REGIONAL AIR QUALITY COUNCIL

OZONE EDUCATION AND OUTREACH PROGRAM
POST-CAMPAIGN PUBLIC OPINION SURVEY

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EXECUTIVE SUMMARY

In 2005, the Regional Air Quality Council (RAQC) launched a three-year Ozone Education and Outreach Program to raise awareness, deepen knowledge and affect behavioral change regarding the Denver Metro area's ground-level ozone pollution problem. To assist in evaluating the effectiveness of this program, RAQC commissioned three public opinion surveys: Pre-Survey (April 2005), Interim-Survey (August 2005) and Post-Survey (August 2007). **The Post-Survey research findings show that the Ozone Education and Outreach Program has been successful in elevating awareness, knowledge and behavioral change among Denver Metro area residents.**

Perceptions about Air Pollution

- The vast majority of Denver Metro area residents (85%) perceive air pollution to be either a **moderate** (49%) or **major problem** (36%). Perceptions about air pollution have elevated between 2005 and 2007. Those who perceived air pollution to be a major problem increased from 25% to 36% between the Pre- and Post-Surveys.

- Those who perceive air pollution to be a moderate or major problem are most likely to associate the problem with the "brown cloud/smog," "affects on people's health" and "too much driving."

- The majority of residents (64%) perceive that air pollution negatively impacts (to a major or moderate extent) the health of Denver Metro area residents, but less than a majority (37%) perceives a major or moderate impact on their daily life.

Knowledge and Perceptions about Ground-Level Ozone Pollution

- In 2007, the majority of survey respondents (62%) perceived that ground-level ozone pollution was either a **moderate** (40%) or **major problem** (22%) in the Denver Metro area. This represents an increase from the 2005 Pre-Survey (52%). Although residents had been most recently exposed to advertising, public relations and news stories regarding ground-level ozone pollution, a larger percentage of survey respondents (70%) perceived that carbon monoxide is a major or moderate problem. A slightly lower percentage (57%) perceived that particulate matter was a major or moderate problem.

- Denver Metro area residents do not have a high level of familiarity with ground-level ozone pollution, although perceived familiarity has improved since the 2005 Pre-Survey. In 2005, only 32% of the survey respondents were either **somewhat familiar** (25%) or **very familiar** (7%) with the problem of ground-level ozone. Those somewhat or very familiar increased to 44% (35% somewhat and 9% very) in 2007.

- The Ozone Action Alerts appear to have an impact on perceived familiarity. Persons aware of Ozone Action Alerts were far more likely than persons with no awareness to perceive they were somewhat or very familiar with the problem of ground-level ozone (55% vs. 32%).

- There is strong agreement that *ozone pollution can cause breathing problems and exacerbate respiratory infections in healthy persons*. Nearly nine out of ten respondents (87%) agreed (57% strongly and 30% somewhat) with this statement. There was also strong agreement that *ozone pollution can be controlled by simple changes in everyday behavior of Denver Metro area residents* (46% strongly and 35% somewhat). More than seven out of ten respondents (71%) agreed (45% strongly and 26% somewhat) that *if the Denver Metro area does not maintain compliance with federal ozone standards, the Environmental Protection Agency can reduce federal funding for highway projects.*

- Although the majority (54%) agreed, agreement was less pronounced regarding *ozone pollution in the Denver Metro area is primarily a problem in the summer*. A large percentage (37%) disagreed, while 10% had no opinion regarding this statement.

- In 2007, the vast majority of respondents were aware of the major contributors to ground-level ozone pollution: *auto emissions* (92%), *truck and bus emissions* (91%) and *gasoline vapors* (88%). More than eight out of ten respondents (82%) were aware that *gasoline-powered lawn equipment* contributed, while seven out of ten (71%) were aware that *vapors from paints, stains and solvents* contributed to ground-level ozone pollution. Two-thirds (67%) were aware that *aerosol products such as hair sprays* contribute to the problem. The majority (57%) were aware that *oil and gas wells* contribute to ground-level ozone pollution.

- Awareness of each contributor to ground-level ozone pollution increased between the 2005 Pre-Survey and the 2007 Post-Survey. The largest increase was measured for *gasoline-powered lawn equipment* (60% to 82%).

Awareness of Ozone Action Alerts

- Awareness of Ozone Action Alerts has steadily increased from the 2005 Pre-Survey (17%) to the 2005 Interim-Survey (43%) to the 2007 Post-Survey (50%). Thus, there has been a three-fold increase in awareness since the launch of the Ozone Education and Outreach Campaign.

- Among those who were aware of Ozone Action Alerts, the majority (69%) said (unaided) they had seen an alert on TV. Radio (18%) was the second most frequently mentioned source for Ozone Action Alerts, followed by the newspaper (18%) and electronic highway signs (10%).

- Awareness of having seen/heard of Ozone Action Alerts on TV (56% to 69%) and radio (14% to 25%) both increased between the 2005 Pre-Survey and the 2007 Post-Survey. Awareness of the newspaper as a source slightly decreased between 2005 and 2007 (21% to 18%).

- Among specific slogans associated with the Ozone Education and Outreach Program, ***Ozone Aware*** had the highest awareness (52%). Three out of ten or more respondents were aware of ***Stop at the click*** (36%), ***If you breathe the air this message is for you*** (34%), and ***Let's take care of our summer air*** (30%). Awareness of ***Mow down pollution*** (14%) and ***Pledge to chill*** (8%) had significantly lower awareness. Slogan awareness did not change significantly between the 2005 Interim-Survey and the 2007 Post-Survey except for ***Let's take care of our summer air*** which increased from 23% to 30%.

- In 2007, nearly one-half of the respondents had heard or seen news stories, (46%), radio traffic reports (45%), and television ads (44%) about ground-level ozone pollution. More than three out of ten respondents had seen something about ozone pollution on the backs/sides of buses (37%) and electronic highway signs (33%). One out of five (22%) had seen something about ozone pollution on outdoor billboards. Only one out of ten (10%) had heard about the "Mow Down Pollution" lawn mower exchange program.

- Awareness of all the types of communications regarding ground-level ozone pollution increased significantly between the 2005 Interim-Survey and the 2007 Post-Survey. The largest increase in awareness was for news stories (15% to 46%).

- Based on differences in awareness and perceptions, the Ozone Education and Outreach Program should increase the targeting of men, younger adults (under 35) and older adults (65 and older).

Behavior Related to Ozone Education and Outreach Program

- More than nine out of ten respondents (92%) had an awareness (unaided) of at least one action that drivers can take to reduce ground-level ozone pollution. In 2007, awareness was highest for four actions: "carpool" (40%), "use public transit" (38%), "reduce driving" (32%), and "keep vehicles well-maintained" (25%). Other actions mentioned with some frequency were "refuel in evening" (11%), "avoid unnecessary idling" (10%), "use electric/hybrid cars" (9%) and "reduce speed" (9%).

- Awareness of driver actions has increased since the 2005 Interim-Campaign Survey. In total, the percentage of respondents aware of at least one action increased from 87% to 92%. The largest increase in awareness between the Interim- and Post-Campaign Surveys were "use public transit" (18% to 38%), and "carpool" (30% to 40%).

- In total, respondents (regardless of whether or not they personally mowed their lawn) had high awareness (unaided) of actions that people who mow lawns can take to reduce ground-level ozone pollution. In 2007, more than eight out of ten respondents (83%) could name at least one action to reduce ozone pollution. Awareness was significantly higher (91%) among those who personally mow their own lawn.

- The majority of all respondents mentioned that ground-level ozone pollution could be reduced by "using earth friendly/electric mowers and trimmers" (58%) and "mow lawn in evening" (53%). Other actions mentioned with some frequency were "keep lawn mower equipment well-maintained" (15%), "mow less frequently" (12%) and "remove/reduce lawn area" (8%). The latter two actions have not been communicated in the Ozone Education and Outreach Program.

- Awareness of actions regarding lawn mowing increased since the 2005 Interim Survey. The percentage of respondents aware of at least one action increased from 74% to 83%. The largest increase in awareness between the Interim- and Post-Surveys was "use earth friendly/electric mowers and trimmers" (45% to 58%).

- Behavioral changes were measured in two ways. The first approach asked respondents how frequently they took specific actions to reduce pollution. Although "ozone pollution" was not specifically referenced, each of these actions can assist in reducing ground-level ozone pollution. In 2007, more than nine out of ten survey respondents indicated that they either **always** or **often** *make sure gas cap is sealed tightly* (96%) and *keep car well-maintained* (92%). More than three out of four (77%) said they *stop pumping gas after nozzle clicks off*. The majority of respondents (56%) indicated that they always or often use *low pollution/water-based paints and stains.* The

majority of those who personally mow their own lawn (54%) said they always or often *mow lawn after 5:00 p.m*. More than four out of ten respondents (43%) said they always or often *limit driving/take alternative modes*. Three out of ten (30%) who personally mow their own lawns said they *use electric, battery or low polluting lawn equipment*.

- There was an increase in the percentages of respondents who always or often took three actions to reduce pollution: *use low-polluting/water-based paints and stains* (47% to 56%), *mow lawn after 5:00 p.m.* (32% to 42%) and *limit driving/take alternative modes* (33% to 43%).

- The second approach for measuring behavioral change was to ask respondents if they had done anything differently as a result of the Ozone Action Alerts. Respondents who had seen or heard an Ozone Action Alert (50% of all respondents) were asked if *the Ozone Action Alerts caused them to do anything differently from their normal routine.* Among those aware of Ozone Action Alerts, 43% said they had responded by doing something different. Thus, 22% of all survey respondents had done something different as a result of the Ozone Action Alerts in 2007.

- Those who did something different as a result of Ozone Action Alerts most frequently mentioned (unaided) that they "stayed inside more" (29% of those who did something differently) or "drove less" (23%). Also mentioned with some frequency were "refueled car later in the day" (15%) and "mowed lawn later in the day" (15%).

I. INTRODUCTION

BACKGROUND

The Regional Air Quality Council (RAQC) is the lead air quality planning agency for the seven-county metropolitan Denver region. The Denver Metro area is comprised of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson Counties.

In 2005, with the assistance of federal funds, the RAQC launched a comprehensive outreach and education program that focused on the metro area's most pressing air quality issue – ground-level ozone pollution. Despite previous air quality accomplishments over the past 25 years, the region is to attain the federal-based health standard by the end of 2007 in order to avoid more stringent air quality regulations.

The Denver region has been monitoring its status with the ozone standard and has measured levels perilously close to the standard over the years. Elevated ozone levels in 1998 resulted in the RAQC implementing its initial Voluntary Ozone Reduction Program in 1999. High levels recorded again in 2002 and 2003 pushed the region over the standard, thereby causing the U.S. Environmental Protection Agency to designate the Front Range region a deferred nonattainment area. The region was given through the end of 2007 to maintain compliance with the standard in order to avoid an official nonattainment designation.

