

TREASURE VALLEY AIR QUALITY PERCEPTION STUDY

Prepared for:

- *Community Planning Association of Southwest Idaho*
- *Idaho Department of Environmental Quality*
- *Ada County Air Quality Board*

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EXECUTIVE SUMMARY

The Community Planning Association of Southwest Idaho (COMPASS), in conjunction with the Idaho Department of Environmental Quality (DEQ) and the Ada County Air Quality Board, undertook this study to learn more about the perceptions residents of Ada and Canyon Counties have regarding air quality in the Treasure Valley. The study's two primary objectives were to determine which types of messages about air quality resonate with the area's residents and to determine the most appropriate mode for communication and outreach regarding those messages.

To accomplish the study, Chavez Survey Research, Inc. and the University of Idaho's Social Science Research Unit (SSRU) conducted focus groups in April, 2012, followed by a telephone survey beginning in late June and ending in early August, 2012.

KEY FINDINGS

- Poor air quality triggers health problems for many respondents and its impacts on personal health and the health of children is the information that would grab attention the most.
- Respondents consume local news often and, as it pertains to information about air quality, most obtain it from television and to a lesser degree newspapers. Despite consumption of news or the source, respondents do not feel highly informed about air quality issues—other than simple air quality ratings—and are open to learning more about almost any air quality issue.
- Respondents prefer to receive air quality information mostly via public service announcements and websites.
- There are essentially no statistically significant differences between respondents of the two counties in their opinions of air quality issues.

PERCEPTIONS OF AIR QUALITY

- 75% of respondents say air quality is good or very good.
- 72% of respondents say air quality hasn't changed or has become somewhat worse.
 - Respondents having lived in the area less than five years are more likely to say they've seen no change in air quality and are less likely to say its gotten worse.
 - Respondents having lived in the area 5 to 10 years are more likely to say there's been no change in air quality and are less likely to say its gotten worse.
 - Respondents having lived in the area more than 20 years are more likely to say air quality has gotten worse.
- The top four *factors contributing most* to poor air quality—having a moderate to significant contribution—are wildfires (81%), vehicle emissions (80%), pollen and other allergens (61%) and weather related causes (60%).
 - Respondents having lived in the area less than five years are more likely to view emissions from industry and agriculture, and smoke from outdoor burning, as being the largest contributors to poor air quality.

- Respondents having lived in the area 5 to 10 years are more likely to view emissions from agriculture and smoke from outdoor burning as being the largest contributors to poor air quality.
- The top three *factors with the greatest negative impact* on air quality are vehicle emissions (41%), wildfires (22%) and weather related causes (11%).
- Canyon County respondents are less likely to say vehicle emissions have the greatest negative impact and more likely to say wildfires and industrial emissions do. Ada County respondents are more likely to say vehicle emissions have the greatest negative impact.

PERCEPTIONS OF POOR AIR QUALITY'S EFFECTS ON HEALTH

- 43% of respondents say poor air quality has triggered health problems either personally or in other household members.
- The health problems mentioned most commonly are allergies (70%), asthma (41%), difficulty breathing (22%) or headaches (17%).
- The air quality factors impacting health most—40% or more saying the impact is significant or extreme—are pollens and other allergens and wildfires. 30% say vehicle emissions have a significant or extreme impact.
- When it comes to taking actions to reduce exposure to poor air quality over a year's time, respondents tend to fall into two groups: The majority which takes no or infrequent action and a minority which takes frequent action.
 - Shut windows – 63% shut them five times or less *or* never but 26% did so 10 or more times.
 - Limited outdoor activity – 76% limited activity five times or less but 13% did so 10 or more times.
 - Used an air purifier – 80% did not use one but 15% did so 10 or more times.
 - Left town – 90% did not leave town and just 1% did so 10 or more times.

AIR QUALITY INFORMATION USE

- 72% of respondents consume news at least 5 days a week but when it comes to feeling informed about local air quality issues, 71% say they are either somewhat informed or slightly informed, with the degree of being informed increasing with age.
- Respondents say they get most of their air quality information from:
 - Local television network affiliates (52% of which 50% is KTVB).
 - Local newspapers (21% of which 79% is the Idaho Statesman).
 - The Internet (12% of which 29% is on search engines).
 - Local radio stations (5% of which 44% is BSU Radio/NPR).

- The top sources of information about air quality respondents say they've used are:
 - Local news broadcasts (89%).
 - Weather.com / The Weather Channel (59%).
 - The National Weather Service (53%).
 - DEQ (21%).
- Respondents prefer receiving air quality information via public service announcements (74%), on websites (59%), from reading material such as pamphlets or brochures (36%), at an air quality information booth (36%) or via smart phone or tablet apps (31%).
- If they have specific questions to ask about air quality, respondents are most likely to contact a state or local agency by phone or via an agency website. When contacting by phone, 37% say they would call DEQ and 12% say they would contact an Ada County agency such as the Ada County Air Quality Board, Ada County or ACHD. When contacting via a website, 40% would use DEQ's website while 14% would use the EPA's site.

AIR QUALITY MESSAGING

- Most respondents (77%) say they remember a message about the area's air quality in the past year. Most say they saw it on television (74%) and a few heard it on radio (8%) or read it in a newspaper or printed material (6%) and felt it was very useful (36%) or somewhat useful (43%).
- In terms of message content and what respondents can recall, it's clear that most of this information is being delivered during the weather portion of local news broadcasts. Respondents most commonly recall seeing or hearing references to the air quality index, color scales or other ratings as well as pollen and allergens counts. Other air quality news commonly recalled is associated with wildfires.
- Respondents say they would like to learn more about air quality issues in general. Of the choices provided, 75% of respondents would like to learn what the biggest contributors to poor air quality are, 70% would like to learn how they can make a difference and 68% would like to learn what specifically makes up the pollution.
- The type of information about the area's air quality that would grab attention most is impacts on personal health (43%), impacts on children's health (24%), impacts on outdoor activities (12%) and impacts on the environment (10%). Additionally, older respondents say they would take more notice of information about impacts on personal health and the environment while younger respondents would take more notice of information about impacts on children's health.

AIR QUALITY ACTIONS AND REGULATIONS

- Respondents' beliefs in actions that would improve the area's air quality and those they report they've taken may be considered in future messaging.
- Actions which respondents believe would have the greatest impact on air quality (40% or more saying the impact would be large or very large) are:
 - Keeping vehicles well maintained (51%).
 - Meeting vehicle emissions guidelines (48%).
 - Biking or walking to work or errands (45%).
 - Carpooling (42%).
 - Using public transportation (40%).
- Actions respondents say they have taken to improve air quality in the past year are:
 - Keeping vehicles well maintained (95%).
 - Meeting vehicle emissions guidelines (93%).
 - Reducing idling (71%).
 - Refraining from outdoor burning (56%).
 - Biking or walking to work or errands (43%).
- Sufficiency and knowledge of air quality regulations:
 - Vehicle emissions regulations are felt to be sufficient and are well known.
 - Residential burning regulations are felt to be sufficient but 25% don't know them.
 - Respondents having lived in the area less than five years are more likely to feel regulations on residential burning are sufficient.
 - Respondents having lived in the area five to 10 years are more likely to feel regulations on residential burning are somewhat insufficient.
 - Respondents having lived in the area 10 to 20 years are more likely to feel regulations on residential burning are somewhat insufficient.
 - Respondents having lived in the area more than 20 years are more likely to feel regulations on residential burning are sufficient.
 - Industrial and Agricultural regulations are felt to be less sufficient but many don't know them (30% don't know industrial / 38% don't know agricultural).
 - Respondents tend to know about burning bans, with 46% saying they are very likely to be aware of them and 28% being somewhat likely to be aware.

DEMOGRAPHIC CHARACTERISTICS

- The respondent group consisted of 455 residents of Ada County and 408 residents of Canyon County.
- Time lived in the Treasure Valley
 - 11% less than five years.
 - 26% of these respondents moved to the Treasure Valley from California, 14% from other locations in Idaho, 9% from Washington and 7% from Arizona.
 - 14% five to 10 years.
 - 25% 10 to 20 years.
 - 50% More than 20 years.
- 14% of respondents own a business.
- 24% of respondents have some college education and 53% have a college degree or higher.
- 89% of respondents are white.

SUMMARY OF CONCERNS OR QUESTIONS COMMENTS

- 13% of all respondents made a comment about needing better public or alternative transportation or commented on improving the road system.
- 12% asked a question, needed information or had an idea that may be useful.
- 11% commented on industrial, agricultural or construction emissions.
- 10% commented on inversions, smoke in the air or weather as an uncontrollable factor in air quality.

REPORT ORGANIZATION

This report begins with broad conclusions and drills into deeper detail with each section. Thus, we encourage taking time to review the report in its entirety in order to gain a full understanding of what was learned.

The Executive Summary (above) provides a quick take-away of the findings and is followed by the Methods section. The Frequencies and Significant Comparisons section displays tables of findings and their interpretation. Color highlights are used to help associate text with table data. The colors themselves signify nothing. In addition, percents contained within tables are presented with two decimal points but have been rounded to the nearest whole number within written text for clarity.

Three appendices—the text of the invitation postcard, the survey instrument and tables of non-statistically significant cross-tabulations (where the p-value is > 0.05)—are included in this document.

Included within the Frequencies and Significant Comparisons section are comments referring to the content analysis summaries for questions offering an “Other” open-ended comment. During content analysis, each comment was reviewed and classified into a theme. At least three reviews of comments for each open-ended question was made. In the end, the final themes provide an organized reflection of the thoughts and opinions of the respondents. The Supplemental Document, provided separately from this report, contains summary and categorized tables of all open-ended questions’ comments. In this report, references to these tables are made as “SD-Table ‘X’”.

The Focus Group Supplemental Document, provided separately from this report, contains summary tables and a categorized list of all focus group comments made and is presented as an Excel document to allow data sorting.

METHODS

To learn what air quality issues were top of mind to Treasure Valley residents, a series of eight focus groups were conducted April 16-19. Participants were recruited from a random sample phone number list of residents living within Ada and Canyon counties. Four sessions were held in each county using a script, or series of questions, developed to help guide each session. A total of 60 residents participated; 30 residents from each county. Content analysis of the sessions' transcriptions showed that, on average, each participant made 19 comments pertaining to air quality or the environment. Through content analysis, comment items were categorized into 15 main themes and 77 sub-themes. The knowledge gained from the focus group sessions was then used to help guide the development of the telephone survey questionnaire ([Appendix A](#)).

The telephone survey used a dual-frame survey methodology, with samples drawn from household landlines in Ada and Canyon counties, as well as a random digit dial sample of wireless phone numbers for Ada and Canyon counties. The sample was stratified by the two counties in Treasure Valley (Ada County, n = 3,558 and Canyon County, n = 2,240).

To increase the telephone survey response rate, a pre-calling postcard was sent to all landline respondents. The postcard stated the SSRU would be contacting the household within the next week, the purpose of the survey, and provided a toll-free number to call the SSRU if they had any questions or concerns regarding the study ([Appendix B](#)). Calls began (for the wireless respondents) on June 25. Calls for the landline numbers began July 9 and all calling ceased on August 9. Each number in the sample was called at least eight times in attempt to complete an interview. Interviewers made calls during the work week in the mornings, afternoons, evenings, as well as on Saturdays 10:00 a.m. – 2:00 p.m. PST in an attempt to reach as many potential respondents for this project as possible. Calls were not made the week of July 2-6, due to the holiday. The SSRU employed a Spanish-language speaking interviewer. Nine interviews were completed in Spanish. Data were collected on Wincati version 5.0¹.

