Pierce County
Public Works and Utilities
Surface Water Management

STORMWATER RUNOFF: PIERCE COUNTY PUBLIC ATTITUDES, AWARENESS AND BEHAVIOR

March 2009

County-wide survey findings
Plus comparative findings for participating cities

ELWAY RESEARCH, INC.

Pierce County Public Works and Utilities

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March, 2009

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INTRODUCTION

This report summarizes the results of a random-sample telephone survey conducted by Elway Research for the Pierce County Public Works Department of Surface Water Management and six cities within Pierce County. The survey was designed to help the county and cities comply with requirements set forth in the Western Washington NPDES Phase I and II Municipal Stormwater Permits.

Heads of household in Pierce County were asked about their awareness, attitudes and behaviors with regard to Pierce County water quality. The information serves as a baseline against which future awareness and behavior change can be measured. Specific areas of inquiry included:

- Perception of the health of local waters and awareness of any pollution;
- Knowledge of stormwater issues and stormwater systems;
- Perceived impact on local water from household and construction sources as well as industrial and commercial sources;
- Willingness to change behaviors, including
  - ~ Lawn care practices
  - ~ Methods for cleaning outdoor impervious spaces
  - ~ Vehicle washing practices
  - ~ Disposal of vehicle fluids
  - ~ Disposal of dog waste;
- Messages most likely to motivate behavior change.

Demographic information was also collected in order to profile those with certain opinions and practices.

Organization of this Report

This survey was conducted in two stages. The first stage was a stratified random-sample of 700 heads of household in Pierce County. A total of 100 interviews were conducted in each County Council District. The samples from each Council District were then statistically weighted to bring each District sub-sample into its proper proportion of the number of households in the county. This produced a representative sample of the county, with an overall maximum margin of sampling error of ±4%.

This report focuses first on these county-wide interviews, including demographic and Council District analysis. The weighted data are used for the county-wide findings.

The second stage of the study added supplemental samples in six participating communities in order to increase the number of respondents for each jurisdiction. The findings from the supplemental samples are presented in the second section of the report. Findings from the individual jurisdictions are compared in charts displaying the answers to each question in the survey.

It must be kept in mind that survey research cannot predict the future. Although great care was 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.

METHODS

SAMPLE: The base Pierce County survey was based on a stratified, county-wide random sample of 100 heads of households in each of 7 County Council Districts. These were then weighted slightly to return the Council Districts to their proper proportions, resulting in 255 unincorporated and 445 incorporated Pierce County surveys. Then, 477 heads of households were added from 6 participating cities. (See Table 1.)

MARGIN OF ERROR ±4% at the 95% confidence interval for the county-wide data. That is, in theory, had this same survey been conducted 100 times, the results for Pierce County would be within ±4% of the results reported here at least 95 times. The margin or error is larger for sub-groups within the sample. (See Table 1.)

TECHNIQUE: Telephone survey

FIELD DATES: February 7 - 15, 2009

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 10% of each interviewer's calls were re-called for verification.

Table 1: Sample Design

County Sample	Sample Base	Added Sample	Total	MOE*
Pierce County	700	0	700	±4%
Unincorporated	255	0	246	±6.5%
Incorporated	445	0	454	±5%
Each Council Dist.	100	0	100	±10%
City Samples				
Fife	2	98	100	±10%
Fircrest	5	95	100	±10%
Milton	4	96	100	±10%
Puyallup	54	46	100	±10%
Sumner	12	88	100	±10%
Tacoma	178	97	275	±6%

* Maximum margin of error at the 95% confidence interval. Maximum margin of error assumes the responses are split 50-50%. The margin of error grows smaller as the answers get further away from 50-50%.

RESPONDENT PROFILE

In interpreting these findings, it is important to keep in mind the characteristics of the people actually interviewed. Table 2 presents a profile of the 700 respondents in the county-wide survey.

Note: Here and throughout this report, percentages may not add to 100%, due to rounding and exclusion of "no answers."

Table 2
County Wide Respondent Profile

GENDER:	50%	Male
	50%	Female
AGE:	11%	18-35
	22%	36-50
	32%	51-64
	35%	65+
	1%	No Answer
EDUCATION:	22%	High School or Less
	5%	Business/Vocational School
	29%	Some College
	30%	College Degree
	11%	Post Graduate
HOUSEHOLD:	20%	Single with no kids
	45%	Couple with no kids
	6%	Single with kids
	28%	Couple with kids
INCOME:	9%	< $25,000
	21%	$25 - $50,000
	16%	$50 - $75,000
	21%	$75,000 +
	32%	No Answer
HOME OWNERSHIP:	84%	Own
	13%	Rent
	3%	No answer
HOME STYLE:	84%	Single house on lot
	4%	Duplex/Multiplex unit on lot
	2%	Manufactured/mobile home
	9%	Apartment/Condo
LOT SIZE:	66%	Half acre or less
	22%	½ – 2 acres
	10%	Over 2 acres
HAVE LAWN/GARDEN	86%	Yes
CARE FOR LAWN	85%	All or some themselves
	14%	Hire a Service Only
SEWER TYPE	56%	Sewer line
	40%	Septic System

When comparing results across the various jurisdictions, it is useful to take note of the demographic variation among the geographic areas -- the Council Districts (Table 3) and cities (Table 4). Some of the more notable differences include:

- Lot sizes, which often are related to behavior. For example, the Council Districts with the largest proportion of 2+ acre properties were:
  17% in District 1,
  14% in District 3, and
  11% in District 7.
- Proportion of apartment/condo dwellers, of which the highest were:
  20% in District 4,
  13% in District 5, and
  10% in both Districts 2 and 6.

Table 3
Housing Style by Council District

	1	2	3	4	5	6	7
Ownership							
Own Home	91%	79%	85%	75%	81%	84%	88%
Rent	5%	17%	12%	21%	16%	13%	10%
Home Style							
House on lot	85%	82%	86%	78%	82%	85%	89%
Multi on lot	5%	5%	3%	2%	3%	2%	4%
Mobile/Manufactured	5%	2%	2%	0%	2%	3%	2%
Apt/Condo	4%	10%	7%	20%	13%	10%	4%
Lot Size							
½ Acre or less	50%	69%	60%	88%	83%	64%	63%
½ to 2 Acres	29%	21%	22%	10%	13%	29%	25%
2+ Acres	17%	8%	14%	1%	3%	7%	11%
Do not Know	4%	2%	4%	1%	1%	0%	1%
Have Lawn/Garden	90%	82%	92%	79%	82%	89%	84%
Care for Yard							
Self, all or some	88%	73%	88%	83%	92%	85%	89%
Hire a Service only	9%	27%	12%	16%	9%	16%	11%
Sewer system							
Sanitary Sewer	41%	66%	27%	87%	71%	75%	42%
Septic System	58%	30%	68%	7%	25%	20%	55%

Table 4
Profile by City/Unincorporated

	Unincorp	Fife	Fircrest	Milton	Puyallup	Sumner	Tacoma
Age							
18-35	10%	12%	7%	7%	10%	7%	13%
36-50	22%	27%	15%	19%	24%	13%	24%
51-64	37%	21%	16%	26%	33%	35%	28%
65+	32%	38%	58%	44%	30%	42%	33%
Education							
High School	23%	23%	20%	26%	21%	29%	21%
Bus/Voc	5%	8%	9%	11%	4%	7%	4%
Some College	30%	29%	31%	33%	33%	26%	32%
College Deg	29%	25%	29%	24%	31%	28%	27%
Grad/Prof	12%	10%	10%	4%	9%	8%	14%
Household							
Single/no kids	21%	28%	29%	30%	18%	32%	21%
Coup/no kids	44%	39%	45%	33%	42%	45%	43%
Single w/kids	4%	5%	0%	7%	5%	3%	5%
Couple w/kids	29%	24%	23%	26%	34%	19%	29%
Income							
<$25,000	7%	7%	12%	17%	5%	12%	10%
$25-$50K	24%	18%	19%	16%	14%	18%	24%
$50-$75K	15%	17%	20%	14%	11%	14%	17%
$75,000+	22%	16%	19%	16%	26%	15%	19%
NA	32%	42%	30%	37%	44%	41%	31%
Ownership							
Own Home	89%	71%	85%	76%	79%	73%	79%
Rent	8%	27%	12%	22%	19%	26%	17%
Home Style							
House on lot	87%	66%	85%	73%	77%	72%	80%
Multi on lot	2%	4%	5%	4%	4%	6%	4%
Mobile/Manuf.	4%	6%	1%	0%	2%	5%	1%
Apt/Condo	6%	23%	8%	21%	14%	16%	15%
Lot Size							
½ Acre -	57%	78%	85%	67%	73%	71%	83%
½ to 2 Acres	25%	14%	12%	19%	15%	23%	14%
2+ Acres	15%	4%	1%	5%	8%	2%	2%
Lawn/Garden							
Yes	89%	78%	85%	78%	84%	82%	81%
No	11%	21%	14%	22%	16%	17%	18%

KEY FINDINGS

- **Most think the health of local waters "good" to "excellent," although many are aware of problems:**
  - 6 in 10 rated as "excellent" or "fairly good" the health of Puget Sound (57%) and Pierce County lakes, streams, and rivers (60%)
  - A quarter (23%) said "not too good" to both.
  - A third (36%) was aware of local water pollution problems.
  - A quarter (25%) said that they or someone they knew had been directly affected by a local water quality issue.
- **Only half knew that storm system water is not treated.**
  - The others said it was treated (31%) or were not sure (19%).
  - Awareness of lack of treatment was slightly higher in the unincorporated areas (55%) than in cities (47%).
- **About half of residents of unincorporated areas were aware of County surface water management programs:**
  - 56% each were aware that the county manages programs to minimize drainage problems and flood damage;
  - 50% knew of salmon recovery efforts; and
  - 49% were aware of surface water quality protection and monitoring
- **Residents in cities tended not to be familiar with programs to cut back on yard chemicals:**
  - Although 66% had heard of a technique called "natural or organic yard care," only 26% said they were familiar with it;
  - Fewer (35%) had heard of "rain gardens," and only 13% said they were "familiar" with the technique.
- **Residents were twice as likely to blame industrial sources as neighborhood sources for local water pollution…**
  - Industrial waste and discharge from boats and ships were the top two "significant sources" of pollution of Pierce County waters (47% and 43%);
  - Only a quarter (24%) said that "pollutants from neighborhoods and residences" were significant.

- **Among household pollutants, vehicle fluids and yard chemicals were rated the most significant.**
  - 43% called both “oil and other vehicle fluids” and “pesticides and fertilizers from yards” “significant source of water pollution”;
  - Leaking septic systems (35%) and household hazardous waste (37%) were close behind; while
  - As in other communities around Puget Sound, soapy car wash water and pet waste were rated the least significance (1 in 5 or fewer rated these sources as “significant” polluters.)

- **The great majority of the respondents reported living in housing that could impact water runoff:**
  - More than 4 in 5 lived in single family houses.
  - Almost 9 in 10 had a lawn and/or garden.
  - 2 in 3 lived on lots of ½ acre of less.

- **Most use chemical fertilizers and herbicides, but use little:**
  - 56% used chemical fertilizer and 62% used herbicides, although the majority of these users said that they used "very little."
  - A quarter of all respondents scored as "heavy" users of multiple products (fertilizers, herbicides, and pesticides).
  - Yard-chemical users tended to live on small lots and to water frequently.

- **There is room for education in how to clean impervious surfaces:**
  - Most swept (50%) or used a blower (26%) to clean impervious surfaces like decks and driveways;
  - About a third (34%) said that they “hose down” or pressure wash decks, sidewalks, patios and/or driveways; however
  - Very few (4%) use a cleaning product

- **Proper care of pet waste presents another challenge:**
  - Most (69%) always picked up the waste while walking and 17% usually did.
  - Most who picked up dog waste bagged it and put in the garbage (67%).
  - However, fewer than half (45%) picked the waste from their yards daily.
  - Completely "proper" dog waste behavior (picked up+bagged+put in trash) was more common in cities than in unincorporated areas (44% vs. 26%).

- **1 in 5 respondents overall washed their vehicles at home and allowed car wash water to get into the storm drain.**
  - They said that it either went directly “into the drain” or “in the street.”

- **Home oil changing was less of a problem.**
  - 1 in 5 reported doing car fluid changes at home;
  - Almost all who did (88%) said that they take used fluids to a collection center; and
  - 2 in 3 said that they would use absorbent materials on spills.

- **4 in 5 were willing to change their behavior to help prevent water pollution.**

  43% would make changes "even if it involves sacrifices," and

  40% would make changes "if the changes are fairly easy."

- **"Protecting drinking water and food sources for people's health" received the most "10" ratings for importance,[1] although all the potential reasons for cutting back on water pollution were rated as "extremely important" by majorities.**
  - 79% rated "Protecting drinking water and food sources" a "10;" as did
  - 69% for "Maintaining the environment for future generations;"
  - 59% for "Protecting fish and wildlife for their own sake;"
  - 53% for "Keeping the waters clean for human recreation."

- **"Protecting drinking water and food sources" was the most frequent number one reason.**
  - 59% chose it as the number one reason, over
  - "Maintaining the environment for future generations," chosen by 23%;
  - "Protecting fish and wildlife for their own sake" (9%); and
  - "Keeping the waters clean for human recreation" (2%).

- **Most residents in unincorporated Pierce County (60%) would support additional fees for more Surface Water Management projects.**
  - However, more said "somewhat support" (39%) than "strongly" (21%).

[1] On a 0 to 10 scale, where "10" meant "extremely important," and zero meant "not important at all."

SUMMARY

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SUMMARY OF FINDINGS

PERCEPTIONS OF LOCAL WATER CONDITIONS

These respondents tended to think that the health of local water was ”fairly good” but not “excellent” and not “poor”:

- When asked about the health of Puget Sound:

  7% said it was "excellent,"
  50% "fairly good,"
  23% "not too good," and
  11% "poor."

- The results were almost identical for the health of lakes, streams, and rivers in Pierce County:

  5% said "excellent,"
  55% "fairly good,"
  23% "not too good," and
  8% "poor."

- A third (36%) said that they were aware of water pollution problems in local streams, lakes or rivers.
- A quarter (25%) said that they or someone they knew had been directly affected by a local water quality issue (closed swimming beaches, restrictions on shellfish harvesting, etc.)

As in other studies around Puget Sound, about half did not know that storm system run-off water is untreated. This lack of awareness was slightly higher in the incorporated areas:

50% overall said that runoff went into the nearest body of water without being treated (55% in unincorporated areas, 47% within cities),

31% said that it was treated (25% and 35%), and

19% did not know the answer (20% and 18%).

As a whole, respondents seemed aware of the complexity of water pollution. At least 20% rated each of seven categories of pollution as making a "significant contribution" to local water pollution. As in other Puget Sound communities, these respondents tended to put more blame for water pollution on other factors than those in which they participate. The following proportions rated these sources of local water pollution "significant":

47% Industrial Waste;
43% Discharge and leaking oil from boats and ships;
35% Run off from roads and parking lots;
34% Run off from agriculture, including animal waste and fertilizer;
26% Run off from construction sites and development;
24% Pollutants from neighborhoods and residences; and
21% Sewage treatment plants.

Asked about neighborhood sources, at least 1/3 rated four of the six sources as "significant contributors." As elsewhere, soapy car wash water and pet waste were rated the least significant. The following rated these "significant":

43% Pesticides and fertilizers from yards;
43% Oils and other fluids from vehicles;
37% Improper disposal of cleaning fluids, paint, and other HH hazardous waste;
35% Leaking septic systems;
20% Soapy water from washing cars on pavement; and
16% Pet waste left on the ground.

These perceptions did not vary geographically. Also, septic system owners and dog owners did not differ from others in the amount of blame they placed on leaking septic systems and pet waste, respectively.

RUN-OFF RELATED BEHAVIORS

As seen in the Respondent Profile, the large majority of the respondents lived in housing that could contribute to run-off pollution:

- Single family houses with cultivated yards prevailed around the County:
  84% lived in single family houses on lots; and
  86% had lawns and/or gardens.
- Most lots were small:
  66% were a half acre or less, including
    57% in the unincorporated county and
    72%in the cities; while only
  10% of all lots were over 2 acres.

Among respondents with lawns/gardens:

- Most (85%) took care of the yard themselves, at least part of the time. (See Table 5.)
- One in seven (14%) hired out all of their yard work. This tendency was higher in cities/towns:

  17% with yards in cities/towns hired out all their yard care, vs.

  9% in unincorporated Pierce County.

Table 5
Lawn and Garden Care

WHO TAKES CARE OF LAWNS	Total	Unincorp	Incorp
Resident only	76%	82%	73%
Resident plus hired	9%	8%	10%
Hired only	14%	9%	17%
At Least Some Self Care	85%	91%	83%
At Least Some Hired	23%	17%	27%

Lawn care practices varied with:

- Age -- the older the respondent the more likely s/he was to hire out yard care:

  30% of respondents age 65+ hired out yard work (18% all, 12% some); vs.

  24% of those ages 50 to 64 (14% and 10%); and

  15% of respondents under 50 (9% and 6%).
- Gender:

  82% of men did all the work themselves, vs. 71% of women.

  11% of men did none of the work, compared to 17% of women.
- Home ownership:

  78% of home owners did all the work themselves, vs. 62% of renters.

  13% of owners did none of the work, compared to 25% of renters.

ROOM FOR IMPROVEMENT IN USE OF POLLUTING YARD PRODUCTS

Herbicides, chemical fertilizers and pesticides were the most prevalent potential polluting products used on lawns and gardens:

62% of those with yards used "Weed & Feed or other weed killers," at least some of the time, although 40% said they used "very little;"

56% used chemical fertilizers (37% "very little.")

39% used "pesticides, such as insecticides or fungicides" (30% "very little.")

Almost all (90%) watered their yards, with 21% saying "a lot," and 41% "a medium amount." This level of watering use could allow pollutants to run off the property.

On the positive side, use of "organic or slow-release fertilizers" was also common:

59% used organic fertilizers at least some;

29% said "very little"; and

21% said that their use was "medium."

Constructing an "index" of product use helps to illustrate how much overlap there is among users. For this index, "a lot" of use of any chemical product was scored as "4," and "never" as zero with other levels of use in between. Chemical fertilizer, pesticides and herbicide usage scores were then added together.[2]

22% of all households with yards scored as "zero" – they used none of the potentially polluting yard products.

33% scored "low" (1 -2). They either used very little of a couple of products, or a medium amount of only one.

20% had "medium" scores (3 – 4). They may have used "a lot" of one product, or some combination of medium amounts of more than one.

25% were "heavy" product users (scores of 5 – 12 on the index-- a mix of "medium" to "a lot" of all three types of chemicals.)

Yard size and over-watering were also related to chemical usage:

- Those with the smaller lots (less than two acres) were more likely than those on 2+ acre properties to use at least one of the products (80% compared to 70%);
- Finally, watering tended to correlate with chemical use:

35% of those who watered "a lot" were heavy chemical yard product users; vs.

29% who watered a medium amount;

11% who did "very little" watering; and

8% who never watered.

"Meta indices" were constructed to indicate the interplay of all three factors: product use, watering habits and lot size. The indices increased with multiple/frequent product usage and watering, and then with smaller lots.

The "meta" index scores were divided into groups of roughly equal size, from "none," who used no chemical yard products, through low, medium and high – most of whom lived on small lots, used multiple products and watered heavily.

Notably, there was no discernible relationship between any of the indices and the respondents' knowledge and awareness of water pollution (knowing that run-off is not treated, experience with some direct impact of pollution, and/or awareness of some local polluted lake, stream or river).

[2] A full explanation of the index construction is included in the appendix.

There was also very little demographic variation. The largest difference was in education level:

31% of those with a high school education were in the group of worst offenders ("heavy" product use x watering heavily x small lot size.) This compares to

22% of those with post-high school education.

What stands out about the "worst offenders" is that they were more likely to hire out their yard work:

- Those who hired out all of their yard care were more likely than others to be "heavy" chemical users:

  35% were, compared to

  23% who did at least some of their own yard work.

- This relationship persisted when compounded by the impact of watering:

  34% who hired out all yard work and 30% who hired some fell into the "heavy water/product user" group. This compares to

  22% of those who do all their own yard work.

Pavement Cleaning Predominantly Proper

A third of respondents (34%) sometimes used water to clean outdoor impervious surfaces, such as driveways and sidewalks. However, few mixed the water with soap or another cleanser:

- Water usage was a combination of:
  19% who "hosed them down,"
  17% who ever pressure washed, and
  4% who used soap or another cleanser outside with water.

- Non-water use (64%) included:
  50% who swept or raked,
  26% who used a blower, and
  6% who never cleaned such surfaces.

There were no demographic differences between those who used water to clean, and those who did not.

PET WASTE DISPOSAL "SPOTTY"

County-wide, 41% of respondents said they had at least one pet dog. This proportion was slightly higher in the unincorporated county (45%) than in the cities (39%).

The prime “dog owning years” were 36–50, and the most prevalent income was over $50,000:

52% of respondents age 36-50 said that they had a dog; vs.
45% of those ages 18-35;
46% of those ages 50-64; and
27% of those age 65 or older.

55% of respondents with incomes from $50- $75,000 had dog; vs.
31% of those with less income.

Among dog owners, waste disposal was rarely dealt with perfectly:

- A third (31%) left pet waste while walking, at least some of the time:

  17% mostly picked it up;

  8% mostly left it; and

  6% always left it.

- Fewer than half (45%) cleaned the waste from their own yard daily:

  25% cleaned the yard weekly,

  12% cleaned it 2x/month or less often; and

  16% of dog owners never cleaned the waste from their own property.

Among those who picked up the waste, 2 in 3 disposed of it properly:

(66%) bagged in the garbage or flushed (2% who did so and were on a sewer line). Otherwise:

17% composted it on their own property; and

2% "just tossed it."

The explanations of the 65 respondents who did not dispose of dog waste properly have a large margin of error, but are still useful. They were:

29% who said that they "did not know" why;

15% who used the waste for fertilizer/compost;

15% who felt that they had enough area to leave the waste;

12% who found disposing of it to be unpleasant (8% mentioned the odor, and 4% did not want to touch it);

9% who said that their disposal method was "easier";

8% who said "habit/have always done it";

8% who did not want it in the garbage, because of concerns for the amount of garbage/landfill (3%), or sympathy with the garbage collectors (5%);

5% who thought there was "no harm in leaving" the waste.

Combining all of these factors into a single index indicates that just 1 in 3 dog owners (30%) always dealt with their pets’ waste properly: consistently picked it up while walking, cleaned it from the yard daily, and then disposed of it properly.

