

**CLEAN WATER
PUBLIC ATTITUDES & KNOWLEDGE
SURVEY RESEARCH**

Conducted for:



**Clark County Public Works
Clean Water Program**

**Data collected
November 2007 & January 2008**





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INTRODUCTION

Clark County's Clean Water Program contracted with Campbell DeLong Resources, Inc. (CDRI) to conduct a survey with residents of the County's unincorporated areas. The purpose of the research is to assess residents' attitudes and understanding of issues surrounding water quality in Clark County. This baseline information can then be used when developing programs aimed at reducing the impact of individuals and households on local water systems.

The report is divided into the following sections:

- ▶ ***Executive Summary***, highlighting the key findings of the research.
- ▶ ***Research Results***, outlining the findings from the research.
- ▶ ***Conclusions and Recommendations***, providing the next steps we believe should be taken based on the research and our past experience.
- ▶ ***Appendix***, containing a review of the survey methodology as well as a copy of the survey questionnaire and the data printout.

If you have questions or comments about this research, contact [Martha DeLong](mailto:Martha.DeLong@cdri.com) at Campbell DeLong Resources, Inc. by phone at (503) 221-2005 or email Marthad@cdri.com.

Within Clark County, questions can be directed to [Cindy Stienbarger](mailto:Cindy.Stienbarger@clark.wa.gov), *Education and Outreach Coordinator, Public Works Clean Water Program*, at (360) 397-6118 ext. 4584, or email Cindy.Stienbarger@clark.wa.gov.

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EXECUTIVE SUMMARY

The following summarizes key points from the research. To understand the full depth of the research, however, the reader is urged to review the entire report.

METHODS

In November 2007 and January 2008, Campbell DeLong Resources, Inc. conducted a telephone survey of 400 residents in unincorporated areas of Clark County. For full detail on the survey methods, see page 35 in the Appendix. The questionnaire and data printouts are also included in the Appendix.

OBJECTIVES

The goal of the research is to provide Clark County's Clean Water Program with information about public attitudes and behavior that can be used to develop educational and outreach programs.

RESEARCH RESULTS

Key findings include:

- ▶ There is no clear consensus on which environmental issue should be a priority for County action, with responses almost evenly split between *"cleaning up rivers/streams,"* *"preserving natural areas,"* and *"increasing alternative energy."* *"Improving air quality"* is a much lower priority compared to the other issues.
- ▶ Majority of residents are confident their drinking water is clean. However, perceptions of quality decline sharply when it comes to area lakes, rivers, and streams.
- ▶ Residents perceive business, rather than households, as having the greatest collective negative impact on water quality. At the same time, most realize that households can take actions to reduce their impact. Younger residents appear more aware that households have a major impact on water quality.
- ▶ The two actions individuals can take to improve water quality rated by far the highest in importance are recycling motor oil and maintaining cars so that oil and other fluid leaks are avoided. These are also the actions residents are most likely to have taken.
- ▶ In addition to motor oil issues, other actions residents consider very important include picking up after dogs in public places and using organic garden products. Actions perceived as less important for water quality include rainwater diversion, using native plants, going to car washes rather than washing at home, and replacing concrete surfaces.
- ▶ Nearly everyone with a dog says they pick up after their dog in public, though fewer do so in their own yard. About 6 in 10 use organic fertilizers and native plants, and about half of

residents say they avoid the use of chemicals or weed-and-feed. Fewer than 2 in 10 residents have replaced concrete surfaces with permeable materials.

- ▶ “Gap” analysis indicates that motivations other than improving water quality are responsible for residents taking some actions, including maintaining cars, diverting runoff, using native plants, and washing cars at car washes rather than at home.
- ▶ When looking at barriers to taking action, “*not knowing what to do*” is perceived as the top barrier. Lack of time is also a perceived barrier for many. Cost of car washes is another major concern. On the gardening side, it is clear that the main impediment to taking action is the cost of organic products, rather than lack of availability or effectiveness.
- ▶ Nearly everyone agrees about the need to reduce impact on area water quality for the sake of future generations. There is also agreement on the need to protect children and pets from chemicals typically used in the yard. Most residents would like to receive more information from the County about what individuals can do to reduce pollution in lakes and streams.
- ▶ Bill inserts are the major source for water quality information, followed by *The Columbian*.
- ▶ A majority of residents are at least somewhat interested in receiving a free rainwater diversion kit.
- ▶ The overall average rating for value of the Clean Water Fee is 3.5 on a 5-point scale. Women are significantly more likely than are men to think the fee provides good value.
- ▶ Respondents come from all areas of the county, splitting between suburban and rural, with a handful considering themselves urban residents. Most do not have children in the home, although those who do are more likely than are urbanites to have a large family. Residents tend to be on the older side (average age 52), have lived in the County a long time, be homeowners, and be slightly less educated than are those in urban areas.

KEY CONCLUSIONS & RECOMMENDATIONS

1. **Clark County residents care, and are concerned about, local water quality.**
2. **Communications need to stress both the negative impact each household can have on local water quality and the actions that a household can take to reduce its impact. Providing feedback is key.**
3. **Preserving clean water for future generations is the key message.**
4. **Increase efforts to communicate benefits provided by Clean Water program.**

More detailed Key Conclusions and Recommendations may be reviewed, starting on page 29 of this report.

RESEARCH RESULTS

I. Perceptions of Water Quality Issues

RESIDENTS ARE SPLIT BETWEEN VARIOUS ENVIRONMENTAL PRIORITIES.

At the beginning of the survey, before becoming aware that the topic of the survey is water quality issues, respondents were read a list of environmental issues and asked which one they believe should be the top priority in Clark County:¹

- ✓ *Cleaning up local rivers, lakes, & streams*
- ✓ *Preserving undeveloped & natural areas*
- ✓ *Increasing the use of alternative energy*
- ✓ *Improving air quality*

As shown on the graphic, there is no clear consensus on which of these issues should be the priority: responses are almost evenly split between “*cleaning up rivers/streams*” (31%), “*preserving natural areas*” (29%), and “*increasing alternative energy*” (28%). However, it is quite clear that “*improving air quality,*” with only 8% mentions, is currently a much lower priority compared to the other issues.

Responses are generally similar across various demographic segments of the sample, including by gender, length of residence, presence of children, and education. However, there are a few differences in priorities for environmental issues, as follows:

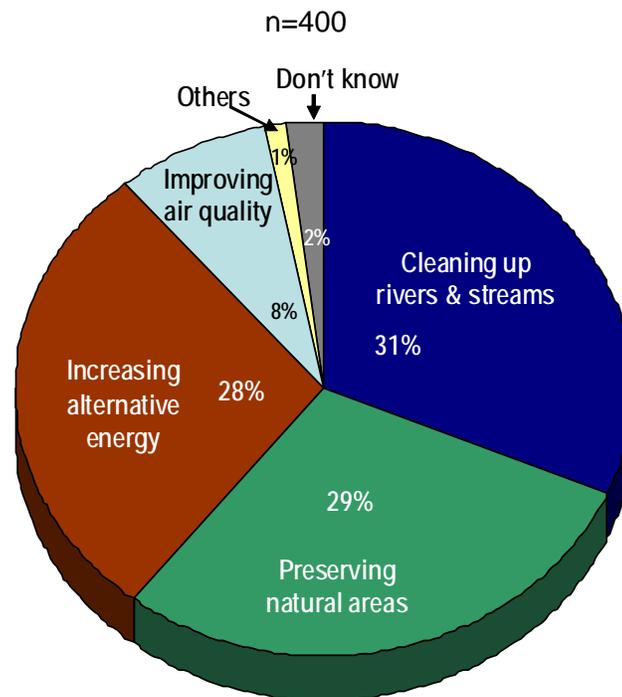
- ▶ **Younger residents place higher priority on alternative energy.** Those ages 18 to 34 are significantly more likely than are older residents to view “*increasing alternative energy*” as the top priority for Clark County (42%, versus 30% among those 35 to 54 and 21% among those 55 and older). Younger residents are less likely to say “*preserving natural areas*” (17%, versus 30% and 32% among older age groups) should be the top priority. “*Cleaning up rivers/streams*” consistently receives about 3 in 10 mentions from all age groups.
- ▶ **Urban residents most concerned about cleaning up waterways.** The relatively small group of unincorporated area residents who describe themselves as living in an “urban” area

¹ To avoid order bias in responses, the computer-aided interviewing program automatically “randomized” lists of items throughout the survey, so that the order of the items varied from respondent to respondent.

are the most likely segment to see to see “*cleaning up rivers/streams*” as the top priority (42%, versus 27% among self-described rural residents; suburban residents, at 34% are very similar to the sample as a whole). Due to the small sample size for “urban” residents (n=36), however, the difference between urban and rural residents is significant at the 85% confidence level rather than the industry-standard 95% level.

Number 1 priority for environmental issues

Q: *I am going to read you a list of environmental issues. If Clark County could only focus on one of these issues, which one do you believe should be the top priority in Clark County?*



MAJORITY ARE CONFIDENT THEIR DRINKING WATER IS CLEAN. PERCEPTIONS OF QUALITY DECLINE WHEN IT COMES TO LAKES, RIVERS, AND STREAMS.

