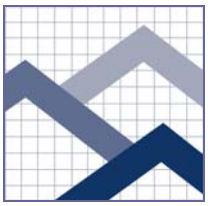

BELLEVUE BOTHELL KENMORE KIRKLAND REDMOND SHORELINE

Stormwater Runoff:

Awareness, Attitudes and Behavior

April 2012

ELWAY RESEARCH, INC.

BELLEVUE BOTHELL KENMORE KIRKLAND REDMOND SHORELINE

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ELWAY RESEARCH, INC.

Stormwater Runoff: Awareness, Attitudes and Behavior

April 2012

INTRODUCTION

This report summarizes the results of a telephone survey, conducted on behalf of the cities of Bellevue, Bothell, Kenmore, Kirkland, Redmond and Shoreline, to assess resident awareness, attitudes and behavior relative to stormwater runoff. The survey was designed to allow the cities to compare current thinking and behavior to that measured in a baseline survey conducted in Bellevue, Redmond and Shoreline in 2005.

In total, some 2030 randomly-selected adult heads of household were interviewed by telephone between March 19-27, 2012. A separate sample was drawn for each of the six cities, so in essence, this project was six surveys utilizing the same questionnaire.

The survey was administered by Elway Research, Inc. The questionnaire was designed in collaboration with representatives of each of the participating cities. Survey respondents were asked about:

- Concern about water pollution and awareness of contributions to local water pollution – particularly stormwater runoff;
- Yard care practices;
- Vehicle maintenance;
- Pet waste;

Demographic information was also collected so as to compare and contrast answers. The demographic analysis is presented as bullet points on the graphs.

This report includes Key Findings, followed by graphs depicting the results to each question by city. The Key Findings and the demographic analysis are based on the combined sample of 2030. Thus, for example, differences noted between income categories refer to the income categories across all the cities. The combined analysis thus makes the tacit assumption that people in similar demographic categories would give similar answers regardless of which city they live in. The combined data were statistically weighted to bring each city's sample into proportion of the combined population of the six cities.

Individual sets of crosstabulation tables for each city have been provided under separate cover.

METHODS

SAMPLE:

2030 Adult heads of household in six North King County cities:

- Bellevue (n=276)
- Bothell (n=400)
- Kenmore (n=275)
- Kirkland (n=400)
- Redmond (n=276)
- Shoreline (n=403)

TECHNIQUE:

Telephone Survey
8% of the interviews were completed via cell phone

FIELD DATES:

March 19-27, 2012

MARGIN OF ERROR:

The margin of error varies by sample size. For the cities with 400 person samples, the margin of error is ±5% at the 95% confidence interval. That is, in theory, had all similarly qualified voters been interviewed, there is a 95% chance the results would be within ±5% of the results in this survey. For the samples of 275, the margin of error is ±6%.

DATA COLLECTION:

Calls were made during weekday evenings and weekend days. Trained, professional interviewers under supervision conducted all interviews. Up to four attempts were made to contact a head of household at each number in the sample before a substitute number was called. Questionnaires were edited for completeness, and a percentage of each interviewer's calls were re-called for verification.

It must be kept in mind that survey research cannot predict the future. Although great care and the most rigorous methods available were employed in the design, execution and analysis of this survey, these results can be interpreted only as representing the answers given by these respondents to these questions at the time they were interviewed.

RESPONDENT PROFILE

In interpreting these findings, it is important to keep in mind the characteristics of the people actually interviewed. This table presents a demographic profile of the 2030 respondents in the survey and the profile of the sample in each of the participating cities.

Note: Here and throughout this report, percentages may not add to 100%, due to rounding.

Demographihc Profile by City

	TOTAL N=2030	BELLVUE N=276	BOTHELL N=400	KENMORE N=275	KIRKLAND N=400	REDMOND N=275	SHORELINE N=408
GENDER:							
Male	48	50	46	45	49	47	50
Female	52	50	54	55	51	53	50
AGE:							
18-35	10	7	9	9	12	11	10
36-50	27	26	26	28	23	35	25
51-64	38	41	39	38	40	32	39
65+	25	26	26	26	25	23	26
YRS IN CITY							
3 or less	8	6	9	8	12	4	5
4-9 yrs	15	11	15	19	13	18	15
10-20 yrs	30	33	31	30	25	32	31
20+	47	50	46	42	50	45	48
HOME							
Own	87	88	86	86	86	90	87
Rent:	13	12	14	14	14	10	13
EDUCATION							
High School	10	6	13	8	11	7	13
Some College	26	16	29	28	25	24	29
College Degree	40	47	39	40	36	42	37
Post Grad	24	30	20	23	27	25	21
INCOME:							
$50,000 or less	16	10	20	19	13	13	21
$50 to $75,000	16	15	18	17	17	11	19
$75 to $100,000	17	15	16	13	17	19	18
$100 to 125,000	12	16	10	12	13	14	9
Over $125,000	16	22	15	14	18	18	11
No Answer	23	22	22	25	24	24	22

KEY FINDINGS

AWARENESS

- **Water Pollution, including runoff, was the top-mentioned environmental issue across the cities**
  - 16% mentioned a water quality issue; plus
  - 5% specifically mentioned stormwater runoff
- **Nearly 4 in 10 said they noticed pollution in local waters**
- **Nearly 4 in 10 believed that their household's actions have a "significant impact" on the health of local waters**
- **6 in 10 aware that runoff ends up in local streams and lakes**
  - 1 in 4 aware that it ends up in Puget Sound
- **2 in 3 believe stormwater runoff has as "significant harmful effect" on local water quality**
- **1 in 4 did not know whether stormwater is treated; 2 in 10 believe runoff is treated**
- **Perceived significance of runoff material varies**
  - Pesticides and fertilizer, vehicle oil leaks, household chemicals were each seen as a significant source of water pollution by at least 6 in 10
  - Pet waste, soil erosion and power washing were seen as significant by about 3 in 10
- **7 in 10 take household hazardous waste to a waste collection facility**

YARD CARE

- **3 in 4 who have yard or garden maintain it themselves**
- **Low use of toxic products reported**
  - Half said they look for the least toxic products when shopping
  - 2 in 3 report using organic fertilizer
  - 2 in 3 never use pesticides (only 3% use them regularly)
  - Half never use week killer (only 5% use it regularly)

PET WASTE

- **More than 1 in 3 (37%) of households in survey had a dog**
- **Most pick up waste regularly**
  - 8 in 10 always pick up on walks
  - 3 in 4 pick up at least weekly in yards (44% daily)
- **3 in 4 who pick up waste deposit it in trash**

VEHICLE MAINTENANCE

- **95% of respondents owned at least one vehicle**
- **Half wash cars at home, 1 in 5 at least every other month**
  - Half of home car washers wash on paved area that runs to drain
- **About 1 in 6 change oil at home**
  - About 1 in 10 of those dispose of used oil improperly
- **Most (6 in 10) said they "always" check for leaks**
  - 3 in 4 would use absorbent material or pad to soak up leak
  - 9 in 10 said they would get a leak checked "immediately" if the noticed one
  - Expense was the largest barrier to acting immediately
- **Various incentives to fix leak immediately moderately effective**
  - Extending the life of the vehicle rated "very effective" by 62%
  - Knowing how to fix the leak themselves rated very effective by 55%
  - Knowing of damage to Puget Sound rated very effective by 46%

MITIGATION EFFECTIVENESS

- **Most believed that various personal mitigation efforts would be "very effective" at protecting local water quality, including:**
  - Taking household hazardous materials to a collection facility (86%);
  - Repairing vehicle leaks (78%);
  - Reducing the use of yard chemicals (74%);
  - Planting and protecting trees (69%);
  - Washing cars at a commercial car wash (61%);
  - Cleaning up dog waste (50%).

SUMMARY

This section presents a summary analysis of the combined findings. That is, the data from the six city samples are combined into a single dataset. The data were statistically weighted by city to bring each city's sample into its proportion of the combined population six participating cities.

AWARENESS

21% named water pollution or runoff as the most important environmental issue facing their city

- Water pollution was the most-mentioned issue in this open-ended question.
- There were no significant differences between demographic categories.

38% were aware of water pollution problems in local waterways

- Those who said runoff was a significant polluter were twice as likely as those who did not to say they were aware of local water pollution (47% vs. 22%).
- Women were slightly more aware than men (41% vs. 35%).
- Awareness generally went up with education (27% of those with high school educations; 42% of those with graduate school).
- Homeowners were more aware than renters (40% vs. 28%).
- Awareness generally went up with income (33% of those under $50,000 vs. 44% of those over $100,000).

37% believed that their actions had a significant impact on the health of local waters

- Those who perceived local water pollution were more likely to say they had a significant impact on it than those unaware of pollution (43% vs. 34%)
- Those who thought runoff was a significant polluter were more than twice as likely as those who did not think so to believe they have a significant impact on local water quality (46% vs. 20%)
- Women were more likely to say "significant" than men (43% vs.31%).
- Those with post graduate educations were somewhat more likely than those with less formal education (43% vs. 36%).
- Belief in significant personal impact went up with income (from 34% under $75,000 to 42% over $100,000).

66% said that runoff ends up in local streams and 27% said it ends up in Puget Sound

- 44% initially said it goes down a storm drain, but when probed 66% said it "eventually ends up" in local streams.
- Shoreline residents were much more likely than residents of the inland cities to say that runoff ended up in Puget Sound (46% vs. 25%).

67% said that stormwater runoff has a "significant and harmful effect on water quality in local streams, lakes and rivers

- Those who said they had a significant impact on water quality were more likely than others to say that runoff had a significant harmful effect (82% vs. 58%).
- 27% said runoff is part of the natural way of things, and that "any harm to water quality is not enough to worry about."
- Women were more likely than men to say it caused significant harm (71% vs. 62%).
- Perception of significant harm generally rose with education level, from 54% of those with high school educations to 69% of those with post graduate school.
- Homeowners were more likely to say "significant harm" than renters (68% vs. 57%).

21% said that stormwater was treated; another 8% said that some is treated. 25% did not know whether or not stormwater is treated.

- There were not significant differences between demographic categories.

Perception of the significance of pollution caused by neighborhood runoff varied widely by source

- The proportion rating each listed source as a "significant source of local water pollution" ranged was:

  71% for pesticides and fertilizer from yards;

  69% for oil leaks from cars and trucks;

  58% for cleaning fluids and other household chemicals that are improperly stored or disposed of;

  39% for soapy water from washing cars on pavement;

  31% for pet waste left on the ground;

  30% for soil erosion from exposed soil;

  26% for runoff water from pressure washing.

For every source listed:

- A rating of significant impact was related to belief of personal impact on water quality. Those who thought they had a personal impact on water quality were much more likely to rate each source as a significant source of pollution.

- Those who said that runoff is generally harmful were much more likely than those who did not believe so to say each source does significant harm.
- Women were more likely than men to rate it as significant.
- The youngest respondents (under 35) were more likely than the oldest (over 65) to rate it as significant – although there was not a straight line relationship between rated significant and age. And power washing runoff was the exception.

YARD CARE

Most respondents were aware of the adverse environmental effects of yard chemicals – they were the top-rated source of water pollution in this survey. Although very few used weed killers and pesticides regularly, significant proportions of yard owners some times used these products.

73% of those who had a yard said they maintained it (at least partially) themselves.

- Yard owners were no more or less likely to rate pesticides and fertilizer as a significant source of water pollution than were non yard owners.

Those who maintained their own yard at least partially:

- Were more likely than those who hired it done to use weed killer - 52% vs. 37% (although 11% of those who hired did not know);
- Were more likely to use organic fertilizer - 70% vs. 53% (although 17% of those who hired did not know);
- There was no significant difference in the use of pesticides between those who maintained their own yard and those who hired it done.

34% cleaned hard surfaces (driveways, decks, patios) with hose, power washer or cleaning fluid at least some time.

PET WASTE

Picking up pet waste was generally seen as the right thing to do. It is not particularly related to perceptions of water pollution. Pet waste was rated near the bottom of neighborhood threats to water quality. And there was no difference between dog owners and non-owners in rating the significance of pet waste as a contribution to local water pollution. Nevertheless, the large majority of area dog owners generally know what they are supposed to do about pet waste and do it.

37% of households had a dog

Most pick up waste regularly

- 79% report "always" picking up on walks, including
  82% of women vs. 75% of men
  81% of those under age 50 vs. 71% of those over 65.
- 77% pick up in yard at least weekly (44% daily).
- There was no difference in picking up behavior related to whether or not a dog owner believed they had a significant personal impact on local water quality.

73% of dog owners who pick up waste dispose of it in the trash.

VEHICLE MAINTENANCE

Like pet waste, car washing was not particularly related to perceptions of water quality. Those who were aware of water pollution and those who thought their behavior made a significant impact on it did not have any different pattern of car washing than those less environmentally attuned.

26% of all respondents wash a vehicle at home on a paved area that runs to a storm drain.

- 95% own a vehicle;
- 47% of them wash their vehicle at home;
- 57% of home washers do so on a paved area.

Home car washers were more likely to be:

- Men (51%) vs. women (43%);
- High school educated (52%) vs. 46% of those with college degrees;
- Homeowners (48%) vs. renters (34%);
- Lower income (51% of those with incomes under $50,000 vs. 43% of those over $100,000)

58% "make it a point" to regularly check for oil leaks under their vehicles.

- Interestingly, those who thought their personal behavior had no impact on local water quality were slightly more likely to check regularly for leaks than those who said they made a "significant" impact (65% vs. 58%);
- Homeowners were more likely than renters to regularly check (60% vs. 45%);
- Car owners under age 35 were less regular checkers than their elders (44% vs. 60% of those over 35);
- Regular checking generally rose with income, from 54% of those with incomes under $50,000 to 61% of those over $125,000.

91% said they would get a leak checked "right away" if they noticed one.

- Of those who would "watch to see if it got worse," 34% cited potential expense as the main reason to delay
- Another 35% said either that "a small leak it doesn't really hurt anything (18%), or "it would be more trouble than it is worth" (16%) - reflecting the belief that oil leaks are not a significant pollution source.

A number of incentives show some promise in getting people to move quickly to repair oil leaks

Although the proportion of vehicle owners who wait to fix fluid leaks is small, some information appears to have potential to reduce the number even further.

62% said knowing that fixing the leak would extend the life of the vehicle would be "very effective in motivating you to fix a fluid leak on your vehicle right away";

53% said the same of knowing how to fix the leak themselves;

47% said if they were told that that oil leaks eventually drain into local creeks, lakes and Puget Sound, that would be a very effective motivator;

36% said a discount on the repair works would be very effective; and

34% said it would be very effective to know that keeping fluid leaks off the streets will make them safer to drive on.

POTENTIAL MITIGATION BEHAVIOR

At the end of the interview, respondents were read a list of potential efforts to mitigate water pollution. They were all things that individuals could do. To reduce the "halo effect" of having respondents give the desired answer, the series was introduced with this statement: "Some people think the things we have been talking about are effective at protecting water quality. Others say they are mostly for show or to make people feel better – they do not really do much for water quality. As I read this list, I'd like you to tell me if you think that each of these things is very effective, somewhat effective or not really effective at protecting water quality."

