ **Evening of the day**

PLEASE CONTINUE TO THE LAST PAGE ⇒

Section 3—Background Information for Summary Purposes

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

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

- ☐ **Less than high school**
- ☐ **High school or GED**
- ☐ **Some college or technical school, including Associate's degree**
- ☐ **College degree**
- ☐ **Some graduate work**
- ☐ **Graduate degree**

Please indicate the number of people in your household—including yourself—in various age groups.
(Enter a number in each box. Enter 0 if no children or no seniors in your household.)

Number of children under 18 years		**Children**
Number of adults 65 years and over		**Seniors**

On a typical summer day, how many hours per day do you spend outdoors—whether for recreation or as part of your job? (*Enter a number between 0 and 24 hours per day in each box.)*

During the Monday through Friday workweek		**Hours per day**
On Saturday or Sunday		**Hours per day**

Does anyone in your household suffer from heart disease or respiratory issues such as asthma, emphysema, or other breathing difficulties? *(check one box)* ☐ **Yes** ☐ **No**

What is your gender? ☐ **Male** ☐ **Female**

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

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

- ☐ **African American/Black**
- ☐ **Asian American**
- ☐ **Latino/Hispanic**
- ☐ **American Indian/Native American**
- ☐ **White**
- ☐ **Other:** _____

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

- ☐ **Less than $25,000**
- ☐ **$25,000-$49,999**
- ☐ **$50,000-$74,999**
- ☐ **$75,000-$99,999**
- ☐ **$100,000 or more**

Feel free to add any additional comments about the environment in your community.

_____

_____

_____

Thank you for your participation.
Please return to CARRS, CMU, Mount Pleasant, MI 48858-9970.
A postage-paid envelope is provided for your convenience.

APPENDIX B

Open Ended Comments

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

Day to take voluntary action (N= 154)

A clean air action day is a day to attempt to emit less pollution into the air by changing actions I.E. carpooling, not topping off gas. Etc.

A day (and everyday) observed and respected by not doing things that pollute our environment

A day for not adding to the pollution by holding off a chore until evening.

A day in the warmer months where air pollution is expected to be particularly bad and people are encouraged to reduce air pollution causing activities

A day in which one is extra cautious of participating in activities which contribute to global warming

A day in which the environment is more at risk of damage due to human use of motor run vehicles or tools.

A day it is not safe to cut grass, fill your tank or take a trip the pollen is up.

A day on which air quality is especially poor and/or vulnerable, and on which, as a result, care should be taken and activity modified to avoid exacerbating the issue

A day on which the weather conditions are such that these suggested actions help to reduce unhealthy air quality.

A day the news tells me not to mow my lawn.

A day to avoid driving

A day to be extra conscientious and reduce pollutants in the air.

A day to be mindful about your effect on air quality and to try to reduce your negative impact.

A day to be more environmentally conscious than others because the weather conditions make it more impactful that day

A day to have a positive impact to air quality through a change in regular behavior.

A day to minimize negative impacts to air quality

A day to minimize or not use any vehicle or equipment that pollutes the air

A day to practice responsibility for keeping pollution out of the air.

A day to put less pollution into the air.

A day to raise awareness & offer concrete methods of taking city-wide action

A day to reduce a household's contribution to air pollution. A day when the levels are particularly high.

A day to reduce pollution.

A day to reduce your carbon footprint on the world

A day to refrain or limit use of certain things like lawn mowers, or filling up gas during peak hours. Occurs often when weather is hot.

A day to stop activities using gasoline engines

A day to try and prevent pollution.

A day when citizens are asked to minimize their impact so they don't make the air quality worse

A day when for some weather-related reasons (that I don't fully understand) it's safer to do the before-mentioned behaviors to protect our environment and health

A day when I need to be more aware of not using fuel if possible.

A day when or time when people are expected to alter/refrain from certain practices to cut down on environmental...pollution

A day when people take steps to reduce pollution and other harmful things for our environment.

A day when the pollutants will not dissipate but only magnify damage. One does not consciously add to the problem.

A day where ozone particles are high and could be an issue for sensitive groups- so steps were introduced to help with the ozone concentration on such days. i.e.: less driving, carpooling, etc.

A day where the temp. is generally high and air stagnant. We try to avoid using all carbon emitting pollution.

A day where the weather is such that you need to take special precautions and reduce emissions

A day where we are asked to do certain things to help reduce air pollution to protect people and the environment

A day where you observe no mowing, filling gas etc.

A day where you try not to pollute the air or environment.

A day which citizens take action to reduce their carbon foot print

A particularly sensitive day due to weather conditions where you refrain from producing hydrocarbon emissions.

A time no one would burn trash or pollute the air.

A time period when certain activity is of greater impact than at other times.

Activities to reduce emitting topic fumes etc.

Adjusting my actions to not do things that hurt air quality

Air quality is less than good-use practices that reduce air pollution.

Air quality is so poor that in order to function properly that day we must change our habits

An attempt to change behavior of individuals to impact local air quality

An opportunity for an individual to reduce air pollution

An opportunity to protect the environment voluntarily.

