



Executive Highlights – Evaluation of the 2006 Sacramento Region Spare The Air Campaign

Methodology

This is the first year that residents from all five air quality management districts in the Sacramento nonattainment area have been interviewed for the annual evaluation. A total of 1,762 (714 when weighted proportionately) interviews were conducted following 14 of the 15 summer 2006 Spare The Air days and 1,692 (613 weighted) interviews were conducted on non-Spare The Air (or Control) days matched for the same day of the week. Based on projected AQI estimates, Spare The Air days are called throughout the entire nonattainment area. However, the summer's maximum AQI recorded in individual air districts varied from 124 in Yolo-Solano AQMD to 182 in Sacramento Metropolitan AQMD. A Spare The Air day is called anytime the AQI is forecast to reach or exceed 127 anywhere in the Sacramento region.

SUMMARY RESULTS:

Awareness:

- ◆ *General awareness of Spare The Air remained about the same as last year, with 62% of respondents in the Sacramento nonattainment area having heard, read, or seen advertisements about Spare The Air. Fewer people (30%) remembered hearing the specific request not to drive due to unhealthy air, a finding consistent with previous years' results. There were no differences among the individual air districts in terms of levels of awareness.*
- ◆ *Respondents interviewed following Spare The Air days did not simply give “socially-acceptable” responses: levels of both types of awareness were significantly higher on Spare The Air days than on Control days in all districts. This provides continuing evidence of the program's success in raising public awareness about air quality issues.*
- ◆ *Control day interviewing also ensures that estimates are not overstated. After subtracting the number of Control day driver respondents who erroneously thought they had heard Spare The Air advertisements, a remaining average of 584,836 drivers in the Sacramento nonattainment area noticed the general advisories on Spare The Air days during the 2006 season, and 362,041 drivers were aware specifically of the request not to drive.*

Driving Reduction:

- ◆ *Over a quarter (28%) of all respondents in the region said they drove “less” on Spare The Air days, the highest percentage in the past seven years. Significantly more Spare The Air respondents reported driving “less” than did Control respondents in all air districts except Yolo-Solano AQMD and Feather River AQMD.*
- ◆ *The percent of purposeful reducers, however, is lower: only 2.2% of all respondent drivers in the entire region reduced their driving on Spare The Air days because they wanted to improve air quality in the region and had heard or seen advertisements within the past two days about Spare The Air. The average percentage of purposeful reducers over the past seven years is 1.8%. This year's percentage, although higher, is not significantly different from the average.*
- ◆ *When extrapolated to the population of drivers, about 30,635 drivers in the Sacramento nonattainment area could be said to have purposefully made fewer trips each Spare The Air day in order to reduce air pollution. They avoided making 2.8 single trips on average. This translates into 85,780 trips that were purposefully avoided on Spare The Air days during the 2006 season.*

Estimated Emission Reductions:

- ◆ *Correcting for control day interviewing, the 2006 Spare The Air program was successful in reducing air pollution in the entire Sacramento nonattainment area by an estimated 0.40 tons of ozone precursors per day. This is due specifically to drivers purposefully reducing the number of trips they took on Spare The Air days for air quality reasons.*

Health Effects:

- ◆ *Despite differences among the air districts in terms of peak ozone concentrations, the adverse health effects of ozone air pollution are experienced throughout the entire area. With the exception of Yolo-Solano AQMD, households in the other four air quality districts of the Sacramento nonattainment area experienced significantly more breathing problems on Spare The Air days than on Control days. Other health effects attributable to poor air quality on Spare The Air days included burning eyes in Sacramento Metropolitan and El Dorado County AQMDs; headaches in Yolo-Solano AQMD and Placer County APCD; and coughing in Feather River AQMD households.*
- ◆ *The percentage of households reporting breathing difficulties in the Sacramento Core Region on Spare The Air days has stayed the same from 2000 to the present, at an average of 13% of all households during the past seven years. An average of 8% of households interviewed on Control days experienced breathing problems.*
- ◆ *Correcting for Control days, an estimated 24,795 additional households in the Sacramento nonattainment area experienced breathing problems during Spare The Air days specifically due to ozone air pollution. In addition, 41,325 households experienced burning eyes.*

