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DATE: March 20, 2014

TO: SJVUAPCD Governing Board

FROM: Seyed Sadredin, Executive Director/APCO
Project Coordinator: Jaime Holt

RE: **ITEM NUMBER 9: REVIEW FINAL REPORT FROM THE PUBLIC OPINION SURVEY RELATING TO RESIDENTIAL WOOD BURNING, LAWN CARE, AND DRIVING HABITS OF VALLEY RESIDENTS AND CONSIDER POTENTIAL ACTIONS TO ENHANCE PUBLIC EDUCATION AND OUTREACH**

RECOMMENDATION:

Review the results of the recent scientific public opinion survey conducted by Gomez Research and discuss potential enhancements to the District's comprehensive public outreach and education programs.

BACKGROUND:

Your Board has consistently asked for and relied on sound science in formulating policies and air quality management strategies. The District routinely conducts scientific surveys to help refine and measure effectiveness of the District's public education and outreach strategies.

On Sept. 19, 2013, your Board approved a contract with Gomez Research (Pasadena, CA) to develop and administer a bilingual user survey of residential wood combustion, lawn care and personal commuting activity levels in the San Joaquin Valley. Prior to this approval, the District received three proposals in response to an RFP released in May 2013; all were evaluated and scored based on criteria included in the RFP, including the proposed survey approach, consistency with desired objectives, overall value and relevant experience. Gomez Research received the highest evaluation score based on the written proposal and a follow-up telephone interview, and thus was recommended to your Board for contract approval.

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Gomez Research developed a survey to build on information gleaned from four previous public opinion surveys. Previous surveys focused on the public's perception of the District, District programs, and the Valley's air quality. This latest survey was also designed to capture activity levels of residential wood combustion and lawn care. Such quantitative information will not only help to inform future incentive and regulatory planning efforts in light of the District's Health-Risk Reduction Strategy, but will also help to better define the emission inventories related to these two

DISCUSSION:

Gomez Research and District staff designed the survey to measure (i) residential wood-burning frequency; (ii) the use of gas-powered lawn equipment and professional lawn care services; (iii) personal driving behavior and student transport; and (iv) perceptions of the District, its programs, and local and regional air quality.

Gomez Research conducted 1,000 telephone surveys with owners and renters of single-family homes in San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare and Kings counties, and the Valley portion of Kern County. Surveys were conducted in English and Spanish with 40 percent being conducted on cell phones, ensuring that residents without landlines would be included in the study. Surveying was conducted Jan. 3-19, 2014, during the middle of the wood-burning season. The *Residential Wood Burning, Lawn Care, and Commuting Survey Final Report, February 2014* is included as Attachment A to this Board Memorandum.

Key Findings of the 2014 Survey—Quantitative Data

The random phone surveys yielded expected and unexpected results. The survey asked questions in four categories:

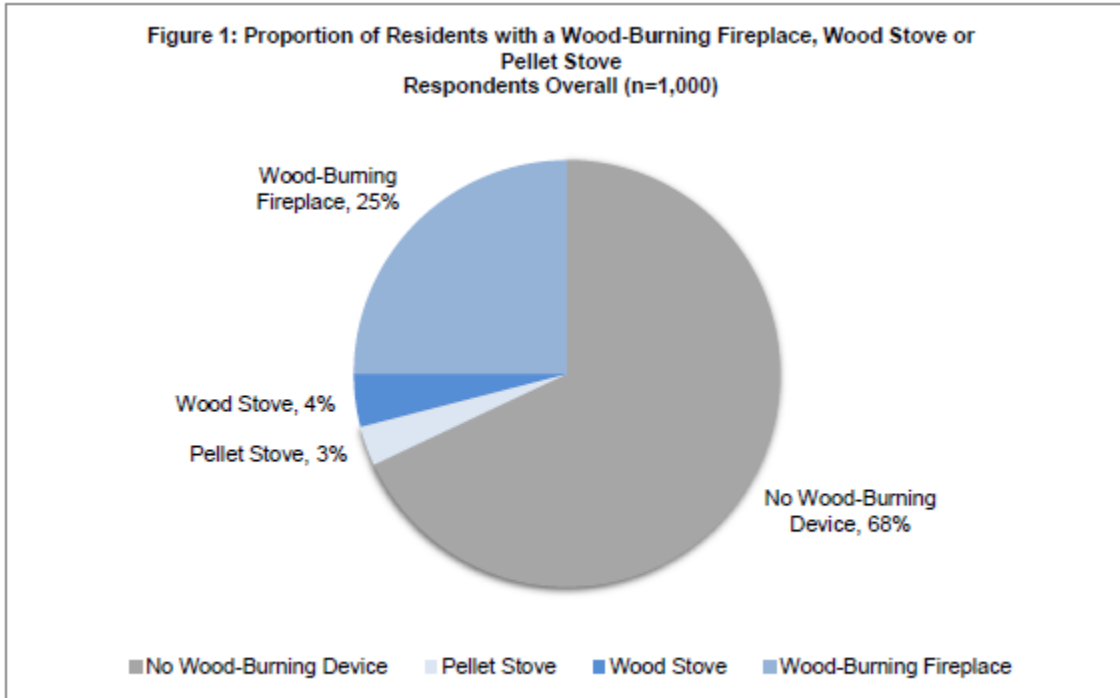
1. Residential wood burning
2. Residential lawn care
3. Commuting patterns
4. General beliefs and awareness

The graphs below highlight a few of the key findings from each question category starting with residential wood burning. For complete results, please see *Residential Wood Burning, Lawn Care, and Commuting Survey Final Report, February 2014*, included as Attachment A.

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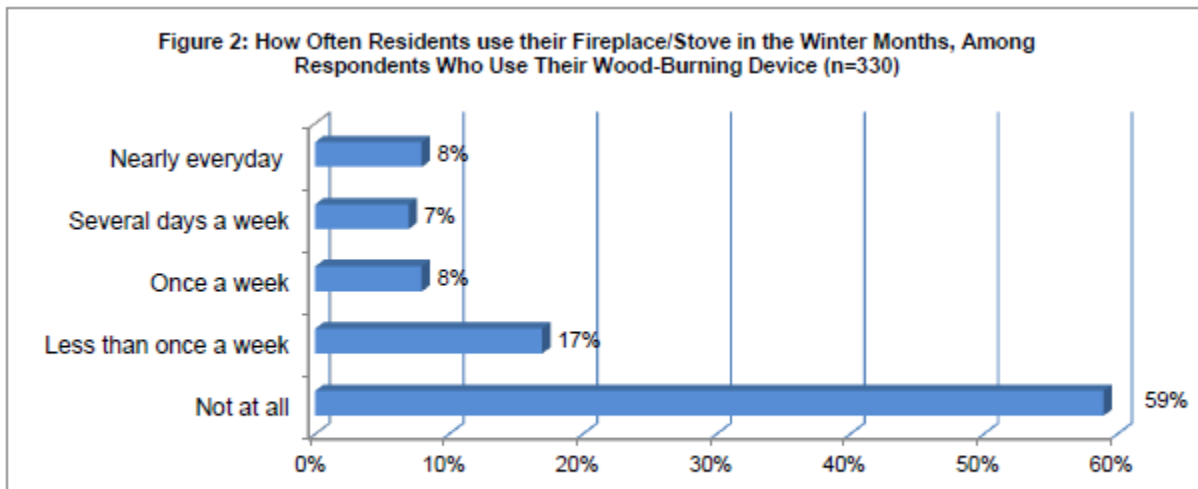
Wood Burning-Related Highlights

Of the 1,000 respondents, just 32 percent reported having a wood-burning device:



*Figure based on Q2: I'd like to ask you about the heating devices you may have in your home. Do you have a wood-burning fireplace, wood stove, or pellet stove in your home?

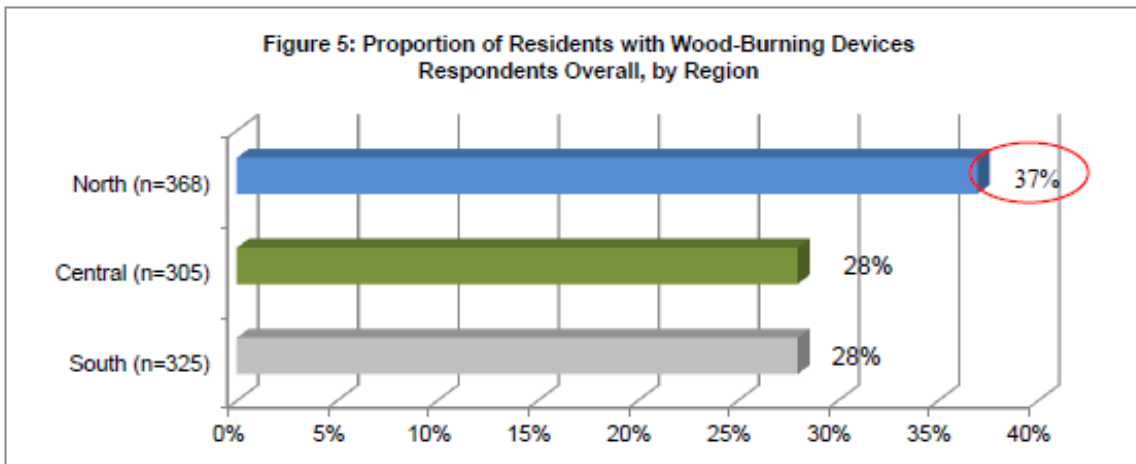
While 32 percent of respondents reported having a wood-burning device, more than half of those households reported not using their device:



*Figure based on Q5: How often do you use your fireplace/stove in the winter? Nearly every day, several days a week, once a week, less than once a week, or not at all?

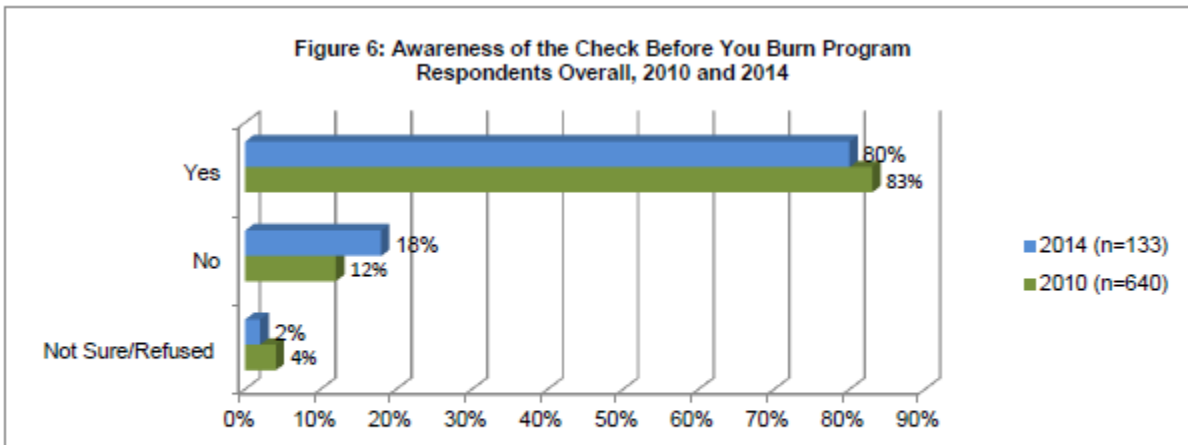
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Additionally, of those that reported having a wood-burning device, 37 percent lived in the northern region (San Joaquin, Stanislaus and Merced counties):



*Figure based on Q2: I'd like to ask you about the heating devices you may have in your home. Do you have a wood-burning fireplace, wood stove, or pellet stove in your home? Statistically significant differences at the 95 percent confidence level are circled.

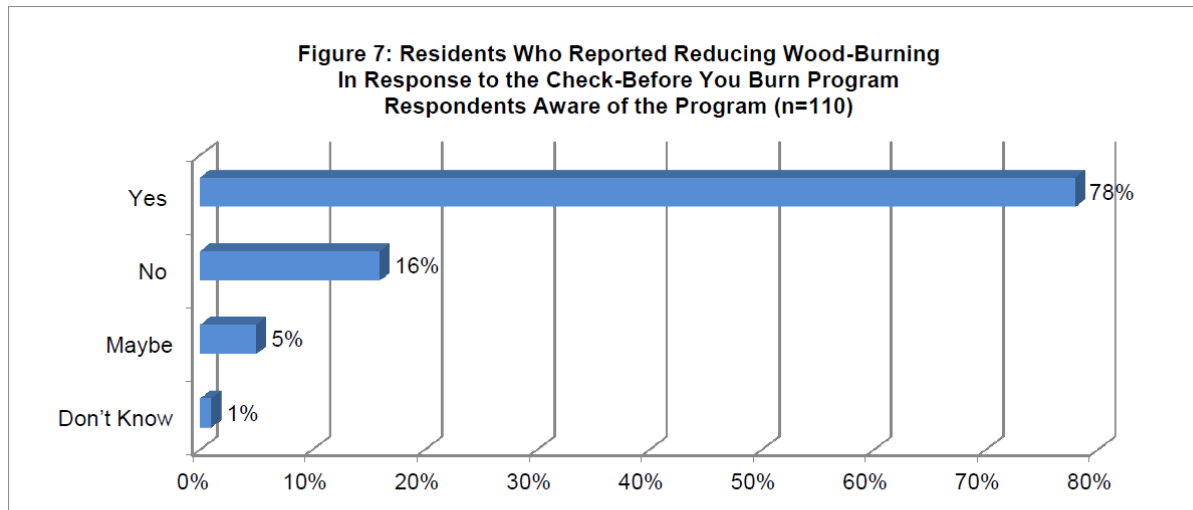
Similar to data from the District's 2010 survey, respondents were aware of the District's Check Before You Burn Program:



*Figure based on Q8: Check Before You Burn runs from November through February each year, and prohibits wood burning in fireplaces, wood or pellet stoves, and outdoor fire pits during certain days when it is determined that air quality levels will be most impacted. Have you ever heard of the Check Before You Burn program? In 2014, only respondents who reported having a wood-burning stove and were not exempt from mandatory no-burn regulations were asked the question. In 2010, all respondents were asked.

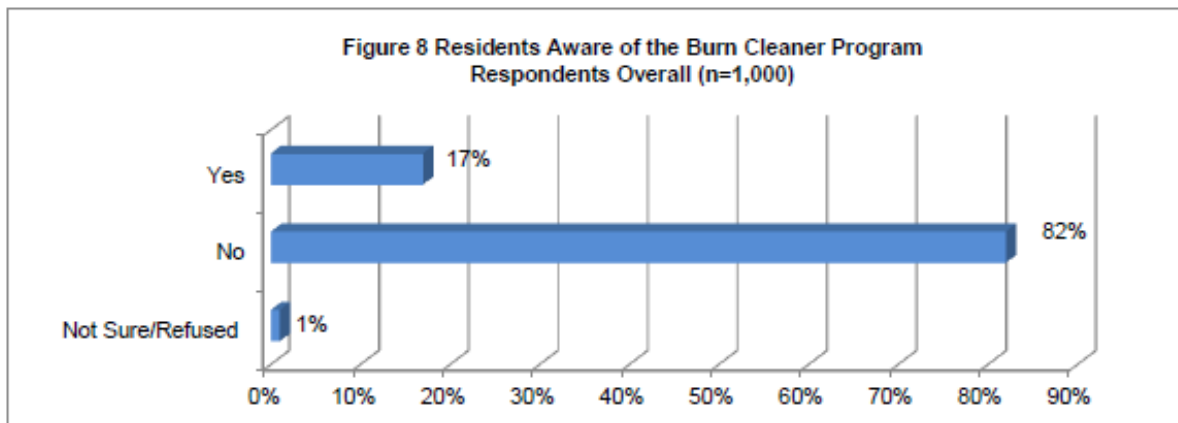
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Additionally, of those respondents aware of the Check Before You Burn Program, more than 75 percent have reduced wood-burning activity in response to the program.



*Figure based on Q9: Have you reduced the amount of wood burning you do in response to the Check Before You Burn Program? Base includes those respondents who have wood-burning devices, are not exempt from no-burn regulations, and have heard of the Check Before you Burn Program.

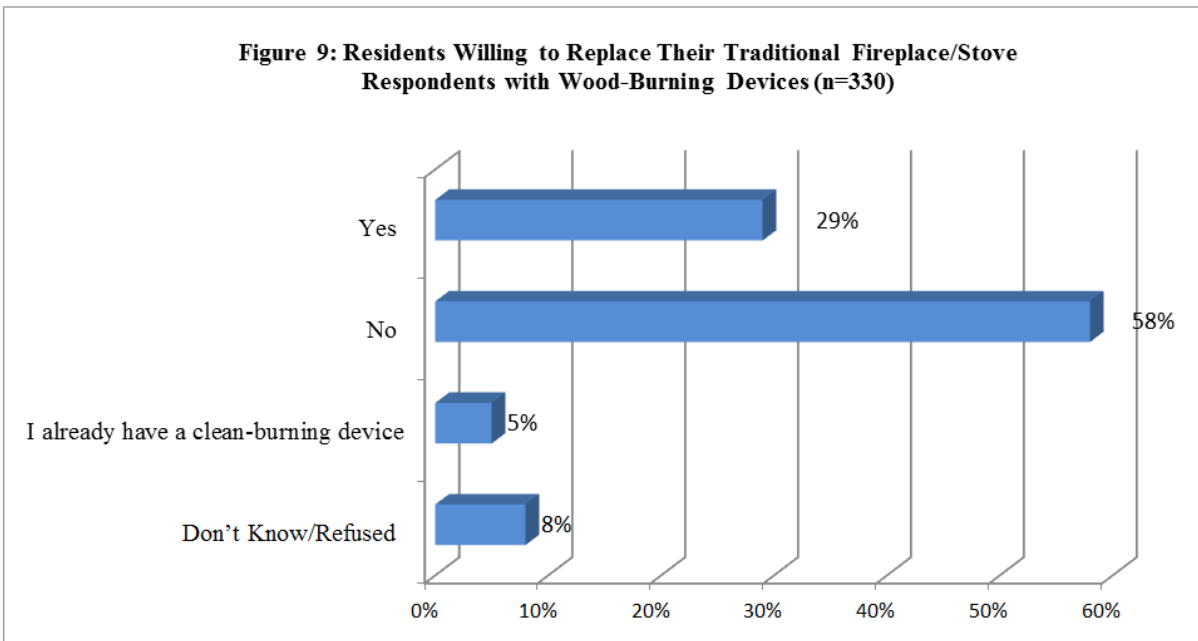
However, when asked if respondents knew about the Districts' Burn Cleaner incentive program, just 17 percent had any awareness of the program:



*Figure based on Q10: "To encourage cleaner burning in the Valley, there is a grant program that offers rebates to residents who replace their traditional fireplace or stove with a cleaner-burning device such as a certified wood stove or a gas fireplace. Are you aware of this grant program, it is called *Burn Cleaner?*"

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In assessing what would motivate an owner of a wood-burning device to upgrade to a cleaner device, both increased use and financial incentives were proposed.



*Figure based on Q11: "Would you be willing to replace your current wood-burning fireplace or stove with a cleaner, less-polluting wood-burning device if you could use it on some No-Burn days?"

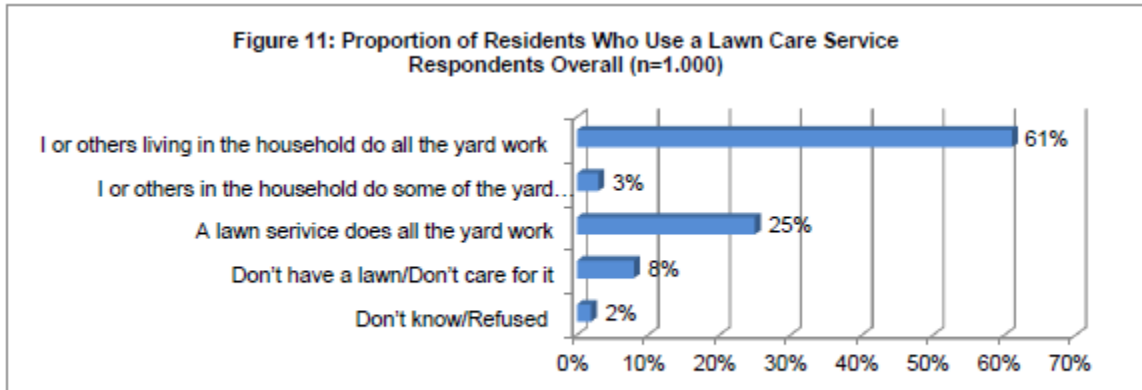
When asked about potential financial incentives in purchasing a cleaner device at a cost of about \$3,000,

- 12 percent would be willing to do it at a 15 percent rebate
- An additional 3 percent would be willing to do it at a 25 percent rebate
- An additional 16 percent would be willing to do it at a 50percent rebate

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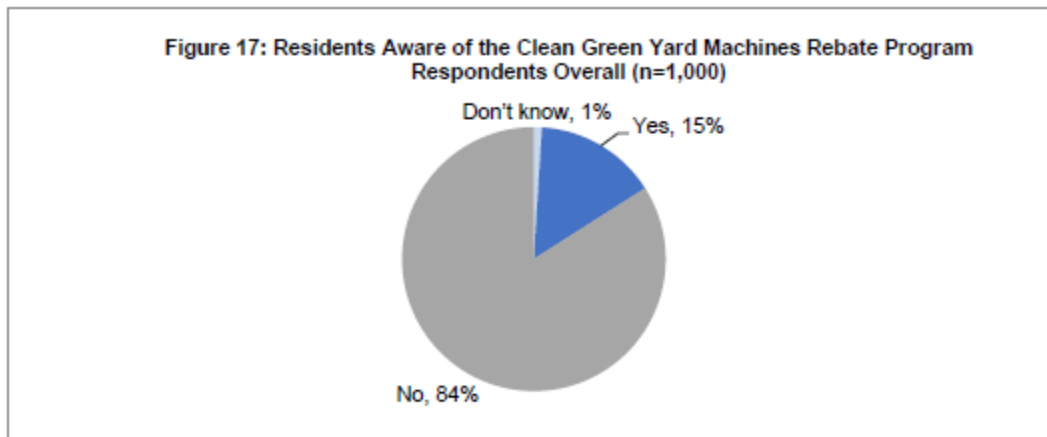
Lawn Care-Related Highlights

The survey indicated that 64 percent of Valley households take care of their own lawn and garden areas, as opposed to hiring a yard-care service:



*Figure based on Q20: "Who usually maintains your lawn, shrubs, trees or garden areas?"

Eighty-four percent of the respondents were unaware of the District's Clean Green Yard Machine Rebate Program, with Spanish-speakers being much less likely than English-speakers to report that they had heard of the program:

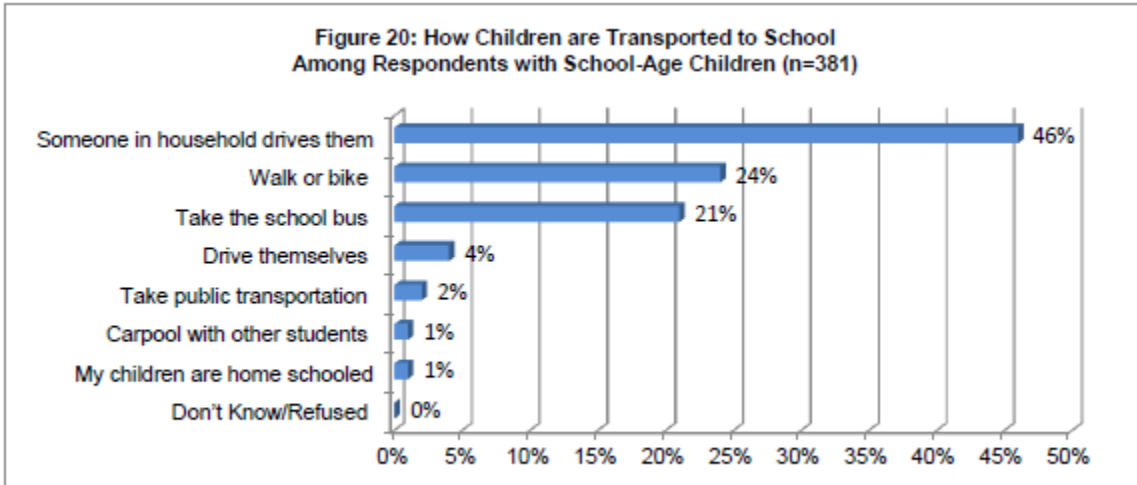


*Figure based on Q26: "Are you aware of a grant program which offers a rebate incentive for electric lawn mowers? The program is called the Clean Green Yard Machines Rebate Program?"