In the fall of 2003, the RAQCs planning process identified a need for much greater public outreach and education on ozone pollution. Increased citizen understanding and awareness of the causes and solutions for ozone pollution is an important element of the RAQCs overall ozone reduction strategy.

In the beginning of 2005, the RAQC, along with Johnston Wells Public Relations and Launch Advertising, began work on a three-year awareness, education and behavior change campaign. It encouraged large-scale outreach, advertising, education, and evaluation components in order to raise public awareness, deepen education, and affect behavior change.

In an effort to measure the impact and effectiveness of the Ozone Education and Outreach Program, RAQC commissioned three public opinion surveys:

***Pre-Campaign Survey* (April 2005)**

Conducted prior to the launch of the Ozone Education and Outreach Program, this survey established benchmarks by measuring public awareness and knowledge of the ground-level ozone pollution problem.

***Interim-Campaign Survey* (August 2005)**

Conducted upon completion of the program's first year to determine if it was having any affect on public awareness, knowledge, or behavior regarding the ground-level ozone pollution problem.

Post-Campaign Survey (August 2007)

Conducted upon completion of the three-year Ozone Education and Outreach Program to measure the impact of the program on public awareness, knowledge and behavior.

This report presents the findings from the Post-Campaign Survey, and where appropriate, makes comparisons to the Pre-Campaign and Interim-Campaign Surveys.

OBJECTIVES

The primary objectives of the Post-Campaign Public Opinion Survey is to measure what impacts the RAQC Ozone Education and Outreach Program has had on the awareness, knowledge and behavior of Denver Metro area residents regarding ground-level ozone pollution. Specific research issues addressed in the survey were to determine:

1. Perceptions about air pollution in the Denver Metro area.

2. Perceived familiarity with the ground level ozone pollution problem.

3. Perceptions about ground-level ozone pollution.

4. Awareness of the contributors to ground-level ozone pollution.
5. Awareness of Ozone Action Alerts.
6. Awareness of actions that can be taken to reduce ozone pollution.
7. Actions actually taken to reduce ozone pollution.
8. Awareness of specific campaign slogans used for the Ozone Education and Outreach Program.
9. Awareness of communications and news stories regarding the Ozone Education and Outreach Program.
10. Differences in awareness, knowledge, and behavior among different demographic segments.

METHODOLOGY

The research methodology used for the 2007 Post-Campaign Survey was essentially the same as that used for the 2005 Pre- and Interim-Campaign Surveys. All three surveys were conducted with a telephone survey of 400 randomly selected adults living in the 7-county Denver Metro area.

The survey respondents were selected using a random digit dialing sample. Random digit dialing allows participation of residents who have listed and unlisted telephone numbers.

The phone interviews were conducted by Aspen Media and Market Research located in Boulder, Colorado. The survey was administered using a Computer Assisted Telephone Interviewing system (CATI). The CATI system automatically dials phone numbers, presents the appropriate questions to be asked by the interviewer and then records the responses entered by the interviewees. The phone calls were conducted between August 10 and 25, 2007.

One change was instituted for the Post-Campaign Survey. The Pre- and Interim-Campaign Surveys resulted in disproportionate samples by gender and age group. Thus, the survey data had to be adjusted or weighted to reflect the appropriate proportions for these demographic segments. The Post-Campaign Survey used quotas for gender and age group to avoid disproportionate samples, and the survey data did not have to be weighted.

The survey results are statistically reliable within ± 4.9% at the 95% confidence interval. This means that 19 out of 20 times (95% confidence) the survey results will be within ± 4.9% (worst case) of how the entire population would have responded if they had participated in the survey.

II. SURVEY FINDINGS

Since the April 2005 Pre-Campaign Survey established benchmarks prior to launch of the enhanced Ozone Education and Outreach Program campaign, it is compared to the Post-Campaign Survey results for most questions. The Interim- and Post-Campaign Surveys included questions not asked in the Pre-Campaign Survey. In these instances, comparisons are made between the Interim- and Post-Campaign Surveys.

PERCEPTIONS ABOUT AIR POLLUTION

■ *Perception of Air Pollution as a Problem*

The vast majority of Denver Metro area residents (85%) perceive that air pollution is at least a **moderate** problem in the Denver Metro area. More than one-third (36%) consider air pollution to be a **major** problem, while about one-half (49%) consider it a **moderate** problem. Only 3% perceive air pollution to be **not a problem at all**. (Refer to Table 1 and Figure 1.)

Perceptions about air pollution as a problem have elevated between the Pre- and Post- Surveys. Those who perceive air pollution as a major problem increased from 25% in April 2005 to 36% in August 2007. In 2007, perceptions about air pollution as a problem varied for two demographic segments:

- Women were more likely than men to perceive air pollution as a major problem (43% vs. 30%).

- Persons with less than a college degree education were more likely than persons with a college degree or higher to perceive air pollution as a major problem (40% vs. 32%).

Perceptions about the problem of air pollution did not significantly vary between those who were and those who were not aware of Ozone Action Alerts.

TABLE 1 PERCEPTIONS OF AIR POLLUTION AS A PROBLEM IN DENVER METRO AREA

	Pre-Survey	Post-Survey
Major Problem	25 %	36%
Moderate Problem	52	49
Minor Problem	19	10
Not a Problem at All	4	3
No Opinion	0	1
Total*	100 %	99%
Mean Score**	3.0	3.2
Base	(400)	(400)

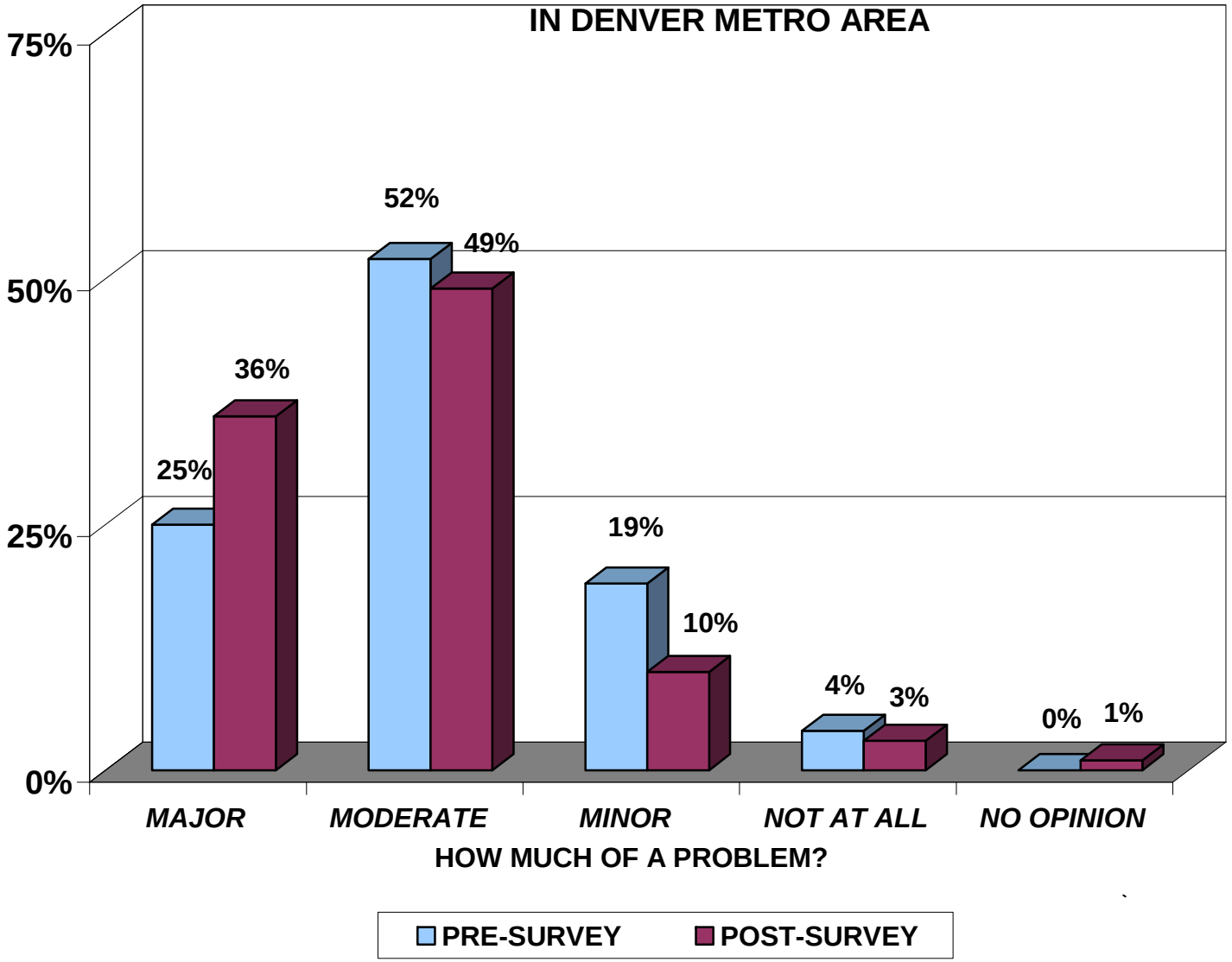
* May add to less than 100% due to rounding.

** Mean score is calculated by assigning integer values of “4” to **major**, ”3” to **moderate**, “2” to **minor**, “1” to **not at all** and disregarding the **no opinions**.

Source: The Howell Research Group

FIGURE 1

PERCEPTION ABOUT AIR POLLUTION AS A PROBLEM IN DENVER METRO AREA



Survey respondents were asked (unaided) why they rated air pollution as a certain type of problem. Interestingly, respondents replied with reasons that described the impacts of air pollution and reasons that described the cause of air pollution. Three responses were given most frequently: "brown cloud/"smog" (28%), "affects people's health" (21%) and "caused by too much driving" (20%). These responses were mentioned most frequently by those who perceived air pollution to be a major problem, but were also mentioned by respondents who perceived air pollution to be a less serious problem. This question was asked only in the Post-Survey. (Refer to Table 2.)

"Ozone pollution" was mentioned by only 5% of all respondents. Persons who perceived air pollution to be less serious were most likely to say "not bad/doesn't impact me" (11% of total), followed by "better compared to other cities" (6%).

TABLE 2 REASONS FOR RATING OF THE AIR POLLUTION PROBLEM (UNAIDED): POST-SURVEY

		Rating of Problem			
	Total	**Major**	**Moderate**	**Minor**	**Not at All**
Brown cloud/smog	28%	36%	26%	15%	8%
Affects people's health	21	28	19	8	15
Caused by too much driving	20	29	17	5	0
Not bad/doesn't impact me	11	1	9	50	39
Better compared to other cities	6	1	9	5	8
Caused by high altitude/geographic location	6	8	5	0	8
Ozone pollution	**5**	**8**	**5**	**0**	**0**
Caused by weather	4	3	6	3	0
Caused by industry	4	4	4	0	15
Has improved	3	0	5	3	8
Smells bad	2	2	2	0	0
Causes global warming	1	0	2	0	0
Other	9	8	10	8	8
Don't know	4	2	4	8	8
Base	(400)	(145)	(197)	(40)	(13)

* Reflects multiple responses.
Source: The Howell Research Group

■ *Perceived Negative Impacts of Air Pollution*

The majority of residents perceive that air pollution negatively impacts the health of Denver Metro area residents, but the majority does not perceive much impact on their daily life. In 2007, 64% of the residents perceived that air pollution had either a moderate (40%) or major (18%) impact on the health of Denver Metro area residents. This is a decline from the 2005 Pre-Survey when 70% perceived either a moderate (44%) or major (26%) impact. (Refer to Table 3 and Figure 2.)