Dog owners who did not always deal properly with waste were likely to be:

- Living in unincorporated areas (44%, vs. 26% of proper disposers),
- Living on more than 2 acres (14% vs. 4%).
- 36 to 64 years old (70% vs. 50%). 1 in 3 “proper disposers" were 65+ (35%).

Probably mostly because of the differences in lot size between Council Districts, the tendency to always dispose of dog waste properly declined as the districts became more rural (see Table 6). The proportions of "proper disposers" were:

42% from District 2,
34% from both Districts 4 and 5,
30% from District 6,
29% from District 1,
25% from District 7, and
19% from District 3.

CAR CARE BEHAVIORS SPLIT BETWEEN DESIRABLE AND NOT

Many (41%) wash their vehicles at home, including 38% who do so exclusively.

49% always use a commercial or coin operated car wash.

The remainder either does not have a car or have not washed it in the past year.

There were few demographic differences in car washing habits, including:

- Surprisingly little variation appeared with income, after taking into account that those making less than $25,000 were most likely to not have a car:

  15% did not own a car, compared to

  1% of all others.

- Men were more likely than women to wash their vehicles only at home, although both genders equally washed their cars at home sometimes:

  41% of men washed their vehicles only at home, compared to

  34% of women.

Among the 41% who ever washed vehicles at home, the runoff result was also split:

- Half let the soapy water run into the storm system or ran a risk of it:

  33% said that it went “into the storm system," and

  15% said it went “down the street.”

- Half (50%) said that it went into dirt, grass, and/or gravel.

Combining all the car wash behavior into a single index indicates that 1 in 5 respondents (20%) risked getting some wash water into runoff. The most variation was related to housing type. Included in the group that may be letting

some car wash water into the storm system were:

22% of home owners, vs. 11% of renters.

32% of those that live in duplexes and triplexes, vs.
20% of single houses, and 14% in multi-unit apartments/condos.

23% who live on a ½ acre or less, vs.
14% with over two acres.

Car Care Seldom Done at Home

Reported improper disposal of car fluids was much lower than for car wash water:

- 4 in 5 respondents (80%) said they always let a shop deal with their cars' oil, anti-freeze, and other fluids.
- Only 13% do all such work at home, while 5% do some.
- Of those who changed car fluids at home at least sometimes, almost all (88%) said that they took the used fluid to a collection location. Other disposal for "do-it-yourselfers" was reported as:

  5% in the trash.

  5% down a drain (2% inside the house, and 3% outside),

  1% each poured it on the ground, kept it, or "other"
  (usually reused, such as for lubricating or for "painting fences.")

There were only 14 respondents who changed fluids at home and did not take the used fluids to a collection site. When asked why, they said that: their disposal method was easier (4 respondents), they did not have a large amount (3), it was a "habit" (1), or that they used the oil elsewhere (3). Two could not say why they did not take car fluids to collection.

There was almost no demographic or geographic variation in the tendency to improperly dispose of car fluids.

Most Knew What to Do With Spills

Two-thirds (64%) of respondents county-wide said they would treat a leak or spill correctly, either by soaking it up with a pad or some other absorbent material. However:

14% said that they would "hose it off;"
10% said that they would do nothing;
6% said it "depends"; and
5% did not know.

Those less likely to "soak it up" were younger and had lower incomes:

54% of respondents ages 18- 35 would "soak it up," vs.63% of those older;
46% with incomes under $25,000 would, vs. 60% with $25,000 to $75,000;
and 71% with $75,000 or more.

Table 6
Behavior Indices

	TOTAL	By Council District 1	2	3	4	5	6	7
Chemical Products								
None	22%	26%	26%	15%	24%	22%	26%	18%
Low	33%	29%	29%	32%	41%	28%	36%	41%
Medium	20%	18%	17%	22%	17%	33%	20%	17%
Heavy	25%	**28%**	**28%**	**32%**	19%	17%	18%	25%
Use of Chemicals Compounded by Watering								
No Chemicals	22%	26%	26%	15%	24%	22%	26%	18%
Low net of both	28%	23%	24%	27%	30%	27%	35%	30%
Medium	25%	20%	23%	25%	28%	28%	20%	32%
Heavy	25%	**31%**	27%	**33%**	18%	23%	19%	20%
Use of Chemicals Compounded by Watering and Lot Size								
No Chemicals	22%	26%	26%	16%	26%	23%	26%	18%
Low net of three	28%	25%	24%	25%	31%	23%	38%	34%
Medium	25%	24%	20%	33%	24%	26%	16%	28%
Heavy	24%	24%	**30%**	26%	19%	**29%**	20%	20%
Some Improper Dog Waste Disposal	70%	71%	58%	**81%**	66%	66%	70%	75%
May Let Car Wash Water into Runoff	80%	81%	79%	73%	**89%**	83%	81%	77%
Improperly Deal with Car Fluids	2%	3%	3%	0%	2%	2%	2%	2%

CHANGES POSSIBLE: PEOPLE'S HEALTH BEST MOTIVATOR

The majority of respondents agreed that they were "willing to make changes in their lifestyle" to help prevent water pollution:

43% agreed that they would make changes "even if it involves sacrifices," and

40% would make changes "if the changes are fairly easy."

Only 13% said that they were "convinced that there is not more that I can do that will make a difference." Of the 3% who "did not know," a few added the disclaimer that it would depend on the change being suggested.

The most variation in this response was related to "awareness of local water pollution:"

52% of those who had said that they were aware of water pollution in local waters were willing to make changes with sacrifices. This compares to

38% who were unaware of local water pollution.

People's Health Top Motivator

More respondents rated "Protecting drinking water and food sources for people's health" as a "10" on a zero – 10 importance scale (where "10" meant "extremely important") than the other potential reasons for "wanting to cut back on local water pollution." The "10" ratings given were:

79% for "Protecting drinking water and food sources for people's health;"

69% for "Maintaining the environment for future generations;"

59% for "Protecting fish and wildlife for their own sake;" and

53% for "Keeping the waters clean for human recreation."

In addition, more said that "Protecting drinking water and food sources for people's health" was their "number one reason." The proportion saying each reason was "number one" were:

59% for "Protecting drinking water and food sources for people's health;"

23% for "Maintaining the environment for future generations;"

9% for "Protecting fish and wildlife for their own sake;" and

2% for "Keeping the waters clean for human recreation."

There was very little difference in motivations according to behaviors: that is, respondents who reported more or fewer undesirable behaviors (using yard chemicals, leaving pet waste, letting soapy water down into the storm system, etc.) did not choose different motivations as their "number one reason to cut back on water pollution"

CURRENT KNOWLEDGE OF SERVICES MIXED

One-half to one-third of respondents in the unincorporated areas had heard of specific Pierce County Surface Water Management Division programs. These were:

56% Minimizing flood damage,
56% Minimizing drainage problems,
50% Salmon recovery efforts, and
49% Surface water quality protection and monitoring.

Overall, 1 in 4 (26%) said that they had heard of all four. Otherwise:

25% knew of none,
11% knew one,
18% two, and
19% three of the four.

SUPPORT EXISTS FOR MORE SURFACE WATER SERVICES

Most respondents within the unincorporated areas (60%) supported "paying additional fees for more surface water management projects," although they tended more to "somewhat support" the additional fees (39%) than "strongly support" (21%).

Support was related to age and education. Most likely to support the additional fees were:

71% of those ages 50 to 64 (28% strongly, 43% somewhat);
55% of 65+ year olds (17% and 38%);
53% of 36 – 50 year olds (21% and 32%); and vs.
48% of those 35 and younger (11% and 37%),

68% of college graduates (29% and 39%); and
57% with some post-high school education (13% and 44%); vs.
47% with a high school degree or less (19% and 28%).

Most likely to strongly oppose the fees were:

- Men (23%, compared to 14% of women), and
- The youngest and the oldest, including 31% ages 35 and younger, and 26% of 65+ year olds.

Perception of Problem, Solution Made a Difference:

Opponents and supporters did not vary significantly in their opinion of the health of local surface water (the Sound or fresh water), their perception of local water pollution, or their experience with being directly affected by a local water quality issue. They also did not vary in their behaviors: they were essentially the same in terms of yard chemical use, proper disposal of pet waste, allowing soapy car wash

water into the storm system, and dealing with car fluids.

Where they did vary was in their perception of the validity of water pollution. Respondents likely to support increased fees for surface water projects were significantly more likely than those opposed to rate pollution sources as "significant contributors" to local water pollution.

A total of 14 sources were tested in this survey, seven "industrial" or single point sources and seven neighborhood or nonpoint sources. For 11 of the 14 sources, supporters were significantly more likely than opponents to rate the source as a "significant contributor" of water pollution,

Importantly, supporters were more likely than opponents to rate *all seven* of the nonpoint ("neighborhood") sources as "significant contributors" to water pollution. This indicates that the definition of the problem is strongly related to support of a proposed solution. Those who saw neighborhood, nonpoint sources as significant contributors were more likely to support new projects to mitigate the problem.

Table 7
Rating of Pollution Sources by Supporters/Opponents of New Surface Water Management Division Projects

Cell Entry = "significant contributor" to local water pollution	SURFACE WATER PROJECTS		
"INDUSTRIAL SOURCES"	**SUPPORT**	**OPPOSE**	**DIFFERENTIAL**
Agricultural Runoff	42%	23%	19%
Ship/Boat Spills And Leakage	45%	32%	13%
Industrial Pollution	50%	39%	11%
Logging Practices	25%	14%	11%
"NEIGHBORHOOD SOURCES"			
Household Hazardous Waste	43%	31%	12%
Leaking Septic Systems	37%	25%	12%
Yard Chemicals	43%	33%	10%
Residential Runoff	25%	16%	9%
Pet Waste Left On The Ground	18%	9%	9%
Vehicle Fluids	43%	35%	8%
Soapy Car-Wash Water	23%	15%	8%

In addition to the definition of the problem, efficacy -- the perception of the ability to mitigate the problem – was also related to support. Those opposed to additional fees were almost twice as likely to say that "there is not more that (they) can do that will make a difference" to reduce water pollution:

21% of opponents agreed with that statement, compared to
12% of supporters.

Most likely to support new projects were those who defined the problem as local and who believed they could make a difference in mitigating that problem.

NATURAL YARD CARE HAS SUBSTANTIAL AWARENESS

In the incorporated cities:

66% had heard of “natural or organic yard care,” and
26% said they were “familiar” with the program.

More than a third (35%) had heard of “rain gardens”:

13% said they were “familiar” with that technique.

Familiarity with natural/organic yard care was:

- Highest in Tacoma (31%), Fife (26%), Fircrest (28%) and Sumner (25%).
- Lowest in Puyallup (16%) and Milton (14%).

Familiarity with rain gardens was:

- Highest in Tacoma (17%).
- Lower in Puyallup (12%), Fircrest (12%), Milton (10%), Sumner (9%) & Fife (8%).

DISCUSSION

Although awareness of stormwater-related issues is reasonable and appropriate behavior is fairly common, there is clear room for improvement in several practices that run the risk of allowing for polluted runoff:

- Most used chemicals on their yards, at least "a little."
- Most dog owners did not always deal with the waste properly, and were especially likely to have left waste too long on their own property.
- Many hosed down or pressure washed outside surfaces.
- Too many may allow car wash water into the storm system.

However, the great majority indicated that they are willing to change their behaviors and, perhaps, even increase surface water management fees to improve water quality. How to effect these changes is also suggested by these results, although the final plan depends on what is perceived as most viable:

People's Health Most Important Message

A message of the impact on people's health seems most effective, with "preserving for future generations" also useful. Concern for wildlife and recreation are not indicated as productive. The "health" motivation remained the most popular regardless of demographic characteristics, geographic variables, or current behaviors.

Awareness of local water pollution was most strongly related to respondents' inclination to cut back on pollutants. This may have to be done with specific area campaigns, if any data exists on pollutants in individual streams, lakes and/or rivers. Alternatively, a campaign could focus on what is considered "local" and show the connection from all streams, lakes and rivers into the Sound and its pollution levels.

Other potentially fruitful messages were indicated to be:

- Continued education on lack of treatment of stormwater, as the information is still lacking, although it did not show here to have any relationship to behaviors.
- Why dog waste does not work as fertilizer/compost, and its health dangers in general.
- What to do with car fluids leaks and spills, particularly among the youngest (18 to 35) and lowest incomes.

Rural and Urban Areas Differ in Most Needed Message

Anyone devising a message should also consider the following when deciding where to focus:

- Areas with small lots are indicated as particular targets for yard care practice improvements. Respondents there tended more often to use yard chemicals, and to water their property, which compounds the risk of runoff.
- Yard care companies may also be fruitful targets, as respondents who hired out yard work were 50% more likely to fall into the category of worst offenders, in terms of chemical use compounded by smaller lot sizes and watering.
- Men were less likely than women to deem neighborhood pollutants significant, and were more likely to wash their own cars and handle the yard work. However, women may actually be the more receptive target, if they can change behaviors for the whole household.
- Unincorporated areas netted almost two times as many "improper dog waste disposers" as incorporated areas. However, as they do have larger yards (and, not cleaning the yard was the most common dog waste offense), they claim that they "have the space."
- Residents in duplexes and triplexes were the single category most likely to allow soapy car wash water into the storm system. Unlike apartment dwellers, they probably have water access. However, they do not have as much appropriate space as with single-family dwellings. Perhaps areas of such housing can be located within the cities and targeted directly.

It is encouraging that better behaviors have become common place: the great majority of respondents knew how to dispose of dog waste (if they picked it up), most used car washes, and heavy use of yard chemicals was limited. This indicates societal trends on which to build, and suggests further improvements in the future.

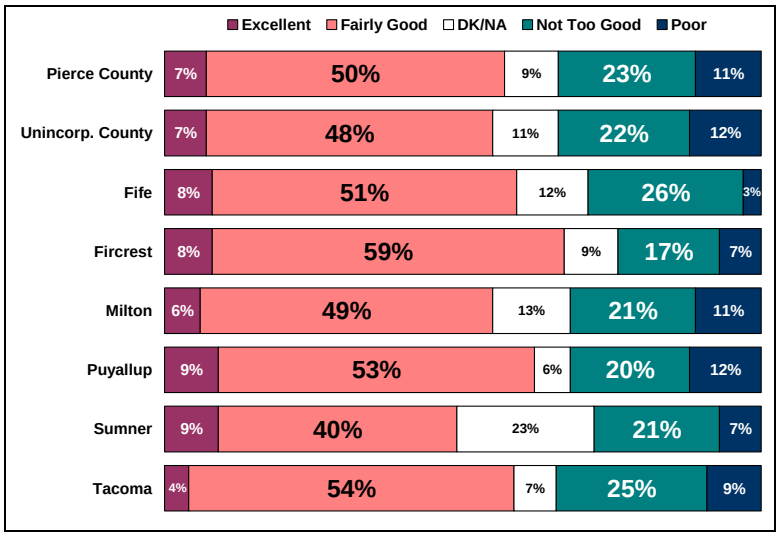
JURISDICTION COMPARISONS

Comparisons between the participating jurisdictions are presented in the following section in the form of annotated graphs and tables. The full results are appended in detailed cross-tabulations.

Note: "Pierce County" represents the county-wide random sample of 700 heads of household which includes both unincorporated and incorporated areas. Where there were significant differences between the two areas it is noted in the text.

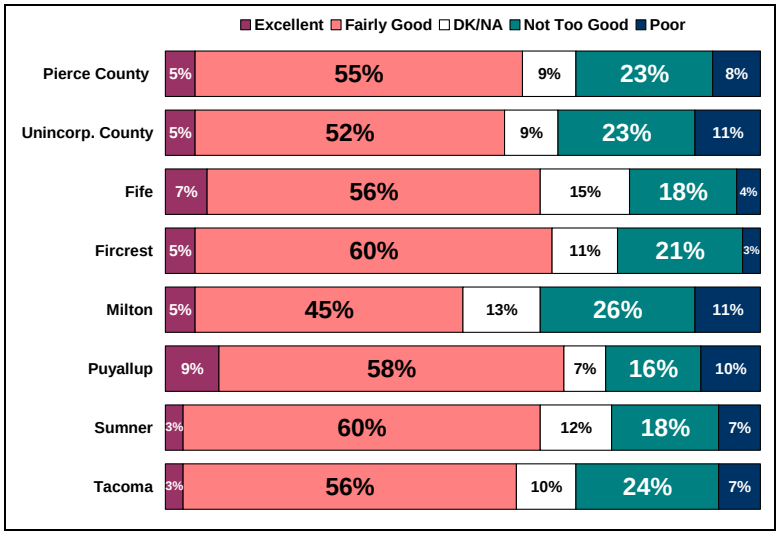
Local Waters Thought Fairly Healthy In...

Puget Sound



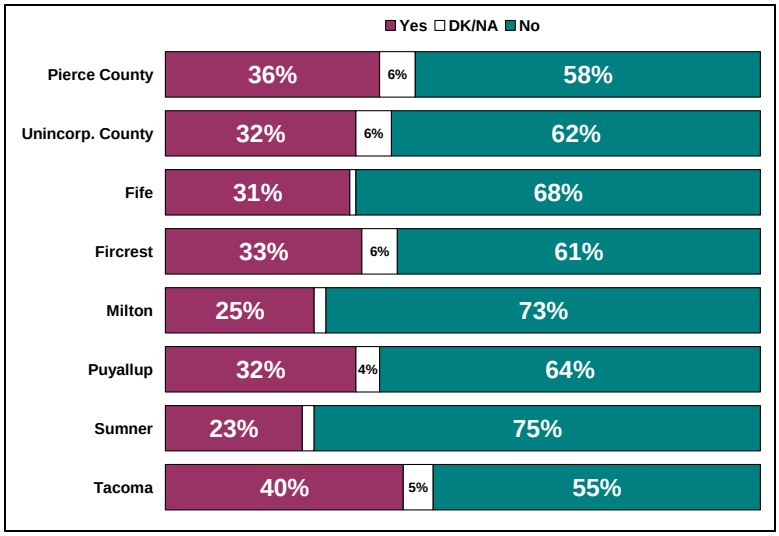
Question 2: Most of my questions are about the bodies of waters within Pierce County. First, what about Puget Sound? Would you say that the health of Puget Sound in Pierce County is…

Lakes, Streams and Rivers



Question 3: And, in your opinion, would you say that the health of the lakes, streams and rivers in Pierce County is, in general …

Awareness of Local Water Pollution Varies



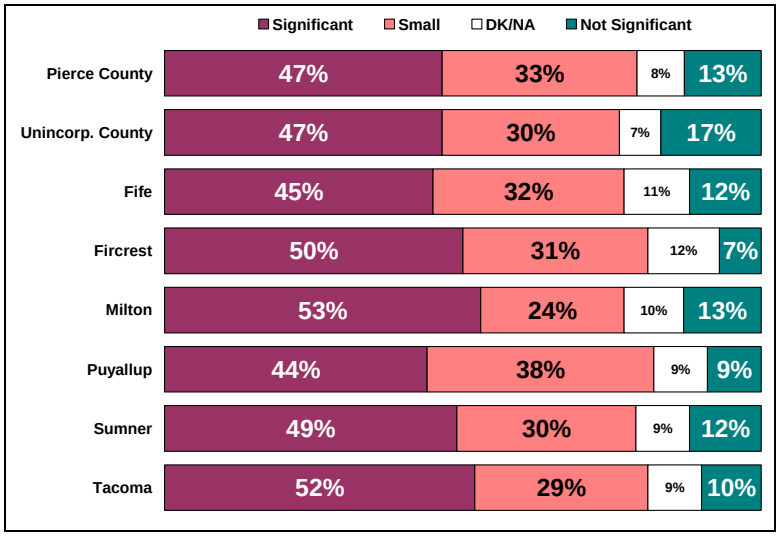
Question 4: Are you aware of any water pollution problems in local streams, lakes, or rivers?

- **Awareness differed by education level. Those "aware" included:**
  - 43% with at least a college degree, vs.
  - 37% with some post-high school education, and
  - 23% with a high school diploma or less education.

- **Related to this, awareness also varied by income level, including:**
  - 55% of those with $50,000 or more in income, vs.
  - 27% with under $50,000.

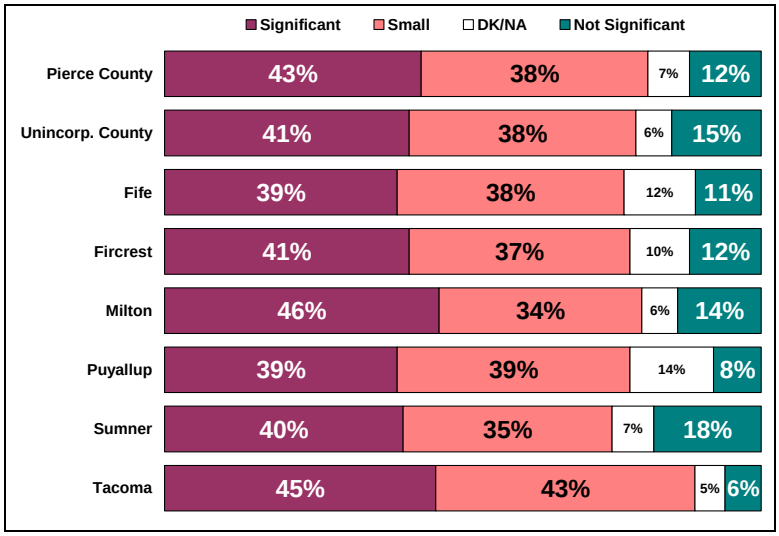
Most Typically Thought to be Significant Sources of Local Water Pollution were…

Industrial Waste



Question 5: The following are some possible causes of pollution in local waters. As I read each one, tell me whether you believe that it is: 1) a Significant Source of water pollution in Pierce County; 2) it May contribute some Small Amount of pollution; 3), or probably is Not a Significant Source of water pollution in Pierce County. The first one is…Question 5.1: Is industrial waste a significant cause of pollution in local waters?

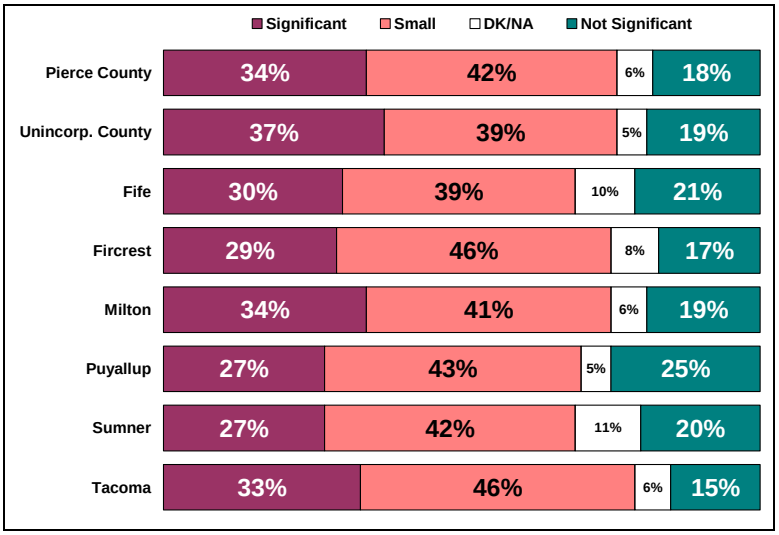
Discharge and Leaks from Ships and Pleasure Boats



Question 5.2: Is discharge and leaking oil from ships and pleasure boats in the water a significant cause of pollution in local waters?