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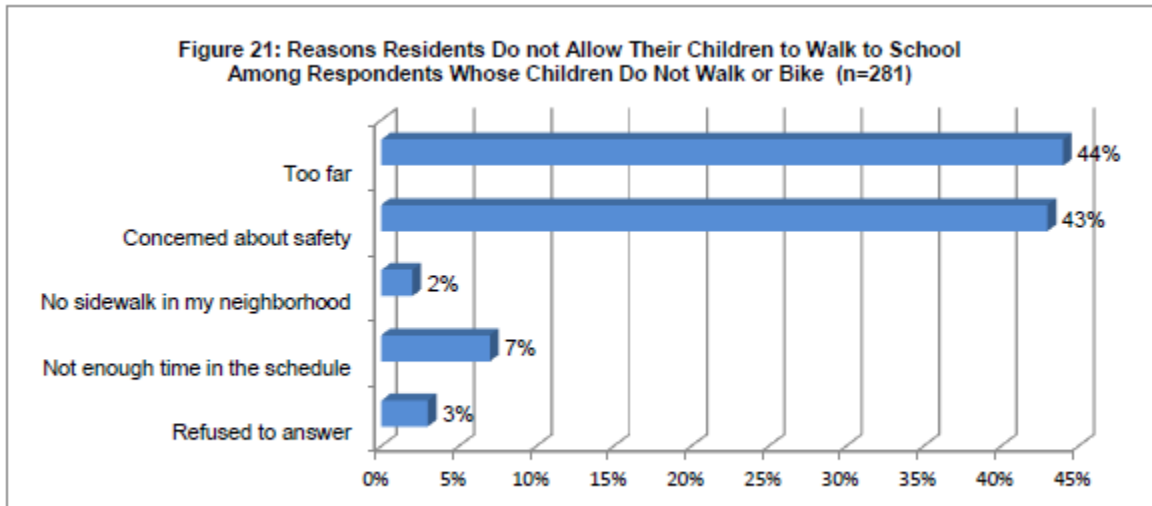
Driving-Related Highlights

As part of the District's Health-Risk Reduction Strategy, understanding student pick-up and drop-off patterns is important. For those respondents with school-age children in the home, 46 percent reported that someone in the household drove the children to school:



*Figure based on Q16a: "How do your children usually get to school?"

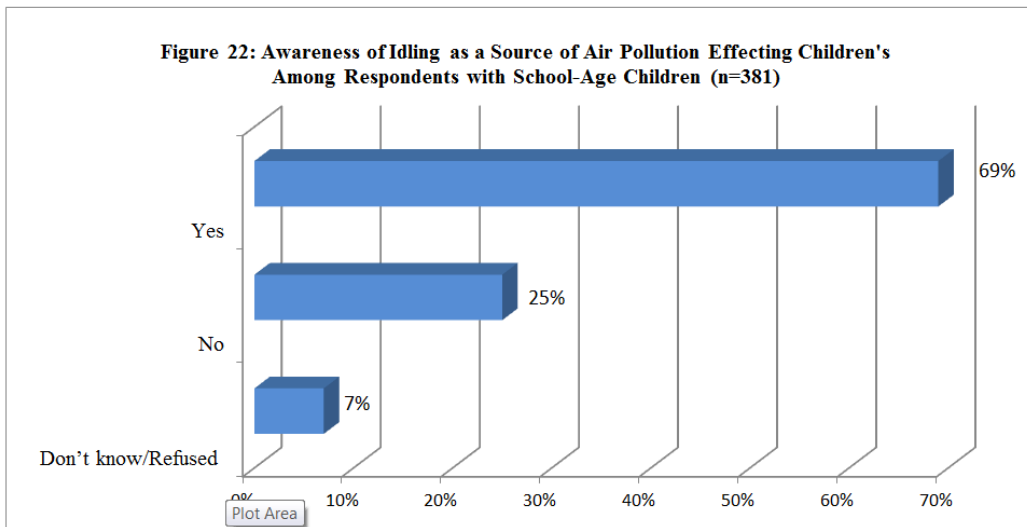
When asked why their children do not walk or bike to school, 77 percent reported that it was either too far to school or they were concerned about safety:



*Figure based on Q17: "What is the main reason you would not let your child walk to school either alone or with an adult?"

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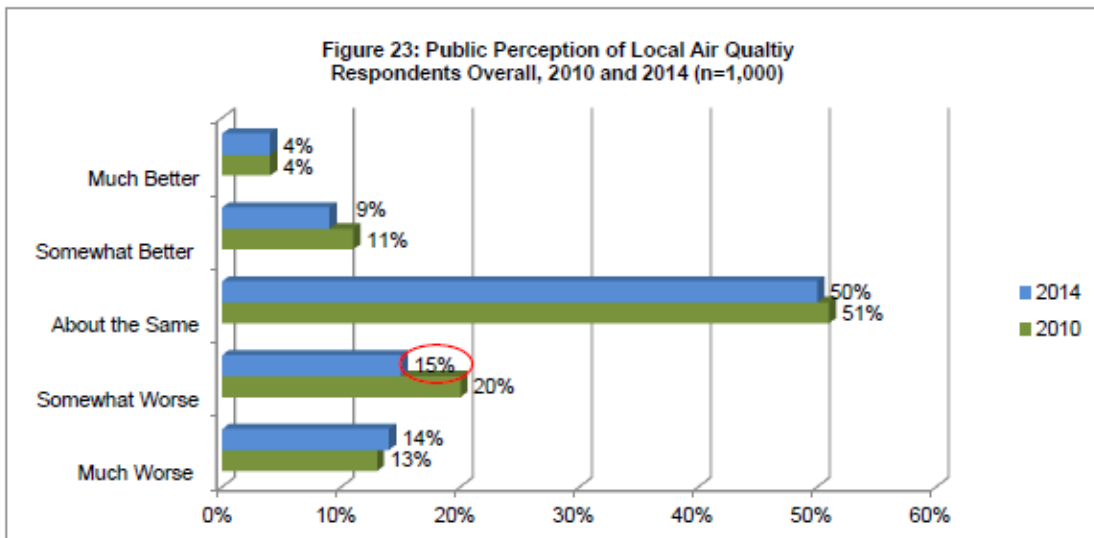
Although nearly half of the respondents drive their children to school, 69 percent believe that idling is a source of air pollution affecting children:



*Figure based on Q19: "Do you consider idling cars at school drop-off and pick-up lines to be a significant source of air pollution that can affect children's health?"

Air Quality- and District-Related Highlights

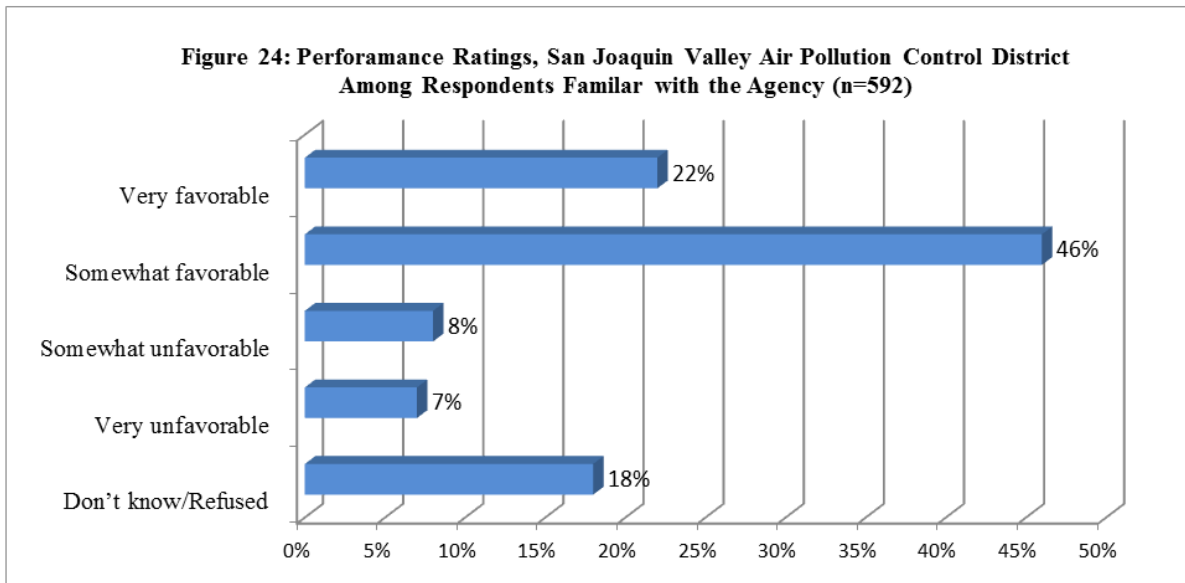
The final category of questions dealt with general beliefs and awareness relating to air quality to follow up on previous surveys. Despite the fact that this survey was conducting during the extreme 2014 winter weather conditions that had led to abnormally high air pollution concentrations, when asked their perception of local air quality, most residents believe the air quality in the Valley has improved or stayed the same compared to three years ago. These results are similar to results from 2010:



*Figure based on Q27: "Compared to three years ago, would you say the air quality in your area has gotten better, gotten worse, or stayed the same? (If better/worse: Is that much better/worse or somewhat better/worse?)" Statistically significant changes at the 95 % confidence level are circled.

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The District also received positive marks from the public with 68 percent of respondents indicating a favorable opinion of the District:



*Figure based on Q29: "The San Joaquin Valley Air Pollution Control District is responsible for monitoring the outdoor air quality and implementing programs to reduce air pollution in your area. Would you say you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable view of the job they are doing?"

Per the RFP requirements, Gomez Research also conducted 40 one-on-one telephone interviews with community stakeholders in the San Joaquin Valley. The interviews were designed to complement the previously mentioned telephone random survey addressing similar questions regarding local air quality, District programs, and perceptions of the District and air quality policies. Participants were recruited randomly from a stakeholder list provided by District staff, and interviews were conducted between Dec. 9, 2013 and Feb. 7, 2014. Key findings are presented in the *Community Stakeholder Interviews Final Report, February 2014* (Attachment B to this Board Memorandum).

CONCLUSIONS AND NEXT STEPS:

Awareness of Check Before You Burn: The study has once again shown a great understanding of and compliance with the Check Before You Burn program. Eight out of 10 Valley residents are aware of the program and more than 75 percent of those aware are actively changing behavior. One unique finding of the survey was the larger percentage of residents in the Northern Region with a wood-burning device (37 percent versus 28 percent in the other District regions). This provides the District with an opportunity to do more outreach and grant promotion in the Northern Region.

Awareness of Burn Cleaner Grant Program: While the Check Before You Burn program is very recognizable with Valley residents, awareness of the Burn Cleaner grant program (17 percent) is relatively low despite this program being hugely popular

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and, at times, oversubscribed. In the past five years, the Burn Cleaner program has replaced 4,002 wood-burning devices for more than \$2.3 million. With the upcoming changes to the District's wood-burning rule, the District will also be amending the Burn Cleaner grant program to accelerate change-outs from older devices to cleaner wood-burning devices for those Valley residents who prefer wood-burning or do not have natural gas access. As we change these programs, this will be an opportune time to also explore additional means to enhance public awareness and knowledge of the Burn Cleaner grant program.

Incentivizing the Switch to Cleaner Wood-Burning Devices: The District asked respondents who owned a wood-burning fireplace what would motivate them to upgrade to a cleaner device. Twenty-nine percent indicated they would be willing to upgrade if it allowed them to burn on certain "No-Burn" days. Additionally, 24 percent indicated they would be willing to upgrade if they received up to a 50 percent discount on the new unit. These results indicate that a mix of financial and use-based incentives are needed to encourage existing wood-burning device owners to upgrade to a cleaner unit. These factors will be incorporated into the design of the new wood-burning rule and associated Burn Cleaner grant program.

Lawn Care Habits: To date, a great deal of District effort to address emissions from lawn maintenance activities has been targeted at commercial landscaping operations. This is due to the fact that commercial landscaping activity related to maintenance of business, municipal and multi-family facilities is the source of the bulk of emissions from this category. It has been our assumption that working with commercial landscapers will also lead to significant reductions from residential lawn care activities. However, this study indicates that a large percentage (61 percent) of Valley residents actually take care of their own lawn maintenance. Therefore, in crafting future measures to reduce residential lawn care emissions, the District will develop programs for direct engagement of Valley residents in addition to commercial landscapers.

Public Awareness of Clean Green Yard Machines: The awareness of the Clean Green Yard Machines lawn mowers replacement program is relatively low with just 15 percent of respondents recognizing the program (only 5 percent of Spanish speakers had heard of the program). This is in spite of this program being hugely popular and at times oversubscribed. In the past five years, the Clean Green Yard Machines program has replaced 3,746 gas-powered lawn mowers for more than \$888,600. This indicates that a great opportunity still exists for significant additional emission reductions from this category. Toward that end, the District will increase efforts to promote this grant program with a particular focus on the Spanish-speaking communities throughout the Valley.

School Idling and Alternative Transportation for Children: Most children are driven to school by someone in their household and most parents state "distance" and "safety" as barriers to allowing their child to walk or bike to school. Additionally, most parents also recognize school site vehicle idling as a cause of air pollution. The District will be working to address these barriers and further educate parents on idling risks as a

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school outreach plan is further developed during the upcoming Governing Board Study Session in May.

Public Opinion of Air Quality and the District: The public's understanding of our improving air quality even during one of the worst winters on record is a reflection of the progress we are making with our public education and outreach. That is coupled with the public's positive perception of the District in spite of the District's tough regulatory responsibilities. Both of these facts reflect success with the District's Core Values, which promote accountability to the public, open and transparent public processes, and outstanding customer service. Moreover, focusing on pollutants with the greatest impact on public health under the District's Health-risk Reduction Strategy seems to have resulted in noticeable benefit to the public at large.

FISCAL IMPACT:

No modification of the District Budget is necessary at this time. Any changes in outreach strategy resulting from the outcome of this survey may be included in future budget proposals for your Board's consideration and approval.

Attachments:

- A - Residential Wood Burning, Lawn Care, and Commuting Survey Final Report (38 pages)*
- B - Community Stakeholder Interviews Final Report (26 pages)*

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
March 20, 2014

**FINAL REPORT FOR THE RESIDENTIAL WOOD BURNING,
LAWN CARE, AND COMMUTER SURVEY**

Attachment A:

**Residential Wood Burning, Lawn Care, and
Commuting Survey Final Report**
(38 of pages)

Residential Wood Burning, Lawn Care, and Commuting Survey

Final Report

February 2014

Submitted to:

San Joaquin Valley Air
Pollution Control District



Submitted by:

Gomez Research
Pasadena, California

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EXECUTIVE SUMMARY

As part of its mission to bring the San Joaquin Valley into compliance with federal and state clean air standards, the San Joaquin Valley Air Pollution Control District contracted with Gomez Research, an independent research and consulting firm, to conduct a survey of residents to help evaluate residential wood burning, lawn care, and commuting patterns. The purpose of the study was to gauge residents' activity levels as well as to document public awareness and understanding of the District's programs. The study was designed to measure: (1) residential wood-burning frequency; (2) the use of gas-powered lawn equipment and professional lawn care services; (3) personal commuting behavior and student transportation; and (4) perceptions of the District, its programs, and the local air quality. Findings will be used to gauge the effectiveness of the District's outreach programs, inform future outreach strategies, and provide data for estimating the emissions produced from these three sources.

A total of 1,000 telephone surveys were conducted with owners and renters of single-family homes¹ in San Joaquin, Stanislaus, Merced, Kings, Fresno, Madera, Tulare Counties and the Valley portion of Kern County, yielding an overall margin of error of +/-3 percent. The survey was conducted in English and Spanish and 40 percent of all telephone interviews were conducted on cell phones, ensuring that residents without landlines would be included in the study. Gomez Research used random-digit dialing (RDD) techniques whereby telephone prefixes were matched to zip codes for the San Joaquin Valley geographical area, and the remaining four digits were randomly generated. The surveys were conducted between January 3 and January 19, 2014. The average length of the survey was 9 minutes in English and 12 in Spanish. Results were weighted to ensure that the sample reflected U.S. Census data. All statements presented here refer to the region as a whole, unless otherwise indicated. In addition, all differences between demographic groups presented here are statistically significant at the 95 percent confidence level, unless otherwise noted. Key findings are presented by topic area for respondents overall, followed by any differences among sub-groups.

Key Findings

Residential Wood Burning

- a. **Nearly one-third (32 percent) of all residents surveyed reported have a wood-burning device in their home.** Among those residents with wood-burning devices, 13 percent were identified as exempt from mandatory no-burn restrictions.
- b. **Nearly one-quarter of residents who use their devices (23 percent) reported lighting their fireplace or stove once a week or more.** Once started, fires burn for six hours on average.
- c. **Respondents who reported using their devices weekly reported burning fires for longer periods of time.** Residents who used their devices once a week or more reported burning their fires for 8.3 hours on average compared to 3.5 hours among those who used their devices less frequently.

¹ The sample is limited to single-family units to ensure that the greatest number of respondents would be able to answer questions regarding wood combustion and lawn care. Based on U.S. Census data, we estimate that more than 80 percent of housing units in the San Joaquin Valley service are single-family units. In some communities, such as Madera, nearly 90 percent of the units are single family.

- d. **Just under three-fourths of residents surveyed (71 percent) burn seasoned firewood, followed by a third (32 percent) who use manufactured logs, such as Duraflame, and 13 percent who use pellets.** A total of 11 percent of residents surveyed reported that they burn trash, magazines, newspapers and/or other household materials as fuel.
- e. **The study found significant differences by region in the proportion of residents with wood-burning devices in their homes.** Residents in the Northern Region, including San Joaquin, Stanislaus, and Merced Counties, were more likely to own wood-burning devices compared to other residents. A total of 37 percent of residents from the Northern region reported having a wood-burning fireplace or stove in their homes, compared to 28 percent among residents in the Central region (Fresno, King, and Madera Counties) and the Southern region (Kern and Tulare Counties), a statistically significant difference.
- f. English-speakers (defined as those who chose to conduct the survey in English) were more likely to report that they had a wood-burning fireplace or stove compared to Spanish-speakers. Specifically, 37 percent of all English-speakers reported having a wood burning device at their residence compared to 15 percent among Spanish-speakers.
- g. Residents above median income were also more likely to report that they had wood burning devices compared to those below-median income (41 percent compared to 26 percent, respectively). In addition, homeowners were more likely to report having a wood-burning device compared to renters.
- h. **Residents who are exempt from mandatory wood-burning regulations were more likely to own a wood-burning device compared to other residents (45 percent of exempt residents compared to 29 percent of non-exempt residents).**
- i. **The Check Before you Burn Program continues to be widely recognized by Valley residents.** There were no statistical changes in the proportion of residents who reported hearing of the program (80 percent in 2014 compared to 83 percent in 2010, statistically equivalent).
- j. In addition, more than three-fourths (78 percent) of residents with wood burning devices who had heard of the Check Before You Burn Program reported that they had reduced their wood burning as a result.
- k. **Less than a quarter of all residents surveyed (17) were familiar with the Burn Cleaner Program.**
- l. Just under one-third (29 percent) of residents surveyed reported that they would be willing to replace their traditional wood-burning fireplace or stove if they could use it on some No-Burn days.
- m. **A total of 12 percent of all residents with traditional wood burning devices reported that they would be willing to make the purchase if given a 15 percent discount.**

- n. **Findings suggest that approximately 24 percent of residents with wood-burning devices would participate in the program if the rebate were increased to 50 percent** (combined totals for residents who would participate at 15, 25, and 50 percent levels.)
- o. **More than half of all residents surveyed (55 percent) reported that they believe wood smoke is a significant source of air pollution in their neighborhoods.** Residents living in the Central Region (Fresno, Madera, and Kings County) were more likely to report that wood smoke was a problem (63 percent) compared to residents from the Northern and Southern regions (49 percent and 53 percent, respectively).

Residential Lawn Care

- a. **The majority of San Joaquin Valley residents (61 percent) tend to their own lawns rather than hire a service.** One quarter of residents use a lawn service to handle all of their yard work and another 3 percent use a lawn service for a portion of the work.
- b. **Nearly three-fourths of residents (73 percent) who care for their own lawns and gardens use gas-powered equipment,** most frequently walk-behind lawn mowers (84 percent), lawn edgers (39 percent), string trimmers (38 percent), and leaf blowers (35 percent).
- c. **Most residents (54 percent) use a service four times a month during the summer followed 22 percent who use a service every other week.** Fewer than 10 percent of residents use a service more than once a week. The average number of times a lawn service was used in the summer was four times. Approximately half (46 percent) of residents who use a lawn service reported that their lawn service comes as frequently during the winter months.
- d. **A total of 84 percent of all residents surveyed reported that they were not aware of the Clean Green Yard Machine Rebate Program.** Spanish-speakers were much less likely than English-speakers to report that they had heard of the Rebate Program (5 percent of Spanish-speakers compared to 18 of English-speakers). In addition, results suggest that Spanish-speaking residents are more likely to care for their own lawns. More than two-thirds of Spanish-speakers (69 percent) reported that they or others in their household do all the yard work, compared to 58 percent among English speakers, a statistically significant difference.

Commuting Patterns

- a. **Half of the residents surveyed reported that they drive alone to work, followed by 30 percent who do not work outside of the home.** A total of 12 percent reported that they drive in a carpool or vanpool. Only 2 percent of respondents reported that they take public transportation.
- b. **Approximately half of commuters surveyed reported that they would consider carpooling if their employer provided a more flexible work schedule, financial incentives, assistance with coordinating carpool partners, or free parking.**

- c. **Among residents with school age children (42 percent of all residents surveyed) nearly half reported that they drive their children to school.** Approximately one-quarter of residents reported that their children take the school bus or walk/bike to school. Less than 3 percent of all residents reported that their children take public transportation or carpool with other students.
- d. The most frequently cited reasons for not allowing children to walk or bike to school were distance and concerns about safety.
- e. More than two-thirds (69 percent) of residents with school-age children agreed that idling cars are a significant source of air pollution.

General Beliefs and Awareness

- a. **Findings indicate that the majority of residents believe the air quality in the San Joaquin Valley has improved or stayed the same compared to three years ago (similar to results from the 2010 survey).** There was, however, a 5 percentage-point decrease this year in the proportion of residents who believe the air quality has gotten “somewhat worse” over time.
- b. **Awareness of the District remains high among residents.** A total of 57 percent of residents this year reported that they had heard of the District, unchanged from 2010.
- c. **More than two-thirds (68 percent) of all residents familiar with the District reported that they had a “very favorable” or “somewhat favorable” view of the District.**

Conclusions

Overall, study findings suggest that past outreach efforts have helped raise public awareness about the District and its programs, but further outreach is still needed. The Check Before You Burn Program continues to be recognized by eight-out-of-ten residents, and those residents aware of the Program report that they have reduced their wood-burning in response to the outreach. In contrast, awareness of the Burn Cleaner and Clean Green Yard Machine Rebate Programs could be improved. Less than 20 percent of residents are aware of either the Burn Cleaner or Clean Green Yard Machine Rebate Programs. Spanish-speakers, who are more likely to care for their own lawns compared to other residents, had particularly low awareness levels. In addition, findings suggest that more residents would consider carpooling to work if their employers offered a flexible schedule, financial incentives, free parking or other programs. These findings suggest that efforts to build more employer programs and outreach to increase awareness of the District’s rebate programs may be helpful in promoting changes in personal behavior and improving air quality.

INTRODUCTION

The San Joaquin Valley Air Basin, which spans 250 miles and is home to three million residents, is unusually susceptible to air pollution. The Valley's surrounding mountain topography, hot summers, foggy winters and frequent temperature inversions help form and retain a variety of air pollutants. While air quality in the Valley has improved significantly over the past 15 years, the Valley continues to be one of the more polluted regions in the nation.

As part of its mission to bring the San Joaquin Valley into compliance with federal and state clean air standards, the San Joaquin Valley Air Pollution Control District contracted with Gomez Research to conduct a survey of residents to help evaluate residential wood burning, lawn care, and commuting patterns. The purpose of the study was to gauge residents' activity levels as well as to document public awareness and understanding of the District's programs. The study was designed to measure: (1) residential wood-burning frequency; (2) the use of gas-powered lawn equipment and professional lawn care services; (3) personal commuting behavior and student transportation; and (4) perceptions of the District, its programs, and the local air quality. Findings will be used to gauge the effectiveness of the District's outreach programs, inform future outreach strategies, and provide data for estimating the emissions produced from these three sources.

The remainder of this report presents the survey methodology and findings that emerged from the data analyses and is organized as follows:

- The **Methodology** section, which describes data collection and statistical methods;
- The **Findings** section, documenting awareness and behaviors;
- **Conclusions**; and,
- The **Appendices**, which include the survey instrument, frequencies for each question, and a demographic profile of residents surveyed compared to known population estimates.