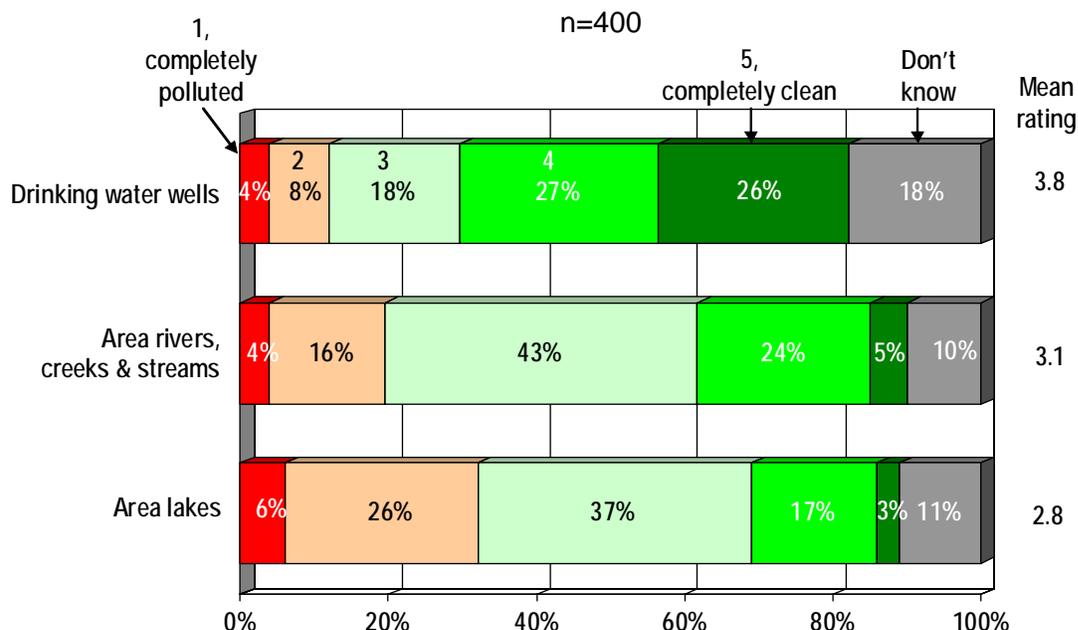
Residents then were asked to rate their perception of how clean three types of water are in Clark County: area lakes; area rivers, creeks, and streams; and wells that provide Clark County drinking water. A 1 to 5 scale was used, with a “1” meaning “completely polluted” and a “5” meaning “completely clean.” As shown on the graphic, just over half of residents provide a “4” or “5” rating for the drinking water wells, indicating that they consider their drinking water to be relatively clean. While a fairly good rating, it is lower than might be anticipated for a drinking water source, especially given that “safe” drinking water is always a very important consideration. In addition, the percentage of “don’t know” responses to this question is relatively high — 18%. These are all indications that there is some concern in Clark County over the drinking water wells.

While there may be some concern about the wells, unincorporated Clark County residents clearly perceive more problems with other types of area water. Only about 3 in 10 perceive area rivers, creeks, and streams as relatively clean. Ratings decline even further for area lakes, with just 2 in 10 providing a 4 or 5 rating for area lakes. Nearly one-third of residents believe area lakes have a serious pollution problem, providing a rating at the bottom of the scale — a 1 or 2.

Among demographic segments, a significant difference is that men tend to be more positive than women regarding the cleanliness of rivers, creeks, and streams — 34% of men provide a 4 or 5 rating compared to 24% among women. This gender gap is also present for area lakes — 25% of men provide a 4 or 5 rating versus only 16% of women. Women are significantly more likely than are men to say they “don’t know” whether drinking water wells are clean (23% versus 14%). In addition, younger residents perceive area lakes as cleaner than do older residents (average 3.2 rating for lakes among those 18 to 34 versus 2.8 in older age groups).

Perception of water quality

Q: Now I want your perception of the quality of three types of water in Clark County using a “1” to “5” scale. On the scale a “1” means the water in this source is completely polluted and “5” means this water source is completely clean.



RESIDENTS PERCEIVE BUSINESS AND INDUSTRY, RATHER THAN HOUSEHOLDS, AS HAVING THE MOST NEGATIVE IMPACT ON WATER QUALITY.

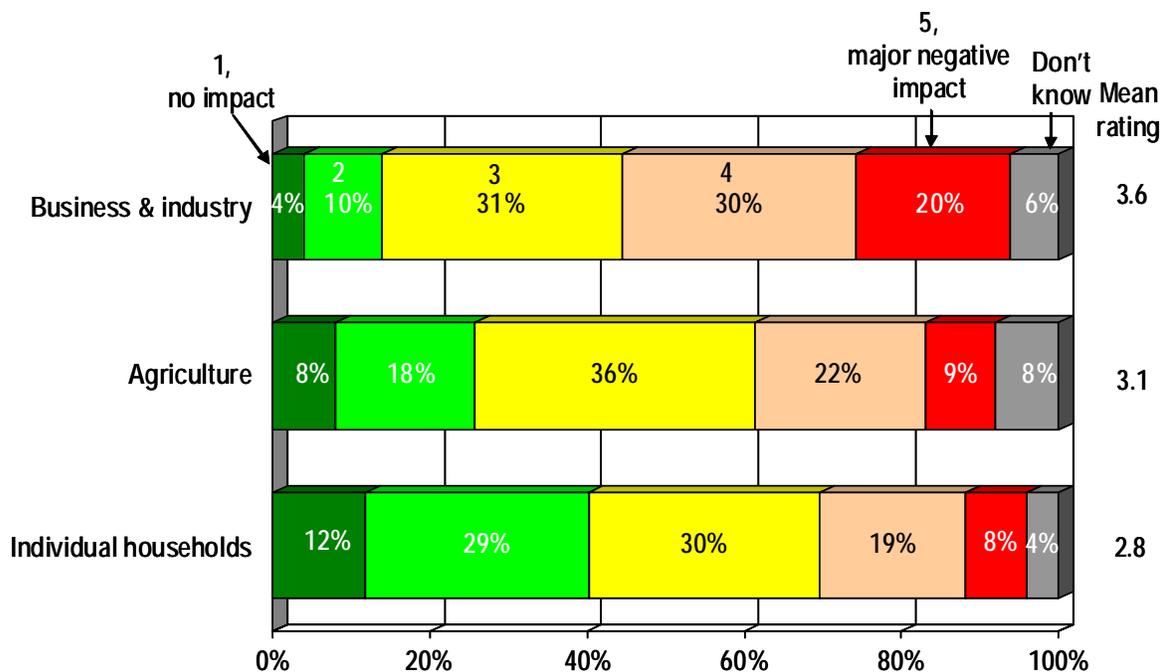
Residents then were asked to rate the impact they believe households, agriculture, and business/industry have on water quality in Clark County. As might be expected, residents are likely to believe that “business and industry” has the most negative impact. One-half of the sample rates the negative impact of industry as quite high (a 4 or 5), while only about 3 in 10 residents see agriculture or households as having a major negative impact. Most striking, about 4 in 10 residents think that households have little or no negative impact on water quality.

Women tend to give higher negative ratings for each area, and are especially likely to see industry as having a negative impact on water quality (3.7 average rating versus 3.4 among men). Also, older residents perceive more of a negative impact from industry than do younger residents (3.6 rating among those 35 and older compared to 3.3 rating among those 18 to 34). Otherwise, responses are very similar across segments.

Perceived impacts on water quality

Q: Now I want you to rate the impact you believe households, agriculture, and industry have on water quality in Clark County. Again use a “1” to “5” scale. This time a “1” means you believe it has no impact on water quality and a “5” means it has a major negative impact on Clark County water quality.

n=400



II. Perceptions of Individual Actions

RECYCLING OIL AND AVOIDING OIL LEAKS ARE CONSIDERED THE MOST IMPORTANT ACTIONS HOUSEHOLDS CAN TAKE.

Respondents were asked to rate the importance of a list of different actions that households might take to reduce their impact on water quality. Responses are shown on the graphic on the next page by the percentage of the sample rating each item high in importance (a 4 or 5), along with the average rating. Details include:

- ▶ **Top tier of importance focuses on motor oil.** The two environmental actions that residents rate by far the highest in importance for households to take are recycling motor oil (4.6 average rating) and maintaining their cars so that oil and other fluid leaks are avoided (4.2).
- ▶ **Second tier includes scooping poop and using organic fertilizer.** Nearly 7 in 10 residents say that picking up after dogs in public places is important (3.9 average rating) and more than 6 in 10 consider using organic products in the garden of high importance (3.7 average).
- ▶ **Third tier of importance includes diverting rainwater and using native plants.** A little less than one-half of residents see rainwater diversion or using native plants as being of major importance for water quality. Average ratings are 3.4 for rainwater and 3.3 for native plants.
- ▶ **Actions perceived as least important: using car washes and replacing concrete surfaces.** About a third of residents perceive going to car washes rather than washing their car at home as having an important impact on water quality, generating an average rating of 3.0. Replacing concrete with permeable surfaces garners the lowest importance ratings of any action, with 21% providing a 4 or 5 rating, generating a 2.6 average rating.
- ▶ **Women tend to rate all items higher than do men.** As is commonly seen in research on environmental issues, women tend to place more importance on all of these environmental steps compared to men, with higher average ratings on each item. The biggest difference is for *“clean up after dogs in yards and public places,”* for which 58% of women give a 5 rating compared to 35% of men. There is also a double-digit gender gap for *“maintain cars so fluids do not leak”* (62% of women rate a 5, versus 51% of men).
- ▶ **Clear correlation with value placed on Clean Water Fee.** It is no surprise that the segment of 125 respondents who later in the survey indicate they think the Clean Water Fee provides good or excellent value often give responses that indicate a higher level of interest in and concern for environmental issues, compared to the 159 residents who give a low or no rating for the value of the Clean Water Fee (116 provide a “neutral” rating). Here the high-value group tends to give significantly higher importance ratings on all items than do those who see low value in the fee. For example, 84% of those who see the fee as

providing high value think that recycling motor oil is very important, compared to 71% of those who rate the fee low in value. There is a similar gap in importance ratings on all items.