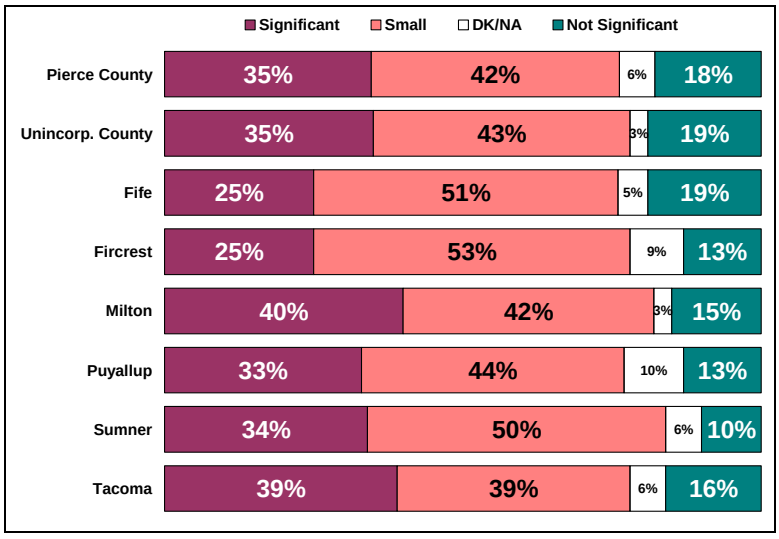
Next Most Typically Thought "Culprits" were...

Agricultural Runoff



Question 5.3: Is run off from agriculture, including animal waste & fertilizer a significant cause of pollution in local waters?

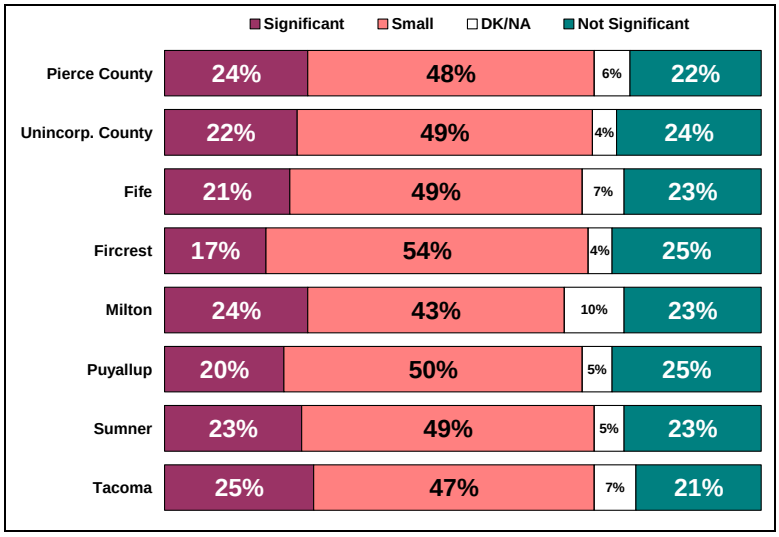
Run off from Roads and Parking Lots



Question 5.5: Is run off from roads and parking lots a significant cause of pollution in local waters?

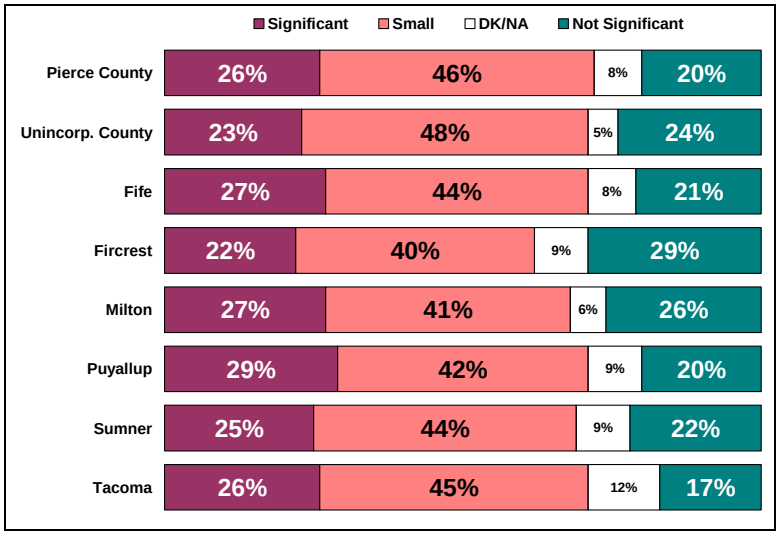
Towards the Bottom of Blame were...

Pollutants from Neighborhoods and Residences



Question 5.6: Is pollutants from neighborhoods and residences a significant cause of pollution in local waters?

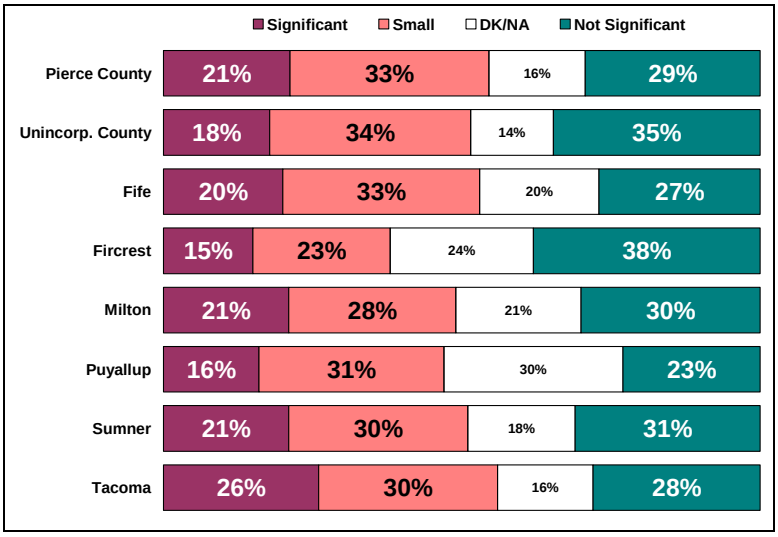
Construction Sites and Development



Question 5.7: Is run off from construction sites and development a significant cause of pollution in local waters?

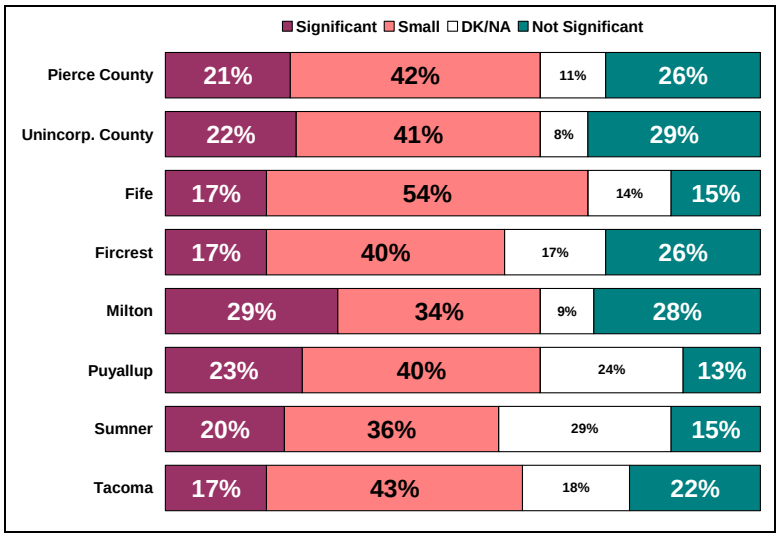
Least Likely to be Thought Significant Polluters Were...

Sewage Treatment Plants



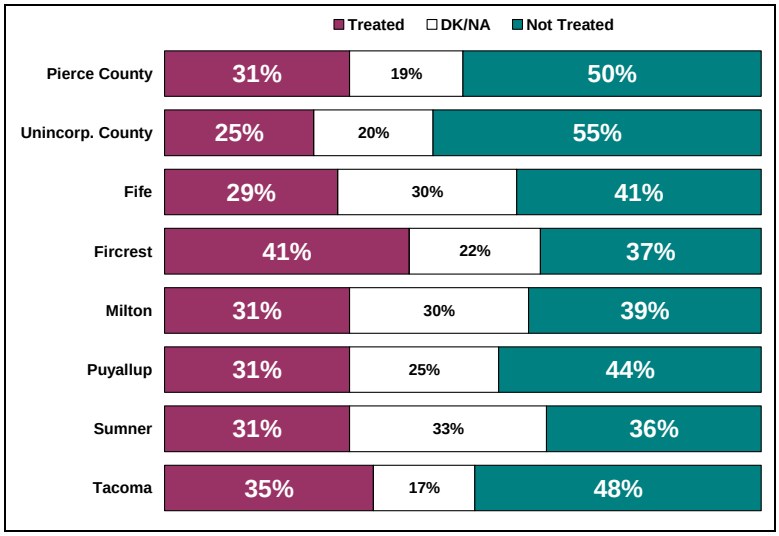
Question 5.8: Are sewage treatment plants a significant cause of pollution in local waters?

Erosion and Pollutants from Logging



Question 5.4: Is erosion and pollutants from logging practices a significant cause of pollution in local waters?

Minority Knew that Stormwater is not Treated



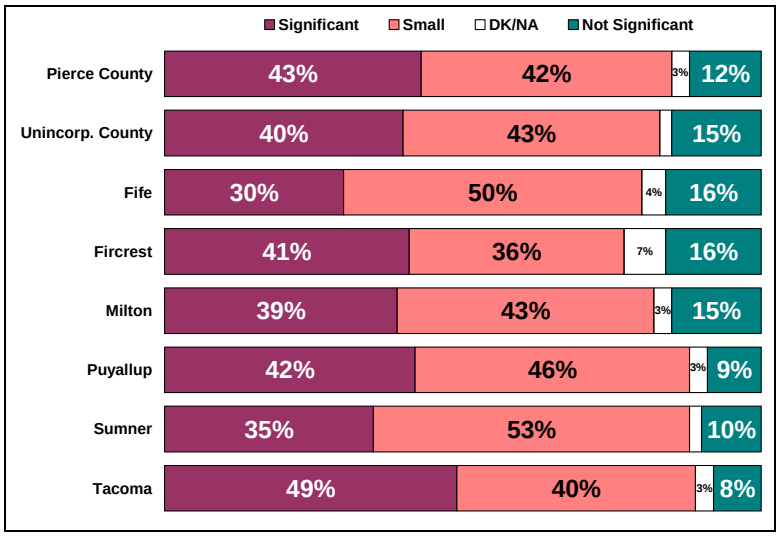
Question 6: Water that runs from neighborhoods and residences off streets, yards, and rooftops goes into a storm system of pipes, ditches and holding tanks or ponds. To the best of your knowledge, what happens to the water after it enters the storm system? Does that water: Go to a treatment plant, or go into the nearest body of water without being treated?

- **Besides the differences among the cities, awareness of lack of treatment was higher in unincorporated Pierce County than in the incorporated areas all together:**
  - 55% knew that stormwater was not treated in unincorporated Pierce County, vs.
  - 47% in all combined cities.

- **There was no significant demographic variation in the responses to this question.**

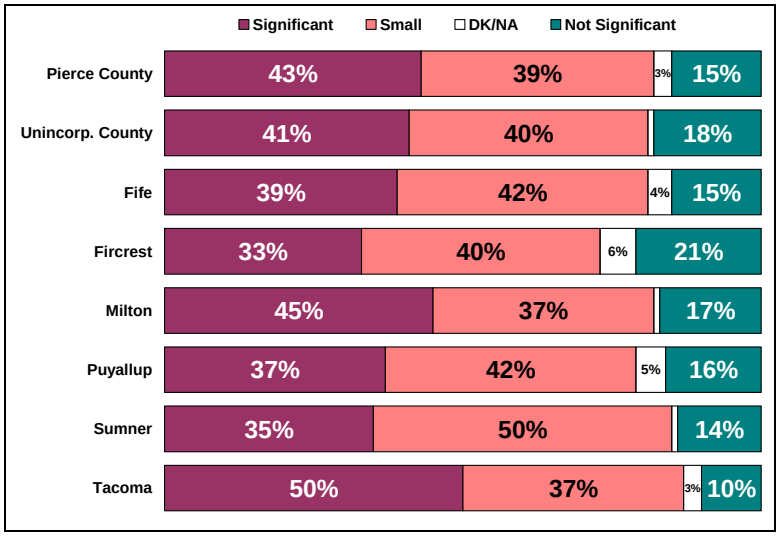
Most "Significant" Stormwater Pollutants Were...

Pesticides and Fertilizers from Yards



Question 7: I am going to read a list of some things that can get washed into the storm system and eventually into lakes, streams and Puget Sound. As I read each one, tell me whether you believe that is: 1) a Significant Source; 2) it May contribute some Small Amount; 3), or probably is Not a Significant Source of Pierce County water pollution. The first is….

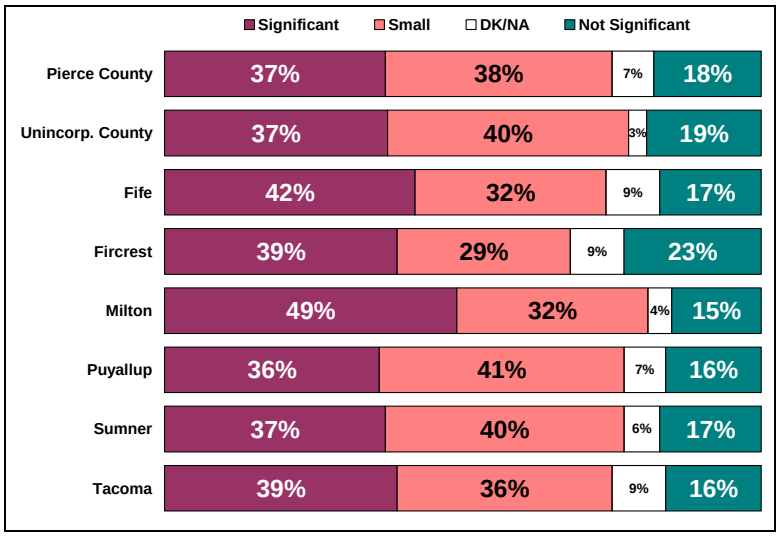
Oils and other fluids from vehicles



- **Both were more apt to be called "significant" by women:**
  - 48% said so of yard chemicals, vs. 38% of men
  - 49% said so of vehicle fluids, vs. 37% of men

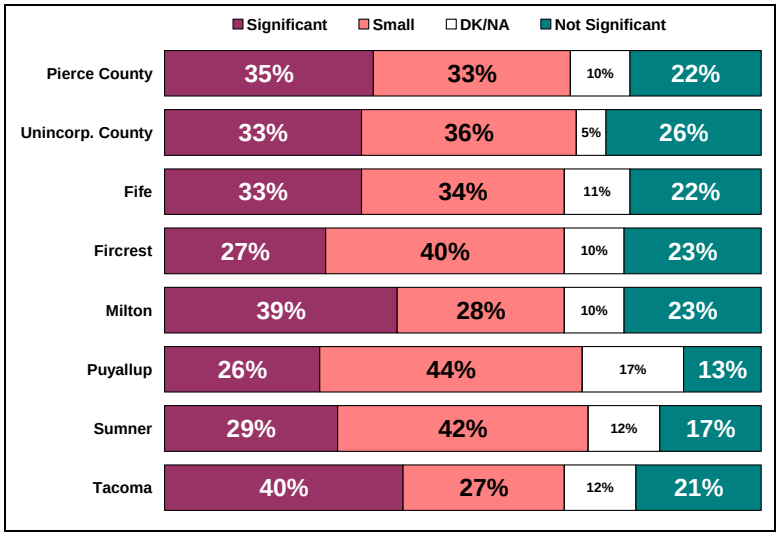
Of Medium Significance Were Thought to Be...

Improper Disposal of Household Hazardous Waste



- **Women, again, were more alarmed:**
  - 41% said that household hazardous waste was a significant pollutant, vs.
  - 34% of men.

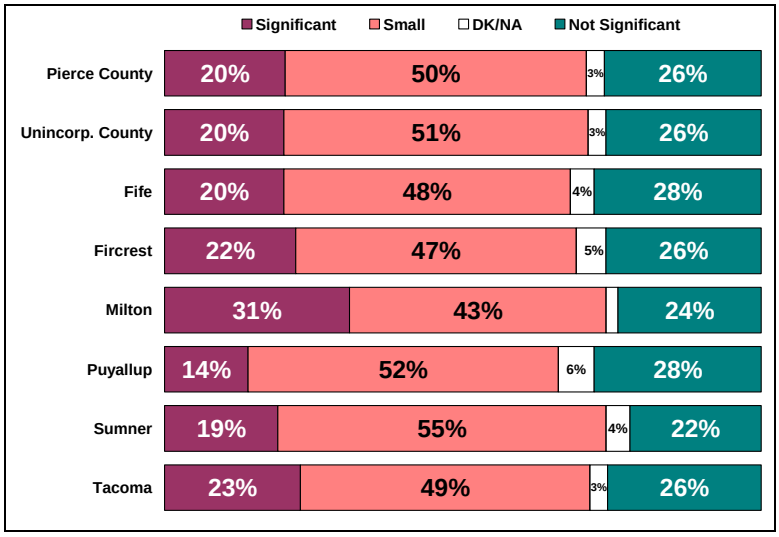
Leaking Septic Systems



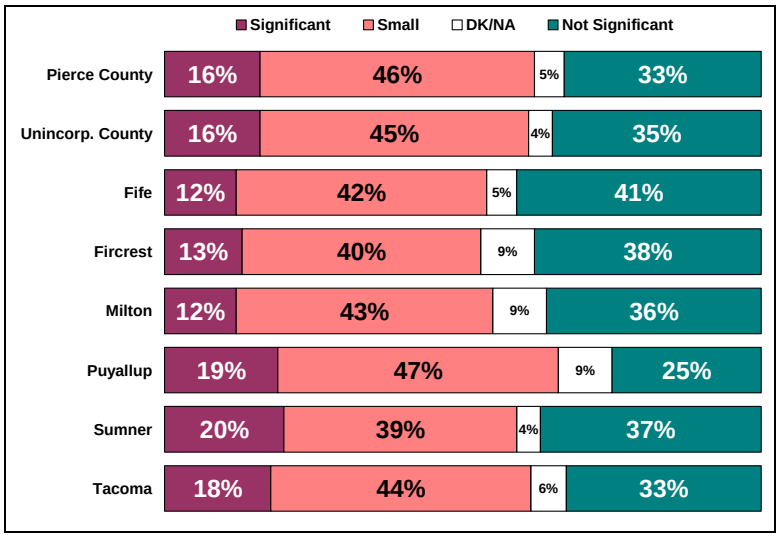
- **Women and men answered this similarly.**

Least Likely to Be Termed "Significant" As Stormwater Pollutants Were...

Soapy water from washing cars on pavement

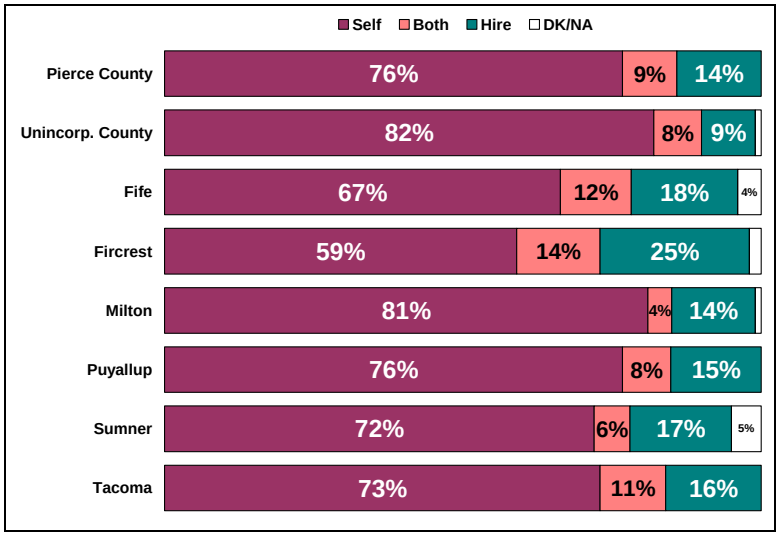


Pet waste left on the ground



- **Women slightly more apt to say "significant" for pet waste:**
  - 19% of women said so, compared to 13% of men.

Majority do Own Yard Care



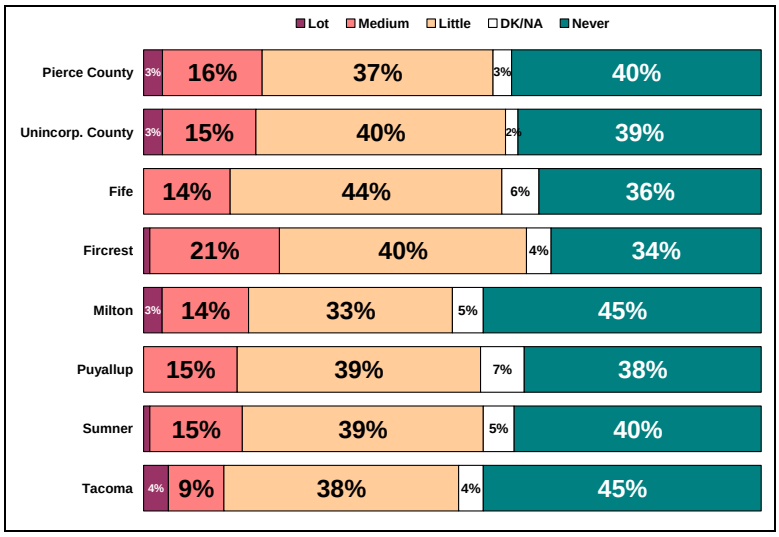
Question 9 (Asked of those with lawns or gardens): Do you or someone else in your household maintain the yard yourself? Or do you hire someone to take care of it?