METHODOLOGY

Overview

A total of 1,000 telephone surveys were conducted with owners and renters of single-family homes² in San Joaquin, Stanislaus, Merced, Kings, Fresno, Madera, and Tulare Counties and the Valley portion of Kern County, yielding an overall margin of error of +/-3 percent. The survey was conducted in English and Spanish and 40 percent of all telephone interviews were conducted on cell phones, ensuring that residents without landlines would be included in the study. Gomez Research used random-digit dialing (RDD) techniques whereby telephone prefixes were matched to zip codes for the San Joaquin Valley geographical area, and the remaining four digits were randomly generated. All respondents were 18 years or older. (For a copy of the survey, including frequencies overall see **Appendix A.**) The surveys were conducted between January 3 and January 19, 2014 using a computer-assisted telephone interview (CATI) system in which interviewers read questions from a computer screen and typed respondents' answers directly into a database. The average length of the survey was 9 minutes in English and 12 in Spanish.

² The sample is limited to single-family units to ensure that the greatest number of respondents would be able to answer questions regarding wood combustion and lawn care. Based on U.S. Census data, we estimate that more than 80 percent of housing units in the San Joaquin Valley service area are single-family units. In some communities, such as Madera, nearly 90 percent of the units are single family.

Caveats

It should be noted that the residential survey, like all surveys, has self-reporting bias and should be used in conjunction with results from air pollution reports to determine the extent to which residents are participating in activities that reduce air pollution. Survey research depends on respondents providing truthful and accurate reports of their activities. In addition, caution should be taken in comparing data from 2014 with responses from the 2010 survey. The 2010 survey included all residents, whereas the 2014 survey focused on residents living in single-family homes and duplexes to ensure a sufficient sample of residents with wood-burning devices and private lawns.

Weighting

The sample was weighted to reflect the population based on the following dimensions: age, race/ethnicity, gender, telephone use, and county of residence. Data were not weighted on income due to non-response bias. Weighting target values were based on the average (population-adjusted) characteristics of the eight-county area. Characteristics were derived from the U.S. Census. Telephone use data were obtained from the U.S. Center for Disease Control. Weighting was conducted through iterative proportional fitting, also known as raking.

Statistical Comparisons

Statistical tests were conducted for all comparative analyses to identify whether observed differences among demographic groups or categories were statistically significant.³ All reported differences were statistically significant at the 95 percent confidence level unless otherwise noted.

Report Organization

This report has been organized around the following topical areas:

- Residential Wood Burning;
- Residential Lawn Care;
- Commuting Patterns; and,
- General Beliefs and Awareness.

The next section of this report presents study findings.

³ A statistically significant difference means that the difference between years or among groups is not by chance, and that a real difference exists.

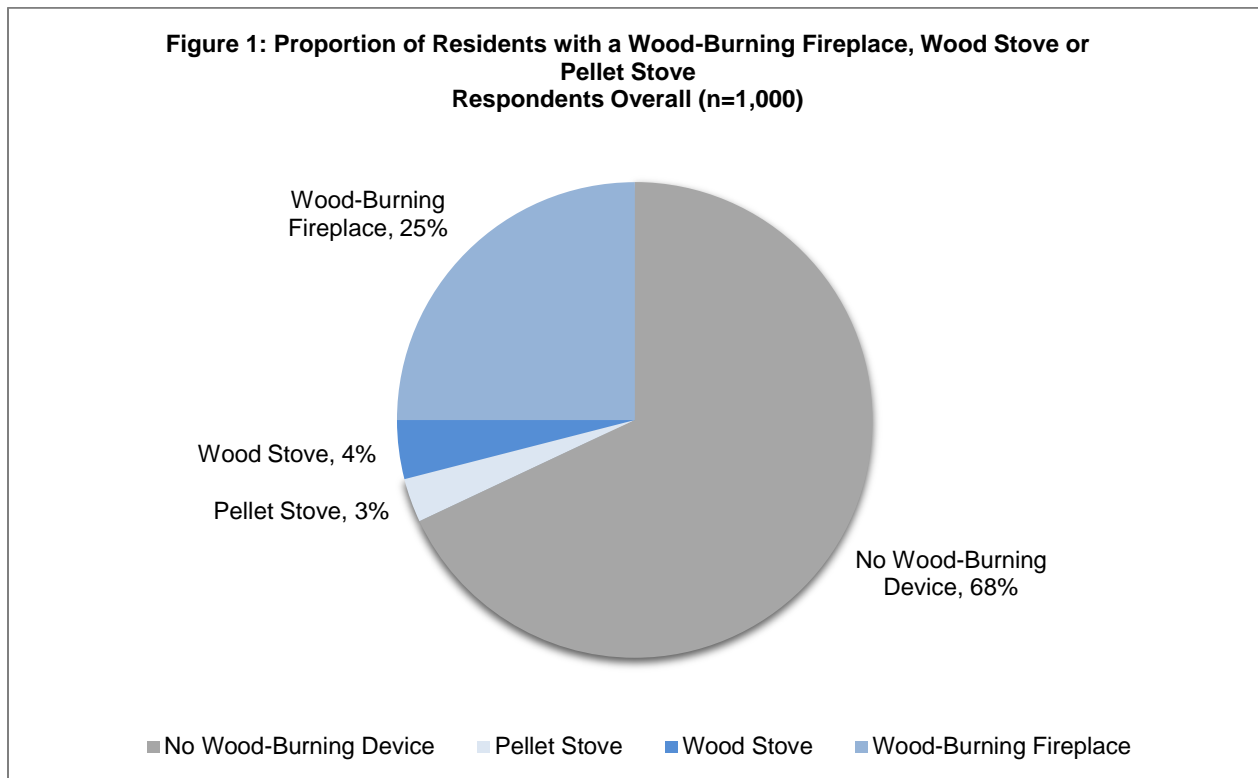
FINDINGS

Residential Wood Burning

A key objective of the research was to gauge the use of wood-burning devices in the San Joaquin Valley and to measure public awareness of outreach campaigns designed to reduce wood-smoke pollution. Results are presented for residents overall, followed by demographic and regional differences.

Presence of Wood Burning Devices

Respondents were first asked if they had a wood-burning fireplace, wood stove, or pellet stove in their home. **As seen in Figure 1, nearly one-third (32 percent) of all residents surveyed reported having a wood-burning device in their home.** Among those residents with wood-burning devices, 13 percent were identified as exempt from mandatory no-burn restrictions.⁴



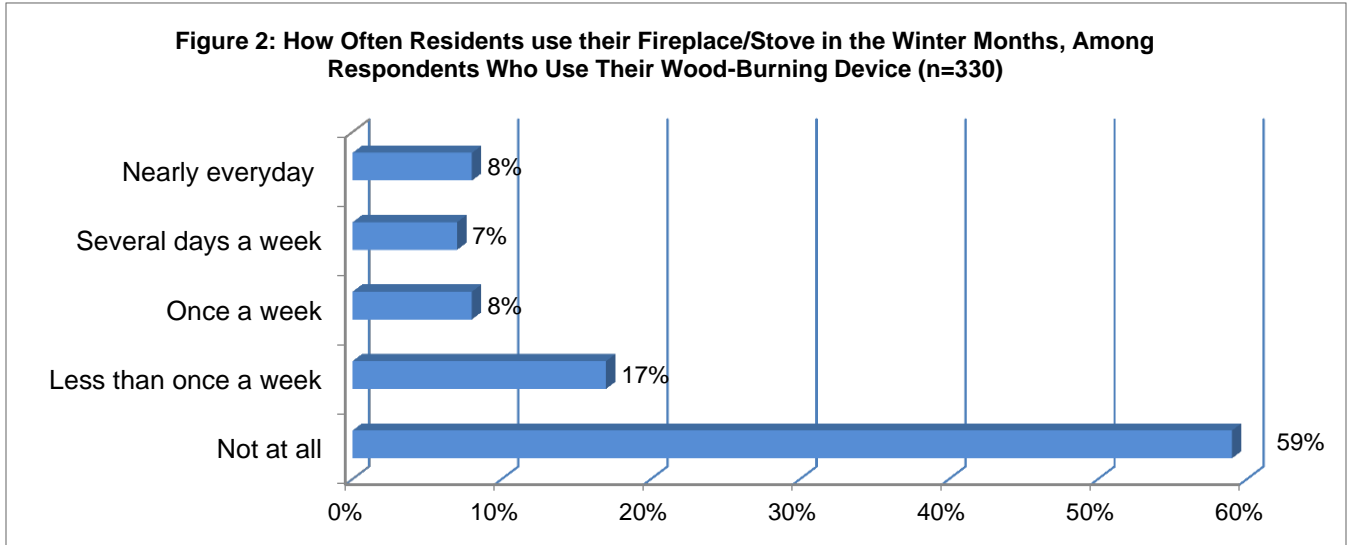
*Figure based on Q2: I'd like to ask you about the heating devices you may have in your home. Do you have a wood-burning fireplace, wood stove, or pellet stove in your home?

Use of Wood-Burning Devices

Respondents who reported having a wood-burning device were asked how often they use their fireplace or stove during the winter months. Results are presented in **Figure 2. In 2014, more than half of all residents with a wood-burning fireplace or stove reported that they do not use their**

⁴ Exempt residents were defined as those living in areas where no natural gas connections are available or in cases where the wood-burning device is the sole source of heat at a residence.

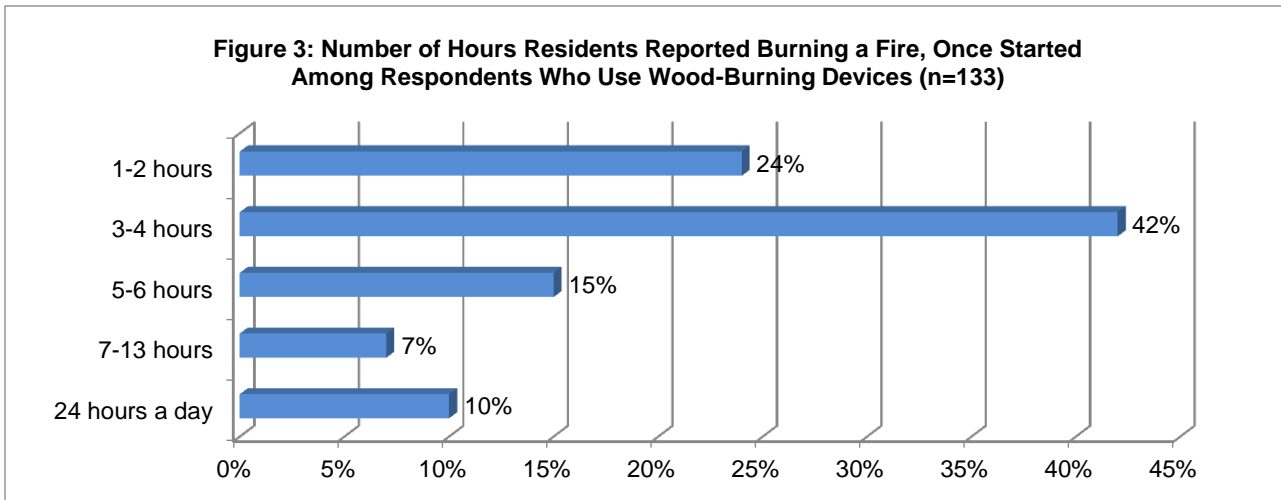
devices (59 percent), up from 49 percent in 2010. Despite an apparent drop in the use of wood-burning devices overall, nearly one-quarter of residents who use their devices (23 percent) reported lighting their fireplace or stove once a week or more. A total of 8 percent of residents reported using their fireplace or stove nearly every day.



*Figure based on Q5: How often do you use your fireplace/stove in the winter? Nearly every day, several days a week, once a week, less than once a week, or not at all?

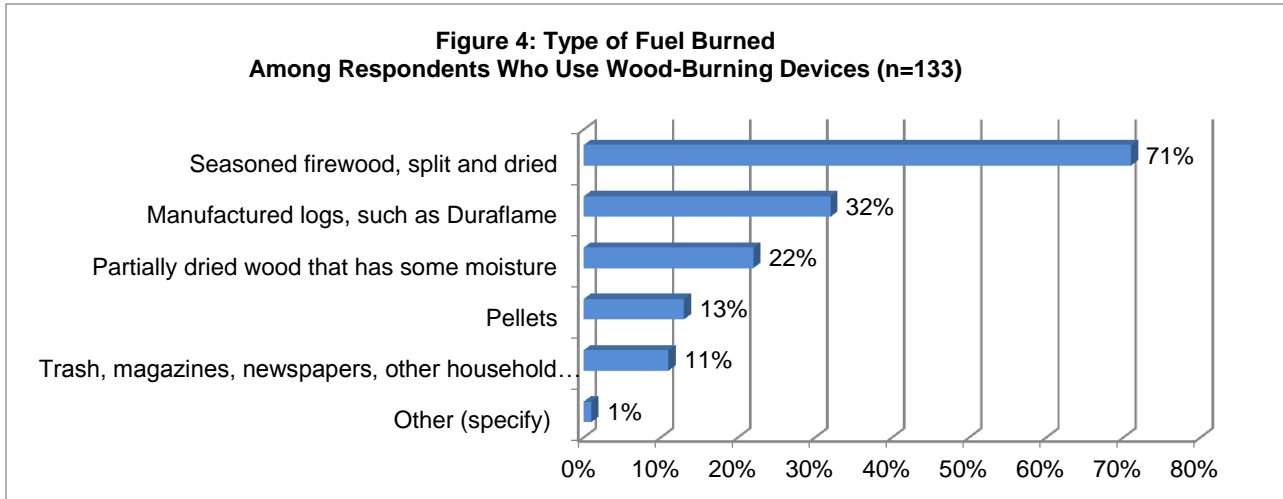
To help estimate the volume of wood-smoke produced during the winter season, residents who reported using their fireplaces or stoves were asked how many hours they typically burn a fire once started. **As seen in Figure 3, nearly two-thirds of residents (65 percent) burn their devices for four hours or less.** Once started, fires were burned for six hours on average (the median was four hours).

Residents who reported using their devices weekly reported burning fires longer each time. Residents who used their devices once a week or more reported burning their fires for 8.3 hours on average compared to 3.5 hours among those who used their devices less frequently (no chart).



*Figure based on Q6: "Once started, how many hours does your fire usually burn?"

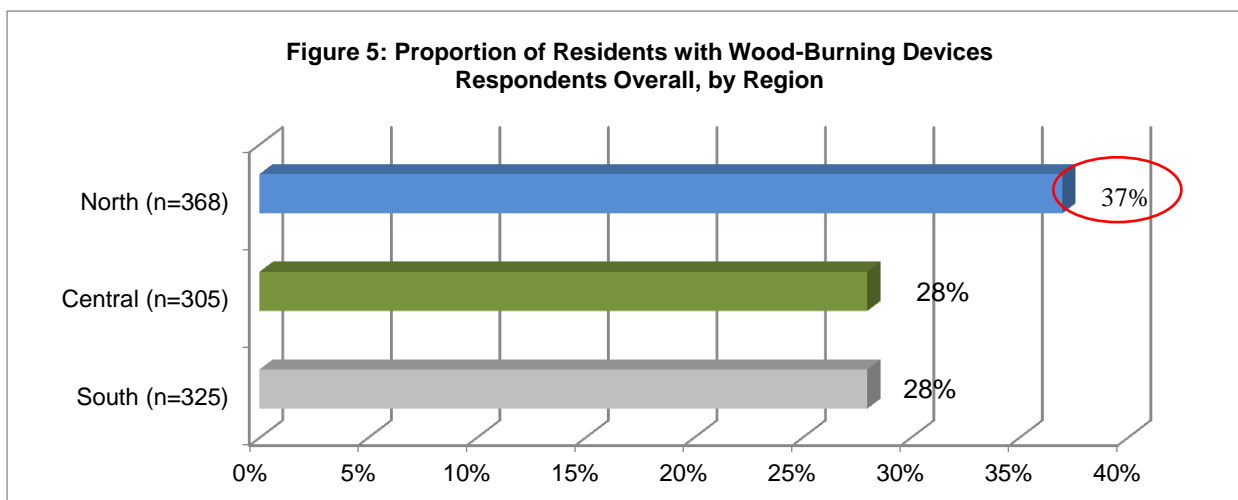
Next, respondents who use their wood-burning devices were asked what type of fuel they typically burn. **As seen in Figure 4, nearly three-fourths of residents surveyed (71 percent) burn seasoned firewood, followed by a third (32 percent) who use manufactured logs, such as Duraflame and 13 percent who use pellets.** A total of 11 percent of residents surveyed reported that they burn trash, magazines, newspapers and/or other household materials.



*Figure based on Q7: "Which of the following types of fuel do you typically burn?"

Regional/Demographic Difference in Use of Wood Burning Devices

The study found significant differences by region in the proportion of residents with wood-burning devices in their homes. **As seen in Figure 5, residents in the Northern Region, including San Joaquin, Stanislaus, and Merced Counties, were more likely to own wood-burning devices compared to other residents.** A total of 37 percent of residents from the Northern region reported having a wood-burning fireplace or stove in their homes, compared to 28 percent among residents in the Central region (Fresno, King, and Madera Counties) and the Southern region (Kern and Tulare Counties), a statistically significant difference.



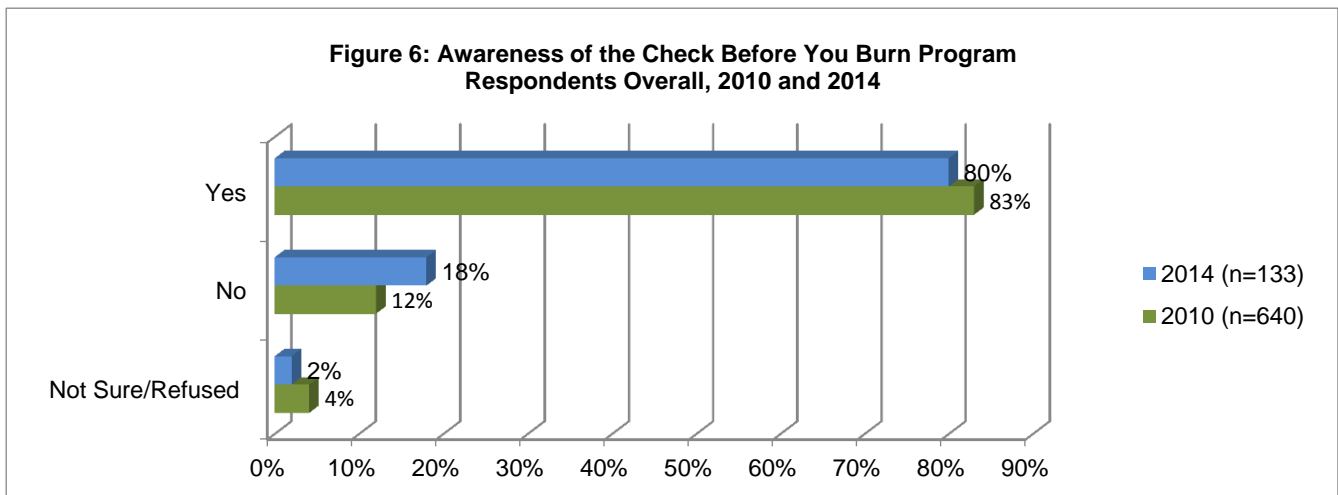
*Figure based on Q2: I'd like to ask you about the heating devices you may have in your home. Do you have a wood-burning fireplace, wood stove, or pellet stove in your home? Statistically significant differences at the 95 percent confidence level are circled.

Additional differences were found by language spoken, income, and other demographics. Results are presented below.

- English-dominant speakers (defined as those who chose to conduct the survey in English) were more likely to report that they had a wood-burning fireplace or stove compared to Spanish-speakers. Specifically, 37 percent of all English-speakers reported having a wood burning device at their residence compared to 15 percent among Spanish-speakers.
- Residents above median income were also more likely to report that they had wood burning devices compared to those below-median income (41 percent compared to 26 percent, respectively). Homeowners were also more likely to report having a wood-burning device compared to renters.
- **Residents who are exempt from mandatory wood-burning regulations were more likely to own a wood-burning device compared to other residents (45 percent of exempt residents compared to 29 percent of non-exempt residents).**

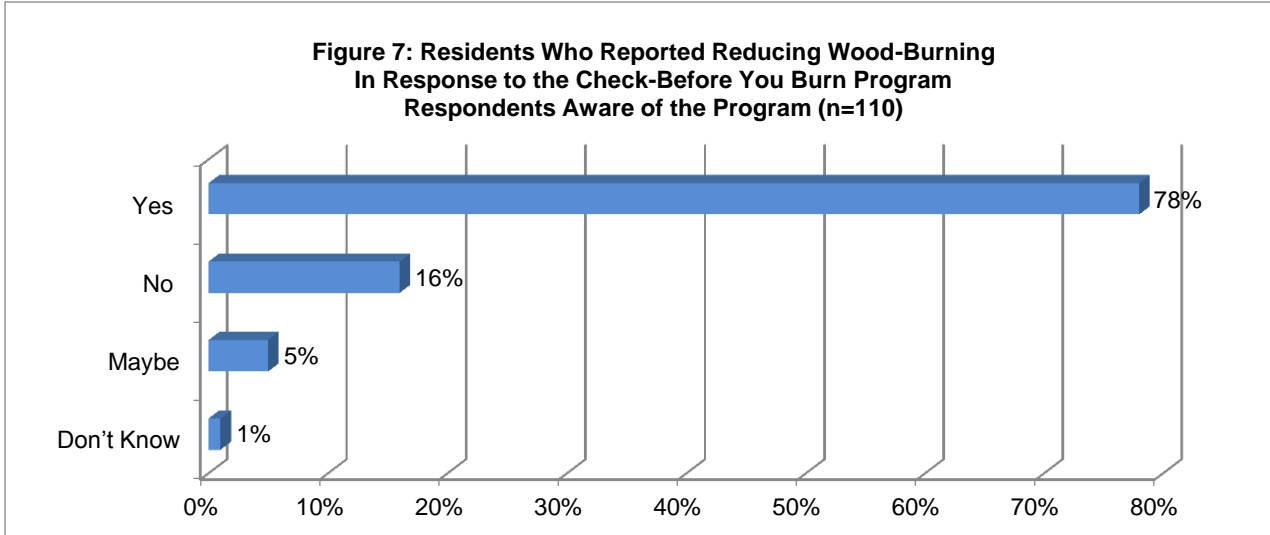
Awareness and Impact of the Check Before you Burn Program

This year, awareness questions regarding the Check Before You Burn Program were specifically asked of residents with wood-burning devices who are not exempt from mandatory no-burn restrictions to provide a more accurate picture of the potential impact of program awareness on air quality. (In previous years, all residents were asked the question, regardless of whether they had a wood-burning device or were exempt from regulations). As seen in **Figure 6**, the Check Before You Burn Program continues to be widely recognized by residents. There were no statistical changes in the proportion of residents who reported hearing of the program, even though a more specific segment of the population was surveyed (80 percent in 2014 compared to 83 percent in 2010, statistically equivalent).



*Figure based on Q8: Check Before You Burn runs from November through February each year, and prohibits wood burning in fireplaces, wood or pellet stoves, and outdoor fire pits during certain days when it is determined that air quality levels will be most impacted. Have you ever heard of the Check Before You Burn program? In 2014, only respondents who reported having a wood-burning stove and were not exempt from mandatory no-burn regulations were asked the question. In 2010, all respondents were asked.