Only 37% of the respondents perceived that air pollution had either a moderate (30%) or major (7%) impact on their daily life in 2007. The perceived impact on daily life also declined from April 2007 when 42% perceived either a moderate (32%) or major (10%) impact.

TABLE 3 PERCEIVED NEGATIVE IMPACTS OF AIR POLLUTION

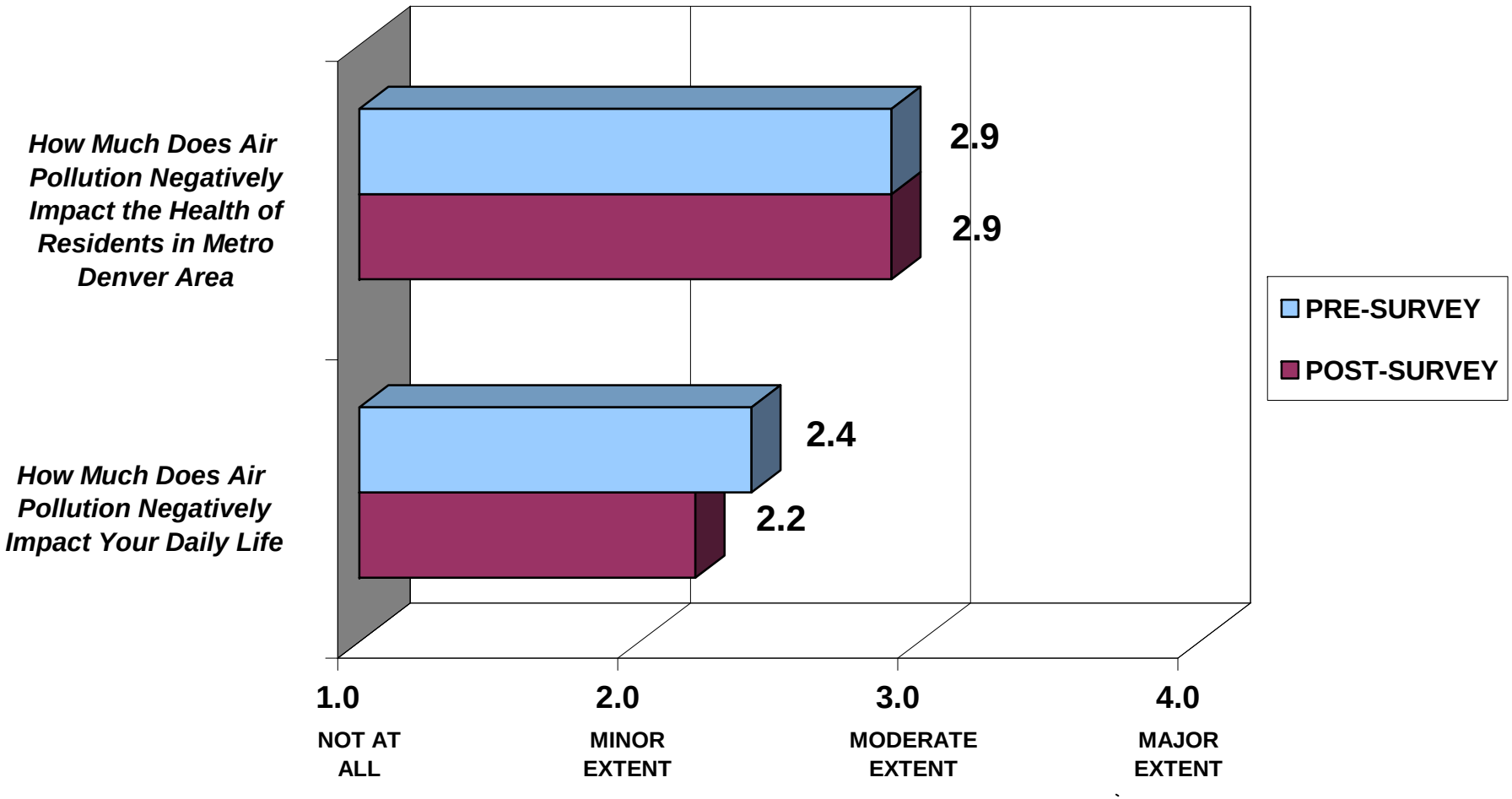
	Negative Impact					
	Major Extent	**Moderate Extent**	**Minor Extent**	**Not at All**	**No Opinion**	**Mean Score***
Health of residents in Denver Metro area						
2005 Pre-Survey	26%	44%	21%	5%	4%	2.9
2007 Post-Survey	18	46	20	5	12	2.9
Your daily life						
2005 Pre-Survey	10	32	39	17	1	2.4
2007 Post-Survey	7	30	34	29	1	2.2
Base	---------- (400) ----------					

* Mean score is calculated by assigning integer values of "4" to **major extent**, "3" to **moderate extent**, "2" to **minor extent**, "1" to **not at all** and disregarding the **no opinions**.

Source: The Howell Research Group

FIGURE 2

PERCEIVED NEGATIVE IMPACTS OF AIR POLLUTION



KNOWLEDGE AND PERCEPTIONS ABOUT GROUND-LEVEL OZONE POLLUTION

■ *Perceptions about Specific Types of Air Pollution*

Survey respondents were asked how serious a problem three specific types of air pollution were: ground-level ozone, carbon monoxide, and particulate matter. Comparisons between the Pre- and Post-Surveys can only be made for ground-level ozone.

Denver Metro area residents perceive carbon monoxide to be a more serious problem than either ground-level ozone or particulate matter. Nearly four out of ten respondents (38%) perceived carbon monoxide to be a major problem compared to about two out of ten who perceived ground-level ozone (22%) and particulate matter (21%) to be major problems. (Refer to Table 4 and Figure 3.)

Perceptions about ground-level ozone being a major problem have increased from 13% in the 2005 Pre-Survey to 22% in the 2007 Post-Survey.

Women were more likely than men (26% vs. 18%) to perceive ground-level ozone as a major problem. Persons aware of Ozone Action Alerts were somewhat more likely than those with no awareness (26% vs. 18%) to perceive ground-level ozone as a major problem in the Denver Metro area.

TABLE 4 PERCEIVED PROBLEM OF SPECIFIC TYPES OF AIR POLLUTION IN DENVER METRO AREA

	Type of Pollution			
	Ground-Level Ozone		Carbon Monoxide	Particulate Matter
Perceived Problem	**Pre-Survey**	**Post-Survey**	**Post-Survey**	**Post-Survey**
Major	13%	22%	38%	21 %
Moderate	39	40	32	37
Minor	25	15	18	22
Not at all	2	6	6	6
No opinion	22	18	7	15
Total*	101%	101%	101%	101 %
Mean Score**	2.8	2.9	3.1	2.9
Base	(400)	(400)	(400)	(400)

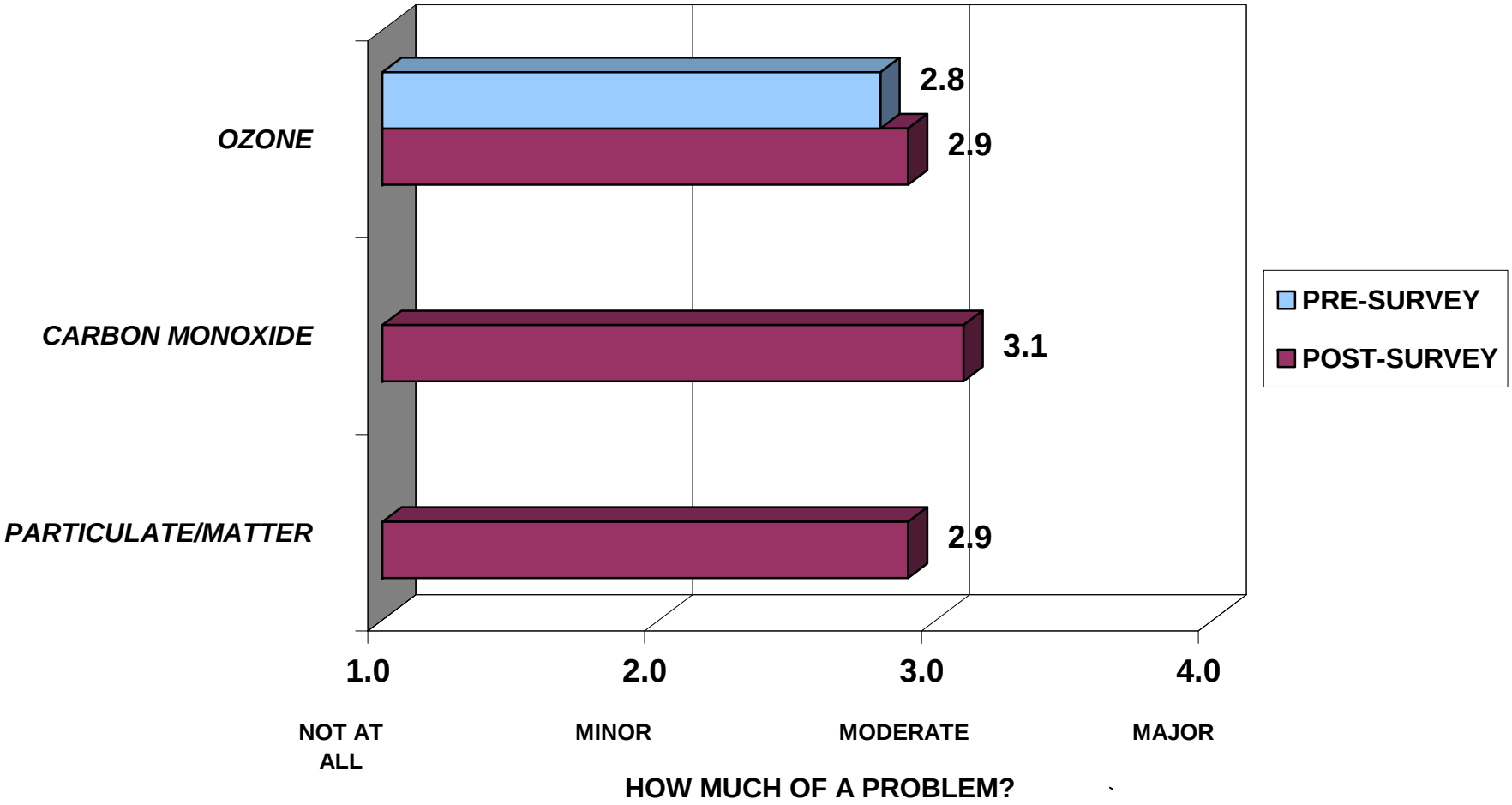
* Adds to more than 100% due to rounding.