- **The prevalence of caring for one's own yard was higher in unincorporated Pierce County than incorporated:**
  - 82% in the unincorporated county did all their own yard work, vs.
  - 73% in the incorporated towns/cities.

- **Additional variation in lawn care practice was seen with:**
  - Age:
    30% of 65+ hired out yard work (18% all, 12% some), vs.
    24% of those ages 50 to 64 (14% and 10%), and
    15% of respondents under 50 (9% and 6%).
  - Gender:
    82% of men did all the work themselves, vs. 71% of women.
    11% of men did none of the work, compared to 17% of women.
  - Home ownership:
    78% of home owners did all the work themselves, vs. 62% of renters.
    13% of owners did none of the work, compared to 25% of renters.
  - Yard Size:
    11% of those with over 2 acres hired any help, compared to
    23% who lived on less than 2 acres.

Most Commonly Used Yard Chemicals were...

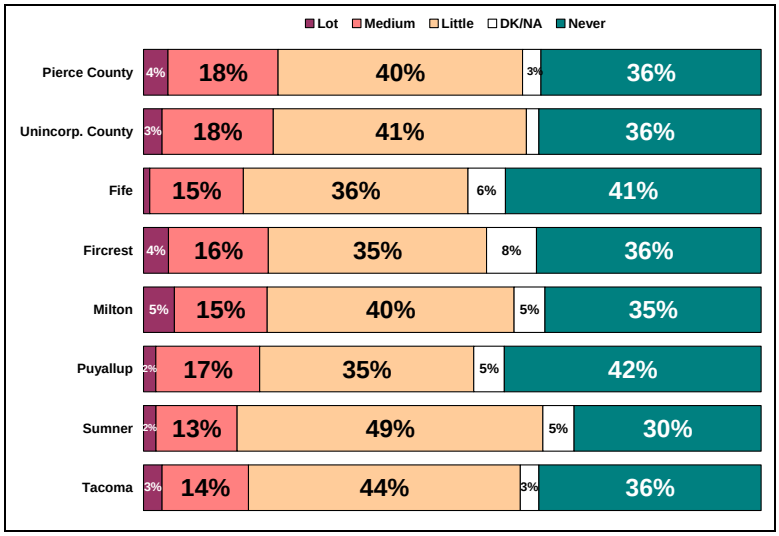
Chemical Fertilizer



Question 10: I am going to read a list of products that some people use on lawns and gardens. Please tell me roughly how much of each is used on your yard, during a typical growing season. What about [insert product]? Would you say that, on your yard, it's used a lot– [in large areas or often]; a medium amount, very little, or is it never used on your yard? *% Among those with yards.*

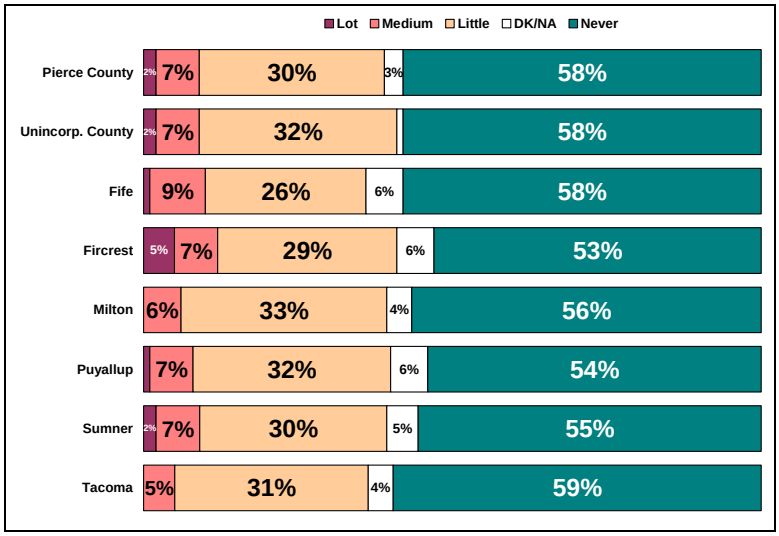
Question 10.1: How much chemical fertilizer is used on your yard?

"Weed & Feed" or other Weed Killer



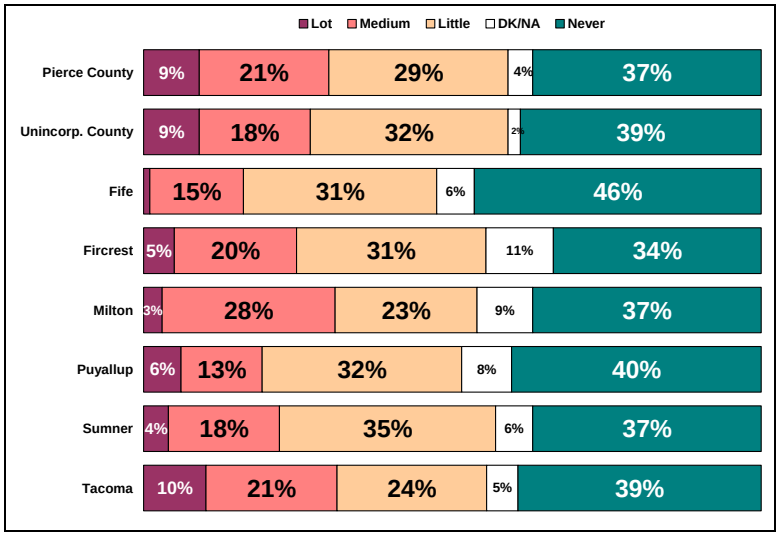
Question 10.3: How much Weed & Feed or other weed killer are used on your yard? (Asked of those with yards.)

Pesticide Use Far Less Prevalent



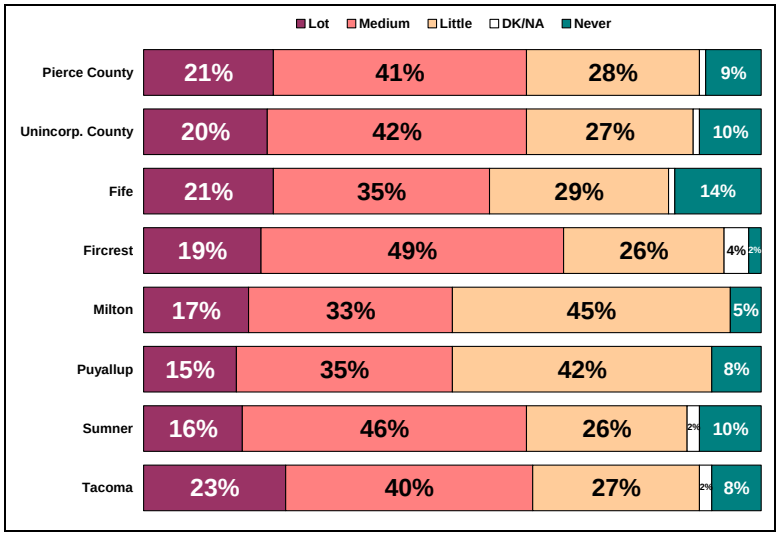
Question 10.2: How much pesticides such as insecticides or fungicides are used on your yard? (Asked of those with yards.)

Organic Fertilizer Somewhat Frequent



Question 10.4: How much organic or slow-release fertilizers are used on your yard? (Asked of those with yards.)

6 in 10 Use More Than "a Little" Water on Their Lawns



Question 10.5: How much water is used on your yard? (Asked of those with yards.)

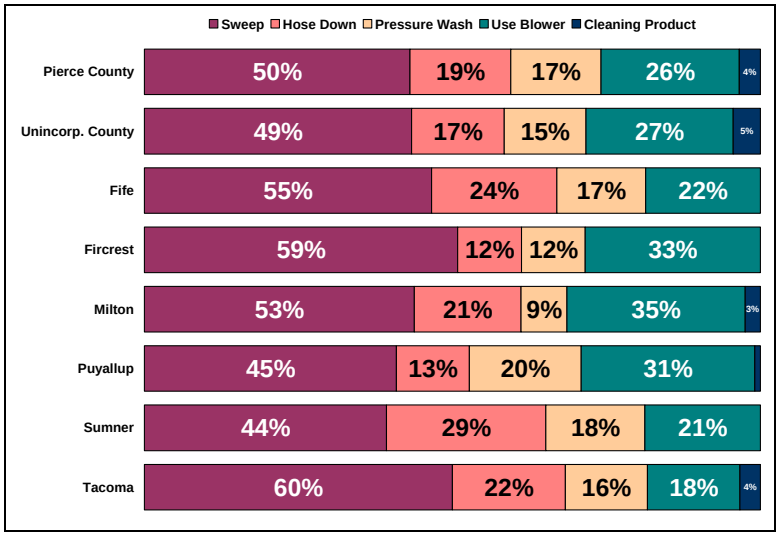
- **All yard chemical use (non-organic fertilizers, herbicides and pesticides) was combined into an index that showed:**
  - 22% of all county-wide households used none of the products, including 20% of those on <2 acres, and 30% on larger lots.
  - 33% scored as "low" users ("very little" of a couple of products, or a medium amount of only one.)
  - 20% had "medium" scores. They used "a lot" of one product, or some combination of medium amounts of more than one.
  - 25% were "heavy" product users -- a mix of "medium" to "a lot" of all three types of chemicals.

- **More product use tended to correlate with more watering:**
  - 35% of those who watered "a lot" and 29% who watered a medium amount were heavy chemical yard product users, vs.
  - 11% who did "very little" watering, and
  - 8% who never watered.

- **Those who hired out all of their yard care were more apt than those who did at least some themselves to be "heavy" chemical users:**
  - 35% were, vs. 23% who did at least some of their own yard work.

- **When compounded by the impact of watering:**
  - 34% who hired out all yard work and 30% who hired some fell into the "heavy water/product user" group, vs. 22% of do-it-yourselfers.

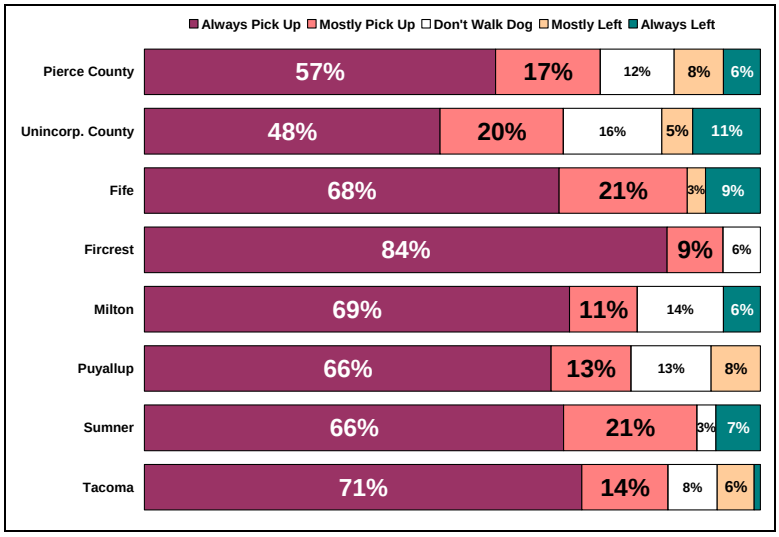
Outside Surfaces Typically Cleaned by Sweeping



Question 11: When you clean places like your driveway, walkways, or deck, do you typically… (Multiple responses allowed.) Shouldn't square up…multiple responses not based on 100

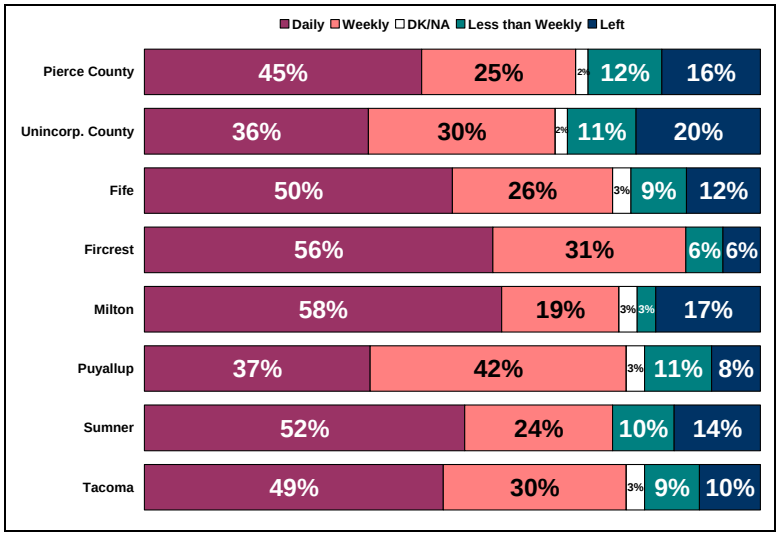
- **Cleaning with water was most prevalent on lots of ½ to 2 acres:**
  - 43% did, compared to
  - 32% with less than ½ acre and
  - 27% with over 2.
- **There were no significant demographic differences in these responses.**

Dog Waste on Walks Picked Up Always/Mostly



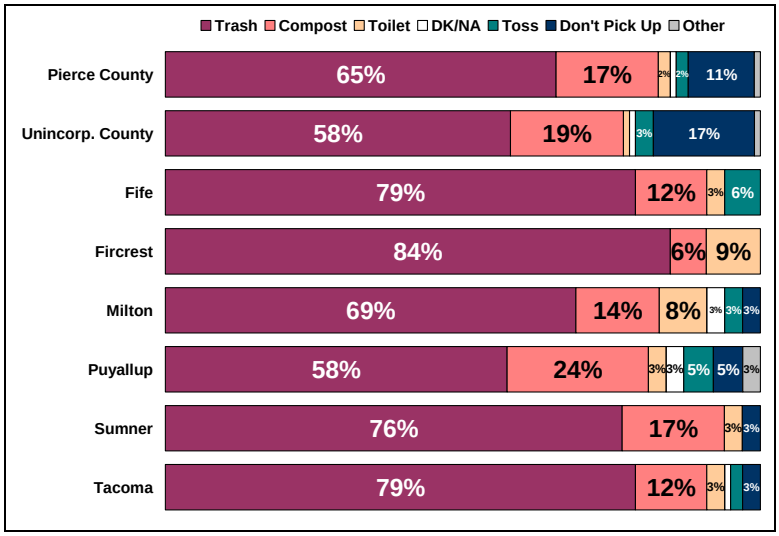
Question 13: (Asked of dog owners only) When the dog is out for a walk, how is the dog waste dealt with? Would you say that it is…

More is Left on Own Property



Question 14: (Asked only of those with dogs) How about the dog waste in the yard at home? Is the waste in the yard cleaned up….

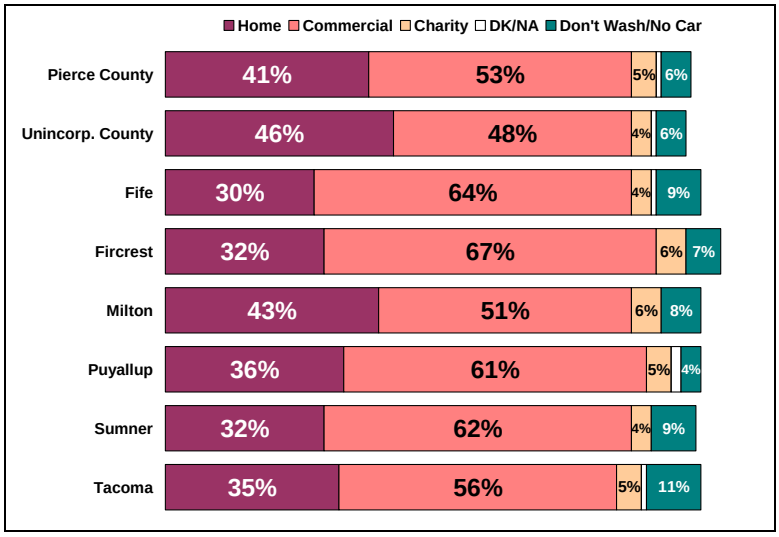
Most Picked-Up Waste Disposed of Properly



Question 14.1: (Asked only of dog owners) If the dog waste is picked up, how is it typically disposed of? Is it…

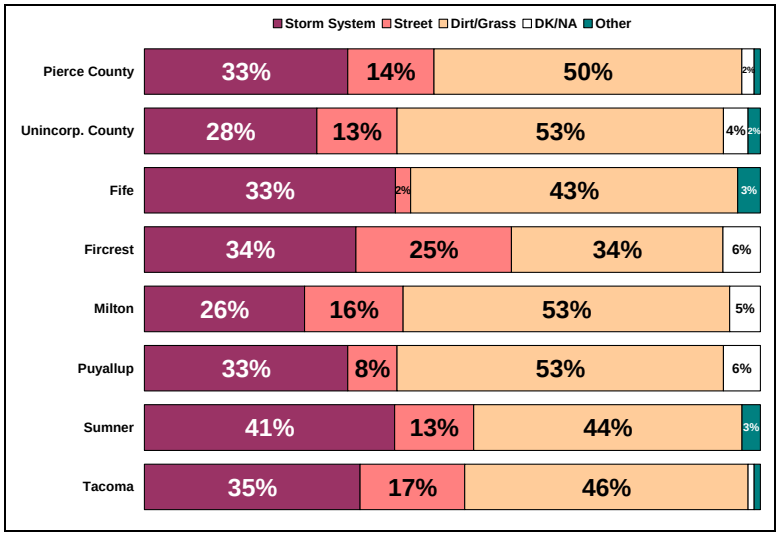
- **Combining the three "dog waste" practices into a single index indicates that fewer than 1 in 3 dog owners (30%) always dealt with their pets' waste correctly** (consistently picked it up while walking, cleaned it from the yard daily, and then disposed of it properly.) Dog owners who didn't were apt to be:
  - Living in unincorporated areas (44%, vs. 26% of proper disposers),
  - Living on more than 2 acres (14% vs. 4%).
  - 36 to 64 years old (70% vs. 50%).
  - Someone who takes care of all their own yard work (85%, vs. 74% of "proper dog waste disposers.")

Slight Tendency to Not Wash Cars at Home



Question 15: Let's talk about the vehicles at your home. At which of the following have you washed your car or had it washed, in the past year … (Multiple responses allowed).

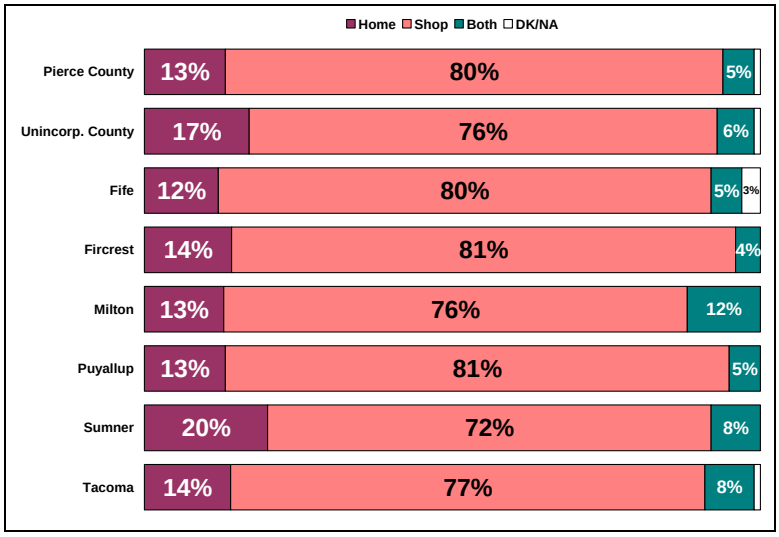
1 in 2 "Home Washers" Risk Soapy Stormwater



Question 15.1 (Of those who wash any vehicles at home): When you wash vehicles at home, where does the wash water go? Does it go…

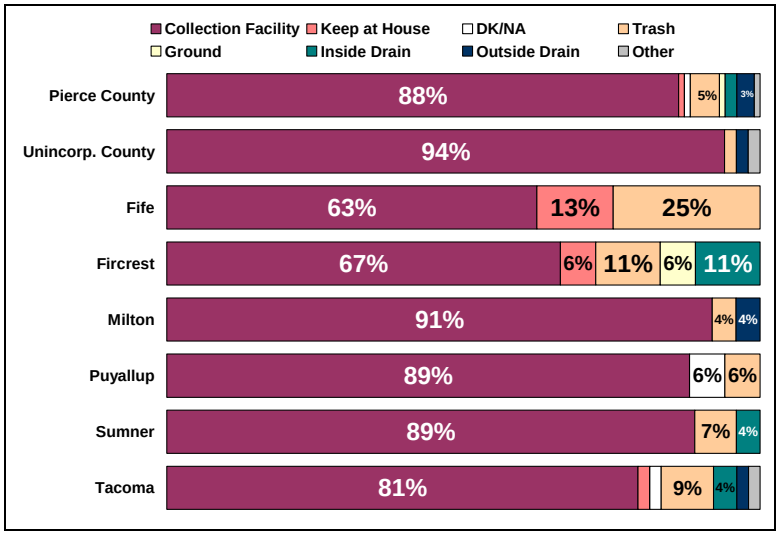
- **County-wide, this nets to 1 in 5 who wash their cars <u>and</u> risk soapy runoff.**
  - This proportion is highest among residents of duplexes/triplexes (32%, vs. 20% in single family houses and 14% in apts/condos.)
  - And on <½ acre lots (23% vs. 18% on ½ - 2 acres, and 14% on 2+.)

2 in 3 Never Change Car Fluids at Home



Question 16: When it comes to changing the motor oil, anti-freeze and other fluids in the vehicles in your household, do you or someone else always change it at home, always take the vehicles to a shop, or some combination of the two?

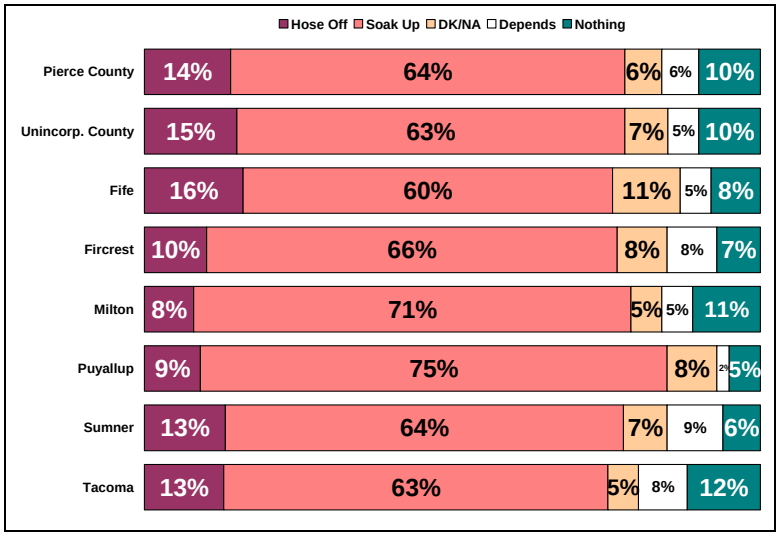
Do-it-Yourselfers Dispose of the Fluids Properly



Question 16.1: (If motor oil is changed at home) If the motor oil or anti-freeze is changed at home, what is typically done with the used fluids?