Six potential behaviors were each rated by most respondents as potentially "very effective" at protecting water quality.

86% said taking cleaning fluids, paint and other household hazardous waste to a collection facility would be "very effective";

78% said repairing vehicle fluid leaks would be "very effective";

74% said the same of reducing the use of yard chemicals;

69% said the same of planting and protecting trees;

61% said the same of using a commercial car wash;

50% said cleaning up dog waste would be "very effective".

Some of these behaviors may have benefited from exposure and education over the course of the interview. Five of the six were included at the beginning of the interview as potential sources of water pollution. For four of these five, more respondents said at the end of the interview that taking an action to mitigate that source of pollution would be "very effective" at protecting water quality than had initially rated it as significant source of water pollution.

The table below indicates the proportion who rated each as a "significant source" of water local pollution and the percentage who said that taking mitigating action against that source would be "very effective" at protecting water quality.

Mitigating Sources of Pollution Compared to Significance of That Source

POLLUTION SOURCE	SIGNIFICANT SOURCE	EFFECTIVE MITIGATION
Car wash water	39%	61%
Oil leaks	69%	78%
Yard chemicals	71%	74%
Dog waste	31%	50%
Household Chemicals	58%	86%

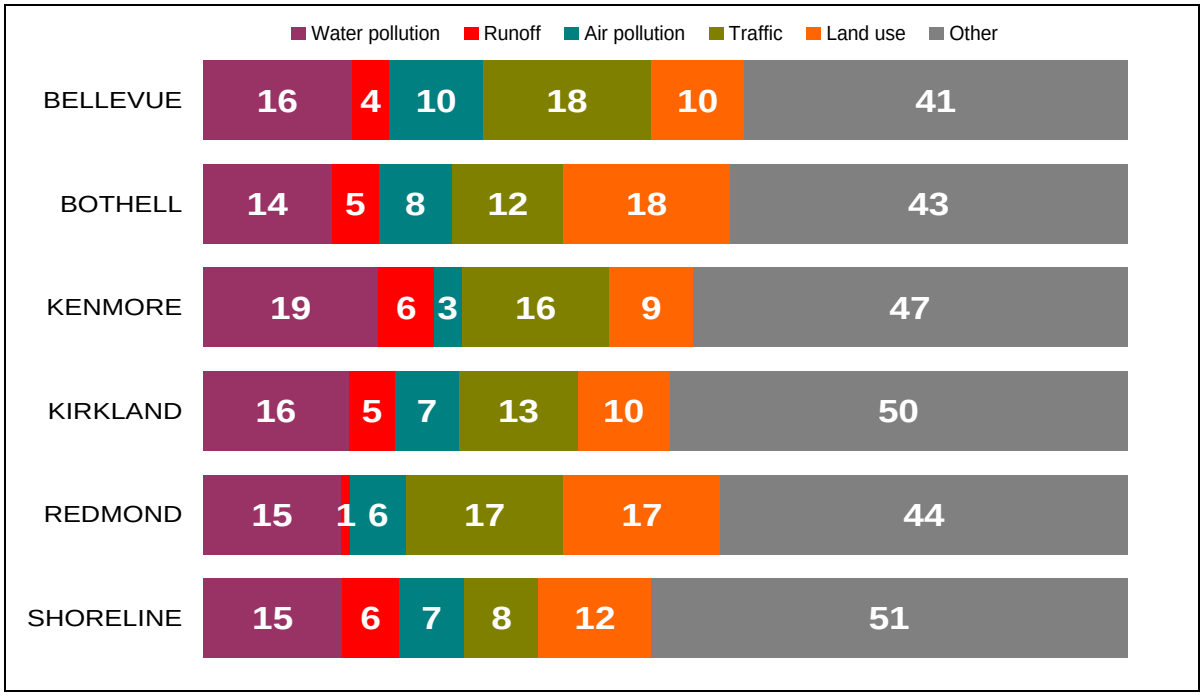
Survey findings are presented in the following section in the form of graphs comparing the responses form the six participating cities.

COMPARATIVE FINDINGS

The graphs in the following section present a comparison of the findings from each survey question by the six participating cities

LOCAL WATER POLLUTION:

1 in 5 Think Water Issues Most Important Environmental Issues Facing Their City



Q1. What do you think is the most important environmental issue facing <CITY> today? (Detail – combined sample)

16% WATER POLLUTION
- 5 Water quality
- 4 Water pollution
- 3 Polluted waterways
- 2 "Water"
- * Groundwater
- * Water treatment

5% RUNOFF
- 2 Water runoff
- 1 Poor drainage
- 1 Stormwater runoff
- * Flooding

17% TRAFFIC
- 12 Traffic
- 2 Congestion
- 1 Too many cars
- 1 "Transportation"
- 1 Better roads

12% GROWTH / LAND USE
- 4 Growth Management
- 3 Open Space / Loss of trees
- 2 Overpopulation
- 1 Construction / Habitat / Waterfront

8% AIR POLLUTION
- 4 Auto emissions
- 2 Air pollution
- 2 Air quality
- 1 Air

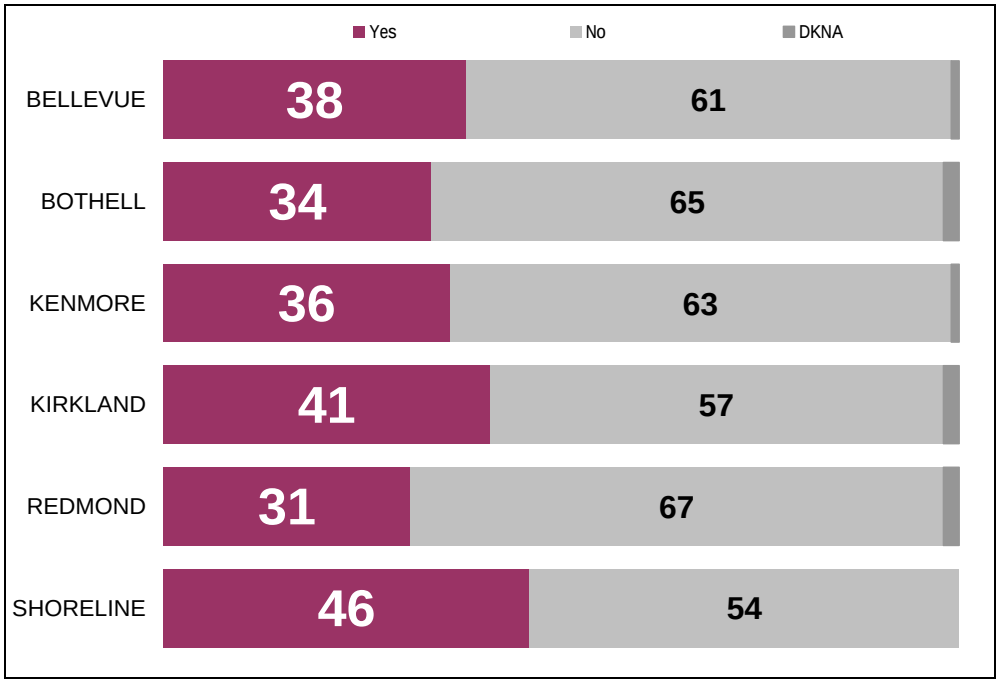
17% OTHER
- 4 Climate change / Weather
- 2 "Pollution"
- 1 Garbage
- 1 Recycling
- 1 Cement plant
- * Pet waste / Pesticides / Renewable energy / Parks / Environmentalists / "Everything" / Energy / Politicians / Regulations / Point Wells / Access to water /

7% NOTHING

19% NO OPINION

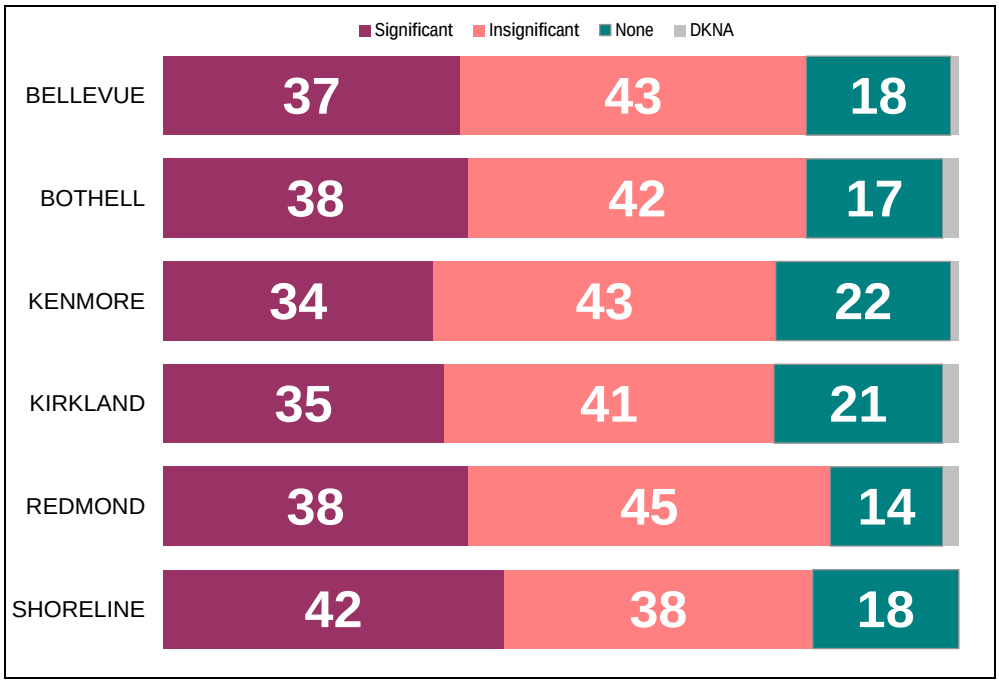
LOCAL WATER POLLUTION:

Yet Most Unaware of Local Water Pollution Problems



Q2: Are you aware of any water pollution problems in local waterways – like streams, rivers or lakes?

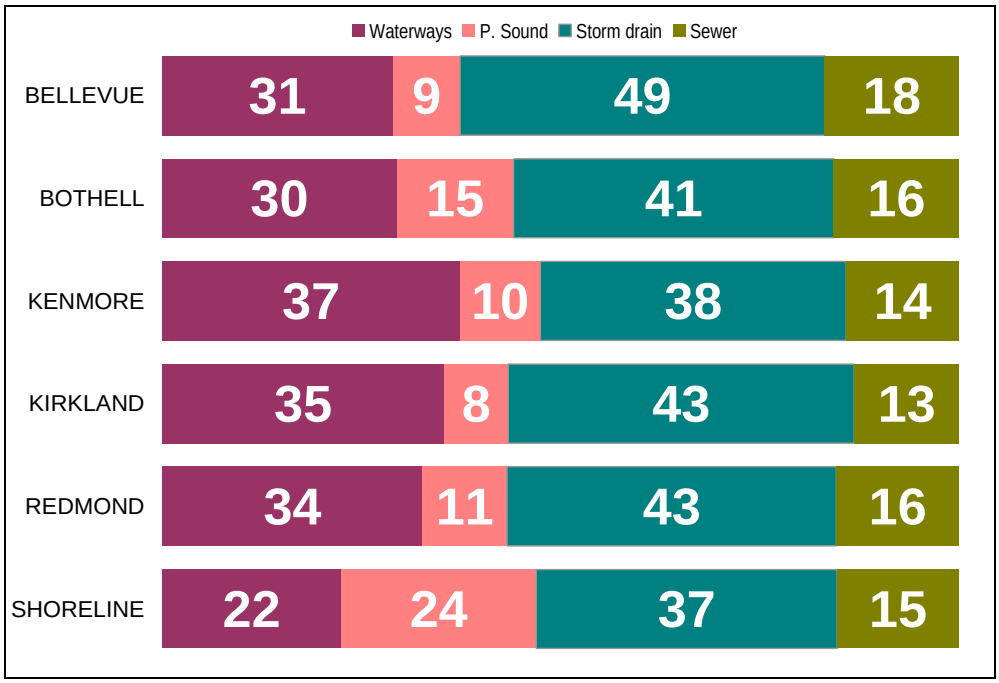
Split On Personal Impact



Q3: To what degree do you believe that actions you and your family take affect the health of local streams, lakes, and rivers?

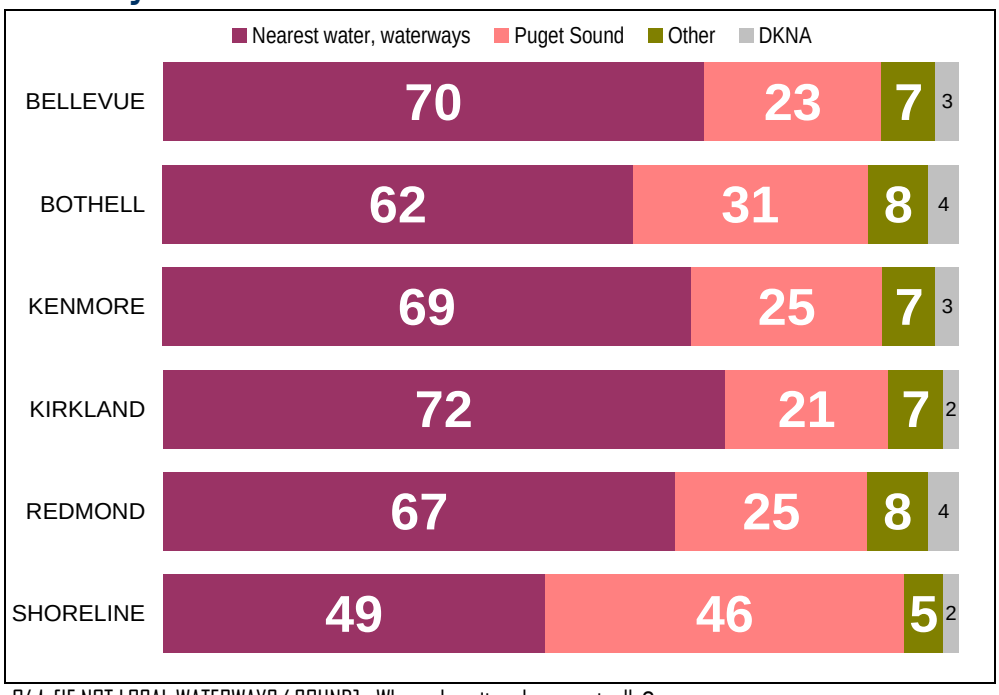
STORMWATER RUNOFF

Most Think Runoff Drains To Nearest Waterway



Q4: When it rains, a lot of water runs off of roofs, driveways, parking lots, and streets. As you understand it, where does that water go?