** Mean score is calculated by assigning integer values of “4” to **major**, ”3” to **moderate**, “2” to **minor**, “1” to **not at all** and disregarding the **no opinions**.

Source: The Howell Research Group

FIGURE 3

PERCEIVED PROBLEM OF SPECIFIC TYPES OF AIR POLLUTION



■ *Perceived Familiarity with Ground-Level Ozone Pollution*

Denver Metro area residents do not have a high level of familiarity with ground-level ozone pollution, although perceived familiarity has improved since the 2005 Pre-Survey. In 2005, only 32% of the survey respondents were either **somewhat familiar** (25%) or **very familiar** (7%) with the problem of ground-level ozone. Those somewhat or very familiar increased to 44% (35% somewhat and 9% very) in 2007. (Refer to Table 5 and Figure 4.)

Perceived familiarity did not vary by gender, but it did vary by age. Persons 45 years or older were more likely than persons under 45 to be somewhat or very familiar with the problem of ground-level ozone (48% vs. 39%).

The Ozone Action Alerts appear to have an impact on perceived familiarity. Persons aware of Ozone Action Alerts were far more likely than persons with no awareness to perceive they were somewhat or very familiar with the problem of ground-level ozone (55% vs. 32%).

TABLE 5 PERCEIVED FAMILIARITY WITH PROBLEM OF GROUND-LEVEL OZONE

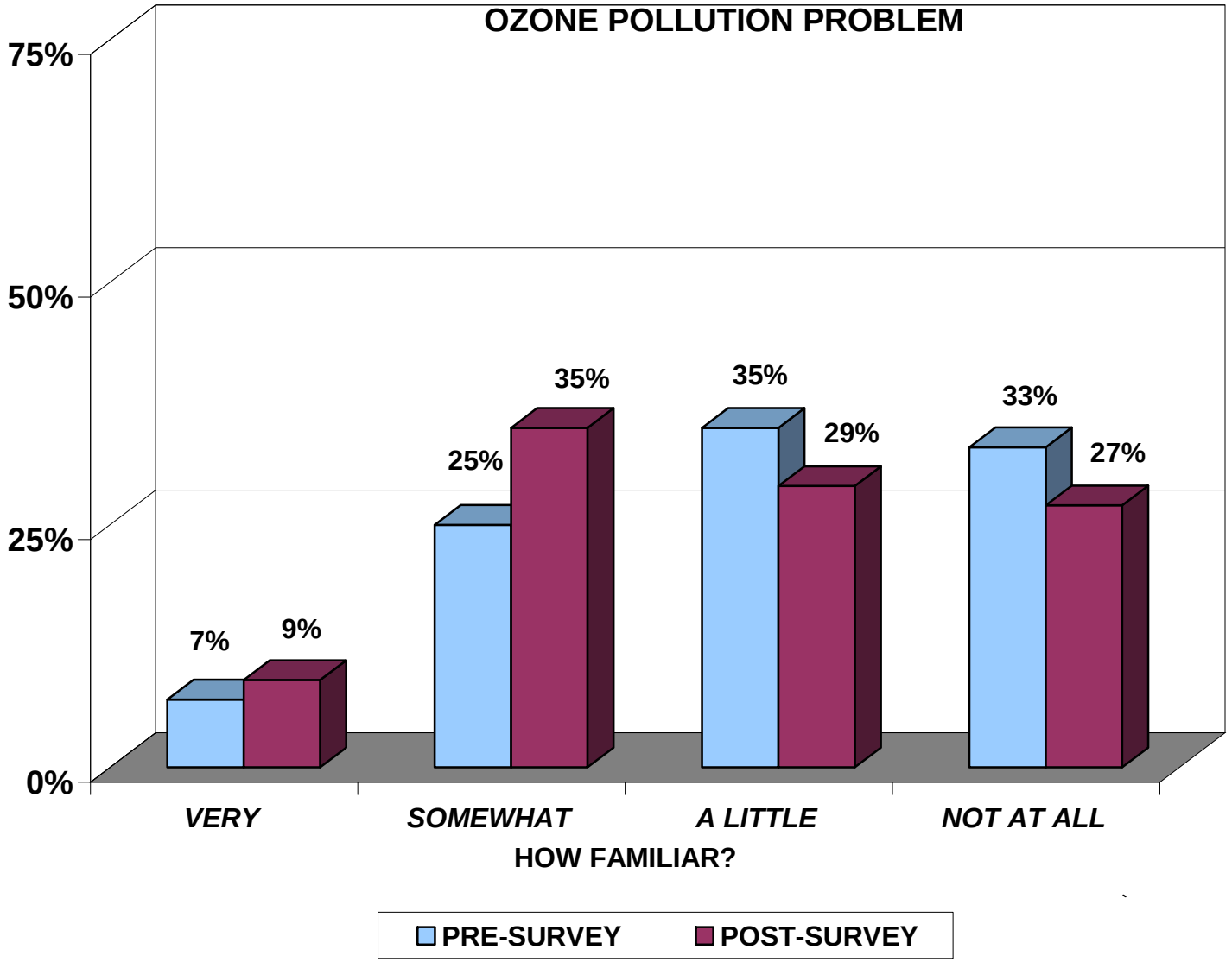
Perceived Familiarity	**Pre-Survey**	**Post-Survey**
Very Familiar	7 %	9%
Somewhat Familiar	25	35
Little Familiar	35	29
Not at All Familiar	33	27
Total*	100 %	100%
Mean Score**	2.1	2.3
Base	(400)	(400)

* Mean score is calculated by assigning integer values of "4" to **very familiar**, "3" to **somewhat familiar**, "2" to **little familiar** and "1" to **not at all familiar**.

Source: The Howell Research Group

FIGURE 4

PERCEIVED FAMILIARITY WITH GROUND-LEVEL OZONE POLLUTION PROBLEM



■ *Perceptions about Ground-Level Ozone Pollution*

Survey respondents were read four statements about ground-level ozone pollution and asked whether they agreed or disagreed (somewhat or strongly) with each statement. This question was asked only in the 2007 Post-Survey.

There is strong agreement that *ozone pollution can cause breathing problems and exacerbate respiratory infections in healthy persons*. Nearly nine out of ten respondents (87%) agreed (57% strongly and 30% somewhat) with this statement. (Refer to Table 6 and Figure 5.)

There was also strong agreement that *ozone pollution can be controlled by simple changes in everyday behavior of Denver Metro area residents* (46% strongly and 35% somewhat). More than seven out of ten respondents (71%) agreed (45% strongly and 26% somewhat) that *if the Denver Metro area does not maintain compliance with federal ozone standards, the Environmental Protection Agency can reduce federal funding for highway projects.*

Although the majority (54%) agreed, agreement was less pronounced regarding *ozone pollution in the Denver Metro area is primarily a problem in the summer*. A large percentage (37%) disagreed, while 10% had no opinion regarding this statement.

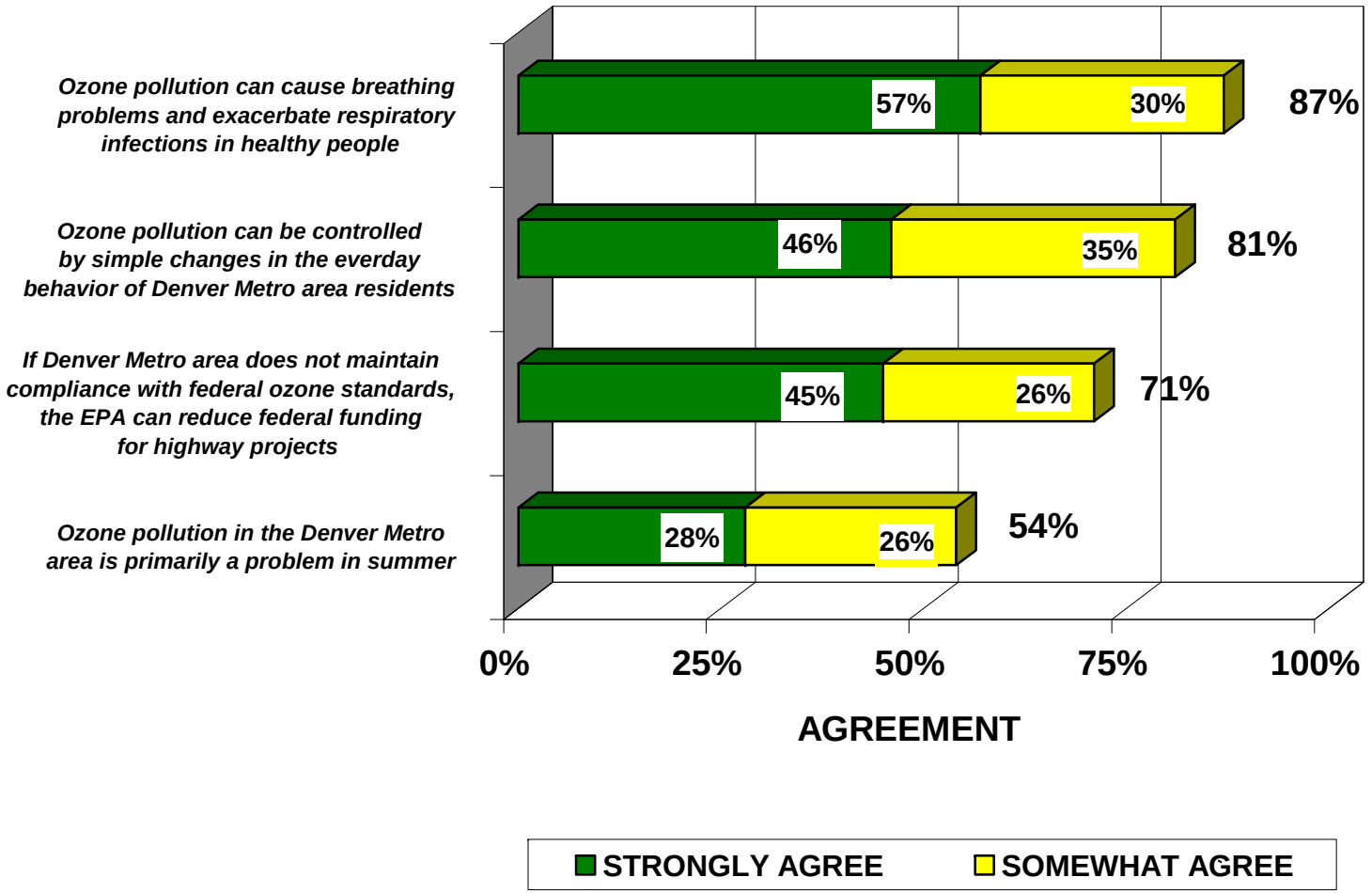
TABLE 6 PERCEPTIONS ABOUT GROUND-LEVEL OZONE POLLUTION: POST-SURVEY

Statement	Agreement: Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	No Opinion	Mean Score*
Ozone pollution can cause breathing problems and exacerbate respiratory infections in healthy people	57%	30%	3%	3%	7%	3.5
Ozone pollution can be controlled by simple changes in the everyday behavior of Denver Metro area residents	46	35	8	5	6	3.3
If the Denver Metro area does not maintain compliance with federal ozone standards, the Environmental Protection Agency can reduce federal funding for highway projects	45	26	7	9	13	3.2
Ozone pollution in the Denver Metro area is primarily a problem in the summer	28	26	17	20	10	2.7
Base	----------	----------	(400)	----------	----------	----------

* Mean score is calculated by assigning integer values of “4” to **strongly agree**, ”3” to **somewhat agree**, “2” to **somewhat disagree**, “1” to **strongly disagree** and disregarding the **no opinions**.

