
King County

Department of Natural Resources and Parks

Water Quality Survey

December 2003



Prepared for King County
by Evans/McDonough Company Inc.

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Methodology

This report is based on the findings of a telephone survey conducted December 8-10, 2003 by Evans/McDonough. Four hundred and three (403) King County residents were selected at random using a Random Digit Dial sample and interviewed by trained, professional telephone interviewers. Respondents were screened to make sure they were over 18 years old and lived in King County. The margin of error for the overall survey results is ± 5.0 percentage points at the 95% confidence level.

Research Design Summary

| | |
|----------------------------|--|
| #Interviews: | 403 |
| Interviewing Dates: | December 8-10, 2003 |
| Margin of Error: | ± 5.0 points at the 95% confidence level |
| Universe: | King County residents 18 years or older |

KEY FINDINGS

Over half of King County residents (55%) say some form of pollution is the most important environmental problem facing the region today.

A strong majority (92%) of respondents agree that garbage disposal, sewage treatment, recycling services and stormwater management help to protect the environment; just 5% do not agree and 3% are undecided.

Two-thirds (65%) of King County residents think that salmon populations in our region are at risk, and only 16% say they are not at risk. After being told that the salmon and bull trout are listed as endangered, 49% say that the county government is doing too little, and a third (33%) say the county is doing the right amount to bring them back from endangerment. Only 5% think the county is doing too much.

There has not been a dramatic shift in familiarity of services since last year, with at least three-fourths of King County residents familiar with most of the services the county provides. Familiarity with air quality (54%) continues to be the lowest of all the services tested.

All but 3% feel that protecting water quality in King County is important, and more than three-fourths (79%) of residents say it is “extremely important”. Those residents who feel protecting water quality is extremely important have increased fourteen points since the 2001 survey.

Almost all (94%) residents agree that there is a direct link between water quality and the health of salmon.

Over half of King County residents agree that water quality is improving in area lakes, rivers, and streams (54%) and in Puget Sound (52%). Residents remain divided, however, over the job that King County is doing protecting water quality (54% positive / 40% negative).

Residents continue to give King County the highest ratings in the area of recycling services and education (73 positive%), garbage disposal services (68% positive), and sewage treatment (66%).

When asked how the county can improve its efforts to protect water quality, the top response continues to be “education/increase awareness” and most residents (84%) agree that water quality education is a good use of public money.

When read response choices, three-quarters of residents (75%) can successfully identify what a watershed is (9% increase since 2001), but most do not know which watershed they live in.

Awareness that the County is running out of sewage treatment capacity and planning for new facilities is at an all-time high of 53%.

Following a brief description of biosolids, a plurality (40%) of respondents think that the best use of biosolids and compost is for agriculture and forestry purposes.

KEY FINDINGS CONTINUED

After being informed about the difference between treated wastewater and reclaimed water, 40% of residents think that reclaimed wastewater should be used for watering parks and golf courses among the choices given. In a follow up question, 80% agree that reclaimed wastewater should be required to be used for watering parks and golf courses, if it is reasonably available.

Just under a third (31%) of King County residents report having bought pesticides in the past year. In addition, 58% say that they have decided to stop using pesticides in their yard.

In general, a strong majority (72%) of residents in King County claim to dispose of their fats, oils, and grease in the garbage. Nine out of ten residents (89%) are aware of the damage that can be caused by pouring cooking oils and grease down the drain.

Half (50%) of residents channel runoff from rain into their yards, 21% connect the drain spout directly to the sewer, and an additional 13% into the street. Most residents (61%) are likely to pay for repairing or replacing the sewer line that serves their property if it is faulty.

SUMMARY OF FINDINGS

General Environmental Issues

Most Important Environmental Issue

Over half of King County residents (55%) say some form of pollution is the most important environmental problem facing the region today.

- Water pollution (26%); Air pollution (23%); and Vehicle emissions (6%)