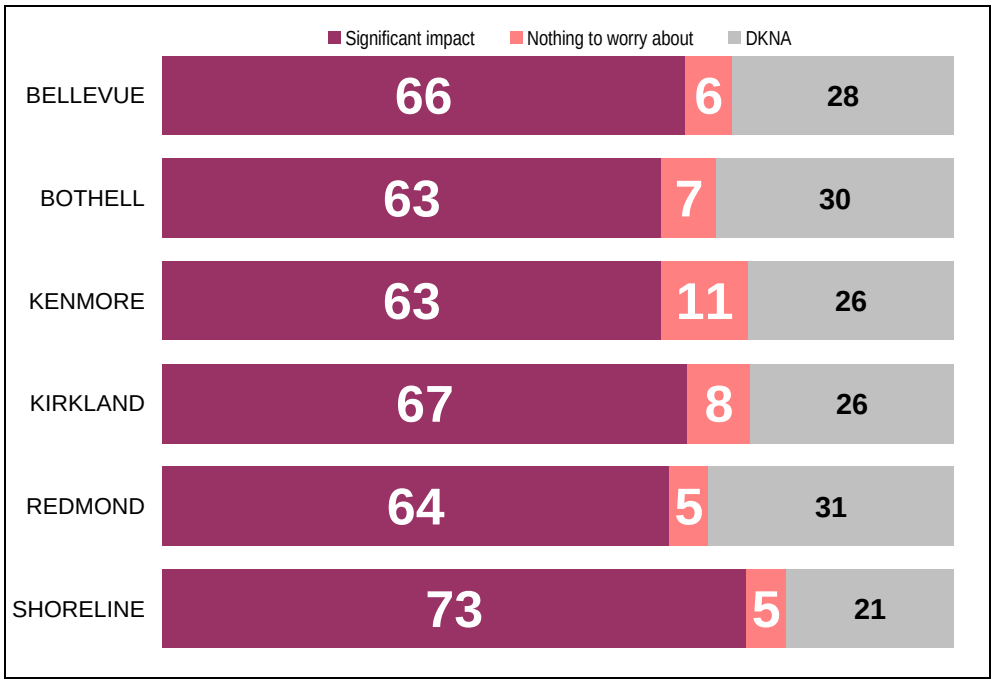
At least eventually



Q4.1: [IF NOT LOCAL WATERWAYS/ SOUND] Where does it end up eventually?

STORMWATER RUNOFF

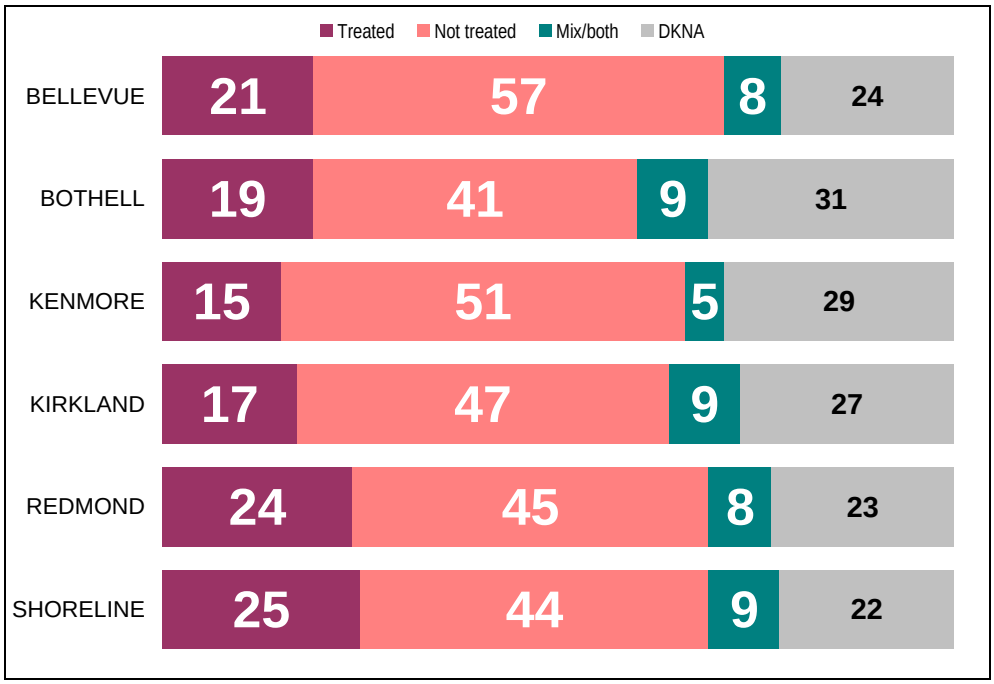
2/3 Think Runoff Has Significant Harmful Impact on Local Waterways



Q5: Which of the following views is closest to your own opinion
A) Stormwater runoff has a significant harmful effect on water quality in local streams, lakes and rivers.
B) Stormwater runoff is part of the natural way of things. Any harm to water quality from stormwater is not enough to worry about.

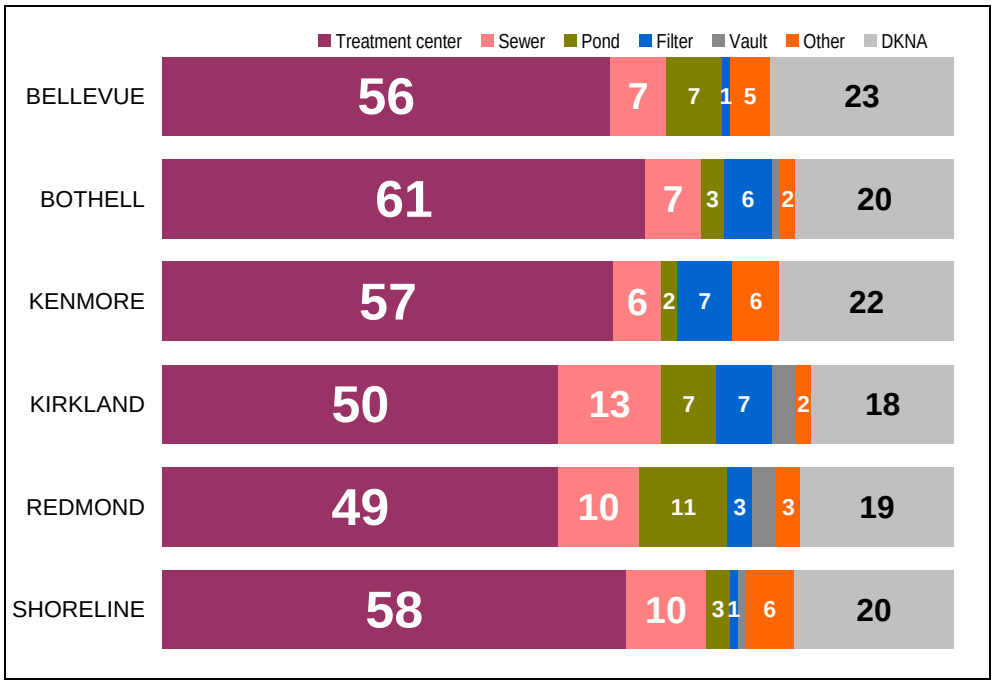
STORMWATER RUNOFF

1/2 Think Stormwater Not Treated



Q6: To the best of your knowledge, is run off water in <CITY> treated before it goes back into local waters? Or is runoff water not treated?

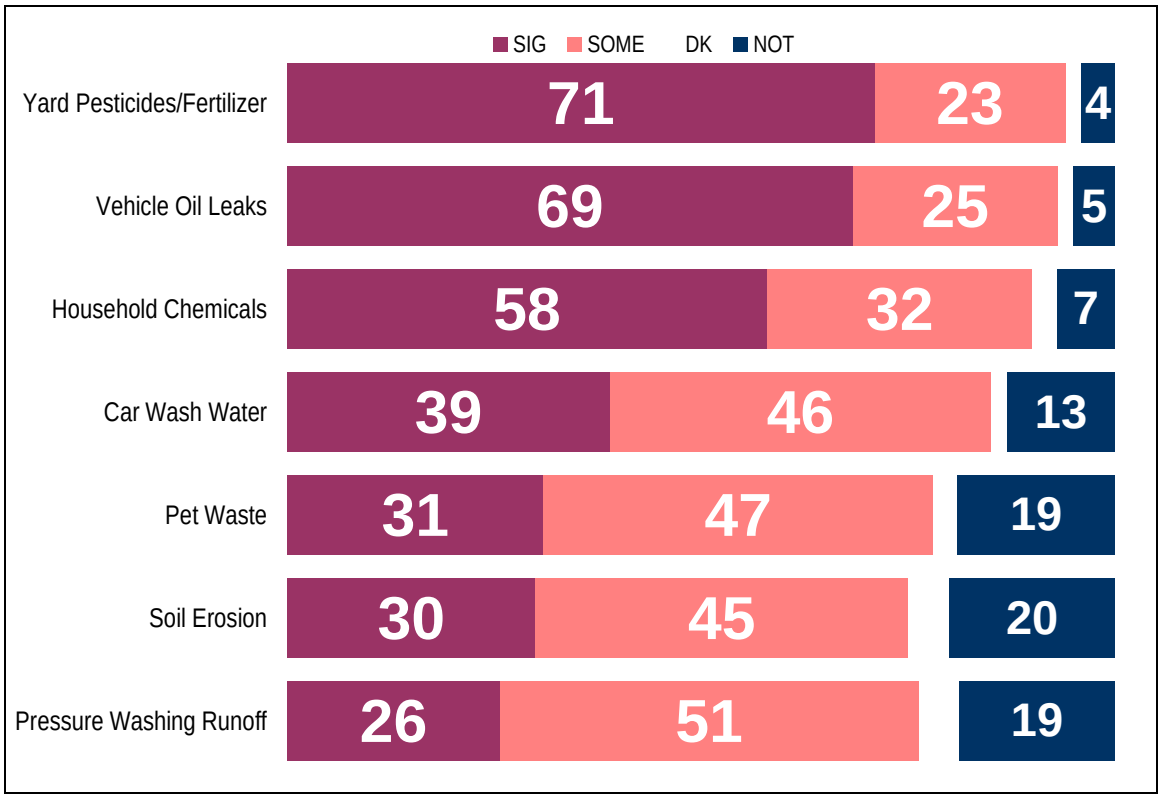
Of those who said it was treated, half said it goes to a treatment center



Q6.1: [IF TREATED] Where does it go for treatment?

CONTRIBUTIONS TO LOCAL WATER POLLUTION:

Chemicals, Pesticides, Oil Seen As Most Harmful
(combined data)

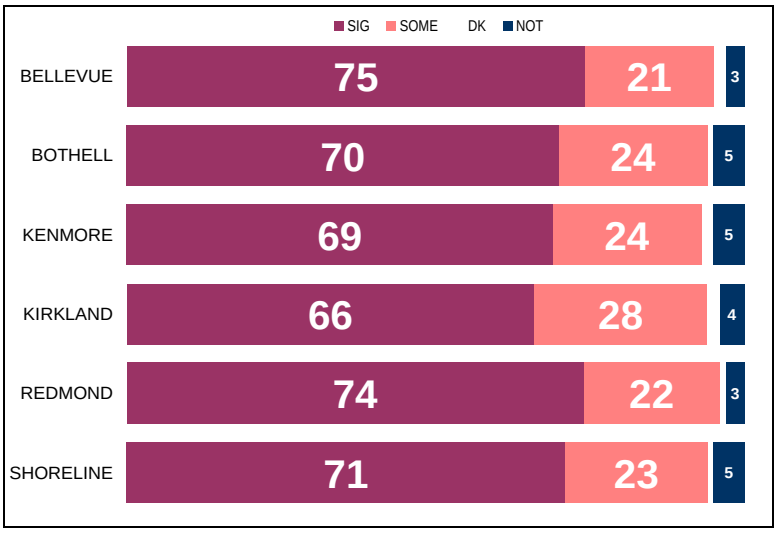


Q7A: As I read a list of things that can get washed into lakes, streams and Puget Sound, tell me how much you think that contributes to local water pollution..
Pesticides and fertilizers from yards
Oil leaks from cars and trucks
Cleaning fluids and other household chemicals that are improperly stored or disposed of
Soapy water from washing cars on pavement
Pet waste left on the ground
Soil erosion from exposed soil
Run off water from pressure washing

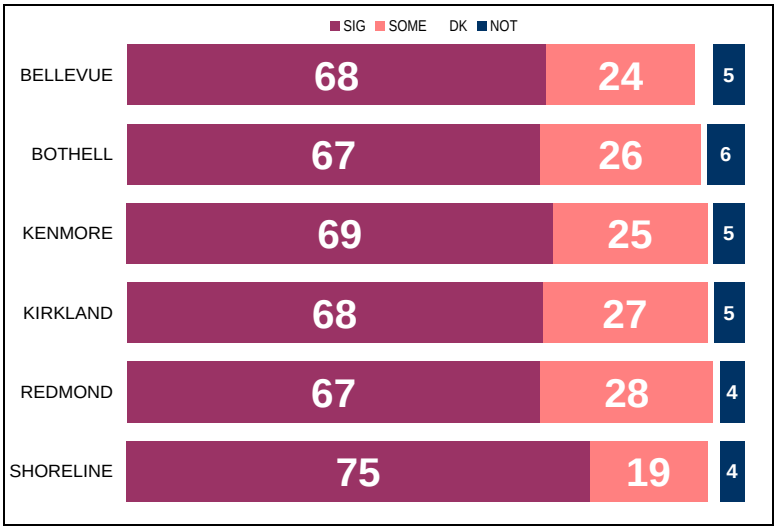
- **This graph displays the responses from the combined sample of 2030**
  - The data are weighted by city size
  - The city-by-city comparisons are on the following pages

CONTRIBUTIONS TO LOCAL WATER POLLUTION:

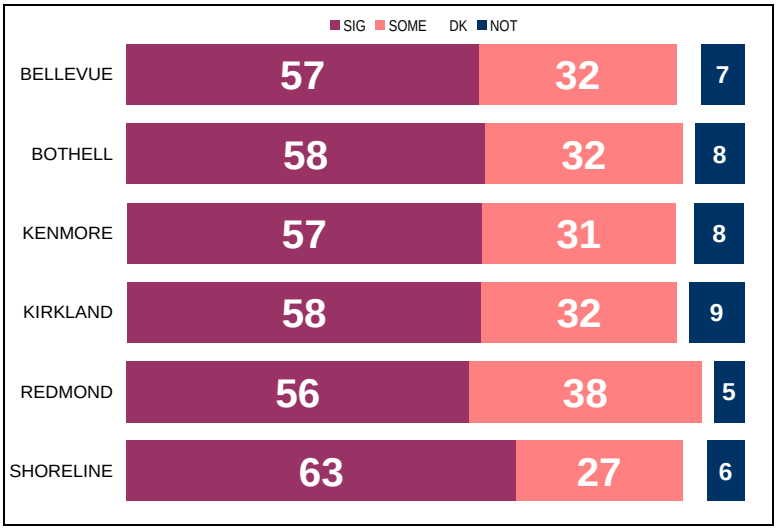
Pesticides and fertilizers from yards



Oil leaks from cars and trucks

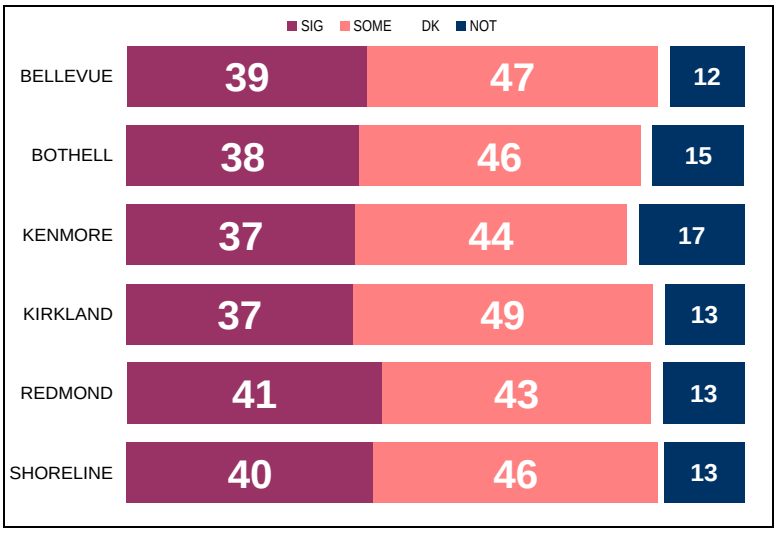


Cleaning fluids & other household chemicals that are improperly stored or disposed of

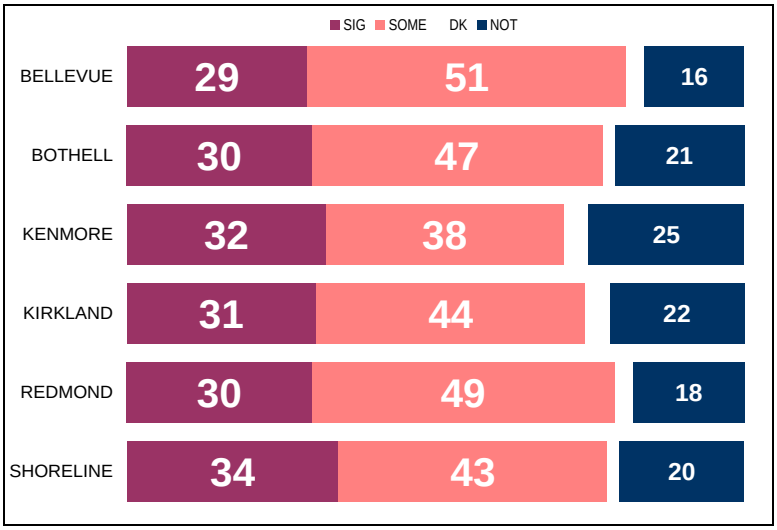


CONTRIBUTIONS TO LOCAL WATER POLLUTION:

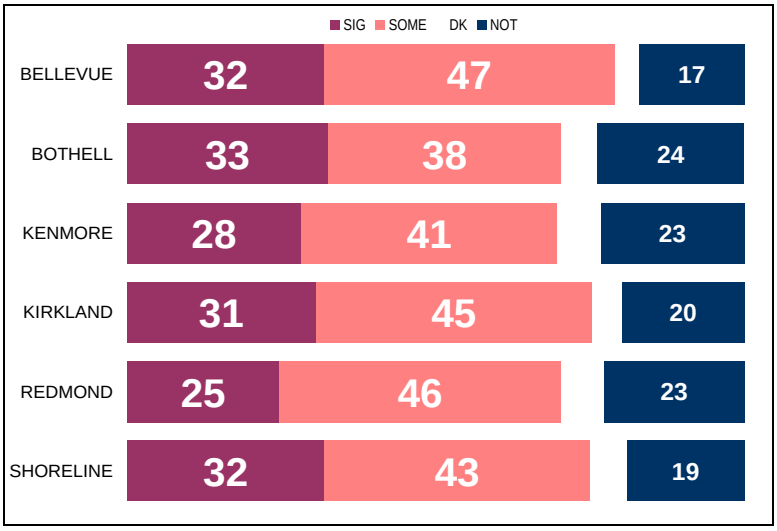
Soapy water from washing cars on pavement



Pet waste left on the ground

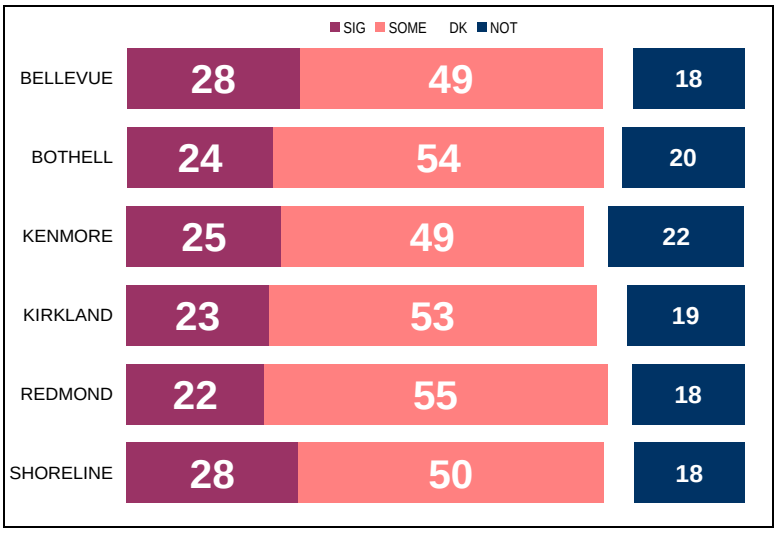


Soil erosion from exposed soil



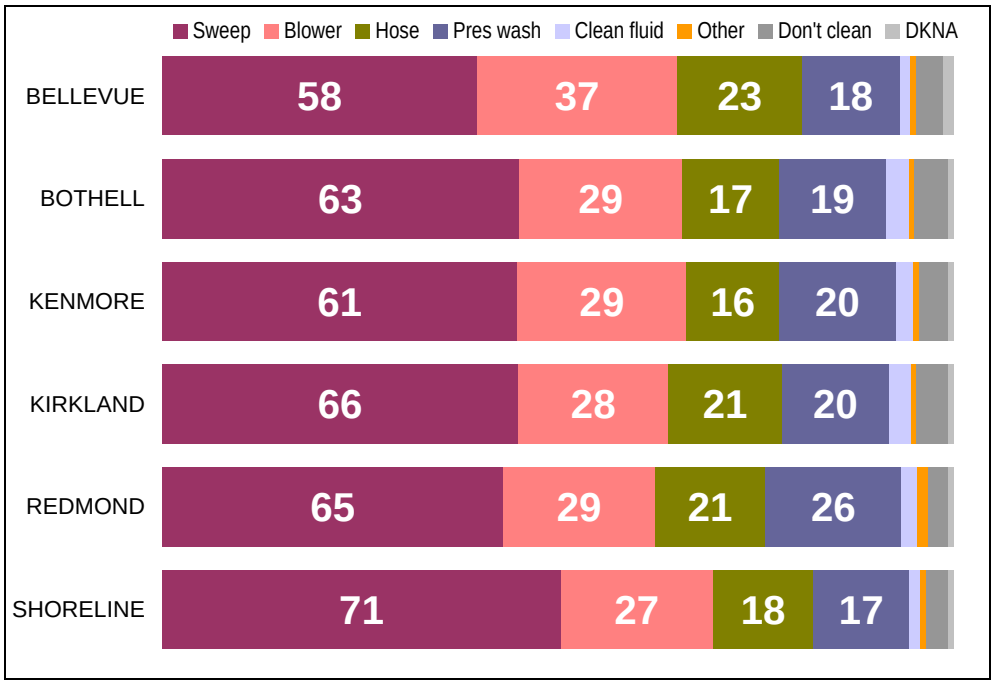
CONTRIBUTIONS TO LOCAL WATER POLLUTION:

Run off water from pressure washing



YARD CARE

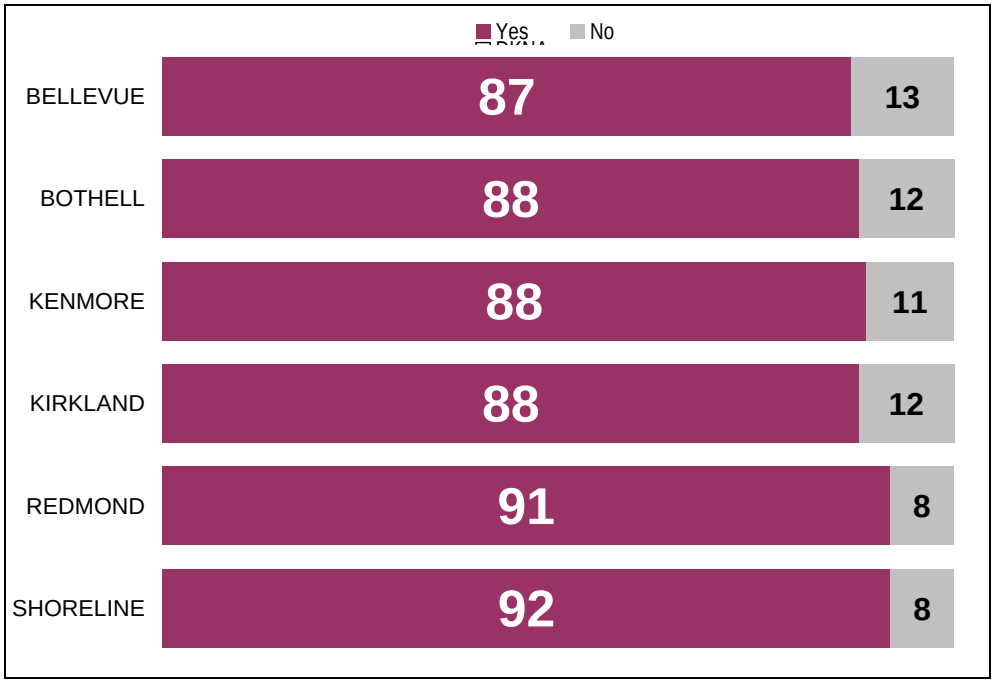
Most Sweep Outdoor Surfaces



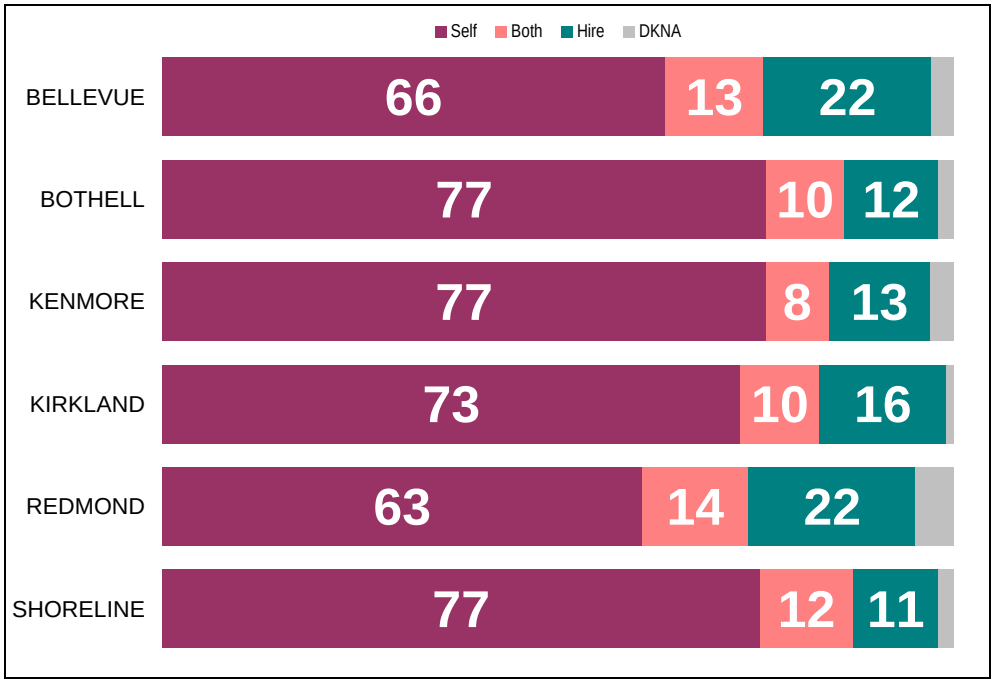
Q8 When you clean places like your driveway, walkways, patio or deck, do you typically…)
sweep those areas
use a blower
hose them down
pressure wash them
use a cleaning fluid
other (specify)
don't have/don't clean those areas

YARD CARE

Nearly all households had yard



..and maintain it themselves

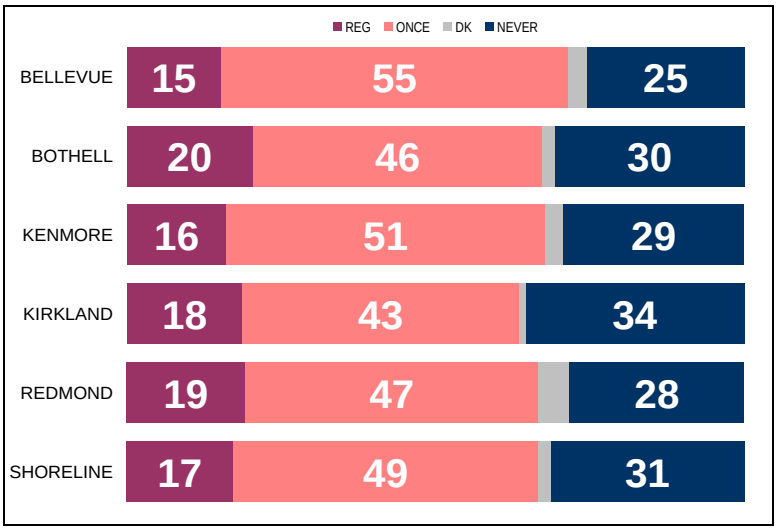


Q10 Do you or someone in your household maintain the yard yourself? Or do you hire someone to take care of it?