Final survey dispositions in the two frames include 863 completed interviews (Ada County n=455 / Canyon County n=408), 661 disconnected or non-working numbers, 534 ineligible households (respondents who were too young to complete the survey, lines used only for business purposes, or individuals that did not live in the Treasure Valley, and fax numbers), and 1,119 refusals. 2,531 households were not able to be contacted for the survey. The final response rate is 18.8 percent (AAPOR2), the cooperation rate (the proportion of interviews conducted from all eligible units actually contacted) is 40.8 percent, and the refusal rate is 26.1 percent².

Survey weights were calculated to account for the complex survey design using SAS, Version 9.2³. Weighted frequencies were used because in the dual-frame methodology,

¹ Sawtooth Technologies, Inc. 2012. Northbrook, IL.

² The American Association for Public Opinion Research (AAPOR). 2006. Standards Definitions: Final Disposition of Case Codes and Outcome Rates for Surveys, 4th Edition. Lenexa, KS: AAPOR. Available at: [Uhttp://www.aapor.org/pdfs/standarddefs_4.pdf](http://www.aapor.org/pdfs/standarddefs_4.pdf)

³ SAS, Version 9.2. 2009. SAS Institute, Inc. Cary, N.C

households have different probabilities of selection for the study depending on whether they are mobile phone-only, landline only, or both. In addition, the study design called for approximately equal numbers of responses from the two counties in order to make county-level estimates. However, when comparing data from across the entire sample, households were weighted in proportion to their actual representation in the population (i.e. to reflect the fact that Ada County has more residents than Canyon). It is important to bear in mind that the percentages are the statistics that are being matched to the population, not the frequencies. Thus, the weighted frequencies will not typically match the observed frequency, due to both rounding and item nonresponse. The weighting process is explained in detail in the following section. The results presented in the comparison to Census data are based on weighted frequencies (Table 1).

ESTIMATION USING DUAL FRAME METHODOLOGY

Survey weights were calculated in order that the data account for the complex survey design. Households had differing probabilities of inclusion in the study based on whether they lived in Ada or Canyon county (because Canyon County was oversampled to allow for an adequate sample size in that area) and based on whether respondents lived in a household with both wireless and landline telephones, only landlines, or only wireless phones. Data from national surveys conducted by the U.S. Department of Health and Human Services (HHS) estimated the fraction of adults living in wireless-only, landline-only, mixed, or no-telephone households within the state. Of all Idaho households, 98.8% are estimated to have a telephone of some sort (including wireless). 31.7% live in wireless-only households, 9.5% live in landline only households, and the remainder (57.6%) live in households with both a landline and wireless telephones.⁴

We used an iterative re-weighting process to calculate survey weights that took into account both the dual-frame methodology and the sampling design in order to have each observation included in proportion to its actual representation in the population. Briefly, base weights were calculated from the inverse probability of selection given the sample size and population size for the different regions.⁵ Weighted frequencies were calculated with these weights, and new weights were generated for household type using the weighted frequencies. These steps were then repeated through one more complete iteration (using the strata, then household type) at which point the weighted frequencies for both the strata variable and the household type matched published data (Census Bureau data for Idaho counties and Health and Human Services data for household telephone status). Because no county level estimates of household telephone status exist, we made the assumption that households in each county in Idaho are similar to the state as a whole.

Chi-square analyses (cross tabulations) are used in this report to assess if a relationship exists between two categorical variables, for example, between county of residence and

⁴ Blumberg, S.J. and J.V. Luke. 2011. Wireless substitution: State-level estimates from the National Health Interview Survey, January 2001-June 2010. National Health Statistics Report, #39. U.S. Department of Health and Human Services, Center for Disease Control and Prevention. April 20, 2011.

⁵ Brick, M.J., S. Dipko, S. Presser, C. Tucker, and Y. Yuan. 2005. Estimation issues in dual frame sample of cell and landline numbers. Proceedings of the Survey Research Methods Section of the American Statistical Association. P. 2794-2798.

factors having the largest negative impact on air quality. If no relationship between the two variables exists (the null hypothesis), impacts are felt more or less equally across both counties. If a relationship between the two variables does exist (the alternative hypothesis), impacts are not equal across both counties. The Rao Scott Chi-square statistic measures the degree of difference between the frequencies that one would expect under the null hypothesis (no association) verses the frequencies actually observed. A probability score (p-value) is then used to assess the probability that the observed frequencies could occur by chance if the null hypothesis (no association) was true. Very small probabilities ($p < 0.05$) mean it is unlikely the frequencies observed would have occurred by chance, and so it is more likely a real relationship exists between the two variables. In this example, a p-value < 0.05 would indicate impacts are not equal across both counties.

Chi-square analyses achieving a p-value < 0.05 are shown as “comparison” tables within the *Frequencies and Significant Comparisons Results* section of the report. Analyses not achieving a p-value $< .05$ are presented for reference in [Appendix C](#).

DEMOGRAPHIC PROFILE OF RESPONDENTS AND COMPARISON TO CENSUS DATA

Slightly more men (51.9%) than women (48.0%) responded to the survey. We compared the age distribution of respondents in this study to recent Census Bureau estimates of Idaho’s adult population. Typically, survey respondents show underrepresentation in lower age groups and overrepresentation in older age groups as younger respondents are more mobile, busier with work and/or young families, and are less likely to have a landline. Using the dual frame methodology in this study (including cell phones in the sample) moderates this effect, and although this sample slightly under-represents some age demographics (those between 25 and 34 years) and over-represents those over 65 years ([Table 1](#)).

Table 1. Comparison of weighted sample estimates to 2005-2009 ACS⁶ age estimates for Idaho residents

Comparison of weighted sample estimates to 2005-2009 ACS age estimates for Idaho residents

Age Category	ACS Estimates in Percent	This Study in Percents	95% Confidence Limits for Percent	
18 – 19 years old	3.80	1.60	0.50	2.60
20 – 24 years old	9.30	6.50	4.50	8.50
25 – 34 years old	20.50	11.20	8.60	13.80
35 – 44 years old	19.70	15.70	12.80	18.60
45 – 54 years old	18.70	14.70	12.00	17.30
55 – 59 years old	7.70	9.50	7.40	11.70
60 – 64 years old	6.30	10.00	7.80	12.10
65 – 74 years old	7.60	17.80	15.10	20.40
75 – 84 years old	4.40	9.00	7.10	11.00
Over 85 years old	2.00	4.10	2.70	5.50

⁶ U.S. Census Bureau. 2005-2009 American Community Survey Five Year Estimates.

FREQUENCIES AND SELECTED COMPARISONS

When considering air quality over a year's time, 75% of all respondents say it's *good* (58%) or *very good* (16%). Just 10% say it's *poor* or *very poor* (Table 2).

A comparison of *overall air quality throughout year* by *county of residence* was performed. The results were not statistically significant. This comparison is provided for reference in Appendix C, Table 92.

Table 2. Rating of outdoor air quality throughout year

Q1 - In general, over the entire year how would you rate the outdoor air quality where you live?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very Good	138	16.40	13.67	19.13
Good	491	58.32	54.68	61.97
Neither Good nor Poor	125	14.78	12.17	17.40
Poor	79	9.42	7.24	11.60
Very Poor	9	1.01	0.39	1.64
Don't know	1	0.06	0.00	0.19
Total	843	100.00		

Table 3 shows most respondents think there has been *no change* in air quality during their time living in the Treasure Valley (36%) or think it has gotten *somewhat worse* (36%).

A comparison of *change in air quality* by *county of residence* was performed. The results were not statistically significant. This comparison is provided for reference in Appendix C, Table 93.

Table 3. Change in air quality in time lived in Treasure Valley

Q2 - Do you think air quality in the Treasure Valley has gotten better or worse in the time you have lived here?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
A lot better	26	3.10	1.88	4.31
Somewhat better	90	10.75	8.45	13.05
No change	304	36.13	32.59	39.66
Somewhat worse	304	36.14	32.54	39.73
A lot worse	111	13.22	10.76	15.68
Don't know	6	0.67	0.13	1.21
Total	841	100.00		
Frequency Missing = 2				

For the question, *Please tell me how much or how little you believe each of the following items contribute to poor air quality*, respondents are relatively split in the belief industrial emissions (Table 4), agricultural or dust emissions (Table 6), smoke from wood burning stoves or fireplaces (Table 7), or outdoor burning (Table 9) are a major contributors.

There is more belief that contributors to poor air quality are:

- Smoke from wildfires in which 81% say it *contributes a moderate amount or contributes significantly* (Table 8).
- Emissions from vehicles in which 80% say it *contributes a moderate amount or contributes significantly* (Table 5).
- Pollen and other allergens in which 61% say it *contributes a moderate amount or contributes significantly* (Table 11).
- Weather related causes in which 60% say it *contributes a moderate amount or contributes significantly* (Table 12).
- There is less belief that construction activities are a contributor to poor air quality (66% *does not contribute* and *contributes a little* combined, Table 10).

Table 4. Industrial emissions' contribution to poor air quality

Q3 - Industrial emissions

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	98	11.63	9.38	13.88
Contributes a little	278	33.09	29.59	36.60
Contributes a moderate amount	246	29.21	25.86	32.57
Contributes significantly	191	22.73	19.58	25.87
Don't know	28	3.34	1.98	4.70
Total	841	100.00		
Frequency Missing = 2				

Table 5. Vehicle emissions' contribution to poor air quality

Q3 - Vehicle emissions

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	33	3.94	2.42	5.46
Contributes a little	131	15.52	13.04	18.00
Contributes a moderate amount	268	31.88	28.46	35.30
Contributes significantly	403	47.83	44.14	51.52
Don't know	7	0.83	0.26	1.40
Total	842	100.00		
Frequency Missing = 1				

Table 6. Agricultural or dust emissions' contribution to poor air quality*Q3 - Agricultural or dust emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	110	13.11	10.62	15.60
Contributes a little	338	40.18	36.54	43.83
Contributes a moderate amount	265	31.50	28.07	34.92
Contributes significantly	103	12.21	9.73	14.68
Don't know	25	3.00	1.82	4.17
Total	841	100.00		
Frequency Missing = 3				

Table 7. Smoke from wood burning stoves or fireplaces' contribution to poor air quality*Q3 - Smoke from wood burning stoves or fireplaces*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	99	11.72	9.34	14.11
Contributes a little	362	43.09	39.42	46.76
Contributes a moderate amount	247	29.40	26.01	32.78
Contributes significantly	118	14.00	11.41	16.58
Don't know	15	1.79	0.92	2.66
Total	841	100.00		
Frequency Missing = 2				

Table 8. Wildfires' contribution to poor air quality*Q3 - Wildfires*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	28	3.32	1.94	4.70
Contributes a little	124	14.76	11.99	17.53
Contributes a moderate amount	230	27.46	24.16	30.77
Contributes significantly	450	53.66	49.95	57.38
Don't know	7	0.79	0.20	1.38
Total	839	100.00		
Frequency Missing = 4				

Table 9. Outdoor burnings' contribution to poor air quality*Q3 - Outdoor burning*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	82	9.76	7.56	11.96
Contributes a little	334	39.65	36.02	43.28
Contributes a moderate amount	256	30.41	27.01	33.80
Contributes significantly	156	18.52	15.66	21.39
Don't know	14	1.66	0.69	2.63
Total	842	100.00		
Frequency Missing = 1				

Table 10. Construction activities' contribution to poor air quality*Q3 - Construction activities*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	165	19.54	16.69	22.39
Contributes a little	388	46.04	42.35	49.73
Contributes a moderate amount	215	25.59	22.30	28.88
Contributes significantly	56	6.68	4.77	8.59
Don't know	18	2.15	1.18	3.11
Total	842	100.00		
Frequency Missing = 1				

Table 11. Pollen and other allergens' contribution to poor air quality*Q3 - Pollen and other allergens*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	85	10.09	7.83	12.36
Contributes a little	221	26.27	22.96	29.59
Contributes a moderate amount	282	33.52	30.06	36.99
Contributes significantly	234	27.89	24.57	31.22
Don't know	19	2.22	1.12	3.31
Total	840	100.00		
Frequency Missing = 4				

Table 12. Weather related causes' contribution to poor air quality*Q3 - Weather related causes*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Does not contribute	88	10.48	8.16	12.80
Contributes a little	235	27.96	24.58	31.33
Contributes a moderate amount	252	30.06	26.66	33.45
Contributes significantly	254	30.20	26.84	33.56
Don't know	11	1.31	0.56	2.05
Total	840	100.00		
Frequency Missing = 3				

When considering the same list of contributors to poor air quality, 41% of respondents think vehicle emissions have the largest negative impact, followed by wildfires (22%) and weather related causes (11%). These three contributors account for 74% of all responses (Table 13).