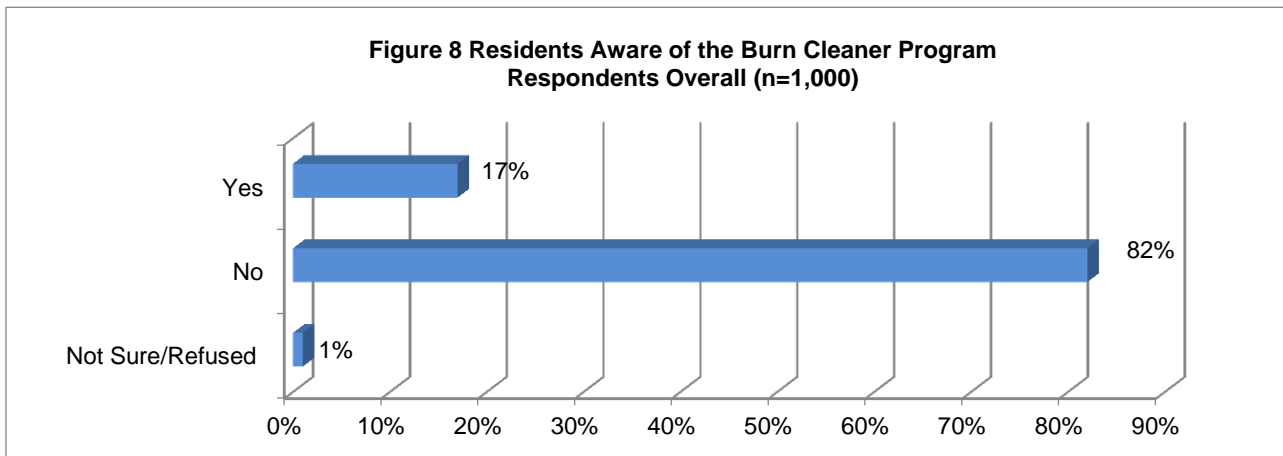
Next, respondents who reported that they had heard of the Check Before You Burn Program were asked if they had reduced the amount of wood they burn in response to the outreach. Results are presented in **Figure 7. More than three-fourths (78 percent) of residents with wood burning devices who had heard of the Check Before You Burn Program reported that they had reduced their wood burning as a result.**



*Figure based on Q9: Have you reduced the amount of wood burning you do in response to the Check Before You Burn Program? Base includes those respondents who have wood-burning devices, are not exempt from no-burn regulations, and have heard of the Check Before you Burn Program.

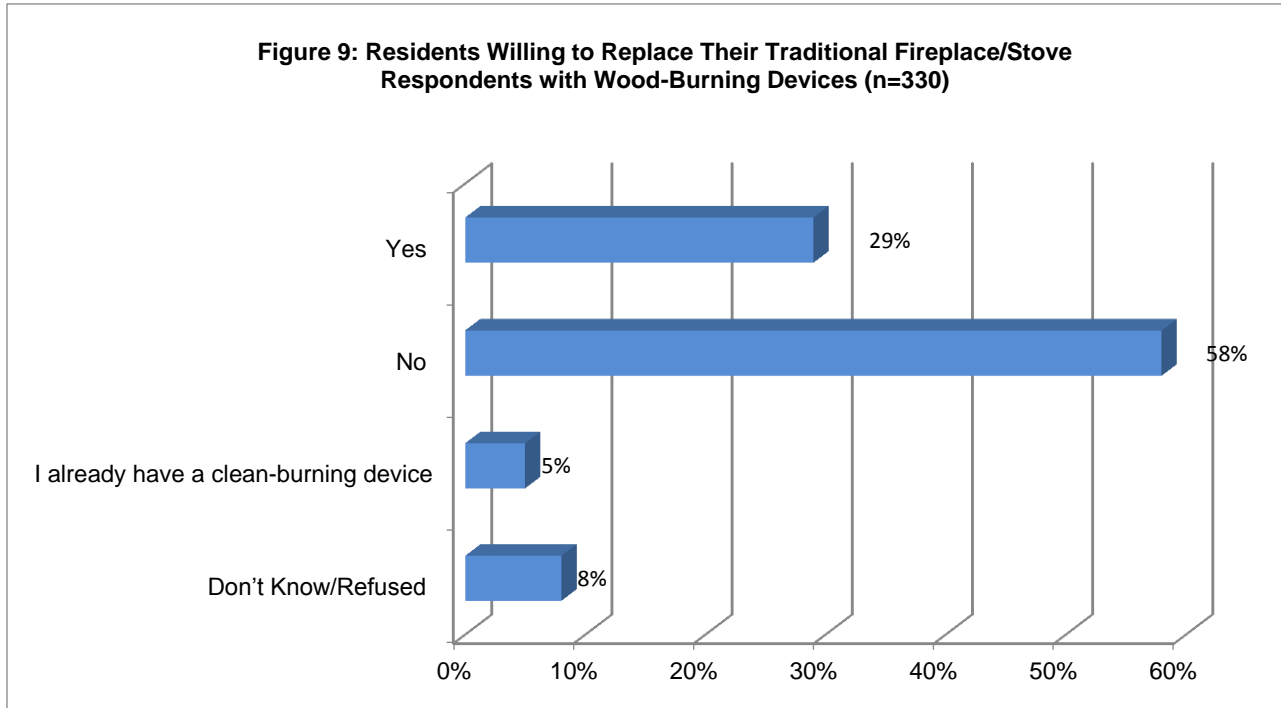
Awareness and Interest of the Burn Cleaner Rebate Program

In addition to measuring awareness of the Check Before You Burn Program, the study asked all respondents if they were aware of the Burn Cleaner Rebate Program which offers rebates to residents who replace their traditional fireplace or stove with a cleaner-burning device. Results are presented in **Figure 8. Less than a quarter of all residents surveyed (17 percent) reported that they had heard of the Burn Cleaner Program, suggesting that more outreach is needed.**



*Figure based on Q10: “To encourage cleaner burning in the Valley, there is a grant program that offers rebates to residents who replace their traditional fireplace or stove with a cleaner-burning device such as a certified wood stove or a gas fireplace. Are you aware of this grant program, it is called *Burn Cleaner?*”

Respondents who reported that they owned a wood-burning device were asked if they would be willing to replace their current wood-burning fireplace or stove with a cleaner device if they could use it on some No-Burn days. **As seen in Figure 9, just under one-third (29 percent) reported that they would be willing to switch devices if they could use it on some No-Burn days.**



*Figure based on Q11: “Would you be willing to replace your current wood-burning fireplace or stove with a cleaner, less-polluting wood-burning device if you could use it on some No-Burn days?”

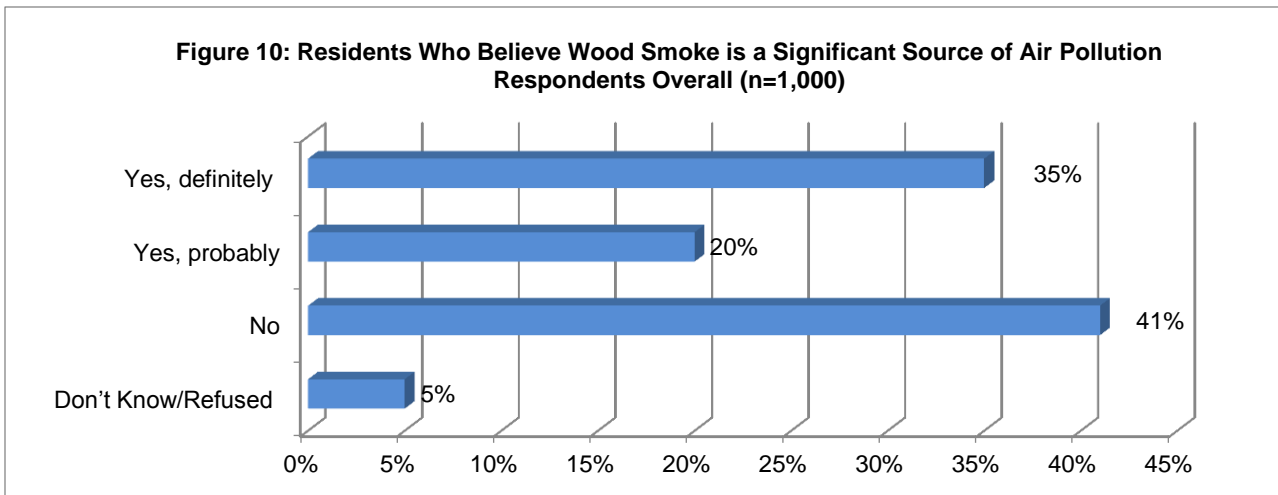
To gauge the level of discount needed to drive residents to purchase a clean burning device, respondents were presented with varying percentage discounts of 15, 25, and 50 percent off the total estimated cost of \$3,000 to purchase a new device. (All respondents who reported owning a wood-burning device or stove were asked the question, even if they reported in the previous question that they were not interested in replacing their device.) **A total of 12 percent of all residents with traditional wood burning devices reported that they would be willing to make the purchase if given a 15 percent discount.**

Those respondents who reported that they would *not* be willing to purchase a cleaner device even if offered a 15 percent discount were asked if they would make the purchase if the discount were increased to 25 percent. Fewer than 5 percent of respondents who refused a 15 percent discount said they would be swayed by a discount of 25 percent. Respondents who were not interested in a 15 or 25 percent discount were asked if they would replace their current device for a 50 percent rebate. An additional 16 percent said they would.

Findings suggest that approximately 24 percent of residents with wood-burning devices would participate in the program if the rebate were increased to 50 percent (combined totals for residents who would participate at 15, 25, and 50 percent levels.)

Beliefs about Wood Smoke

The last question regarding residential wood burning addressed beliefs about wood smoke. As seen in **Figure 10**, more than half of all residents surveyed (55 percent) reported that they believe wood smoke is a significant source of air pollution in their neighborhoods. Residents living in the Central Region (Fresno, Madera, and Kings County) were more likely to report that wood smoke was a problem (63 percent) compared to residents from the Northern and Southern regions (49 percent and 53 percent, respectively).



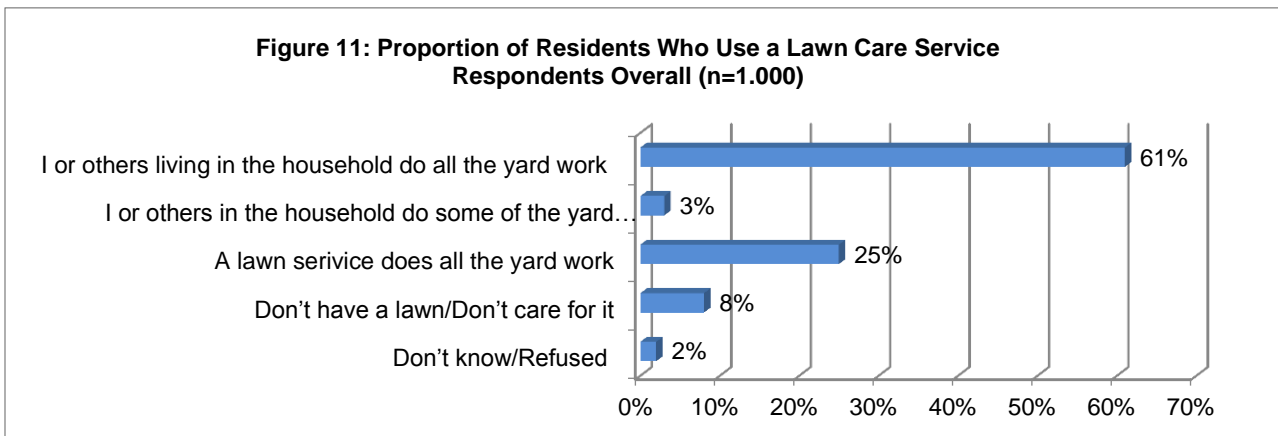
*Figure based on Q13: "Do you believe wood smoke is a significant source of air pollution in your neighborhood?"

Residential Lawn Care

Another objective of the study was to gauge the impact of gas-powered lawn equipment on air pollution and to measure awareness of programs designed to reduce pollution from these sources. Findings are presented below.

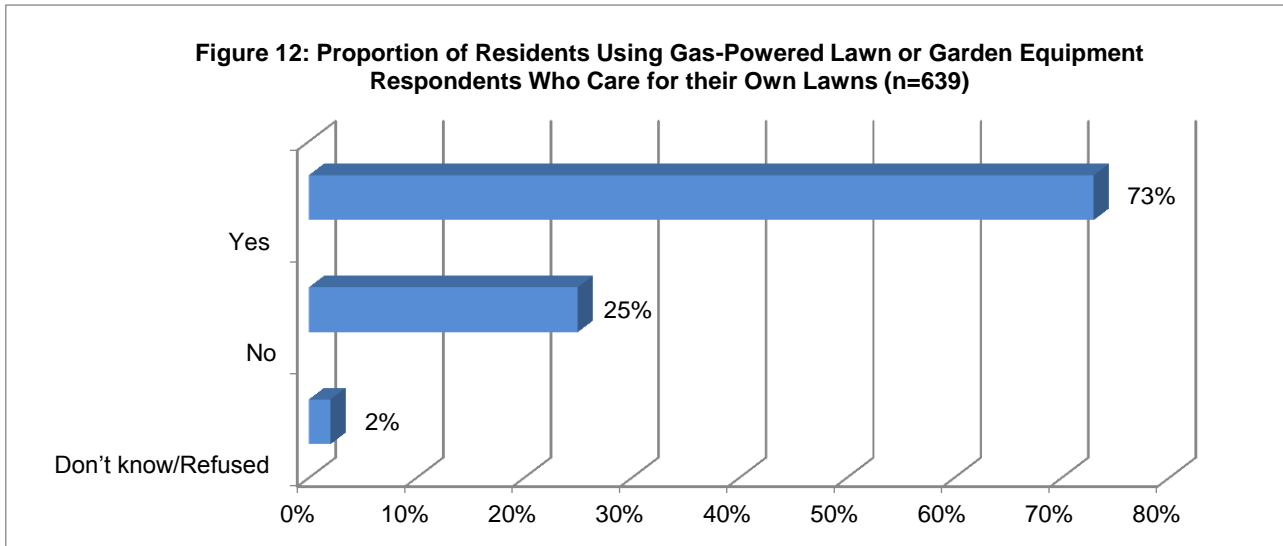
Use of Gas-Powered Lawn and Garden Equipment by Residents

Respondents were first asked who usually maintains their lawns and garden areas. **As seen in Figure 11, the majority of San Joaquin Valley residents (61 percent) tend to their own lawns rather than hire a service.** One quarter of residents use a lawn service to handle all of their yard work and another 3 percent use a lawn service for some of the yard work.

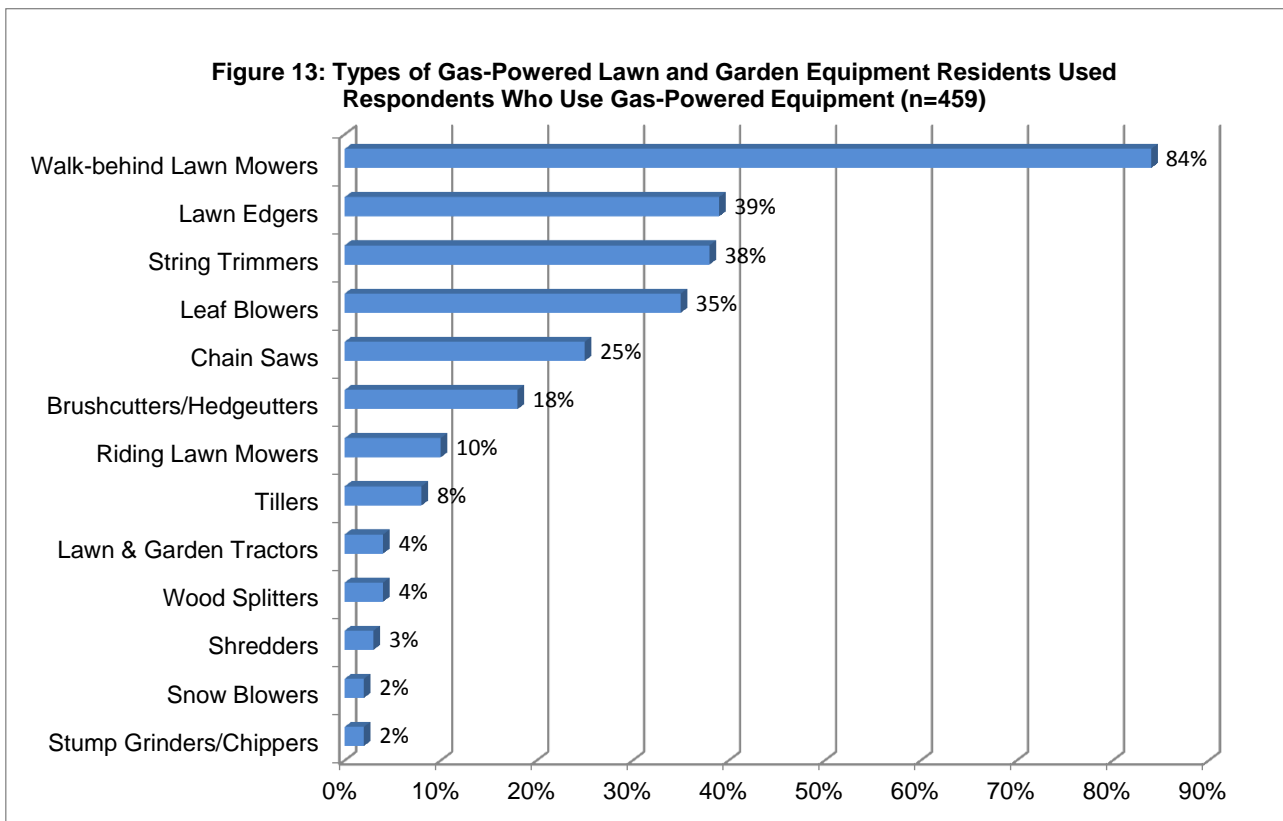


*Figure based on Q20: "Who usually maintains your lawn, shrubs, trees or garden areas?"

Residents who reported caring for their own lawns and gardens were asked if they use gas-powered equipment and, if so, to name the type of equipment. Results are presented in **Figures 12 and 13**. **Nearly three-fourths of residents (73 percent) who care for their own lawns and gardens use gas-powered equipment, most frequently walk-behind lawn mowers (84 percent), lawn edgers (39 percent), string trimmers (38 percent), and leaf blowers (35 percent).**



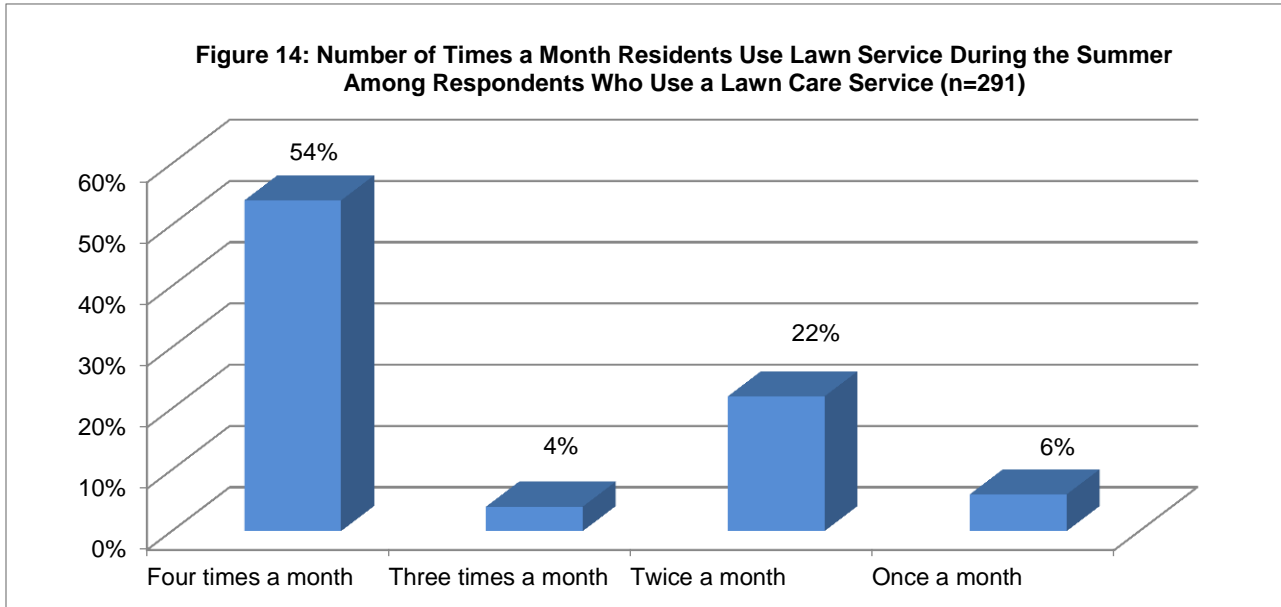
*Figure based on Q21: "Do you use any gas-powered lawn or garden equipment at your residence?"



*Figure based on Q22: "Considering only gas-powered lawn and garden equipment, which of the following do you use?"

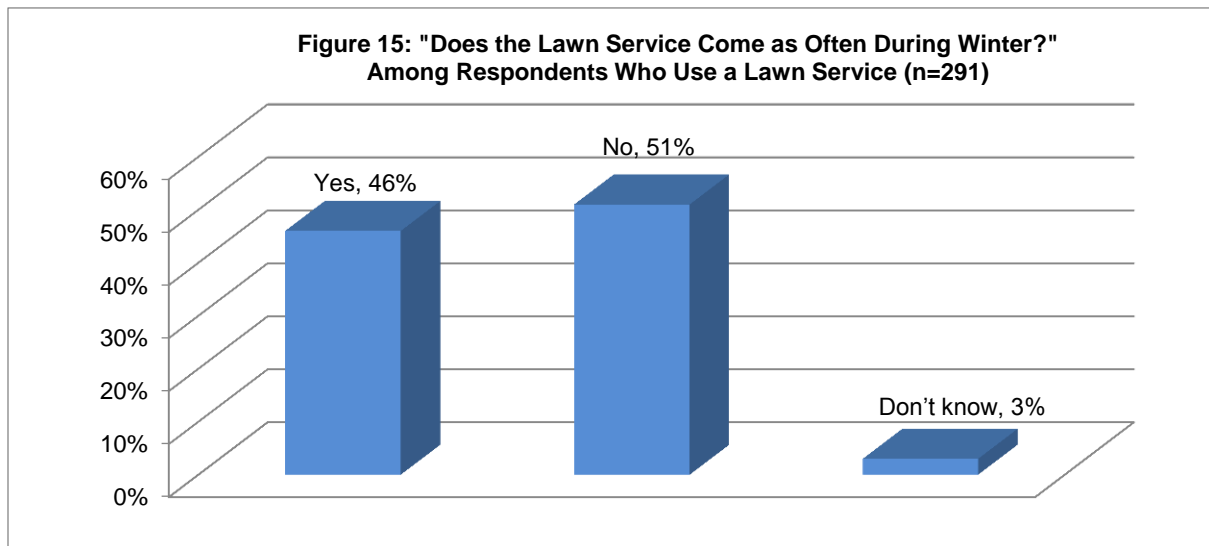
Use and Frequency of Professional Lawn Service

Residents who reported that they use a lawn service were asked how many times of month they use the service and whether that frequency varied by season. As seen in **Figure 14**, most residents (54 percent) use a service four times a month during the summer, followed by 22 percent who use a service every other week. Less than 10 percent of residents use a service more than once a week. The average number of times a lawn service was used in the summer was four times.



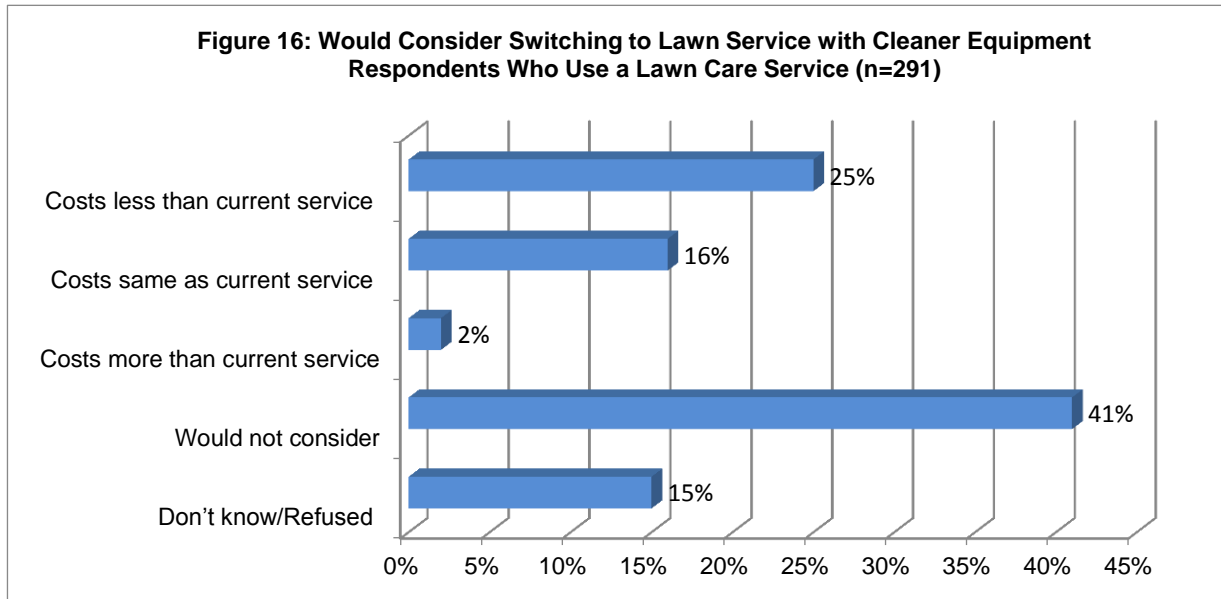
*Figure based on Q23: "During the summer, how many times a month does the lawn service come?"