Be extra careful on these days to not pollute

Behavior that help reduce amounts of gasses and chemicals emitted into the atmosphere

Carpooling, not topping off your gas tank. Reduce use of fuel in any way you can.

Citizen’s opportunity to support actions to help improve the environment (clean air)

Citizens do what they can to help the environment around them

Clean air for breathing whatever the weather man says not to do don't do it!

Controlling emissions, exhaust, etc. on hot days

Cut back because of bad air.

Cut back on behaviors that pollute

Cutting down all the items we use that pollute the air, etc.

Day to observe good clean air habits

Day to reduce air pollution

Day to reduce emission of CO2

Days encouraged to carpool, take the bus, bike ride, or walk instead of driving your car.

Days in which can act on our awareness and concern for air quality as it relates to our health and well-being.

Days in which ozone quality is low or at risk and I should avoid mowing/using vehicle is possible

Days in which pollution in the air is above acceptable safe levels for health. Therefore, any measures to help reduce 'controllable' pollution is encouraged.

Days in which we need to reduce our pollution to provide better quality air in our environment

Days in which we need to reduce our pollution to provide better quality air in our environment

Days that require special attention and consideration of personal activities that may promote additional pollution or harm

Days that you need to change daily habits to reduce pollutants in the air

Days to be aware of/take action to protect environment by reducing emissions into the ozone. Don't mow, don't drive long distances, (no fires especially fuel).

Days when certain activities can be very harmful to the environment due to weather.

Days where there are risks with ozone issues. Situation gets worse, citizens advised to take steps to lighten toxic load that contributes to bad air quality.

Do not do things you do not have to do with machinery on gas on those days

Do what you can to keep pollution out of air.

Do your share for cleaner air

Doing certain things to keep air, and environment clean for the next generation.

Don’t have a fire because of smoke in the air. Help me with my asthma

Don’t run your lawn mower during hot days

Don't cut grass, don't get gas (ozone layer protecting and climate control)

Don't do activities that harm the ozone.

Don't do anything that will add to harming the ozone as it is more impacted on these action days

Don't drive, walk, smoke less, pick up litter, or maybe just stay home.

Due to certain weather conditions we should try to reduce pollution that we add

Exist without polluting the stuff we breathe.

Follow all the Action suggestions.

Follow the clean air action rules.

High heat high humidity don't top off gas mow lawn keeps extra air pollutant out of the air.

High humidity days when air pollution is higher and the use of fossil fuels discouraged.

High humidity. Don't refuel your car or mow grass.

Hot days when you want to try to avoid filling up your gas tank or mowing your yard

I am not real sure, but have been told what not to do on these days and I try to do that

Increase danger to environment due to heat index - so limit polluting activities

It is a day that people work together to reduce pollution in the air because combined with weather conditions, this could lead to adverse effects on your health. (ie: asthma). Poor air quality.

Keep smog, fumes, and smoke to a minimum to improve air quality.

Limit vehicle use, don't get gas, and don’t cut grass

Make personal choices that help improve air quality

Means that auto use, mower use should not be done.

More rules- usually very hot outside - don't mow or get gas because of fumes

No idea, except maybe to limit the emission of carbon dioxide in the atmosphere.

No mowing - get gas later in day.

On extremely hot/humid days, it is best for the environment to refrain from causing additional air pollution

On super-hot/humid days, certain activities are suggested (or to be avoided) to help prevent pollution, greenhouse effect

Ozone action days don't drive or use power equipment

Participating in the action listed.

Participating in ways to decrease pollution

Pollute less

Poor air quality - limit outdoor activity

Really hot day where you can't mow yard, put gas in cars etc. until after 6 p.m. so you don't cause any more harm to the air quality.

Reduce activities causing pollution on identified critical days.

Reduce activities causing pollution on identified critical days.

Reduce all activity and utilities.

Reduce carbon emissions.

Reduce pollutants in the air.

Reduce pollution

Reduce pollution on that day.

Reduce possibility of producing extra ozone, CO2, and others

Reducing air pollution. Also air quality. Ozone levels.

Reducing pollutants to go in the air on designated days by changing some of our daily activities

Reducing use of gasoline and petroleum products so we have fewer emissions and our air quality is better.

Ride bus, car pool.

Taking action toward clean environment.

Taking steps to reduce air pollution

The atmosphere is at its worst and we need to cut all activities that contribute to the situation

The day when people are aware of clean air action day observe the day and help others do the same.

The temp is high, no starting cars so you can ride the bus, that’s cool. No drying clothes, etc.

These are days that are announced on air and TV informing the public to please refrain from doing 'x' because of the different levels in the air. By doing 'x' could increase the problem.

These are days, when we as individuals, can change some of our daily action for the betterment of the environment and the health of other with breathing difficulties.

This is a day you don't add pollution, such as refueling before 6 pm

To reduce emissions that pollute the air

Try to reduce ozone-improve air quality on those days.

Trying to prevent further harm to our environment by reducing actions that create greenhouse gases.