Source: The Howell Research Group

FIGURE 5
PERCEPTIONS ABOUT GROUND-LEVEL OZONE POLLUTION



■ *Awareness of Contributors to Ground-Level Ozone Pollution*

When asked (aided) what contributes to ground-level ozone pollution, more than nine out of ten respondents in 2007 mentioned *auto emissions* (92%) and *truck and bus emissions* (91%). Nearly nine out of ten respondents (88%) indicated that *gasoline vapors* contributed to ground-level ozone pollution. (Refer to Figure 6.)

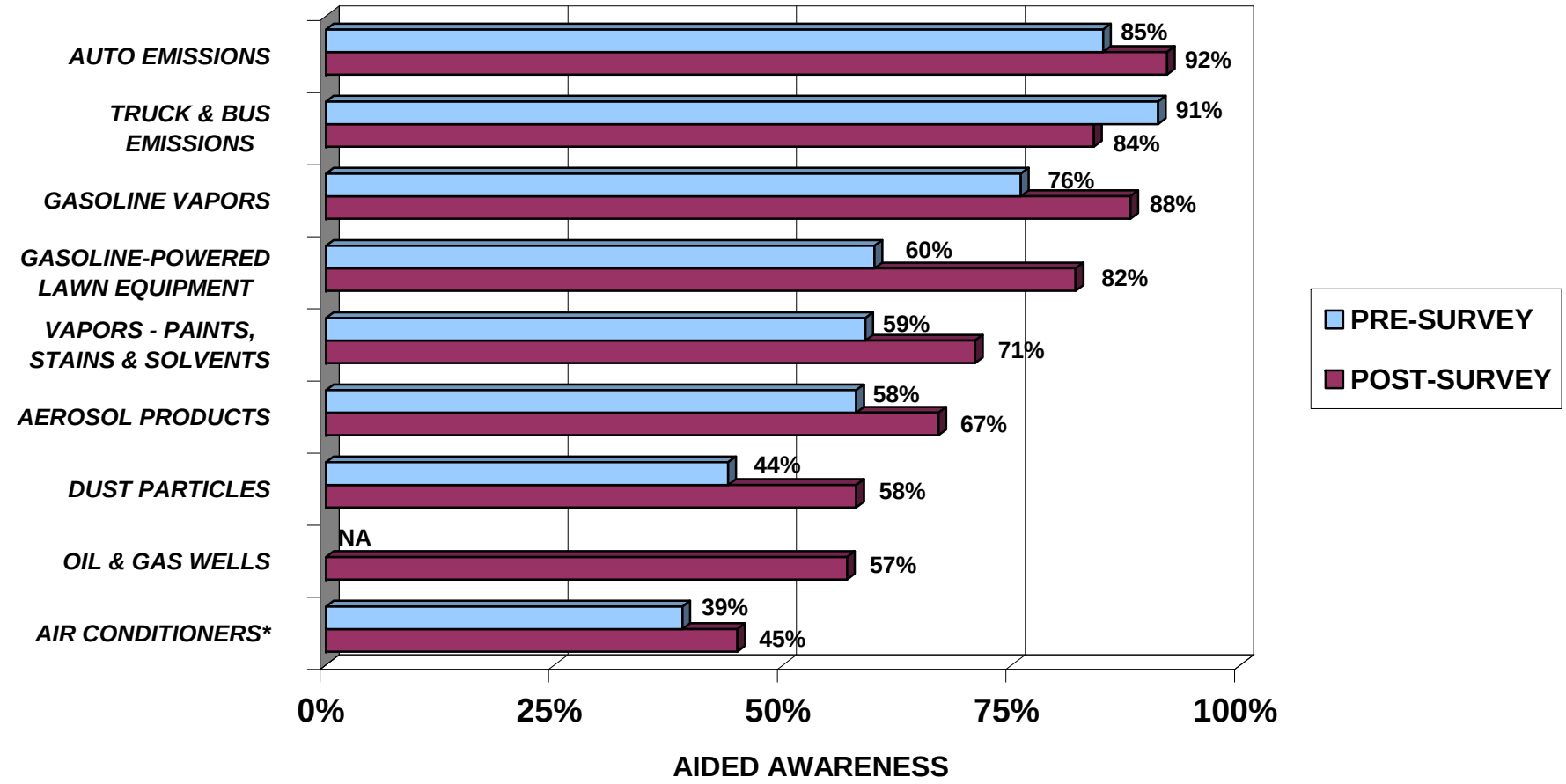
More than eight out of ten respondents (82%) were aware that *gasoline-powered lawn equipment* contributed, while seven out of ten (71%) were aware that *vapors from paints, stains and solvents* contributed to ground-level ozone pollution. Two-thirds (67%) were aware that *aerosol products such as hair sprays* contribute to the problem. The majority (57%) were aware that *oil and gas wells* contribute to ground-level ozone pollution.

A majority of respondents (58%) incorrectly thought that *dust particles* contribute to ground-level ozone pollution, while 39% incorrectly thought that *air conditioners* contribute to the problem.

Awareness of each contributor to ground-level ozone pollution increased between the 2005 Pre-Survey and the 2007 Post-Survey. The largest increase was measured for *gasoline-powered lawn equipment* (60% to 82%).

In general, women were more aware than men of the contributors to ground-level ozone pollution. Persons 65 years and older were generally less aware of the contributors than persons under 65. Interestingly, awareness of *gasoline-powered lawn equipment* was essentially the same between persons who did or did not personally mow their lawns.

FIGURE 6
AWARENESS OF CONTRIBUTORS TO GROUND-LEVEL OZONE POLLUTION



NA - NOT ASKED IN PRE-SURVEY

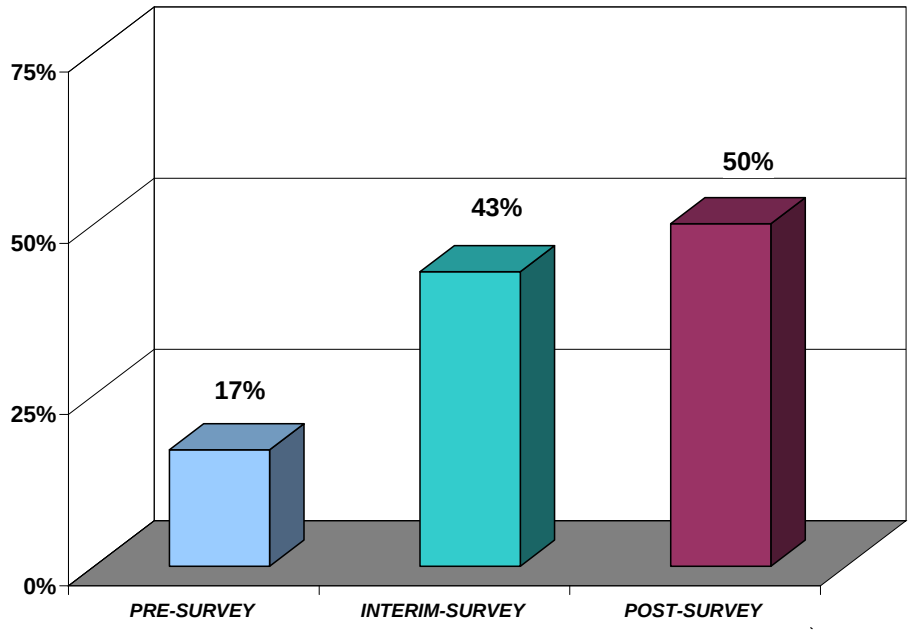
* NOT A CONTRIBUTOR

AWARENESS OF OZONE ACTION ALERTS

■ *Awareness of Alerts*

Awareness of Ozone Action Alerts has steadily increased from the 2005 Pre-Survey (17%) to the 2005 Interim-Survey (43%) to the 2007 Post-Survey (50%). Thus, there has been a three-fold increase in awareness since the launch of the Ozone Education and Outreach Campaign. (Refer to Figure 7.)

FIGURE 7
AWARENESS OF OZONE ACTION ALERTS



With a couple of exceptions, awareness of Ozone Action Alerts did not vary significantly by demographic characteristics. Adults under the age of 45 were somewhat less aware than persons 45 and older (39% vs. 53%). Persons with a lower education (high school or less) were less aware than those who had some college education (36% vs. 53%).

■ *Where Ozone Action Alerts Were Seen/Heard*

Among those who were aware of Ozone Action Alerts, the majority (69%) said (unaided) they had seen an alert on TV. Radio (18%) was the second most frequently mentioned source for Ozone Action Alerts, followed by the newspaper (18%) and electronic highway signs (10%). (Refer to Table 7.)

Awareness of having seen/heard of Ozone Action Alerts on TV (56% to 69%) and radio (14% to 25%) both increased between the 2005 Pre-Survey and the 2007 Post-Survey. Awareness of the newspaper as a source actually decreased between 2005 and 2007 (21% to 18%).

In April 2005, electronic highway signs were not used for Ozone Action Alerts, thus, no awareness was reported. Awareness of electronic highway signs was 10% in 2007.

TABLE 7 WHERE OZONE ACTION ALERTS WERE SEEN/HEARD (UNAIDED)

	Persons Aware of Ozone Action Alerts	
Source	**Pre-Survey**	**Post-Survey**
TV	56 %	69%
Radio	14	25
Newspaper	21	18
Electronic highway sign	0	10
Billboards	0	4
Website	2	3
Bus signs/billboards	0	1
Other	11	6
Can't remember	8	2
Base	(68)	(201)

* Reflects multiple responses..

Source: The Howell Research Group

■ *How Respondents Describe the Ozone Action Alert Program*

In the 2007 Post-Survey, those aware of the Ozone Action Alert Program were asked (unaided) to describe what the program means. Some responses were evaluative of the program, while others described the information provided by the program.

The most frequently mentioned description was that the program was "effective/informative" (17% of those who were aware of Ozone Action Alerts). However, a similar percentage described the program as "ineffective" (13%). (Refer to Table 8.)