Next, residents who use a lawn service were asked if the lawn service comes as often during winter. Approximately half (46 percent) of residents who use a lawn service reported that their lawn service comes as frequently during the winter months. See **Figure 15**.



*Figure based on Q24: "Does the lawn service come as often during the winter?"

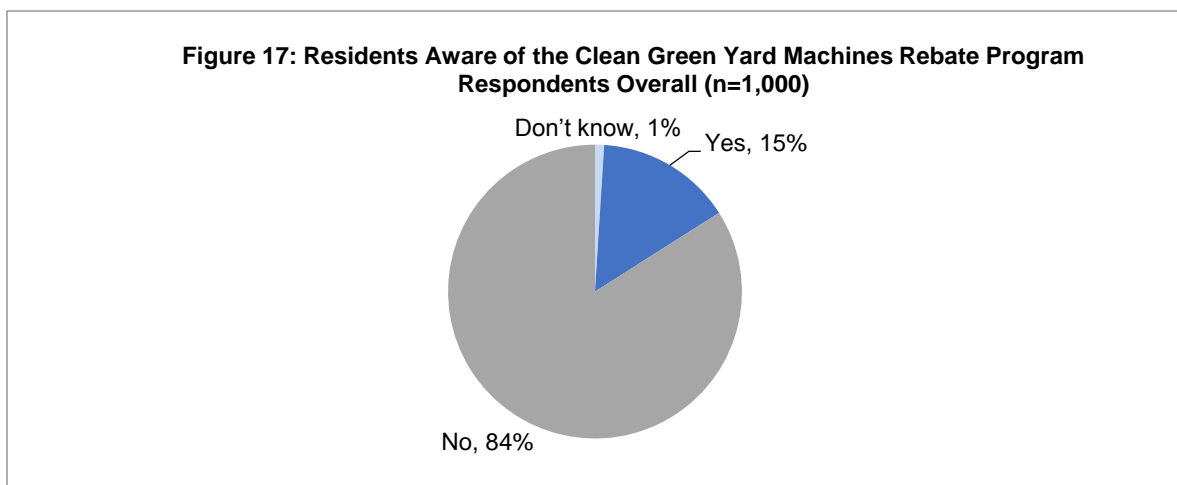
Residents were then asked if they would consider switching to a lawn care service that used cleaner equipment if that service cost less than their current service, the same as their current service, or more than their current service. Results are presented in **Figure 16**. A total of 41 percent of respondents reported that they would not consider switching.



*Figure based on Q25: "Would you consider switching to a lawn care service that used cleaner equipment if it cost: less, the same, or more than your current service?"

Awareness and Interest in the Clean Green Yard Machines Rebate Program

As seen in Figure 17, 84 percent of all residents surveyed reported that they were not aware of the Clean Green Yard Machine Rebate Program. Spanish-speakers were much less likely than English-speakers to report that they had heard of the Rebate Program (5 percent of Spanish-speakers compared to 18 of English-speakers). In addition, results suggest that Spanish-speaking residents are more likely to care for their own lawns. More than two-thirds of Spanish-speakers (69 percent) reported that they or others in their household do all the yard work, compared to 58 percent among English speakers, a statistically significant difference.



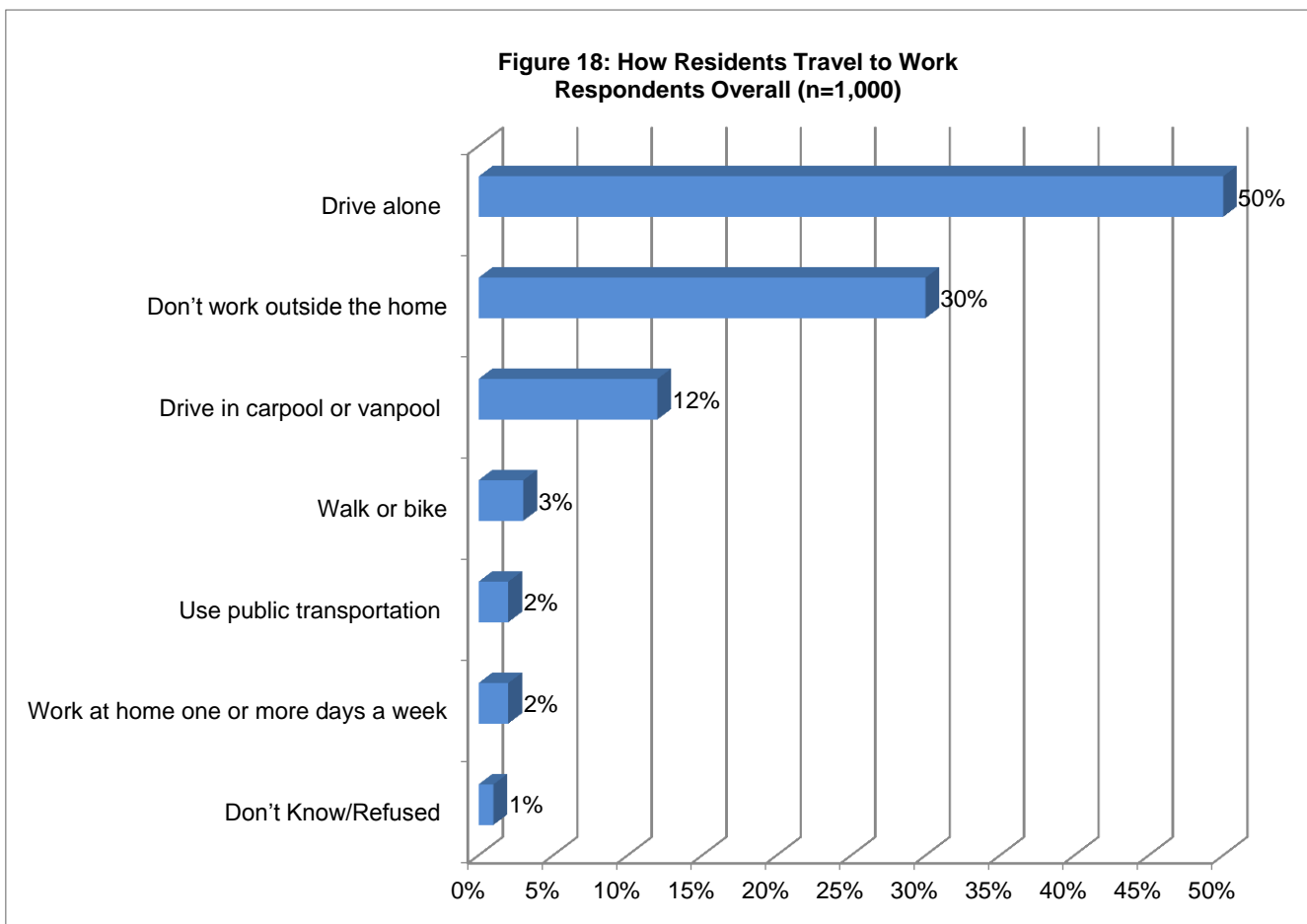
*Figure based on Q26: "Are you aware of a grant program which offers a rebate incentive for electric lawn mowers? The program is called the *Clean Green Yard Machines Rebate Program*?"

Commuting Patterns

In addition to measuring sources of air pollution from wood-smoke and gas-powered lawn equipment, the study was designed to track commuting patterns and the circumstances under which residents would consider carpooling over driving alone. The study also measured how school-age children travel to and from school. Results are presented below.

Current Commuting Patterns

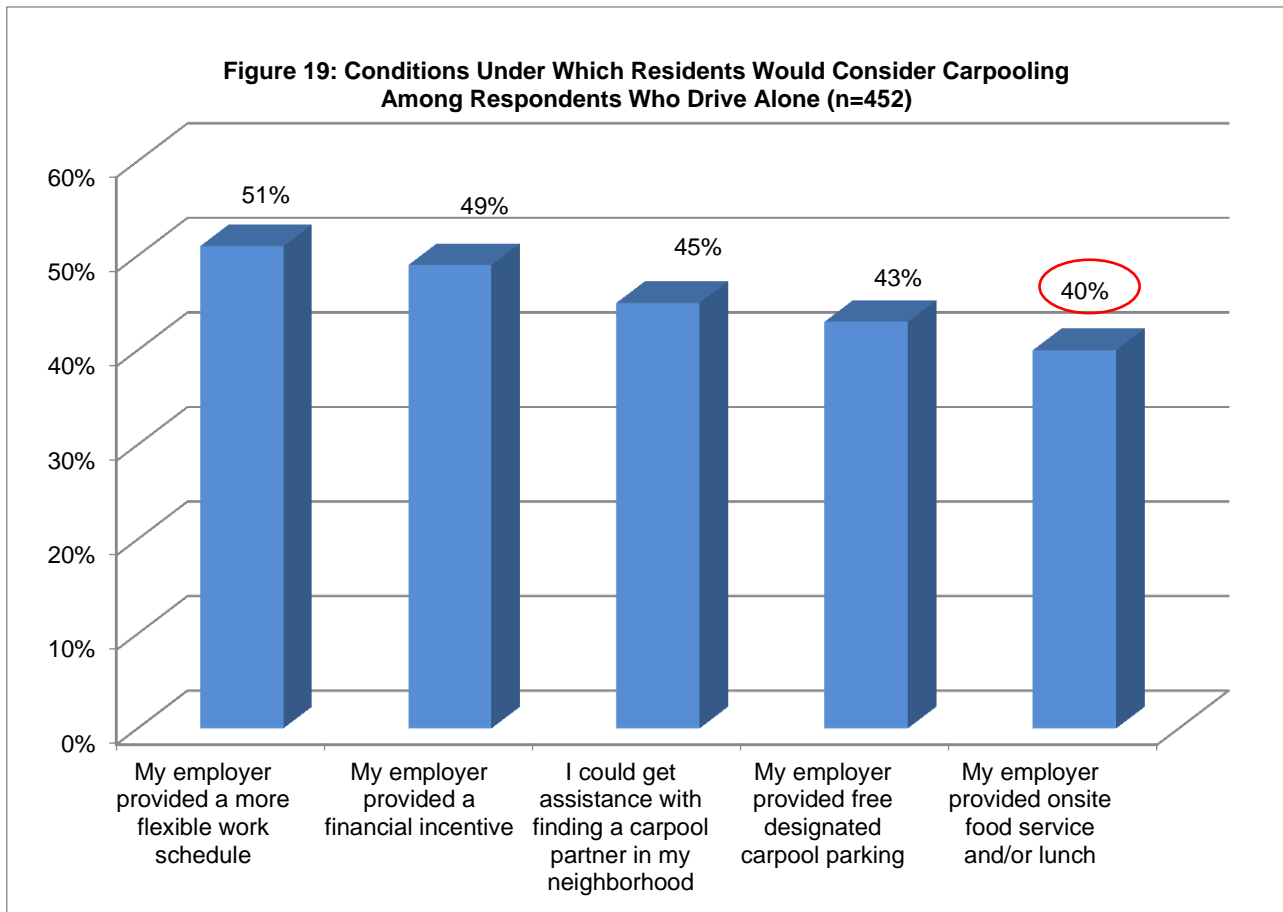
Respondents were first asked how they usually get to work. Results are presented in **Figure 18. Half of the residents surveyed reported that they drive alone to work, followed by 30 percent who do not work outside of the home.** A total of 12 percent reported that they drive in a carpool or vanpool. Only 2 percent reported that they take public transportation.



*Figure based on Q14: "How do you usually get to work?"

Future Behavior

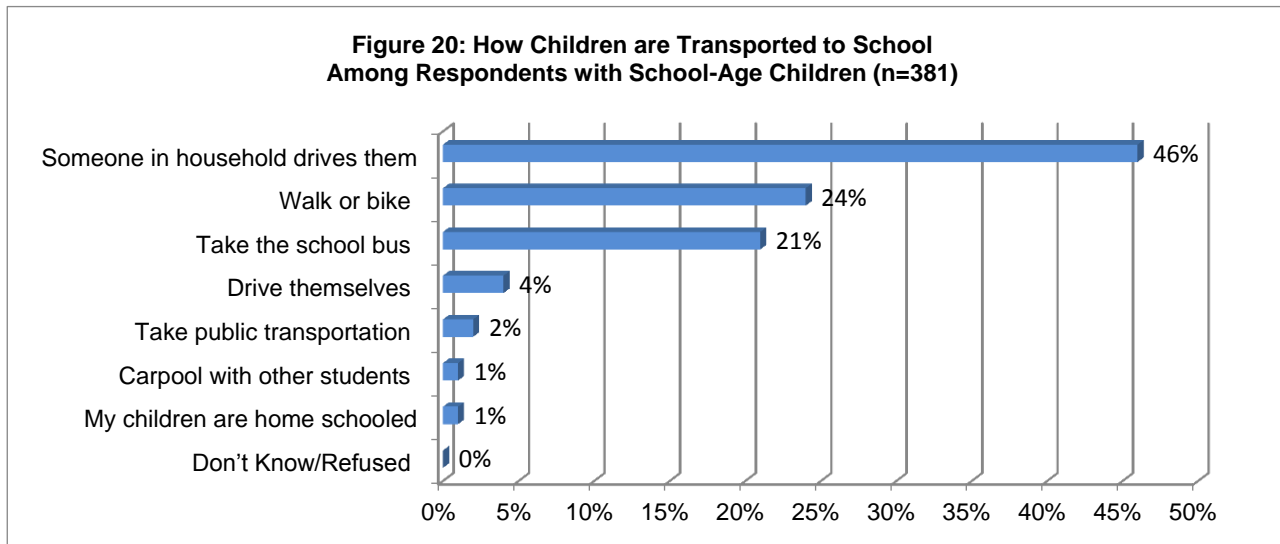
To help identify strategies for increasing the proportion of Valley residents who carpool to work, residents were read a list of employer programs and asked if they would consider carpooling instead of driving alone if the incentive were offered. Results are presented in **Figure 19. Approximately half of commuters surveyed reported that they would consider carpooling if their employer provided a more flexible work schedule, financial incentives, assistance with coordinating carpool partners, or free parking.** While support for most of the programs was statistically comparable, on-site food service was less popular than a flexible work schedule or financial incentives.



*Figure based on Q15: "Please answer yes, no, or maybe to each of the following questions: I would carpool if ...?" Significant differences at the 95% confidence level are circled. On-site food service was less popular than a flexible work schedule and financial incentives.

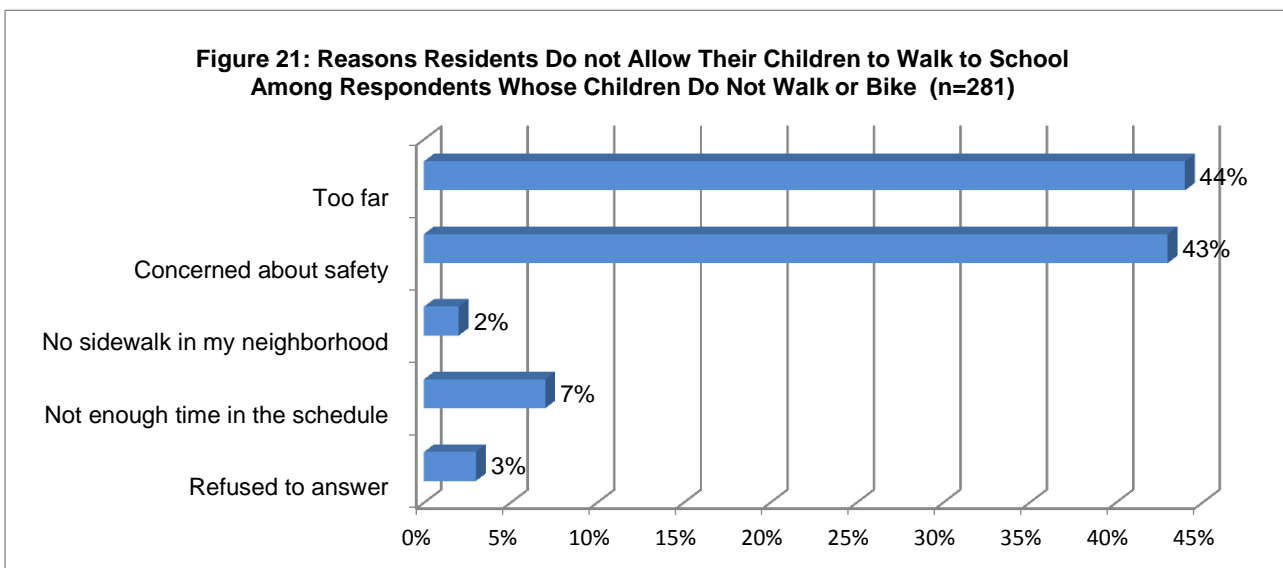
Student Pick Up and /Drop Off

In addition to assessing the problem of commuter traffic, the study examined travel to and from school. Among residents with school-age children (42 percent of all residents surveyed) nearly half reported that they drive their children to school. One-quarter of all students walk or bike to school and 21 percent take the school bus. Less than 3 percent of all residents reported that their children take public transportation or carpool with other students. See **Figure 20**.



*Figure based on Q16a: "How do your children usually get to school?"

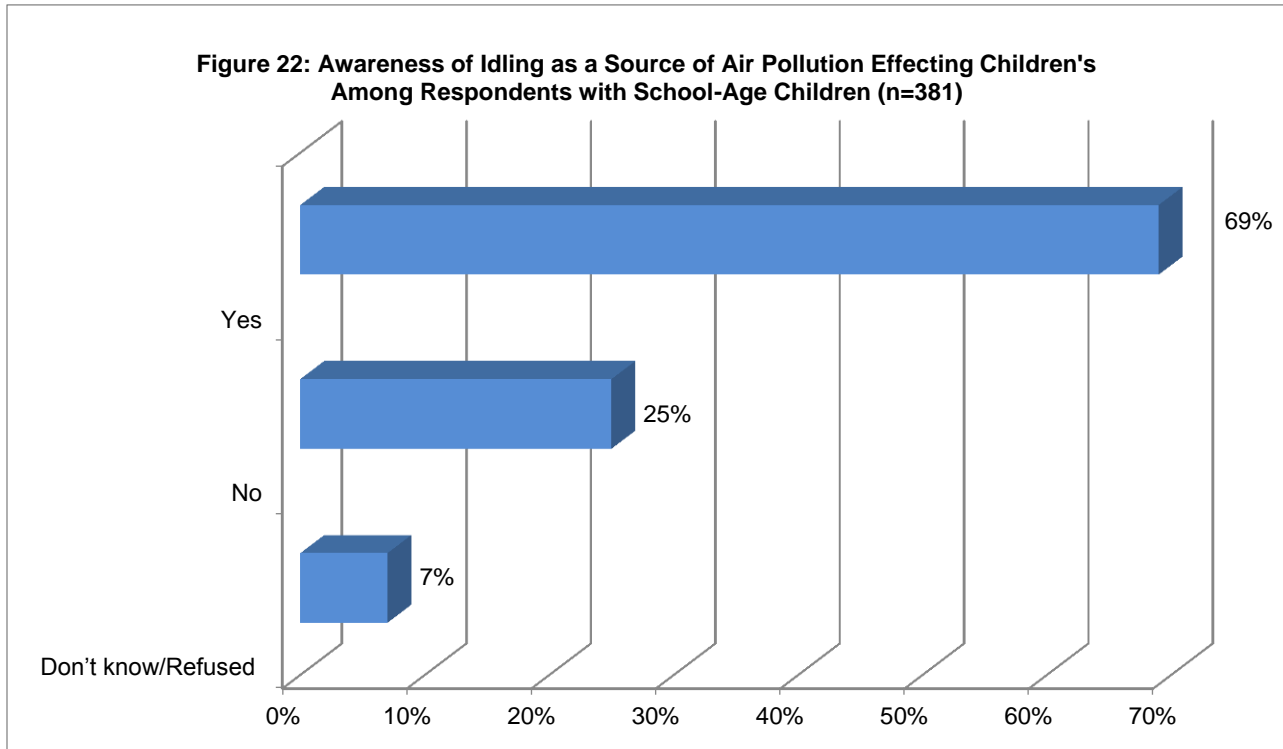
Next, residents were asked why their children do not walk or bike to school. **As seen in Figure 21, the primary reasons for not allowing children to walk or bike to school were distance and concerns about safety.**



*Figure based on Q17: "What is the main reason you would not let your child walk to school either alone or with an adult?"

Beliefs about Car Idling at Schools as a Source of Air Pollution

Finally, residents with school-age children were asked if they consider idling cars at school drop-off and pick-up lines to be a source of air pollution that affect children’s health. **More than two-thirds (69 percent) of residents with school-age children agreed that idling cars are a significant source of air pollution, as seen in Figure 22.**



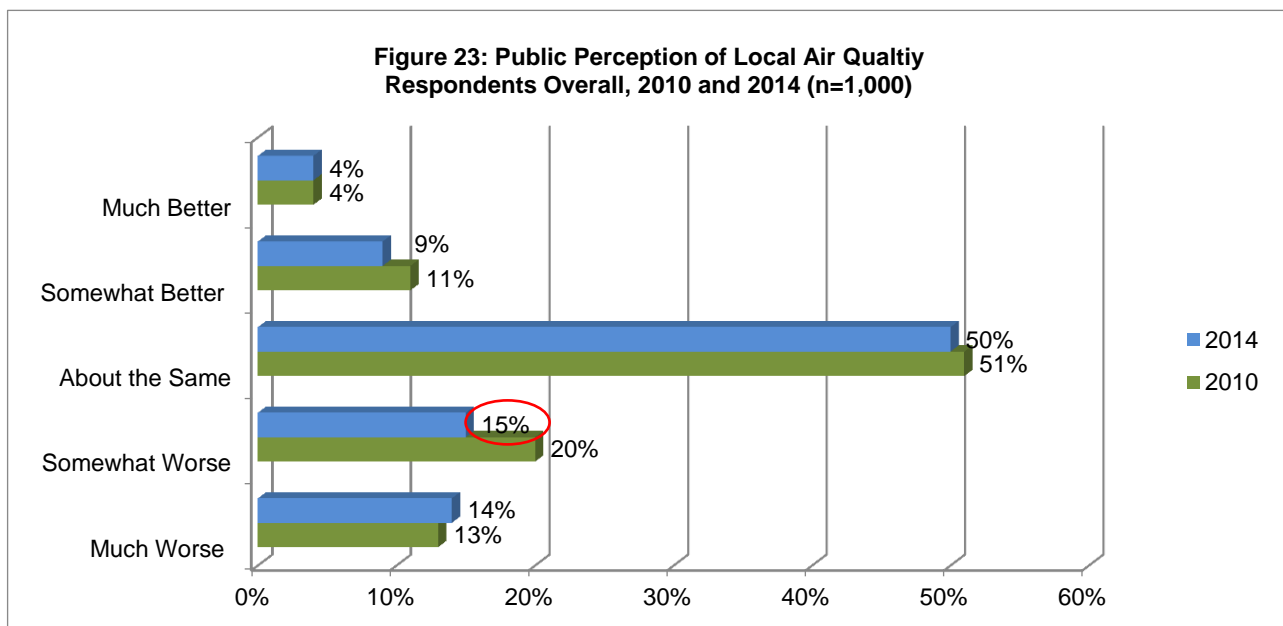
*Figure based on Q19: “Do you consider idling cars at school drop-off and pick-up lines to be a significant source of air pollution that can affect children’s health?”

General Beliefs and Awareness

Finally, the study addressed public perceptions of local air quality and perceptions of the Air Pollution Control District. Results are presented below.