Use as little gas, electricity as possible also water

Usually hot and humid-don't use devices/machines as described in section 2.

Very warm days that you try not to mow or use a lot of gas (at least that the first thing that comes to mind).

Voluntary action day to help the environment.

Voluntary things you need to do on those days.

Watch what or limit fuel usage

Watching for activities that can affect the air quality on that day

Watching what we are doing to keep air clean

Ways to generate less pollution. We generate almost none. Seldom drive and recycle everything. Clean country air always!

We don't mow or gas up.

Weather conditions are such that changes in behavior are suggestions are made to lessen air pollution effects

When air quality is predicted to be poor so the public is asked to reduce or eliminate activities that contribute to air pollution

When climate conditions aggravate pollution, we voluntarily reduce our use of things that would make it worse

When environmental factors are right to cause air pollution to be trapped at a human level. We are asked to help reduce pollution on these days

When I lived in California 35 years ago we had smog alert days. Encouraged to car pool or take bus, etc.

When ozone levels reach a point where we need to be proactive about reducing or not adding to the problem.

When we work harder to keep the air cleaner on those days. Keep the pollution and fumes down by not running engines or burning stuff.

When you do not mow your grass or fill up your car due to ozone

Where you don't put things into the air.

You reduce or eliminate activities that may harm the air quality.

You try not to use anything with gasoline to protect the ozone

Your turn to do your part to help the environment and maybe learn ways to continue to help.

Day when weather is hot and/or humid (N=111)

A day in the warmer months where air pollution is expected to be particularly bad and people are encouraged to reduce air pollution causing activities

A day in which the current weather conditions and the use of fossil fuels have a negative impact on air quality and the ozone layer.

A day of high heat and humidity when pollutants stay close to the ground.

A day on which actions taken because of weather conditions greater impact air quality

A day on which the weather conditions are such that these suggested actions help to reduce unhealthy air quality.

A day that is usually really hot that causes concern for the environment, using fuels, and using energy

A day to be more environmentally conscious than others because the weather conditions make it more impactful that day

A day to refrain or limit use of certain things like lawn mowers, or filling up gas during peak hours. Occurs often when weather is hot.

A day when environmental triggers mean we are at a particularly stressed environment state

A day when for some weather-related reasons (that I don't fully understand) it's safer to do the before-mentioned behaviors to protect our environment and health

A day when heat and humidity are high enough to cause a greater degree of pollution

A day when weather condition will not adequately disperse air pollution

A day when weather conditions are right to allow ozone damage

A day when weather factors into how much the environment will be affected by the routine daily activities and making the air quality worse than they normally would.

A day where temperatures are high and the need to reduce emissions is critical.

A day where the temp. Is generally high and air stagnant. We try to avoid using all carbon emitting pollution.

A day where the weather is such that you need to take special precautions and reduce emissions

A day with high heat and humidity where the ozone is more likely to be impacted by gasses and fumes.

A hot and muggy day when dew point and humidity is up.

A hot muggy day when the air is already heavy - don't want to add more.

A particularly sensitive day due to weather conditions where you refrain from producing hydrocarbon emissions.

A still humid say where normal combustion products remain close to the ground

A very hot day with free bus rides

A very humid and hot day with little to no breeze to dissipate fumes, smoke, etc. These days used to be called Ozone Action Days.

As I understand, these days are usually on hot, muggy days - usually during low pressure weather periods.

Based on weather conditions and environment (smog, smoke...) the air quality decreases to harmful or unsafe levels

Be aware of the output of emissions because the temperature and humidity are oppressive.

Certain days in the summer- high heat/humidity- can cause health issues

Concern about conditions for smog or poor air quality, heat, dust.

Conditions to hold contaminates down

Controlling emissions, exhaust, etc. on hot days

Day to concern fuel emissions-exhaust-air pollution due to extreme heat and ozone levels.

Days that air quality is poor due to weather and other conditions.

Days that are prone to more pollution due to hot and humid weather plus no/low wind

Days that weather conditions are so that you should not put gas emissions in air as they will not dissipate.

Days when air is hot and heavy air is likely to hold more pollutants. Ozone level is bad.

Days when climate conditions call for reduced ozone emissions

Days when due to weather, the pollutants we produce stay in the air we breathe.

Days where it is humid and pollution is more apt to erode the atmosphere

Don't pollute when too hot out

Due to certain weather conditions we should try to reduce pollution that we add

Due to high temperatures and wind factors, the atmosphere is too stagnant to disperse pollutants in the atmosphere

Due to the high temps and humidity the fumes from the use of gas powered and gas refueling stay trapped in our breathing spaces and it compromises respiration

During hot, humid days are when these days occur

Have heard on radio for year during relevant weather patterns or days

High heat high humidity don't top off gas mow lawn keeps extra air pollutant out of the air.

High heat, high humidity, no wind, hard to breathe.

High humidity days when air pollution is higher and the use of fossil fuels discouraged.

High humidity. Don't refuel your car or mow grass.

High temp day that creates a reaction with the ozone and pollution emissions.