Table 13. Factors with largest negative impact on air quality*Q4 - Of the factors I have just mentioned, which do you think has the largest negative impact on air quality?*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Vehicle emissions	346	41.18	37.50	44.86
Wildfires	181	21.55	18.62	24.47
Weather related causes	95	11.36	9.08	13.64
Industrial emissions	76	9.08	6.97	11.20
Pollen and other allergens	58	6.90	5.01	8.78
Agricultural or dust emissions	24	2.82	1.54	4.10
Smoke from wood burning stoves or fireplaces	20	2.39	1.35	3.42
Don't know	19	2.26	1.25	3.28
Outdoor burning	14	1.70	0.81	2.59
Construction activities	6	0.76	0.10	1.43
Total	840	100.00		
Frequency Missing = 3				

When comparing the county of residence by factors having the largest negative impact on air quality, respondents from Canyon County are less likely to say vehicle emissions are the largest factor and are somewhat more likely to say wildfires and industrial emissions are the largest factors. Respondents from Ada County are somewhat more likely to say vehicle emissions have the largest impact (Table 14).

In order to perform statistical tests on the cross-tabulation, construction activities—with just six respondents saying it has the largest negative impact—was excluded from the analysis.

Table 14. Comparison of county of residence by factors having the largest negative impact on air quality

Comparison of county of residence by factors having the largest negative impact on air quality – in percentages

County	Vehicle Emissions	Wildfires	Weather Related Causes	Industrial Emissions	Pollen and Other Allergens	Agricultural or Dust Emissions	Smoke from Wood Burning Stoves or Fireplaces	Outdoor Burning
Ada	46.7	20.2	11.4	7.7	7.4	3.3	2.2	1.2
Canyon	33.2	26.4	12.4	13.5	6.4	2.2	3.1	3.0
Rao Scott Chi Square = 22.0469								
DF = 7								
Pr > ChiSq = 0.0025								
Comparison Reference: Table 13								

Four of ten respondents (43%) say poor air has triggered health related problems for them or others in their household (Table 15).

Table 15. Poor air triggering health problems in household

Q5 - Has exposure to poor air ever triggered health related problems for you or anyone in your household?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	357	42.60	38.92	46.27
No	481	57.40	53.73	61.08
Total	838	100.00		
Frequency Missing = 3				

Table 16 shows that for respondents saying they have health problems due to poor air, allergies (70%) and asthma (41%) are the most commonly reported problems, followed by breathing problems (22%) and headaches (17%).

Table 16. Description of health problems due to poor air

Q5A – How would you describe the health problems?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Allergies	252	69.64	64.49	74.80
Asthma	149	41.24	35.54	46.93
Harder to breathe	78	21.51	16.89	26.14
Headaches	61	16.96	12.62	21.30
Feel sluggish	27	7.39	4.39	10.39
Depressed	8	2.12	0.46	3.78
Other	60	16.56	12.43	20.69

Table 17 provides a summary from the data contained in Table 18 through Table 26 for the question, *Thinking about air quality related health problems, please rate the degree to which each of the following air quality issues negatively impact you or your family.*

By comparing the combined categories of *no impact* and *small impact* with the combined categories of *significant impact* and *extreme impact* we can see that:

- The issues with the most impact (more than 40% of respondents saying its impact is *significant* or *extreme*) are pollen or other allergens and wildfires.
- Those with the least impact (with more than 40% of respondents saying they have *no impact* or *small impact*) are construction activities, industrial emissions, smoke from wood burning stoves or fireplaces, outdoor burning, agricultural or dust emissions and weather related causes.
- Vehicle emissions are more neutral across all responses.

Table 17. Summary table of negative impact of air quality on health

Q6 – Summary table of negative impact of air quality issues on health.

Source	No Impact / Small Impact Combined Percents	Moderate Impact Percent	Significant Impact / Extreme Impact Combined Percents	Percent of Respondents
Pollen and other allergens	14	34	52	100
Wildfires	28	29	43	100
Vehicle emissions	34	36	30	99
Weather related causes	41	34	24	99
Agricultural or dust emissions	58	30	11	99
Outdoor burning	59	22	17	98
Smoke from wood burning stoves or fireplaces	59	27	12	98
Industrial emissions	62	26	11	99
Construction activities	74	22	3	99

Table 18. Industrial emissions negatively impacting health*Q6 - Industrial emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	99	27.53	22.48	32.59
Small impact	124	34.36	28.82	39.90
Moderate impact	95	26.49	21.45	31.53
Significant impact	27	7.55	4.63	10.46
Extreme impact	12	3.20	1.18	5.21
Don't know	3	0.87	0.00	1.86
Total	360	100.00		
Frequency Missing = 504				

Table 19. Vehicle emissions negatively impacting health*Q6 - Vehicle emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	49	13.51	9.76	17.26
Small impact	74	20.51	15.92	25.10
Moderate impact	128	35.62	30.07	41.17
Significant impact	79	21.85	17.07	26.63
Extreme impact	28	7.80	4.77	10.83
Don't know	3	0.72	0.00	1.56
Total	360	100.00		
Frequency Missing = 504				

Table 20. Agricultural or dust emissions negatively impacting health*Q6 - Agricultural or dust emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	77	21.22	16.53	25.90
Small impact	132	36.66	31.13	42.19
Moderate impact	109	30.22	24.98	35.46
Significant impact	31	8.70	5.45	11.95
Extreme impact	9	2.63	0.86	4.39
Don't know	2	0.58	0.00	1.38
Total	361	100.00		
Frequency Missing = 503				

Table 21. Smoke from wood burning stoves or fireplaces negatively impacting health*Q6 - Smoke from wood burning stoves or fireplaces*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	80	22.19	17.47	26.90
Small impact	132	36.51	30.96	42.06
Moderate impact	96	26.75	21.68	31.81
Significant impact	31	8.51	5.26	11.76
Extreme impact	14	3.98	1.67	6.29
Don't know	7	2.07	0.42	3.71
Total	360	100.00		
Frequency Missing = 504				

Table 22. Wildfires negatively impacting health*Q6 - Wildfires*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	31	8.64	5.33	11.94
Small impact	68	18.90	14.27	23.54
Moderate impact	106	29.40	24.19	34.61
Significant impact	96	26.68	21.65	31.71
Extreme impact	58	16.09	11.96	20.23
Don't know	1	0.29	0.00	0.86
Total	360	100.00		
Frequency Missing = 504				

Table 23. Outdoor burning negatively impacting health*Q6 - Outdoor burning*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	87	24.11	19.12	29.11
Small impact	127	35.32	29.81	40.83
Moderate impact	79	21.90	17.23	26.57
Significant impact	42	11.56	7.91	15.21
Extreme impact	18	5.09	2.72	7.47
Don't know	7	2.01	0.34	3.68
Total	360	100.00		
Frequency Missing = 504				

Table 24. Construction activities negatively impacting health*Q6 - Construction activities*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	132	36.60	31.12	42.09
Small impact	133	37.04	31.45	42.63
Moderate impact	79	21.90	17.07	26.73
Significant impact	8	2.18	0.70	3.65
Extreme impact	3	0.83	0.00	1.83
Don't know	5	1.45	0.24	2.66
Total	360	100.00		
Frequency Missing = 504				

Table 25. Pollen and other allergens negatively impacting health*Q6 - Pollen and other allergens*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	14	3.95	1.83	6.06
Small impact	36	9.92	6.74	13.10
Moderate impact	122	33.92	28.47	39.38
Significant impact	116	32.32	26.88	37.75
Extreme impact	72	19.90	15.30	24.50
Don't know	0	0.00		
Total	360	100.00		
Frequency Missing = 504				

Table 26. Weather related causes negatively impacting health*Q6 - Weather related causes*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	52	14.44	10.29	18.58
Small impact	95	26.44	21.37	31.52
Moderate impact	123	34.23	28.75	39.71
Significant impact	67	18.60	14.30	22.91
Extreme impact	21	5.71	3.10	8.32
Don't know	2	0.58	0.00	1.39
Total	360	100.00		
Frequency Missing = 504				

The following four tables show responses to the question, *To reduce your exposure to poor outdoor air quality, how many times did you do any of the following in the past year?*

Table 27 shows that most respondents never shut windows to reduce exposure to poor outdoor air quality (34%) or shut them one to five times in the past year (29%). Still, 26% say they shut them more than 10 times.

Table 27. Shut windows to reduce exposure to poor outdoor air quality

Q7 - Shut windows

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
0 times	290	34.45	30.92	37.98
1-5 times	242	28.74	25.36	32.12
6-10 times	78	9.25	7.09	11.41
More than 10 times	221	26.31	23.09	29.54
Don't know	10	1.25	0.56	1.93
Total	841	100.00		
Frequency Missing = 2				

Nearly half (49%) of respondents did not limit outdoor activity while 27% did so one to five times in the past year (Table 28).

Table 28. Limited outdoor activity to reduce exposure to poor outdoor air quality

Q7 - Limited outdoor activity

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
0 times	411	48.80	45.10	52.50
1-5 times	225	26.75	23.47	30.04
6-10 times	89	10.57	8.30	12.83
More than 10 times	113	13.40	10.90	15.90
Don't know	4	0.48	0.00	0.98
Total	841	100.00		
Frequency Missing = 1				

Most respondents (80%) did not use an air purifier in the past year to improve indoor air quality. Yet, 15% used a purifier more than ten times (Table 29).

Table 29. Used an air purifier to reduce exposure to poor outdoor air quality

Q7 - Used an air purifier

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
0 times	674	79.94	76.99	82.90
1-5 times	35	4.19	2.70	5.68
6-10 times	9	1.04	0.32	1.76
More than 10 times	124	14.76	12.14	17.38
Don't know	1	0.06	0.00	0.19
Total	843	100.00		
Frequency Missing = 0				

Most respondents say they did not leave town in the past year because of poor air quality (90%) yet 7% did at least one to five times (Table 30).

Table 30. Left town to reduce exposure to poor outdoor air quality

Q7 - Left town to avoid poor air quality

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
0 times	761	90.38	88.16	92.60
1-5 times	63	7.44	5.44	9.44
6-10 times	6	0.68	0.06	1.29
More than 10 times	12	1.38	0.54	2.22
Don't know	1	0.12	0.00	0.37
Total	843	100.00		
Frequency Missing = 0				

Seven of ten respondents feel they are either *somewhat informed* (42%) or *slightly informed* (29%) about air quality issues in the Treasure Valley (Table 31).

A comparison of *degree of being informed by county of residence* was performed. The results were not statistically significant. This comparison is provided for reference in Appendix C, Table 94.

Table 31. Degree of being informed about air quality issues in Treasure Valley

Q8 - How informed are you about air quality issues in the Treasure Valley?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very informed	159	18.90	16.03	21.76
Somewhat informed	349	41.52	37.90	45.14
Slightly informed	246	29.22	25.82	32.62
Not informed	87	10.30	7.88	12.72
Don't know	1	0.06	0.00	0.19
Total	841	100.00		
Frequency Missing = 1				

Six in ten respondents say they read, watch or listen to the news each day of the week and an additional 13% consume news five or six days a week. On the other hand, 7% report not consuming news at all (Table 32).