Employer Participation:

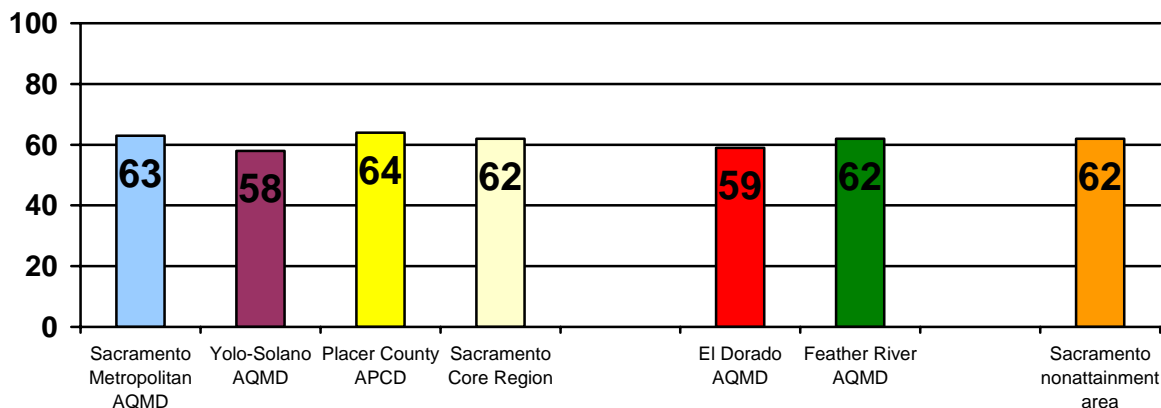
- ◆ *Employer participation in the Spare The Air program is increasing: it is significantly higher this year at 20% than it was in 2003 and 2004 (both 16%).*
- ◆ *Significantly more employers are using e-mail to tell their employees about poor air quality days now (13%) than in 2003 and 2004 (both 10%). However, the 8% of employers who post signs about Spare The Air days has not changed in four years. The percent of employers who ask their employees to register to receive Air Alert notifications has not increased in three years and remains low at only 4%. Further efforts to increase employer participation are warranted.*

Summertime Seasonal Trip Reductions:

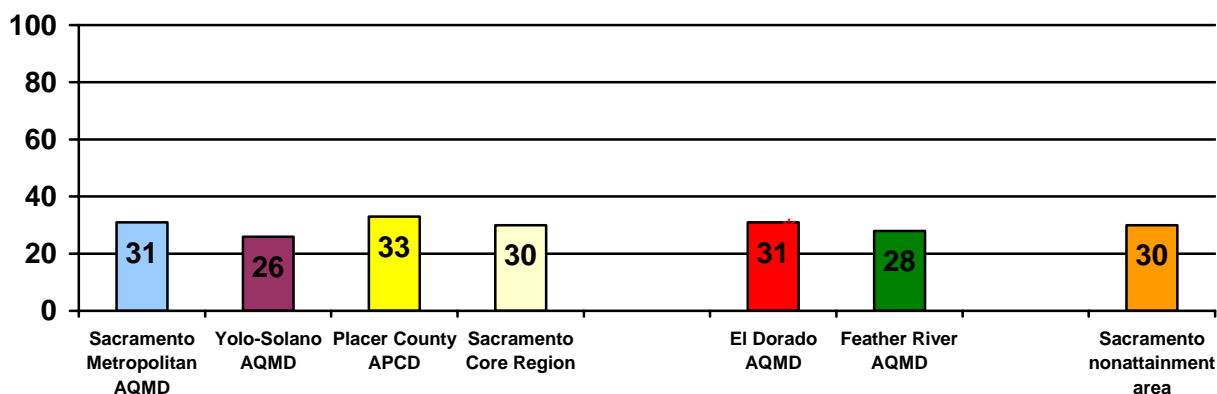
- ◆ *Nearly four-in-ten (39%) of all respondents in the Sacramento nonattainment area are summertime seasonal driving reducers. They said they usually reduce the amount of driving they do during the summer to avoid adding to air pollution by making fewer trips, staying home, consolidating trips, walking, bicycling, carpooling, and using public transit.*
- ◆ *These reducers reported entering their cars significantly fewer times than those respondents who said they did not usually reduce driving during the summer, making, on average, three-quarters of a trip less per day than non-reducers.*
- ◆ *These avoided trips among seasonal reducers could be said to translate into an estimated 2.8 tons of emission precursor reductions per summer day in 2006.*