- **Combining these nets just 2% overall who change their own fluids and don't dispose of the used fluids properly.**
  - This proportion was highest among those 18-35 (6%, vs. 4% ages 36-50, 2% 50-64, and <1% of those ages 65+).

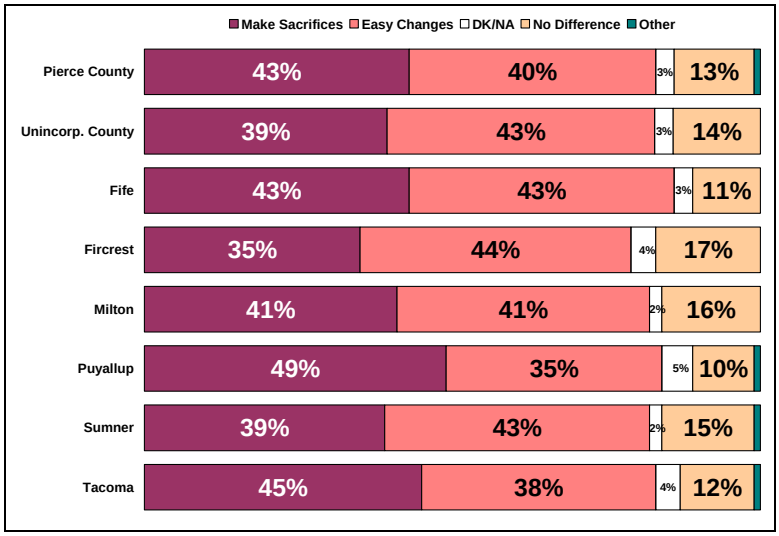
3 in 5 Would Put Absorbent Pad/Material on a Leak



Question 17: If one of your vehicles leaked or spilled oil or antifreeze onto pavement, which of the following would you be most likely to do:

- **Those less likely to "soak it up" were younger and had lower incomes, including:**
  - 54% of respondents ages 18- 35, vs.
  - 63% of those older.
  - 46% with incomes under $25,000, vs.
  - 60% with $25,000 to $75,000, and
  - 71% of respondents with $75,000 or more.
- **Otherwise, there was little variation in this data.**

Changes Possible to Help Prevent Water Pollution



Question 18: Which of the following best describes your attitude toward making changes to help prevent water pollution? Are you…

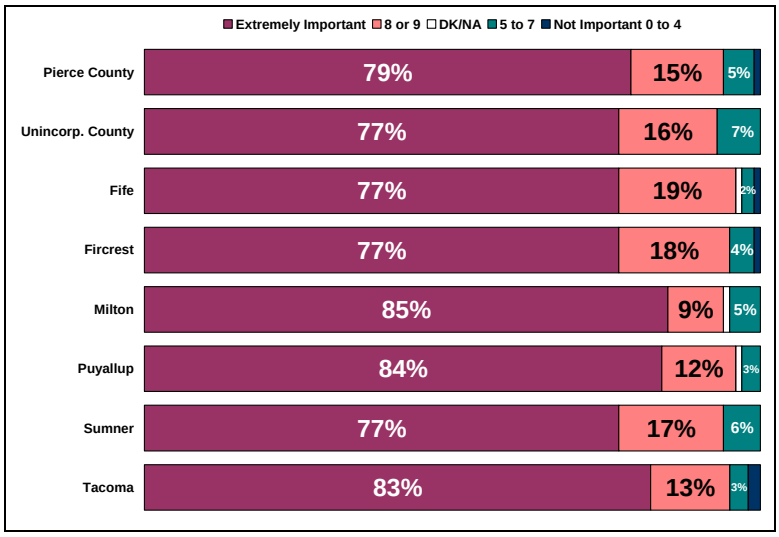
Willing to make changes in your lifestyle, even if it involves sacrifices
Willing to make changes, if the changes are fairly easy
Convinced that there is not more that you can do that will make a difference

- **Those "willing to sacrifice" included:**
  - 50% of college graduates, vs.
  - 42% with some post-high school education, and
  - 31% of those with a high school degree or less.
  - 46% of those with over $50,000 in income, vs.
  - 38% making $25,000 to $50,000, and
  - 32% of those with incomes of under $25,000.
  - 51% between the ages of 36 – 50, vs.
  - 40% of the rest (who were similar to each other.)

- **The proportions who felt that they could "make no difference" were essentially the inverse, with the following being notable:**
  - The lowest income group was the single most prominent demographic (20% agreed, compared to 11% with higher incomes.)
  - 65+ year olds were the most highly agreeing age group (16% agreed, compared to 11% of those younger.)
  - The plurality of 18- 35 year olds and 50-64 year olds agreed that they would make "fairly easy" changes.

Reasons to Cut Back on Water Pollution Led by..

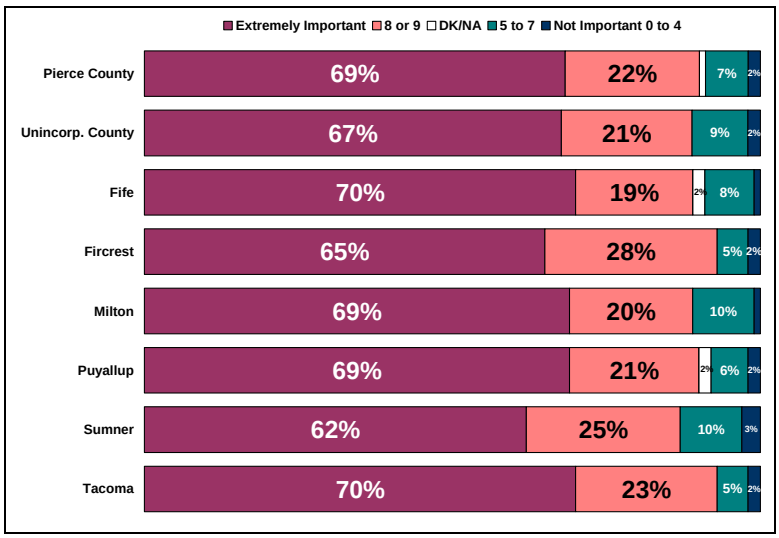
"People's Health"



Question 19: I am going to read reasons that some people give for wanting to cut back on local water pollution. As I read each, please tell me how important it is for you personally. Please use a 1 to 10 scale, where "10" means "extremely important," and "0" means "not important at all." First, what about…

Question 19.2: Cut back on local water pollution to protecting drinking water and food sources for people's health.

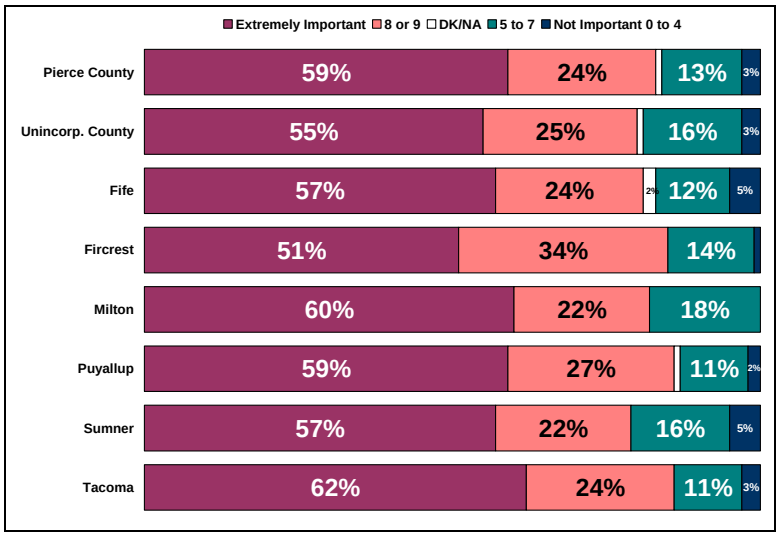
With "Maintain the Environment for Future Generations" Second



Question 19.3: Cut back on local water pollution to maintaining the environment for future generations.

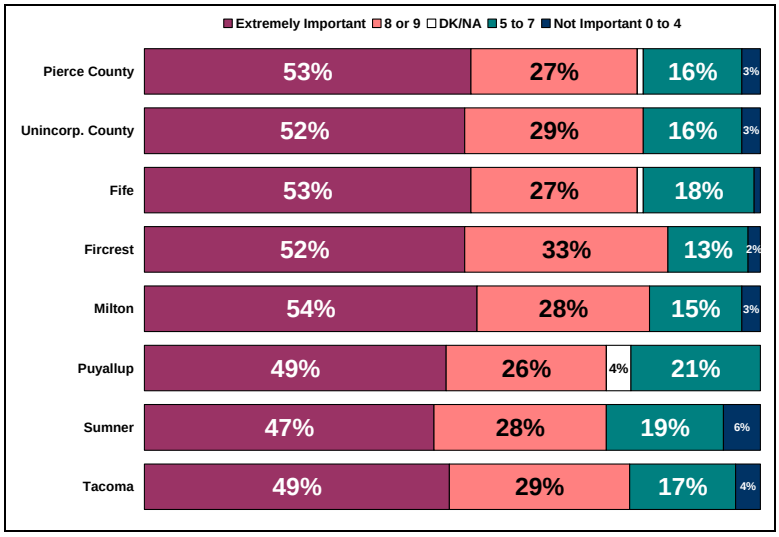
Slightly Lower "Importance Scores" for...

Fish and Wildlife



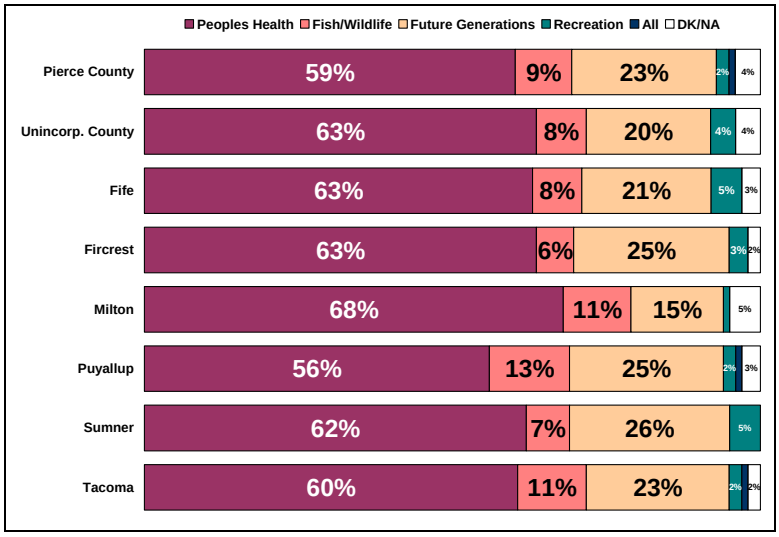
Question 19.1: Cut back on local water pollution to protect fish and wildlife for their own sake.

Recreation



Question 19.4: Cut back on local water pollution to keeping the waters clean for recreation.

"Protect People's Health" Number 1 Reason



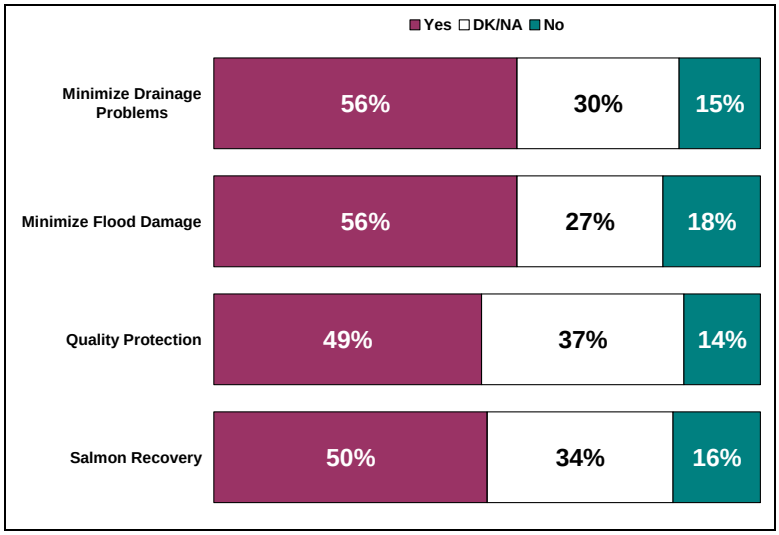
Question 20: Which of the reasons I just read would you say is the number one reason?
Protecting fish and wildlife for their own sake
Protecting drinking water and food sources for people's health
Maintaining the environment for future generations
Keeping the waters clean for human recreation

- **"Future generations" was slightly more popular among college graduates. Those rating it the number one reason included:**
  27% of college graduates, vs.
  24% of those with some post-high school education, and
  17% with a high school diploma or less education.

- **Those choosing "people's health" as the number one reason included:**
  63% with high school educations,
  57% with some post-high school education, and
  59% with college degrees or more education.

- **There was very little other significant demographic variation in this data; that is men/women, older/younger, with and without children all answered essentially in the same proportions.**

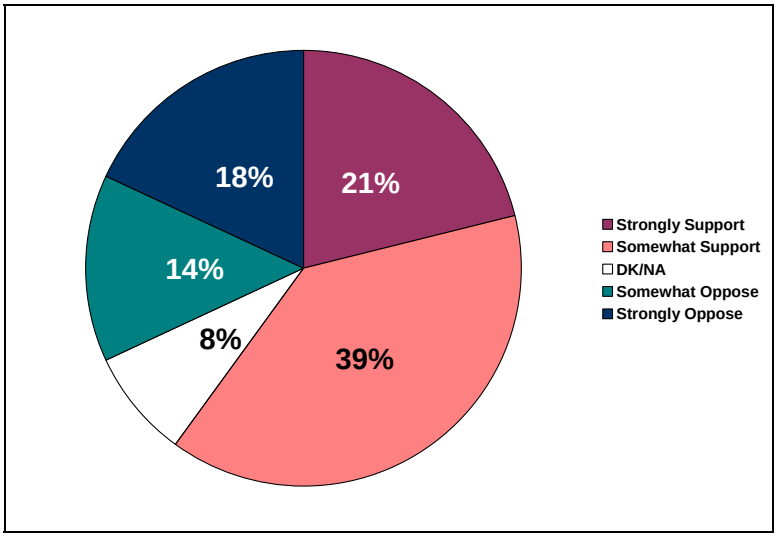
One-half to One-third Aware of Surface Water Management Programs in Unincorporated Areas



Question 22 (If living in unincorporated areas): The Pierce County Surface Water Management Division provides services throughout the county having to do with water. As I read the following list, please tell me – to the best on your knowledge – whether or not the Pierce County manages that program. The first one is…
Surface Water Quality Protection and Monitoring
Salmon Recovery Efforts
Minimizing Flood Damage
Minimizing Drainage Problems

- **Overall, 1 in 4 (26%) said that they had heard of all four being managed by Pierce County. Otherwise:**
  - 25% knew of none,
  - 11% knew one,
  - 18% two, and
  - 19% three of the four.
- **There were few significant demographic differences in these findings.**

Support for More Services Widespread



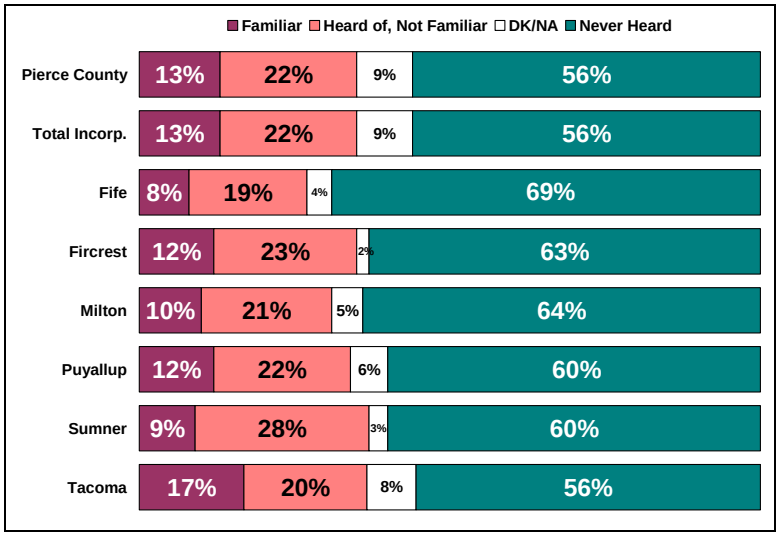
QUESTION 23: UNINCORPORATED AREAS: Landowners in unincorporated Pierce County pay an annual fee for all the Surface Water management services that I just listed. The average annual fee is $85 per landowner. If additional projects were needed to improve water quality, reduce flood damage, and protect endangered fish, would you be inclined to support or oppose increased fees to pay for additional projects? In general, would you say that you would Definitely Support, Probably Support, Probably Oppose, or Strongly Oppose paying additional fees for more Surface Water management projects?

- **Most likely to <u>support</u> the additional fees were:**

  71% of those ages 50 to 64 (28% strongly, 43% somewhat);
  55% of 65+ year olds (17% and 38%);
  53% of 36 – 50 year olds (21% and 32%); and vs.
  48% of those 35 and younger (11% and 37%),
  68% of college graduates (29% and 39%); and
  57% with some post-high school education (13% and 44%); vs.
  47% with a high school degree or less (19% and 28%).

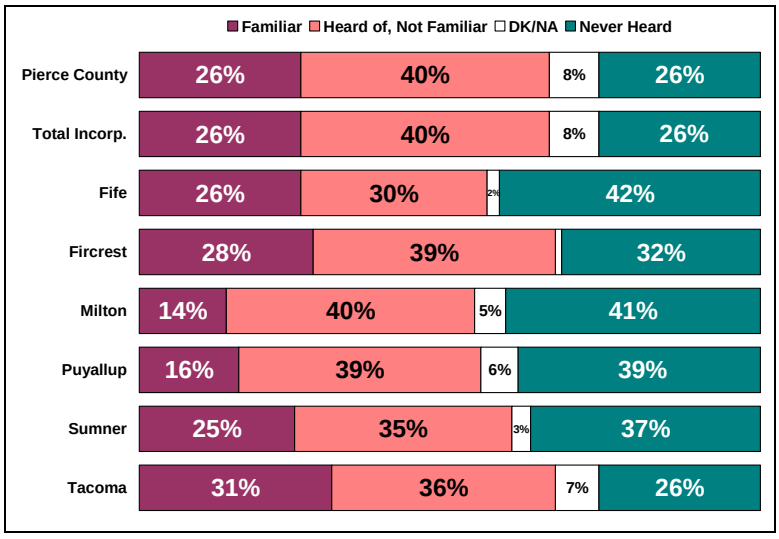
- **Most likely to strongly <u>oppose</u> the fees were:**
  - Men (23%, compared to 14% of women), and
  - The youngest and the oldest, including 31% ages 35 and younger, and 26% of 65+ year olds.

Most Not Familiar with Rain Gardens



Question 24.1: Incorporated areas: The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called rain gardens? Heard of it but not really familiar with it? Or Never heard of that term?

More Familiar with Natural Yard Care



Question 24.2: Incorporated areas: The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called natural yard care? Heard of it but not really familiar with it? Or Never heard of that term?

APPENDIX

ELWAY RESEARCH, INC.

APPENDIX

CONSTRUCTION OF YARD CARE INDICES

Products Index

Reported use of chemical fertilizer, pesticides, and herbicides Question 10) were added together:
“A lot” of use counted as "4",
“Medium use’ was coded as "3",
Those who did not know counted as "2",
“Very little” became “1,” and
"Never" counted as zero.

Question 10d, which asked about organic or slow-release fertilizers, was omitted.

This resulted in scores ranging from 0 to 12, with “zeros” using none of the products, and “12s” using “a lot” of all three. The index nets were set at: None = zero; Low = 1-2; Medium = 3-4; and High = 5+.

Chemicals * Watering Index

The amount of lawn/garden watering reported (Question 10) was coded as:
None = 1;
“Very Little” = 1.5;
“Do not know” = 2;
“Medium” = 2.5, and
“Lots” = 3.

These were then multiplied times the Product Index scores, resulting in a scale from zero to 36. The nets were set at:

None= zero; Low =1 to <5; Medium = 5 thru 10; Heavy = 11+.

Chem * Water * Lots

This last index takes into account the impact of small lot sizes. The scores from the Chem/Water index were multiplied by the following lot-size code:
½ acre or smaller lots became “3s,”
½ to 2 acres lots became “2s,” and
Lots of over 2 acres became 1s.

The multiplication resulted in a Chem/Water/Lot size index of zero to 108. The nets were set at: None = 0; Low = 1 – 10; Medium = 11 – 25; and Heavy = 26+.

Dog Waste Disposal
To be a "yes" in this index, the respondent needed to:
Always pick up if walking the dog or not walk the dog at all (Q13),
Always clean up their own yard daily (Q14), and
Always put waste into the trash or, if they are on a sewer system flush it (Q14.1).
Other dog owners were defaulted to "no."

Car Wash Water
"Yes" in this category included those who
washed their vehicles at home at least sometimes and
responded that the water either went to the storm drain or the street.

Respondents who never washed at home, never washed, or washed at home with the water draining only on sand/gravel or grass were "no's."

Car Fluid Care

Respondents were scored “yes” for changing fluids at home and doing anything other than take it to a collection facility

They were “no” if they:

- Did not have a car.
- Never serviced it at home, and/or
- Always took fluids to a collection facility.

QUESTIONNAIRE

WITH DATA

ELWAY RESEARCH, INC.

TOPLINE DATA

This summary presents draft response frequency distributions for the survey of 700 Pierce County adult heads of household. Telephone interviews were completed between February 7-8, 2009.

The overall maximum margin of sampling error is ±3.6%. That means, in theory, there is a 95% probability that the results of this survey are within ±3.6% of the results that would have been obtained by interviewing all qualified heads of households.

The data are presented here in the same order the questions were asked in the interview. The figures in bold type are percentages of respondents who gave each answer. The percentages may not add to 100% due to rounding.

Hello. I'm calling from Elway Research, an independent public opinion research firm here in Washington state. My name is ___.We are conducting a random sample survey among residents of Pierce County. We are not selling anything. You are one of 1000 people who is being interviewed. We are trying to keep our sample in balance, so my instructions are to talk to the [MALE / FEMALE] head of this household at this number.

