

**EVALUATION OF THE 2007-2008  
PIMA COUNTY CLEAN AIR CAMPAIGN**

(May, 2008)

*Executive Summary*

*Prepared for:*

PIMA COUNTY DEPARTMENT OF  
ENVIRONMENTAL QUALITY

Tucson, Arizona

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Tucson, Arizona

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**The Sample and Tracking Comparisons** – This tracking survey project, conducted for the Pima County Department of Environmental Quality, is comprised of 402 telephone interviews conducted among randomly-selected men and women age 16 or older who live in Pima County. As in prior surveys, respondents were further randomized by interviewing “the male or female in your household who is 16 or older and most recently celebrated a birthday.” All interviews were conducted in early May 2008 and distributed on the basis of geographic population density in the county – with specific steps taken to ensure a proportionate number of interviews in each of four zip code-defined survey “regions” based on recent population estimates. The 2008 sample is once again highly representative of projected demographic patterns and on target with geographic sampling quotas. A Spanish-language version of the final questionnaire design was prepared and made available to survey respondents who requested it. Where possible and relevant, data from this survey is tracked and compared with prior projects. The sample size for the 2008 survey (N=402) is smaller than recent studies conducted between 2004 and 2007 (N=500-503).

**Awareness of the Pima County “Clean Air” Program** – Nearly one-half of survey respondents (46%) indicate awareness of the Pima County “Clean Air” Program. This is down from an all-time high of 59% in the last two surveys, and the lowest total recorded since 2003 (43%). Still, like last year, awareness remains highest in the East zip codes (56%) and among non-Hispanic minorities (61% versus only 38% among Hispanics) – as well as women (53% versus 39% of men), 26 to 35 or 46 to 65 year-olds and 6+ year Pima County residents.

**Awareness of Various “Clean Air” Events or Activities** – While awareness of the “Clean Air” Program has decreased, familiarity with individual events associated with it is generally unchanged to higher. Fully 93% of respondents are aware of at least one “Clean Air” Program event or activity (up from 90% last year). As in prior surveys, awareness remains significantly higher among those aware of the “Clean Air” Program than not. Similar to last year, the four most familiar events include:

- **“Earth Day Festival and Parade”** (72% awareness, down only slightly from last year’s record recall [74%]. Awareness is marginally higher in the Northwest or Central zips. Women and households impacted by a breathing-related medical condition also indicate some increased familiarity.)
- **“Bike to Work Day”** (61% awareness, the highest recorded to-date [up from 55%-56% the last two years]. Central region residents, women, those impacted by a breathing-related medical condition and part-time employees report higher levels of familiarity. Awareness is lower in the Northwest zips.)

- **“Clean Air Days”** (41% awareness, off slightly from 2007’s record mention [44%]. Awareness is lower only in the Northwest region, and higher among women, respondents who perceive a progressively more severe air quality problem and the most formally educated citizens.)
- **“Car Care Checkup”** (40% awareness, basically unchanged since last year [41%]. Older respondents [66+], 6-to-10 year residents, non-Hispanic minorities and lower income households report a higher degree of familiarity – with few differences based on gender. Awareness is highest in the East zips, and lowest in the Northwest.)

Three of ten or more are familiar with the following activities or events:

- **“Walk and Roll to School Day”** (33% awareness, up from 22% last year and near the all-time high recorded in 2006 [38%.])
- **“Clean Air Fair”** (31% awareness, up slightly from 28% in 2007.)
- **“Bike Fest”** (New to the current study, three of ten are aware of Bike Fest.)

Awareness of **“The Smoking Vehicle Hotline”** (28%) has increased marginally since 2007 (26%) and 2006 (25%). There has also been a slight increase (relative to 2007) in the recall of the **“Kids for Clean Air Club”** (from 17% to 18%) and **“Bike to the Zoo Day”** (from 10% to 11%).