High Temperature/ high humidity

High temps and high humidity

Hot and humid

Hot day with little air movement

Hot days when you want to try to avoid filling up your gas tank or mowing your yard

Hot days where CO2 can build up quicker in the atmosphere

Hot humid day.

Hot humid days

Hot humid days that have questionable air quality concerning those people with respiratory issues.

Hot, high humidity, high dew point, light wind, or no wind summer day

Hot, humid day with little or no wind.

Hot, humid weather conditions

Hot/humid/high particulate

Hot/muggy summer days

Increase danger to environment due to heat index - so limit polluting activities

It is a day that people work together to reduce pollution in the air because combined with weather conditions, this could lead to adverse effects on your health. (i.e.: asthma). Poor air quality.

It is a day when temperatures and humidity and pollution are at high enough levels to cause difficulty in breathing, and may be dangerous for individuals with respiratory problems, and/or the elderly.

It is a hot day, or really bad air for breath on this day

It is really hot humid where Rapid gives free rides

It is usually a very hot day when a LOT of pollution blows over from Milwaukee and Chicago

It is when the high temperatures, dry air, and wind combine with pollution emissions (cars etc.) to form high ozone levels.

Low level atmospheric inversion, high temp/humidity/ozone little air moving

More rules- usually very hot outside - don't mow or get gas because of fumes

On extremely hot/humid days, it is best for the environment to refrain from causing additional air pollution

On super-hot/humid days, certain activities are suggested (or to be avoided) to help prevent pollution, greenhouse effect

Over 90 degree day

Ozone forms when it interacts with the sun. Warm/hot weather exacerbates. Humidity exacerbates

Ozone problems because of the weather

Really hot day where you can't mow yard, put gas in cars etc. until after 6 p.m. so you don't cause any more harm to the air quality.

Temperature and humidity become high allowing fumes, etc. to linger.

The air/weather is such that use of gas/fuels keep vapors close to the earth

The heat and humidity are at high enough levels that pollution from engine/fossil fuel exhausts and discharges do not dissipate into the atmosphere they hang low enough to affect air quality at the surface level

The temp is high, no starting cars so you can ride the bus, that's cool. No drying clothes, etc.

Typically a very hot, humid day with higher levels of ground level ozone

Typically hot humid days when air quality is already affected especially for people with asthma and breathing issues

Typically very warm days when pollutants are likely to be trapped in the atmosphere.

Unless weather related; I think it's a way to get people to think "climate changes" are problematic.

Usually a high temperature day.

Usually hot and humid day's air is heavy and not moving. We are asked to try to not make the problem worse.

Usually hot and humid-don't use devices/machines as described in section 2.

Usually really hot days when running things that use gas could release toxic fumes that are bad for environment (ozone layer) and people.

Usually seems to be when the temp is very high and pollution will be at its worst

Usually when weather is very hot, a clean air action day is called to reduce pollution going into the air.

Very warm days that you try not to mow or use a lot of gas (at least that the first thing that comes to mind).

Very warm, usually high humidity when the air holds fumes and dust particles.

Weather condition combines with pollutions to form level of ozone.

Weather conditions and pollution (airborne) are likely to join and cause harmful ozone near ground level (un-healthy)

Weather conditions are such that changes in behavior are suggestions are made to lessen air pollution effects

Weather conditions are such that pollutants sit in place, low to the earth.

When hot and humid, pollutants stay in the air.

When humidity and temperature are high and very little circulation of wind

When it is hot and very humid which it is very hard to breathe.

When pollen, heat, and humidity make the air hard to breathe.

When temperature and humidity make conditions worse for ozone impact

When temperature is high enough to create issues with fossil fuel exhaust; ozone problems.

When temperatures rise above a certain degree the city initiates CAAD to bring down emissions that help the ozone.

When the air is hot when is heavy

When the air quality is very low due to the combination of weather and pollution that form high levels of ozone near ground

When the heat (temp.), humidity, and ozone levels are dangerously high in the air we breathe.

When the temperature and humidity goes up so high.

When the weather is hot and humid more ozone and particles are in the air. This makes breathing more difficult for those with lung XX, children, and the elderly.

Day when air pollution is high/Air quality is low (N=89)

A clean air action day is when air pollution, ozone, and or particulate reach or go beyond certain thresholds

A day for not adding to the pollution by holding off a chore until evening.

A day in the warmer months where air pollution is expected to be particularly bad and people are encouraged to reduce air pollution causing activities

A day in which air pollution, ozone or particulate matter is above safe levels

A day in which the current weather conditions and the use of fossil fuels have a negative impact on air quality and the ozone layer.

A day of high heat and humidity when pollutants stay close to the ground.

A day on which actions taken because of weather conditions greater impact air quality

A day on which air quality is especially poor and/or vulnerable, and on which, as a result, care should be taken and activity modified to avoid exacerbating the issue

A day on which conditions are such that air pollution is likely to be a problem

A day on which the weather conditions are such that these suggested actions help to reduce unhealthy air quality.

A day to be mindful about your effect on air quality and to try to reduce your negative impact.

A day to practice responsibility for keeping pollution out of the air.