Table 32. Number of days in past week consuming news

Q28 - Approximately how many days in the past week did you read, watch, or listen, to the news?

Number of Days	Weighted Frequency	Percent	95% Confidence Limits for Percent	
0	59	7.03	5.04	9.01
1	30	3.55	2.04	5.06
2	43	5.12	3.31	6.93
3	58	6.90	4.95	8.84
4	41	4.88	3.19	6.57
5	80	9.47	7.19	11.76
6	27	3.18	1.92	4.44
7	500	59.29	55.59	62.99
Refused	5	0.58	0.10	1.07
Total	843	100.00		
Frequency Missing = 0				

The most commonly used source in obtaining information about air quality is television at 52%, followed by newspaper at 21%, the Internet at 12% and radio at 5% (Table 33).

After selecting the most commonly used source for information about air quality, respondents were asked to specify the source's name. For each source, a summary table and a categorized list of all comments is provided in the Supplemental Document (SD-Table 1 through SD-Table 13). In brief, KTVB-NBC is the most watch television station (50%), the Idaho Statesman is the most read newspaper (79%), and search engines or non-agency local websites are where respondents seek air quality information on the Internet (12%). When listening to radio, Boise State Radio/NPR (44%) is cited most often and, while the number is small (n=5), DEQ is the most often mentioned government agency sought for air quality information.

Table 33. Where information about air quality is found

Q9 - Where do you get MOST of your information about air quality?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
TV	396	52.50	48.64	56.37
Newspapers	158	20.97	17.88	24.06
Internet	92	12.17	9.41	14.93
Radio	36	4.75	3.06	6.44
Co-workers/colleagues	13	1.70	0.59	2.81
Government agencies	12	1.65	0.72	2.58
Family and friends	12	1.58	0.62	2.54
Don't know	4	0.51	0.04	0.98
Magazines	3	0.35	0.00	0.76
Other	29	3.80	2.27	5.34
Total	753	100.00		
Frequency Missing = 78				

In terms of how respondents prefer to *receive* information about air quality, **public service announcements** is the most commonly selected from the choices (74%) followed by **websites** at 59%, **reading materials or an information booth**, both at 36%, followed by **information received by smart phone or tablet app** at 31% (Table 34).

For respondents selecting the “other” response category for preference in how to receive information about air quality, 28% of all comments mentioned newspapers and 25% mentioned email. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 14 and SD-Table 15).

Table 34. Preference for how to receive information about air quality

Q10 - How would you prefer to receive information about air quality? (Mark all that apply)

	Frequency	Percent	95% Confidence Limits for Percent	
PSA	627	74.37	71.06	77.68
Website	501	59.48	55.89	63.07
Reading material	307	36.45	32.91	40.00
Air quality booth	300	35.63	32.06	39.19
Smart phone	258	30.62	27.07	34.17
One on one conversations	183	21.74	18.64	24.84
Public Meetings	175	20.80	17.82	23.79

Most respondents (77%) recall seeing or hearing a message about air quality in the Treasure Valley in the past year (Table 35).

Table 35. Recall of messaging about air quality in Treasure Valley in past year

Q11 - Can you recall seeing or hearing any messages in the past year regarding air quality in the Treasure Valley?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	645	76.63	73.40	79.85
No	173	20.57	17.50	23.63
Don't know	24	2.81	1.47	4.14
Total	841	100.00		
Frequency Missing = 1				

As shown in Table 36, most respondents (74%) report television as the message vehicle followed by radio at 8%. For respondents selecting the "other" response category for recall of where a message about air quality was seen or heard, 40% of all comments indicate seeing the message online and 20% hearing about it at work or school. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD Table 16 and SD-Table 17).

Table 36. Recall of where message was seen or heard

Q12 - Where did you see or hear this message?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Television	478	74.06	70.36	77.77
Radio	55	8.48	6.12	10.83
Newspaper or printed material	41	6.33	4.40	8.26
Billboard or electronic reader board	32	4.89	3.13	6.66
Don't know	3	0.49	0.00	1.04
Other	37	5.75	3.57	7.93
Total	645	100.00		
Frequency Missing = 190				

Respondents were then asked to recall the content of the message seen or heard. Table 37 below provides a summary of message content for the response group as a whole as well as percents for each county. This summary table as well as a categorized list of all responses is provided in the Supplemental Document (SD-Table 18 and SD-Table 19).

- For all comments made, the most commonly mentioned aspect of the message was that of color scales, air index, air quality levels or air ratings (16%) closely followed by messages about wildfire effects on air quality (15%), messages about air quality in general (13%) and messages about pollen or allergen levels or particulate count (11%).
- For comments made by respondents from Ada County, the four categories mentioned above have nearly equal percents.
- For comments made by respondents from Canyon County, just 2% mentioned messages containing information about color scales, air index, air quality levels or air ratings and just 9% mentioned wildfire effects on air quality.

Table 37. Summary of content analysis for recall of the message seen or heard about air quality in the Treasure Valley

Q13 – Summary of content analysis for recall of the message seen or heard about air quality in the Treasure Valley.

Count for All	Percent for All	Percent for Ada County	Percent for Canyon County	Theme
134	15.84	15.61	1.73	Mention of color scale / index / levels / rating
130	15.37	14.25	8.91	Wildfire effects on air quality
113	13.36	13.35	16.58	Air quality in general
92	10.87	9.73	13.37	Pollen/Allergen levels / Particulate count
81	9.57	10.18	6.93	Health warnings / Staying indoors
74	8.75	10.41	4.70	Air quality alert / warning
66	7.80	6.79	16.09	Burning issues / ban
54	6.38	7.47	0.50	Inversion warning
37	4.37	4.98	0.00	Poor / bad air quality
31	3.66	2.71	5.20	Vehicle emissions / limit idling / limit driving
16	1.89	2.04	3.71	Suggestions of actions to take
8	0.95	1.36	12.13	Legislation
3	0.35	0.68	8.91	Energy production development
7	0.83	0.45	1.24	Miscellaneous
846	100.00	100.00	100.00	

Table 38 shows that respondents say the information about Treasure Valley air quality they saw or heard was *somewhat useful* (43%) or *very useful* (36%).

Table 38. Usefulness of information seen or heard about Treasure Valley air quality

Q14 - How useful was the information contained in the message to you and your family?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very useful	230	35.88	31.86	39.91
Somewhat useful	277	43.17	39.02	47.32
Not very useful	89	13.90	10.99	16.82
Not at all useful	41	6.33	4.28	8.38
Don't know	5	0.71	0.04	1.38
Total	642	100.00		
Frequency Missing = 193				

In terms of what air quality issues respondents say they'd like to learn more about, the results show there is interest in essentially all air quality information. That said, the top three items on the list are *what are the biggest contributors to poor air quality* followed by *what can a person do to make a difference in air quality* and *what specifically pollutes our air* (Table 39).

For respondents selecting the "other" response category for air quality issues to learn more about, 18% of all comments focused on effects due to weather such as inversions, wildfires or pollen and an additional 14% mentioned learning more about air quality ratings. 11% *each* mentioned learning more about agricultural emissions, industrial emissions and regulations or their enforcement. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 20 and SD Table 21).

Table 39. Air quality issues to learn more about

Q15 - What air quality issues would you like to learn more about? (Mark all that apply)

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
What are the biggest contributors to poor air quality?	632	74.96	71.84	78.09
What can I do that would make a difference in air quality?	591	70.17	66.86	73.48
What specifically pollutes our air?	573	67.97	64.59	71.36
How do I know if the air quality is bad/how do I find out the quality of air?	538	63.91	60.38	67.44
How are air quality regulations enforced?	533	63.25	59.69	66.80
How do I know when there is a burn ban?	464	55.04	51.37	58.72
Other	58	6.93	4.94	8.92

Respondents say they would use a local or state agency if they have specific questions about air quality and are nearly equally likely to do so by calling (68%) or going through an agency's website (62%). They are less likely to seek answers to specific questions by doing a search on the Internet or going to local news or weather information sources (Table 40).

Respondents indicating they would call a local or state agency to ask specific questions about air quality were asked to specify the agency. 37% of all comments mentioned DEQ and 12% mention an Ada County agency (Ada County Air Quality Board, Ada County or ACHD). A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 22 and SD-Table 23).

Respondents indicating they would use a local or state agency's website to ask specific questions about air quality were asked to specify the agency. 40% of all comments mentioned DEQ's site, 14% mentioned the U.S. EPA's site and 11% mentioned performing an Internet search. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 24 and SD Table 25).

For respondents selecting the "other" response category for what source would be used to ask specific questions about air quality, 30% indicated consulting a newspaper, followed by 17% asking friends or family, 15% using a radio station and 11% using the Internet. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 26 and SD-Table 27).

Table 40. Sources to use in seeking answers to specific questions about air quality

Q16 – If you had specific questions about air quality, what sources would you use to find the information you need? (Mark all that apply)

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Call a local or state agency	574	68.16	64.83	71.48
A local or state agency website	520	61.72	58.09	65.35
Search on the Internet	262	31.08	27.61	34.55
The local news or weather	191	22.63	19.63	25.63
Other	59	6.95	4.99	8.92

Table 41 provides a comparison of YES answers for the question, *Have you used any of the following sources of information regarding air quality?* Local news broadcasts are clearly the most used source for air quality information (89%) followed by using weather.com/The Weather Channel (59%) and the National Weather Service (53%). Falling farther behind are DEQ, the City of Boise, the Ada County Air Quality Board and the U.S. EPA. Table 42 through Table 51 show the complete results for each option.

For respondents selecting the "other" response category for sources actually used for information regarding air quality, 26% of the comments indicated using the Internet, 16% using the radio and 16% using a newspaper. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 28 and SD-Table 29).

Table 41. Summary of YES responses to having used sources of information regarding air quality

Q17 – Summary of YES responses to having used sources of information regarding air quality

	Weighted Frequency - YES	Percent - YES	95% Confidence Limits for Percent	
Local news broadcast	748	88.76	86.26	91.27
Weather.com/The Weather Channel	498	59.16	55.52	62.80
National Weather Service	446	52.88	49.18	56.58
Idaho DEQ	176	20.87	17.85	23.89
City of Boise	143	17.02	14.16	19.87
Ada County Air Quality Board	133	15.81	12.99	18.63
U.S EPA	118	14.00	11.40	16.60
COMPASS	34	3.99	2.61	5.36
Airnow.gov	29	3.44	2.14	4.75

Table 42. Source of air quality information: Idaho Department of Environmental Quality

Q17 - Idaho Department of Environmental Quality

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	176	20.87	17.85	23.89
No	667	79.13	76.11	82.15
Total	843	100.00		
Frequency Missing = 0				

Table 43. Source of air quality information: National Weather Service*Q17 - National Weather Service*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	446	52.88	49.18	56.58
No	397	47.12	43.42	50.82
Total	843	100.00		
Frequency Missing = 0				

Table 44. Source of air quality information: Local news broadcast*Q17 - Local news broadcast*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	748	88.76	86.26	91.27
No	95	11.24	8.73	13.74
Total	843	100.00		
Frequency Missing = 0				

Table 45. Source of air quality information: Weather.com / The Weather Channel*Q17 - Weather.com / The Weather Channel*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	498	59.16	55.52	62.80
No	344	40.84	37.20	44.48
Total	841	100.00		
Frequency Missing = 1				

Table 46. Source of air quality information: Ada County Air Quality Board*Q17 - Ada County Air Quality Board*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	133	15.81	12.99	18.63
No	709	84.19	81.37	87.01
Total	843	100.00		
Frequency Missing = 0				

Table 47. Source of air quality information: U.S. Environmental Protection Agency*Q17 - U.S. Environmental Protection Agency*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	118	14.00	11.40	16.60
No	725	86.00	83.40	88.60
Total	843	100.00		
Frequency Missing = 0				

Table 48. Source of air quality information: the Community Planning Association (COMPASS)*Q17 - The Community Planning Association (COMPASS)*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	34	3.99	2.61	5.36
No	809	96.01	94.64	97.39
Total	843	100.00		
Frequency Missing = 0				

Table 49. Source of air quality information: City of Boise*Q17 - City of Boise*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	143	17.02	14.16	19.87
No	699	82.98	80.13	85.84
Total	843	100.00		
Frequency Missing = 0				

Table 50. Source of air quality information: airnow.gov*Q17 - Airnow.gov*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	29	3.44	2.14	4.75
No	814	96.56	95.25	97.86
Total	843	100.00		
Frequency Missing = 0				

Table 51. Source of air quality information: Other sources

Q17 - Other sources

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	77	9.38	7.04	11.72
No	742	90.62	88.28	92.96
Total	819	100.00		
Frequency Missing = 27				

Table 52 shows that air quality's impacts on health are the type of information that would grab attention most (43% impacts on personal health and 24% impacts on children's health), followed by impacts on outdoor activities (12%) and impacts on the environment (10%).