Perceptions of Local Air Quality

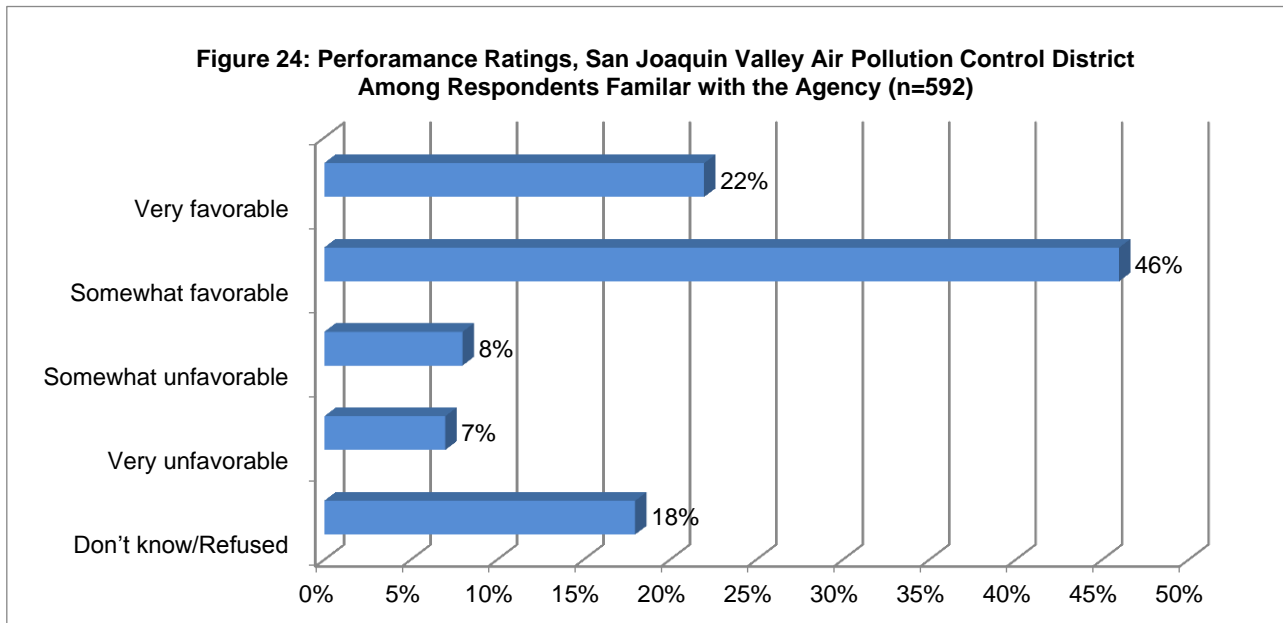
In 2010 and 2014, residents were asked if they thought the air quality in their areas had gotten better, worse, or stayed the same. **As seen in Figure 23, most residents believe the air quality in the San Joaquin Valley has improved or stayed the same compared to three years ago (similar to results from 2010).** There was, however, a 5 percentage-point decrease this year in the proportion of residents who believe the air quality has gotten “somewhat worse” over time.



*Figure based on Q27: “Compared to three years ago, would you say the air quality in your area has gotten better, gotten worse, or stayed the same? (If better/worse: Is that much better/worse or somewhat better/worse?)” Statistically significant changes at the 95 % confidence level are circled.

Awareness and Perceptions of the Air Pollution Control District

In 2010 and 2014, respondents were asked whether they had heard of the San Joaquin Valley Air Pollution Control District. A total of 57 percent of residents this year reported that they had heard of the District, unchanged from 2010. (Awareness of the agency was highest among English-speakers and those with above median incomes.) Those residents familiar with the District were asked if they had a “very favorable,” “somewhat favorable,” “somewhat unfavorable,” or “very unfavorable” view of the agency’s performance. **More than two-thirds (68 percent) of all residents familiar with the agency reported that they had a “very favorable” or “somewhat favorable” view of the District, as seen in Figure 24.**



*Figure based on Q29: “The San Joaquin Valley Air Pollution Control District is responsible for monitoring the outdoor air quality and implementing programs to reduce air pollution in your area. Would you say you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable view of the job they are doing?”

Conclusions

Study findings suggest that past outreach efforts have helped raise public awareness about the District and its programs, but further outreach is still needed. The Check Before You Burn Program continues to be recognized by eight-out-of-ten residents, and those residents aware of the Program report that they have reduced their wood-burning in response to the outreach. In contrast, awareness of the Burn Cleaner and Clean Green Yard Machine Rebate Programs could be improved. Less than 20 percent of residents are aware of either the Burn Cleaner or Yard Machine Rebate Programs. Spanish-speakers, who are more likely to care for their own lawns compared to other residents, had particularly low awareness levels. In addition, findings suggest that more residents would consider carpooling to work if their employers offered a flexible schedule, financial incentives, free parking or other programs. These findings suggest that efforts to build more employer programs and outreach to increase awareness of the District's rebate programs may be helpful in promoting changes in personal behavior and improving air quality.

**APPENDIX A:
SURVEY INSTRUMENT WITH WEIGHTED OVERALL FREQUENCIES**

Valley Air District Residential Wood Burning, Lawn Care, and Commuting Survey 2014
Overall Frequencies (n=1,000)

INTRODUCTION

My name is _____. We are conducting a survey with people in the area about issues affecting your community, and I want to include your opinions. We are not trying to sell you anything.

- 01 willing to continue
- 02 refusal
- 03 call back <at specific time>
- 04 call back <no specific time>
- 05 no answer
- 06 busy
- 07 answering machine
- 08 disconnected number
- 09 language barrier (not Spanish or English)
- 10 business number
- 11 fax machine

SCREENER QUESTIONS

Landline

1. May I speak with the [youngest/oldest] adult at home who is 18 years or older?

- 1 Yes, I am that person (continue interview)
- 2 Yes, transferring to the person (restart intro)
- 3 Not available now (If person who answered is an adult, continue interview. If person who answered is under 18 arrange a call-back)
- 9 Refused (terminate)

Cell Phone

1a. Since you are on a cell phone, I can call you back if you are driving or doing anything else that requires your full attention. Can you talk safely and privately now, or not?

- 1 Yes
- 2 Not right now (try and arrange a time to call-back)
- 9 Refused (terminate)

1b. Are you 18 years or older? (n=1,000)

- 1 Yes 100%
- 2 No (terminate)

All Respondents

1c. What county do you live in? (Don't Read) (n=1,000)

- 01 Fresno 23%
- 02 Kern 21%
- 03 Kings 4%
- 04 Madera 4%
- 05 Merced 6%
- 06 San Joaquin 18%
- 07 Stanislaus 13%
- 08 Tulare 11%
- 09 Other, outside of San Joaquin Valley area (terminate)
- 99 Don't know/refused (terminate)

1d. What is your zip code? [Record 5 digit zip code. Zip code list to be provided. Refused = terminate]

1e. Which of the following best describes the property where you live? (Read) (n=1,000)

- 1 House or duplex 100%
- 2 Apartment (terminate)
- 3 Condominium (terminate)
- 4 Townhouse (terminate)
- 5 Other (terminate)
- 9 Don't know/Refused (terminate)

1f. Do you own or rent your home? (n=1,000)

- 1 Own 59%
- 2 Rent 39%
- 9 Refused 2%

WOOD COMBUSTION: BEHAVIOR AND AWARENESS

2. I'd like to ask you about the heating devices you may have in your home. Do you have a wood-burning fireplace, wood stove, or pellet stove in your home?⁵ (check all that apply) (n=1,000)

- 1 Yes, wood-burning fireplace 25%
- 2 Yes, wood stove 4%
- 3 Yes, pellet stove 3%
- 4 No (skip to Q4) 68%
- 9 Don't know/Refused (skip to Q4) 0%

3. Is your sole source of heat from a wood-burning device? (n=330)

- 1 Yes 19%
- 2 No 81%
- 9 Refused

4. (Only ask if Q2 = 4 or 9) Does your public utility provide a natural gas connection to your home? (Skip to Q10) (n=670)

- 1 Yes 85%
- 2 No 10%
- 9 Don't know/refused 4%

5. How often do you use your fireplace/stove in the winter? Nearly every day, several days a week, once a week, less than once a week, or not at all?⁶ (n=330)

- 1 Nearly everyday 8%
- 2 Several days a week 7%
- 3 Once a week 8%
- 4 Less than once a week 17%
- 5 Not at all (skip to Q10) 59%
- 9 Don't Know/Refused (Do not read) (Skip to Q10)

6. Once started, how many hours does your fire usually burn? [record number, 2 digits; 99 don't know/refused]

(n=133)

Mean= 6, Median= 4 hours. Excludes respondents who reported burning zero times.

- 1-2 hours = 24%
- 3-4 hours = 42 %
- 5-6 hours = 15%
- 7-13 hours = 7 %
- 24 hours a day = 10%

⁵ Identical to QH on 2010 survey.

⁶ Similar to QI on 2010 survey.

-
7. Which of the following types of fuel do you typically burn? (Read. Check all that apply. Rotate. Yes/No punch. 9= Don't know/refused) (n=133)
- 1 Seasoned firewood that has been split and dried for a year or more 71%
 - 2 Partially dried wood that has some moisture 22%
 - 3 Pellets 13%
 - 4 Manufactured logs, such as *Duraflame* 32%
 - 5 Trash, magazines, newspapers or other household materials 11%
 - 6 Other (specify) 1%
8. *Check Before You Burn* runs from November through February each year, and prohibits wood burning in fireplaces, wood or pellet stoves, and outdoor fire pits during certain days when it is determined that air quality levels will be most impacted. Have you ever heard of the *Check Before You Burn* program? (n=133)
- 1 Yes 80%
 - 2 No 18%
 - 3 Maybe 2%
 - 9 Don't know 1%
9. (Only ask if Q8 was 1 & 3) Have you reduced the amount of wood burning you do in response to the *Check Before You Burn* Program? (n=110)
- 1 Yes 78%
 - 2 No 16%
 - 3 Maybe 5%
 - 4 Don't Know 1%
10. To encourage cleaner burning in the Valley, there is a grant program that offers rebates to residents who replace their traditional fireplace or stove with a cleaner-burning device such as a certified wood stove or a gas fireplace. Are you aware of this grant program, it is called *Burn Cleaner*? (n=1,000)
- 1 Yes 17%
 - 2 No 82%
 - 9 Not Sure/Refused 1%
11. (**ASK only if Q2= 1, 2, 3 otherwise skip to Q13**) Would you be willing to replace your current wood-burning fireplace or stove with a cleaner, less-polluting wood-burning device if you could use it on some No-Burn days? (n=330)
- 1 Yes 29%
 - 2 No 58%
 - 3 I already have a clean-burning device (don't read) (**skip to Q13**) 5%
 - 9 Don't know/Refused (don't read) 8%
12. Assuming a clean wood-burning device costs about \$3,000, would you upgrade from your current fireplace or stove if you could get a 15% rebate on your purchase? (n=314)
- 1 Yes (**Skip to Q13**) 12%
 - 2 No 67%
 - 3 I would purchase it without a rebate/incentive (do not read) (**Skip to Q13**) 1%
 - 4 Not interested/no discount would be enough (do not read) (**Skip to Q13**) 14%
 - 9 Don't know 6%

-
- 12a. How about a 25% rebate? (n=276)
- 1 Yes (**Skip to Q13**) 3%
 - 2 No 73%
 - 3 I would purchase it without a rebate/incentive (do not read) (**Skip to Q13**) <1%
 - 4 Not interested/no discount would be enough (do not read) (**Skip to Q13**) 2%
 - 9 Don't know 6%

- 12b. How about a 50% rebate? (n=222)
- 1 Yes 16%
 - 2 No 71%
 - 3 I would purchase it without a rebate/incentive (do not read) 0%
 - 4 Not interested/no discount would be enough (do not read) 2%
 - 9 Don't know 9%

13. Do you believe wood smoke is a significant source of air pollution in your neighborhood? (n=1,000)
- 1 Yes, definitely 35%
 - 2 Yes, probably 20%
 - 3 No 41%
 - 9 Don't know/Refused 5%

COMMUTING BEHAVIOR AND AWARENESS

14. How do you usually get to work? (Do not read.) (n=1,000)
- 1 Drive alone 50%
 - 2 Drive in carpool or vanpool 12%
 - 3 Use public transportation 2%
 - 4 Walk or bike 3%
 - 5 Work at home one or more days a week 2%
 - 6 Don't work outside the home 30%
 - 9 Don't know/refused 1%

15. (Ask only if Q14=1) Please answer yes, no, or maybe to each of the following questions: I would carpool if ... (9=don't know) (n=452)
- 1 My employer provided a financial incentive. 49%
 - 2 I could get assistance with finding a carpool partner in my neighborhood. 45%
 - 3 My employer provided onsite food service and/or lunch. 40%
 - 4 My employer provided a more flexible work schedule. 51%
 - 5 My employer provided free designated carpool parking. 43%

16. Do you have school-age children who live with you? (n=1,000)
- 1 Yes 42%
 - 2 No (Skip to Q20) 58%
 - 9 Don't know/Refused (Skip to Q20) 0%

- 16a. How do your children usually get to school? (**Do Not Read**) (n=381)
- 1 Do they take the school bus? 21%
 - 2 Do you or someone else in your household drive them? 46%
 - 3 Do they drive themselves? 4%
 - 4 Do they take public transportation? 2%
 - 5 Do they walk or bike? 24%
 - 6 Do they carpool with other students? 1%
 - 7 My children are home schooled (Do not read) 1%
 - 9 Don't Know/Refused (Do not read) 0%

17. (Ask only if Q16a = 1, 2, 3, 4, 6. Others skip to Q19) What is the main reason you would not let your child walk to school either alone or with an adult? (n=281)
- 1 Too far 44%
 - 2 Concerned about safety 43%
 - 3 No sidewalk in my neighborhood 2%
 - 4 Not enough time in the schedule 7%
 - 9 Refused to answer 3%
18. (Ask only if Q16a = 6. Others skip to Q19) Which of the following best describes the main reason you decided to use a carpool to get your children to school? (Check one. Rotate first three stems.) (n=6) Due to the extremely small sample of respondents who responded to this question, results could not be analyzed statistically.
- 1 It is convenient or it worked with our schedule mentioned
 - 2 To save money on gas mentioned
 - 3 To help reduce air pollution mentioned
 - 4 Other specify (Do not read) 0%
 - 9 Don't know/Refused (Do not read) 0%
19. Do you consider idling cars at school drop-off and pick-up lines to be a significant source of air pollution that can affect children's health? (n=381)
- 1 Yes 69%
 - 2 No 25%
 - 9 Don't know/Refused 7%

LAWN CARE: BEHAVIOR AND AWARENESS

20. Who usually maintains your lawn, shrubs, trees or garden areas?⁷ (Do not read) (n=1,000)
- 1 I or others living in the household do all the yard work 61%
 - 2 I or others in the household do some of the yard work and a lawn service does the rest 3%
 - 3 A lawn service does all the yard work (skip to Q23) 25%
 - 4 Don't have a lawn/ Don't care for it (skip to Q26) 8%
 - 9 Don't know/Refused (skip to Q26) 2%
21. Do you use any gas-powered lawn or garden equipment at your residence?⁸ (n=639)
- 1 Yes 73%
 - 2 No (skip to prompt above Q26) 25%
 - 9 Don't Know/Refused (skip to prompt above Q26) 2%
22. Considering only gas-powered lawn and garden equipment, which of the following do you use?⁹ (yes/no punch. 99 = don't know) (n=459)
- 01 Walk-behind Lawn Mowers 84%
 - 02 String Trimmers 38%
 - 03 Chain Saws 25%
 - 04 Leaf Blowers 35%
 - 05 Lawn Edgers 39%
 - 06 Brushcutters/Hedgecutters 18%
 - 07 Riding Lawn Mowers 10%
 - 08 Tillers 8%
 - 09 Lawn & Garden Tractors 4%
 - 10 Wood Splitters 4%
 - 11 Shredders 3%

⁷ Identical wording to Q70 from the ARB survey.

⁸ Similar wording to Q80 from the ARB survey.

⁹ Identical list to Q89 from the ARB survey.

- 12 Snow Blowers 2%
- 13 Stump Grinders/Chippers 2%

(Only ask Q23 through Q26 if Q20 = 2 or 3. Otherwise skip to Q26)

23. During the summer, how many times a month does the lawn service come? [record number 2 digits] [99= Don't know/Refused] (n=291) Mean 4, Median 4
 Once a month 6%
 Twice a month 22%
 Three times a month 4%
 Four times a month 54%
 More than once a week 9%
 Don't know 5%
24. Does the lawn service come as often during the winter? [record number 3 digits] [99= Don't know/Refused] (n=291)
 1 Yes 46%
 2 No 51%
 9 Don't know/Refused 3%
25. Would you consider switching to lawn care service that used cleaner equipment if it cost: (n=291)
 1 Less than your current service 25%
 2 The same as your current service 16%
 3 More than your current service 2%
 4 Would not consider (do not read) 41%
 9 Don't know/refused 15%
26. Are you aware of a grant program which offers a rebate incentive for electric lawn mowers? The program is called the *Clean Green Yard Machines Rebate Program*? (n=1,000)
 1 Yes 15%
 2 No 84%
 9 Don't know/Refused 1%

GENERAL BELIEFS AND AWARENESS

27. Compared to three years ago, would you say the air quality in your area has gotten better, gotten worse, or stayed the same? ¹⁰ (If better/worse: Is that much better/worse or somewhat better/worse?) (n=1,000)
 1 Much Better 4%
 2 Somewhat Better 9%
 3 About the Same 50%
 4 Somewhat Worse 15%
 5 Much Worse 14%
 6 I haven't lived here long enough to say (Don't read) 3%
 9 Don't know/Refused (Don't read) 4%
28. Have you heard of the San Joaquin Valley Air Pollution Control District? ¹¹ (n=1,000)
 1 Yes 57%
 2 No (**skip to Q30**) 40%
 9 Not sure/Refused (**skip to Q30**) 2%

¹⁰ Similar wording to Q5 from 2010 survey. The time interval has been changed from 5 to 3 years.

¹¹ Similar wording to Q11 from 2010 survey. "Maybe" has been excluded from the options.

-
29. The San Joaquin Valley Air Pollution Control District is responsible for monitoring the outdoor air quality and implementing programs to reduce air pollution in your area. Would you say you have a very favorable, somewhat favorable, somewhat unfavorable, or very unfavorable view of the job they are doing? (n=592)
- 1 Very favorable 22%
 - 2 Somewhat favorable 46%
 - 3 Somewhat unfavorable 8%
 - 4 Very unfavorable 7%
 - 9 Don't know/refused 18%

DEMOGRAPHICS

Finally, I'd like to ask you a few general questions for research purposes. Your answers are confidential.

30. What year were you born? _____ (n=1,000)
- 18-29 16%
 - 30-49 36%
 - 50-64 29%
 - 65+ 14%
31. Would you please tell me what ethnic group you identify with? Are you Hispanic/Latino, Black/African American, Asian, Caucasian, or of some other ethnic or racial background? (n=1,000)
- 1 Hispanic/Latino 49%
 - 2 Black/African American 5%
 - 3 Asian-American 8%
 - 4 White/Caucasian 35%
 - 5 Other (specify) 1%
 - 9 Refused (Don't Read) 2%
32. How many people live in your household? _____ (
33. [Asked of cell phones only] Do you have a landline telephone? (n=400)
- 1 Yes 45%
 - 2 No 51%
 - 9 Refused 5%
33. [Asked of landline phones only] Do you have a cell phone? (n=600)
- 1 Yes 77%
 - 2 No 19%
 - 9 Refused 4%
34. [Asked of everyone] Does your household primarily use cell phones or land line phones? (n=1,000)
- 1 Cell 60%
 - 2 Landline 32%
 - 9 Refused 8%

35. I am going to read some categories of household income. Please stop me when I reach the category of your total 2013 annual household income, before taxes: (n=1,000)

- 1 Less than \$15,000 12%
- 2 \$15,000 to less than \$35,000 20%
- 3 \$35,000 to less than \$50,000 12%
- 4 \$50,000 to less than \$75,000 9%
- 5 \$75,000 to less than \$100,000 5%
- 6 \$100,000 to less than \$150,000 6%
- 7 \$150,000 to less than \$200,000 2%
- 8 More than \$200,000 1%
- 9 Refused (DON'T READ) 34%

36. (GENDER BY OBSERVATION-- DON'T READ) (n=1,000)

- 1 Male 50%
- 2 Female 50%

37. Note Language (n=1,000) (English 73% or Spanish 27%)

That concludes our survey. Thank you very much for your time.

**APPENDIX B:
DEMOGRAPHIC PROFILE OF RESIDENTS SURVEYED COMPARED TO
POPULATION ESTIMATES**

**Table 1: Demographic Profile of Residents Surveyed
Compared to Population Estimates**

| Population Characteristic | U.S. Census Population (Across 8 County-Region) | Unweighted Sample | Weighted Sample |
|----------------------------------|--|--------------------------|------------------------|
| Fresno | 23.4% | 23.8% | 23.1% |
| Kern | 21.2% | 18.7% | 21.2% |
| Kings | 3.7% | 3.7% | 3.8% |
| Madera | 3.8% | 4.2% | 3.7% |
| Merced | 6.5% | 7.9% | 6.5% |
| San Joaquin | 17.4% | 17.7% | 17.8% |
| Stanislaus | 12.9% | 9.6% | 12.6% |
| Tulare | 11.2% | 14.4% | 11.5% |
| Cell only | 32.6% | 37.0% | 31.6% |
| Male | 50.4% | 44.8% | 50.0% |
| Female | 49.6% | 55.2% | 50.0% |
| White | 35.6% | 40.4% | 34.6% |
| Black | 5.5% | 3.4% | 5.3% |
| Hispanic | 49.6% | 42.7% | 49.2% |
| Asian | 8.1% | 4.7% | 7.8% |
| Age <65 | 85.3% | 78.1% | 85.3% |
| Age 65+ | 14.7% | 21.9% | 14.7% |

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
March 20, 2014

**FINAL REPORT FOR THE RESIDENTIAL WOOD BURNING, LAWN CARE,
AND COMMUTER SURVEY**

Attachment B:

Community Stakeholder Interviews Final Report
(26 PAGES)

Community Stakeholder Interviews

Final Report

February 2014

Submitted to:

San Joaquin Valley Air
Pollution Control District



Submitted by:

Gomez Research
Pasadena, California

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APPENDICES:

Appendix A: Interview Guide

EXECUTIVE SUMMARY

The San Joaquin Valley Air Pollution Control District contracted with Gomez Research to conduct a series of one-on-one telephone interviews with community stakeholders in the San Joaquin Valley. The research was designed to complement a public opinion survey conducted with 1,000 San Joaquin Valley residents addressing similar questions regarding local air quality, programs implemented by the District, and perceptions of the District and air quality policies. A total of 40 interviews were conducted by telephone between December 9, 2013 and February 7, 2014. Participants were recruited randomly from a list provided by the District including Citizen Advisory Committee members, members of the District's Environmental Justice Advisory Group (EJAG), Commercial Lawn and Garden representatives, Drive Clean Program representatives, the San Joaquin Valley Air Pollution Control District Governing Board members, and other District Stakeholders. Study results were qualitative in nature and do not represent a statistical sample.

Key findings from the study are presented below.

- a. **Using a 5-point scale where five is “excellent” and one is “poor,” respondents gave local air quality an average rating of 3, suggesting that stakeholders believe the air quality is fair but could be improved.** When asked if the air quality had improved over the last five years, 28 out of the 40 individuals interviewed reported that they believe the air quality has “gotten better,” followed by eight who believe the air quality has stayed the same and three who believe the air quality has worsened (one individual declined to answer the question). Several respondents cited the particularly poor air experienced this year due, in part, to severe drought conditions.
- b. **When asked how poor air quality and/or air regulations have impacted their constituents and communities, the majority of stakeholders more frequently cited economic impacts rather than health concerns.** In addition, when discussing the health impacts of air pollution, respondents tended to focus on daily, short-term problems such as asthma and curtailed outdoor exercise, rather than more severe conditions such as cancer.
- c. **When discussing how to reduce emissions, stakeholders most frequently cited the need to reduce diesel truck emissions, followed by suggestions for encouraging carpooling, biking, public transportation and other alternatives to single-occupant vehicles.**
- d. **The majority of stakeholders were familiar with the Healthy Air Living Program (31 out of 40), although a minority of respondents were unclear about the details of the program.**
- e. **When asked if they had a favorable or unfavorable view of the Healthy Air Living Program, nearly all respondents reported that they had a “very favorable” or “somewhat favorable” view of the Program.** When asked why they gave a favorable rating, respondents most frequently reported that they believe the Program has been helpful in educating the public about air pollution and providing specific, cumulative actions that residents can take to improve the air quality. The most frequently cited reason for lower ratings was the belief that the program does not tackle the biggest causes of air pollution, notably diesel truck emissions.
- f. **All stakeholders who participated in the study, with the exception of one individual, had heard of the Check Before You Burn Program.**

- g. The most frequently cited suggestions for increasing participation in the Burn Cleaner Program were increasing incentives to make the Program more affordable, followed by additional outreach to ensure that residents are aware of the program.** Some respondents suggested that the District continue to work closely with businesses that sell hearth and heating equipment.
- h. Overall, findings suggest that the majority of respondents believe the District is doing a good job balancing public health and economic interests even though some stakeholders believe more or less regulation is needed.** Although many respondents expressed concern that the District does not do enough to protect business interests, the majority of stakeholders described the District's policies as reasonable given California requirements and local economic considerations. Commercial stakeholders were more concerned about compliance requirements imposed on businesses than were citizen advisory committee members and other District stakeholders.
- i. The most frequently cited areas for additional District action were school-site idling and drive-through services followed by gas-powered lawn care equipment.**
- j. When asked what type of policies they would recommend to address these areas, respondents most often suggested incentive-based programs over regulatory and volunteer approaches.**
- k. When asked if they had any other suggestions, many stakeholders recommend that the District increase its interaction with constituents, including face-to-face opportunities to explain programs, gather feedback, and increase visibility.** Other suggests included multi-lingual materials and an increased budget for public outreach.