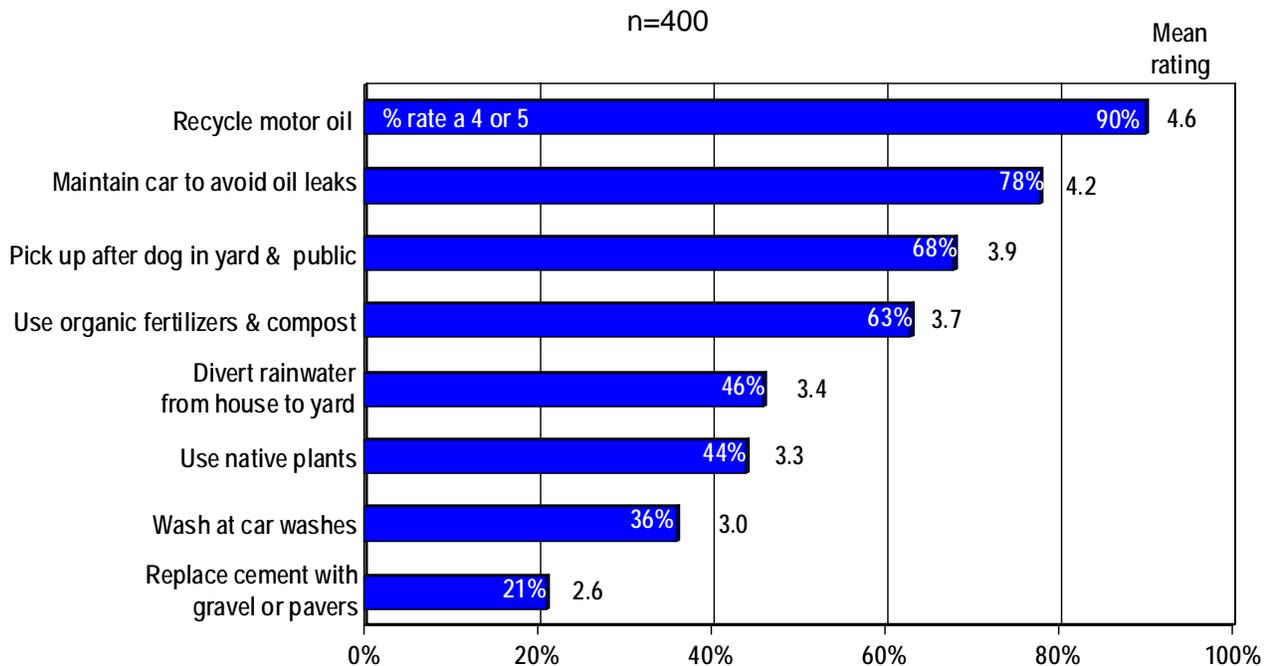
- ▶ **Little difference based on rural, suburban/urban location.** The only significant difference based on where respondents perceive themselves to live — rural, suburban, or urban — is on picking up after dogs. The small sample of those considering themselves urban are more likely to consider this action important (80% rate a 4 or 5) than either suburban (70%) or rural (61%) respondents.

The full list of actions, in order of overall perceived importance, includes:

- ✓ *Recycle used car oil or anti-freeze*
- ✓ *Maintain cars so oil and other fluids do not leak onto driveways or streets*
- ✓ *Clean up after dogs in yards and public areas*
- ✓ *Use natural organic fertilizers & compost*
- ✓ *Divert rainwater runoff from your roof into your yard or garden*
- ✓ *Use native or drought-tolerant plants in the garden*
- ✓ *Wash cars at car washes rather than at home*
- ✓ *Replace cement driveways or patios with materials like gravel or pavers*

Importance of household actions

Q: *The actions of individual households can affect water quality in Clark County. I have a list of steps households can take that may reduce their impact on area water quality. I want you to rate how important you believe it is that individual households take each step. Again use the “1” to “5” scale, with a “1” meaning you believe it is not important at all and a “5” meaning it is very important for individual households to take this step.*



MOST RESIDENTS CLAIM TO HAVE TAKEN SEVERAL ACTIONS; AVOIDING OIL LEAKS FROM THEIR CARS, RECYCLING MOTOR OIL, AND SCOOPING DOG POOP IN PUBLIC TOP THE LIST.

Respondents were then read a similar but slightly expanded list of actions and asked which, if any, their household has taken in the last year.

It is possible that at least some respondents may have overstated their actions — likely because being “green” is currently widely perceived as the socially acceptable thing to do. In particular, it is rather doubtful that half of unincorporated area residents have disconnected their downspouts or that three-quarters consistently pick up after their dog in their own yard. However, even if one allows for some exaggeration, it is clear that many residents are taking a variety of steps that do help with water quality, even though they perceive business and industry as well as agriculture to be bigger contributors to water quality problems than households.

Details include:

- ▶ **Almost everyone says they avoid oil leaks from their cars and recycle their motor oil.** At 92% and 89%, these two actions are nearly universal (or at least, claimed to be so) among unincorporated area residents. Although nearly everyone says they avoid car oil leaks, several segments stand out as being significantly more likely than their demographic counterparts to do so: those who place high value on the Clean Water Fee (94% versus 87%), more educated residents (96% versus 88%), those with children (94% versus 90%), and rural residents (95% versus 89% among suburban residents).

Responses for motor oil recycling vary considerably, likely due to differences in who recycles their own oil, plus varying levels of car ownership, or responsibility for car maintenance. For example, residents ages 35 to 54 are by far the most likely age segment to recycle their own motor oil (88%, compared to 75% of both younger and 77% of older residents). Also, 86% of college graduates say they recycle their own motor oil, compared to 79% of those without a college degree.

- ▶ **Nearly everyone picks up after their dog in public, less so in their yard.** Among those who have a dog, 87% say they pick up after it in public, while 76% claim to pick up poop in their yard. In focus groups conducted for the Regional Coalition for Clean Rivers and Streams, it was clear that while picking up after your dog is the universally socially acceptable action in public areas, many residents do not bother to pick up poop in their yards. One would expect this to be especially the case in rural areas where many homeowners have large lots or acreage. Indeed, the segment by far the most likely to say they pick up after their dog in their yard is self-described urban residents (93%, versus 67% of rural residents; suburbanites are in the middle with 81%). Other segments especially likely to pick up in their own yard include dog owners ages 18 to 34 (85% pick up in their yards, compared to just 74% of older dog owners) and those with children (81% versus 72%).
- ▶ **About 6 in 10 use organic garden products, while half avoid chemicals.** Moderately popular actions focus on gardening, with 64% of residents overall saying they use organic products, 55% using native plants, and 54% avoiding the use of lawn/garden chemicals. Rural residents are significantly more likely than are suburban residents to avoid the use of lawn/garden chemicals (60% versus 50%). Also, it is worth noting that parents of young children are only slightly more likely to avoid chemicals than are those without children (55% versus 52%).

Segments most likely to use organics include middle-aged and older residents — not surprising since younger residents are typically less likely to be gardeners. Native plants receive highest mentions among middle-aged residents (62%), rural residents (61%), and women (60%).

- ▶ **About half say they have diverted rainwater.** Among residents of unincorporated Clark County, 54% say they have diverted rainwater into their yard. This response is largely driven by rural residents — 62% of rural residents say they have diverted rainwater, compared to 46% of suburban residents.
- ▶ **About 6 in 10 go to a car wash.** While 64% overall say they wash their car at a car wash rather than at home, there are several demographic differences. Segments most likely to use a car wash include newer residents (69% of those living in the County less than 20 years have used a car wash, versus 58% of longtime residents), suburban residents (69%, versus 60% among rural), and those who place high value on the Clean Water Fee (69%, versus 53% among those who place low value on the fee).
- ▶ **Fewer than 2 in 10 have replaced concrete surfaces.** Replacing driveways and other hard surfaces with permeable materials can be an expensive undertaking and is generally not perceived by residents as of great importance, so it is not surprising that few residents have actually taken this step. Rural residents are by far the most likely to have used gravel or pavers (27%, versus 10% among suburban and 8% among urban residents).

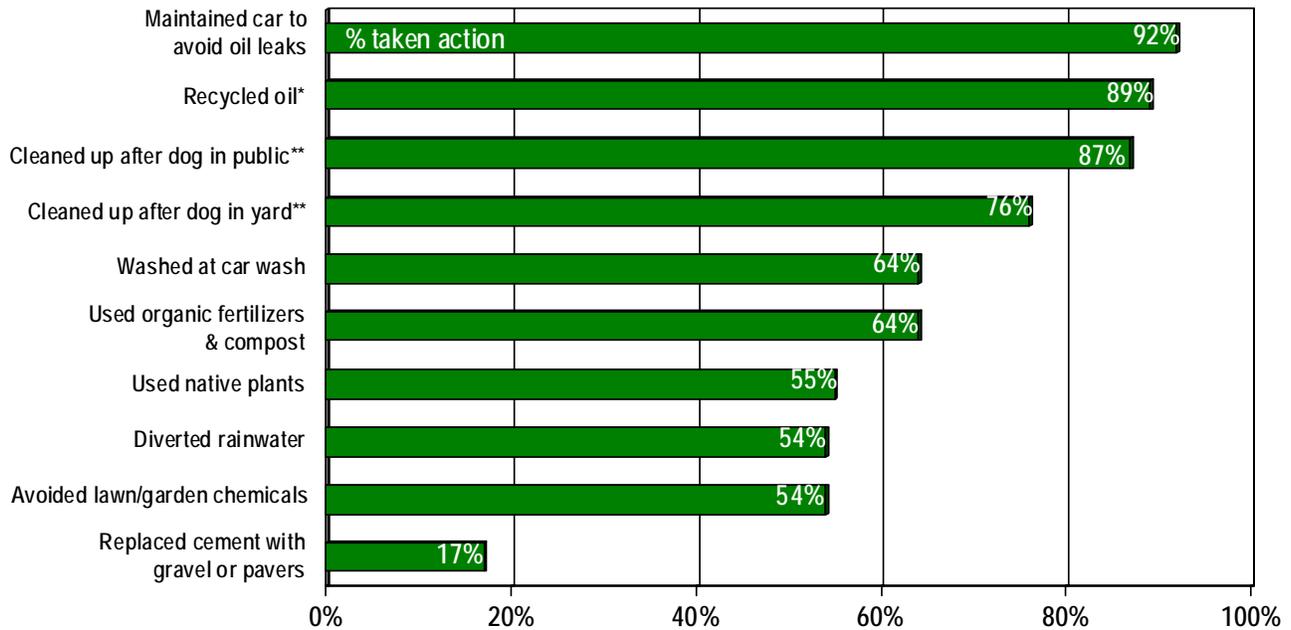
Full wording for the list of actions, in order of likelihood of being taken, includes:

- ✓ *Maintained your cars so oil & other fluids do not leak onto driveways or streets*
- ✓ *If changing your car's oil or anti-freeze, recycled the oil or other fluids*
- ✓ *Cleaned up after your dog in public places*
- ✓ *Cleaned up after your dog in your yard*
- ✓ *Washed your car at a car wash rather than at home*
- ✓ *Used natural organic fertilizers and/or compost*
- ✓ *Used native or drought-tolerant plants*
- ✓ *Diverted rainwater runoff from your roof into your yard or garden*
- ✓ *Avoided use of chemical pesticides or weed & feed on your lawn or garden*
- ✓ *Replaced cement driveway or patio with materials like gravel or pavers*

Actions taken

Q: Now please tell me which, if any, of these steps your household has taken in the last year.

n=400



* Those for whom changing their car's oil is "not applicable" taken out of the base.