For respondents selecting the "other" response category for what information about air quality would grab attention most, 46% of all comments indicated *all* choices presented would grab attention. An additional 28% of the comments said information about health or impact on the home would grab attention. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 30 and SD-Table 31).

Comparisons were made of *information on air quality that would grab attention by factors having the largest negative impact on air quality as well as by county of residence*. These comparisons were not statistically significant and are provided for reference in Appendix C, Table 101 and Table 95.

Table 52. Air quality information that would grab attention the most

Q18 - What information about Treasure Valley air quality would grab your attention the most?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Impacts on your health	361	43.08	39.41	46.75
Impacts on your children's health	200	23.92	20.71	27.13
Impact on outdoor activities	100	11.97	9.57	14.37
Impacts on the environment	83	9.90	7.72	12.09
Impacts on the local economy	41	4.92	3.28	6.57
Don't know	11	1.29	0.49	2.09
Other	41	4.92	3.32	6.51
Total	837	100.00		
Frequency Missing = 5				

Table 53 provides a summary from the data contained in Table 54 through Table 62 for the question, *How much of an impact do you believe each of the following actions have on improving air quality?*

By comparing the combined categories of *no impact* and *small impact* with the combined categories of *significant impact* and *extreme impact* we can see that:

- The action with the belief it would have the most impact (40% or more of respondents saying the impact would be *large* or *very large*) is keeping vehicles well maintained and in good running order followed by meeting emissions guidelines, biking or walking to work or errands, carpooling and using public transportation.
- Those with the least impact (40% of respondents saying there would be *no impact* or *small impact*) are having a newer wood stove installed and not using a wood stove/wood burning fireplace.
- Reducing idling of vehicles and refraining from outdoor burning are more neutral across responses.

Table 53. Summary table of belief actions have impact on air quality

Q19 - Summary table of belief actions have impact on air quality

Action	No Impact / Small Impact Percents Combined	Moderate Impact Percent	Large Impact / Very Large Impact Percents Combined	Total Percent of Respondents
Keeping vehicles well maintained and in good running order	16	32	51	98
Meeting vehicle emissions guidelines	21	29	48	98
Biking or walking to work or errands	21	27	45	98
Carpooling	21	35	42	98
Using public transportation	29	29	40	98
Reducing idling of vehicles	29	34	35	98
Refraining from outdoor burning	32	32	34	98
Not using a wood stove/wood burning fireplace	42	30	24	96
Having a newer wood stove installed	43	29	19	90

Table 54. Belief an action will have an impact on improving air quality: Carpooling*Q19 - Carpooling*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	21	2.48	1.33	3.63
A small impact	159	18.93	16.10	21.76
A moderate impact	296	35.25	31.70	38.79
A large impact	262	31.18	27.71	34.66
A very large impact	88	10.50	8.24	12.75
Don't know	14	1.66	0.82	2.50
Total	840	100.00		
Frequency Missing = 3				

Table 55. Belief an action will have an impact on improving air quality: Biking or walking to work or errands*Q19 - Biking or walking to work or errands*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	56	6.69	4.94	8.44
A small impact	172	20.45	17.56	23.35
A moderate impact	222	26.51	23.20	29.82
A large impact	244	29.05	25.63	32.47
A very large impact	130	15.48	12.76	18.20
Don't know	15	1.82	0.93	2.71
Total	839	100.00		
Frequency Missing = 4				

Table 56. Belief an action will have an impact on improving air quality: Refraining from outdoor burning*Q19 - Refraining from outdoor burning*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	40	4.76	3.31	6.21
A small impact	232	27.55	24.21	30.90
A moderate impact	267	31.69	28.22	35.16
A large impact	204	24.26	21.09	27.42
A very large impact	86	10.23	8.06	12.40
Don't know	13	1.51	0.67	2.35
Total	842	100.00		
Frequency Missing = 1				

Table 57. Belief an action will have an impact on improving air quality: Meeting vehicle emissions guidelines*Q19 - Meeting vehicle emissions guidelines*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	46	5.55	3.92	7.19
A small impact	127	15.18	12.57	17.79
A moderate impact	241	28.85	25.49	32.21
A large impact	252	30.11	26.68	33.54
A very large impact	152	18.13	15.21	21.05
Don't know	18	2.17	1.23	3.12
Total	837	100.00		
Frequency Missing = 6				

Table 58. Belief an action will have an impact on improving air quality: Keeping vehicles well maintained and in good running order*Q19 - Keeping vehicles well maintained and in good running order*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	17	2.01	0.99	3.02
A small impact	120	14.20	11.61	16.79
A moderate impact	265	31.53	28.07	34.99
A large impact	281	33.37	29.88	36.85
A very large impact	146	17.31	14.50	20.12
Don't know	13	1.59	0.70	2.48
Total	841	100.00		
Frequency Missing = 1				

Table 59. Belief an action will have an impact on improving air quality: Reducing idling of vehicles*Q19 - Reducing idling of vehicles*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	42	5.03	3.48	6.58
A small impact	200	23.86	20.65	27.08
A moderate impact	289	34.43	30.93	37.93
A large impact	218	25.98	22.70	29.26
A very large impact	75	8.92	6.83	11.01
Don't know	15	1.78	0.84	2.72
Total	840	100.00		
Frequency Missing = 3				

Table 60. Belief an action will have an impact on improving air quality: Having a newer wood stove installed*Q19 - Having a newer wood stove installed*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	94	11.31	8.94	13.68
A small impact	261	31.28	27.78	34.78
A moderate impact	239	28.68	25.34	32.03
A large impact	118	14.19	11.64	16.74
A very large impact	38	4.59	3.07	6.12
Don't know	83	9.95	7.78	12.12
Total	834	100.00		
Frequency Missing = 8				

Table 61. Belief an action will have an impact on improving air quality: Using public transportation*Q19 - Using public transportation*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	42	5.05	3.60	6.50
A small impact	202	24.12	20.96	27.27
A moderate impact	242	28.88	25.52	32.23
A large impact	230	27.52	24.12	30.91
A very large impact	106	12.63	10.14	15.11
Don't know	15	1.82	0.88	2.76
Total	838	100.00		
Frequency Missing = 6				

Table 62. Belief an action will have an impact on improving air quality: Not using a wood stove / wood burning fireplace*Q19 - Not using a wood stove/wood burning fireplace*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
No impact	94	11.19	8.88	13.51
A small impact	258	30.85	27.39	34.31
A moderate impact	254	30.36	26.92	33.79
A large impact	146	17.43	14.65	20.20
A very large impact	52	6.26	4.52	7.99
Don't know	33	3.91	2.51	5.31
Total	837	100.00		
Frequency Missing = 7				

Table 63 provides a comparison of YES responses from the data contained in Table 64 through Table 73 for the question, *Have you or members of your household taken any of these actions to improve air quality in the past year?*

The actions most respondents took were keeping vehicles well maintained and in good running order (95%) and meeting vehicle emissions guidelines (93%). These are also the top two actions respondents believe would have the greatest impact on air quality (Table 53).

A majority of respondents have reduced idling of vehicles (71%) and refrained from outdoor burning (56%) while less biked or walked to work or errands (43%), carpooled (35%) and didn't use a wood burning stove/wood burning fireplace (29%). Few respondents used public transportation (16%) and very few installed a newer wood stove (5%) —which was also the action believed would have the least impact on air quality (Table 53).

For respondents selecting the "other" response category for actions taken to improve air quality in the past year, 16% of all comments indicated planting trees or plants and 12% indicated recycling. 11% of all comments indicated using a vehicle or using an alternate vehicle and another 11% making improvements to home energy use. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 32 and SD-Table 33).

Table 63. Summary of YES responses to actions taken in the past year to improve air quality

Q20 – Summary of YES responses to actions taken in the past year to improve air quality

Action	Weighted Frequency - YES	Percent - Yes	95% Confidence Limits for Percent	
Keeping vehicles well maintained and in good running order	796	95.10	93.53	96.68
Meeting vehicle emissions guidelines	779	93.16	91.28	95.03
Reducing idling of vehicles	591	70.98	67.61	74.34
Refraining from outdoor burning	469	55.97	52.28	59.66
Biking or walking to work or errands	360	43.03	39.35	46.72
Carpooling	291	34.78	31.14	38.41
Not using a wood stove/wood burning fireplace	244	29.20	25.78	32.62
Using public transportation	136	16.24	13.39	19.09
Having a newer wood stove installed	40	4.73	3.29	6.17

Table 64. Actions taken in past year to improve air quality: Carpooling*Q20 - Carpooling*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	291	34.78	31.14	38.41
No	381	45.55	41.86	49.24
N/A	165	19.67	16.89	22.45
Total	837	100.00		
Frequency Missing = 6				

Table 65. Actions taken in past year to improve air quality: Biking or walking to work or errands*Q20 - Biking or walking to work or errands*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	360	43.03	39.35	46.72
No	358	42.80	39.22	46.38
N/A	118	14.16	11.71	16.62
Total	837	100.00		
Frequency Missing = 6				

Table 66. Actions taken in past year to improve air quality: Refraining from outdoor burning*Q20 - Refraining from outdoor burning*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	469	55.97	52.28	59.66
No	115	13.78	11.19	16.38
N/A	253	30.24	26.84	33.65
Total	838	100.00		
Frequency Missing = 5				

Table 67. Actions taken in past year to improve air quality: Meeting vehicle emissions guidelines*Q20 - Meeting vehicle emissions guidelines*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	779	93.16	91.28	95.03
No	22	2.67	1.46	3.89
N/A	35	4.17	2.69	5.65
Total	837	100.00		
Frequency Missing = 6				

Table 68. Actions taken in past year to improve air quality: Keeping vehicles well maintained and in good running order*Q20 - Keeping vehicles well maintained and in good running order*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	796	95.10	93.53	96.68
No	19	2.22	1.21	3.24
N/A	22	2.67	1.44	3.90
Total	837	100.00		
Frequency Missing = 6				

Table 69. Actions taken in past year to improve air quality: Reducing idling of vehicles*Q20 - Reducing idling of vehicles*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	591	70.98	67.61	74.34
No	198	23.80	20.66	26.94
N/A	43	5.22	3.53	6.92
Total	832	100.00		
Frequency Missing = 11				

Table 70. Actions taken in past year to improve air quality: Having a newer wood stove installed*Q20 - Having a newer wood stove installed*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	40	4.73	3.29	6.17
No	259	31.01	27.59	34.43
N/A	538	64.26	60.73	67.78
Total	837	100.00		
Frequency Missing = 6				

Table 71. Actions taken in past year to improve air quality: Using public transportation*Q20 - Using public transportation*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	136	16.24	13.39	19.09
No	569	67.99	64.51	71.47
N/A	132	15.77	13.15	18.39
Total	838	100.00		
Frequency Missing = 5				

Table 72. Actions taken in past year to improve air quality: Not using a wood stove / wood burning fireplace*Q20 - Not using a wood stove/wood burning fireplace*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	244	29.20	25.78	32.62
No	149	17.82	15.09	20.55
N/A	442	52.98	49.27	56.69
Total	834	100.00		
Frequency Missing = 9				

Table 73. Actions taken in past year to improve air quality: Other actions taken

Q20 - Other actions taken

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	69	8.51	6.40	10.63
No	671	82.72	79.85	85.59
N/A	71	8.77	6.61	10.92
Total	812	100.00		
Frequency Missing = 34				

Table 74 provides a summary from the data contained in Table 75 through Table 78 for the question, *In your opinion, how sufficient or insufficient are existing regulations to protect air quality for each of the following types of emissions?*

By comparing the combined categories of *very sufficient* and *somewhat sufficient* with the combined categories of *somewhat insufficient* and *insufficient* and *don't know* we can see that:

- Vehicle emissions regulations are viewed as being sufficient *and* are well known.
- Residential burning regulations are viewed as sufficient by a majority yet 25% don't know them.
- Industrial and agricultural emissions are viewed as being less sufficient than the other two but many respondents don't know what the regulations are (30% industrial and 38% agricultural).
- Comparisons were made for each of *the four regulation types* by *factors having the largest negative impact on air quality*. These comparisons were not statistically significant or did not meet the criteria required to apply statistical tests due to cross-tabulation cells containing one "0" or more. These comparisons are provided for reference in Appendix C, Table 102 through Table 105.
- Comparisons were made for each of *the four regulation types* by *county of residence*. These results were not statistically significant. These comparisons are provided for reference in Appendix C, Table 96 through Table 99.