1. First, is your residence inside city or town limits, or is it in an unincorporated area?

SKIP TO Q2 ← UNINCORPORATED PIERCE COUNTY…**36**
ASK 1.1 ← INSIDE CITY LIMITS…**64**
THANK & TERMINATE ← NOT IN PIERCE……

1.1. IF INSIDE CITY LIMITS: What city or town do you live in? DO NOT READ.

AUBURN…1	ORTING…1
BONNEY LAKE…2	PUYALLUP…8
BUCKLEY…2	ROY…1
CARBONADO…<1	SOUTH PRAIRIE…<1
DUPONT…1	SPANAWAY…1
EATONVILLE…<1	STEILACOOM…1
EDGEWOOD…2	SUMNER…2
FIFE…<1	TACOMA…27
FIRCREST…1	UNIVERSITY PLACE…3
GIG HARBOR…1	WILKESON…<1
LAKEWOOD…6	OTHER…1
MILTON…1	[DK/NA…<1]

2. Most of my questions are about the bodies of waters within Pierce County. First, what about Puget Sound? Would you say that the health of Puget Sound in Pierce County is…

READ 1- 4. ROTATE TOP/BOTTOM

Excellent**…7**
Fairly Good…**50**
Not Too Good…**23**
Poor…**11**
[DK/NA…**9**]

3. And, in your opinion, would you say that health of the lakes, streams and rivers in Pierce County is, in general,…

READ 1- 4. ROTATE TOP/BOTTOM

Excellent**…5**
Fairly Good…**55**
Not Too Good…**23**
Poor**…8**
[DK/NA…**9**]

4. Are you aware of any water pollution problems in local streams, lakes, or rivers?

YES…**36**
NO…**58**
DK/NA**…6**

5. The following are some possible causes of pollution in local waters. As I read each one, tell me whether you believe that it is: 1) a Significant Source of water pollution in Pierce County; 2) it May contribute some Small Amount of pollution; 3), or probably is Not a Significant Source of water pollution in Pierce County. The first one is….

ROTATE	SIG	SMALL	NOT	DK/NA
1. Industrial waste	47	33	13	8
2. Discharge and leaking oil from ships and pleasure boats in the water	43	38	12	7
3. Run off from roads and parking lots	35	42	18	6
4. Run off from agriculture, including animal waste & fertilizer	34	42	18	6
5. Run off from construction sites and development	26	46	20	8
6. Pollutants from neighborhoods and residences	24	48	22	6
7. Erosion and pollutants from logging practices	21	42	26	11
8. Sewage treatment plants	21	33	29	16

6. Water that runs from neighborhoods and residences off streets, yards, and rooftops goes into a storm system of pipes, ditches and holding tanks or ponds. To the best of your knowledge, what happens to the water after it enters the storm system? Does that water…

Go to a treatment plant…**31**
or Go into the nearest body of water without being treated…**50**
[DK/NA…**19**]

7. I am going to read a list of some things that can get washed into the storm system and eventually into lakes, streams and Puget Sound. As I read each one, tell me whether you believe that is: 1) a Significant Source of water pollution in Pierce County; 2) it May contribute some Small Amount; 3), or probably is Not a Significant Source of Pierce County water pollution. The first is….

ROTATE	SIG	SMALL	NOT	DK/NA
1. Pesticides and fertilizers from yards	43	42	12	3
2. Oils and other fluids from vehicles	43	39	15	3
3. Soapy water from washing cars on pavement	20	50	26	3
4. Pet waste left on the ground	16	46	33	5
5. Leaking septic systems	35	33	22	10
6. Improper disposal of cleaning fluids, paint, and other household hazardous waste	37	38	18	7

8. I'd like to ask you next about your own yard. Do you have a lawn or garden at your home?

YES…**86**
SKIP TO Q12 (Pet Waste) ← NO…**14**

YARD MAINTENANCE

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

SELF…**76**
BOTH SELF & HIRE**…9**
HIRE SOMEONE…**14**

10. I am going to read a list of products that some people use on lawns and gardens. Please tell me roughly how much of each is used on your yard, during a typical growing season. What about [insert product]? Would you say that, on your yard, its used a lot– [REPEAT AS NEEDED: in large areas or often]; a medium amount, very little, or is it never used on your yard? ***% Among those with yards.***

ROTATE	LOT	MED	LITTLE	NEVER	DKNA
1. Chemical Fertilizers	3	16	37	40	3
2. Pesticides such as Insecticides or fungicides	2	7	30	58	3
3. Weed & Feed or other weed killer	4	18	40	36	3
4. Organic or slow-release fertilizers	9	21	29	37	4
5. Watering	21	41	28	9	1

11. When you clean places like your driveway, walkways, or deck, do you typically…

CIRCLE ALL THAT APPLY

Sweep Those Areas…**50**
Use A Blower…**26**
Hose Them Down…**19**
Pressure Wash Them…**17**
Use water with soap or another cleanser**…4**
don't have / don't clean those areas**…6**
[DK/NA…**2**

PET WASTE

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

YES …**41**
SKIP TO Q15 (Vehicles)←NO…**59**

13. When the dog is out for a walk, how is the dog waste dealt with? Would you say the waste is … [% Among dog owners]

ROTATE TOP/BOTTOM

Picked up Every Time…**57**
Picked up Most of The Time…**17**
Left on the ground Most of the time**…8**
Always Left on the ground**…6**
DON'T WALK THE DOG…**12**

14. How about the dog waste in the yard at home? Is waste in the yard… ***% Among dog owners***

READ 1 – 5. ROTATE TOP/BOTTOM

Left on the Ground…**16**
Cleaned Up Daily…**45**
Weekly…**25**
Every couple of weeks**…7**
Cleaned up once a month or less often**…5**
[DK/NA]**…2**

14.1. If the dog waste is picked up, how is it typically disposed of? Is it…

READ 1 – 4.

SKIP TO Q15← Bagged and put in the Trash…**65**
Put in compost or yard waste collection…**17**
Flushed down the toilet**…2**
Tossed somewhere else**…2**
SKIP TO Q15←NEVER PICK UP…**11**
_____OTHER**…1**
SKIP TO Q15← [DK/NA]**…1**

14.2. What is the main reason you don't typically bag it and put it into the trash? (Base = 65)

use for fertilizer/compost	**15**	concern for garbage collectors	**5**
have enough space	**15**	don't see any harm in leaving it	**5**
Easier/convenience	**9**	don't want to touch it	**4**
odor	**8**	less garbage/ landfill	**3**
habit	**8**	dkna	**29**

VEHICLE MAINTENANCE / OIL CHANGING

15. Let's talk about the vehicles at your home. At which of the following have you washed your car or had it washed, in the past year …READ 1 – 3. MULTIPLES ALLOWED.

Home...**41**
A Car Wash Or Commercial Coin Operated car wash…**53**
A charity car wash, such as a school or other fundraiser**...5**
SKIP TO Q16←HAVEN'T WASHED IN PAST YEAR**...3**
SKIP TO Q18 (MOTIVATIONS)←DON'T HAVE ANY VEHICLES**...3**
SKIP TO Q16←DK/NA**...1**

15.1. IF WASH ANY VEHICLES AT HOME (CODE 1): When you wash vehicles at home, where does the wash water go? Does it go… [ROTATE 1-3]

Into a drain or ditch that is part of the Storm System…**33**
Down the Street…**14**
Onto Gravel, Dirt or Grass…**50**
[DK/NA…**2**]

16. When it comes to changing the motor oil, anti-freeze and other fluids in the vehicles in your household, do you or someone else,

ALWAYS CHANGE IT AT HOME…**13**
SKIP TO Q17 ←ALWAYS TAKE THE VEHICLES TO A SHOP …**81**
OR, SOME COMBINATION OF THE TWO**...5**
SKIP TO Q17 ←DK/NA **...1**

16.1. IF FLUIDS CHANGED AT HOME ASK: When the motor oil or anti-freeze is changed at home, what is typically done with the used fluids?

PLACED IN THE TRASH**...5**
POURED DOWN THE DRAIN INSIDE THE HOUSE….**2**
POURED DOWN A DRAIN OR DITCH OUTSIDE OR IN THE STREET**...3**
POURED ON THE GROUND**...1**
KEPT AROUND THE HOUSE/GARAGE**...1**
SKIP q17←TAKEN TO A COLLECTION FACILITY/GAS STATION/SHOP…**88**
Used at home; on fences, as lubricant < OTHER (RECORD ANSWERS)**...1**
DK/NA…**1**

16.2. IF NO CODE 5 ASK: What is the main reason that no one takes it to a collection facility? (Base = 14 who change oil at home and don't take to collection.)

easier	**36**	habit	**7**
pickup/other disp	**20**	use elsewhere	**8**
not large amount	**16**	dkna	**14**

17. If one of your vehicles leaked or spilled oil or antifreeze onto pavement, which of the following would you be most likely to do:

READ 1 – 3. ROTATE TOP/BOTTOM

Hose It Off…**14**

Soak it up with an Absorbent Pad or other absorbent material …**64**

Probably Not Do Anything…**10**

[depends]**…6**

[DK/NA…**6**]

18. Which of the following best describes your attitude toward making changes to help prevent water pollution. Are you…

READ 1 - 3. ROTATE TOP/BOTTOM

Willing to make changes in your lifestyle, even if it involves sacrifices…**43**

Willing to make changes, if the changes are fairly easy…**40**

Convinced that there is not more that you can do that will make a difference…**13**

DK/NA…**3**

19. I am going to read reasons that some people give for wanting to cut back on local water pollution. As I read each, please tell me how important it is for you personally. Please use a 1 to 10 scale, where "10" means "extremely important," and "0" means "not important at all." First, what about…

	Ext 9	8	7	6	5	4	3	2	1	Not	DK
1. Protecting fish and wildlife for their own sake....	**59**	**12**	**13**	**6**	**3**	**4**	**0**	**1**	**1**	**0**	**1**
2. Protecting drinking water and food sources for people's health.....	**80**	**10**	**5**	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
3. Maintaining the environment for future gen	**69**	**12**	**10**	**4**	**2**	**1**	**1**	**0**	**0**	**0**	**0**
4. Keeping the waters clean for recreation.....	**53**	**12**	**16**	**7**	**4**	**5**	**1**	**0**	**1**	**0**	**0**

20. Which of the reasons I just read would you say is the number one reason?

Protecting fish and wildlife for their own sake**…9**

Protecting drinking water and food sources for people's health…**59**

Maintaining the environment for future generations…**23**

Keeping the waters clean for human recreation**…2**

NONE, NO REASONS/DON'T CARE ABOUT IT…**<1**

DK/NA**…4**

21. Have you, or someone you know ever been directly affected by a local water quality issue, such as closed swimming beaches, or restrictions on shellfish harvesting?

YES…**25**
NO…**71**
DK/NA**…4**

UNINCORPORATED AREA (Q1=1) ASK Q22-23 / INCORPORATED (Q1=X) ASK Q24

22. UNINCORPORATED AREAS: The Pierce County Surface Water Management Division provides services throughout the county having to do with water. As I read the following list, please tell me – to the best on your knowledge – whether or not the Pierce County manages that program. The first one is…

ROTATE	YES	NO	DK
1. Surface Water Quality Protection and Monitoring	**49**	**14**	**37**
2. Salmon Recovery Efforts	**50**	**16**	**34**
3. Minimizing Flood Damage	**56**	**18**	**27**
4. Minimizing Drainage Problems	**56**	**15**	**30**

23. UNINCORPORATED AREAS: Landowners in unincorporated Pierce County pay an annual fee for all the Surface Water management services that I just listed. The average annual fee is $85 per landowner. If additional projects were needed to improve water quality, reduce flood damage, and protect endangered fish, would you be inclined to support or oppose increased fees to pay for additional projects? In general, would you say that you would Definitely Support, Probably Support, Probably Oppose, or Strongly Oppose paying additional fees for more Surface Water management projects?

STRONGLY SUPPORT…**21**
SOMEWHAT SUPPORT…**39**
SOMEWHAT OPPOSE…**14**
STRONGLY OPPOSE…**18**
DK/NA**…8**

24. INCORPORATED AREAS: The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called [INSERT 1-2]? Heard of it but not really familiar with it? Or Never heard of that term?

	FAM	HEARD	NEVER	NA
1. Rain gardens	**13**	**22**	**56**	**9**
2. Natural or organic yard care	**26**	**40**	**26**	**8**

25. I have just a few last questions for our statistical analysis. How old are you?

18-35...**11**
36-50...**22**
51-64...**32**
65+...**35**
[NO ANSWER].....**1**

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

HIGH SCHOOL OR LESS...**22**
BUSINESS/VOCATIONAL SCHOOL...**5**
SOME COLLEGE...**29**
COLLEGE DEGREE...**30**
GRADUATE/PROFESSIONAL SCHOOL...**11**
NA...**2**

27. Do you own or rent the place in which you live? OWN…**84** RENT…**13** [NA…**3**]

28. Do you have a septic system, or are you on a sewer line?

SEPTIC SYSTEM…**40**
SEWER LINE…**56**
DON'T KNOW/NO ANSWER**…4**

29. Which of these best describes your home:

A single family house on its own lot...**84**
A duplex or multi-plex on its own lot...**4**
A manufactured, or mobile home...**2**
SKIP TO Q30 ←An apartment or condo...**9**
No answer...**1**

30. What size is the lot on which your home is located? Is it…

Half an acre or less…**66**
One half acre to two acres…**22**
Larger than two acres…**10**
[DK/NA…**2**]

31. Which of the following best describes your household:

Single with no children at home**...20**
Couple with no children at home**...45**
Single with children at home**...6**
Couple with children at home**...28**
NA...**1**

32. Finally, which of these categories best describes your approximate household income - before taxes - for last year:

$25,000 OR LESS...**9**
OVER $25,000 TO $50,000...**21**
OVER $50,000 TO $75,000...**16**
OVER $75,000...**21**
[NO ANSWER]...**32**

COUNCIL DISTRICT	1	2	3	4	5	6	7
	14	**14**	**14**	**14**	**14**	**14**	**14**

SEX: MALE...**50** FEMALE...**50**

DATA TABLES

READING THE CROSSTABULATION TABLES

The crosstabulations found in this report are presented in a "banner table" format. Categories of respondents (e.g."35-54 years old," or "Female") are listed across the top of each page (the "banner"). The questions asked in the survey are listed down the left margin. The figures in each cell are percentages based on the number of respondents in the category at the head of each column.

ELWAY RESEARCH, INC.