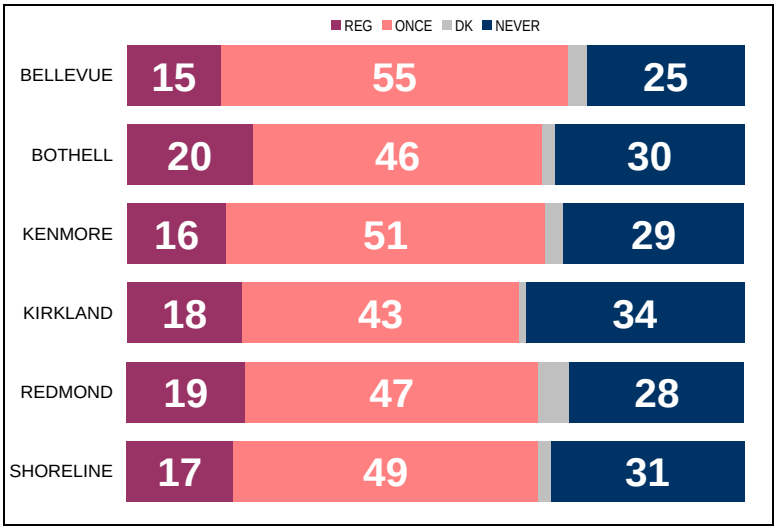
YARD CARE

Most Weed Killer at Least "Once in a While"

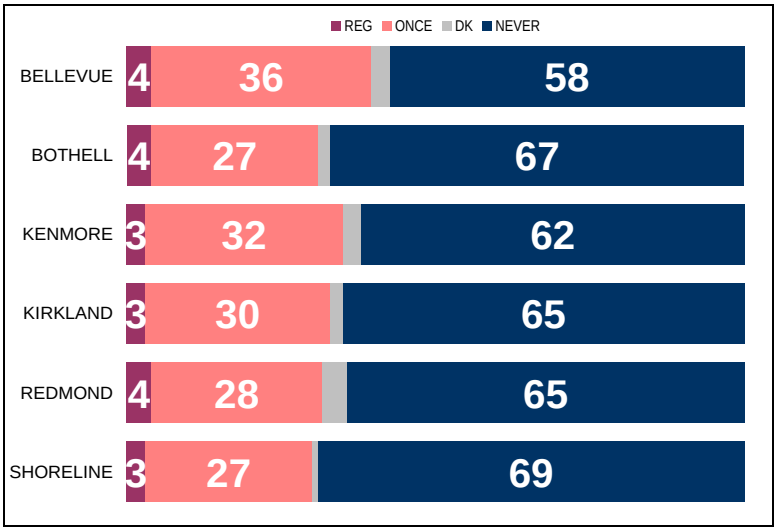
Q11A: I am going to read a list of products that people sometimes use on their yards and gardens. During a typical growing season would you say you used this regularly, once in a while, or never:



Most Use Organic or Slow Release Fertilizer

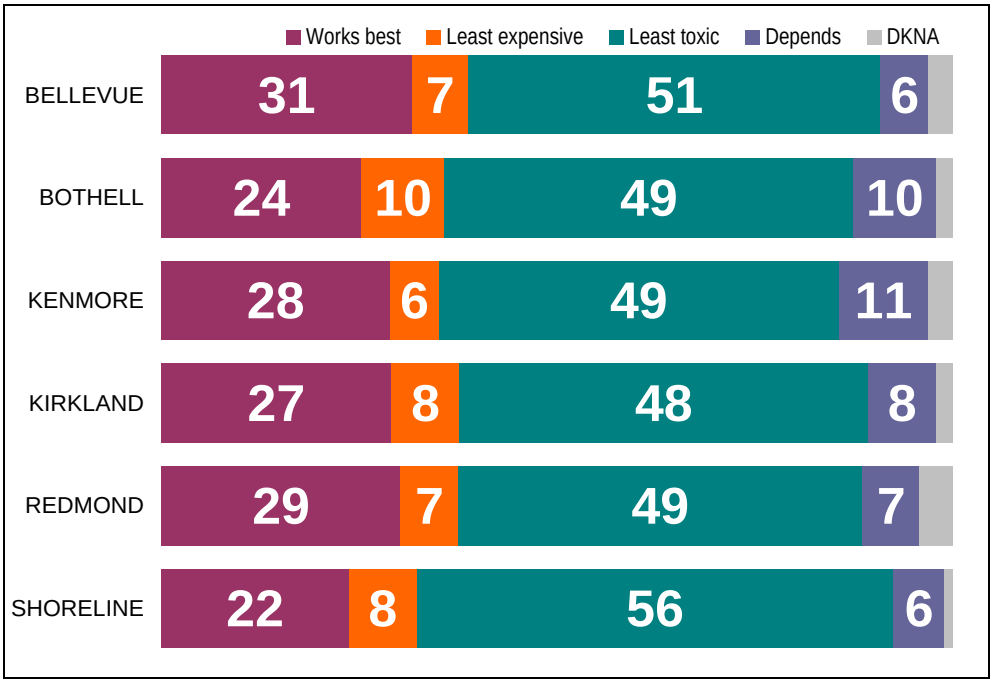


Pesticides, insecticides, or fungicides.



YARD CARE

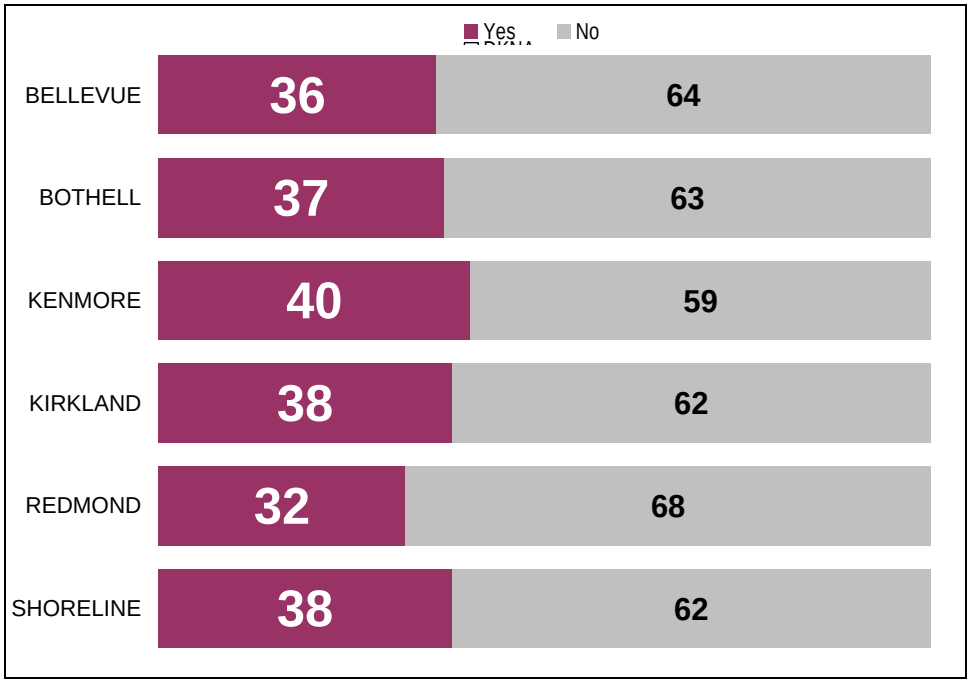
About Half Shop For Least Toxic Yard Product



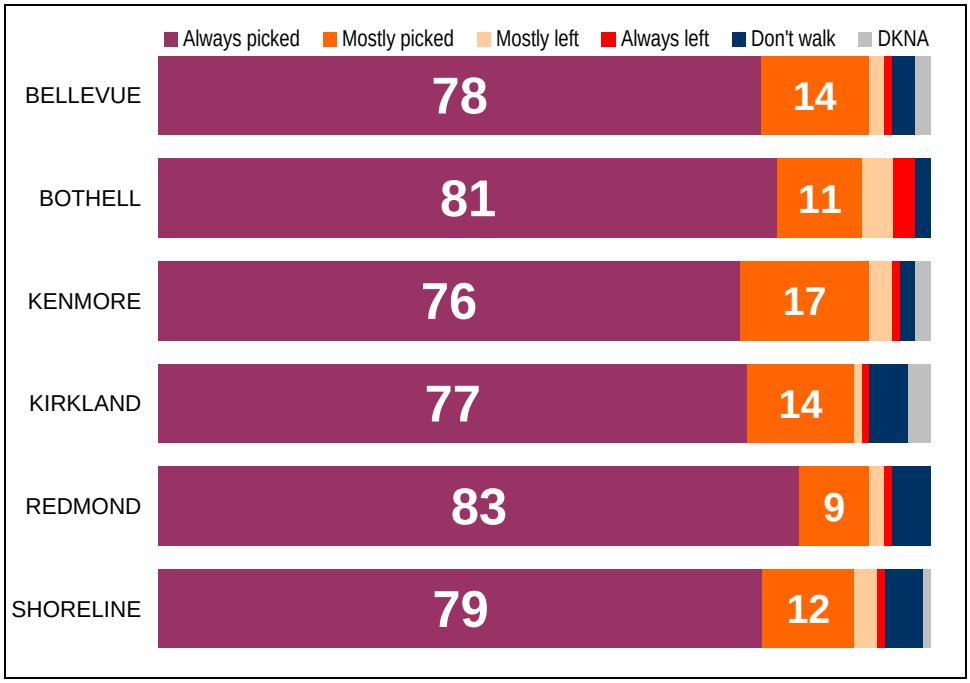
Q12: When you shop for yard and garden care products do you most often buy products that:
works best
least expensive
least toxic
"it depends"

PET WASTE

More than 1 in 3 households have a dog



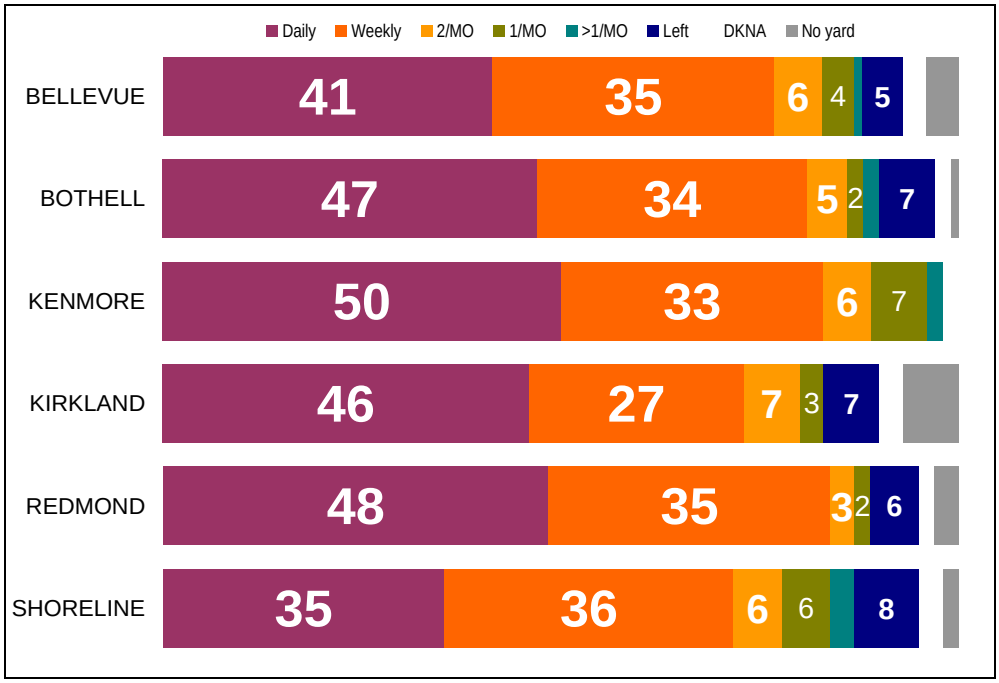
8 in 10 always pick up dog waste on street



Q14: When the dog is out for a walk, how is the dog waste dealt with

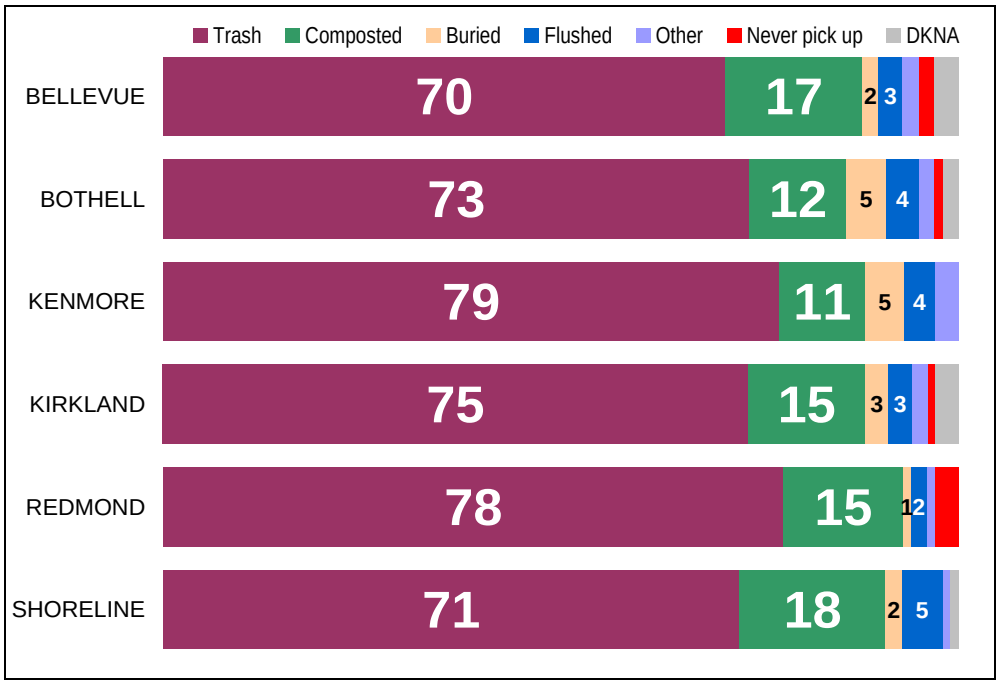
PET WASTE

... and at least weekly at home



Q15 :How about dog waste in the yard at home?

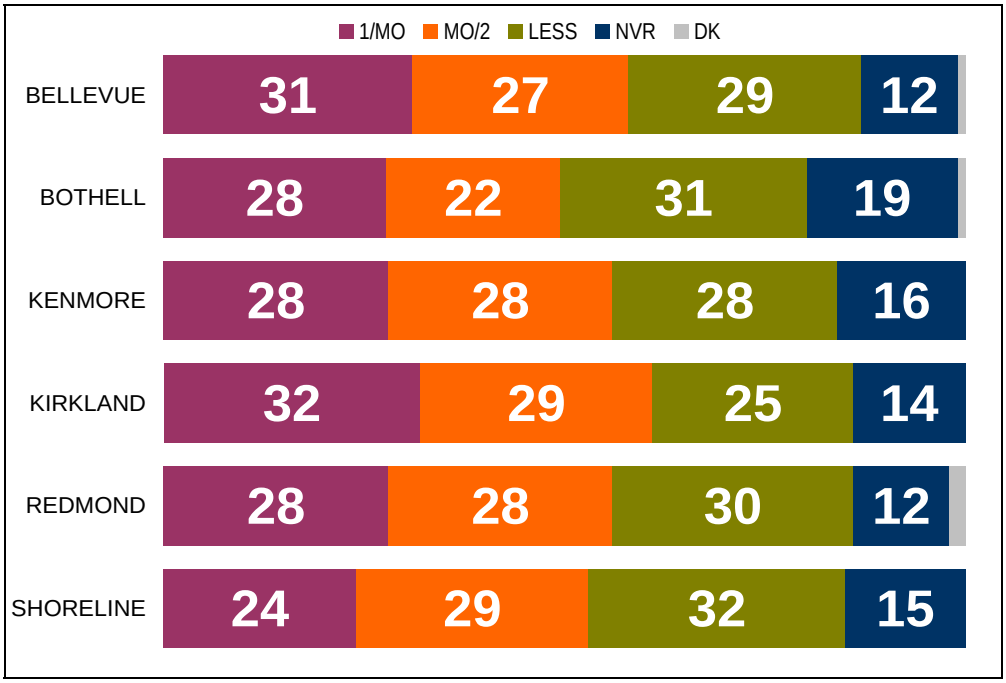
Most Dog Waste Thrown In Trash



Q16: If the dog waste is picked up, how is it typically disposed of?