Awareness:

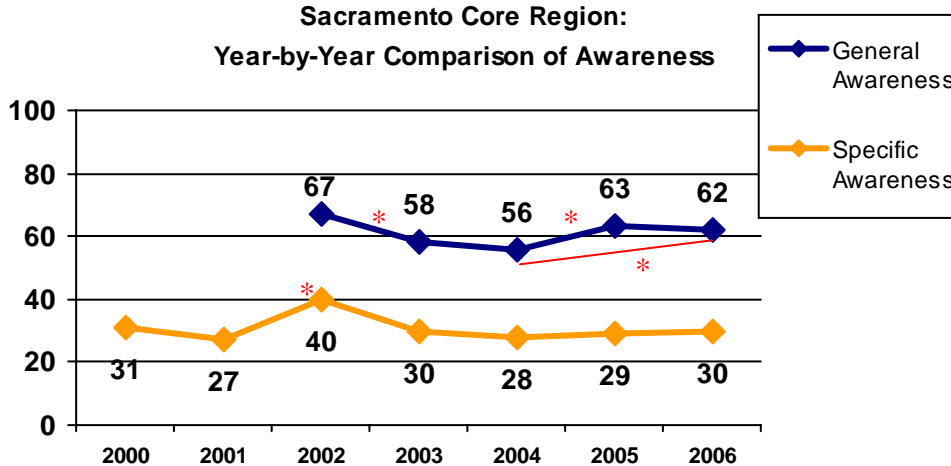
2006 General Awareness of Spare The Air (ARB wording)



2006 Specific Awareness: Heard Request to Not Drive



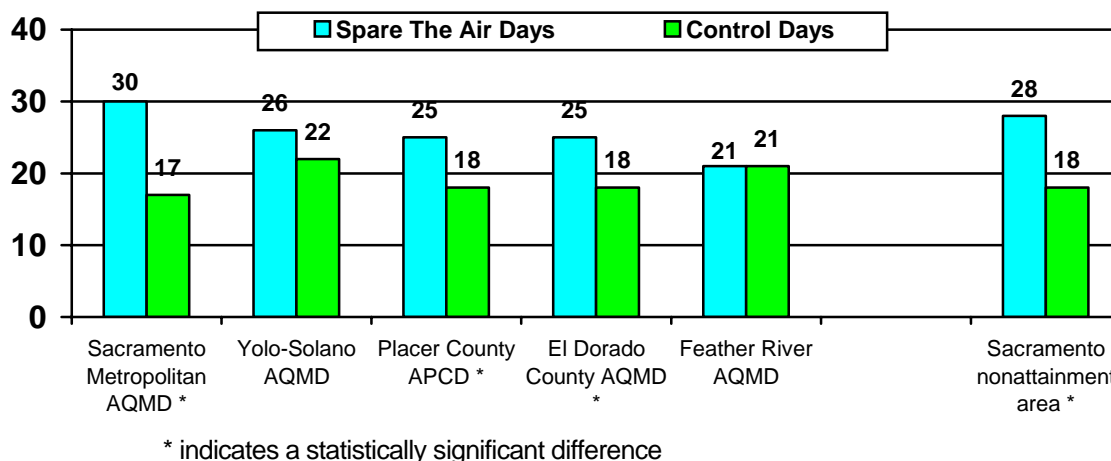
**Sacramento Core Region:
Year-by-Year Comparison of Awareness**