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[2] SOUND HEALTH													
EXCELLENT	7 7%	6 6%	7 7%	5 5%	4 4%	10 10%	9 9%	8 8%	8 8%	6 6%	9 9%	9 9%	12 4%
FAIRLY GOOD	45 45%	52 52%	50 50%	53 53%	49 49%	50 50%	53 53%	51 51%	59 59%	49 49%	53 53%	40 40%	149 54%
NOT TOO GOOD	26 26%	24 24%	20 20%	24 24%	25 25%	22 22%	19 19%	26 26%	17 17%	21 21%	20 20%	21 21%	69 25%
POOR	12 12%	8 8%	12 12%	14 14%	14 14%	8 8%	9 9%	3 3%	7 7%	11 11%	12 12%	7 7%	25 9%
DKNA	10 10%	10 10%	11 11%	4 4%	8 8%	10 10%	10 10%	12 12%	9 9%	13 13%	6 6%	23 23%	20 7%
[3] LAKES HEALTH													
EXCELLENT	2 2%	8 8%	9 9%	0 0%	3 3%	7 7%	4 4%	7 7%	5 5%	5 5%	9 9%	3 3%	8 3%
FAIRLY GOOD	62 62%	47 47%	55 55%	56 56%	49 49%	54 54%	57 57%	56 56%	60 60%	45 45%	58 58%	60 60%	155 56%
NOT TOO GOOD	26 26%	26 26%	19 19%	25 25%	22 22%	25 25%	22 22%	18 18%	21 21%	26 26%	16 16%	18 18%	66 24%
POOR	5 5%	9 9%	7 7%	9 9%	16 16%	4 4%	9 9%	4 4%	3 3%	11 11%	10 10%	7 7%	18 7%
DKNA	5 5%	10 10%	10 10%	10 10%	10 10%	10 10%	8 8%	15 15%	11 11%	13 13%	7 7%	12 12%	28 10%
[4] AWARE POLLUTION													
YES	35 35%	39 39%	29 29%	41 41%	38 38%	36 36%	35 35%	31 31%	33 33%	25 25%	32 32%	23 23%	110 40%
NO	60 60%	58 58%	68 68%	54 54%	54 54%	57 57%	55 55%	68 68%	61 61%	73 73%	64 64%	75 75%	151 55%
DKNA	5 5%	3 3%	3 3%	5 5%	8 8%	7 7%	10 10%	1 1%	6 6%	2 2%	4 4%	2 2%	14 5%
[5.1] INDUSTRY													
SIG	45 45%	41 41%	43 43%	52 52%	47 47%	50 50%	50 50%	45 45%	50 50%	53 53%	44 44%	49 49%	143 52%
SMALL	34 34%	34 34%	33 33%	34 34%	30 30%	31 31%	31 31%	32 32%	31 31%	24 24%	38 38%	30 30%	79 29%
NOT	12 12%	12 12%	19 19%	6 6%	11 11%	14 14%	13 13%	12 12%	7 7%	13 13%	9 9%	12 12%	28 10%
DKNA	9 9%	13 13%	5 5%	8 8%	12 12%	5 5%	6 6%	11 11%	12 12%	10 10%	9 9%	9 9%	25 9%
[5.2] SHIPS/ BOATS													
SIG	41 41%	37 37%	43 43%	44 44%	51 51%	42 42%	45 45%	39 39%	41 41%	46 46%	39 39%	40 40%	125 45%
SMALL	43 43%	36 36%	33 33%	42 42%	33 33%	42 42%	38 38%	38 38%	37 37%	34 34%	39 39%	35 35%	118 43%
NOT	12 12%	11 11%	16 16%	7 7%	11 11%	11 11%	12 12%	11 11%	12 12%	14 14%	8 8%	18 18%	17 6%
DKNA	4 4%	16 16%	8 8%	7 7%	5 5%	5 5%	5 5%	12 12%	10 10%	6 6%	14 14%	7 7%	15 5%
[5.3] AGRICULTURE													
SIG	37 37%	31 31%	27 27%	37 37%	35 35%	40 40%	32 32%	30 30%	29 29%	34 34%	27 27%	27 27%	92 33%
SMALL	44 44%	36 36%	44 44%	37 37%	42 42%	37 37%	49 49%	39 39%	46 46%	41 41%	43 43%	42 42%	126 46%
NOT	15 15%	24 24%	21 21%	19 19%	16 16%	17 17%	15 15%	21 21%	17 17%	19 19%	25 25%	20 20%	40 15%
DKNA	4 4%	9 9%	8 8%	7 7%	7 7%	6 6%	4 4%	10 10%	8 8%	6 6%	5 5%	11 11%	17 6%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[5.4] LOGGING													
SIG	22 22%	21 21%	15 15%	28 28%	22 22%	24 24%	18 18%	17 17%	17 17%	29 29%	23 23%	20 20%	47 17%
SMALL	47 47%	35 35%	49 49%	34 34%	42 42%	42 42%	42 42%	54 54%	40 40%	34 34%	40 40%	36 36%	118 43%
NOT	26 26%	29 29%	29 29%	20 20%	23 23%	24 24%	29 29%	15 15%	26 26%	28 28%	24 24%	29 29%	60 22%
DKNA	5 5%	15 15%	7 7%	18 18%	13 13%	10 10%	11 11%	14 14%	17 17%	9 9%	13 13%	15 15%	50 18%
[5.5] ROAD RUNOFF													
SIG	31 31%	32 32%	35 35%	48 48%	37 37%	34 34%	27 27%	25 25%	25 25%	40 40%	33 33%	34 34%	107 39%
SMALL	49 49%	42 42%	41 41%	35 35%	38 38%	39 39%	45 45%	51 51%	53 53%	42 42%	44 44%	50 50%	108 39%
NOT	15 15%	18 18%	19 19%	12 12%	19 19%	24 24%	19 19%	19 19%	13 13%	15 15%	13 13%	10 10%	44 16%
DKNA	5 5%	8 8%	5 5%	5 5%	6 6%	3 3%	9 9%	5 5%	9 9%	3 3%	10 10%	6 6%	16 6%
[5.6] RESIDENCES													
SIG	24 24%	25 25%	23 23%	31 31%	24 24%	24 24%	21 21%	21 21%	17 17%	24 24%	20 20%	23 23%	68 25%
SMALL	56 56%	50 50%	45 45%	40 40%	45 45%	49 49%	49 49%	49 49%	54 54%	43 43%	50 50%	49 49%	130 47%
NOT	16 16%	18 18%	28 28%	24 24%	22 22%	20 20%	24 24%	23 23%	25 25%	23 23%	25 25%	23 23%	59 21%
DKNA	4 4%	7 7%	4 4%	5 5%	9 9%	7 7%	6 6%	7 7%	4 4%	10 10%	5 5%	5 5%	18 7%
[5.7] CONSTRUCTION													
SIG	25 25%	20 20%	32 32%	26 26%	28 28%	34 34%	22 22%	27 27%	22 22%	27 27%	29 29%	25 25%	71 26%
SMALL	50 50%	50 50%	42 42%	48 48%	38 38%	38 38%	50 50%	44 44%	40 40%	41 41%	42 42%	44 44%	124 45%
NOT	17 17%	19 19%	21 21%	17 17%	23 23%	22 22%	24 24%	21 21%	29 29%	26 26%	20 20%	22 22%	47 17%
DKNA	8 8%	11 11%	5 5%	9 9%	11 11%	6 6%	4 4%	8 8%	9 9%	6 6%	9 9%	9 9%	33 12%
[5.8] SEWAGE PLANTS													
SIG	21 21%	20 20%	14 14%	27 27%	26 26%	30 30%	17 17%	20 20%	15 15%	21 21%	16 16%	21 21%	71 26%
SMALL	38 38%	36 36%	33 33%	30 30%	33 33%	30 30%	32 32%	33 33%	23 23%	28 28%	31 31%	30 30%	82 30%
NOT	23 23%	23 23%	38 38%	24 24%	30 30%	30 30%	32 32%	27 27%	38 38%	30 30%	23 23%	31 31%	77 28%
DKNA	18 18%	21 21%	15 15%	19 19%	11 11%	10 10%	19 19%	20 20%	24 24%	21 21%	30 30%	18 18%	45 16%
[6] RUNOFF TREATED													
TREATED	28 28%	32 32%	32 32%	39 39%	30 30%	31 31%	29 29%	29 29%	41 41%	31 31%	31 31%	31 31%	95 35%
NOT TREATED	50 50%	44 44%	46 46%	52 52%	47 47%	54 54%	56 56%	41 41%	37 37%	39 39%	44 44%	36 36%	132 48%
DKNA	22 22%	24 24%	22 22%	9 9%	23 23%	15 15%	15 15%	30 30%	22 22%	30 30%	25 25%	33 33%	48 17%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[7.1] YARD CHEMICALS													
SIG	42 42%	45 45%	30 30%	49 49%	48 48%	51 51%	42 42%	30 30%	41 41%	39 39%	42 42%	35 35%	136 49%
SMALL	46 46%	39 39%	54 54%	39 39%	41 41%	34 34%	39 39%	50 50%	36 36%	43 43%	46 46%	53 53%	110 40%
NOT	9 9%	14 14%	12 12%	10 10%	10 10%	12 12%	16 16%	16 16%	16 16%	15 15%	9 9%	10 10%	22 8%
DKNA	3 3%	2 2%	4 4%	2 2%	1 1%	3 3%	3 3%	4 4%	7 7%	3 3%	3 3%	2 2%	7 3%
[7.2] VEHICLE FLUIDS													
SIG	40 40%	47 47%	43 43%	49 49%	41 41%	45 45%	38 38%	39 39%	33 33%	45 45%	37 37%	35 35%	137 50%
SMALL	41 41%	39 39%	35 35%	37 37%	40 40%	35 35%	44 44%	42 42%	40 40%	37 37%	42 42%	50 50%	102 37%
NOT	17 17%	10 10%	18 18%	11 11%	17 17%	15 15%	17 17%	15 15%	21 21%	17 17%	16 16%	14 14%	27 10%
DKNA	2 2%	4 4%	4 4%	3 3%	2 2%	5 5%	1 1%	4 4%	6 6%	1 1%	5 5%	1 1%	9 3%
[7.3] CAR WASH WATER													
SIG	18 18%	19 19%	24 24%	23 23%	25 25%	17 17%	17 17%	20 20%	22 22%	31 31%	14 14%	19 19%	62 23%
SMALL	58 58%	47 47%	50 50%	52 52%	38 38%	52 52%	53 53%	48 48%	47 47%	43 43%	52 52%	55 55%	134 49%
NOT	22 22%	25 25%	23 23%	22 22%	36 36%	30 30%	28 28%	28 28%	26 26%	24 24%	28 28%	22 22%	71 26%
DKNA	2 2%	9 9%	3 3%	3 3%	1 1%	1 1%	2 2%	4 4%	5 5%	2 2%	6 6%	4 4%	8 3%
[7.4] PET WASTE													
SIG	13 13%	14 14%	20 20%	21 21%	15 15%	17 17%	13 13%	12 12%	13 13%	12 12%	19 19%	20 20%	49 18%
SMALL	49 49%	54 54%	44 44%	38 38%	49 49%	48 48%	43 43%	42 42%	40 40%	43 43%	47 47%	39 39%	120 44%
NOT	33 33%	25 25%	32 32%	35 35%	33 33%	33 33%	38 38%	41 41%	38 38%	36 36%	25 25%	37 37%	90 33%
DKNA	5 5%	7 7%	4 4%	6 6%	3 3%	2 2%	6 6%	5 5%	9 9%	9 9%	9 9%	4 4%	16 6%
[7.5] SEPTIC SYSTEMS													
SIG	29 29%	37 37%	32 32%	37 37%	44 44%	37 37%	34 34%	33 33%	27 27%	39 39%	26 26%	29 29%	110 40%
SMALL	40 40%	32 32%	33 33%	30 30%	28 28%	35 35%	30 30%	34 34%	40 40%	28 28%	44 44%	42 42%	73 27%
NOT	20 20%	17 17%	28 28%	20 20%	22 22%	17 17%	26 26%	22 22%	23 23%	23 23%	13 13%	17 17%	58 21%
DKNA	11 11%	14 14%	7 7%	13 13%	6 6%	11 11%	10 10%	11 11%	10 10%	10 10%	17 17%	12 12%	34 12%
[7.6] HH HAZ WASTE													
SIG	39 39%	32 32%	37 37%	38 38%	39 39%	38 38%	39 39%	42 42%	39 39%	49 49%	36 36%	37 37%	107 39%
SMALL	40 40%	37 37%	41 41%	34 34%	42 42%	40 40%	30 30%	32 32%	29 29%	32 32%	41 41%	40 40%	99 36%
NOT	15 15%	18 18%	18 18%	22 22%	16 16%	16 16%	20 20%	17 17%	23 23%	15 15%	16 16%	17 17%	44 16%
DKNA	6 6%	13 13%	4 4%	6 6%	3 3%	6 6%	11 11%	9 9%	9 9%	4 4%	7 7%	6 6%	25 9%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[8] HAVE LAWN/ GARDEN													
YES	90 90%	82 82%	92 92%	79 79%	82 82%	89 89%	84 84%	78 78%	85 85%	78 78%	84 84%	82 82%	224 81%
NO	10 10%	17 17%	8 8%	20 20%	18 18%	11 11%	16 16%	21 21%	14 14%	22 22%	16 16%	17 17%	49 18%
DKNA	0 0%	1 1%	0 0%	1 1%	0 0%	0 0%	0 0%	1 1%	1 1%	0 0%	0 0%	1 1%	2 1%
[9] YARD CARE													
SELF	76 84%	51 62%	73 79%	53 67%	71 87%	70 79%	63 75%	52 67%	50 59%	63 81%	64 76%	59 72%	163 73%
BOTH	4 4%	9 11%	8 9%	13 16%	4 5%	5 6%	12 14%	9 12%	12 14%	3 4%	7 8%	5 6%	25 11%
HIRE	8 9%	22 27%	11 12%	13 16%	7 9%	14 16%	9 11%	14 18%	21 25%	11 14%	13 15%	14 17%	35 16%
DKNA	2 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	3 4%	2 2%	1 1%	0 0%	4 5%	1 0%
[10a] CHEM FERT													
LOT	5 6%	1 1%	3 3%	2 3%	2 2%	3 3%	1 1%	0 0%	1 1%	2 3%	0 0%	1 1%	9 4%
MED	15 17%	9 11%	20 22%	9 11%	13 16%	12 13%	15 18%	11 14%	18 21%	11 14%	13 15%	12 15%	21 9%
LITTLE	28 31%	31 38%	34 37%	36 46%	31 38%	32 36%	33 39%	34 44%	34 40%	26 33%	33 39%	32 39%	85 38%
NEVER	39 43%	33 40%	32 35%	31 39%	36 44%	41 46%	32 38%	28 36%	29 34%	35 45%	32 38%	33 40%	100 45%
DKNA	3 3%	8 10%	3 3%	1 1%	0 0%	1 1%	3 4%	5 6%	3 4%	4 5%	6 7%	4 5%	9 4%
[10b] PESTICIDES													
LOT	2 2%	0 0%	0 0%	2 3%	0 0%	4 4%	3 4%	1 1%	4 5%	0 0%	1 1%	2 2%	1 0%
MED	8 9%	7 9%	6 7%	3 4%	6 7%	4 4%	6 7%	7 9%	6 7%	5 6%	6 7%	6 7%	11 5%
LITTLE	23 26%	20 24%	34 37%	23 29%	24 29%	26 29%	28 33%	20 26%	25 29%	26 33%	27 32%	25 30%	70 31%
NEVER	54 60%	49 60%	49 53%	48 61%	51 62%	54 61%	46 55%	45 58%	45 53%	44 56%	45 54%	45 55%	133 59%
DKNA	3 3%	6 7%	3 3%	3 4%	1 1%	1 1%	1 1%	5 6%	5 6%	3 4%	5 6%	4 5%	9 4%
[10c] WEED KILLER													
LOT	2 2%	2 2%	6 7%	3 4%	3 4%	5 6%	1 1%	1 1%	3 4%	4 5%	2 2%	2 2%	7 3%
MED	19 21%	16 20%	23 25%	10 13%	18 22%	7 8%	13 15%	12 15%	14 16%	12 15%	14 17%	11 13%	32 14%
LITTLE	35 39%	25 30%	35 38%	31 39%	37 45%	37 42%	37 44%	28 36%	30 35%	31 40%	29 35%	40 49%	98 44%
NEVER	31 34%	32 39%	26 28%	34 43%	24 29%	39 44%	30 36%	32 41%	31 36%	27 35%	35 42%	25 30%	80 36%
DKNA	3 3%	7 9%	2 2%	1 1%	0 0%	1 1%	3 4%	5 6%	7 8%	4 5%	4 5%	4 5%	7 3%
[10d] ORG FERT													
LOT	6 7%	4 5%	13 14%	6 8%	9 11%	13 15%	5 6%	1 1%	4 5%	2 3%	5 6%	3 4%	23 10%
MED	21 23%	16 20%	18 20%	18 23%	19 23%	16 18%	18 21%	12 15%	17 20%	22 28%	11 13%	15 18%	48 21%
LITTLE	25 28%	18 22%	27 29%	19 24%	24 29%	31 35%	28 33%	24 31%	26 31%	18 23%	27 32%	29 35%	54 24%
NEVER	35 39%	36 44%	32 35%	32 41%	28 34%	27 30%	29 35%	36 46%	29 34%	29 37%	34 40%	30 37%	87 39%
DKNA	3 3%	8 10%	2 2%	4 5%	2 2%	2 2%	4 5%	5 6%	9 11%	7 9%	7 8%	5 6%	12 5%
[10e] WATERING													
LOT	13 14%	18 22%	22 24%	18 23%	21 26%	15 17%	18 21%	16 21%	16 19%	13 17%	13 15%	13 16%	51 23%
MED	35 39%	28 34%	43 47%	32 41%	37 45%	37 42%	33 39%	27 35%	42 49%	26 33%	29 35%	38 46%	90 40%
LITTLE	30 33%	25 30%	18 20%	20 25%	20 24%	28 31%	28 33%	23 29%	22 26%	35 45%	35 42%	21 26%	60 27%
NEVER	10 11%	9 11%	9 10%	8 10%	4 5%	8 9%	4 5%	11 14%	2 2%	4 5%	7 8%	8 10%	19 8%
DKNA	2 2%	2 2%	0 0%	1 1%	0 0%	1 1%	1 1%	1 1%	3 4%	0 0%	0 0%	2 2%	4 2%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[q11.1] SWEEP													
yes	40 44%	31 38%	48 52%	50 63%	41 50%	48 54%	43 51%	43 55%	50 59%	41 53%	38 45%	36 44%	134 60%
no	50 56%	51 62%	44 48%	29 37%	41 50%	41 46%	41 49%	35 45%	35 41%	37 47%	46 55%	46 56%	90 40%
[q11.3]HOSE DOWN													
yes	12 13%	18 22%	20 22%	13 16%	12 15%	17 19%	20 24%	19 24%	10 12%	16 21%	11 13%	24 29%	50 22%
no	78 87%	64 78%	72 78%	66 84%	70 85%	72 81%	64 76%	59 76%	75 88%	62 79%	73 87%	58 71%	174 78%
[q11.4]PRESSURE WASH													
yes	18 20%	15 18%	12 13%	14 18%	12 15%	18 20%	14 17%	13 17%	10 12%	7 9%	17 20%	15 18%	36 16%
no	72 80%	67 82%	80 87%	65 82%	70 85%	71 80%	70 83%	65 83%	75 88%	71 91%	67 80%	67 82%	188 84%
[q11.2] USE BLOWER													
yes	26 29%	26 32%	19 21%	13 16%	18 22%	25 28%	28 33%	17 22%	28 33%	27 35%	26 31%	17 21%	40 18%
no	64 71%	56 68%	73 79%	66 84%	64 78%	64 72%	56 67%	61 78%	57 67%	51 65%	58 69%	65 79%	184 82%
[q8.5]USE SOAP/ CLEANSER													
yes	3 3%	3 4%	2 2%	1 1%	4 5%	4 4%	6 7%	0 0%	0 0%	2 3%	1 1%	0 0%	9 4%
no	87 97%	79 96%	90 98%	78 99%	78 95%	85 96%	78 93%	78 100	85 100	76 97%	83 99%	82 100	215 96%
[q11.7]DONT CLEAN													
dont clean	9 10%	2 2%	5 5%	4 5%	7 9%	5 6%	5 6%	4 5%	3 4%	3 4%	1 1%	5 6%	17 8%
clean	81 90%	80 98%	87 95%	75 95%	75 91%	84 94%	79 94%	74 95%	82 96%	75 96%	83 99%	77 94%	207 92%
[q11.9]DK ON CLEANING													
no answer	2 2%	3 4%	1 1%	3 4%	4 5%	1 1%	0 0%	2 3%	0 0%	0 0%	3 4%	1 1%	9 4%
answered	88 98%	79 96%	91 99%	76 96%	78 95%	88 99%	84 100	76 97%	85 100	78 100	81 96%	81 99%	215 96%
USE WATER NET													
yes	31 34%	33 40%	30 33%	23 29%	23 28%	31 35%	31 37%	29 37%	17 20%	22 28%	28 33%	36 44%	80 36%
no	57 63%	46 56%	61 66%	53 67%	55 67%	57 64%	53 63%	47 60%	68 80%	56 72%	53 63%	45 55%	135 60%
dkna	2 2%	3 4%	1 1%	3 4%	4 5%	1 1%	0 0%	2 3%	0 0%	0 0%	3 4%	1 1%	9 4%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[12] HAVE DOG													
YES	48 48%	38 38%	42 42%	35 35%	41 41%	46 46%	36 36%	34 34%	32 32%	36 36%	38 38%	29 29%	105 38%
NO	52 52%	62 62%	58 58%	65 65%	59 59%	54 54%	64 64%	66 66%	68 68%	64 64%	62 62%	71 71%	170 62%
[13] WASTE ON WALK													
ALWAYS PICK UP	25 52%	26 68%	21 50%	22 63%	25 61%	25 54%	20 56%	23 68%	27 84%	25 69%	25 66%	19 66%	75 71%
MOSTLY PICK UP	7 15%	6 16%	10 24%	6 17%	7 17%	8 17%	5 14%	7 21%	3 9%	4 11%	5 13%	6 21%	15 14%
MOST LEFT	3 6%	1 3%	2 5%	3 9%	2 5%	4 9%	7 19%	1 3%	0 0%	0 0%	3 8%	0 0%	6 6%
ALWAYS LEFT	7 15%	1 3%	2 5%	1 3%	2 5%	2 4%	2 6%	3 9%	0 0%	2 6%	0 0%	2 7%	1 1%
DONT WALK DOG	6 13%	4 11%	7 17%	3 9%	5 12%	7 15%	2 6%	0 0%	2 6%	5 14%	5 13%	1 3%	8 8%
DKNA	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 3%	0 0%
[14] WASTE AT HOME													
Left on ground	12 25%	7 18%	6 14%	6 17%	2 5%	6 13%	6 17%	4 12%	2 6%	6 17%	3 8%	4 14%	10 10%
cleaned daily	19 40%	19 50%	15 36%	17 49%	20 49%	27 59%	15 42%	17 50%	18 56%	21 58%	14 37%	15 52%	51 49%
weekly	7 15%	10 26%	16 38%	7 20%	11 27%	7 15%	11 31%	9 26%	10 31%	7 19%	16 42%	7 24%	32 30%
every 2 weeks	5 10%	1 3%	2 5%	2 6%	6 15%	2 4%	2 6%	1 3%	1 3%	0 0%	3 8%	2 7%	6 6%
1x mth or less	5 10%	1 3%	1 2%	1 3%	2 5%	4 9%	1 3%	2 6%	1 3%	1 3%	1 3%	1 3%	3 3%
dkna	0 0%	0 0%	2 5%	2 6%	0 0%	0 0%	1 3%	1 3%	0 0%	1 3%	1 3%	0 0%	3 3%
[14.1] DOG WASTE DISPOSAL													
in trash	29 60%	29 76%	24 57%	23 66%	35 85%	28 61%	20 56%	27 79%	27 84%	25 69%	22 58%	22 76%	83 79%
compost	6 13%	4 11%	11 26%	7 20%	4 10%	10 22%	6 17%	4 12%	2 6%	5 14%	9 24%	5 17%	13 12%
toilet	0 0%	0 0%	0 0%	2 6%	1 2%	2 4%	2 6%	1 3%	3 9%	3 8%	1 3%	1 3%	3 3%
tossed	1 2%	0 0%	1 2%	0 0%	0 0%	1 2%	2 6%	0 0%	0 0%	1 3%	2 5%	0 0%	2 2%
dont pick up	11 23%	5 13%	4 10%	2 6%	1 2%	3 7%	4 11%	2 6%	0 0%	1 3%	2 5%	1 3%	3 3%
other	0 0%	0 0%	2 5%	0 0%	0 0%	1 2%	1 3%	0 0%	0 0%	0 0%	1 3%	0 0%	0 0%
dkna	1 2%	0 0%	0 0%	1 3%	0 0%	1 2%	1 3%	0 0%	0 0%	1 3%	1 3%	0 0%	1 1%
[14.2] WHY NOT BAG													
easier	0 0%	2 50%	1 7%	1 10%	1 20%	1 7%	0 0%	0 0%	0 0%	0 0%	3 23%	1 17%	3 16%
habit	0 0%	0 0%	3 21%	1 10%	0 0%	1 7%	0 0%	1 20%	1 20%	1 11%	1 8%	1 17%	2 11%
concern for workers	1 14%	1 25%	0 0%	0 0%	0 0%	0 0%	1 9%	0 0%	1 20%	0 0%	2 15%	0 0%	1 5%
less garbage/ landfill	0 0%	0 0%	0 0%	0 0%	1 20%	0 0%	1 9%	0 0%	0 0%	0 0%	1 8%	1 17%	0 0%
odor	0 0%	0 0%	3 21%	0 0%	0 0%	1 7%	1 9%	0 0%	1 20%	0 0%	2 15%	1 17%	0 0%
have enough area	2 29%	0 0%	2 14%	1 10%	0 0%	1 7%	3 27%	0 0%	0 0%	1 11%	0 0%	0 0%	1 5%
use for fert/compost	1 14%	0 0%	2 14%	1 10%	1 20%	3 21%	2 18%	1 20%	0 0%	1 11%	0 0%	1 17%	1 5%
no harm leaving	0 0%	1 25%	0 0%	1 10%	0 0%	0 0%	1 9%	0 0%	0 0%	0 0%	0 0%	0 0%	4 21%
dont want touch	1 14%	0 0%	0 0%	0 0%	0 0%	0 0%	1 9%	1 20%	0 0%	0 0%	0 0%	0 0%	1 5%
dkna	2 29%	0 0%	3 21%	5 50%	2 40%	7 50%	1 9%	2 40%	2 40%	6 67%	4 31%	1 17%	6 32%