The second most frequently mentioned description was a general response, "informs people about pollution level" (15%). Other descriptions mentioned with some frequency were "alerts people about health issues" (10%) and "provides actions to reduce pollution" (9%).

Specific actions to reduce ozone pollution were mentioned less frequently: "encourages less driving" (6%), "encourages people to limit/not mow lawn" (5%), "encourages people to fill gas tank later in the day" (4%) and "encourages carpooling" (2%). There were some people who incorrectly thought the Ozone Action Alert Program "alerts people to not use their fireplace" (4%).

A significant percentage of those who were aware of the Ozone Action Alert Program could not provide any description of the program (21%).

Among those aware of Ozone Action Alerts, men were more likely than women (20% vs. 8%) to describe the program as "ineffective."

TABLE 8 HOW RESPONDENTS DESCRIBE WHAT THE OZONE ACTION ALERT PROGRAM MEANS (UNAIDED)

Description*	Post-Survey Respondents Aware of Ozone Action Alert Program
Effective/informative	17%
Informs people about pollution level	15
Ineffective	13
Alerts people about health issues	10
Provides actions to reduce pollution	9
Encourages less driving	6
Encourages people to limit/not mow lawn	5
Alerts people to not use fireplace	4
Encourages filling gas tank later in the day	4
Encourages carpooling	2
Other	6
Don't know	21
Base	(201)

* Reflects multiple responses..

Source: The Howell Research Group

■ *Awareness of Campaign Slogans*

Survey respondents were asked if they had heard or seen any of eight specific slogans. Six of the slogans were part of the Ozone Education and Outreach Program, while two were associated with other public campaigns: Colorado Highway Patrol – ***Click it or ticket*** and RTD ***RideSmart Thursdays***. Awareness of the slogans was tested in the 2005 Interim- and 2007 Post-Surveys, but not in the 2005 Pre-Survey.

As expected, highest awareness was measured for ***Click it or ticket***, a long-running public relations campaign to promote the state's seat belt law. Nine out of ten respondents (89%) were aware of this slogan in 2007. (Refer to Figure 8.)

Ozone Aware had the highest awareness (52%) of the six slogans associated with the Ozone Education and Outreach Program. Three out of ten or more respondents were aware of ***Stop at the click*** (36%), ***If you breathe the air this message is for you*** (34%), and ***Let's take care of our summer air*** (30%).

Awareness of ***Mow down pollution*** (14%) and ***Pledge to chill*** (8%) had significantly lower awareness than the other slogans. Awareness of ***Mow down pollution*** was the same between those who did or did not personally mow their own lawn.

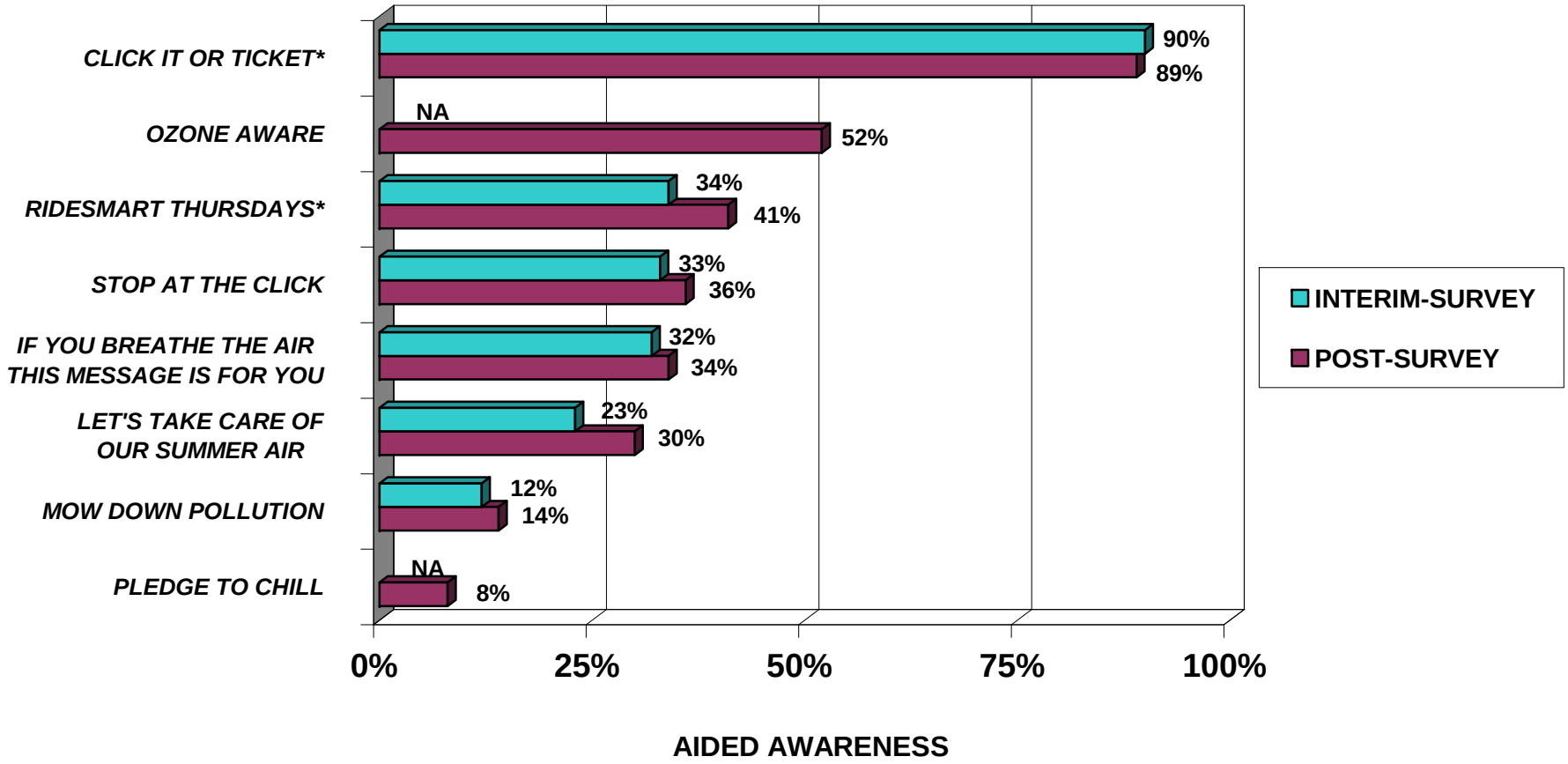
Slogan awareness did not change significantly between the 2005 Interim-Survey and the 2007 Post-Survey except for ***Let's take care of our summer air*** which increased from 23% to 30%.

There were some significant variances in awareness of slogans related to the Ozone Education and Outreach Program by the demographics of survey respondents:

- **Ozone Aware** had higher awareness among persons 65 and older than those under 65 (68% vs. 49%).

- Awareness of ***Stop at the click*** was higher among persons 35 and older than those under 35 (31% vs. 24%). Awareness was also higher among those who drove a motor vehicle than those who did not (36% vs. 20%).

FIGURE 8
AWARENESS OF SLOGANS



*** NOT AN OZONE POLLUTION CAMPAIGN SLOGAN**

NA - NOT ASKED IN INTERIM-SURVEY

■ *Awareness of Communications about Ground-Level Ozone Pollution*

Survey respondents were asked if they had seen or heard specific communications about ground-level ozone pollution. In 2007, nearly one-half of the respondents had heard or seen news stories (46%), radio traffic reports (45%), and television ads (44%). More than three out of ten respondents had seen something about ozone pollution on the backs/sides of buses (37%) and electronic highway signs (33%). One out of five (22%) had seen something about ozone pollution on outdoor billboards. Only one out of ten (10%) had heard about the "Mow Down Pollution" lawn mower exchange program. Awareness of the program was the same between those who did or did not personally mow their own lawns. (Refer to Table 9.)

Persons 45 and older were more likely than persons under 45 (52% vs. 38%) to have seen or heard a news story about ground-level ozone pollution. Awareness of news stories increased as the education level of the respondents increased.

Awareness of all of these types of communications increased significantly between the 2005 Interim-Survey and the 2007 Post-Survey. The largest increase in awareness was for news stories (15% to 46%).

TABLE 9 AWARENESS OF COMMUNICATIONS ABOUT GROUND-LEVEL OZONE POLLUTION (AIDED)

Communications*	**Interim-Survey**	**Post-Survey**
News stories	15 %	46%
Radio traffic reports	35	45
Television ads	21	44
Backs/sides of buses	24	37
Electronic highway signs	26	33
Outdoor billboards	13	22
"Mow Down Pollution" lawn mower exchange program	4	10
Base	(400)	(400)

* Reflects multiple responses..

Source: The Howell Research Group

BEHAVIOR RELATED TO OZONE EDUCATION AND OUTREACH PROGRAM

■ *Awareness of Actions Drivers Can Take to Reduce Ozone Pollution*

More than nine out of ten respondents (92%) had an awareness (unaided) of at least one action that drivers can take to reduce ground-level ozone pollution. In 2007, awareness was highest for four actions: "carpool" (40%), "use public transit" (38%), "reduce driving" (32%), and "keep vehicles well-maintained" (25%). Other actions mentioned with some frequency were "refuel in evening" (11%), "avoid unnecessary idling" (10%), "use electric/hybrid cars" (9%) and "reduce speed" (9%). (Refer to Table 10.)

There were only a couple of significant variances in awareness of actions that drivers can take to reduce ground-level ozone pollution by the demographics of respondents:

- Persons under 65 were more likely than those 65 and older to mention use of alternative transportation modes such as "carpool" (44% vs. 15%), "use public transit" (40% vs. 27%) and "bicycle" (7% vs. 2%).

- Persons under 35 were more likely than those 35 and older to mention "use electric/hybrid cars" (17% vs. 7%).

Awareness of driver actions has increased since the 2005 Interim-Campaign Survey. In total, the percentage of respondents aware of at least one action increased from 87% to 92%. The largest increase in awareness between the Interim- and Post-Campaign Surveys were "use public transit" (18% to 38%), and "carpool" (30% to 40%). Awareness of "keep vehicles well-maintained" declined from 32% to 25% between the Interim- and Post-Campaign Surveys.

TABLE 10 AWARENESS OF WHAT DRIVERS CAN DO TO REDUCE OZONE POLLUTION (UNAIDED)

Actions*	Interim-Survey	Post-Survey
Carpool	30 %	40%
Use public transit	18	38
Reduce driving	na	32
Keep vehicles well-maintained	32	25
Refuel in evening	13	11
Don't overfill gas tank	na	11
Avoid unnecessary idling	12	10
Use electric/hybrid cars	na	9
Reduce speed	11	9
Bicycle	na	7
Use higher mileage cars	na	5
Keep gas cap tight	na	3
Use right type of gas	na	2
Walk	na	2
Other	61	3
Don't Know	13	8
Base	(400)	(400)

* Reflects multiple responses..
na - Responses included in "other" and not categorized in 2005 Interim-Survey.