**Based over those with dogs.

GAP ANALYSIS INDICATES THAT FOR SOME ACTIONS, OTHER MOTIVATIONS LIKELY IMPORTANT.

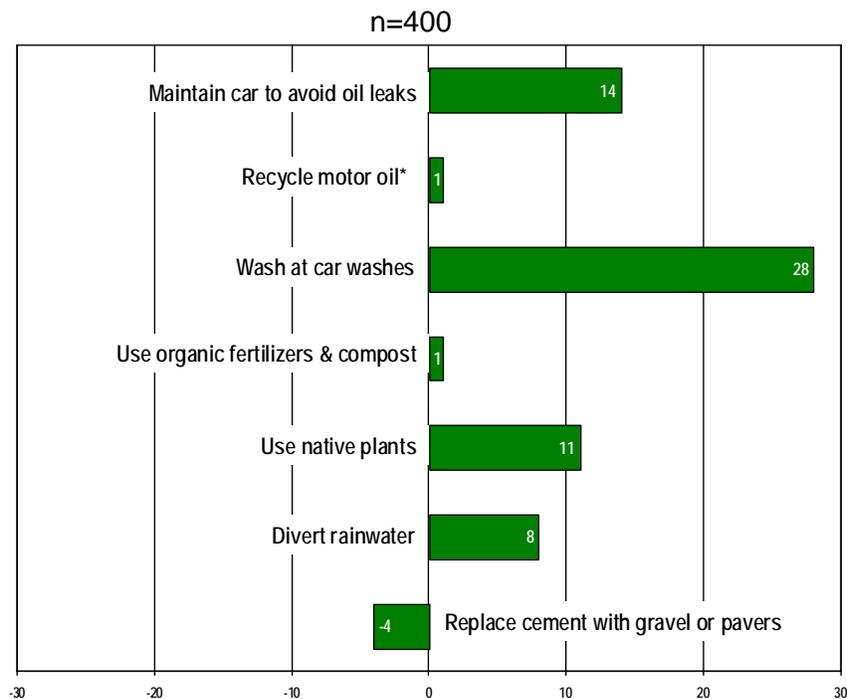
The next chart analyzes the combined data on importance of actions to water quality and whether or not the action was taken. Looking at just the items that are directly comparable from both lists, the chart shows percentage-point differences between the perceived importance of the action and whether or not the action was actually taken.

For example, the percentage who rate using organic fertilizers a 4 or 5 for importance is 63%, and the percentage of those who say they have used organic fertilizers is 64%, generating a “gap” of one percentage point to the positive. Positive “gaps” indicate that more people are taking the action than believe it is important to do so. Negative “gaps” mean that fewer are people are taking the action than believe it is important to do so.

The results generated in this instance are, in our experience, rather unusual. Four of the seven actions for which there are direct comparisons — maintaining their car, diverting rainwater, using native plants, and washing their car at car washes — there is a substantial positive gap. These results indicate that the motivating factors for taking these actions are likely *not* to have a positive impact on water quality. Rather, there are likely other factors that are causing people to take the action. For example, residents likely wash their car at a car wash rather than at home because they don’t have the time or don’t want to deal with the mess of washing their car at home. So, while only 36% of the residents of unincorporated Clark County think that washing their car at a car wash rather than at home would have a positive impact on water quality, 64% say they are doing so.

The remaining three actions that are directly comparable with their importance ratings have very small gaps between importance and actions taken. These actions include recycling motor (+1 percentage point), using organic fertilizers (+1), and replacing cement with gravel or pavers (-4).

Gap analysis of importance versus actions taken



* Those for whom changing their car’s oil is “not applicable” taken out of the base.

RESIDENTS SAY NOT KNOWING WHAT TO DO IS THE MAJOR BARRIER TO TAKING ACTION.

Respondents were read a list of possible reasons “*why people don’t take steps to reduce their household’s impact on water quality.*” The question was phrased in this indirect way to make it easier for respondents to admit why they themselves, as well as others, may not take environmentally “correct” actions. Results show:

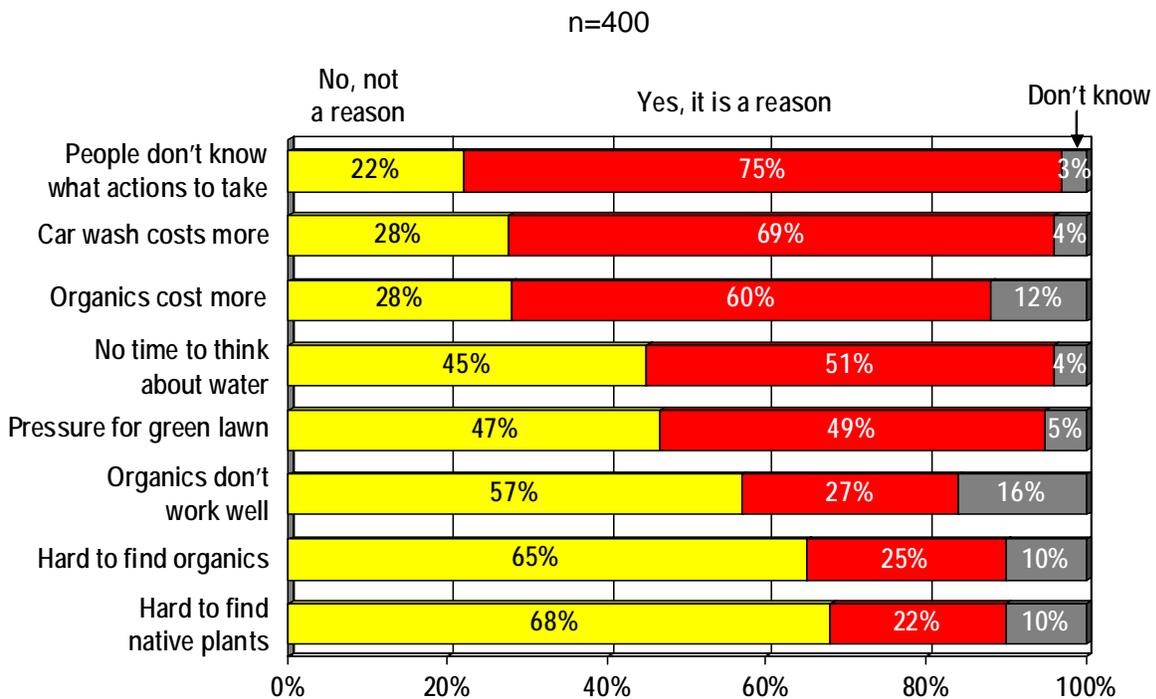
- ▶ **Not knowing what to do is the key barrier.** Clearly the major perceived barrier, with 75% of mentions, is not knowing “*what actions are important to take.*” Response is similar across all segments, with the exception that those who believe the Clean Water Fee is a good value are more likely to perceive lack of knowledge as a barrier to action.
- ▶ **Lack of time a concern for about half.** Another overall barrier which impacts just about any action is “*lack of time.*” About half of residents cite lack of time to think about water quality as a barrier to taking action. As with lack of knowledge, responses are similar across segments. One difference, probably not surprisingly, is that those with children are significantly more likely to cite lack of time as a barrier than are those without children — 57% for those with children versus 47% among those without children.
- ▶ **Cost of car wash is a major concern.** Seven in ten respondents cite the cost of a car wash as a barrier, the second highest level of mentions on the list. Segments most likely to cite the cost of car washes include those with children (76%), rural residents (73%), and men (73%).
- ▶ **Residents split on pressure for green lawn.** Responses are almost evenly split on whether pressure for a green lawn is a barrier to taking environmental actions: 49% say yes and 47% say no. However, there are significant variations among segments. Those most likely to cite pressure for keeping a green lawn as a factor in their neighborhood are the more affluent college graduates (54% say yes, compared to 44% of less-educated residents). Additionally, those who place high value on the Clean Water Fee are far more likely to cite green lawn pressure as an issue (59%, versus 38% of those who do not see value in the fee). Residents with children are also more likely to cite social pressure as a barrier (54% versus 45%). As might be expected, those respondents that indicate they live in a suburban area are a little more likely to say pressure for a green lawn is a barrier. However, the differences — 51% for suburban respondents, 46% for rural respondents, and 47% for urban respondents — are not statistically significant.
- ▶ **Cost, rather than availability or effectiveness, seen as key issue for organic gardening.** Looking at the garden-related issues, it is clear that the main impediment to taking low-impact actions in the garden is the cost of organic products (60% say this is a reason, with similar responses across all segments). Other issues are much less likely to be seen as barriers, including organics not working well (27%), being hard to find (25%), or native plants being hard to find (22%).