A day to reduce a household's contribution to air pollution. A day when the levels are particularly high.

A day to try and prevent pollution.

A day when or time when people are expected to alter/refrain from certain practices to cut down on environmental...pollution

A day when the conditions favor poor dispersion of air contaminants.

A day when the pollutants will not dissipate but only magnify damage. One does not consciously add to the problem.

A day when weather condition will not adequately disperse air pollution

A day when weather factors into how much the environment will be affected by the routine daily activities and making the air quality worse than they normally would.

A day where we are asked to do certain things to help reduce air pollution to protect people and the environment

A period that the pollution is lower to the Earth.

A preemptive effort to alleviate the severity of the contaminants in the air on ozone action days.

A still humid say where normal combustion products remain close to the ground

A time no one would burn trash or pollute the air.

Air pollution is higher than average

Air quality is less than good-use practices that reduce air pollution.

Air quality is so poor that in order to function properly that day we must change our habits

Be extra careful on these days to not pollute

Bring awareness to air pollution.

Clean air action day is when the ozone may be affected and pollution is high

Concern about conditions for smog or poor air quality, heat, dust.

Conditions are such that the air is not the best quality it can be and certain things can worsen it, such as fueling, cutting the lawn, etc.

Cutting down all the items we use that pollute the air, etc.

Da please a day when air quality is in jeopardy.

Day to concern fuel emissions-exhaust-air pollution due to extreme heat and ozone levels.

Day to reduce air pollution

Days in which pollution in the air is above acceptable safe levels for health. Therefore, any measures to help reduce 'controllable' pollution is encouraged.

Days that air quality is poor due to weather and other conditions.

Days that are prone to more pollution due to hot and humid weather plus no/low wind

Days when air is hot and heavy air is likely to hold more pollutants. Ozone level is bad.

Days when due to weather, the pollutants we produce stay in the air we breathe.

Days where it is humid and pollution is more apt to erode the atmosphere

Due to certain weather conditions we should try to reduce pollution that we add

Due to high temperatures and wind factors, the atmosphere is too stagnant to disperse pollutants in the atmosphere

Getting pollution down.

High humidity days when air pollution is higher and the use of fossil fuels discouraged.

High temp day that creates a reaction with the ozone and pollution emissions.

Hot humid days that have questionable air quality concerning those people with respiratory issues.

Hot, muggy days when our air pollution index rises due to our proximity to Chicago and the prevailing winds.

Hot/humid/high particulate

Improve our ozone and pollution.

It is a day that people work together to reduce pollution in the air because combined with weather conditions, this could lead to adverse effects on your health. (i.e.: asthma). Poor air quality.

It is usually a very hot day when a LOT of pollution blows over from Milwaukee and Chicago

It is when the high temperatures, dry air, and wind combine with pollution emissions (cars etc.) to form high ozone levels.

It was known as ozone action days previously, helps to not pollute air and preserve ozone layer

Keep smog, fumes, and smoke to a minimum to improve air quality.

Keeping pollutants out of the air

Lessening the pollution in the air

On super-hot/humid days, certain activities are suggested (or to be avoided) to help prevent pollution, greenhouse effect

Pollute less

Poor air quality - limit outdoor activity

Reduce pollutants in the air.

Reduce pollution on that day.

Reducing air pollution. Also air quality. Ozone levels.

Reducing pollutants to go in the air on designated days by changing some of our daily activities

Reducing use of gasoline and petroleum products so we have fewer emissions and our air quality is better.

Taking steps to reduce air pollution

The air/weather is such that use of gas/fuels keep vapors close to the earth

The heat and humidity are at high enough levels that pollution from engine/fossil fuel exhausts and discharges do not dissipate into the atmosphere they hang low enough to affect air quality at the surface level

To reduce emissions that pollute the air

Try to reduce ozone-improve air quality on those days.

Typically very warm days when pollutants are likely to be trapped in the atmosphere.

Usually seems to be when the temp is very high and pollution will be at its worst

Usually when weather is very hot, a clean air action day is called to reduce pollution going into the air.

Very warm, usually high humidity when the air holds fumes and dust particles.

Weather condition combines with pollutions to form level of ozone.

Weather conditions and pollution (airborne) are likely to join and cause harmful ozone near ground level (un-healthy)

Weather conditions are such that changes in behavior are suggestions are made to lessen air pollution effects

Weather conditions are such that pollutants sit in place, low to the earth.

When air quality is predicted to be poor so the public is asked to reduce or eliminate activities that contribute to air pollution

When environmental factors are right to cause air pollution to be trapped at a human level. We are asked to help reduce pollution on these days

When hot and humid, pollutants stay in the air.

When pollutants are trapped by inversions

When pollution is in the air.

When pollution levels are elevated.

When the air can be affected by excess pollution causing respiratory problems, etc.

When the air quality is not good clean air action day allow to normalize the quality of the air.

When the air quality is very low due to the combination of weather and pollution that form high levels of ozone near ground

When we work harder to keep the air cleaner on those days. Keep the pollution and fumes down by not running engines or burning stuff.