**“Clean Air” Campaign Event Participation** – Among the 93% of respondents aware of at least one “Clear Air” campaign event, 10% indicated that they (or someone in their household) have participated in at least one activity (down just slightly from 11% last year). Participants are primarily those aware of the “Clean Air” Program (17% versus 2% who are unfamiliar). Northwest residents, 16 to 25 year-olds, Hispanics and the most formally educated respondents are also more likely to indicate participation in a “Clean Air” campaign event. Among those who have participated in one or more “Clean Air” campaign events, fully eight of ten indicate that they have changed (or are considering actions to change) their daily routine or behaviors to help improve air quality. This is up from two-thirds last year. The willingness to change among event participants is evident regardless of perceived air quality severity, particularly those who think that Tucson has a “major” problem.

**Opinion of Campaign Advertisements/Events** – As we have found the last two years, more than eight of ten (82%) respondents aware of at least one “Clean Air” campaign event indicate a favorable opinion of “events and activities that encourage people to use other modes of transportation or work from home instead of driving alone.” The percentage “very favorable” towards such events and activities has inched even higher (from 45% to 46%). Those with a highly favorable opinion tend to be South region residents and citizens who think that Tucson has a progressively more serious air quality problem. Similar to the last two surveys, less than one of ten overall indicate a negative opinion of “Clean Air” events and activities (8%).

**Information Encouraging Transportation Behavior Changes** – As we found last year, the types of information that would most encourage use of alternative transportation methods include:

- **Information about how alternative modes can save you money** (44%, up slightly from 42% in 2007. Geographically, importance is somewhat lower only in the South zips [39% versus 43%-47% elsewhere]. Whites, 26 to 45 year-olds and higher income types also place increased emphasis on money-saving information.)
- **Information about how alternative modes can save you gasoline** (38%, up from 34% last year. South region residents, men, 46 to 55 year-olds, Hispanics and those who earn between \$25,000 and \$59,999 annually indicate increased importance.)
- **Information on how alternative modes can help reduce air pollution** (27%, down slightly from 29% in 2007. Air pollution-related information is more highly important to East region residents, 46 to 55 year-olds, college graduates, respondents employed at large jobsites [with 100+ workers] and those who perceive a progressively more severe air quality problem in Tucson.)
- **Information on how alternative modes can improve your health** (23%, unchanged since last year. There are few differences in importance based on geography, gender or existence of a breathing-related medical condition within the household. Instead, it is the youngest respondents, 6-to-10 year residents and Hispanics who most value this type of information.)

Similar to recent surveys, one of ten indicate that **information about how to use alternative modes** might encourage their utilization – more often South region residents and 56 to 65 year-olds. Representing a progressive decline since the 2004 study, 19% in the current project report that **nothing** would encourage them to use alternative modes.

**Air Quality Awareness Among Children** – Consistent with the last two studies, three of ten survey respondents indicate that they have children ages 5 to 18 living in their household. The incidence of children ages 5 to 18 in the household is fairly consistent across geography, and elevated among 16 to 45 year-olds, Hispanics and less formally educated respondents. Among households with children ages 5 to 18 (30% of the total

sample), three of ten say these children have asked questions or talked about air pollution. This is down from 2007 (36%), but consistent with the 2006 survey (30%). Households with children in the Northwest or Central zips are more likely to say these children have expressed air pollution concerns. Three of ten households with children ages 5 to 18 indicate that these children have talked about or brought home materials from school about improving air quality. This is down from 36% in the last two studies. Recall of school materials is higher among those aware of the “Clean Air” Program and respondents who perceive a “major” air quality problem – as well as Northwest zip residents, women, 36 to 55 year-olds, Hispanics and the most formally educated respondents.

**Best Methods to Communicate Air Quality Action Days** – New to the current survey, respondents were asked to choose the most effective method for communicating information related to Air Quality Action Days (when air pollution increases to levels that affect people with breathing-related medical conditions). Nearly two-thirds think that **television alerts** would be most effective (64%), while four of ten each identify **television news reports** or **radio announcements**. Similar to overall patterns, two-thirds of respondents impacted by a breathing-related medical condition select television alerts – with more secondary emphasis on radio announcements (48%) than television news reports (41%).