Table 74. Summary of sufficiency of existing regulations to protect air quality

Q21 – Summary of sufficiency of existing regulations to protect air quality

Regulation's Area of Focus	Very Sufficient and Somewhat Sufficient Percents Combined	Somewhat Insufficient and Insufficient Percents Combined	Percent Don't Know
Vehicle emissions	72	23	5
Residential burning (fireplace, outdoor burning, etc.)	57	18	25
Industrial emissions	46	24	30
Agricultural emissions	46	16	38

Table 75. Sufficiency of existing regulations: Residential burning*Q21 - Residential burning (fireplace, outdoor burning, etc.)*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very sufficient	184	21.94	18.93	24.95
Somewhat sufficient	296	35.28	31.74	38.82
Somewhat insufficient	100	11.86	9.41	14.31
Very insufficient	48	5.69	3.99	7.40
Don't know	212	25.23	21.97	28.49
Total	839	100.00		
Frequency Missing = 4				

Table 76. Sufficiency of existing regulations: Agricultural emissions*Q21 - Agricultural emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very Sufficient	135	16.19	13.57	18.80
Somewhat sufficient	251	30.00	26.63	33.37
Somewhat insufficient	85	10.18	7.86	12.50
Very insufficient	50	6.03	4.20	7.85
Don't know	314	37.61	34.00	41.22
Total	836	100.00		
Frequency Missing = 5				

Table 77. Sufficiency of existing regulations: Industrial emissions*Q21 - Industrial emissions*

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very Sufficient	147	17.62	14.86	20.39
Somewhat sufficient	239	28.61	25.30	31.93
Somewhat insufficient	119	14.21	11.59	16.83
Very insufficient	79	9.44	7.16	11.72
Don't know	252	30.11	26.68	33.54
Total	836	100.00		
Frequency Missing = 7				

Table 78. Sufficiency of existing regulations: Vehicle emissions

Q21 - Vehicle emissions

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very Sufficient	258	30.82	27.42	34.23
Somewhat sufficient	345	41.10	37.44	44.77
Somewhat insufficient	110	13.18	10.61	15.74
Very insufficient	79	9.47	7.26	11.68
Don't know	45	5.42	3.84	7.01
Total	838	100.00		
Frequency Missing = 6				

Respondents are either *very likely* (46%) or *somewhat likely* (28%) to know when a burning ban is in place (74% of all respondents). Only 4% say they are unaware bans exist at all (Table 79).

A comparison of *likelihood to know when burning bans are in place* by *county of residence* was performed. The results were not statistically significant. This comparison is provided for reference in Appendix C, Table 100.

Table 79. Likelihood to know when burning bans are in place

Q22 - How likely are you to know when a burn ban is in place?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Very likely	391	46.45	42.79	50.12
Somewhat likely	234	27.84	24.48	31.20
Somewhat unlikely	89	10.53	8.13	12.93
Very unlikely	84	9.98	7.61	12.34
I was unaware they existed	37	4.34	2.70	5.98
Don't know	7	0.86	0.20	1.53
Total	841	100.00		
Frequency Missing = 1				

Table 80 presents the age categories of the survey respondents.

Table 80. Respondents by age category

Q23 - In what year were you born?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
18 - 34 years	156	19.21	16.00	22.42
35 - 44 years	128	15.72	12.79	18.65
45 - 54 years	119	14.66	11.98	17.33
55 - 64 years	159	19.51	16.58	22.44
65 years or older	251	30.90	27.61	34.20
Total	813	100.00		
Frequency Missing = 31				

When comparing *age of respondents by how informed they are about air quality issues in the Treasure Valley*, the older the respondent, the more likely he/she is to feel informed and the less likely to feel uninformed (Table 81).

Table 81. Comparison of age categories by how informed about air quality issues in the Treasure Valley

Comparison of age categories by how informed about air quality issues in the Treasure Valley – in percentages

	Very Informed	Somewhat Informed	Somewhat Uninformed	Very Uninformed
18 - 34 years	7.9	31.3	38.4	22.4
35 - 44 years	11.8	46.2	30.3	11.6
45 - 54 years	25.1	30.6	35.8	8.5
55 - 64 years	22.2	51.4	20.9	5.5
65 years or older	24.3	45.4	25.4	4.9
Rao Scott Chi Square = 62.8337				
DF = 12				
Pr > ChiSq = <.0001				
Comparison Reference = Table 31				

When comparing *age of respondents by what information about air quality would grab attention most*, it's not surprising that older respondents may take more notice of information about personal health whereas younger respondents may take more notice of information about children's health. In addition, older respondents may take more note of information about air quality's impact on the environment (Table 82).

Table 82. Comparison of age categories by air quality information that would grab attention the most

Comparison of age categories by air quality information that would grab attention the most – in percentages

	Impacts on Your Health	Impacts on the Local Economy	Impacts on Your Children's Health	Impacts on the Environment	Impact on Outdoor Activities	Other
18 - 34 years	36.7	3.4	37.0	7.0	10.7	5.2
35 - 44 years	34.6	2.4	40.3	4.9	16.1	1.6
45 - 54 years	36.1	6.2	29.1	14.0	12.3	2.2
55 - 64 years	47.8	7.8	14.1	12.2	9.6	8.5
65 years or older	51.2	5.2	13.1	12.1	13.1	5.3
Rao Scott Chi Square = 61.8684						
DF = 20						
Pr > ChiSq = < .0001						
Comparison Reference = Table 52						

A comparison of *age of respondents by change in air quality over time lived in the area* was performed. The results were not statistically significant. This comparison is provided for reference in Appendix C, Table 91.

50% of respondents have lived in the Treasure Valley more than 20 years and 25% have lived here 10-20 years. Conversely, 5% have lived here less than two years (Table 83).

Respondents saying they have lived in the Treasure Valley less than five years were asked the follow-up question, *Where did you move from?* 26% of these respondents said they moved from California, 14% moved from another part of Idaho, 9% moved from Washington and 7% moved from Arizona. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 34 and SD-Table 35).

Table 83. Time lived in the Treasure Valley

Q25 – How long have you lived in the Treasure Valley?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Less than 2 years	43	5.15	3.38	6.91
2-5 years	49	5.79	4.00	7.59
5-10 years	115	13.69	11.15	16.24
10-20 years	213	25.23	21.96	28.50
More than 20 years	422	50.14	46.45	53.84
Total	843	100.00		

When comparing the *number of years lived in the Treasure Valley* by *whether air quality has gotten better or worse*, respondents having lived in the area less than five years are more likely to say there has been no change and less likely to say it's gotten worse. The same finding is true to a lesser degree for respondents having lived in the area five to ten years. On the other hand, those having lived in the area for more than 20 years are more likely to say the air quality has gotten worse (Table 84).

Table 84. Comparison of number of years lived in the Treasure Valley by change in air quality over time

Comparison of number of years lived in the Treasure Valley by change in air quality – in percentages

	A Lot Better	Somewhat Better	No Change	Somewhat Worse	A Lot Worse
Less than 5 years	1.1	7.1	76.6	13.3	1.9
5-10 years	0.9	13.4	47.2	29.8	8.7
10-20 years	2.9	10.6	32.4	42.7	11.4
More than 20 years	4.3	11.1	26.5	40.1	18.1
Rao Scott Chi Square = 87.071					
DF = 12					
Pr > ChiSq = < .0001					
Comparison reference = Table 3					

When comparing the *number of years lived in the Treasure Valley* by the *sufficiency of regulations on residential burning (fireplaces, outdoor burning, etc.)*, respondents having lived in the area the shortest or the longest are more likely to say the regulations are sufficient while those having lived in the area 5 to 20 years are more likely to say they are somewhat insufficient (Table 85).

Comparisons with *time lived in the Treasure Valley* were also made for the variables of *agricultural emissions regulations, industrial emissions regulations, and vehicle emissions regulations*. These comparisons were not statistically significant and are provided for reference in Appendix C, Table 106 through Table 108.

Table 85. Comparison of number of years lived in the Treasure Valley by sufficiency of regulations on residential burning

Comparison of number of years lived in the Treasure Valley by sufficiency of regulations on residential burning – in percentages

	Very Sufficient	Somewhat Sufficient	Somewhat Insufficient	Very Insufficient
Less than 5 years	41.2	42.5	7.6	8.7
5-10 years	22.1	41.9	28.5	7.5
10-20 years	26.9	44.2	21.2	7.7
More than 20 years	30.3	50.5	11.7	7.4
Rao Scott Chi Square = 19.6268				
DF = 9				
Pr > ChiSq = 0.0204				
Comparison Reference = Table 75				

When comparing the number of years lived in the Treasure Valley by factors having the largest impact on air quality, we found that respondents having lived in the area less than five years are less likely to view weather related causes and smoke from residential burning as the largest contributors to negative air quality and more likely to view industrial and agricultural emissions and smoke from outdoor burning as the largest contributors. Respondents having lived in the area five to ten years are less likely to view vehicle emissions as the largest contributor and are more likely to view agricultural emissions and smoke from outdoor burning as the largest contributors (Table 86).

In order to perform statistical tests on the cross-tabulation, construction activities—with just six respondents saying it has the largest negative impact—was excluded from the analysis.

Table 86. Comparison of number of years lived in the Treasure Valley by factors having the largest impact on air quality

Comparison of number of years lived in the Treasure Valley by factors having the largest impact on air quality – in percentages

	Vehicle Emissions	Wildfires	Weather Related Causes	Industrial Emissions	Pollen and Other Allergens	Agricultural or Dust Emissions	Smoke from Wood Burning Stoves or Fireplaces	Outdoor Burning
Less than 5 years	41.6	21.0	2.3	19.5	4.0	6.9	0.6	4.0
5-10 years	32.7	25.1	12.4	7.8	6.9	6.3	4.8	4.0
10-20 years	42.1	23.1	11.7	11.1	6.7	1.3	2.8	1.2
More than 20 years	45.6	21.2	13.6	6.6	8.1	1.9	2.0	0.9
Rao Scott Chi Square = 47.2902								
DF = 21								
Pr > ChiSq = 0.0009								
Comparison Reference = Table 13								

14% of respondents own a business in the Treasure Valley (Table 87).