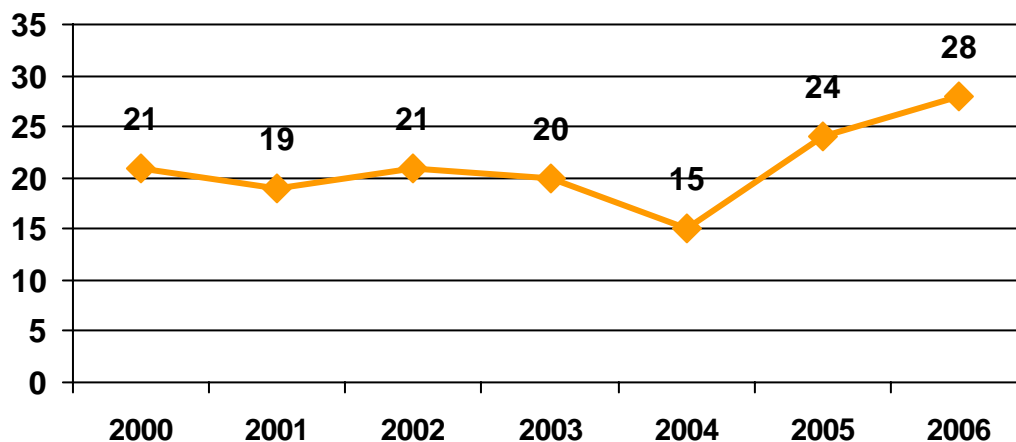
* indicates a statistically significant difference between the years

Driving Reduction:

**2006 Spare The Air vs. Control Days:
Percent of Respondents Who Drove "Less" The Previous Day**



**Year-by-Year Comparison: Percent of Respondents Who Drove "Less" on Spare The Air Days:
Sacramento Core Region
(excludes El Dorado AQMD and Feather River AQMD)**



| <i>Spare The Air: Purposeful Reducers in 2006</i> | <i>Number of Respondents Who Reduced Driving For Air Quality Reasons and Were Aware of STA Advisories</i> | <i>Total Number of Respondents Interviewed on Days Following Spare The Air</i> | <i>% of Total Respondents Who Reduced Driving for Air Quality Reasons and Were Aware of STA Advisories</i> |
|---|---|--|--|
| <i>Sacramento Metropolitan AQMD</i> | 9 | 470 | 1.9% |
| <i>Yolo-Solano AQMD</i> | 9 | 482 | 1.9% |
| <i>Placer County APCD</i> | 17 | 397 | 4.3% |
| <i>Sacramento Core Region</i> | 15 | 671 | 2.2% |
| <i>El Dorado County AQMD</i> | 7 | 331 | 2.1% |
| <i>Feather River AQMD</i> | 0 | 82 | 0.0% |
| <i>Sacramento Nonattainment Area</i> | 16 | 714 | 2.2% |