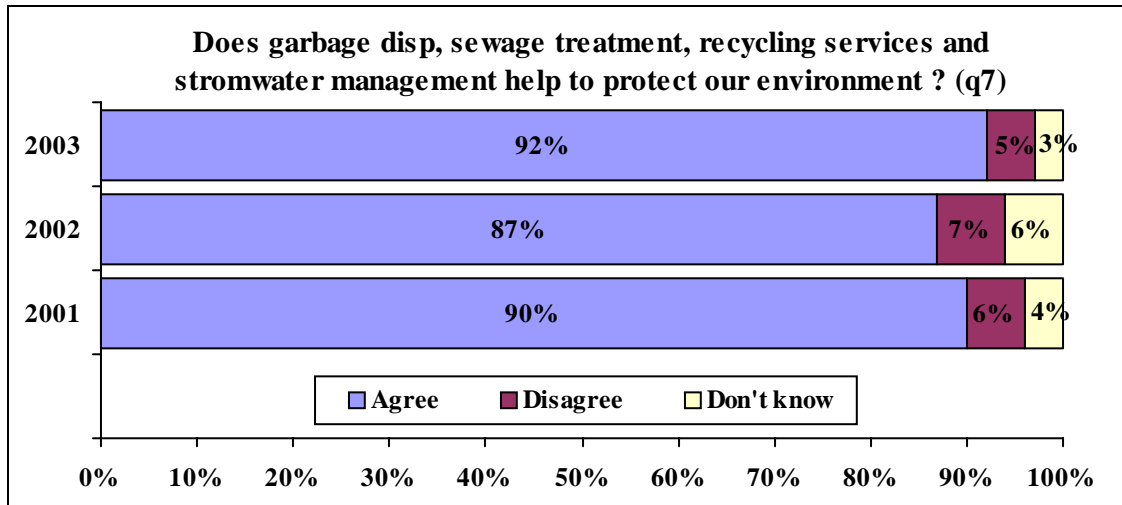
What do you think is the most important environmental issue facing our region today?

| <u>Issue</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|-----------------------------|-------------|-------------|-------------|-------------|
| Water pollution/quality | 17 | 23 | 22 | 26 |
| Air pollution | 38 | 20 | 19 | 23 |
| Growth/Population growth | 8 | 16 | 29 | 12 |
| Vehicle Emissions | -- | -- | -- | 6 |
| Deforestation | 5 | 3 | 4 | 5 |
| Global warming/Ozone | 5 | 3 | 6 | 4 |
| Salmon | 9 | 5 | 3 | 2 |
| Toxic waste | 2 | 2 | 3 | 1 |
| Energy/Power Conservation | -- | -- | -- | 1 |
| Garbage/Landfills/Trash | -- | -- | -- | 1 |
| Recycling | -- | -- | -- | 1 |
| Water Shortage/Availability | -- | -- | -- | 1 |
| Traffic/Transportation | -- | 7 | 4 | -- |
| Anthrax | -- | 1 | 1 | -- |
| War/terrorism | -- | 1 | -- | -- |
| None/Other/DK/Refused | 17 | 19 | 10 | 16 |

- While growth/population growth decreased significantly for the first time since 2000, other mentions have surfaced for the first time. Those include vehicle emissions (6%), energy/power conservation, garbage, recycling, and water shortage (all 1%). Various forms of pollution continue to be the top of mind most important problem.
- Results by geographic location are similar to the overall with the excluding East King County in which 38% stated "Growth/Population growth" as the most important environmental problem facing the region today.

Protecting the Environment

A strong majority (92%) of respondents agree that garbage disposal, sewage treatment, recycling services and stormwater management help to protect the environment; just 5% do not think this and 3% are undecided.



- These findings are statistically identical to the results from the previous two surveys.