Table 87. Ownership of business in the Treasure Valley

Q27 - Do you own a business in the Treasure Valley?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Yes	118	14.08	11.46	16.70
No	722	85.92	83.30	88.54
Total	840	100.00		
Frequency Missing = 3				

Table 88 shows that a majority of respondents (53%) have a post high school degree while 24% have some college experience but no degree. 20% are high school graduates only.

Table 88. Level of education completed

Q29 - What is the highest level of education that you have completed?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
8th grade or less	11	1.35	0.51	2.20
9th-12th no diploma	21	2.50	1.36	3.64
High school graduate	162	19.55	16.70	22.40
Some college, no degree	199	24.04	20.84	27.23
Associate's degree	73	8.85	6.69	11.01
Bachelor's degree	222	26.77	23.45	30.10
Graduate or professional degree	140	16.94	14.12	19.77
Total	829	100.00		
Frequency Missing = 14				

Table 89 shows that the vast majority of respondents are white.

Table 89. Race / ethnicity of respondents

Q30 - Which of the following categories describes your race or ethnicity?

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
African American	7	0.82	0.13	1.51
American Indian	8	0.94	0.34	1.54
Asian	18	2.16	1.01	3.31
Hispanic	34	4.01	2.64	5.38
White	749	88.88	86.61	91.14
Other	6	0.68	0.06	1.29
Total	821	97.48		
Frequency Missing = 22				

Household incomes of the respondents are spread relatively evenly across the income categories (Table 90).

Table 90. Household income of respondents

Q31 - Please stop me when I reach the category that best describes your total household income.

	Weighted Frequency	Percent	95% Confidence Limits for Percent	
Less than \$24,999	124	17.57	14.32	20.82
\$25,000-\$34,999	107	15.22	12.32	18.11
\$35,000-\$49,999	136	19.36	16.20	22.52
\$50,000-\$74,999	138	19.61	16.41	22.82
\$75,000-\$99,999	90	12.72	10.01	15.42
More than \$100,000	109	15.52	12.51	18.53
Total	704	100.00		
Frequency Missing = 150				

Respondents were asked if they had questions or concerns regarding air quality in the Treasure Valley. 246 respondents made a comment(s) and/or asked a question(s). A total of 318 comment items were identified during content analysis. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 36 and SD-Table 37). In brief:

- 13% made a comment about needing better public or alternative transportation or commented on improving the road system.
- 12% asked a question, needed information or had an idea that may be useful.
- 11% commented on industrial, agricultural or construction emissions.
- 10% commented on inversions, smoke in the air or weather as an uncontrollable factor in air quality.

For the final question of the interview, respondents were asked if they had anything else they wanted to add regarding air quality in the Treasure Valley. 61 respondents made a comment(s) and a total of 68 comment items were identified during content analysis. A summary table and a categorized list of all responses are provided in the Supplemental Document (SD-Table 39 and SD-Table 39). In brief:

- 18% made a positive comment about the survey itself.
- 13% made a positive comment about air quality regulations or their enforcement.
- 13% made a suggestion or expressed a concern about vehicle emissions.
- 7% commented that they felt Treasure Valley air quality is good.

APPENDICES

APPENDIX A – TELEPHONE SURVEY INSTRUMENT

Air Quality

First, we have a few general questions about your perceptions of air quality in your area.

1. In general, over the entire year how would you rate the outdoor air quality where you live?
Would you rate it as...?
 - a. VERY POOR
 - b. POOR
 - c. NEITHER POOR nor GOOD
 - d. GOOD
 - e. VERY GOOD
 - f. (Don't know)
 - g. (Refused)

2. Do you think air quality in the Treasure Valley has gotten better or worse in the time you have lived here?
 - a. A lot better
 - b. Somewhat better
 - c. No change
 - d. Somewhat worse
 - e. A lot worse
 - f. (Don't know)
 - g. (Refused)

Pollution Sources

3. Please tell me how much or how little you believe each of the following items contribute to poor air quality. [Randomize List]

- a. Industrial Emissions (such as manufacturing plants)
- b. Vehicle emissions
- c. Agricultural dust or emissions
- d. Smoke from wood burning stoves or fireplaces
- e. Wildfires
- f. Outdoor burning
- g. Construction activities
- h. Pollen and other allergens
- i. Weather related causes

- 1. Does not contribute at all
- 2. Contributes a little bit
- 3. Contributes a moderate amount
- 4. Contributes significantly
- 5. (Refused)

4. Of the factors I have just mentioned, which do you think has the largest negative impact on air quality?

- a. Industrial Emissions (i.e., manufacturing plants)
- b. Vehicle emissions
- c. Agricultural dust or emissions
- d. Smoke from wood burning stoves or fireplaces
- e. Wildfires
- f. Outdoor burning
- g. Construction activities
- h. Pollen and other allergens
- i. Weather related causes
- j. (Refused)

Impacts of Air Pollution

5. Has exposure to poor air ever triggered health related problems for you or anyone in your household?

[YES OR NO]

IF YES, ASK "HOW WOULD YOU DESCRIBE THE HEALTH PROBLEMS" [Ask as open ended]

IF NO, SKIP TO Q7

Allergies
Asthma
Headaches
It is harder to breathe when exercising
Depressed
Feel Sluggish
(Refused)

6. Thinking about air quality related health problems, please rate the degree to which each of the following air quality issues negatively impact you or your family. [Randomize List]

- a. Industrial Emissions (i.e., manufacturing plants)
- b. Vehicle emissions
- c. Agricultural dust or emissions
- d. Smoke from wood burning stoves or fireplaces
- e. Forest fires
- f. Outdoor burning
- g. Construction activities
- h. Pollen and other allergens
- i. Weather related causes

1. No impact at all
2. Small impact
3. Moderate impact
4. Significant impact
5. Extreme impact
6. (Refused)

7. To reduce your exposure to poor outdoor air quality, how many times did you do any of the following in the past year?

0 Times	1-5 Times	6-10 Times	More Than 10 Times
--------------------	----------------------	-----------------------	-------------------------------

- a. Shut windows
- b. Limited outdoor activities
- c. Used an air purifier
- d. Left town to avoid the poor air quality
- e. (Refused)

Knowledge of Air Quality

8. How informed are you about air quality issues in the Treasure Valley?

- a. Very informed
- b. Somewhat informed
- c. Slightly informed
- d. Not informed
- e. (Don't know)
- f. (Refused)

IF ANSWER IS "D" OR "E" SKIP TO Q10

9. Where do you get MOST of your information about air quality? Please select ONE of the following:

- a. Newspapers *specify* _____
- b. Internet *specify* _____
- c. TV *specify* _____
- d. Radio *specify* _____
- e. Magazines *specify* _____
- f. Government agencies *specify* _____
- g. Family and friends
- h. Co-workers/colleagues
- i. Other *specify* _____
- j. (Refused)

10. How would you prefer to receive information about air quality? [Mark all that apply]

1. Reading material, such as a pamphlet or brochure
2. A web site dedicated to Treasure Valley air quality
3. Public service announcements (TV or radio advertising)
4. Public meetings about air quality
5. Smart phone, tablet apps or text messages
6. An air quality booth at a public event
7. One-on-one conversations (such as a phone call or personal meeting)
8. Other _____
9. (Refused)

11. Can you recall seeing or hearing any messages in the past year regarding air quality in the Treasure Valley?

- a. Yes
 - b. No
 - c. (Don't recall)
 - d. (Refused)
- IF DON'T RECALL, SKIP TO Q15

12. Where did you see or hear this message?

- a. Television
 - b. Radio
 - c. Newspaper or printed material
 - d. Billboard or electronic reader board
 - e. Other _____
 - f. (Don't recall)
 - g. (Refused)
- IF DON'T RECALL, SKIP TO Q15

13. What was the message?

[Ask as open ended]

IF DON'T RECALL, SKIP TO Q15

14. How useful was the information contained in the message to you and your family?

- a. Very useful
- b. Somewhat useful
- c. Not very useful
- d. Not at all useful
- e. (Don't know)
- f. (Refused)

15. What air quality issues would you like to learn more about? [Mark all that apply]
- What specifically pollutes our air?
 - What are the biggest contributors to poor air quality?
 - What can I do that would make a difference in air quality?
 - How do I know if air quality is bad/how do I find out the quality of the air?
 - How do I know when there is a burn ban?
 - How are air quality regulations enforced?
 - Other _____
 - Don't know/not sure
 - (Refused)
16. If you had specific questions about air quality, what sources would you use to find the information you need? [Mark all that apply]
- Call a local or state agency (specify) _____
 - A local or state agency website (specify) _____
 - Search on the Internet
 - The local news or weather
 - Other _____
 - (Don't know)
 - (Refused)
17. Have you used any of the following sources of information regarding air quality? [Randomize list] Yes or no [Mark all that apply]
- Idaho Department of Environmental Quality
 - National Weather Service
 - Local news broadcast
 - Weather.com/The Weather Channel
 - Ada County Air Quality Board
 - U.S. Environmental Protection Agency
 - The Community Planning Association (COMPASS)
 - City of Boise
 - Airnow.gov
 - Other _____

18. What information about Treasure Valley air quality would grab your attention the most?
[SELECT ONE]

1. Impacts on your health
2. Impacts on the local economy
3. Impacts on your children's health
4. Impacts on the environment
5. Impacts on outdoor activities
6. Other _____
7. (Don't know)
8. (Refused)

Steps to Improve Air Quality

19. How much of an impact do you believe each of the following actions have on improving air quality? [Randomize list]

- a. Car pooling
- b. Biking or walking to work or errands
- c. Refraining from outdoor burning
- d. Meeting vehicle emissions guidelines
- e. Keeping vehicles well maintained and in good running order
- f. Reducing idling of vehicles
- g. Having a newer wood stove installed
- h. Using public transportation
- i. Not using a wood stove/wood burning fireplace

1. No impact
2. A small impact
3. A moderate impact
4. A large impact
5. A very large impact
6. (Refused)

20. Have you or members of your household taken any of these actions to improve air quality in the past year?

- a. Car pooling
- b. Biking or walking to work or errands
- c. Refraining from outdoor burning
- d. Keeping vehicles well maintained and in good running order
- e. Reducing idling of vehicles
- f. Having a newer wood stove installed
- g. Using public transportation
- h. Not using a wood stove/wood burning fireplace
- i. Other _____
- j.

1. YES
2. NO
3. NA
4. (Refused)

21. In your opinion, how sufficient or insufficient are existing regulations to protect air quality for each of the following types of emissions.

- a. Residential burning (fireplace, outdoor burning, etc.)
- b. Agricultural emissions
- c. Industrial emissions
- d. Vehicle emissions

1. Very sufficient
2. Somewhat sufficient
3. Somewhat insufficient
4. Very insufficient
5. Don't know
6. (Refused)

22. How likely are you to know when a burn ban is in place?

- a. Very likely
- b. Somewhat likely
- c. Somewhat unlikely
- d. Very unlikely
- e. I was unaware that burn bans existed
- f. (Don't know)
- g. (Refused)

DEMOGRAPHICS

Now I have a few questions that are asked for data analysis purposes.