	COUNCIL DISTRICT														CITY/TOWN													
	1		2		3		4		5		6		7		FIFE		FIR-CREST		MILTON		PUYAL-LUP		SUMNER		TACOMA	
TOTAL																										
(N=)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	275	100
[15] HOME WASH																										
Yes	50	50%	35	35%	46	46%	29	29%	36	36%	36	36%	49	49%	30	30%	32	32%	43	43%	36	36%	32	32%	95	35%
No	47	47%	59	59%	51	51%	58	58%	56	56%	57	57%	41	41%	60	60%	61	61%	49	49%	58	58%	59	59%	148	54%
Dont wash	1	1%	2	2%	2	2%	4	4%	5	5%	4	4%	5	5%	4	4%	4	4%	3	3%	0	0%	4	4%	13	5%
No car	2	2%	2	2%	1	1%	9	9%	2	2%	1	1%	1	1%	5	5%	3	3%	5	5%	4	4%	5	5%	16	6%
DKNA	0	0%	2	2%	0	0%	0	0%	1	1%	2	2%	4	4%	1	1%	0	0%	0	0%	2	2%	0	0%	3	1%
[15] COMM CAR WASH																										
Yes	48	48%	56	56%	53	53%	57	57%	58	58%	54	54%	45	45%	64	64%	67	67%	51	51%	61	61%	62	62%	153	56%
No	49	49%	38	38%	44	44%	30	30%	34	34%	39	39%	45	45%	26	26%	26	26%	41	41%	33	33%	29	29%	90	33%
Dont wash	1	1%	2	2%	2	2%	4	4%	5	5%	4	4%	5	5%	4	4%	4	4%	3	3%	0	0%	4	4%	13	5%
No car	2	2%	2	2%	1	1%	9	9%	2	2%	1	1%	1	1%	5	5%	3	3%	5	5%	4	4%	5	5%	16	6%
DKNA	0	0%	2	2%	0	0%	0	0%	1	1%	2	2%	4	4%	1	1%	0	0%	0	0%	2	2%	0	0%	3	1%
[15] CHARITY CAR WASH																										
Yes	5	5%	7	7%	4	4%	5	5%	3	3%	5	5%	4	4%	4	4%	6	6%	6	6%	5	5%	4	4%	15	5%
No	92	92%	87	87%	93	93%	82	82%	89	89%	88	88%	86	86%	86	86%	87	87%	86	86%	89	89%	87	87%	228	83%
Dont wash	1	1%	2	2%	2	2%	4	4%	5	5%	4	4%	5	5%	4	4%	4	4%	3	3%	0	0%	4	4%	13	5%
No car	2	2%	2	2%	1	1%	9	9%	2	2%	1	1%	1	1%	5	5%	3	3%	5	5%	4	4%	5	5%	16	6%
DKNA	0	0%	2	2%	0	0%	0	0%	1	1%	2	2%	4	4%	1	1%	0	0%	0	0%	2	2%	0	0%	3	1%
[15.1] WATER GOES																										
storm system	12	24%	15	43%	19	41%	9	32%	10	28%	15	42%	13	27%	10	33%	11	34%	11	26%	12	33%	13	41%	33	35%
street	6	12%	6	17%	7	15%	2	7%	5	14%	4	11%	8	17%	6	20%	8	25%	7	16%	3	8%	4	13%	16	17%
dirt/ grass	31	62%	14	40%	19	41%	16	57%	19	53%	17	47%	24	50%	13	43%	11	34%	23	53%	19	53%	14	44%	43	46%
other	0	0%	0	0%	0	0%	1	4%	0	0%	0	0%	1	2%	1	3%	0	0%	0	0%	0	0%	1	3%	1	1%
dkna	1	2%	0	0%	1	2%	0	0%	2	6%	0	0%	2	4%	0	0%	2	6%	2	5%	2	6%	0	0%	1	1%
[16] CAR FLUID CARE																										
home	16	16%	7	7%	14	14%	12	13%	14	14%	11	11%	14	14%	11	12%	14	14%	12	13%	13	14%	19	20%	36	14%
shop	75	77%	83	85%	76	77%	75	82%	76	78%	83	84%	82	83%	76	80%	79	81%	72	76%	78	81%	68	72%	200	77%
both	6	6%	8	8%	9	9%	3	3%	6	6%	4	4%	1	1%	5	5%	4	4%	11	12%	5	5%	8	8%	21	8%
dkna	1	1%	0	0%	0	0%	1	1%	2	2%	1	1%	2	2%	3	3%	0	0%	0	0%	0	0%	0	0%	2	1%
[16.1] FLUID DISPOSAL																										
trash	2	9%	0	0%	0	0%	0	0%	1	5%	1	7%	2	13%	4	25%	2	11%	1	4%	1	6%	2	7%	5	9%
inside drain	0	0%	2	13%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	11%	0	0%	0	0%	1	4%	2	4%
outside drain	1	5%	1	7%	1	4%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	4%	0	0%	0	0%	1	2%
ground	0	0%	0	0%	0	0%	0	0%	1	5%	0	0%	0	0%	0	0%	1	6%	0	0%	0	0%	0	0%	0	0%
kept	0	0%	0	0%	0	0%	0	0%	0	0%	1	7%	0	0%	2	13%	1	6%	0	0%	0	0%	0	0%	1	2%
collection	19	86%	12	80%	20	87%	15	100	18	90%	13	87%	13	87%	10	63%	12	67%	21	91%	16	89%	24	89%	46	81%
other	0	0%	0	0%	1	4%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%
dkna	0	0%	0	0%	1	4%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	6%	0	0%	1	2%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[16.2] WHY NOT COLLECTION													
easier	2 67%	1 33%	0 0%	0 0%	1 50%	0 0%	1 50%	1 17%	5 83%	0 0%	0 0%	1 33%	3 27%
habit	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	3 50%	0 0%	0 0%	0 0%	0 0%	2 18%
pickup/other disp avail	1 33%	1 33%	0 0%	0 0%	0 0%	1 100	0 0%	0 0%	0 0%	0 0%	0 0%	1 33%	1 9%
use elsewhere	0 0%	0 0%	1 33%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
not large amount	0 0%	0 0%	1 33%	0 0%	0 0%	0 0%	1 50%	0 0%	0 0%	1 50%	0 0%	0 0%	1 9%
6	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	2 33%	0 0%	0 0%	0 0%	0 0%	0 0%
dkna	0 0%	0 0%	1 33%	0 0%	1 50%	0 0%	0 0%	0 0%	1 17%	1 50%	2 100	1 33%	4 36%
[17] FLUID SPILL													
hose it off	15 15%	19 19%	16 16%	7 8%	12 12%	14 14%	11 11%	15 16%	10 10%	8 8%	9 9%	12 13%	34 13%
soak up	63 64%	56 57%	60 61%	55 60%	69 70%	69 70%	64 65%	57 60%	64 66%	67 71%	72 75%	61 64%	162 63%
nothing	9 9%	14 14%	7 7%	16 18%	5 5%	8 8%	12 12%	8 8%	7 7%	10 11%	5 5%	6 6%	30 12%
depends	6 6%	4 4%	9 9%	7 8%	9 9%	3 3%	2 2%	5 5%	8 8%	5 5%	2 2%	9 9%	21 8%
dkna	5 5%	5 5%	7 7%	6 7%	3 3%	5 5%	10 10%	10 11%	8 8%	5 5%	8 8%	7 7%	12 5%
[18] ATTITUDE													
make sacrifices	51 51%	46 46%	29 29%	52 52%	35 35%	46 46%	43 43%	43 43%	35 35%	41 41%	49 49%	39 39%	124 45%
easy changes	36 36%	38 38%	47 47%	38 38%	46 46%	35 35%	42 42%	43 43%	44 44%	41 41%	35 35%	43 43%	105 38%
make no diff	10 10%	10 10%	20 20%	8 8%	13 13%	15 15%	13 13%	11 11%	17 17%	16 16%	10 10%	15 15%	33 12%
other	2 2%	0 0%	1 1%	2 2%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	1 1%	2 1%
8	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
dkna	1 1%	6 6%	3 3%	0 0%	6 6%	3 3%	2 2%	3 3%	4 4%	2 2%	5 5%	2 2%	11 4%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
PROT WILDLIFE													
0-4	1 1%	2 2%	5 5%	4 4%	2 2%	1 1%	4 4%	5 5%	1 1%	0 0%	2 2%	5 5%	7 3%
5-7	12 12%	14 14%	11 11%	12 12%	13 13%	14 14%	17 17%	12 12%	14 14%	18 18%	11 11%	16 16%	31 11%
8 or 9	31 31%	25 25%	21 21%	22 22%	26 26%	26 26%	20 20%	24 24%	34 34%	22 22%	27 27%	22 22%	66 24%
10	56 56%	56 56%	62 62%	62 62%	58 58%	58 58%	59 59%	57 57%	51 51%	60 60%	59 59%	57 57%	170 62%
dkna	0 0%	3 3%	1 1%	0 0%	1 1%	1 1%	0 0%	2 2%	0 0%	0 0%	1 1%	0 0%	1 0%
PROTECT FOOD & D WATER													
0-4	0 0%	0 0%	0 0%	2 2%	2 2%	1 1%	1 1%	1 1%	1 1%	0 0%	0 0%	0 0%	5 2%
5-7	4 4%	4 4%	6 6%	5 5%	3 3%	5 5%	5 5%	2 2%	4 4%	5 5%	3 3%	6 6%	7 3%
8 or 9	18 18%	13 13%	12 12%	18 18%	13 13%	10 10%	18 18%	19 19%	18 18%	9 9%	12 12%	17 17%	36 13%
10	78 78%	82 82%	80 80%	75 75%	82 82%	84 84%	76 76%	77 77%	77 77%	85 85%	84 84%	77 77%	227 83%
dkna	0 0%	1 1%	2 2%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	1 1%	1 1%	0 0%	0 0%
FUTURE GEN													
0-4	0 0%	2 2%	2 2%	3 3%	2 2%	3 3%	1 1%	1 1%	2 2%	1 1%	2 2%	3 3%	5 2%
5-7	7 7%	5 5%	8 8%	6 6%	6 6%	8 8%	8 8%	8 8%	5 5%	10 10%	6 6%	10 10%	15 5%
8 or 9	29 29%	28 28%	17 17%	20 20%	19 19%	18 18%	22 22%	19 19%	28 28%	20 20%	21 21%	25 25%	62 23%
10	64 64%	62 62%	71 71%	71 71%	73 73%	71 71%	69 69%	70 70%	65 65%	69 69%	69 69%	62 62%	193 70%
dkna	0 0%	3 3%	2 2%	0 0%	0 0%	0 0%	0 0%	2 2%	0 0%	0 0%	2 2%	0 0%	0 0%
RECREATION													
0-4	2 2%	1 1%	4 4%	5 5%	2 2%	5 5%	1 1%	1 1%	2 2%	3 3%	0 0%	6 6%	12 4%
5-7	17 17%	15 15%	12 12%	22 22%	14 14%	14 14%	17 17%	18 18%	13 13%	15 15%	21 21%	19 19%	48 17%
8 or 9	31 31%	30 30%	21 21%	26 26%	31 31%	26 26%	26 26%	27 27%	33 33%	28 28%	26 26%	28 28%	80 29%
10	50 50%	49 49%	62 62%	47 47%	53 53%	55 55%	56 56%	53 53%	52 52%	54 54%	49 49%	47 47%	134 49%
dkna	0 0%	5 5%	1 1%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	4 4%	0 0%	1 0%
[20] NUMBER ONE REASON													
fish/ wildlife	10 10%	10 10%	8 8%	13 13%	7 7%	9 9%	10 10%	8 8%	6 6%	11 11%	13 13%	7 7%	30 11%
peoples health	62 62%	63 63%	62 62%	53 53%	68 68%	54 54%	51 51%	63 63%	63 63%	68 68%	56 56%	62 62%	166 60%
future gen	21 21%	21 21%	21 21%	23 23%	21 21%	31 31%	28 28%	21 21%	25 25%	15 15%	25 25%	26 26%	64 23%
recreation	3 3%	0 0%	6 6%	4 4%	2 2%	0 0%	2 2%	5 5%	3 3%	1 1%	2 2%	5 5%	5 2%
other	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	0 0%	0 0%
all	0 0%	1 1%	1 1%	3 3%	1 1%	1 1%	1 1%	0 0%	0 0%	0 0%	1 1%	0 0%	4 1%
none	1 1%	0 0%	0 0%	0 0%	0 0%	1 1%	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
dkna	3 3%	5 5%	2 2%	4 4%	1 1%	4 4%	7 7%	3 3%	2 2%	5 5%	3 3%	0 0%	6 2%
[21] DIRECTLY AFFECTED													
YES	26 26%	28 28%	20 20%	27 27%	31 31%	19 19%	22 22%	25 25%	25 25%	26 26%	20 20%	19 19%	80 29%
NO	71 71%	68 68%	77 77%	69 69%	63 63%	77 77%	74 74%	70 70%	74 74%	73 73%	78 78%	78 78%	187 68%
DKNA	3 3%	4 4%	3 3%	4 4%	6 6%	4 4%	4 4%	5 5%	1 1%	1 1%	2 2%	3 3%	8 3%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[22.1] WATER PROT AND MONITOR													
YES	21 53%	14 50%	35 56%	6 75%	16 41%	12 50%	16 36%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
NO	6 15%	6 21%	6 10%	2 25%	4 10%	3 13%	8 18%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
DKNA	13 33%	8 29%	22 35%	0 0%	19 49%	9 38%	20 45%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
[22.2] SALMON RECOVERY													
YES	18 45%	12 43%	37 59%	5 63%	17 44%	16 67%	18 41%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
NO	7 18%	6 21%	7 11%	2 25%	6 15%	1 4%	10 23%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
DKNA	15 38%	10 36%	19 30%	1 13%	16 41%	7 29%	16 36%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
[22.3] FLOODS													
YES	24 60%	17 61%	35 56%	5 63%	23 59%	13 54%	20 45%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
NO	9 23%	4 14%	12 19%	2 25%	4 10%	3 13%	8 18%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
DKNA	7 18%	7 25%	16 25%	1 13%	12 31%	8 33%	16 36%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
[22.4] DRAINAGE													
YES	25 63%	11 39%	37 59%	7 88%	23 59%	15 63%	19 43%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
NO	5 13%	9 32%	9 14%	1 13%	2 5%	2 8%	8 18%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
DKNA	10 25%	8 29%	17 27%	0 0%	14 36%	7 29%	17 39%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
[23] ADD FEES													
str sup	8 20%	5 18%	16 25%	2 25%	7 18%	3 13%	10 23%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
sw sup	16 40%	12 43%	20 32%	2 25%	19 49%	13 54%	16 36%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
sw opp	7 18%	6 21%	6 10%	1 13%	5 13%	4 17%	5 11%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
str opp	5 13%	4 14%	17 27%	0 0%	5 13%	1 4%	10 23%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
dkna	4 10%	1 4%	4 6%	3 38%	3 8%	3 13%	3 7%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
[24.1] RAIN GARDENS													
familiar	8 13%	7 10%	5 14%	21 23%	3 5%	8 11%	5 9%	8 8%	12 12%	10 10%	12 12%	9 9%	46 17%
heard	13 22%	15 21%	10 27%	24 26%	12 20%	12 16%	12 21%	19 19%	23 23%	21 21%	22 22%	28 28%	55 20%
never	34 57%	41 57%	19 51%	38 41%	44 72%	48 63%	33 59%	69 69%	63 63%	64 64%	60 60%	60 60%	153 56%
na	5 8%	9 13%	3 8%	9 10%	2 3%	8 11%	6 11%	4 4%	2 2%	5 5%	6 6%	3 3%	21 8%
[24.2] NATURAL YARD CARE													
familiar	17 28%	19 26%	7 19%	27 29%	12 20%	19 25%	16 29%	26 26%	28 28%	14 14%	16 16%	25 25%	85 31%
heard	29 48%	23 32%	16 43%	39 42%	24 39%	32 42%	20 36%	30 30%	39 39%	40 40%	39 39%	35 35%	99 36%
never	10 17%	22 31%	11 30%	20 22%	22 36%	18 24%	16 29%	42 42%	32 32%	41 41%	39 39%	37 37%	72 26%
na	4 7%	8 11%	3 8%	6 7%	3 5%	7 9%	4 7%	2 2%	1 1%	5 5%	6 6%	3 3%	19 7%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[25] AGE													
18-35	12 12%	10 10%	13 13%	9 9%	12 12%	12 12%	7 7%	12 12%	7 7%	7 7%	10 10%	7 7%	37 13%
36-50	19 19%	20 20%	27 27%	25 25%	23 23%	23 23%	15 15%	27 27%	15 15%	19 19%	24 24%	13 13%	67 24%
51-64	39 39%	37 37%	28 28%	27 27%	30 30%	23 23%	36 36%	21 21%	16 16%	26 26%	33 33%	35 35%	77 28%
65+	29 29%	31 31%	30 30%	39 39%	35 35%	41 41%	40 40%	38 38%	58 58%	44 44%	30 30%	42 42%	90 33%
na	1 1%	2 2%	2 2%	0 0%	0 0%	1 1%	2 2%	2 2%	4 4%	4 4%	3 3%	3 3%	4 1%
[26] EDUCATION													
high school	29 29%	26 26%	22 22%	20 20%	26 26%	18 18%	15 15%	23 23%	20 20%	26 26%	21 21%	29 29%	59 21%
bus/voc school	2 2%	6 6%	7 7%	3 3%	4 4%	8 8%	5 5%	8 8%	9 9%	11 11%	4 4%	7 7%	11 4%
some college	28 28%	26 26%	35 35%	29 29%	38 38%	27 27%	23 23%	29 29%	31 31%	33 33%	33 33%	26 26%	88 32%
coll deg	30 30%	31 31%	26 26%	25 25%	24 24%	34 34%	42 42%	25 25%	29 29%	24 24%	31 31%	28 28%	74 27%
grad/ prof	10 10%	9 9%	8 8%	23 23%	5 5%	13 13%	12 12%	10 10%	10 10%	4 4%	9 9%	8 8%	38 14%
dk	1 1%	2 2%	2 2%	0 0%	3 3%	0 0%	3 3%	5 5%	1 1%	2 2%	2 2%	2 2%	5 2%
[27] OWN/RENT													
own	91 91%	79 79%	85 85%	75 75%	81 81%	84 84%	88 88%	71 71%	85 85%	76 76%	79 79%	73 73%	218 79%
rent	5 5%	17 17%	12 12%	21 21%	16 16%	13 13%	10 10%	27 27%	12 12%	22 22%	19 19%	26 26%	48 17%
na	4 4%	4 4%	3 3%	4 4%	3 3%	3 3%	2 2%	2 2%	3 3%	2 2%	2 2%	1 1%	9 3%
[28] SEWER TYPE													
septic	58 58%	30 30%	68 68%	7 7%	25 25%	20 20%	55 55%	20 20%	6 6%	9 9%	19 19%	14 14%	24 9%
sewer line	41 41%	66 66%	27 27%	87 87%	71 71%	75 75%	42 42%	69 69%	90 90%	86 86%	75 75%	79 79%	241 88%
both	0 0%	0 0%	1 1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
dkna	1 1%	4 4%	4 4%	6 6%	4 4%	5 5%	3 3%	11 11%	4 4%	5 5%	6 6%	7 7%	10 4%
[29] HOME STYLE													
single on lot	85 85%	82 82%	86 86%	78 78%	82 82%	85 85%	89 89%	66 66%	85 85%	73 73%	77 77%	72 72%	220 80%
multi on lot	5 5%	5 5%	3 3%	2 2%	3 3%	2 2%	4 4%	4 4%	5 5%	4 4%	4 4%	6 6%	11 4%
mobile	5 5%	2 2%	2 2%	0 0%	2 2%	3 3%	2 2%	6 6%	1 1%	0 0%	2 2%	5 5%	2 1%
apt/ condo	4 4%	10 10%	7 7%	20 20%	13 13%	10 10%	4 4%	23 23%	8 8%	21 21%	14 14%	16 16%	42 15%
na	1 1%	1 1%	2 2%	0 0%	0 0%	0 0%	1 1%	1 1%	1 1%	2 2%	3 3%	1 1%	0 0%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
[30] LOT SIZE													
half acre or less	48 50%	62 69%	56 60%	70 88%	72 83%	58 64%	60 63%	60 78%	78 85%	53 67%	63 73%	60 71%	194 83%
half to 2 acres	28 29%	19 21%	20 22%	8 10%	11 13%	26 29%	24 25%	11 14%	11 12%	15 19%	13 15%	19 23%	32 14%
over 2 acres	16 17%	7 8%	13 14%	1 1%	3 3%	6 7%	11 11%	3 4%	1 1%	4 5%	7 8%	2 2%	4 2%
dkna	4 4%	2 2%	4 4%	1 1%	1 1%	0 0%	1 1%	3 4%	2 2%	7 9%	3 3%	3 4%	3 1%
[31] HOUSEHOLD													
single no kids	14 14%	24 24%	11 11%	27 27%	22 22%	19 19%	23 23%	28 28%	29 29%	30 30%	18 18%	32 32%	59 21%
couple no kids	40 40%	43 43%	45 45%	46 46%	51 51%	43 43%	47 47%	39 39%	45 45%	33 33%	42 42%	45 45%	118 43%
single w kids	9 9%	7 7%	4 4%	3 3%	6 6%	7 7%	3 3%	5 5%	0 0%	7 7%	5 5%	3 3%	13 5%
couple w kids	36 36%	24 24%	38 38%	24 24%	20 20%	31 31%	23 23%	24 24%	23 23%	26 26%	34 34%	19 19%	81 29%
na	1 1%	2 2%	2 2%	0 0%	1 1%	0 0%	4 4%	4 4%	3 3%	4 4%	1 1%	1 1%	4 1%
[25] INCOME													
$25K or less	8 8%	5 5%	7 7%	14 14%	11 11%	13 13%	7 7%	7 7%	12 12%	17 17%	5 5%	12 12%	27 10%
$25K to $50K	12 12%	18 18%	26 26%	22 22%	31 31%	15 15%	26 26%	18 18%	19 19%	16 16%	14 14%	18 18%	65 24%
>$50K to $75K	17 17%	17 17%	7 7%	18 18%	14 14%	19 19%	21 21%	17 17%	20 20%	14 14%	11 11%	14 14%	46 17%
>$75K	19 19%	24 24%	31 31%	20 20%	11 11%	24 24%	19 19%	16 16%	19 19%	16 16%	26 26%	15 15%	52 19%
NA	44 44%	36 36%	29 29%	26 26%	33 33%	29 29%	27 27%	42 42%	30 30%	37 37%	44 44%	41 41%	85 31%
GENDER													
MALE	51 51%	48 48%	50 50%	50 50%	50 50%	47 47%	50 50%	49 49%	51 51%	48 48%	46 46%	51 51%	138 50%
FEMALE	49 49%	52 52%	50 50%	50 50%	50 50%	53 53%	50 50%	51 51%	49 49%	52 52%	54 54%	49 49%	137 50%

	COUNCIL DISTRICT							CITY/TOWN					
	1	2	3	4	5	6	7	FIFE	FIR-CREST	MILTON	PUYAL-LUP	SUMNER	TACOMA
TOTAL													
(N=)	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	100 100	275 100
NET OF YARD CHEMICAL USE													
none	23 26%	21 26%	14 15%	19 24%	18 22%	23 26%	15 18%	17 22%	16 19%	14 18%	21 25%	16 20%	51 23%
low	26 29%	24 29%	29 32%	32 41%	23 28%	32 36%	34 40%	31 40%	27 32%	27 35%	27 32%	31 38%	80 36%
medium	16 18%	14 17%	20 22%	13 16%	27 33%	18 20%	14 17%	11 14%	19 22%	19 24%	14 17%	15 18%	53 24%
heavy	25 28%	23 28%	29 32%	15 19%	14 17%	16 18%	21 25%	19 24%	23 27%	18 23%	22 26%	20 24%	40 18%
INDEX W/ WATERING IMPACT													
none	23 26%	21 26%	14 15%	19 24%	18 22%	23 26%	15 18%	17 22%	16 19%	14 18%	21 25%	16 20%	51 23%
low	21 23%	20 24%	25 27%	24 30%	22 27%	31 35%	25 30%	24 31%	19 22%	31 40%	26 31%	25 30%	66 29%
med	18 20%	19 23%	23 25%	22 28%	23 28%	18 20%	27 32%	18 23%	30 35%	21 27%	17 20%	24 29%	63 28%
high	28 31%	22 27%	30 33%	14 18%	19 23%	17 19%	17 20%	19 24%	20 24%	12 15%	20 24%	17 21%	44 20%
INDEX W/WATERING AND LOT SIZE													
none	23 26%	21 26%	14 16%	19 26%	18 23%	23 26%	15 18%	17 23%	16 20%	14 20%	21 26%	16 22%	51 24%
low	22 25%	19 24%	22 25%	23 31%	18 23%	33 38%	28 34%	24 33%	18 22%	24 34%	19 23%	21 29%	59 28%
med	21 24%	16 20%	29 33%	18 24%	21 26%	14 16%	23 28%	17 23%	23 28%	19 27%	19 23%	21 29%	53 25%
high	21 24%	24 30%	23 26%	14 19%	23 29%	17 20%	16 20%	15 21%	25 30%	14 20%	23 28%	15 21%	51 24%
ALWAYS PROPER W/ DOG WASTE													
yes	14 29%	16 42%	8 19%	12 34%	14 34%	14 30%	9 25%	13 38%	15 47%	12 33%	11 29%	9 31%	42 40%
no	34 71%	22 58%	34 81%	23 66%	27 66%	32 70%	27 75%	21 62%	17 53%	24 67%	27 71%	20 69%	63 60%
NET OF WASH WATER IN SYSTEM													
no	81 81%	79 79%	73 73%	89 89%	83 83%	81 81%	77 77%	84 84%	79 79%	80 80%	83 83%	83 83%	225 82%
yes	19 19%	21 21%	27 27%	11 11%	17 17%	19 19%	23 23%	16 16%	21 21%	20 20%	17 17%	17 17%	50 18%
NET OF FLUIDS NOT TO COLLECTION													
proper	97 97%	97 97%	97 97%	100 100	98 98%	98 98%	98 98%	94 94%	94 94%	98 98%	98 98%	97 97%	264 96%
improper	3 3%	3 3%	3 3%	0 0%	2 2%	2 2%	2 2%	6 6%	6 6%	2 2%	2 2%	3 3%	11 4%