Source: The Howell Research Group

■ *Awareness of Actions People Who Mow Lawns Can Take to Reduce Ozone Pollution*

In total, respondents (regardless of whether or not they personally mowed their lawn) had high awareness (unaided) of actions that people who mow lawns can take to reduce ground-level ozone pollution. In 2007, more than eight out of ten respondents (83%) could name at least one action to reduce ozone pollution. Awareness was significantly higher (91%) among those who personally mow their own lawn. (Refer to Table 11.)

The majority of all respondents mentioned that ground-level ozone pollution could be reduced by "using earth friendly/electric mowers and trimmers" (58%) and "mow lawn in evening" (53%). Other actions mentioned with some frequency were "keep lawn mower equipment well-maintained" (15%), "mow less frequently" (12%) and "remove/reduce lawn area" (8%). The latter two actions have not been communicated in the Ozone Education and Outreach Program.

Awareness of actions regarding lawn mowing increased since the 2005 Interim Survey. The percentage of respondents aware of at least one action increased from 74% to 83%. The largest increase in awareness between the Interim- and Post-Surveys was "use earth friendly/electric mowers and trimmers" (45% to 58%). Awareness of "keep lawn mower/equipment well-maintained declined from 21% to 15% between the Interim- and Post-Surveys.

TABLE 11 AWARENESS OF WHAT PEOPLE WHO MOW LAWNS CAN DO TO REDUCE OZONE POLLUTION (UNAIDED)

Actions	Interim-Survey	Post-Survey Total	Post-Survey People Who Mow
Use earth-friendly/electric mowers/trimmers	45%	58%	67%
Mow lawn in evening	52	53	57
Keep lawn mower/equipment well-maintained	21	15	18
Mow less frequently	na	12	12
Remove/reduce lawn area	na	8	7
Keep gas tank half full	3	4	4
Mow lawn in morning**	na	1	1
Other	24	5	5
Don't know	26	17	9
Base	(400)	(400)	(206)

* Reflects multiple responses..
** Not a correct response.
na - Responses included in "other" and not categorized in 2005 Interim Survey.

Source: The Howell Research Group

■ *Actions Taken to Reduce Air Pollution*

Behavioral changes were measured in two ways. The first approach asked respondents how frequently they took specific actions to reduce air pollution. Although "ozone pollution" was not specifically referenced, each of these actions can assist in reducing ground-level ozone pollution. It should be recognized that responses to these actions may overstate actual behavior.

In 2007, more than nine out of ten survey respondents indicated that they either **always** or **often** *make sure gas cap is sealed tightly* (96%) and *keep car well-maintained* (92%). More than three out of four (77%) said they *stop pumping gas after nozzle clicks off*. (Refer to Table 12 and Figure 9.)

The majority of respondents (56%) indicated that they always or often use *low pollution/water-based paints and stains.* In total, 42% said they always or often *mow lawn after 5:00 p.m.* However, the majority of those who personally mow their own lawn (54%) said they always or often took this action.

More than four out of ten respondents (43%) said they always or often *limit driving/take alternative modes*. While 25% of all respondents said they *use electric, battery or low polluting lawn equipment,* 30% of those who personally mow their own lawns said they took this action.

There were no significant differences regarding frequency of actions taken to reduce air pollution among the various demographic segments.

The percentages who always or often took these actions to reduce pollution were similar between the 2005 Pre-Survey and the 2007 Post-Survey except for three actions which increased between 2005 and 2007:

Use low-polluting/water-based paints and stains (47% to 56%).

Mow lawn after 5:00 p.m. (32% to 42%).

Limit driving/take alternative modes (33% to 43%).

TABLE 12 ACTIONS TAKEN TO REDUCE AIR POLLUTION

Action	Frequency					Mean Score*
	Always	Often	Sometimes	Rarely	Don't Know/ Not Applicable	
Make sure gas cap is sealed tightly						
2005 Pre-Survey	91%	2%	1%	2%	4%	3.9
2007 Post-Survey	91	5	1	1	3	3.9
Keep car well-maintained						
2005 Pre-Survey	84	9	2	2	4	3.8
2007 Post-Survey	83	9	4	2	3	3.8
Stop pumping gas after nozzle clicks off						
2005 Pre-Survey	68	8	6	13	5	3.4
2007 Post-Survey	67	10	9	12	4	3.4
Use low-polluting/water-based paints and stains						
2005 Pre-Survey	37	10	9	23	21	2.8
2007 Post-Survey	43	13	12	13	20	3.1
Mow lawn after 5:00 p.m.						
2005 Pre-Survey	24	8	13	24	32	2.5
2007 Post-Survey	33	9	12	18	28	2.8

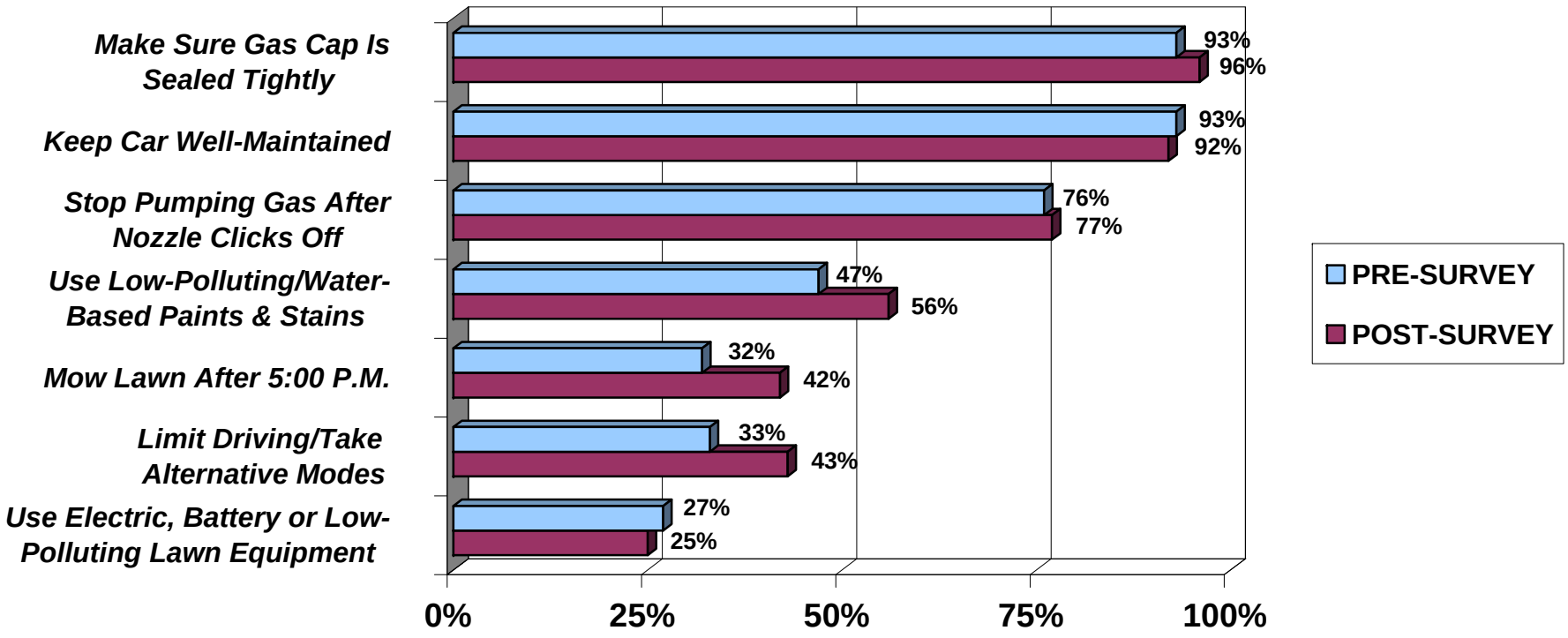
TABLE 12 ACTIONS TAKEN TO REDUCE AIR POLLUTION (Continued)

Action	Frequency					Mean Score*
	Always	Often	Sometimes	Rarely	Don't Know/ Not Applicable	
Limit driving/take alternative modes						
2005 Pre-Survey	16	17	26	37	4	2.1
2007 Post-Survey	25	18	29	26	3	2.4
Use electric, battery or low polluting lawn equipment						
2005 Pre-Survey	17	10	13	37	23	2.1
2007 Post-Survey	20	5	12	39	24	2.1
Base	(400)					

* Mean score is calculated by assigning integer values of "4" to **always**, "3" to **often**, "2" to **sometimes**, "1" to **rarely** and disregarding the **don't know/not applicable** responses.

Source: The Howell Research Group

FIGURE 9
ACTIONS TAKEN TO REDUCE POLLUTION

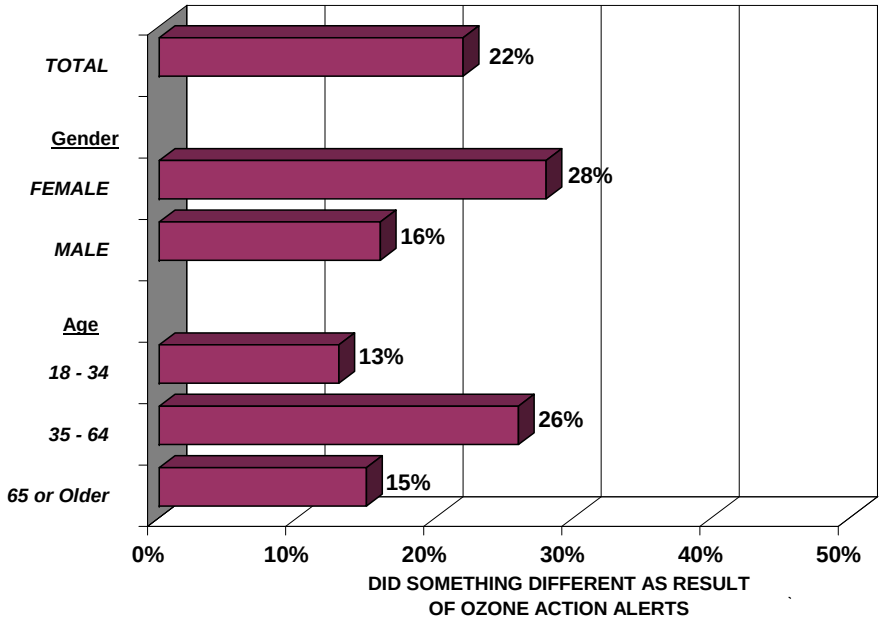


■ *Actions Taken as a Result of Ozone Action Alerts*

The second approach for measuring behavioral change was to ask respondents if they had done anything differently as a result of the Ozone Action Alerts. Respondents who had seen or heard an Ozone Action Alert (50% of all respondents) were asked if *the Ozone Action Alerts caused them to do anything differently from their normal routine.* Among those aware of Ozone Action Alerts, 43% said they had responded by doing something different. Thus, 22% of all survey respondents had done something different as a result of the Ozone Action Alerts in 2007. (Refer to Figure 10.)