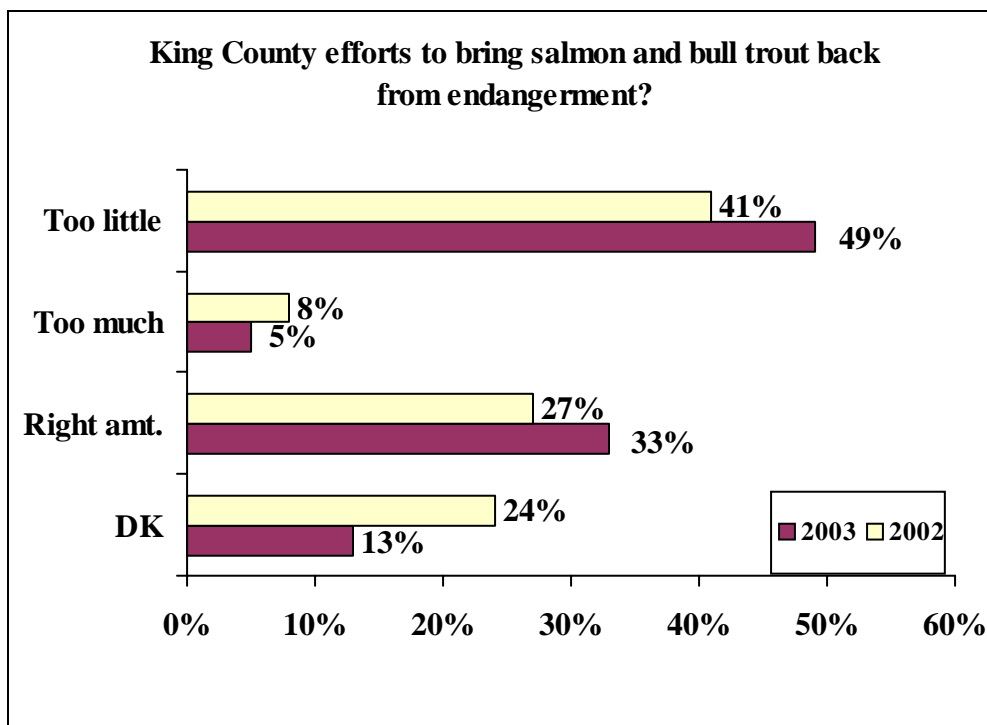
Salmon populations

Two-thirds (65%) of King County residents think that salmon populations in our region are at risk, and only 16% say they are not at risk. After being told that the salmon and bull trout are listed as endangered, 49% say that the county government is doing too little, and a third (33%) say the county is doing the right amount to bring them back from endangerment. Only 5% think the county is doing too much.

- There is a significant increase (8 points) in the number of residents who believe the county is doing too little to bring the bull trout back from endangerment (49%) since last year's survey.

On a scale of 1 to 7, where 1 means not at all at risk and 7 means extremely at risk, how at risk do you think salmon populations in our region are?

| <u>Rank</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|-----------------------|-------------|-------------|-------------|
| 7- Extremely at risk | 20 | 22 | 23 |
| 6 | 17 | 17 | 16 |
| 5 | 26 | 24 | 26 |
| 4 | 18 | 17 | 17 |
| 3 | 7 | 6 | 10 |
| 2 | 3 | 3 | 3 |
| 1- Not at all at risk | 5 | 4 | 3 |
| (Don't Know) | 4 | 7 | 2 |
| MEAN | 4.92 | 5.11 | 5.03 |