23. What year were you born?

24. In which county do you live?

25. How long have you lived in the Treasure Valley?
IF LIVED IN TREASURE VALLEY 5 YEARS OR MORE, SKIP TO Q27

26. Where did you move from?

27. Do you own a business in the Treasure Valley?
 1. YES
 2. NO
 3. (Refused)

28. Approximately how many days in the past week did you read, watch, or listen, to the news?

29. What is the highest level of education that you have completed?
 - a. 8th grade or less
 - b. 9th-12th grade, no diploma
 - c. High school graduate (includes GED)
 - d. Some college, no degree
 - e. Associate's degree
 - f. Bachelor's degree
 - g. Graduate or professional degree
 - h. (Refused)

30. Which of the following categories describes your race or ethnicity?
[Respondents can mark more than one]
 1. African American
 2. American Indian
 3. Asian/Pacific Islander
 4. Hispanic/Latino/a
 5. White/Caucasian
 6. Other (specify)
 7. (Refused)

31. Please stop me when I reach the category that best describes your total household income.

1. Less than \$24,999
2. Between \$25,000 and \$34,999
3. Between \$35,000 and \$49,999
4. Between \$50,000 and \$74,999
5. Between \$75,000 and \$99,999
6. More than \$100,000
7. (Refused)

32. How many landline numbers do you have in your household?

33. How many cell phone numbers are used by members of your household?

34. What questions or concerns do you have regarding air quality in the Treasure Valley?

35. That's all the questions I have. Do you have anything you'd like to add about air quality in the Treasure Valley?

APPENDIX B – TEXT OF PRE-CALL POSTCARD

Ada & Canyon Air quality Survey

July 2012

Next week the University of Idaho's Social Science Research Unit will be calling you to participate in a telephone survey to understand how residents of the Treasure Valley feel about the Valley's air quality. The survey is sponsored by COMPASS – Community Planning Association, the Department of Environmental Quality and the Ada County Air Quality Board.

We are writing in advance of our telephone call to let you know that this study is being done and that you have been randomly selected to be called.

The interview should take about 14 minutes. If we call when you are busy, please tell the interviewer and they will call back another time.

If you have any questions about the survey please call the Social Science Research Unit (SSRU) at our toll-free number 1-877-542-3019.

Sincerely,

Barbara E Foltz

SSRU Survey Operations Manager

APPENDIX C – NON-SIGNIFICANT COMPARISONS**Table 91. Age by change in air quality**

Age by change in air quality					
Years	A Lot Better	Somewhat Better	No Change	Somewhat Worse	A Lot Worse
18-34	1.0%	9.5%	31.9%	50.5%	7.1%
35-44	2.4%	13.2%	37.7%	34.6%	12.0%
45-54	1.8%	12.6%	40.7%	31.1%	13.9%
55-64	4.6%	11.5%	31.0%	35.4%	17.4%
65+	4.4%	10.2%	39.2%	30.4%	15.7%
Rao Scott Chi Square = 25.7741					
DF = 16					
Pr > ChiSq = 0.0573					

Table 92. County by overall air quality throughout year

County by overall air quality throughout year					
	Very Good	Good	Neither Poor nor Good	Poor	Very Poor
Ada	0.69%	9.66%	15.64%	57.62%	16.39%
Canyon	1.73%	8.92%	12.67%	60.35%	16.33%
Rao-Scott Chi-Square 3.4760					
DF = 4					
Pr > ChiSq = 0.4815					

Table 93. County by change in air quality over time lived in area

County by change in air quality over time lived in area					
	A lot better	Somewhat better	No change	Somewhat worse	A lot worse
Ada	3.4%	11.4%	34.3%	37.9%	13.0%
Canyon	2.4%	9.5%	41.2%	33.2%	13.7%
Rao Scott Chi Square = 5.1041					
DF = 4					
Pr > ChiSq = 0.2768					

Table 94. County by degree of being informed about air quality

County by degree of being informed about air quality				
	Very informed	Somewhat informed	Slightly informed	Not informed
Ada	19.2%	40.0%	29.9%	10.9%
Canyon	18.0%	44.6%	27.9%	9.5%
Rao Scott Chi Square = 1.7095				
DF = 3				
Pr > ChiSq = 0.6348				

Table 95. County by what information would grab attention

County by what information would grab attention						
	Impacts on your health	Impacts on the local economy	Impacts on your children's health	Impacts on the environment	Impact on outdoor activities	Other (specify)
Ada	44.1%	4.9%	24.6%	9.9%	11.7%	4.9%
Canyon	42.1%	5.4%	24.0%	10.1%	13.2%	5.2%
Rao Scott Chi Square = 0.7016						
DF = 5						
Pr > ChiSq = 0.9829						

Table 96. County by sufficiency of regulations - Residential burning Residential burning (fireplace, outdoor burning, etc.)

County by sufficiency of regulations - Residential burning Residential burning (fireplace, outdoor burning, etc.)				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Ada	26.9%	48.2%	17.2%	7.7%
Canyon	34.8%	44.8%	12.9%	7.4%
Rao Scott Chi Square = 5.1527				
DF = 3				
Pr > ChiSq = 0.1609				

Table 97. County by sufficiency of regulations - Agricultural emissions

County by sufficiency of regulations - Agricultural emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Ada	23.4%	47.3%	18.4%	11.0%
Canyon	30.7%	49.7%	12.4%	7.2%
Rao Scott Chi Square = 7.6997				
DF = 3				
Pr > ChiSq = 0.0526				

Table 98. County by sufficiency of regulations - Industrial emissions

County by sufficiency of regulations - Industrial emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Ada	24.1%	39.2%	21.7%	15.0%
Canyon	27.4%	44.5%	17.3%	10.7%
Rao Scott Chi Square = 4.752				
DF = 3				
Pr > ChiSq = 0.1909				

Table 99. County by sufficiency of regulations - Vehicle emissions

County by sufficiency of regulations - Vehicle emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Ada	30.7%	43.5%	14.5%	11.3%
Canyon	37.4%	43.1%	12.6%	6.9%
Rao Scott Chi Square = 6.5487				
DF = 3				
Pr > ChiSq = 0.0878				

Table 100. County by likelihood to be aware of burn ban

County by likelihood to be aware of burn ban						
	Very likely	Somewhat likely	Somewhat unlikely	Very unlikely	I was unaware that burn bans existed	Don't know (don't read)
Ada	44.0%	27.6%	11.5%	11.0%	4.8%	1.0%
Canyon	50.8%	28.8%	8.6%	7.9%	3.4%	0.5%
Rao Scott Chi Square = 6.9127						
DF = 5						
Pr > ChiSq = 0.2272						

Table 101. Factors having largest impact on air quality by what information would grab attention

Factors having largest impact on air quality by what information would grab attention						
	Impacts on your health	Impacts on the local economy	Impacts on your children's health	Impacts on the environment	Impact on outdoor activities	Other
Industrial emissions	43.3%	2.6%	24.4%	10.0%	14.7%	5.0%
Vehicle emissions	44.3%	5.3%	23.6%	13.6%	9.5%	3.7%
Agricultural or dust emissions	47.9%	0.0%	23.6%	16.7%	2.4%	9.3%
Smoke from wood burning stoves or fireplaces	54.3%	3.6%	11.4%	10.5%	12.4%	7.8%
Wildfires	41.1%	4.6%	28.5%	7.6%	12.4%	5.8%
Outdoor burning	25.6%	14.7%	37.9%	10.4%	3.8%	7.6%
Pollen and other allergens	51.4%	2.7%	29.2%	1.8%	12.4%	2.5%
Weather related causes	38.4%	7.5%	19.4%	5.6%	21.9%	7.2%
Rao Scott Chi Square = Undefined						
DF = Undefined						
Pr > ChiSq = Undefined						

Table 102. Factors having largest impact on air quality by regulations - Residential burning

Factors having largest impact on air quality by regulations - Residential burning				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Industrial emissions	26.3%	56.8%	10.0%	6.9%
Vehicle emissions	25.8%	47.7%	17.9%	8.6%
Agricultural or dust emissions	68.6%	17.3%	11.2%	2.9%
Smoke from wood burning stoves or fireplaces	15.4%	53.5%	22.5%	8.6%
Wildfires	28.4%	45.7%	18.6%	7.3%
Outdoor burning	30.0%	23.8%	23.5%	22.7%
Pollen and other allergens	29.2%	50.2%	13.5%	7.1%
Weather related causes	35.8%	50.9%	9.9%	3.4%
Rao Scott Chi Square = 28.4544				
DF = 21				
Pr > ChiSq = 0.1277				

Table 103. Factors having largest impact on air quality by regulations - Agricultural emissions

Factors having largest impact on air quality by regulations - Agricultural emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Industrial emissions	18.2%	57.2%	22.7%	1.9%
Vehicle emissions	24.5%	46.9%	16.0%	12.6%
Agricultural or dust emissions	21.9%	14.0%	39.1%	25.1%
Smoke from wood burning stoves or fireplaces	11.3%	60.8%	20.4%	7.5%
Wildfires	25.7%	52.3%	11.6%	10.3%
Outdoor burning	26.8%	14.1%	41.5%	17.5%
Pollen and other allergens	26.3%	54.8%	19.0%	0.0%
Weather related causes	41.6%	48.4%	6.4%	3.7%
Rao Scott Chi Square = Undefined				
DF = Undefined				
Pr > ChiSq = Undefined				

Table 104. Factors having largest impact on air quality by regulations - Industrial emissions

Factors having largest impact on air quality by regulations - Industrial emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Industrial emissions	8.4%	25.5%	27.5%	38.5%
Vehicle emissions	22.6%	40.2%	23.4%	13.8%
Agricultural or dust emissions	41.7%	27.8%	16.6%	14.0%
Smoke from wood burning stoves or fireplaces	29.5%	50.7%	13.2%	6.6%
Wildfires	29.1%	44.0%	19.2%	7.7%
Outdoor burning	15.3%	20.5%	20.5%	43.8%
Pollen and other allergens	30.8%	51.0%	18.2%	0.0%
Weather related causes	37.3%	45.5%	10.7%	6.5%
Rao Scott Chi Square = Undefined				
DF = Undefined				
Pr > ChiSq = Undefined				

Table 105. Factors having largest impact on air quality by regulations - Vehicle emissions

Factors having largest impact on air quality by regulations - Vehicle emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Industrial emissions	26.5%	56.9%	9.6%	6.9%
Vehicle emissions	29.9%	40.5%	17.5%	12.1%
Agricultural or dust emissions	33.2%	40.7%	19.0%	7.1%
Smoke from wood burning stoves or fireplaces	37.5%	34.3%	15.5%	12.7%
Wildfires	30.1%	43.9%	14.3%	11.7%
Outdoor burning	46.3%	53.7%	0.0%	0.0%
Pollen and other allergens	52.5%	35.2%	7.1%	5.2%
Weather related causes	35.9%	49.1%	7.3%	7.8%
Rao Scott Chi Square = Undefined				
DF = Undefined				
Pr > ChiSq = Undefined				

Table 106. Number of years lived in area by sufficiency of regulations - Agricultural emissions

Number of years lived in area by sufficiency of regulations - Agricultural emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Less than 5 years	19.2%	52.2%	21.7%	7.0%
5-10 years	19.7%	54.0%	20.3%	6.0%
10-20 years	22.0%	52.5%	10.7%	14.8%
More than 20 years	30.6%	43.7%	16.9%	8.8%
Rao Scott Chi Square = 13.1795				
DF = 9				
Pr > ChiSq = 0.1547				

Table 107. Number of years lived in area by sufficiency of regulations - Industrial emissions

Number of years lived in area by sufficiency of regulations - Industrial emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Less than 5 years	15.0%	58.4%	15.8%	10.8%
5-10 years	23.8%	37.5%	22.4%	16.3%
10-20 years	18.2%	41.6%	25.7%	14.5%
More than 20 years	30.9%	38.6%	17.9%	12.7%
Rao Scott Chi Square = 14.6692				
DF = 9				
Pr > ChiSq = 0.1004				

Table 108. Number of years lived in area by sufficiency of regulations - Vehicle emissions

Number of years lived in area by sufficiency of regulations - Vehicle emissions				
	Very sufficient	Somewhat sufficient	Somewhat insufficient	Very insufficient
Less than 5 years	34.0%	44.2%	15.3%	6.6%
5-10 years	35.7%	43.4%	16.6%	4.3%
10-20 years	29.7%	46.0%	14.2	10.1
More than 20 years	32.9%	42.1%	12.8%	12.2%
Rao Scott Chi Square = 7.3126				
DF = 9				
Pr > ChiSq = 0.6046				