Women were more likely than men (28% vs. 16%) to have responded to the Ozone Action Alerts. Persons aged 35 – 64 were twice as likely (26%) as persons 18 – 34 (13%) or 65 and older (15%) to have done something different due to the alerts.

FIGURE 10
DID OZONE ACTION ALERTS CAUSE PEOPLE TO DO ANYTHING DIFFERENT



Those who did something different as a result of Ozone Action Alerts most frequently mentioned (unaided) that they "stayed inside more" (29% of those who did something differently) or "drove less" (23%). Also mentioned with some frequency were "refueled car later in the day" (15%) and "mowed lawn later in the day" (15%). Some respondents (6%) said they "didn't burn wood in the fireplace," which is not an action to reduce ground-level ozone pollution. (Refer to Table 13.)

TABLE 13 WHAT WAS DONE DIFFERENTLY AS A RESULT OF OZONE ACTION ALERTS (UNAIDED)

Actions*	**Post-Survey Respondents Who Did Something Different**
Stayed inside more	29%
Drove less	23
Refueled car later in day	15
Mowed lawn later in day	15
Didn't burn wood in fireplace	6
Mowed lawn less frequently	5
Used public transit	5
Used electric lawn mower/trimmer	1
Other	26
Can't remember	1
Base**	(87)

* Reflects multiple responses.
** Base is those who were aware of Ozone Action Alerts and did something different (22% of total).

Source: The Howell Research Group

APPENDIX A

Survey Questionnaire

Regional Air Quality Council
Ozone Program Post Survey
Final: 8/1/07

Hello, my name is _____ with Aspen Research. We are conducting a survey of Denver area residents about air quality issues. This survey is for research purposes only and your individual responses are completely confidential.

1 Gender (By Observation)

Male 1
Female 2

(QUOTAS: 50% MALE/50% FEMALE)

2 In order to make sure we have a representative sample, I would like to know in which category your age falls. Is it (READ LIST, EXCEPT "REFUSED")

Under 18 ..... 1 (THANK & TERMINATE)
18 – 24 2
25 – 34 3
35 – 44 4
45 – 54 5
55 – 64 6
65 or older 7
Refused ..... 8 (THANK & TERMINATE)

PERCEPTIONS ABOUT AIR POLLUTION

3. How much of a problem do you think air pollution is in the Denver Metro area? Is it a . . . . . .(READ LIST, EXCEPT "DON"T KNOW/REFUSED")

Major problem 4
Moderate problem 3
Minor problem 2
Not a problem at all 1
Don't know/refused ..... 0 (SKIP TO Q. 4)

3a. Why do you think air pollution is a (Response from Q.3) ? (PROBE & CLARIFY)

_____

4. How much does air pollution negatively impact your daily life? Would you say . . . (READ LIST, EXCEPT "DON"T KNOW/REFUSED")

   To a major extent 4
   To a moderate extent 3
   To a minor extent 2
   Not at all 1
   Don't know/refused 0

5. How much does air pollution negatively impact the health of residents in the metro-Denver area? Would you say . . . (READ LIST, EXCEPT "DON"T KNOW/ REFUSED")

   To a major extent 4
   To a moderate extent 3
   To a minor extent 2
   Not at all 1
   Don't know/refused 0

6. There are different types of air pollution in the Denver Metro area. How much of a problem is each of the following types of air pollution? Is each a major problem, moderate problem, minor problem or no problem at all? (READ & ROTATE LIST)

   a. Carbon monoxide
   b. Ground level ozone
   c. Particulate or matter

   SCALE:

   Major problem 4
   Moderate problem 3
   Minor problem 2
   Not a problem at all 1
   Don't know/refused 0

<u>GROUND LEVEL OZONE – KNOWLEDGE/BEHAVIOR</u>

7. How familiar would you say you are with the problem of ground level ozone pollution? Would you say you are… (READ LIST, EXCEPT "DON"T KNOW/REFUSED")

   Very familiar 4
   Somewhat familiar 3
   A little familiar 2
   Not at all familiar 1
   Don't know/refused 0

8. I will read you some statements about ground level ozone pollution. For each statement, please tell me if you strongly agree, somewhat agree, somewhat disagree or strongly disagree. (READ & ROTATE LIST)

   a. Ozone pollution can cause breathing problems and exacerbate respiratory infections in healthy persons

   b. If the Denver Metro area does not maintain compliance with federal ozone standards, the Environmental Protection Agency can reduce federal funding for highway projects

   c. Ozone pollution in the Denver Metro area is primarily a problem in the summer

   d. Ozone pollution can be controlled by simple changes in the everyday behavior of Denver Metro area residents

   SCALE:

   Strongly Agree 4
   Somewhat Agree..... 3
   Somewhat Disagree..... 2
   Strongly Disagree..... 1
   Don't know/refused 0

9. Tell me whether or not you think each of the following contributes to ground level ozone pollution. What about . . . . (READ & ROTATE LIST)

   a. Auto emissions
   b. Truck and bus emissions
   c. Air conditioners
   d. Gasoline-powered lawn equipment
   e. Oil and gas wells
   f. Aerosol products, such as hair spray
   g. Gasoline vapors
   h. Vapors from paints, stains and solvents
   i. Dust particles

   SCALE:

   Yes..... 1
   No 2
   Don't know/refused 3

10 How often would you say that you do each of the following things to reduce pollution? How about (READ & ROTATE LIST)?

a. Limit driving or take alternative modes of transportation
b. Make sure that your gas cap is sealed tightly on your gas tank
c. Stop pumping gasoline after the nozzle clicks off
d. Keep your car well-maintained
e. Mow your lawn only after 5:00 p.m.
f. Use low-polluting or water-based paints and stains
g. Use electric, battery-operated or low-polluting lawn equipment

SCALE:

Almost always 4
Often 3
Sometimes 2
Rarely 1
Not applicable (e.g. Never mow lawn/don't have a car) 9
Don't know/refused 0

FAMILIARITY WITH ALERT SYSTEMS

11. Have you seen or heard an Ozone Action Alert or heard about the Ozone Action Alert Program?

Yes 1
No ..... 2 (SKIP TO Q.15)
Don't know/refused ..... 3 (SKIP TO Q.15)

12. Where have you seen or heard Ozone Action Alerts? (DO NOT READ LIST, MULTIPLE RESPONSES OK)

TV 1
Radio 2
Newspaper 3
Bus signs/billboards 4
Billboards 5
Web site 6
Electronic sign along highway 7
Other ..... 8 SPECIFY _____
Can't remember/refused 9

13. How would you describe what the Ozone Action Alert Program means? (PROBE & CLARIFY)

_____

14. Did the Ozone Action Alerts cause you to do anything different from your normal routine?

Yes	1	
No	2	(SKIP TO Q.16)
Don't know/refused	3	(SKIP TO Q.16)

15. What did you do differently as a result of the Ozone Action Alerts? (PROBE & CLARIFY)

_____

16. What can drivers do to reduce ozone pollution? Please tell me up to three things that you can think of. (PROBE) Are there any others? (DO NOT READ LIST)

Reduce speed	1	
Keep vehicle well-maintained/tuned up	2	
Avoid unnecessary idling	3	
Use public transit/RTD	4	
Carpool	5	
Refuel in the evening	6	
Don't overfill gas tank	7	
Other	8	(SPECIFY) ___
Don't know/refused	9	

17. What can people who mow their lawn do to reduce ozone pollution? Please tell me up to three things that you can think of. (PROBE) Are there any others? (DO NOT READ LIST)

Keep lawn mower gas tank half full	1	
Mow lawn after 5:00 PM	2	
Keep lawn mower/equipment well maintained	3	
Use earth friendly mower or trimmer	4	
Other	5	(SPECIFY) ___
Don't know/refused	6	

18. I will read you some phrases. Please tell me if you have heard or read the phrase as part of an advertising or public relations campaign. What about… (READ & ROTATE LIST)

    a. "Click it or ticket"
    b. "RideSmart Thursdays"
    c. "Let's take care of our summer air"
    d. "If you breathe the air, this message is for you"
    e. "Stop at the click"
    f. "Mow down pollution"
    g. "Ozone Aware"
    h. "Pledge to Chill"

    SCALE:

    Yes..... 1
    No 2
    Don't know/refused 3

19. Have you seen or heard of any of the following? (READ & ROTATE LIST)

    a. A television ad this summer about ozone pollution
    b. Radio traffic reports on ozone pollution
    c. Electronic message billboards along the highways that provide Ozone Action Alerts
    d. Any communications about ozone pollution on outdoor billboards
    e. Any communications about ozone pollution on the backs or sides of buses
    f. The "Mow Down Pollution" Lawnmower Exchange Program

    SCALE:

    Yes..... 1
    No 2
    Don't remember/refused 3

20. Have you seen or heard any news stories about ground level ozone pollution?

    Yes..... 1
    No 2
    Don't know/refused 3

DEMOGRAPHIC INFORMATION

My last few questions are about you and your household so that we can classify the responses to our survey. As with the entire survey, your responses are completely confidential.

21. Do you drive a motor vehicle?

Yes 1
No/Not Applicable 2
Refused 3

22. Do you ever personally mow the lawn at your residence?

Yes 1
No/Not Applicable 2
Refused 3

23. Do you rent or own your residence?

Rent 1
Own 2
Parent or other adult is homeowner 3
Refused 4

24. Which of the following categories best describes the amount of formal education you have completed? Stop me when I reach the right category. (READ LIST, EXCEPT "REFUSED")

11 years, no diploma 1
High school graduate 2
Some college, no degree or an associate degree 3
Bachelors degree 4
Graduate or professional degree 5
Refused 6

25. Which one of the following best describes your ethnicity or race? (READ LIST, EXCEPT "REFUSED" – ONE RESPONSE ONLY)

Caucasian 1
Hispanic/Latino 2
African American 3
Asian/Pacific Islander 4
American Indian 5
Other ..... 6 (SPECIFY) _____
Refused 7

THANK YOU FOR PARTICIPATING IN OUR SURVEY.

APPENDIX B

Demographic Characteristics of Post-Campaign Survey Respondents

DEMOGRAPHIC CHARACTERISTICS OF POST-CAMPAIGN SURVEY RESPONDENTS

Gender

Male	50%
Female	50
	100%

Age

18 – 24	6%
25 – 34	15
35 – 44	24
45 – 54	25
55 – 64	15
65 or older	15
	100%

Education

High school or less	14%
Some college/Associate Degree	33
Bachelors Degree	28
Graduate/Professional Degree	25
	100%

Home Ownership

Own	83%
Rent	16
Live with parents	1
	100%

DEMOGRAPHIC CHARACTERISTICS OF POST-CAMPAIGN SURVEY RESPONDENTS (Continued)

Drive a Motor Vehicle	
Yes	95%
No	5
	100%
Personally Mow Lawn	
Yes	52%
No	48
	100%
Ethnicity	
Caucasian	86%
Hispanic/Latino	7
African American	3
Asian/Pacific Islander	2
American Indian	1
Other	1
	100%
Base**	(400)

Source: The Howell Research Group