Among the 37% of households impacted by a breathing-related medical condition, 44% would be interested in registering to receive free air quality alerts on Air Quality Action Days. This is particularly true among 16 to 45 year-olds, non-Whites and less formally educated respondents – with few differences based on gender. Geographically, interest is similar in the Northwest, South and Central regions (48%-51% versus only 17% in the East zips). Instead, one of four East region residents impacted by a breathing-related medical condition are “possibly” interested (17% overall). The remaining 38% overall are not interested – especially older respondents and college graduates. What is the best way to contact those interested in receiving free air quality alerts on Air Quality Action Days? Four of ten say that an **e-mail** would be the best way to contact them. Three of ten prefer an **automated call to their home phone**, while two of ten say that a **text message** would suit them best. E-mail is more popular with 26 to 45 year-olds. Automated telephone calls appeal more to older respondents. As might be expected, 16 to 35 year-olds are most apt to prefer text messages.

**Agreement With Various Statements Regarding Air Pollution** – The following is a summary of the agreement with a variety of statements about the Pima County Department of Environmental Quality and air pollution in general.

**PDEQ Evaluations** –

- **You are aware of the Pima County Department of Environmental Quality (PDEQ)** (70% agree, representing progressive improvement from the 2006 [48%] and 2007 [65%] projects. In 2006, the statement was worded to include specific

knowledge of PDEQ. Awareness is marginally lower only in the Northwest zips [63% versus 70%-77% in the other regions], and is highest among those who perceive a “major” air quality problem and respondents aware of the “Clean Air” Program [82% versus 57% unaware].)

- **You are aware of PDEQ’s dust control program** (Unchanged from last year, 43% agree. Awareness is marginally higher in the Northwest and East zips, as well as among 56 to 65 year-olds, Whites and those familiar with the “Clean Air” Program. Similar to last year, there is no difference in awareness based on whether or not households are impacted by breathing-related medical problems.)

#### **Air Pollution/Gas Price Evaluations –**

- **You are aware that airborne dust causes health problems** (In line with last year, nearly all respondents agree with this statement [96%].)
- **You are aware that riding quads or dirt bikes can cause airborne dust problems** (New to the current survey, fully 87% agree – regardless of geography or perceived air quality problem.)
- **You are aware of air pollution advisories in Tucson** (79% agreement, representing progressive improvement since 2006 [70%]. Awareness is directly related to the perceived severity of the air quality problem in Tucson and elevated among Northwest or East region residents, women and those familiar with the “Clean Air” Program – with fewer differences based on household impact of a breathing-related medical condition.)
- **You understand what an air pollution advisory means, issued as part of an Air Quality Action Day** (79% agree, down slightly from last year [83%], when the statement read was “You understand what an air pollution advisory means.” Northwest or East region residents and 66 to 75 year-olds indicate increased awareness.)
- **You have seen or heard commercials on TV or radio regarding clean air or dust pollution** (Seven of ten recall TV or radio spots, down from three of four in recent surveys. Recall is higher among those aware of the Pima County “Clean Air” Program and is directly related to the perceived severity of the air quality problem in Tucson. Northwest or East zip residents, women and non-Hispanic minorities are also more likely to remember a TV or radio spot.)
- **Because of *higher gas prices*, you are generally driving less** (Similar to the last two surveys, more than six of ten agree [62%] – more often East region residents, 26 to 55 year-olds, non-Whites and lower income types. There is little difference based on awareness of the “Clean Air” Program.)

- **Because you want to *reduce air pollution*, you are generally driving less** (New to the current survey, 55% agree. Agreement is directly related to the perceived severity of Tucson's air quality problem and awareness of the Pima County "Clean Air" Program. Central zip residents, non-Whites and those impacted by a breathing-related medical condition are also more likely to agree.)
- **You are aware that you must control dust emissions on your property** (53% agree, up marginally from last year [52%] when this statement read, "You are aware that if you own vacant, disturbed land, you are required to control dust emissions." Central or East region respondents, 46 to 75 year-olds, Hispanics and those aware of the Pima County "Clean Air" Program are more likely to agree.)
- **You have noticed a reduction in the amount of dust generated at construction sites or at other dust producing activities** (44% agree, up slightly from 2007 [42%]. Similar to last year, agreement is lower only in the Central zips and is highest among those who perceive a "minor" air quality problem. Younger respondents, non-Whites and those familiar with the "Clean Air" Program are also more likely to agree.)