Day when ozone is excessive(N=48)

A clean air action day is a day where instability in the ozone makes the earth susceptible

A clean air action day is when air pollution, ozone, and or particulate reach or go beyond certain thresholds

A clean air action day is when the ozone numbers are higher - usually haven't referred to it as ground ozone before

A day in which air pollution, ozone or particulate matter is above safe levels

A day in which the current weather conditions and the use of fossil fuels have a negative impact on air quality and the ozone layer.

A day Ozone is high

A day when weather conditions are right to allow ozone damage

A day where ozone particles are high and could be an issue for sensitive groups- so steps were introduced to help with the ozone concentration on such days. i.e.: less driving, carpooling, etc.

A preemptive effort to elevate the severity of the contaminants in the air on ozone action days.

Clean air action day is when the ozone may be affected and pollution is high

Day to concern fuel emissions-exhaust-air pollution due to extreme heat and ozone levels.

Days in which ozone quality is low or at risk and I should avoid mowing/using vehicle is possible

Days when air is hot and heavy air is likely to hold more pollutants. Ozone level is bad.

Days when your actions can greater effect the ozone.

Days where there are risks with ozone issues. Situation gets worse, citizens advised to take steps to lighten toxic load that contributes to bad air quality.

Don't cut grass, don't get gas (ozone layer protecting and climate control)

Don't do anything that will add to harming the ozone as it is more impacted on these action days

During summer ozone pollution can accumulate to unhealthy levels.

High ozone levels close to the ground.

High ozone.

High temp day that creates a reaction with the ozone and pollution emissions.

Improve our ozone and pollution.

It is when the high temperatures, dry air, and wind combine with pollution emissions (cars etc.) to form high ozone levels.

It was known as ozone action days previously, helps to not pollute air and preserve ozone layer

Low level atmospheric inversion, high temp/humidity/ozone little air moving

Ozone forms when it interacts with the sun. Warm/hot weather exacerbates. Humidity exacerbates

Ozone levels are high/ pollen count high have actually seen dirty rain- particles once or twice in past years.

Ozone problems because of the weather

Raise awareness on elevated ozone level

Reducing air pollution. Also air quality. Ozone levels.

Stagnant air holding down ozone, volatiles and other vapors at life zone levels.

Try to reduce ozone-improve air quality on those days.

Typically a very hot, humid day with higher levels of ground level ozone

Usually really hot days when running things that use gas could release toxic fumes that are bad for environment (ozone layer) and people.

Weather condition combines with pollutions to form level of ozone.

Weather conditions and pollution (airborne) are likely to join and cause harmful ozone near ground level (un-healthy)

When it is likely that high levels of ozone can form near the ground

When ozone levels may cause breathing difficulties in sensitive populations

When ozone levels reach a point where we need to be proactive about reducing or not adding to the problem.

When temperature and humidity make conditions worse for ozone impact

When temperature is high enough to create issues with fossil fuel exhaust; ozone problems.

When temperatures rise above a certain degree the city initiates CAAD to bring down emissions that help the ozone.

When the air quality is very low due to the combination of weather and pollution that form high levels of ozone near ground

When the heat (temp.), humidity, and ozone levels are dangerously high in the air we breathe.

When the ozone is heavy

When the weather is hot and humid more ozone and particles are in the air. This makes breathing more difficult for those with lung XX, children, and the elderly.

When you do not mow your grass or fill up your car due to ozone

You try not to use anything with gasoline to protect the ozone

Day when it is unhealthy to be outdoors (N=31)

A clean action day reminds us that our health and environment are very fragile and reminds us our decisions hurt the [present]? And even though they might be small, they are still very important.

A day it is not safe to cut grass, fill your tank or take a trip the pollen is up.

A day on which the weather conditions are such that these suggested actions help to reduce unhealthy air quality.

A day when for some weather-related reasons (that I don't fully understand) it's safer to do the before-mentioned behaviors to protect our environment and health

A day with poor air quality, which mostly affects people with respiratory issues

Air is very heavy and hard to breathe.

Air pollution can cause serious health problems. Clean Air Action Days are meant to encourage to make environmentally friendly.

Based on weather conditions and environment (smog, smoke...) the air quality decreases to harmful or unsafe levels

Breathing better, trying to clean air

Certain days in the summer- high heat/humidity- can cause health issues

Clean air for breathing whatever the weather man says not to do don't do it!

Days in which can act on our awareness and concern for air quality as it relates to our health and well-being.

Days in which pollution in the air is above acceptable safe levels for health. Therefore, any measures to help reduce 'controllable' pollution is encouraged.

Don’t have a fire because of smoke in the air. Help me with my asthma

Due to the high temps and humidity the fumes from the use of gas powered and gas refueling stay trapped in our breathing spaces and it compromises respiration

During summer ozone pollution can accumulate to unhealthy levels.

High heat, high humidity, no wind, hard to breathe.

Hot humid days that have questionable air quality concerning those people with respiratory issues.

It is a day that people work together to reduce pollution in the air because combined with weather conditions, this could lead to adverse effects on your health. (i.e.: asthma). Poor air quality.