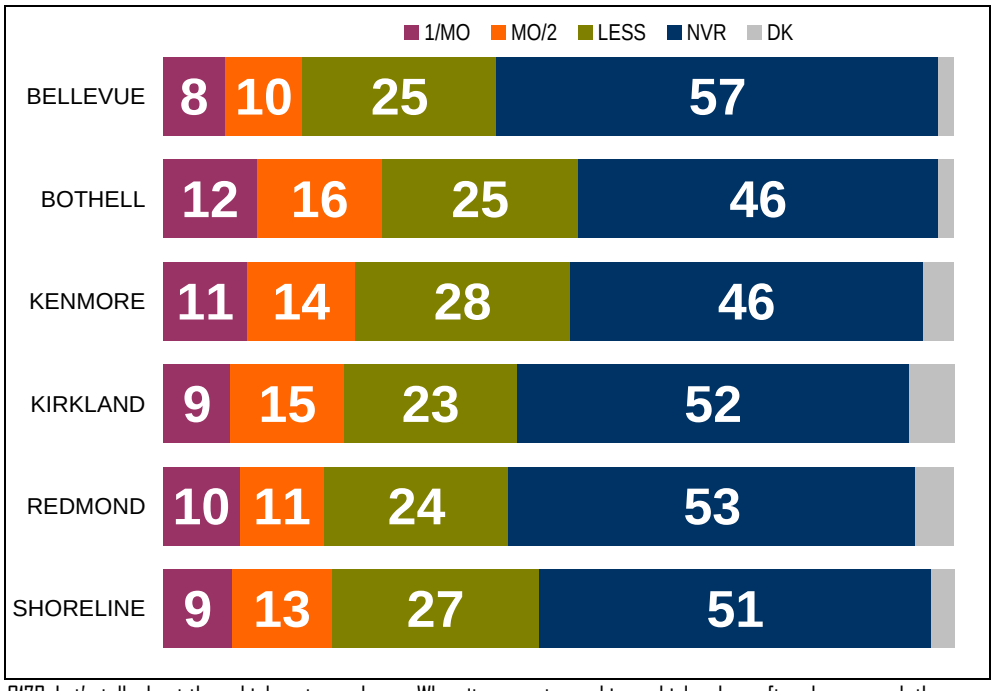
CAR WASHING

8+ in 10 Use Commercial Car Wash



Q17A: Let's talk about the vehicles at your home. When it comes to washing vehicles, how often do you wash the car at a car wash

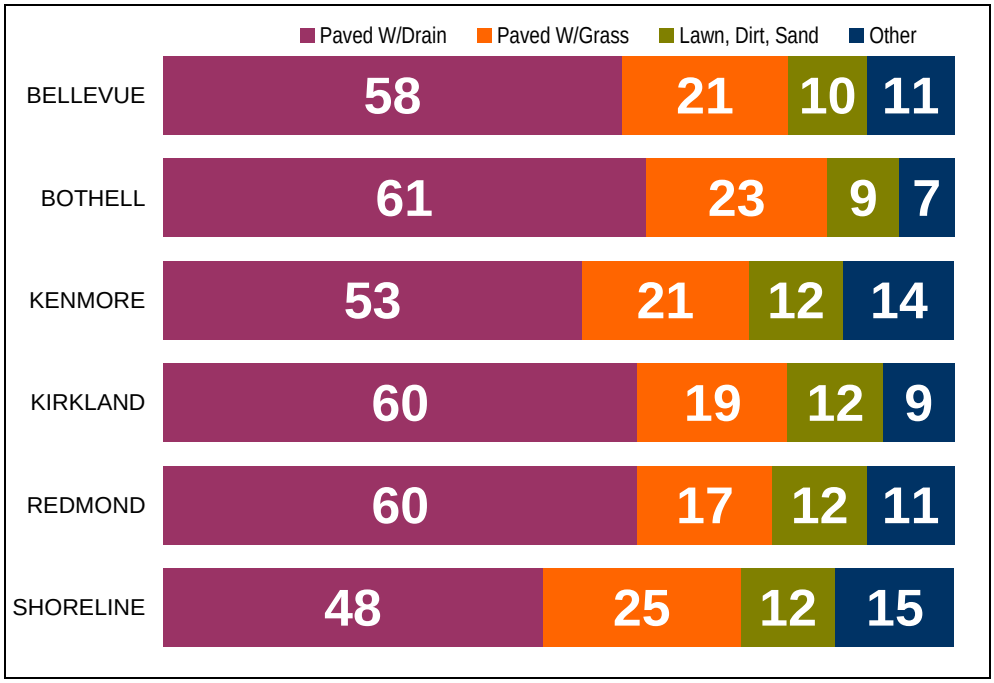
Just under half wash vehicles at home – About half of those at least every other month



Q17B: Let's talk about the vehicles at your home. When it comes to washing vehicles, how often do you wash the car at home?

CAR WASHING

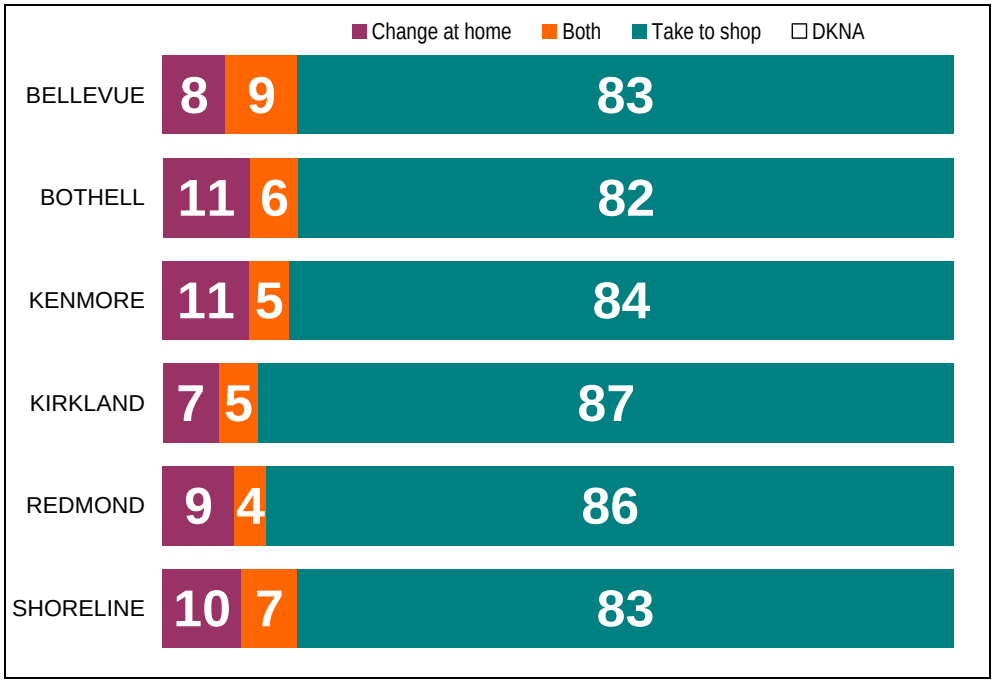
Most Wash Car On Paved Surface



Q17.1: When you wash your vehicle at home, do you wash it...
On a paved driveway or parking spot that runs to the street or a drain
On a driveway or parking spot the drains to soil, grass or gravel in the street
On gravel on the lawn or dirt or sandy ground

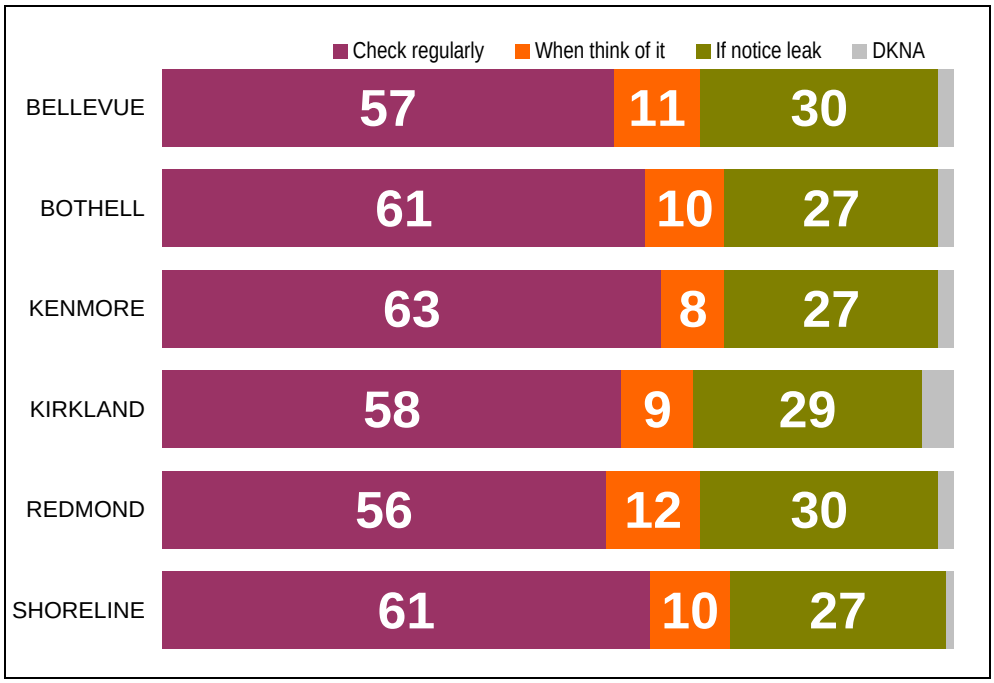
FLUID LEAKS

Almost All Have Oil Changed At Shop



Q18: When it comes to changing the motor oil, anti-freeze or other fluids, do you or someone else in your household typically do it at home, or are the vehicles taken to a service shop for that?

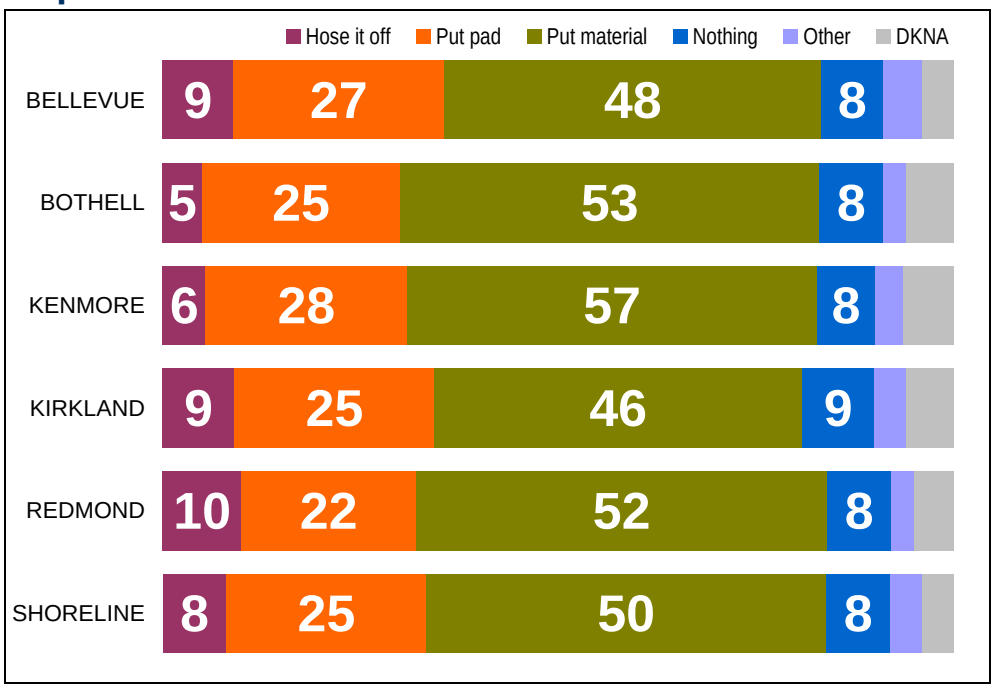
6 in 10 Check Regularly For Leaks



Q19: What about oil or fluid leaks? Which of the following best describes you?