Full wording for the list of barriers:

- ✓ *People don't know what actions are important to take*
- ✓ *It costs more to take a car to a car wash rather than to wash it at home*
- ✓ *Organic fertilizers cost more*
- ✓ *People don't have time to think about their impact on water quality*
- ✓ *There is pressure from neighbors to maintain a green lawn*
- ✓ *Organic garden supplies don't work very well*
- ✓ *It is hard to find organic lawn & garden products*
- ✓ *It is hard to find native & drought tolerant plants*

Reasons not to take actions

Q: *Now I have a list of possible reasons why people don't take steps to reduce their household's impact on water quality. For each one, please tell me whether or not you believe this is a reason why some residents of Clark County do not take some of the steps I just read to you.*



NEARLY EVERYONE AGREES ABOUT THE NEED TO REDUCE IMPACT ON WATER QUALITY FOR FUTURE GENERATIONS. MORE INFORMATION FROM THE COUNTY WOULD BE WELCOMED.

Respondents were read a list of attitudinal statements and asked whether they agree or disagree with each. For all but one statement — on household versus industry impact — a strong majority of residents is in agreement. Details include:

- ▶ **Nearly all want to work to reduce their impact now so the problem is not passed on to future generations and to protect kids and pets.** At least 8 in 10 residents agree strongly or somewhat with the first two statements — “*reduce impact on area water quality so we don’t pass the problems on to future generations*” (93% agree) and “*keep my yard chemical free to protect kids and pets*” (83% agree). Clearly, there is broad consensus on these concerns, particularly on the importance of reducing impact for the sake of future generations.

Not surprisingly, those who place a high value on the Clean Water Fee are far more likely to agree with these two statements than are those who see low value in the Clean Water Fee. For example, while 88% of the high-value group agrees strongly about the need to reduce our impact for future generations, only 65% among those who place low value on the fee strongly agree with this statement. Given the level of strong agreement on not passing on current problems to future generations, it is not surprising that there are no other significant variations by segment.

There are a couple of important differences regarding keeping the yard free of chemicals to protect children and pets. Women are by far the more concerned about keeping yards chemical-free to protect children than are men — 62% of women strongly agree, versus 49% of men. However, there is virtually no difference between parents and non-parents on this issue (56% versus 55%). Corresponding with the finding that highly educated (and thus more affluent) residents tend to be more concerned than less affluent residents about having a green lawn, the highly educated segment places less importance on keeping their yard chemical-free (49% strongly agree, versus 59% among those without a college degree). Also, suburban residents are slightly less likely than rural and urban residents to strongly agree about the importance of being chemical-free (52%, vs. 57% and 58%, though this difference is not statistically significant).

- ▶ **Most residents want more information from the County.** Over half of Clark County’s unincorporated area residents strongly agree that the County should provide more information so they can learn what they can do to reduce pollution. Segments of the sample most interested in hearing more from the County on water issues include middle-aged residents (61% strongly agree, versus 44% of those 18 to 34), suburban rather than rural residents (57% versus 46%; mentions jump to 72% in the very small “urban” segment), and of course, the “choir” — those who already place high value on the Clean Water Fee (67% strongly agree, versus 50% of the low-value group).
- ▶ **Split of opinions about household versus industry impact on pollution.** In keeping with the finding that residents are more likely to believe business and industry has a greater impact on local water quality than do individual households, residents are much less likely to agree that “*the total water pollution generated by individual households is much less than the total generated by industry.*” While 6 in 10 residents erroneously agree with the statement, one-third disagree and 10% are unsure. This pattern of responses is the same across most of the segments. The one demographic segment where there is variation is

age. Younger residents (18 to 34) are less likely to agree with the statement than are older residents, indicating that the message regarding the impact of individuals on water quality may be starting to reach younger individuals. It is also worth noting that younger (18 to 34) and older (55+) residents are much more likely to say they “don’t know” the answer than are those age 35 to 54.

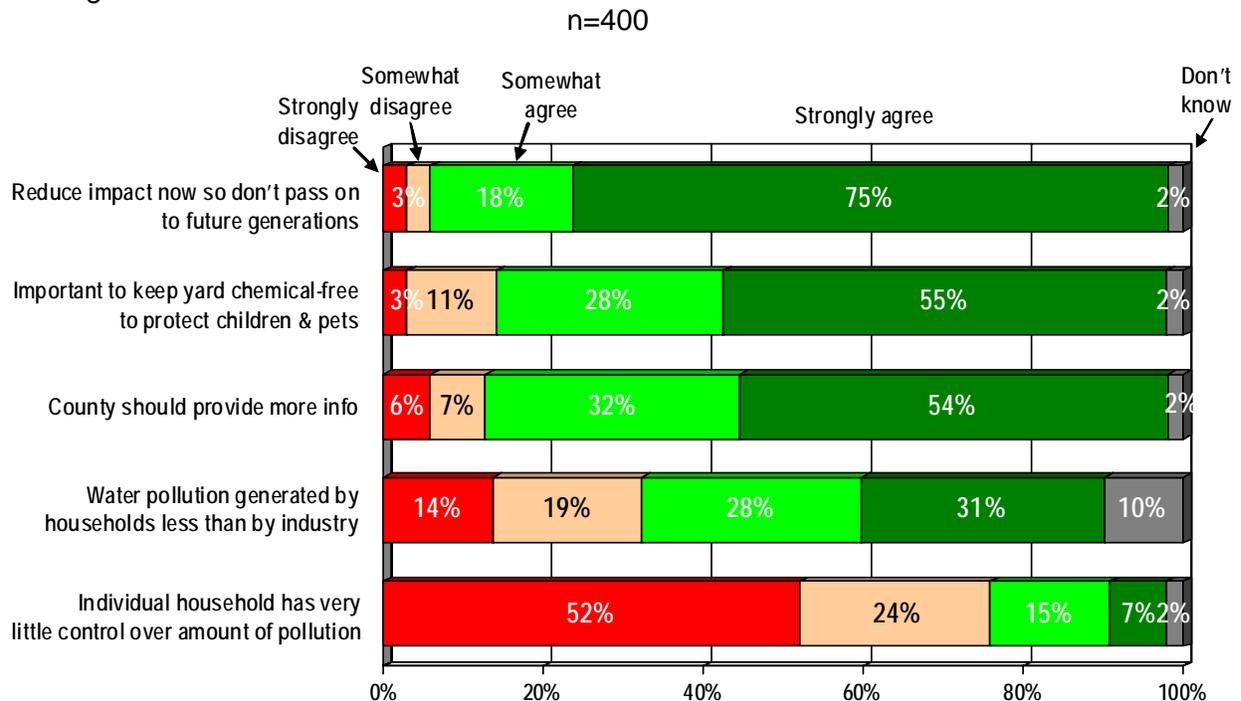
- ▶ **Most residents realize that households do have control over their impact.** Three-quarters of residents either somewhat or strongly disagree with the false statement that “an individual household has very little control over the amount of pollution it creates.” Segments of the population most likely to disagree strongly with this premise include parents (59%, versus 48% among those with no children at home); younger residents (60% of those ages 35 to 54 versus 45% among those 55 and older); and those who place high value on the Clean Water Fee (57%, versus 45% in the low-value segment).

Exact wording of statements includes:

- ✓ *It is important for individuals to reduce our impact on area water quality now so we don’t pass the problems on to future generations*
- ✓ *It is important to keep my yard chemical-free to protect children and pets*
- ✓ *Clark County should provide more information to the public about what individuals can do to reduce the pollution in our lakes and streams*
- ✓ *The total water pollution generated by individual households is much less than the total generated by industry*
- ✓ *An individual household has very little control over the amount of pollution it creates*

Agree/disagree statements

Q: Now I am going to read you a series of statements. Please tell me whether you agree or disagree with each statement.



BILL INSERTS ARE THE MAJOR SOURCE FOR WATER QUALITY INFORMATION, FOLLOWED BY THE COLUMBIAN.

When asked where they get information specifically about local water quality issues, “utility bill inserts” top the list with 53% of mentions. In other research conducted by CDRi, residents consistently identify bill inserts as a convenient and reliable source of information on issues such as stormwater. Segments which are particularly likely to get water quality information from bill inserts include women (59%, versus 47% of men), older residents (55%, versus 48% among those 18 to 34), and suburban residents (58%, versus 48% among rural residents).

In addition to bill inserts, the only other major information source about local water quality is *The Columbian* (40%). *The Reflector* stands out as a key source among rural residents (34%). Across the sample as a whole, other sources, including television (18%), word-of-mouth (13%), and the County website (8%), appear to have relatively low impact when it comes to water issues.

There are differences in the use of the County website by segment. Those most likely to have gotten information on water quality issues from the County’s website include younger people (13%) and longtime residents (11%). Young people are more likely to be comfortable with the Internet, while long-time residents are more likely to be tuned into local issues and thus interested in seeking out County information. Also, not surprisingly, only 5% of those who see little value in the Clean Water Fee have gotten information from the County website, compared to 14% of those who place high value on the fee. Indeed, as one would expect, the high-value group is far more informed than the low-value group, with higher mentions for each source.

Information sources

Q: *And in the last year, from which of the following sources have you received information specifically about local water quality issues?*

Source	Total n=400
Utility bill inserts	53%
<i>The Columbian</i>	40%
Television	18%
<i>The Reflector</i>	17%
Word-of-mouth	13%
<i>The Oregonian</i>	9%
Radio	9%
Clark County website	8%
<i>Camas-Washougal Post Record</i>	3%
Other	3%
Don't know/refused/none of the above	12%

III. Interest in Runoff Diversion Kit

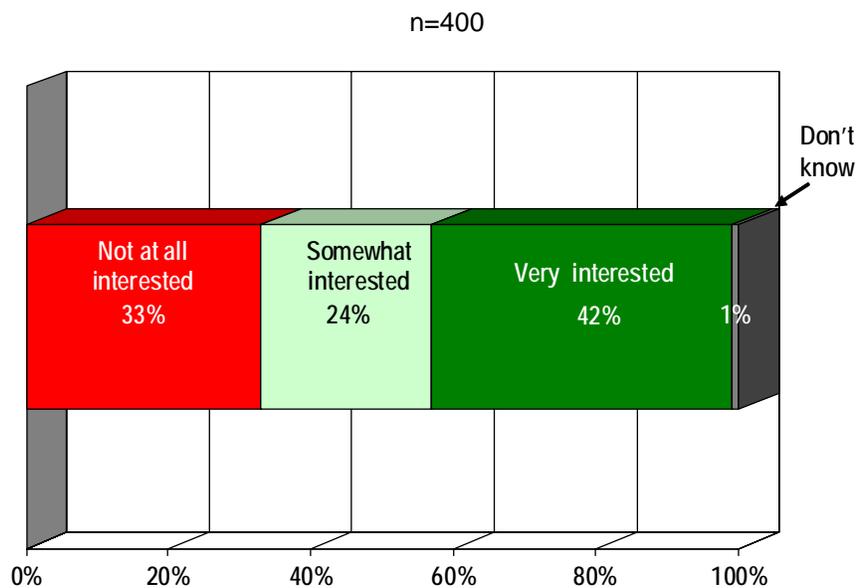
MOST RESIDENTS ARE INTERESTED IN A FREE KIT.