It is a day when temperatures and humidity and pollution are at high enough levels to cause difficulty in breathing, and may be dangerous for individuals with respiratory problems, and/or the elderly.

It is a hot day, or really bad air for breath on this day

These are days, when we as individuals, can change some of our daily action for the betterment of the environment and the health of other with breathing difficulties.

Typically hot humid days when air quality is already affected especially for people with asthma and breathing issues

Usually really hot days when running things that use gas could release toxic fumes that are bad for environment (ozone layer) and people.

Warning that outside air may make breathing difficult with COPD.

When it is hot and very humid which it is very hard to breathe.

When ozone levels may cause breathing difficulties in sensitive populations

When pollen, heat, and humidity make the air hard to breathe.

When the air can be affected by excess pollution causing respiratory problems, etc.

When the heat (temp.), humidity, and ozone levels are dangerously high in the air we breathe.

When the weather is hot and humid more ozone and particles are in the air. This makes breathing more difficult for those with lung XX, children, and the elderly.

Other (N=20)

A day to make people feel they are doing good for the earth but the actions do little to effect environment.

A day when environmental triggers mean we are at a particularly stressed environment state

A long story for burning gas and so on.

A way to benefit and improve our Earth.

Chill out days! Rest.

Clean air action days have been announced on the regular TV stations for at least 20 years in G Rapids.

Clean our air so the wind doesn't blow our dirt into New York - they have enough problems.

Improve our air.

Improving or maintain environment condition

It is really hot humid where Rapid gives free rides

K.I.S.S. (Keep It Simple Stupid) not being sarcastic either. Let's do it, teach it, and be Happy. :)

Low carbon output

NONSENSE

People with nothing to do pushing their political agenda

Protect our air and people.

Same as ozone action day

Should be all the time

To help keep the air clean

Unless weather related; I think it's a way to get people to think "climate changes" are problematic.

When the air is not circulating well

Don't Know (N=11)

Do not know anything about this subject.

Don't know

I don't get information on Clean Air Action Day

I don't know

I don't know.

I don't remember. I’m 98 and husband 99.

I have no idea.

I'm not sure what Clean Air Action is.

No idea, except maybe to limit the emission of carbon dioxide in the atmosphere.

No info on subject.

Unsure, I have heard the term but never known exactly what it referred to.

Day to be aware of air issues (N=10)

A day in which one is extra cautious of participating in activities which contribute to global warming

A day to be aware of the environment

A day to be extra conscientious and reduce pollutants in the air.

A day to raise awareness & offer concrete methods of taking city-wide action

A day when I need to be more aware of not using fuel if possible.

Be aware of the output of emissions because the temperature and humidity are oppressive.

Bring awareness to air pollution.

Days to be aware of/take action to protect environment by reducing emissions into the ozone. Don't mow, don't drive long distances, (no fires especially fuel).

Raise awareness on elevated ozone level

Where everyone is more conscious about how much water/gas they're using

Feel free to add any additional comments about the environment in your community.

Specific suggestion about Clean Air Days or survey (N=40)

If I knew of a way to know about ozone days better, I would be more careful

Most actions I just do not have time for

Obviously I'm quite ignorant of Clean Air Action Days. Would be very willing to participate if more info was available.

Single man living alone. No TV or Internet at home. Generally listen to NPR while driving. I have heard of Clean Air Action Days, but never understood the intent.

To notify the community better all the public schools should send something home with children. Because I haven't heard much regarding environment wellness, other than hybrid cars.

Because I live away from the cities- or the shore of Lake Michigan I cannot always feel the effects of "Bad air days" in my area

Bias what does education income; race have to do with this-based on these question indicates thinking maybe uneducated, low income, minorities know less!! Really?

Every day is a clean air day. Making/designating a day is at times a condescending attitude if pushed on others.

For the most part I feel the environment in our community is fair. New construction makes dusty fine particles deposit all over. But I feel that air quality is far better than bigger city.

Has improved since heavy industry has moved out or shut down

Holland is changing from a coal burning to gas burning power plant. Environmentally, Holland is a very clean city and makes great effort to stay that way.

I am 86 years old. Do not mow grass, etc.

I believe "Global Warming" is nothing more than Earth's natural cyclical changes that we as humans cannot change for the better or worse in any significant way. That being said, pollution needs to be addressed with common sense restraint.

I believe there is a greater awareness of the many problems concerning our valuable national resources. Violations among industry and people need to be addressed soon. Thank you!

I didn't really know what an air quality day was. Simply taking this survey gave me awareness and knowledge. Thank you!

I don't think that people pay attention to clean air days. They still mow lawns and fill their gas tanks.

I hope you are paying for this and not getting money from the government. This is B.S. pick someone else.

I live in Grandville near industrial sites. Our air quality is usually very poor- we live by water treatment plant as well.

I sometimes walk home from work in downtown GR. I feel my asthma worsening on Clean Air Action Days. It's quite bad. I love West Michigan but have serious concerns about long-term livability in relation to its poor air quality and my asthma.