**Actions Taken to Drive Less Because of Higher Gas Prices** – Among respondents who say they are generally driving less because of higher gas prices (62% of the total sample), fully seven of ten are reducing or combining car trips (down from three of four in prior surveys). These tend to be Northwest or East region residents and those who perceive a progressively more severe air quality problem.

Compared to last year, fewer report walking for short trips or errands (from 19% to 14%) and/or carpooling/vanpooling (from 24% to 14%). Central or Northwest residents are more apt to be walking, with fewer differences based on gender, age or perception of air quality problem. Ride-sharing is more common in the South or Central zips, as well as among women, 16 to 25 year-olds and Hispanics.

One of ten each are taking the bus (up slightly from 9% in 2007) and/or riding a bicycle for short errands (up from just 4%) in response to higher gas prices. In lesser numbers, and unchanged from last year, 4% each are walking to work or school or telecommuting. A similar share are simply staying home. Fewer are riding a bicycle to work or school (3%) or participating in a compressed work week (2%).

**Perceived Seriousness of Air Quality Problem in the Tucson Area** – Up slightly from last year (22%), one of four in the current survey perceive that there is a "serious" air quality problem in the Tucson area. At the same time, fewer indicate a "moderate" (58%, down from 60%) or "minor" (from 15% to 13%) air quality problem – while slightly more are not sure (from 2% to 4%). The perception of a "major" air quality problem is lower only in the East zips (19% versus 24%-28% in the other regions). Women (29% versus 21% of men), 66 to 75 year-olds, part-year Pima County residents and lower income types are more likely to think that Tucson has a "major" air quality problem. While the perception of a "major" problem is higher among households affected by a

breathing-related medical condition, awareness of the “Clean Air” program is a non-factor. East region residents – as well as those 56+, newer Pima County denizens and the most formally educated respondents – are more likely to think that Tucson has a “minor” air quality problem.

**Importance of Regional Campaign to Encourage Action** – The majority of respondents (55%) believe that it is “very important” to have a regional campaign that encourages people to improve air quality. This is down slightly from last year’s record mention (60%), but still consistent with 2005-2006 findings. Instead, more think a regional campaign is “somewhat important” (from 29% to 35%) – while one of ten continue to say it is of little (5%) or no (4%) importance. In line with prior surveys, a high degree of importance for a regional campaign is directly related to the perceived severity of Tucson’s air quality problem. Strong support is inversely related to education and is highest among lower income households. Similar to last year, only East zip code residents place a lower degree of strong importance on a regional air quality campaign (47% versus 55%-59% elsewhere).

**Work Commuting Behavior** – Down somewhat from last year (35%), three of ten are employed on a full-time basis (30 hours or more each week) (29%). The share of full-time employees is lower only in the East region (20% versus 27%-32% in other areas). Similar to last year, 12% are employed part-time (less than 30 hours each week). Overall, one-third are retired (34%) – up slightly over last year (31%). There has been a slight decrease in students (from 10% to 9%), but an increase in homemakers (from 10% to 12%). Compared to last year, twice as many report being unemployed (from 4% to 8%). Among those employed at least part-time, there has been a slight decrease in the share who work at a home-based business, both exclusively (15%, down from 17%) and in addition to another company (4%, down from 5%). The balance (82%, up from 78% last year) are employed exclusively outside the home.

Down slightly from last year (68%) – but still higher than in 2006 (62%) – 64% of full-time employees work a “standard” work schedule (8 hours/day, 5 days/week). Another 11% work 10 hour days, four days a week (up from only 6%), while 6% work 12 hour days, three or four days a week (down slightly from 7%), and 3% work 80 hours over 9 days with the 10<sup>th</sup> day off (unchanged from 2007). Similar to last year, these compressed workweek programs are more likely to be offered at large (100+ employee) jobsites. Overall, 16% (basically unchanged from last year) report that their current work schedule “varies” – more often those who work at small (less than 50 employees) jobsites.