To gauge reactions to a potential new program, residents were read an explanation of the rainwater diversion issue and asked how interested they would be in receiving a free kit from the County. As shown on the graphic below, a majority of residents are either very (42%) or somewhat interested (24%) in a free kit.

Women tend to be the most interested in the diversion kit (47% are very interested, versus only 38% of men). Also, it is worth noting that the segment of residents who see little value in the Clean Water Fee are almost as interested in the kit as the high-value group (41% very interested, compared to 45%). Residents in rural (42%) and suburban (44%) areas are essentially equally likely to be interested in the program. The small sample of urban residents shows less interest (31%).

Interest in diversion kit

Q: *Diverting rainwater from roofs onto lawns and gardens has a significant positive impact on water quality by reducing the amount of rainwater that runs onto streets and into the drainage system. To encourage homeowners to take this step, Clark County is considering offering free kits which would provide materials and instructions on how to divert rainwater from your roof onto your lawn and garden. How interested would you be in receiving a free kit from Clark County? Would you be very interested, somewhat interested, or not at all interested?*



IV. Perceptions of Clean Water Fee

RESIDENTS ARE DIVIDED ON THE VALUE OF THE CLEAN WATER FEE.

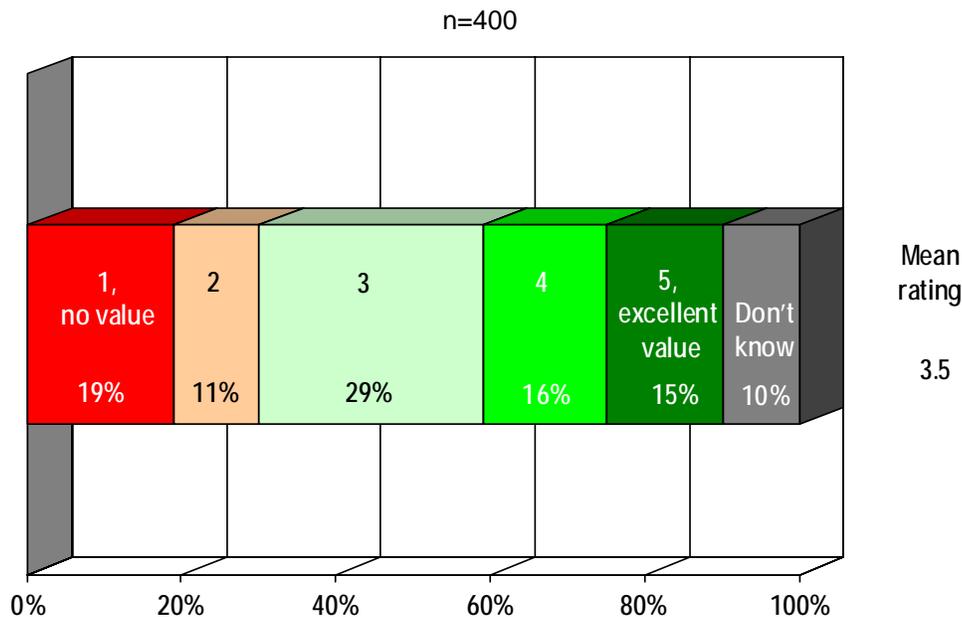
Additional questions explored attitudes toward the County’s Clean Water Fee, which averages \$33 per year per household and helps pay for water quality monitoring, public education, and maintenance of stormwater facilities.

After being read a description of the fee, respondents were asked to rate their “*perception of the value for the money that the Clean Water Fee provides.*” Unincorporated area residents are evenly split on this issue, with 30% giving a low rating for value (rate 1 or 2), 29% feeling neutral (3 rating) and 31% saying the fee is a high value (rate 4 or 5). The overall average rating is a 3.5. This is not at all bad for a government fee, but clearly not everyone perceives that they are receiving a high value from the money they pay in.

Responses are fairly uniform across segments, except that men are far more likely to be unhappy with the fee (25% rate it a 1, compared to just 14% of women). Men, as a group, often tend to be more negative about taxes or fees, while women tend to be more enthusiastic about the services and benefits that they help pay for. Also, rural residents are somewhat less enthusiastic about the Clean Water Fee (3.3 average rating, compared to 3.5 among suburban and 4.2 among urban), though the difference is not statistically significant.

Value of Clean Water Fee

Q: *The average household in Clark County pays a Clean Water Fee of \$33 per year. This fee pays for water quality monitoring, public education, and maintenance of stormwater facilities in Clark County. Based on what you currently know, please rate your perception of the value for the money that the Clean Water Fee provides. Use the “1” to “5” scale, where a “1” means the Clean Water Fee offers little or no value and a “5” means the fee offers an excellent value for the money.*



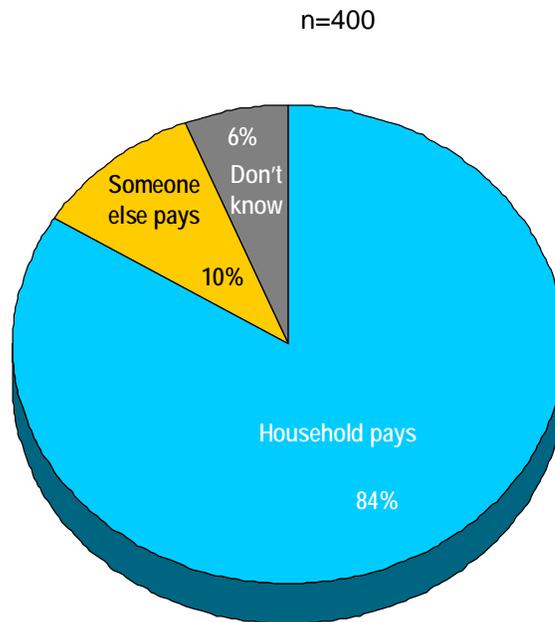
VAST MAJORITY PAY THEIR OWN FEE.

When asked whether they or someone in their household pays the fee, 84% of respondents say their household pays. Only 10% say someone else pays the Clean Water Fee, and 6% don't know.

Responses are very uniform across all segments, except that, as one would expect, the very small segment of renters (33 respondents) are far less likely to pay the fee themselves (21% do so, versus 90% of homeowners).

Who pays Clean Water Fee

Q: *Do you or someone in your household pay your yearly Clean Water Fee, or does someone else, such as a landlord, pay it for you?*



V. Demographics

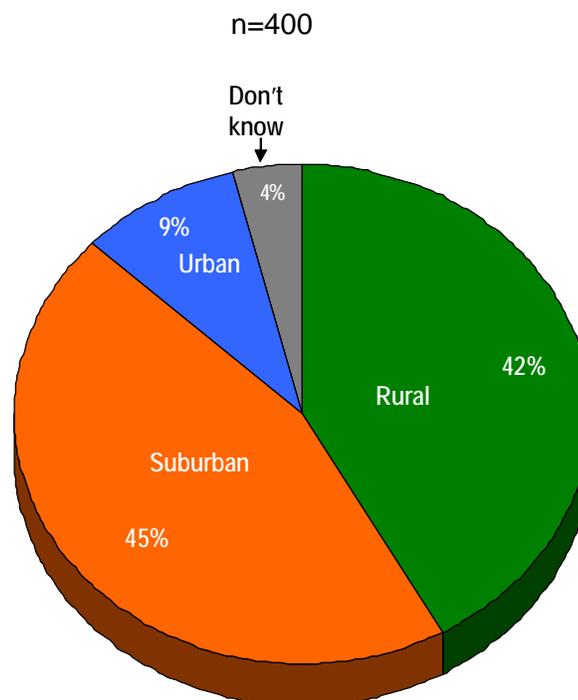
RESPONDENTS COME FROM ALL UNINCORPORATED AREAS OF THE COUNTY, SPLITTING BETWEEN SUBURBAN AND RURAL.

The sample included a random selection of households from ZIP codes in the County that include unincorporated areas. Quotas were established to ensure proportional representation based on population in each area. Also, as part of the screening process, respondents had to state that they live in an unincorporated area of the County rather than inside city limits. (A handful of respondents who were unsure were included in the survey, based on the assumption that if they are unsure whether they live in a city, they actually are likely to be located in or very near an unincorporated area.) The ZIP code area distribution is shown on the table on the following page. About 4 in 10 live in a Vancouver-area ZIP code (either outside or near the city limits), and the rest of the sample is distributed amongst the various other ZIP codes in the County.

Residents also were asked whether they feel the area they live in is a rural, suburban, or urban area. As shown on the graphic below, this self-reported perception shows the expected roughly even split between suburban (45%) and rural (42%) residents, with a handful who perceive themselves as “urban” residents (9%).

Perception of area lived

Q: *Would you say the area of Clark County you live in is currently a rural, suburban, or urban area?*



ZIP code area

Q: What is your ZIP code?