I suffer from angisedema and have allergies this summer the air quality in Kent County wasn't good!

In my opinion clean air action days is not related to global warming

It's hard to breathe

Like the idea of Clean Air Action days, but for those not online, maybe a mailer woudl work? I just don't know when they are scheduled.

Many people are immune-compromised and disabled, the hi temps and humidity causes us to stay in more when this alert is issued.

Mary Senter, Director I've been a sailor most of my life (Lake Michigan) and have witnessed the continuing change of water quality. Less trash and chemical substances. Also, years passed, when factories spewed black smoke from their stacks, not today! So, we've been slowly mending our delicate environment. "Thank God"

Much of our air quality issues blow in on the trades...

Never heard of Clean air action days. Live in rural area-no industry here.

Not as much crap as global warming.

Our earth cleans itself if it's not abused by overpopulation creating excessive waste. We have a neighbor who burns a couple times a year. Otherwise our air is always lovely!!! Hang laundry often. Sun disinfects beautifully. Ahhh, country living.

Pretty simple survey. It does not address NOAA weather, particulate from farm fields or if there is even bus routes available.

Road resurfacing techniques in our county produces lots of dust until the gravel over [tar]? Wears in. Vehicle moving down these roads produce lots of airborne dust.

Smoking should be banned everywhere-including cars as second hand smoke is terrible.

Tell Chicago to clean up its act. We don't have a problem originating here. Chicago is the root cause.

The air in Muskegon is fine the only I see is people with the fire pits sometime it a little too much smoke. Thank you! [Name]

The leather factory puts a foul smell into the air.

Three year old son has asthma and allergies. I believe his are mostly pollen related as they peak in June and September.

Too much dust, dirt, smog, and waste.

We live on a dirt road and dust is a problem, however, I would rather deal with dust instead of the chemicals they shower our road with.

We still have some dirt roads, not many factories, most people drive, there's no bus service except for GVSU students, there is golden rod and hay that affects respiratory systems.

What do the above 5 questions have to do with Clean Air Action day?

General statement about Clean Air Days or survey (N=23)

As a retiree who doesn't leave home every day, it isn't difficult to comply with voluntary actions most days.

Blessed by the work of WEMEAC in our community!

Great to have special days designated for environmental actions! We all should participate!

I am 90 years young with a slight respiratory problem and appreciate clean air

i read the original survey and then did more research on clean air action days. Thanks

I wish there was more being done.

I'm pleased with it. I think the most important thing to do is focus on measures that allow people to USE the environment without abusing it and ignoring alarmism.

My thanks!

Our city pretty up environment issues moderate safety for loved ones and self

Very clean neighborhood, has better air then Grand Rapids or freeways areas; thank you

Seems to be very clean, no complaints!

Thank you for allowing me to participate in this survey. Recently I enrolled in physical science. It has made me more aware of reactivity of metals and gasses in the atmosphere.

Thank you for caring enough to ask what people think about clean air.

Thank you for continuing to research and improve this very important topic! Fire up chips!

Thank you for doing this.

Thank you for this survey.

Thank you!

Thanks for asking and caring.

The city council of Holland has had a very well publicly shared program to better our environment.

The public needs to know what the dangers of not participating in air quality issues and how much we can help if we do.

There is a need for the general public to be educated on what the benefits to the public are and why we need to participate.

Very good.

We need to be more aware of where we live. As big as G.R. is getting there is not enough being done, YET!!

Other comment about the environment (N=13)

The water of Black River in Holland is green - looks like a film on top of water - comes from fertilizers. What can be done?

The worst issue we have regularly is when the farmers use manure to fertilize their fields and that is just an inconvenience.

We notice the smell from landfill more

Clear (somewhat) could be better.

Coal- no pipes to burst. Solar- too costly for the return UGLY! Natural gas- best solution-need more drilling in Michigan. Nuclear- radioactivity fall out and dangers from terrorists.

I feel the city of Montague is trying very hard to protect our environment and wildlife. We moved back from the state of Wyoming and there is a big difference in the air here compared to out there. Michigan has work to do.

I haven't been too concerned with air quality here. I do care about environment.

I wish recycling was free :)

Lake Michigan and Spring Lake still being affected by fertilizers, residential and farming. We need to do everything possible to reduce use of carbon based fuels.

We also like to participate in Land Conservancy efforts. We are VERY THANKFUL that Ottawa County Parks has given us more land to play in. Thank you [name] and staff.

We are both retired and enjoy spending as much time outside as we can. We respect Mother Nature and care for everything given to us

We care deeply about our water quality of lakes. I'm shocked by the lack of recycling among educated friends, and complete ignorance about it among my uneducated friends. Litter, too, is a huge concern.

We have lived where we are now since 1950. The farms have become a small city and a high school on that former farm. We have an acre so we think it's good for us.

We live in a country environment.

Other topic (N=4)

Good place to live and raise kids and grandkids

Great!

I no longer live in Kent County, we just moved to Barry County two weeks ago.

We love our lake community. However, over 40 years traffic gets quite busy.