Three of four utilize **single passenger commuting to work or school** (74%), down from 78% in 2007. The average frequency of use is 4.7 days, up from 4.1 in 2007. Consistent with last year, the incidence of driving alone to work or school for 5+ days per week is lower only in the South zip codes (41% versus 48%-69% in other regions). Those who perceive a “major” air quality problem are also less apt to drive alone 5+ days a week (40%).

The share who **carpool or vanpool** at least one day per week has decreased (from 30% to 22%), although the average frequency of usage has increased (3.9, up from 3.4 in 2007 – but still lower than the 4.4 average in 2006). Only Northwest area residents are less apt to carpool 5+ days per week (7% versus 12%-19% in other areas); and those who perceive a “major” air quality problem are more apt to carpool 5+ days per week.

**Use of Alternative Modes** – The following is a summary of the usage of alternative modes work/school commute travel:

- **Walk to work or school** (The incidence of walking to work/school is unchanged from last year at 14%, while frequency has declined slightly [3.4, down from 3.6]. Walking to work/school is more common among Central and Northwest residents, as well as those who perceive a “major” air quality problem.)
- **Ride a bike to work or school** (Slightly fewer are riding bikes [from 9% to 8%], although they are doing so more often [3.5 days, up from 2.8 in 2007]. Central area residents are more apt to be riding bikes to work/school [18%.])
- **Work at home instead of driving to work** (A few more report telecommuting [from 10% last year to 12% now], and with increased frequency [from 2.7 days to 3.2 days]. Telecommuting is greater among Northwest area residents.)
- **Ride the bus to work or school** (Bus ridership has increased [from 7% to 11%], with only a slight decrease in frequency [3.7 days a week, down from 3.8]. Northwest and Central residents are more apt to take the bus.)
- **Ride a motorcycle to work or school** (Motorcycle usage [1%, down from 2%] and frequency [1.0 days, down from 3.6] have continued to decline.)

**Miles Traveled to Work or School** – Miles traveled to work or school are generally in line with last year. The majority report travel of five miles or less (34% versus 36% in 2007) or 6 to 10 miles (26% versus 25%), while another 4% (down slightly from 5%) say they travel between 11 and 14 miles. Slightly fewer report traveling 15 miles or more (24%, down from 28%). South (36%) and East (38%) area residents are more apt to report commutes of 15 miles or more, while the majority of Central zip code residents travel five miles or less (55%). The largest share of Northwest residents say they travel between 6 to 10 miles (31%).

**Telecommuting** – Among those employed outside the home, 16% report having the option of telecommuting. This is down from 21% in 2007, but higher than in 2006 (10%). The availability of telecommuting is greater among those employed at jobsites with 100 or more employees. Six of ten who have the option of telecommuting take advantage of it (59%, down from 68% in 2007). Overall, this represents a 9% telecommute rate among respondents employed outside the home (down from 14%). The

majority of those who telecommute do so more than once a week (31%, down from 52%) or about once a week (23%, up from 15%). The remainder do so 2 to 3 times a month (31%, up from 15%) or once a month (15%, down from 18%).

**“Compressed Workweek” Programs** – One of four respondents employed outside the home have “compressed workweek” programs available to them (27%, down slightly from 31%). Northwest area residents continue to be more apt to have a compressed workweek option, as are those employed at large (100+ employee) jobsites and respondents 45 or younger.

**Commuter Miles Saved by Alternate Modes** – Based on the combined results related to modes of commuter travel and distances traveled with employment estimates (Source: Department of Commerce), we estimate that the reduction of single-occupant vehicles commuting through the use of alternative methods of travel saves **2,864,682** vehicle miles per day – or **30%** of total miles driven/not driven. This is identical to the savings we found in 2007.