INTRODUCTION

In 2014, as part of a larger effort to continue to improve local air quality, the San Joaquin Valley Air Pollution Control District contracted with Gomez Research to conduct a series of one-on-one telephone interviews with community stakeholders in the San Joaquin Valley. The research was designed to complement a public opinion survey conducted with 1,000 San Joaquin Valley residents addressing similar questions regarding local air quality, programs implemented by the District, and perceptions of the District and air quality policies.

METHODOLOGY

A total of 40 interviews were conducted by telephone between December 9, 2013 and February 12, 2014. Each interview lasted approximately 15 to 20 minutes. Participants were recruited randomly from a list provided by the District including Citizen Advisory Committee members, members of the District's Environmental Justice Advisory Group (EJAG), Commercial Lawn and Garden representatives, Drive Clean Program representatives, and San Joaquin Valley Air Pollution Control District Governing Board members, and other District Stakeholders.

Of the 40 stakeholders interviewed:

- 16 were Citizen Advisory Committee and/or EJAG members
- 9 were District Board members
- 7 were commercial lawn and garden representatives
- 6 were other District stakeholders
- 2 were from the Drive Clean Program

Caveats

Due in part the small sample size, the study was qualitative in nature and cannot be analyzed statistically. Results reflect the opinions of the individuals included in the study and cannot be extrapolated to the population as a whole.

FINDINGS

Perception of Air Quality

Rating of Current Air Quality

One objective of the research was to gauge stakeholders' perception of the air quality in the San Joaquin Valley basin compared to five years ago. Using a 5-point scale, where five is "excellent" and one is "poor," stakeholders were asked how they would rate air quality in the San Joaquin Valley overall. **Respondents gave the local air quality an average rating of 3, suggesting that they believe the air quality is fair but could be improved.** When asked if the air quality had improved over the last five years, 28 out of the 40 individuals interviewed reported that they believe the air quality has "gotten better," followed by eight who believe the air quality has stayed the same and three who believe the air quality has worsened. (One individual declined to answer the question.) Several respondents cited the particularly poor air experienced this year due to drought conditions.

Impact of Air Quality and Air Quality Regulations

Respondents were asked to describe how the air quality and the air quality regulations in the area have impacted their customers, employees, constituents, or family members. When asked how they have been impacted by poor air quality and air regulations, respondents most frequently mentioned health-related problems such as asthma and cost-related impacts on businesses trying to purchase cleaner equipment. **Stakeholders generally expressed more concern regarding the economic impacts of poor air quality and air regulations than on the health impacts of air pollution.** Moreover, when discussing the health impacts of air pollution, respondents tended to focus on daily, short-term problems such as asthma and curtailed outdoor exercise, rather than more serious, long-term conditions such as cancer.

Results from the open-ended responses are presented below, grouped by comments regarding health impacts of air pollution followed by comments regarding policy and regulations.

Q: Could you describe how the air quality and/or air quality regulations in this area have impacted your [customers, employees, constituents, members, family], if at all?

Comments Regarding Health Impacts:

- *Well, it impacts different people differently. Obviously, if you are in a sensitive group, the air quality is going to be a part of your everyday life. Your daily life is dictated by what you can or cannot do.*
- *I think the regulations that we are trying to develop to clean our air have actually improved the quality of life of people that I know.*
- *My customers are students so they are affected by not being able to go outside and play or participate in sports.*
- *I don't know anybody with health issues related to the air quality. We haven't had any employees with asthma, miss work or anything like that, that I'm aware of.*
- *In terms of air quality itself, I have known people who have physically moved from the area due to their children's health issues, like asthma.*
- *There is a lot more asthma, really serious cases that are made worse by the pollution.*
- *Mostly, I hear about health-related issues, things like asthma and allergies that are being contributed to by air pollution, but I don't know anyone who has gotten cancer or lung disease because of air pollution.*
- *I think the air quality has gotten better in the last few years. Obviously relating air quality to health impacts is important...there is a direct correlation between the air and the health of my constituents. The only thing I hear is that we under-regulate air pollution sources.*
- *I think the poor air quality prohibits old people from going out because they can't breathe when they are out there. I think the awareness about the Valley air quality is so much greater than it has ever been.*
- *It's a drain on our economy because we pay for all the hospital visits for asthma. Kids are missing days of school because of asthma and other health-related issues. It's really a drain on our society and economy.*
- *I think the biggest problem is allergies. I have it myself.*

Comments Regarding Business Impacts:

- *The air quality doesn't seem to be a big issue, but the regulations have been detrimental to employees... it's more expensive to do business here.*
- *The air quality problem has not been addressed. Our employees do not want to move families to this region. People are not moving into the District.*
- *Air quality has had little impact on me personally and the people I know. I know people who have trucking operations and they are going to be severely impacted by the new laws if they can't get financing for new vehicles.*
- *[The regulations] have been very detrimental businesswise. Unfortunately the [Air District] only has the authority to try to reduce emissions from stationary sources. They don't have the ability to go after automobiles, which I'm pretty sure is one of the biggest problems. Going after the stationary sources has been very detrimental to businesses throughout the Central Valley and I also think it has been unfair. It chases business away. If I could take my business and move it to another state, I would do it in a heartbeat. I can't because I grow trees here and they won't grow in another state.*
- *Rule 4570 [Confined Animal Facilities] was by far the most expensive rule that has been put on ...and it absolutely affects our community. We are the only state in the world that I know of that is under such expensive regulatory requirements.*
- *We have been really fortunate at the School District. We've been able to replace five of our older units and have been able to update five other ones. A lot of smaller organizations and businesses have not been able to make it because of financial costs...That's what I hear from people, especially in the trucking industry and construction, that the laws that are coming are hitting them pretty hard economically.*
- *It's harmed the business side enormously and has kept businesses away from the San Joaquin Valley. It has increased the cost and it's basically created a barrier of entry.*
- *The EPA put a 29 million dollar fine on us. It was outrageous. Financially it cost every driver in the valley.*
- *Regulations have affected [air quality]. I don't think it has direct connections to my own family or friends that I can think of. But I can say in general the way regulations have affected people is that in some cases it has meant loss of employment. I know of businesses that have closed their doors. I can't say it's the price of regulatory compliance, but it would certainly be a contributing factor.*
- *Given that I work for a manufacturer, the air regulations impact us dramatically, both in terms of cost and operational complexity. Cost has gone up dramatically since 2007, a few hundred thousand in additional fees.*
- *A lot of requirements have been imposed on industry, which makes life difficult on businesses. Residents in the Valley have to abide by regulations that more fortunate areas do not have to abide by. It's not the fault of the Air District, it's where we live in that traps ozone and pollution.*
- *Obviously, the agriculture industry has been tremendously affected through this and AG has been a willing partner towards cleaning up the air. Trying to help reach those standards has been costly for agriculture.*
- *Regulatory impacts have put a financial burden on stationary sources.*
- *Air quality has not been an issue with the people I work with or my family. Other than comments from time to time, we are definitely a winner with the lack of rain and where we live. I wish the air was a little cleaner. You can see the smog just hanging down. There has not been a lot of conversation.*

- *There have been times when the rules did not make sense and the people administering those rules were not even following their own rule book. That has given very poor feelings or thoughts about the [California] Air Quality Resources Board. They truly believe they are autonomous and are not held accountable.*
- *The thing that most people complain about is that it has cost too much to clean the air. Smog and diesel trucks have to be replaced, all we can do is suggest it, set a rule and enforce what we can. It's like a cop, you can't have a cop out there in the street for every person to stop the violating.*
- *Air regulations have cost me a lot of money. I'm in the oil business and of course it has impacted our business. These regulations, you don't put them on for free.*
- *I'm up in the mountains. It [poor air quality] doesn't impact us as much. They've reduced the cost of controlled burns, and that helps. The controlled burns have helped prevent catastrophic fires.*
- *[The air quality and regulations] have impacted everyone in the community. When we fall out of compliance with EPA regulations, the EPA requires a penalty to be assessed over the citizens of the air District and the last time around what basically happened was the penalty came around to approximately 41 million dollars, of which 29 million went directly against tax payers, the citizens, the population of the area and that was done through an additional fee. And it hurts the environmental justice areas, people who cannot afford an additional fee.*
- *Well, I think that it's probably definitely hampered business and some expansion plans, but a lot of it has probably been necessary. I would say much of it has been necessary and the reason for any improvement we have seen, it's definitely had a negative impact on the economy even though we have had a fairly decent economy in the valley.*
- *[The District] really has the most stringent boiler rules. When that was passed 5 or 7 years ago... they said it was going to cost \$25 million dollars. They really have strict source rules, even more stringent than South Coast in some instances. Stationary sources have put in a lot of money. The state is putting millions of dollars into passenger vehicles, which is good, but that doesn't impact emissions in the San Joaquin Valley.*
- *The company I work for sells outdoor power equipment and one of those is chain saws. People that I know cut wood to burn for heat. One impact [of regulations] is that people are not burning as much wood as they did years ago.*

Strategies for Improving Air Quality/Reducing Emissions

Respondents were asked what could be done to improve the local air quality and reduce emissions. Open-ended responses are presented below. **When discussing how to reduce emissions, stakeholders most frequently cited the need to reduce diesel truck emissions, followed by suggestions for encouraging carpooling, biking, public transportation and other alternatives to single-occupant vehicles.**

Q: Looking forward, what can be done in the Valley to reduce emissions further?

Comments Regarding Diesel Trucks:

- *Trucks come to our valley from outside and, except for state and federal regulations, we have no say over their emissions and they are the biggest polluters.*
- *All the companies are doing their part. Mobile trucks seem to be the biggest problem.*
- *They need to tackle the heavy duty trucks. The stationary sources is what [the District] is able to regulate, so they have squeezed them very hard but [the District] doesn't*

necessarily have the authority to regulate mobile sources like trucks. Vehicles are now 80 percent of the emissions inventory, particularly heavy-duty, diesel trucks. The state sets the standards for engines and the most recent one was in 2010 but there are engines that are much cleaner than those standards. They aren't diesel, they are natural gas or maybe natural gas hybrids. There is a lot of technology out there, but [the trucking industry] need to be incentivized to get the cleaner engines. We have local money as well as state money to provide that. People have replaced older diesel trucks with cleaner diesel trucks but it's still not enough.

- *Dealing with diesel needs to be corrected and we need to reorient the community away from automobiles, engage in activities like mass transit, walking, and biking.*
- *Do something with the traffic on the I-5 and 99*
- *The biggest problem we have are all the trucks on the road.*
- *I think it has to do with mobile source, I do have some first-hand information about what causes pollution and I have been involved with air issues for a long time. Mobile sources have to be controlled and tamed. The exhaust system for bigger trucks has to get better.*
- *Well, some of it will be technology driven, but some of it is just a turnover of automobiles, but the big thing is the turnover of truck fleets.*
- *We obviously need to deal with mobile sources, reducing the vehicle miles traveled, we need to stop diesel trucks, especially the origin and destination in here. We have lots of truck traffic, diesel that is just travelling through the Valley. It's almost criminal when you think of the asthma rates. We definitely need to manage interstate and intrastate transportation.*
- *There has to be a focus and an emphasis on mobile sources of pollution, such as diesel trucks.*
- *Right now 85% of our emissions would be from diesel trucks. We have 15,000 diesel trucks that are owned by small, either single unit operators or small companies. They were not included originally in any of the incentive programs until October 21st of last year, and literally there was only a month to let them know to get in line in for incentive funds. I would say the number one thing to clean up the air in the Valley would be put high-speed rail on hold and take those funds and take them from providing more surface water storage and use it to replace the semi-trucks on the road with new trucks that are much more energy efficient.*

Comments Regarding Local Vehicle Traffic and Alternative Modes of Transportation:

- *Our whole land use in the Valley is pretty much sprawl, and in Fresno they are trying to adopt a plan that is more walking, biking and transit. Compact development is smarter and more sustainable. That would help air quality.*
- *I think a lot of things can be done. The biggest concern is automobile and truck traffic. The NOx emissions should be reduced when the new law is implemented in January, but internal combustion engines will still be a concern. The trend toward electric and hybrid vehicles will reduce emissions in the long run, but we will need more charging stations.*
- *Well we need the public to participate even more than they are and they need to realize that their contribution makes a difference. Really it's through education. We need more education, more money dedicated to the different groups... we really don't spend enough money to get the message out to as many groups as we can on a big scale.*
- *Get people to park their cars and ride mass transit. I think the cars are the problem; we need to limit automobile travel.*

- *We cannot continue to put the burden of living in the Central Valley on the backs of business. We all need to be smarter on how we travel.*
- *I think somehow we need to get more ways to move people from point A to point B without using automobiles. And we need to get the older automobiles off the road and incentivize people to buy new, cleaner vehicles. I think with the tune-up program that we have, we are taking a lot of those vehicles off the road by getting repaired, but we need to somehow get some kind of transportation going in the Central Valley, like ridesharing off the 99 corridor, like commuting from Fresno to Madera, Madera to Fresno, and Madera to Merced that there is more ride sharing. We can find funding to do that.*
- *I think a lot of it has to do with mobile sources, a.k.a. cars. I think a lot of it is getting older cars off the road. Just when you look at the emission factors, these new late models versus cars from more than 10 years ago, the differences are tremendous.*
- *[The District] really has to sit down and have meetings with people to really brainstorm ideas.*
- *More rapid transit or public transportation. More incentives for electric vehicles or low emission vehicles.*
- *Automobile and truck traffic seem to be contributing major sources of pollution in the Valley that the District has little control over. I would hate to mandate the elimination of vehicle travel, but you could say it's the law that everyone would have to walk or ride a bike, but that wouldn't do enough for the regional economy, so I think the District is kind of in a hard spot.*
- *The citizens out there have to do the cleaning up. It seems that everyone wants to blame the Air Board, they don't want to blame themselves for it and they are the ones creating the pollution.*
- *Automobiles are 90-95% [of the problem]. I think the biggest culprit is automobiles and what can you say about that, that's the state of California. We can only focus here on mobile sources.*

Comments Regarding Agriculture:

- *I think having more programs to help replace older equipment has helped make a difference, such as programs to help purchase [low-emissions] trucks and tractors.*
- *Probably working with agriculture on the almond harvest and almond harvesting techniques. Almond harvest has increased over the years and the Air District is not addressing the almond harvest at all. The technology is there, it just has not been deployed by the agriculture industry and so the Air District should be working with them and as opposed to regulating them they should be using their war chest to invest in their technology held during the almond harvest.*
- *Improve the rules and regulations on everything that includes agriculture and berry industries. In addition to incentive programs for limiting development that increases vehicle trips.*

Additional Comments (No Burn Days/Gas-Powered Lawn Equipment):

- *Order rain more often [joke]. I don't think there is much more they can do. The only area that I think has room to grow is consumer gas products like lawn mowers and blowers. I would say it is in the consumer market that needs room for improvement.*
- *I believe we should ban leaf blowers. And ban fireplaces. Just flat ban them.*
- *[To further reduce emissions] we should look toward tightening the rules on burning-- including in the foothill areas—which have been exempt in the past.*

- *Fix the Bay Area. They are not held to the same standards. They are lax in their required emissions. It's all directed at the Valley where we import their air. Their air is invading us.*
- *Do more of the same. Encourage people not to use their wood-burning stoves for those key time periods.*

Awareness and Perceptions of District Programs

Healthy Air Living Program

In addition to gathering feedback on general issues related to air quality and air regulation policies, the study asked respondents about their awareness and perceptions of the Healthy Air Living Program, designed to improve air quality on a daily basis. **The majority of respondents participating in the study were familiar with the Healthy Air Living Program (31 out of 40), although a minority of respondents were unclear about the details of the program.**

Next, respondents were asked if they had a favorable or unfavorable opinion of the program. Nearly all stakeholders surveyed (35 out of 40) had a “very favorable” or “somewhat favorable” view of the program. Results are presented in **Table 1**, below.

Table 1: Perceptions of the Healthy Air Living Program.

| Scale | Score |
|----------------------|----------------|
| Very Favorable | 23 respondents |
| Somewhat Favorable | 12 respondents |
| Somewhat Unfavorable | No respondents |
| Very Unfavorable | 2 respondents |
| Not Sure/Refused | 3 respondents |

Respondents were asked to explain the reasons behind their ratings. Open-ended responses, organized by positive and negative comments, are presented below. **When asked why they had a favorable view of the Program, respondents most frequently reported that they believe the Program has been helpful in educating the public about air pollution and providing specific, cumulative actions that residents can take to improve the air quality.** The most frequently cited reason for lower ratings was the belief that the program does not tackle the biggest causes of air pollution, notably diesel truck emissions. A minority of respondents reported that the District should increase its efforts to educate the public.

Q: Why did you give that rating of the program?

Reasons for High Rating of the Healthy Air Living Program:

- *I think they are doing a lot of things that will really have an impact [on air quality]. They've gotten kids involved in the lower grades [through Health Air Living]. They are making sure the younger generation is acutely aware of what's going on.*
- *Anything that could help educate consumers on how they can reduce their sources of pollution is a good idea.*
- *[The Program] gives people specific things that they can do to improve. First of all it helps them understand why air quality is bad, and once you understand why it is bad then you know what you can do, you're in a role to improve it. It gives very specific tools and techniques and tells people exactly what they can do to help.*

- *Well I think that everybody should do their part, and getting the word out through your program is going to help. A lot of people do not know about those things.*
- *Good to know what's going on. It's a reminder that the air quality is not as good as it possibly could be. There have been days where I walk instead of driving my car or ride my bike.*
- *People are now realizing we have to do something and its being talked about on radio, television and newspapers. People are taking an interest.*
- *The District is trying to encourage education and reasonable action without hardcore regulations.*
- *It's helping us do what we are supposed to be doing. Making the rules and trying to get the air clean and trying to get the people to work with us.*
- *I think it is going in the right direction, but they can do more. Like, instead of asking people to make one change they should ask people to make huge changes.*
- *Well because of the mass advertising and commercials that they do. Promoting during the different seasons during the year—"make one change," "thank you for not burning your wood stove," I think the mass communication and advertising that they have on the radio, TV, and on the billboards—I believe it has had an impact on people wanting to make that one change and do what is good for the environment. It has brought more awareness to the District.*
- *I think education is very important and it [puts] the burden on the Valley residents to take charge and make change first hand and to do something about air quality. I think that would be the ultimate solution when everyone gets involved with the Valley.*
- *It empowers people to make their own decision based on the information given by the District.*
- *I think it's a very effective tool for the District to communicate to the right stakeholder. It's the right mechanism to get the information out there for people to take aggressive actions when necessary.*
- *I think it's important to educate the public and encourage them to do things that impact air quality as individuals. I think it's OK to share the burden of air quality with the community. I think [the program] has done a lot to bring air quality to the ground level.*
- *Because anything that gets public participation and awareness, and helps to get people aware of what's going on, on a day-to-day basis, with air quality will help to really lessen the effects of bad days, because people know, for example people should know when to stay indoors when the air is bad. We want people to be aware of our air situation which is only going to get worse when population increases.*
- *Because no matter how bad the situation is, turning a blind eye to it and saying there is nothing we can do doesn't help. We still have to do something every day so that it makes it better.*
- *Because they are getting the word out to people to do something about their fireplaces, take fewer trips and they are getting the word out for people to respond to it.*

Reasons for Lower Ratings of the Healthy Air Living Program:

- *The message of the current campaign is "Do One Thing." The normal people who live in the San Joaquin Valley don't know much about air pollution and there are other things that we can all do to reduce it. That's absolutely important but it's going to have to go beyond "one thing." You have to start somewhere but they need to move beyond that initial message. They try and get business partners and maybe they could do more to get those partners. You can always use more outreach to businesses. For example, a*

packing plant...they have hundreds of workers and they can set up carpool programs. Maybe they should have some brainstorming sessions or focus groups and invite people to discuss additional strategies.

- *Not many businesses are promoting the program.*
- *Well I think it's a good program to try to encourage residents to do what they can, but [there are] limitations for what residents can do. So many programs are outside of their control. [There are] very few exceptions, like burning wood fires and how they use air blowers, how long they idle their cars. There are a few things like that [that] each of us can do to help, even if we all did everything we could as individuals. The problems go way beyond that. There are no silver bullets to solve that problem, but if you only had one silver bullet, use it on diesel trucks.*
- *I think they are trying to do good things, their programs and communications are good. I would like to see more policing, for example, on the "No Light Tonight Program." I have a neighbor that religiously burns on no-burn days, but he waits till after dark so there is no way he is going to get caught. I don't agree with that, I think it's terrible. So things I would want to see in conjunction with that is more enforcing.*
- *[The Healthy Air Living Program] is a good start. But we are agriculturally based and travel is almost necessary for jobs. By penalizing people [for emissions] you are really penalizing the poor, working class [residents] because they have to live in cheap areas and their jobs may be in areas where they can get work. So, you have to look at the broader picture.*
- *More education, more and better outreach.*
- *It's useless, voluntary measures get no scores—boycott is ineffective and requires incentives.*
- *I think that it's politically motivated. I think its fluff and not addressing the real issues.*

Check Before You Burn/Burn Cleaner Program

In addition to gauging awareness and perceptions of the Healthy Air Living Program, respondents were asked if they had heard of the Air District's Check Before You Burn Program. **All stakeholders who participated in the study, with the exception of one individual, had heard of Check Before You Burn.** Next, respondents were asked how the District might encourage more people to take advantage of its incentive and rebate programs to purchase cleaner devices. Open-ended results are presented below. **The most frequently cited suggestions for increasing participation in the Burn Cleaner Program were increasing incentives to make the program more affordable, followed by additional outreach to ensure that residents are aware of the program.** Some respondents also suggested that the District continue to work closely with businesses that sell hearth and heating equipment.

Q: How can the District encourage more people to take advantage of its incentive and rebate programs to purchase cleaner wood-burning devices (Burn Cleaner Program)?

- *Make [the incentive] available to vendors as well. For those in homes with wood-burning devices there needs to be an increased incentive amount. For lower income the incentive is not high enough.*
- *They can do better with advertising, giving financial incentive so people can have an economic benefit to make the switch.*

- *They need to get a good outreach program and make sure people are aware of the incentives. I think there are a lot of people who don't know [what is available]. They need get the word out on local media, through advertising, and on television.*
- *I think we have to continue to get the word out. Right now most people get their information through tablets, laptops, mobile devices and television. I think you have to do more to get the message out from those media devices. I would think that the easier way is to offer a financial incentive, whether it be free or a much reduced price to get people to switch over.*
- *Well, you know they can make the program available to more people by offering it to more people, I think the way it works now is that it is only available certain times a year, very limited on how much they can do. Encouraging to people who actually sell these products, to help make it more widespread. Make it more affordable and have merchandisers to advertise it as well.*
- *Just more advertising of the availability of those incentives. I personally see those incentives and I think they do a good job. Advertise that in the newspapers. Ordinary people who have fireplaces in their homes need to see those opportunities. So they need to get it out and in front of people more and I think newspaper is the way to do it. I know they do it on the radio and I don't listen to any kind of radio that has advertising on it. The other idea I have is they should advertise more with the vendors that sell those cleaner burning fireplace apparatus because they will push the heck out of it because they got a stake in it to sell me and replace my fireplace.*
- *I would say continue doing outreach, I think one of the largest things that I see in the "EJ" community that I live in is a lot of the Hispanic communities do a lot of outdoor burnings, especially on the weekends when they are having gatherings, and it's open pits and they are barbecuing turkeys and having big bonfires. I think that would be a good area to educate folks on.*
- *It is very difficult now because of the recession. Let's say a device cost \$1000 bucks and they only give you \$200; they only cover 80% and people just don't have the money.*
- *Advertise more. A lot of people don't know of the programs that are available.*
- *Issue vouchers to residents that want to turn them in so people know there is X amount of dollars available, if they choose to retrofit their house.*
- *I think they are doing the maximum they can at this point. They are doing everything they can through newspapers, television and specific areas with advertising. I don't think they can do more.*
- *I think closer partnerships with retailers. It would provide retailers or give retailers more incentives for more advertising on cleaner burning equipment and they would advertise more if those rebates were available to them or their customers.*
- *I think just getting the word out to the different communities, whether that be through television or radio. Somehow we just need to get the word out on websites. We just need to get the word out, maybe attending fairs or maybe attending farmers markets, just making people aware that there are funds out there to change their wood-burning stoves.*
- *[The District] does quite a bit of outreach and advertising. I guess I would say I like the incentive approach to the extent that we can provide more funding to make contributions to help offset the cost of people putting in EPA approved wood burning devices and stoves to replace open-hearth burning. I like that approach versus the regulatory approach.*
- *I don't know if there's public information [going] out to folks about grant opportunities. Frankly there are more incentives for folks to move to cleaner wood burning devices. I think it's just more information that needs to be [given] to the community because I know that people are more sensitive to the check before you burn and folks burning fireplaces*

or wood burning stoves than they used to be, so part of that is air quality issues and also the message that has been provided to the community. So I think more information.