Area	Total n=400
Vancouver area	39%
98665	12%
98682	12%
98685	12%
98662	11%
98686	9%
98661	6%
98684	2%
98681	2%
98663	1%
Battle Ground (98604)	10%
Ridgefield (98642)	7%
Brush Prairie (98606)	5%
La Center (98629)	4%
Camas (98607)	3%
Washougal (98671)	3%
Woodland (98674)	2%
Amboy (98601)	2%
Yacolt (98675)	2%

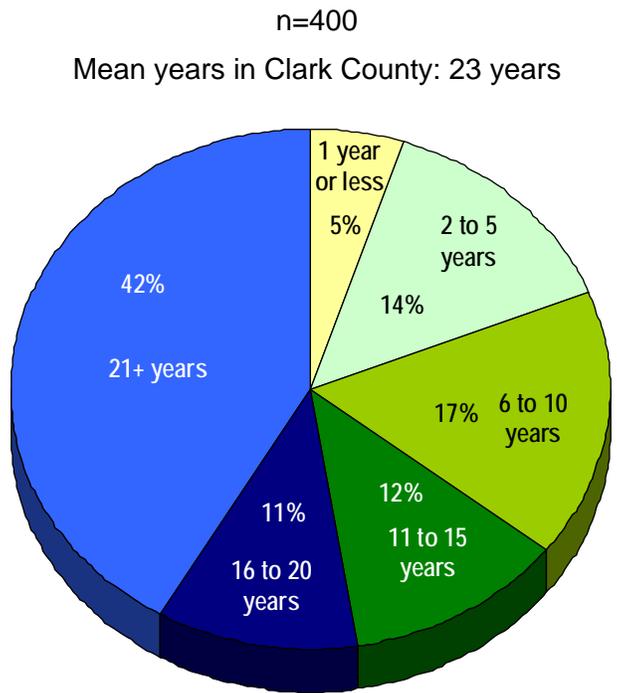
MOST RESPONDENTS HAVE LIVED IN CLARK COUNTY FOR OVER 20 YEARS.

As is typically seen in surveys conducted in unincorporated areas, many people are long-time residents of the area. In this case the average length of residence is 23 years, with 4 in 10 respondents having lived in the County for 21 years or more. At the same time, however, reflecting the recent growth in the unincorporated areas, nearly 2 in 10 respondents are newcomers to the County who have lived in the area for five years or less.

The demographic profile of the County’s unincorporated areas is clearly changing. For example, newer residents are more likely to have a higher level of education, indicating a higher level of affluence. However, it is interesting to note that there is no difference in length of residence based on whether respondents live in the rural, suburban, or urban portions of unincorporated Clark County.

Length of residence

Q: *How long have you lived in Clark County?*



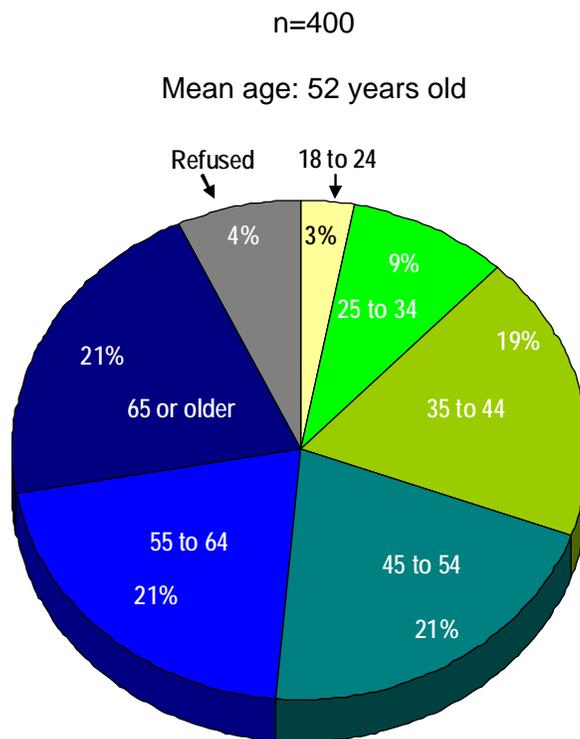
RESPONDENTS AVERAGE 52 YEARS OLD.

The range of ages represented in the sample is very similar to what is typically seen in telephone surveys.

As always, not only does the baby boom generation tend to dominate due to size, older residents are more likely than younger ones to be at home and answer the phone. Also, there is currently no legal way for researchers to randomly dial cell phone numbers, making it difficult to reach younger and more mobile segments of the population, many of whom no longer use a landline phone. It is worth noting, however, that several recent studies have indicated that the opinions of those with only cell phones are not typically different from those with landlines in the same age range.

Age

Q: *What is your age, please?*



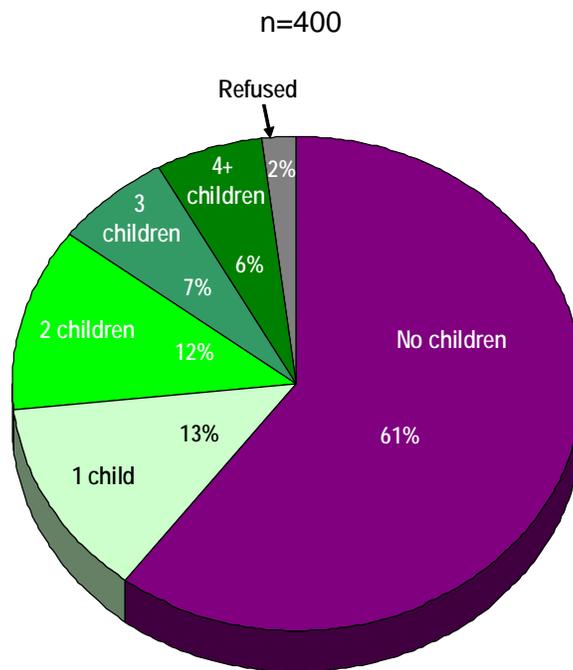
CLARK COUNTY’S UNINCORPORATED RESIDENTS ARE MORE LIKELY THAN URBAN RESIDENTS TO HAVE SEVERAL CHILDREN AT HOME.

Six in ten respondents have no young children at home. Among those who do have children at home, the average is about two, and 12% have three or more young children. There are differences by type of unincorporated area — rural residents are more likely to have children under the age of 18 in the home (42%) than suburban (32%) or urban (30%) residents.

By way of contrast, in a survey CDRI recently conducted with North Portland residents, 79% had no young children at home and only 6% had three or more children.

Children in household

Q: *How many, if any, children under the age of 18 live in your home?*

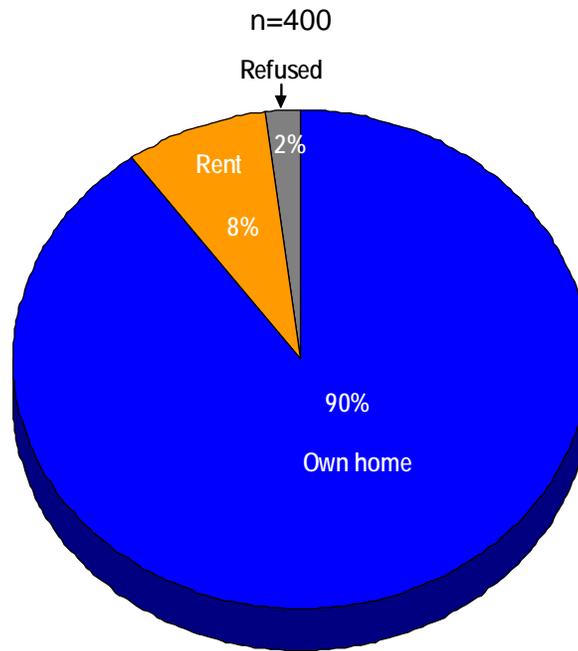


NEARLY ALL RESPONDENTS OWN THEIR HOME.

Again reflecting the distinctive profile of the County's unincorporated areas, nearly all respondents (91%) are homeowners, and just a handful (7%) are renters.

Homeownership

Q: *Do you own or rent your current home?*



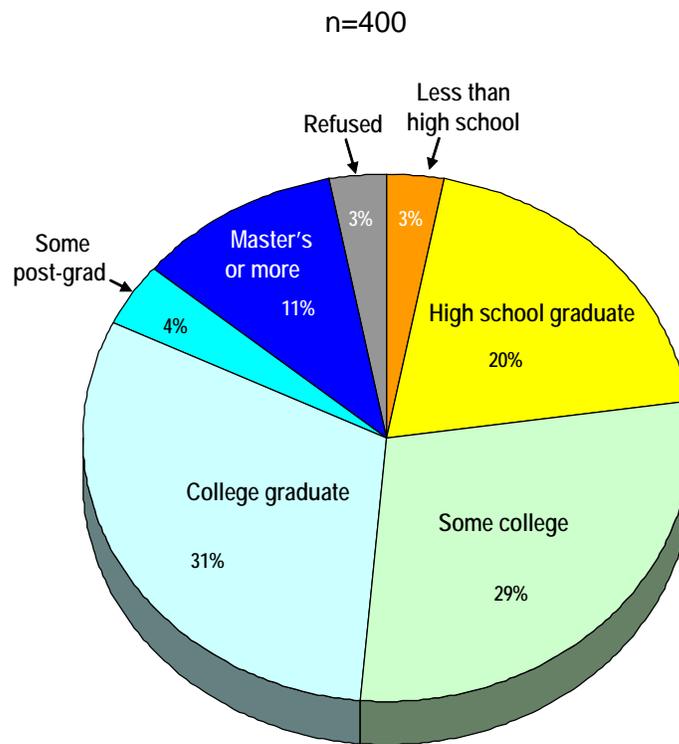
ABOUT HALF OF RESIDENTS HAVE A COLLEGE DEGREE.

Most residents in the unincorporated areas of Clark County have at least some college — only about one-quarter have a high school education or less. Close to half (46%) say they have a college or advanced degree.

Those in the suburban areas of unincorporated Clark County are most likely to have a college degree (51%), followed by rural residents (46%). The small sample of urban residents are least likely to have a college degree (34%).

Education

Q: *And what is the last year of education you had the opportunity to complete?*



KEY CONCLUSIONS & RECOMMENDATIONS

The following provides Campbell DeLong Resources' conclusions and recommendations based on the current research as well as past experiences. This section is intended to provide both a summary of the key recommendations that grow directly from the research and to introduce our further judgments and recommendations based on a comparison of these findings with previous research.