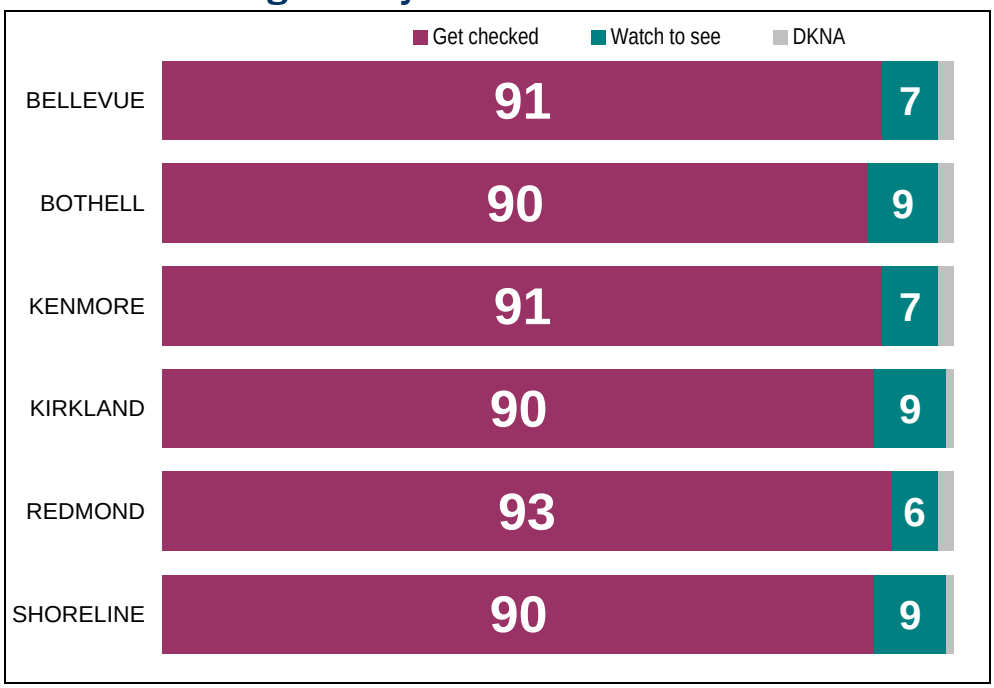
FLUID LEAKS

3 in 4 Soak Up Leaks



Q20: If your vehicle leaked or spilled oil or antifreeze onto your driveway, which of the following would you most likely do:

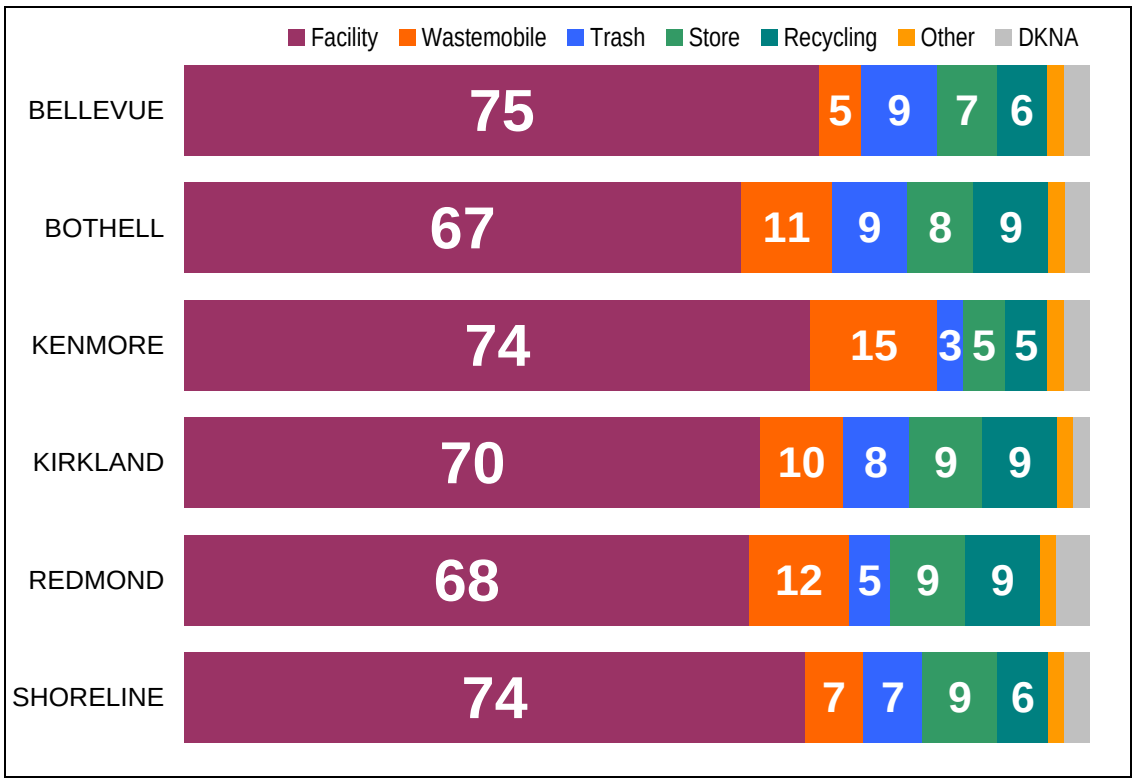
Almost All Check Leaks Right Away



Q21: If you noticed a leak, would you... Get it checked right away or Watch to see if it got worse?

HOUSEHOLD CHEMICALS

8 in 10 Dispose of Household Chemicals at Hazmat Facility or Wastemobile

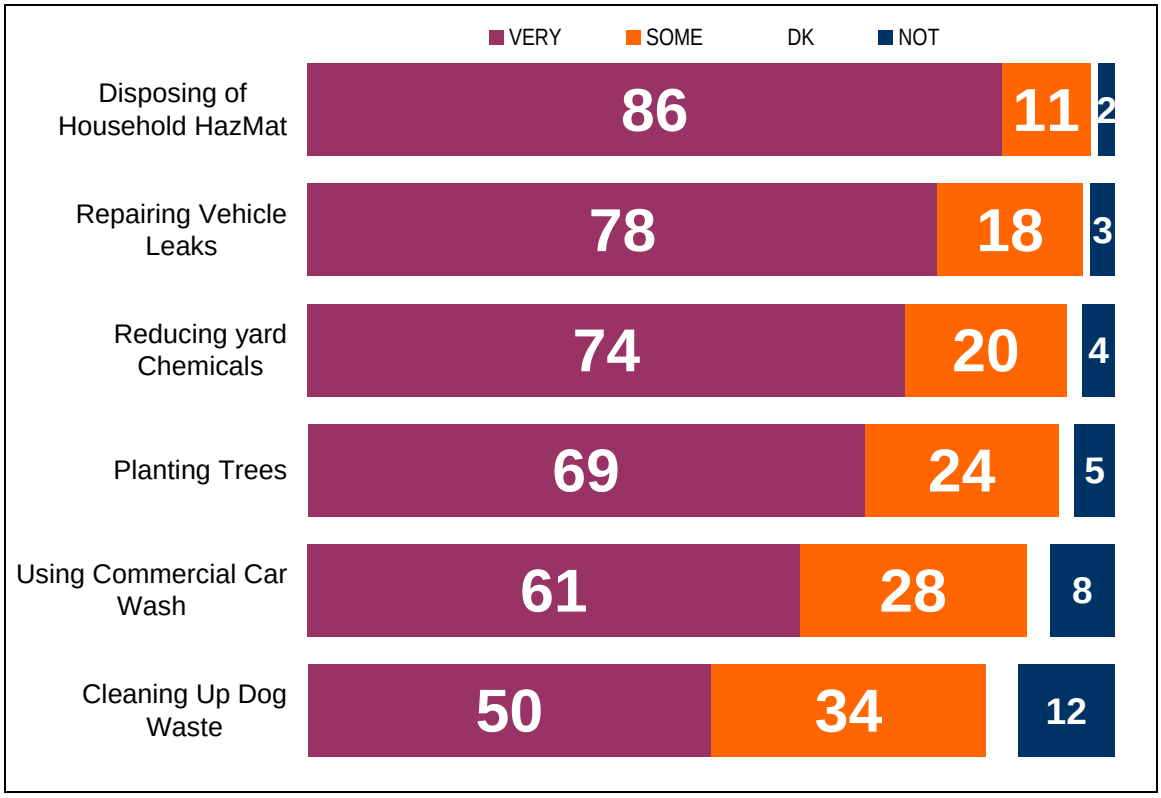


Q22: What does your household typically do with products that may contain hazardous materials, such as cleaning fluids, paint and other household hazardous waste to a collection facility??

MEASURES TO PROTECT WATER QUALITY

Reducing, Disposing of Chemicals Seen as "Very Effective" Means to Protect Water Quality

(combined data)



Q23: I'd like you to tell me if you think that each of these things is very effective, somewhat effective or not really effective at protecting water quality.:
Planting and protecting trees
Repairing leaks on vehicles
Washing a car at a commercial car wash4
Cleaning up dog waste
Reducing chemical use in your yard
Taking cleaning fluids, paint and other household hazardous waste to a collection facility

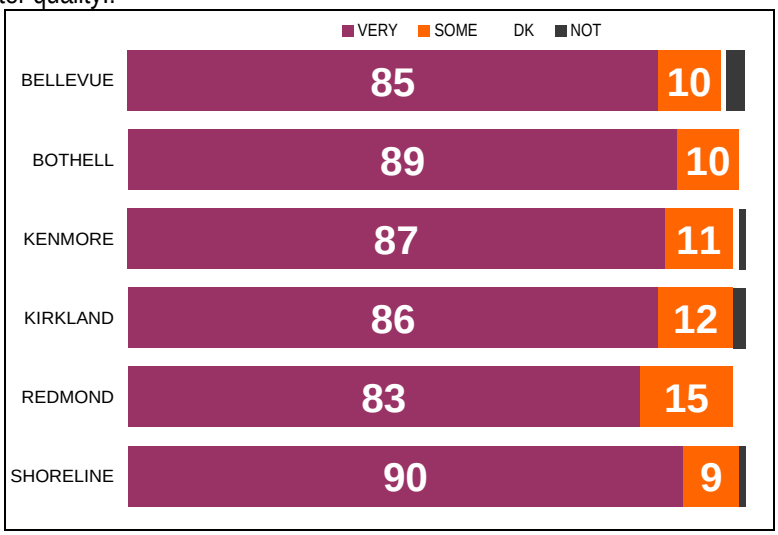
- **This graph displays the responses from the combined sample of 2030**
  - The data are weighted by city size
  - The city-by-city comparisons are on the following pages

MEASURES TO PROTECT WATER QUALITY

Q23: I'd like you to tell me if you think that each of these things is very effective, somewhat effective or not really effective at protecting water quality.:

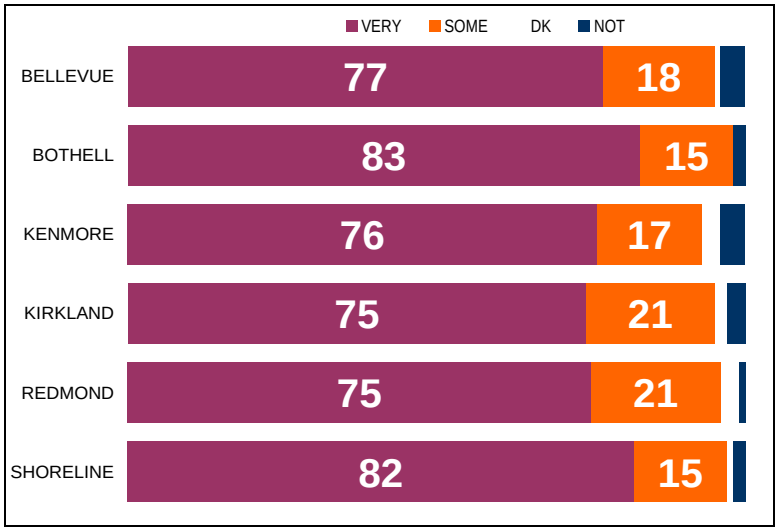
Disposing of Household Chemicals: 8 in 10 Rated as Very Effective

Taking cleaning fluids, paint and other household hazardous waste to a collection facility



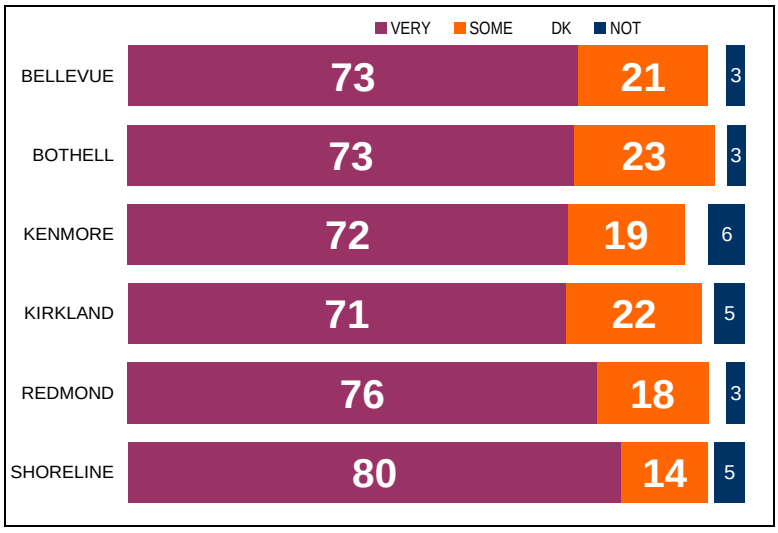
Repairing Vehicle Leaks: 3 in 4 Rated as Very Effective

Repairing leaks on vehicles.



Reducing Use of Yard Chemicals: 7 in 10 Rated as Very Effective

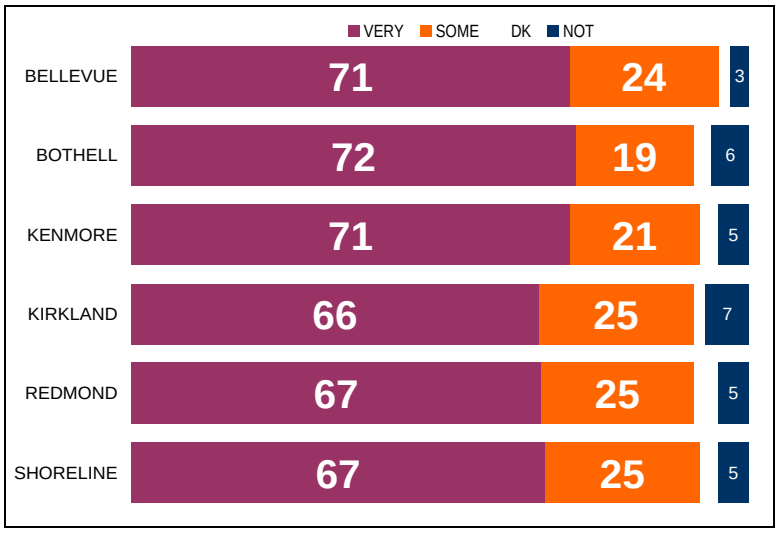
Reducing chemical use in your yard.



MEASURES TO PROTECT WATER QUALITY

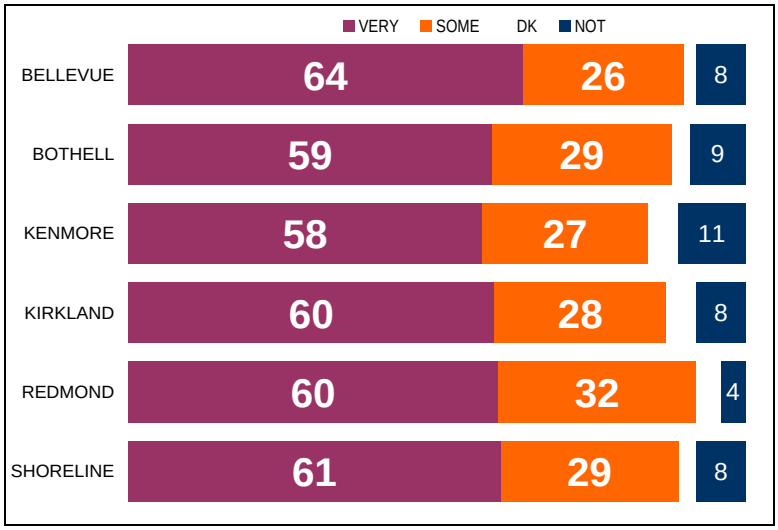
Planting Trees: 7 in 10 Rated as Very Effective

Planting and protecting trees



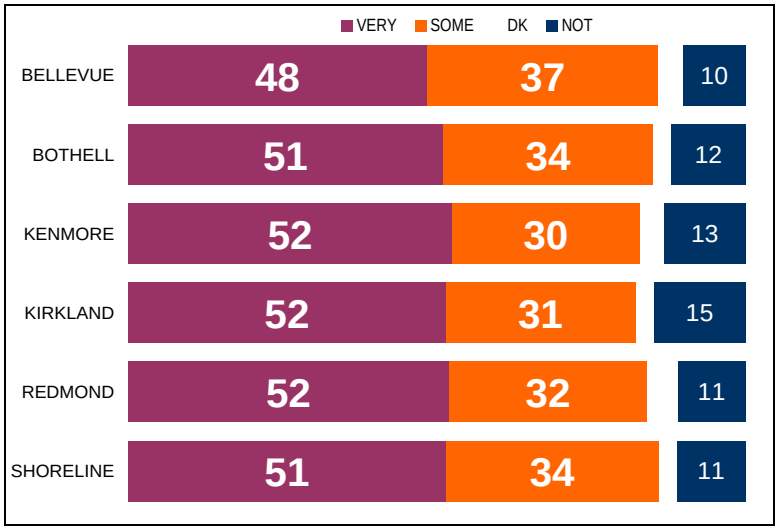
Using Commercial Car Wash : 6 in 10 Rated as Very Effective

...Washing a car at a commercial car wash



Cleaning Up Dog Waste: 1 in 2 Rated as Very Effective Way

...Cleaning up dog waste.