While the percentage of miles saved through use of alternative modes has remained the same, the actual number of vehicle miles saved daily has increased by 2% – due to an increase in the average commute distance (from 11.4 to 11.9 miles) and fewer single-passenger commuters (from 78% last year to 74% now).

***Final Observations***

As we have found in prior surveys, there is a significant difference in key attitudes and behaviors related to air quality – including Air Quality Event Awareness, PDEQ Awareness & Usage, PDEQ Activity Understanding and Air Quality Perceptions – among those aware of the Pima County “Clean Air” Campaign and those unaware (46% each). While overall awareness has decreased from 59% in 2007 to 46% now, this relationship is still readily apparent, as summarized below.

<u>Some key differences:</u>	<u>Difference</u>	<u>“Clean Air” Program</u>	
		<u>Aware</u> (46%)	<u>Unaware</u> (46%)
<b><i>Air Quality Event Awareness</i></b>			
Earth Day Festival & Parade	+32%	82%	62%
Bike to Work Day	+48%	74%	50%
Clean Air Days	+107%	56%	27%
Car Care Checkup	+115%	56%	26%
Clean Air Fair	+156%	46%	18%
Walk and Roll to School Day	+100%	44%	22%
Bike Fest	+100%	42%	21%
The Smoking Vehicle Hotline	+147%	42%	17%
• Participation in a “Clean Air” event	+750%	17%	2%
✓ <b>On average, there is a 101% higher awareness and/or participation in “Clean Air” events or programs among those familiar with the “Clean Air” Program. In addition, participation in a campaign event is more than seven times greater among those familiar with the “Clean Air” Program (17% versus 2% not aware).</b>			

***PDEQ Awareness & Usage***

• Aware of PDEQ	+44%	82%	57%
• Aware of PDEQ’s dust control program	+90%	55%	29%
✓ <b>On average, there is a 67% greater knowledge and use of PDEQ services among those aware of the “Clean Air” Program.</b>			

<u>Some key differences:</u>	<u>Difference</u>	<u>“Clean Air” Program</u>	
		<u>Aware</u>	<u>Unaware</u>
<b><i>PDEQ Activity Understanding</i></b>			
• Aware of Tucson air pollution advisories	<b>+33%</b>	89%	67%
• Seen or heard TV/radio commercials regarding clean air or dust pollution	<b>+46%</b>	82%	56%
• Understand air pollution advisory meaning	<b>+9%</b>	82%	75%
• Aware that owners of vacant, disturbed land required to control dust emissions	<b>+68%</b>	67%	40%
• Noticed a reduction in the amount of dust generated at construction sites/other places	<b>+38%</b>	51%	37%
✓ <b>On average, there is a 39% higher understanding of PDEQ activities among those aware of the “Clean Air” Program.</b>			

***Air Quality Perceptions***

• Perceive that Tucson area has a “moderate” or “major” air quality problem	<b>+5%</b>	84%	80%
✓ <b>There is an 5% greater perception of air quality problems in Tucson among those aware of the “Clean Air” Program.</b>			

**These findings again suggest that the Pima County “Clean Air” Program clearly increases awareness, belief and actions related to improving air quality.** Consequently, targeting those unaware of the program continues to be a key recommendation of this project. What is the “target” profile of Pima County residents unfamiliar with the “Clean Air” Program? While there are fewer differences with respect to geography in the three largest zip code zones (Northwest, Central and South), men, 16 to 25 or 56 to 65 year-olds, Hispanics and Pima County residents for less than five years are among those more likely to be unfamiliar with the “Clean Air” Program. Consequently, additional promotional, communication and awareness-building efforts should be targeted towards these groups – particularly 16 to 25 year-olds and Hispanics. Why is that? The youngest respondents and Hispanics are among those most likely to participate in “Clean Air” activities and indicate a change in behavior as a result of their participation.

Without question, this study also highlights the need to increase promotional marketing and advertising efforts – to the extent possible – in order to expand awareness of the Clean Air Program, as well as specific events. It is also clear that the most effective means of communicating Air Quality Action Day alerts is with television alerts.