1. CLARK COUNTY RESIDENTS CARE, AND ARE CONCERNED ABOUT, LOCAL WATER QUALITY.

When residents of unincorporated Clark County look around, they see plenty of environmental issues that need attention. When asked which environmental issue should be the number one priority, they are equally likely to say resources should be concentrated on any of three areas — cleaning up area waterways, preserving natural areas, and increasing the use of alternative energy. Only improving air quality receives just a handful of mentions.

While it is hard for residents to pick one environmental priority, it is also clear that water quality is a vital concern for most area residents. Three-quarters strongly agree that it is *important for individuals to reduce our impact on area water quality now so we don't pass it on to future generations*. Most display concern about water quality in area lakes, rivers, creeks, and streams. Residents also appear eager to learn what they can do to reduce their negative impact on water quality — three-quarters believe Clark County residents don't take action to reduce their impact on water quality simply because they don't know what to do and almost 9 in 10 agree Clark County should provide them with more information about what they can do to reduce their impact on water quality.

The challenge for Clark County's Clean Water Program, then, is not so much to raise awareness that area water quality is suffering, but to communicate to residents the actions they, as individuals, can take to improve water quality in the County.

2. COMMUNICATIONS NEED TO STRESS BOTH THE NEGATIVE IMPACT EACH HOUSEHOLD CAN HAVE ON LOCAL WATER QUALITY AND THE ACTIONS THAT A HOUSEHOLD CAN TAKE TO REDUCE ITS IMPACT. PROVIDING FEEDBACK IS KEY.

Residents express strong general concern about reducing their impact on water quality and most realize that there are steps they, as individual households, can and should take to reduce their negative impact on local water quality. However, few appear to believe that individual households have a significant impact on water quality, especially compared to business and industry. Only a little more than a third provide a rating that indicates they

believe individual households have a substantial negative impact on local water quality, but half provide this type of rating for business and industry. In addition, about 6 in 10 agree that water pollution generated by households is *less* than that generated by industry.

As a result, simply educating residents on the impact each individual has on local water quality needs to be the number one priority of any communications campaign. Information regarding individual impact needs to be combined, of course, with information about what individuals can do to improve the situation. To determine which actions to stress, County staff should first determine which actions will, in fact, have the greatest measurable impact (yet are still reasonable to expect residents will perform). Once these actions have been identified and prioritized, the County should, ideally, evaluate the best way to communicate to area residents about the actions that are most important to take.

Residents do display a willingness to make some changes in their lifestyle in order to improve local water quality and it is encouraging that simply not knowing what to do is perceived as the main barrier to residents' taking action. In addition, half strongly *disagree* that individual households have very little control over the amount of pollution they generate. But first they have to understand that all the small actions of individual households add up to a major source of pollution.

In addition to simply not knowing what to do, there are two other significant barriers to action that the County needs to take into consideration — lack of time and cost. Any steps or programs that require significant amounts of time or money are unlikely to get much traction among residents. Instead, simple steps that require only a small increment of time or money will be most successful. Examples might include distributing a simple, free downspout diversion kit; promoting coupons for organic garden products, native plants, or car washes; or providing information about how to landscape with permeable materials.

There is one final element that we believe is very important to include in a program to encourage individual action — feedback. Residents need to know that their efforts make a difference. While the need for feedback is a given in most learning situations, it is especially true in this case since residents frequently do not understand that individual households do have a major negative impact on Clark County water quality and that the simple steps they are being asked to take will result in cleaner water.

3. PRESERVING CLEAN WATER FOR FUTURE GENERATIONS IS THE KEY MESSAGE.

By far the strongest message — one that resonates across all segments of unincorporated area residents — is that *“It is important for individuals to reduce our impact on area water quality now so we don't pass the problems on to future generations.”* All communications from the County should evoke, either directly or indirectly, this key message, reminding residents of their shared core values.

4. INCREASE EFFORTS TO COMMUNICATE BENEFITS PROVIDED BY CLEAN WATER PROGRAM.

Given the anti-tax mood of most citizens, the average 3.5 (out of 5) rating for value provided for the Clean Water Fee is not bad. However, the fact that only about one-third of the residents of unincorporated Clark County provide a rating at the top end of a 5-point scale (a 4 or 5) means that any fee increase will likely be poorly received by the majority of those paying the fee.

Clark County can improve perception of the value of the Clean Water Fee by providing residents with feedback regarding the benefits the program provides. By benefits we are not talking, for example, about how many new capital projects have been undertaken and built. Instead we are talking about providing information about how the program has resulted in cleaner water in Clark County. For example, rather than, “The Clean Water Program has retrofitted six existing and built two new stormwater facilities to improve water quality protection at a cost of approximately \$2,044,000,” say, “Because of the Clean Water Program, the water in the Salmon Creek watershed is now cleaner than at any time since 1950.”

We know that statements like these are not always easy to develop or prove. But in our experience, the more a government program talks about the benefits provided, not the activities undertaken, the more support it will enjoy within the community it serves.

APPENDIX

Methods

RESEARCH GOAL AND OBJECTIVES

The goal of the research is provide Clark County with information on attitudes and behaviors among residents of the County's unincorporated areas. Specific objectives include:

- ▶ Assess existing values, attitudes, and behaviors related to stormwater pollution held by residents of unincorporated Clark County;
- ▶ Determine public awareness regarding activities that contribute to stormwater pollution;
- ▶ Assess how residents of unincorporated Clark County believe their personal and household's actions affect stormwater quality and stream habitat;
- ▶ Identify current barriers, constraints, and public "*norms*" that prevent residents from making changes in their everyday activities to protect stormwater quality.

STUDY DESIGN

A telephone survey methodology was used to interview a random sample of 400 residents of Clark County's unincorporated areas.

When reviewing the research results, remember the survey is *household-based*. The data reflect a random sample of respondents by household — regardless of the size of the household, only one person per sampled household was interviewed. Compared to a theoretically perfect random sample of a population, this methodology can result in an under-representation of the opinions of adults who live in homes where there is a higher-than-average number of adults.

INTERVIEWING

All interviewing took place using a computer-aided telephone system (CATI) at Campbell DeLong Resources, Inc.'s strategic partner, Universal Survey Center, a data collection firm. Interviews were conducted from November 1 to November 18, 2007 and follow-up interviews to correct a sampling error (see below) were conducted from January 4 to 13, 2008.

SAMPLE FRAME

CDRI designed the sample by identifying the residential prefixes in unincorporated Clark County ZIP codes. Once the residential prefixes were identified, a sample of residential household

phone numbers was created by randomly generating the final four numbers and these households were contacted to participate in the survey. However, in the initial set of interviews in November, some suburban-area Clark County ZIP codes were inadvertently excluded. Once the error was identified, a follow-up set of interviews was conducted in early January with residents of these ZIP codes. The final sample of 400 includes respondents from both sets of interviews based on the proportion of each ZIP code area in the County's actual population, thus ensuring an accurate sampling of all unincorporated areas in the county. The analysis in this report is based upon this proportional random sample.

While we based the analysis on the proportional random sample, we have also included a second data printout that shows responses of all rural residents interviewed in the course of the study — including those whose interviews were removed from the final sample to include the correct proportion of suburban residents. This will allow the County to review responses to all questions by those respondents who indicated that they live in “rural” areas of unincorporated Clark County.

RESPONDENT CRITERIA

The respondent criteria are relatively simple. All respondents are:

- ▶ Residents of a Clark County ZIP code that includes unincorporated areas.
- ▶ Self-identified as residents of unincorporated areas of Clark County.
- ▶ Age 18 or older.

In addition, a 50/50 male/female quota was maintained.

SAMPLE SIZE/RELIABILITY

Interviews were completed with a random sample of 400 residents in unincorporated areas of Clark County. The worst-case theoretic reliability for a sample of 400 is $\pm 4.9\%$. This “*worst-case reliability*” figure is based on the following assumptions:

- ▶ **The sample is drawn from a large population universe**, which is the case for residents in unincorporated areas of Clark County.
- ▶ **The reliability is calculated at the 95% confidence level.** This means that if a large number of samples of 400 were taken, in 95% of the samples the survey results will not vary from the mean sample results by more than $\pm 4.9\%$.
- ▶ **The calculation applies to a dichotomous variable with results distributed 50/50.** An example of this would be a question with two possible answers — yes or no — where half say “yes” and half say “no.” As the distribution moves away from 50/50, the reliability improves.

- ▶ **Reliability for subsamples will depend on the sample size and the distribution of the response.** As could be expected, as the sample size decreases, the worst case reliability figure increases. For example, the worst-case reliability of the sample of 200 women and 200 men is $\pm 6.9\%$.

QUESTIONNAIRE DESIGN

The questionnaire was designed by Campbell DeLong Resources, Inc. based on input from Clark County staff.

The average time it took a respondent to complete the questionnaire was 13 minutes. A copy of the questionnaire is included in this Appendix.

COMPUTER PROCESSING

A cross-tabulation program was used to sort the data into a total of 20 unique segments. The following is a list of the segments provided in the printouts, along with the number of respondents in each segment.

Printout One: Demographic segments

▶ Total	400
▶ Gender	
• Male	200
• Female	200
▶ Age	
• 18 to 34	48
• 35 to 54	159
• 55+	164
▶ Children in household	
• Has child under 18 living at home	148
• No children living at home	244
▶ Length of time residing in Clark County	
• Less than 20 years	212
• Twenty years or more	187
▶ Area of County (self-described)	
• Rural	168

- Suburban 179
- Urban 36
- ▶ Homeownership
 - Own home..... 361
 - Rent 33
- ▶ Education
 - No college degree..... 208
 - College graduate or above 182
- ▶ Clean Water Fee
 - Low value (rates 1, 2, or don't know)..... 159
 - Neutral (rates 3)..... 116
 - Perceives as providing good value (rates 4, or 5)..... 125