DISCUSSION

Water quality is important to local residents, if often taken for granted. Water quality issues were the single most-mentioned category of response when respondents were asked, in an open-ended question at the beginning of the interview, to name the most important environmental issue in their city: 20% cited something having to do with water quality, including 4% who specifically mentioned runoff.

Consistent with previous studies, this survey found residents of north King County cities to be generally aware of the negative effects of stormwater runoff on local water quality: two-thirds of all respondents said that stormwater runoff has a "significant harmful effect" on local water quality. Two-thirds were aware that stormwater runoff ends up in local streams, although fewer than 3 in 10 said it ends up in Puget Sound.

Appreciation of the immediacy of the problem, however, is not as high as recognition of the relationship between runoff and water quality in the abstract. Just 4 in 10 respondents were aware of any pollution problems in local waters, and 4 in 10 believed that their household had any "significant impact" on local water quality, although only 20% thought they had "no impact."

These levels of awareness are important because they are significantly related to pertinent attitudes and behavior. Response to the question about the significance of stormwater harm was correlated to the response of 36 of the 42 substantive questions in this survey. Response to the personal impact question was related to 34 of the 42 substantive questions. That is to say, respondents who thought that runoff has a significant harmful effect and those who believe that have a personal impact on runoff were significantly more likely to engage in the target behaviors in almost every case than those who lacked that awareness.

Recognition of a problem is related to acceptance of solutions and taking of action. The contributors to pollution perceived as the greatest threat were chemical: pesticides, cleaning fluids, vehicle leaks. At the bottom of the list were pet waste, car wash water, soil erosion and power washing. It is no coincidence that the target behaviors most likely to be reported were those having to do with chemicals: relatively small minorities use pesticides and 8 in 10 report properly disposing of household hazardous waste, and nearly everyone checks for fluid leaks under their vehicles.

Far fewer people reported proper behavior related to those threats deemed less serious: half wash their vehicles at home and half of those do so on paved surfaces. Pet waste pick up was an exception – nearly every one says they pick up all the time – but that behavior was not particularly related to water quality attitudes or awareness. One suspects the "good neighbor" factor and the "yuck" factor to be at work here, more than protecting water quality.

There were differences in some responses between demographic categories, noted throughout this report. But none of those nothing so strong and consistent as the differences between those who did and did not perceive significant harm being done by runoff and their personal impact. There was very little difference from city to city in these findings, suggesting that a continuation of the coordinated effort to raise awareness and change behavior will be effective and efficient.

APPENDIX

ELWAY RESEARCH, INC.

CITY:	BELLEVUE…1	BOTHELL..2	KENMORE..3	KIRKLAND…4	REDMOND..5	SHORELINE..6

Hello. I'm calling from Elway Research, an independent public opinion firm in Washington state. My name is ___. We are conducting a public opinion survey about some issues in <CITY>. You are one of only 400 persons – selected at random – who is being interviewed. Your answers will be completely confidential. We are not selling anything and no one will contact you as a result of this call.

We are trying to keep our sample in balance, so my instructions are to talk to a [MALE / FEMALE] age 18 or older at this number.

S1>	Would that be you?	YES →GO TO S3
OR>	Is there a [MALE / FEMALE] 18 or older at home?	NO → GO TO S2
S2>	Then my instructions are to interview you. Are you 18 or older?	YES → GO TO S3 NO → THANK & TERMINATE
S3>	Just to double check, are you a resident of <CITY>	YES → BEGIN Q1 NO → THANK & TERMINATE

1. These first questions are about the environment. – What do you think is the single most important environmental issue facing <CITY> today?

A1. [SHORELINE ONLY] Which of these statements come closest you your thinking about climate change:

1. Climate change is real and requires us to make changes in our behavior now
2. If climate change turns out to be real, there will be time to make adjustments later
3. Climate change is not a genuine threat
4. DKNA

2. Are you aware of any water pollution problems in local waterways – like streams, rivers or lakes?

1. YES
2. NO
3. DK/NA

3. To what degree do you believe that actions you and your family take affect the health of local streams, lakes, and rivers? Would you say your household has…

ROTATE TOP/BOTTOM

1. No Impact on the water quality in local waterways
2. An Insignificant Impact
3. Significant impact on the water quality in local waterways
4. DK/NA

4. When it rains, a lot of water runs off of roofs, driveways, parking lots, and streets. As you understand it, where does that water go?

DO NOT READ
1. GOES DOWN STORM DRAIN / INTO STORM DRAIN SYSTEM
2. DOWN DRAIN (NOT "*STORM DRAIN*")
3. SEWER
4. DOWN THE STREET
5. CATCH BASIN /TROUGH
6. SOAKS INTO GROUND
7. SITS IN PUDDLES / PONDS
8. PUGET SOUND
9. CREEKS / STREAMS / RIVERS / LAKES
10. OTHER> _____
11. DK/NA

4.1. IF CODES 1-7: Where does it end up eventually?
DO NOT READ
1. NEAREST WATER / CREEKS / STREAMS / RIVERS / LAKES
2. PUGET SOUND
3. OTHER
4. DK/NA

5. Which of the following views is closest to your own opinion about the impact of stormwater.

A. Stormwater runoff has a significant harmful effect on water quality in local streams, lakes and rivers.

B. Stormwater runoff is part of the natural way of things. Any harm to water quality from stormwater is not enough to worry about.

C. DK/NA

6. To the best of your knowledge, is runoff water in <CITY> treated before it goes back into local waters? Or is runoff water not treated?

1. TREATED
2. NOT TREATED
3. MIX / BOTH / SOME IS SOME IS NOT
4. DK/NA

6.1. IF TREATED Where does it go for treatment?
DO NOT READ
1. SEWER
2. VAULT (HELD IN)
3. POND / HOLDING POND
4. FILTER
5. TREATMENT CENTER
6. OTHER>_____
7. DK/NA

7. Now I'm going to read you a list of things that can get washed from towns and neighborhoods into lakes, streams and Puget Sound. As I read each one, tell me whether you think that is: 1) a significant source of local water pollution; it may contribute some small amount; or 3) Does not contribute enough local water pollution to worry about. The first one is…

ROTATE	SIG	SOME	NOT	DK
A. Soapy water from washing cars on pavement	1	2	3	4
B. Pesticides and fertilizers from yards	1	2	3	4
C. Pet waste left on the ground	1	2	3	4
D. Soil erosion from exposed soil	1	2	3	4
E. Oil leaks from cars and trucks	1	2	3	4
F. Cleaning fluids and other household chemicals that are improperly stored or disposed of	1	2	3	4
G. Run off water from pressure washing	1	2	3	4

YARD CARE

8. The next questions are about your home. When you clean places like your driveway, walkways, patio or deck, do you typically… (CHOOSE ALL THAT APPLY)

1. sweep those areas
2. use a blower
3. hose them down
4. pressure wash them
5. use a cleaning fluid
6. other (specify)
7. don't have/don't clean those areas
8. DK/NA

9. Does your home have a yard or garden?

1. YES
2. NO → SKIP TO Q13
3. DK/NA → SKIP TO Q13

10. Do you or someone in your household maintain the yard yourself? Or do you hire someone to take care of it?

1. SELF
2. BOTH SELF & HIRE
3. HIRE SOMEONE
4. DK/NA

11. I am going to read a list of products that people sometimes use on their yards and gardens. During a typical growing season would you say you used <INSERT> regularly, once in a while, or never.

ROTATE	REG	ONCE	NEVER	DK
A. Weed killers, like weed and feed type products	1	2	3	4
B. Organic or slow release fertilizer	1	2	3	4
C. Pesticides, insecticides or fungicides	1	2	3	4

12. When you shop for yard and garden care products do you most often buy products that:

1. Will work the best
2. Are least expensive
3. Are least toxic
4. [DEPENDS]
5. DK/NA

PET WASTE

13. My next question is about pets. Do you have a pet dog or dogs?

1. YES
2. NO→ SKIP TO Q17
3. DK/NA→ SKIP TO Q17

14. When the dog is out for a walk, how is the dog waste dealt with? Would you say the waste is …

1. Picked up every time
2. Picked up most of the time
3. Left on the ground most of the time
4. Always left on the ground
5. [DON'T WALK THE DOG]
6. [DON'T KNOW]

15. How about dog waste in the yard at home? Is waste in the yard…

1. Left on the ground
2. Cleaned up daily
3. Cleaned up weekly
4. Every couple of weeks
5. Once a month or so
6. Less than once a month
7. DON'T KNOW
8. DON'T HAVE A YARD

16. If the dog waste is picked up, how is it typically disposed of?

DO NOT READ
1. trash
2. compost or yard waste
3. buried
4. flushed down toilet
5. OTHER
6. NEVER PICK IT UP
7. DK/NA

VEHICLE MAINTENANCE

17. Let's talk about the vehicles at your home. When it comes to washing vehicles, how often do you [INSERT LIST]? Would you say once a month or more often? Every couple of months? Less often? Or never.

IF NO VEHICLE, SKIP TO Q22

ROTATE	1/MO+	MO/2	LESS	NVR	DK
1. Take them to a car wash	1	2	3	4	5
2. Wash them at home	1	2	3	4	5

17.1. IF WASH AT HOME: When you wash your vehicle at home, do you wash it…

1. On a paved driveway or parking spot that runs to the street or a drain
2. On a driveway or parking spot the drains to soil, grass or gravel
3. in the street
4. On gravel
5. on the lawn or dirt or sandy ground
6. [OTHER]
7. DK/NA

18. When it comes to changing the motor oil, anti-freeze or other fluids, do you or someone else in your household typically do it at home, or are the vehicles taken to a service shop for that?

1. -someone in the household changes the oil at home
2. -we sometimes change oil at home/ sometimes take the vehicle to the shop
3. -take vehicles to service shop to have oil changed
4. –DK/NA

18.1. IF MOTOR OIL IS CHANGED AT HOME….When the motor oil or other fluid is changed at home, what is typically done with the used fluids?

19. What about oil or fluid leaks? Which of the following best describes you?

1. I make it a point to check for leaks under my vehicles regularly
2. I look under the vehicle for leaks when I think of it
3. I'll notice a leak if there is one, but I don't make a point of checking
4. DK/NA

20. If your vehicle leaked or spilled oil or antifreeze onto your driveway, which of the following would you most likely do:

1. Hose it off
2. Put an absorbent pad under the leak to soak it up
3. Put some absorbent material on the puddle
4. Probably not do anything
5. [OTHER]
6. [DK/NA]

21. If you noticed a leak, would you…

1. Get it checked right away or →SKIP TO Q22
2. Watch to see if it got worse
3. DK/NA

21.1. IF WAIT: Here are some reasons we have heard about why people do not always fix an oil like right away. Which comes closest to your thinking?

1. It could be expensive
2. A small leak doesn't really hurt anything
3. It would be more trouble than it is worth
4. I am not sure where I could take it to be fixed
5. [OTHER] > _____
6. [DK/NA]

21.2. IF WAIT: I am going to list some things that may or may not motivate you to fix a fluid leak on your vehicle right away. As I read each one, tell me whether that would be Very Effective, Somewhat or Probably Not Effective in motivating you to fix a fluid leak on your vehicle right away. The first one is…

ROTATE A-D (READ E LAST)	VERY	SOME	NOT	DK
A. If you were offered a discount at a shop to have a leak fixed	1	2	3	4
B. If you knew that it will extend the life of your vehicle	1	2	3	4
C. If you knew how to fix the leak yourself	1	2	3	4
D. If you were told that keeping fluid leaks off the streets will make them safer to drive on	1	2	3	4
E. If you were told that oil leaks eventually drain into local creeks, lakes and Puget Sound	1	2	3	4

22. What does your household typically do with products that may contain hazardous materials, such as cleaning fluids, paint and other household hazardous waste to a collection facility? [DO NOT READ]

1. Take them to a hazardous waste collection site/facility
2. Take them to the Wastemobile
3. Put them in the trash
4. Store them in a garage, shed or basement at home
5. Put them in curbside recycling
6. OTHER: _____
7. DK/NA

23. Some people think the things we have been talking about are effective at protecting water quality. Others say they are mostly for show or to make people feel better – they do not really do much for water quality. As I read this list, I'd like you to tell me if you think that each of these things is very effective, somewhat effective or not really effective at protecting water quality. The first one is…

ROTATE	VERY	SOME	NOT	DK
A. Planting and protecting trees	1	2	3	4
B. Repairing leaks on vehicles	1	2	3	4
C. Washing a car at a commercial car wash	1	2	3	4
D. Cleaning up dog waste	1	2	3	4
E. Reducing chemical use in your yard	1	2	3	4
F. Taking cleaning fluids, paint and other household hazardous waste to a collection facility	1	2	3	4

DEMOGRAPHICS

24. I have just a few last questions for our statistical analysis. I want to remind you that all your answers are confidential. How old are you?

1. 18-35
2. 36-50
3. 51-34
4. 65+
5. no ans

25. How long have you lived in <CITY>?

1. 3 years or less
2. 4-9yrs
3. 10 to 20 years
4. More than 20 years
5. DK/NA

26. Do you own or rent the place in which you live?

1. OWN
2. RENT
3. DK/NA

27. What is the last year of schooling you completed?

1. High school or less
2. Some college or technical school
3. 4-yr college degree
4. Post graduate school
5. NA

28. Finally, I am going to list four broad categories. Just stop me when I get to the category that best describes your approximate household income - before taxes - for this year.

ROTATE TOP/BOTTOM

1. $50,000 or less
2. $50 to 75,000
3. $75 to $100,000
4. $100-125,000
5. Over $125,000
6. [DO NOT READ: NO ANSWER]

Thank you very much. You have been very helpful. [RECORD GENDER]