- *Ban wood burning; honestly, if you ban it and this is the only alternative, people, I think, would look toward it. If it was ever to go out of place, wood burning, I think it is still important to have the incentive in place. Not to take the incentives away now that it is mandatory.*
- *Well, I'm not familiar with the incentives for that program, so I can't say whether they should be increased, but I do know, for example, on the clean lawn mower situation when the District was supplementing the cost, so we traded in my gas mower for an electric mower. They paid about \$200 of the \$300 in the cost. I paid about \$150. That was very enticing for me to get that benefit.*
- *I know several people that I have recommended that they convert and they have. The problem is that they have a lot of folks that do not have the financial ability to do so.*
- *Get the message out during the season when people are buying those items.*
- *There are already restrictions and building codes requiring new homes to be built with cleaner burning fireplaces. I figured it was already taken care of with those existing regulations. If you're talking about trying to get people to replace [their existing devices], that's tougher. I don't know how you would do that. Do you think people are aware of the incentives? I would think so.*
- *Well I believe that many wood burners burn wood because of their economic status, they are trying to get low-cost heating for their space. They are not likely to spend \$3,000 or more for the installation of a clean fuel device because they do not have those kinds of funds. So, I think the incentive the District offers for \$500 is insufficient to attract those individuals to change their dirty burning devices to a clean burning device. Bottom line is they are going to have to increase their incentives if they want more participation.*
- *Well, I think they had a program where they had at one time a program: trade in your old fireplace or upgraded and you would get an incentive. I've heard now new houses are being built without fireplaces in the home.*
- *More education. People don't know about it [the incentive programs]. A lot of people don't read the papers. We are a very poor county so a lot of them don't have TVs and many don't speak English.*
- *One of the things that I have tried to be involved in and I really think is important and as a result, what we are looking at doing is make the program available for property owners, for example landlords can actually participate in the programs, they need to be able to participate in programs. That can be done through an educational process, through local entities like real estate boards and things like that. If we want to get people to stop burning wood we need to get the landlords newer and cleaner devices and we need to incentivize that.*
- *I think that they should do what PG&E does when they wanted to move people towards using less electricity—they gave rebates. That's effective when people are looking to spend less money, and when you hit that you will get a better response.*
- *Outreach through community benefit groups, organizations and non-profits.*
- *Right now it's only when a house switches hands that they have to upgrade. Also, people who are exempt maybe shouldn't be exempt.*

Perceptions of the District and Air Quality Policies

Balance Between Public Health and Economic Prosperity

Respondents were asked how well they think the District balances public health with economic interests. **Overall, the majority of respondents reported that District was doing a good job balancing public health and economic interests even though some stakeholders believe more or less regulation is needed.** Although many respondents expressed concern that the District does not do enough to protect business interests, the majority of stakeholders described the District's policies as reasonable given California requirements and local economic concerns. Commercial stakeholders were more concerned about compliance requirements imposed on business than were citizen advisory committee members and other District stakeholders.

Q: How well do you think the District balances protecting public health through regulation and helping to ensure the Valley's economic prosperity?

- I believe the District does a really good job. I think they do a balancing act. I have been very impressed with the outreach they have done. Everybody thinks the Air District is heavy handed. People don't understand that we are trying to meet federal regulations in order to be able to put more money into our grants programs to help people to change out their wood stoves or purchase cleaner burning lawn mowers, or help tune up their cars so there isn't any bad stuff going into the air.*
- It's a tough balance we are always keeping our economy in mind and the economy in the Valley is always a bigger challenge when the new regulations are being imposed. I would say we have done a good job to keep balance and we have always thought out new incentive programs and grants that we can get for the federal governments.*
- The Valley Air District has done a tremendous service for our valley and our community; it's a model for the nation, other people are looking at we do. All we have to do is look at people in China who are walking around with masks--that's what zero regulation is. And so once more people realize what they are doing makes a difference, people can make a small sacrifice to improve air quality.*
- I just think the Air District is doing a great job. I think that we, as Valley residents, live in a fish bowl and unless we can do something about the cartography of the mountains surrounding us, the District is doing all that they can with the air.*
- I think the District does an excellent job at that [balance protecting public health]. That's the hallmark of the District, achieving measurable and significant air quality, while working closely with stakeholders who are impacted by regulatory decisions to attempt to work in better ways so they are able to stay in business.*
- I think they are doing well in a very difficult circumstance.*
- I think the board is very much in tune with their constituents on what they can and can't do. What they do very well is they have the industry help write these rules. If I am in industry I am more apt to follow a rule that I helped write than dictated to. I think the board does an excellent job on how they are regulating the rules right now. Everyone has to give and compromise.*
- It can improve. I recall during conversations and meetings with the District the focus is on not hurting business and jobs, but the focus and improvement should be on other [economic prosperity]. It should not be one or the other.*
- [The District is] heavily weighted on money and not enough on air quality. Define short term horizon, how is it going to [encourage] businesses and people to live and move to the area in the next 10-15 years. The economic viewpoint has to be long term, not short term.*

- *I'm not sure what regulations the District has in place, but there has to be a fine line [between public health and regulation] so that the economy doesn't tank. The Valley's economy is agriculturally based and that produces a lot of pollution.*
- *I give them a failing grade at this point. I think they are abusive and hard on the Valley businesses. I think they would like to do better by the businesses, but I think they are being sued by the environmental groups. I think they are caught in the middle. I think the businesses have the least amount of dollars to sue back so the environmental group is winning at this game. I think it's more than a game, it's very serious, but I feel sorry for the air board because I know they are caught in between environmental activist and the EPA. And I don't know where the air board goes next quite frankly, their goals are unattainable. I know their goals are unattainable because the air board told me the goals the EPA and environmental groups are unattainable.*
- *I think they have our health at the forefront.*
- *I think there is a very thin line the District has to balance. I think first and foremost the District is a public health agency and their job is to protect public health. I sometimes wonder whether trying to protect the most sensitive groups is sometimes fruitless at the same time a token... I think they do an outstanding job to protect the overall majority. In the end it's obvious in my opinion, I mean I come up on top of the overpass every day and can have a clear view of the Sierras and the Coastal Range and that is proof in the pudding that the rules that the District has has really good effects.*
- *I would say 3.5, favorable, [but] not doing enough. That's my personal opinion.*
- *I don't think they are too strict. I think they do a good job.*
- *I think there is a total disconnect. I think it's a terrible relationship. I think the District is catering to CARB and EPA and I think that it has totally forgotten their constituents of the Valley. I think they are harming the people of the Valley.*
- *I think they are doing a very good job.*
- *I think they do a reasonably good job. I think there is more room to improve that. I think it's in the way for incentives and grants for small businesses to comply.*
- *I think the District works hard to try to maintain that balance. Because the District is public health focused organization and is also trying to do so in geographic constraints that we operate under, as well as the economic circumstances the Valley faces. The District and board tries to make that balance every time we face those decisions.*
- *They have done a very decent job. The administration and staff at the District, in my opinion, have done a good job outreaching towards those individuals that will be affected to try and come up with economic incentives or different ways of obtaining goals that are more realistic. They try to work with the stakeholders to reach the goal while taking into account the business community.*
- *Wow, that's a complicated balance. I think they try really hard so I would say they are doing a good job.*
- *Well, as far as I know, it has been fairly balanced. I would be more aggressive on supporting local government and adopting and maintaining a simple growth plan that would reduce all vehicles travelled.*
- *I think the District does as much as they possibility can as far as information is concerned and the California Air Board and they dictate what we can and cannot do. The District has some flexibility, but most regulations come out of Sacramento and Washington DC from the EPA. I believe that most people in this area, the San Joaquin Valley, are very aware what we are trying to do and what other people need to do to clean the air.*

- *Not well. It's not working because of greater problems [are at] the State level. The regulations have just become so exhaustive that businesses just can't afford to be here. Those that are left, pass on the cost to consumers.*
- *You have to tag the problems to individual [segments] in the industry, not across the board. The fuel industry and the farm industry, they all deal with different components of the ag-industry. A tree farm is not going to be the same as a cow farm, a cow farm is not going to be the same as a cotton farm. So when you are looking at the ag-industries you have to break them down and do a needs assessment as opposed to applying a blanket policy. The industry does not fit into one box.*
- *San Joaquin Valley Air Pollution Control District is exceptional at that [balance]. They do a really good job and that is partly why they are so successful. They understand that there are limits to what they can mandate and still have people stay in business...The problems come from the State and Feds in their ivory towers. [The State and Fed] don't really care what the effect is on the individual.*
- *I think at this state of this game, or at least until old timers get older and die off, the District is always going to be blamed for the loss of jobs. They have done some strict pollution regulations that have been imposed on industry and stationary sources that have added a lot on the perception that regulatory climate in Southern California is not business friendly. I believe the District needs to try and maintain a balance, but the early regulations may have crippled businesses that may be gone now.*
- *Well, the economic prosperity is we help the programs help and people don't want to take advantage of it and then again that goes back to the people.*
- *Well, the standards are set to public health and that's their goal, continuously their goal is to meet the...the standard is set through the EPA and CARB to protect health. That's a kicker, they are trying, the board itself takes into consideration the economics and to have a healthy business climate that is constantly on their mind, so that's always what we start when we are making the rule making process.*
- *It's a delicate balance. It's very, very important that the public understands that this [the regulations] are for their health. A lot of people don't realize the connection between what they do and air pollution. They don't get it.*
- *It's a tough thing but I think the District does as well as it can. [The District] has to be mindful of the decisions that it makes and how they will impact businesses. I think they do a really good job of balancing that.*
- *I think they are doing a really good job, the District has a really good program through industry and agricultural through the different associations and entities that represent different segments of those entities. Working with them has been very cognitive, give and take, accomplishing the goals the District needs to take to get the air cleaned up. I would say they have done a fantastic job.*
- *I think they are trying, but I don't think they are doing a good job.*
- *They do a fair job... but I think they need to do more.*
- *I think they do as well as they can. They try very hard.*

Regulatory, Voluntary, and Incentive-Based Policies

Finally, respondents were asked if there were any unregulated consumer activities that they thought were appropriate for additional District action and, if so, whether they would recommend regulatory, voluntary or incentive-based policies. **The most frequently cited areas for additional action were school-site idling and drive-through services followed by gas-powered lawn care equipment. When asked what type of policies they would recommend, respondents most often recommended incentive programs.** Stakeholders were evenly split

in their support of regulatory and voluntary measures. Many respondents recommended all three approaches. As one respondent explained, *“It’s not one or the other. You have to use those [regulatory, voluntary, and incentive-based policies] all in concert. Some things have to be regulated and there has to be some incentives. Obviously we need to get people to voluntarily do some things. They don’t work in isolation of each other.”* Selected comments regarding regulatory, voluntary, and incentive-based programs are presented in **Table 2**, followed by comments regarding the activities that the District should consider addressing.

Table 2: Selected Comments
Regulatory, Voluntary, and Incentive-Based Policies
 (Multi-Response Question, Respondents Could Recommend More Than One Approach)

| | |
|---|--|
| <p>Regulatory (13 Respondents)</p> | <p><i>Leaf blowers should be regulated, you can’t depend on volunteer measures.</i></p> <p><i>You have to make some things mandatory to get people’s attention. When we hold town-hall meetings, if it’s about regulations we have 200 people, if it’s about education we get 60 people. Those regulations are controversial but you have to make it matter to people.</i></p> |
| <p>Voluntary (13 Respondents)</p> | <p><i>We should start with voluntary measures and see how that works.</i></p> <p><i>You can get a lot done with volunteer efforts.</i></p> <p><i>School idling must be voluntary, but regulator or incentive programs are important to address other questions.</i></p> |
| <p>Incentives (18 Respondents)</p> | <p><i>I think incentives and education are more effective. I really hate to see rules and regulations come down to the kind of detail there is now... There is a point where you are not going to get the bang for the buck for the kind of disturbance you are causing in people’s lives.</i></p> <p><i>Incentives work best for lawn equipment and carpooling.</i></p> <p><i>I think [incentives] work. There are a lot of options, including financial incentives.</i></p> <p><i>They should be incentive based.</i></p> <p><i>Regulations are hard to enforce and would place a burden on one class of people, but if you can incentivize that would be better than a mandate.</i></p> |

Q: Are there any unregulated consumer activities (e.g. lawn care, drive-through services, or school-site idling) that are appropriate for additional District action? Please explain.

- Leaf blowers, especially since the District covers a big landscaping industry. Especially summer and fall. Idling at school, it is so hard to enforce this behavior, but it should be regulated. Also, the carpool lane should create more outreach and be more enticing. We should give incentives based on tracking how many miles you drive in the car pool lane.*
- Lawn care needs to be incentive based. Politically, lawn service people are poor. And for idling, it needs to be much easier to walk or bike to school, it's a federal-state problem, encourage walking and biking. There is always an excuse for parents to pick up their children but in the long term they are hurting the lungs of their kids. Society is very short term focused.*
- There has been a lot of discussion of cars idling in fast food lines and at schools. I'm not sure how much needs to be done in terms of regulation. I think the issue is awareness. People don't know [the impact of idling.]*
- I don't know, I think a lot of those things would be hard to regulate first of all, so like drive-through idling, how do you regulate that? Lawn care, it has to be balanced between what you can do to reduce emission, but at the same time making it so that the people who are performing those services are not impacted financially. I think it's a balancing act.*
- Well, you know it gets back to what business can and cannot do again. The whole debate about drive-through and whether those are harmful have been debated. Just look at the number one fast food in the country, Subway, and they don't offer drive through services. Fast food companies say it's for their business, so it can't be just that. Educating the parents and schools, I think more can be done there. Once parents realize that they are sitting there idling is way more harmful. Getting more people to walk to school or riding their bikes. A lot more can be done with educating people.*
- I get really frustrated when you drive through town and there are numerous lawn folks who have their leaf blowers and they are blowing leaves, dust and dirt onto the street and the vehicles are blowing it right back on the sidewalk. I tend to wonder what they are accomplishing... it seems to be a continual cycle never getting anywhere.*
- Those are all for just attention, they don't address the true issue. The true issue is that 80% of the pollution in the valley is from mobile sources.*
- We need to approach the school district and somehow make people more aware of how idling effects the bad air we have. I think we can do more education through the District. [It] is the only thing that I can see.*
- I think school idling is a big issue. We have told parents to turn off their engine when waiting...in hot weather they like to keep it on. I think regulation may be a good idea.*
- A lot of folks are opposed to drive-throughs, but the analysis shows that unless you are going to be sitting in a drive-through for an extended period of time, you actually may have more emissions from turning off your car than turning it back [on]. We have to avoid reacting to people's intuition and rely on sound science.*
- Lawn care, may be one area of focus, but it's relatively small compared to mobile source emissions*
- Just make people aware, don't regulate. If you start with education and reasoning, most people are going to comply. That's how recycling first got started in Fresno in the 1970s—through education and voluntary actions. People are regulated to death.*
- Some cities have [placed] bans on drive-throughs, which I think is a big source of idling cars. I know they have changed the procedures at schools so you're not encouraged to sit there and have your car running.*

- *Well nobody wants their activity to be regulated, so by encouraging innovation and technology is to improve quality of equipment or reduction of emissions from that type of equipment, to increase education, and to try and continue to teach principles to community members of their importance or their work or their actions contributing to their reduction of air pollution. Their services to be best provided.*
- *All we can do is suggest that they kill the engines when they are waiting for the kids. And we've done that, we had the flag program where they can wait to pick up their children near the flags, and they don't realize what the flag is all about. We advertised the flag program and now we have spots on TV where all board members get on there and suggest something. What else can we do?*
- *There needs to be more regulations on drive-throughs and trucks.*
- *We have to be careful not to cross that line between regulations and infringements on civil rights. So, to tell someone for example that they can try to shut down drive-throughs at restaurants, but I don't think legally we can do that and the impact on businesses would end up costing thousands of dollars.*
- *I think the dairy and AG industries are an even more important target.*
- *School-site idling is huge. Our son rides his bike to school and it's less than a mile and a half. I understand that people are nervous about kids on the street, but we really need to get back to the culture when kids walked. Get parents to chaperone neighborhood kids. It's promotes a healthy lifestyle.*

Suggestions for Additional District Action

Lastly, respondents were asked if they had any other suggestions for the District. Open-ended responses are presented below. **Many stakeholders recommended that the District increase its interaction with its constituents, including face-to-face opportunities to explain programs, gather feedback, and increase visibility.** Other suggestions included multi-lingual materials and an increased budget for public outreach.

If you could you could give the Air Pollution Control District one suggestion, what would it be?

- *They should have more materials in different languages. There should be more robust campaigns for multi-languages, other than English and Spanish.*
- *Be more aggressive, and don't have a political agenda.*
- *Make sure you know the word is being disseminated to everyone. Not only is it necessary to conduct outreach, but also follow-up to see if the outreach is working and how it could be improved.*
- *Continue on with the zero emission program where it is incentive based where consumers and homeowners in general have the opportunity to purchase things that are cleaner. Give consumers an incentive to switch over to cleaner or zero based emission.*
- *They need to increase their outreach budget. Because right now the way they take those dollars and split them... It just needs to be out there more than it is. It's a function of cost, they only have so many dollars.*
- *I think they need to pause, they have done really good. They need to let us all get a breath of air and we will strive for something cleaner burning in our next phase. We need a little breathing room.*
- *I've had the pleasure with working with them now for a decade, and I've said this in many public meetings, if other [regulatory(s)] would follow the paradigm of San Joaquin Valley, my job as environmental director would be so much easier.*

- *[The Air Pollution Control District should] make it easier for people to take advantage of their programs. Make it friendlier. Send more people out in person to explain the benefits to individuals, organizations and businesses. Let people know, "Hey, here we are and this is what we are trying to do." Some of these people don't have access to the Internet and computers. Start implementing pilot programs and show results. That will encourage more people to make changes. Give people a chance to use a vehicle or equipment for a year. Test it and see what it does. I think that would work.*
- *Stop catering to CARB and EPA; remember who they work for.*
- *I think they are doing an excellent job so I don't have any objections.*
- *To continue to be user friendly and market [their programs]. Do more marketing so that they aren't perceived as a regulatory agency and more as an agency for the people.*
- *Continue doing the great things that they are doing.*
- *Be more visible in the community.*
- *Probably working as aggressive as possible with California [Air] Resource Board on trying to reduce mobile sources.*
- *I think they are doing a really good job given the difficult circumstances, unfortunately if God had wanted to create the perfect location he would have done better than the San Joaquin Valley. We're plagued by the fact that we are the east/west [corridor] for transporting goods. We have so many kinds of diesel trucks that make no contributions to the Valley. They are just passing through and leaving the pollution to be cleaned up.*
- *I would just say, continue the efforts in terms of public information and education because I think the more informed our Valley constituents are about air role and impact of air quality and the challenged regarding air quality the better they are making decisions about that.*
- *I'm an environmental manager for a plant so I deal with them regularly and they have been very supportive, flexible and have done what they can to help me. And other times they are not very flexible, I guess the only comment I can make there is within the guidelines be a little more flexible. I'm not complaining like I said, they have helped me lots of times.*
- *Probably investing in demonstration projects that would increase walking, biking and transit throughout the Valley so helping to finance the infill development and transit-oriented development in cities like Fresno and other cities that are trying to offer some alternatives to low density sprawl.*
- *[I recommend] having a summit with people with life experience and enthusiasm and combine that with those with education to better understand the situation. All of that needs to be part of the component. You are dealing with people's lives and their livelihood.*
- *They seem to do things in a coherent way, thoughtfully. I have no suggestions.*
- *Well I think the rules they have established are pretty complex, it's really hard for individuals who do not have significant training in those areas to try and even to be able to decipher and determine what the requirements are, so they often find themselves on the end enforcement action by the Air District, which makes people to cooperate less.*
- *Continue working the way we are working. Try to get the people to work with us because if they don't want to work with us there is nothing else we can do.*
- *I would probably want to make sure that all decisions are scientific, are good science. No regulations are not based on good science.*
- *I think that we should ask what people think about how to regulate traffic and drive-throughs. Those are the big problems we're facing.*

- *Continue to take a proactive stance in not only keeping the air clean, but proactive politically and to not be afraid to actually litigate against the EPA or the ARB as necessary, don't be afraid to go after them.*
- *To be more bold in their rule creation and rule enforcement.*
- *I would say to keep doing what they are doing with one respect, I think they are maintaining a balance on health and on the impacts on their recommendations or decisions on the economy. Maintain that balance.*
- *I really think they need to more about the particulate. We've had horrible episodes in the last year. For planning purposes, they [the District] don't have to count these really bad episodes. It's allowed by the EPA as an "exceptional event." The air quality will get marginally better after one of these events and then they [the District] will lift the no-burn restrictions, which doesn't make sense.*
- *Look back at the Remove Program, might be other worthwhile programs. Look at the highest dollars vs. reduction of air pollution. Do not limit based on budget because there can be great programs that can help eliminate air pollution, but can't make the cut.*
- *I just think the board and the Air District need to take a serious review of their allegiance to CARB and the EPA versus the economic damage that has been [done] to the Valley.*
- *It seems like to me they are trying to find ways around this thing instead of going towards and through the people.*

**APPENDIX A:
INTERVIEW GUIDE**

**Valley Air District Residential Wood Burning, Lawn Care, and Commuting Study 2014
Community Stakeholder Interview Guide**

INTRODUCTION

Hello, my name is _____ and I'm calling on behalf of the San Joaquin Valley Air Pollution Control District. Is this _____ [confirm name of individual being interviewed]. I have you scheduled for a brief interview. Is this still a good time? [Reschedule if necessary]

We are speaking with various community stakeholders about their perceptions of the air quality in the San Joaquin Valley and the various programs that have been implemented to reduce air pollution.

I. Perception of Air Quality

1. Using a 5-point scale, where 5 is Excellent and 1 is poor, how would you rate air quality in the San Joaquin Valley overall?

5 4 3 2 1 Not sure/Refused

2. Thinking back over the last 5 years, would you say the air quality in this area has gotten better, gotten worse, or stayed about the same?

Gotten Better
Gotten Worse
Stayed the Same
Not sure/Refused

3. Looking forward, what can be done in the Valley to reduce emissions further?
4. Could you describe how the air quality and/or air quality regulations in this area have impacted your [customers, employees, constituents, members, family], if at all?

II. Awareness and Perceptions of Healthy Air Living /Check Before Your Burn Programs

5. Have you ever heard of the Valley Air District's *Healthy Air Living* program?
Yes (go to modified Q7)
No (go to Q6 & Q7)
Not Sure/Refused
6. *Healthy Air Living* is a program designed to improve air quality on a daily basis. This includes reducing the number of miles driven each day; reducing pollution created by equipment such as leaf blowers and lawnmowers; and encouraging development of cleaner energy sources. The program provides specific information and incentives so San Joaquin Valley residents can voluntarily reduce air pollution.

7. Now that you have some/more information about *Healthy Air Living*, [do you have a favorable or unfavorable opinion about the program? (Is that very or somewhat?)] (Ask only second part if response to Q5 is Yes)

- Very Favorable
- Somewhat Favorable
- Somewhat Unfavorable
- Very Unfavorable
- Not Sure/Refused

8. Why is that? [rating of *Healthy Air Living* program]

9. Have you ever heard of the Valley Air District's *Check Before You Burn* program? (Explain if needed)

10. How can the District encourage more people to take advantage of its incentive and rebate programs to purchase cleaner wood-burning devices (*Burn Cleaner Program*)?

III. Perceptions of the District and Air Quality Policies

11. How well do you think the District balances protecting public health through regulation and helping to ensure the Valley's economic prosperity?

12. Are there any unregulated consumer activities (e.g. lawn care, drive-through services, or school-site idling) that are appropriate for additional District action? Please explain.

13. If you recommend action on Q12, should that action be regulatory, voluntary, incentive-based, or other.

- Regulatory
- Voluntary
- Incentive-based
- Other (explain)

14. If you could give the Air Pollution Control District one suggestion, what would it be?

"They seem to do things in a coherent way, thoughtfully. I have no suggestions."

15. Those are all the questions I have. Is there anything you would like to add?

Thank you for your time