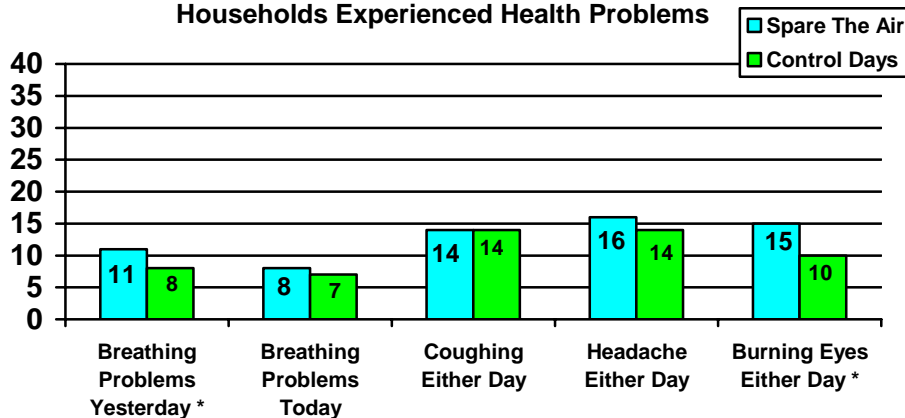
Estimated Emission Reductions:

**2006 Emissions Reduction Estimate
in the Sacramento Nonattainment Area**

| Sacramento Nonattainment Area | Percent of Respondent Drivers who Drove Less for Air Quality Reasons | x Number of Licensed Drivers in Sacramento Nonattainment Area (1,392,467 Total) | x Mean Number of Single Trips Reduced Per Day | x 6.04 Grams of Ozone precursors per trip (EMFAC 2002 V2.2) 2006 Model | = Estimated Tons Per Day of Ozone Precursors Reduced |
|--|---|--|--|---|---|
| Spare The Air Days | 2.2% (16 / 714) | 30,635 | x 2.8 = 85,780 | 518,111 grams | 0.57 tons |
| Control Days | 0.5% (3 / 613) | 6,960 | x 3.7 = 25,750 | 155,530 grams | 0.17 tons |
| Estimated Tons of Ozone Precursors Reduced Per Day: (STA Day Reductions – Control Day Reductions) | | | | | 0.40 tons |

Health Effects:

**Spare The Air vs. Control Groups:
Percent of Sacramento Nonattainment Area Whose
Households Experienced Health Problems**

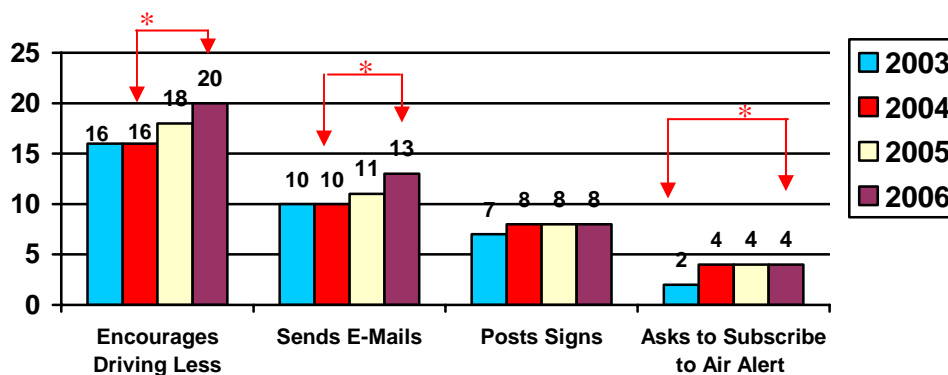


* indicates a statistically significant difference

| | Number of Households Affected | | |
|---|-------------------------------|---------------------|--|
| | Spare The Air Respondents | Control Respondents | = |
| Sacramento Nonattainment Area (826,507 Households) | | | Remaining Number of Households Affected Specifically Due to Air Pollution on STA Days |
| Breathing Difficulties Yesterday | 11% = 90,915 | 8% = 66,120 | 24,795 |
| Burning Eyes Yesterday or Today | 15% = 123,975 | 10% = 82,650 | 41,325 |

Employer Participation:

**Employer Participation Since 2003
(Sacramento Core Region)**



* indicates a statistically significant difference

Seasonal Trip Reductions:

**Year-To-Year Comparison of Percent of Respondents
Who Seasonally Reduce Driving to Avoid Adding to
Air pollution: Sacramento Core Region**