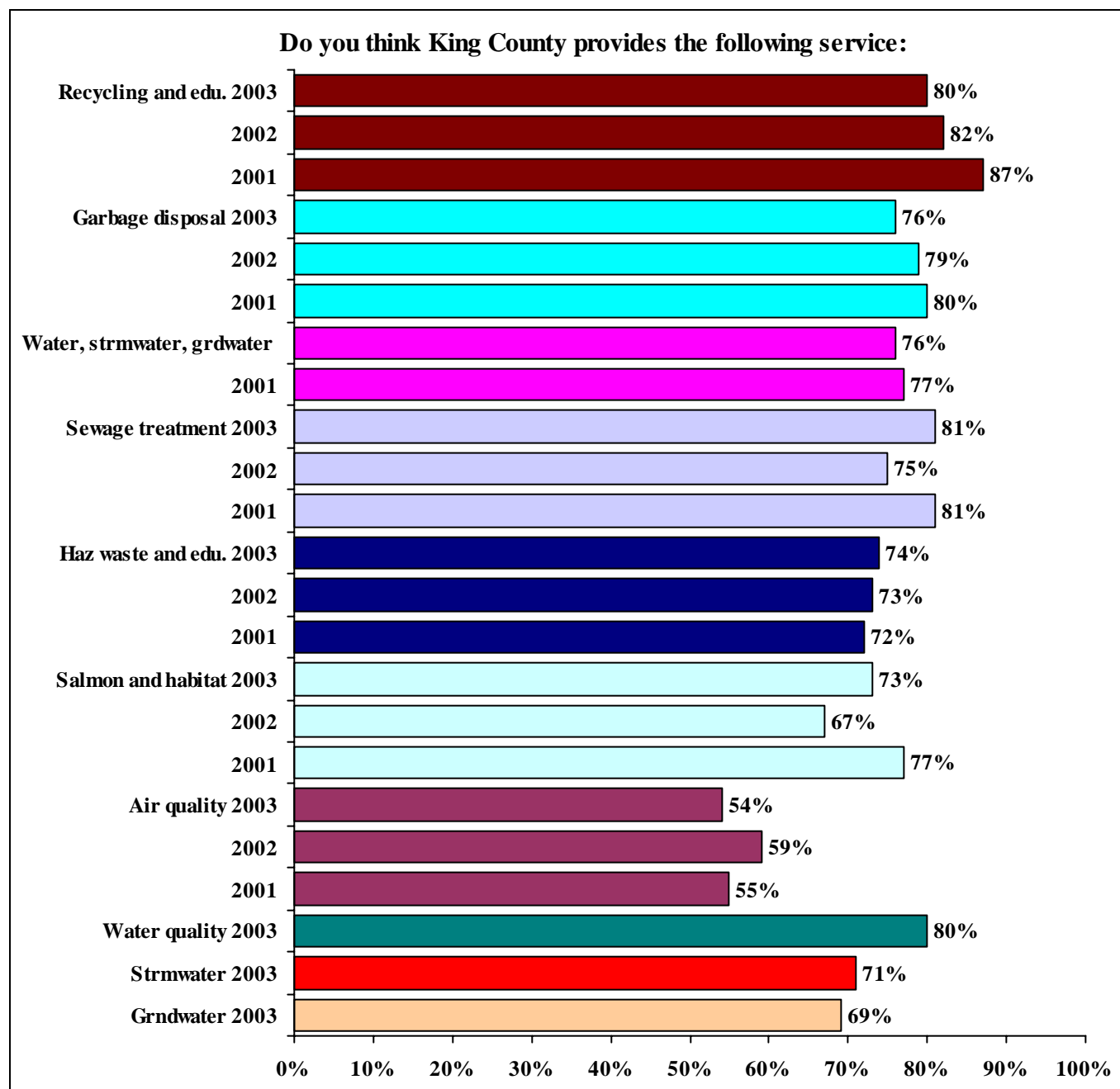
King County Services

Familiarity with services King County provides

There has not been a dramatic shift in familiarity of services since last year, with at least three-fourths of King County residents familiar with most of the services the county provides.

Familiarity with air quality (54%) continues to be the lowest of all the services tested, which is consistent with King County's minimal role in providing air quality services.

- While in previous years water, groundwater, and storm water management were tested together, this year they are explored in isolation from one another. In doing so it is seen that familiarity is greatest with the water quality (80%), followed by storm water (71%) and groundwater (69%).



Water Quality in King County

Importance of Protecting Water Quality

All but 3% feel that protecting water quality in King County is important, and more than three-fourths (79%) of residents say it is “extremely important”. Those residents who feel protecting water quality is extremely important have increased fourteen points since the 2001 survey.

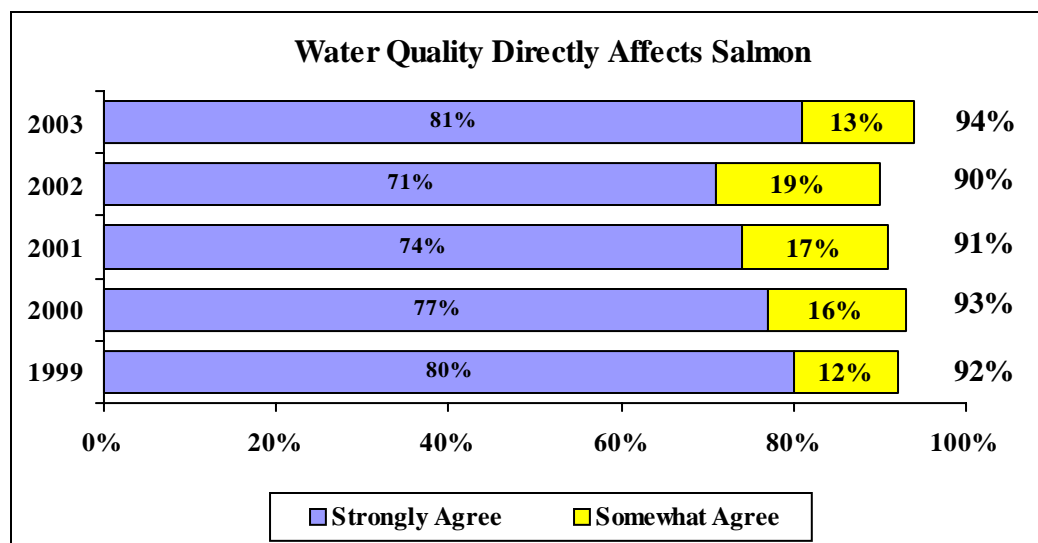
On a scale of 1 to 7, where 1 means not at all important and 7 means extremely important, how important do you think it is to protect water quality in King County?

| <u>Rank</u> | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|-------------------------|-------------|-------------|-------------|-------------|-------------|
| 7- Extremely important | 74 | 67 | 65 | 76 | 79 |
| 6 | 11 | 18 | 15 | 9 | 13 |
| 5 | 6 | 10 | 13 | 8 | 5 |
| 4 | 2 | - | 3 | 3 | 1 |
| 3 | 2 | 2 | 2 | 1 | 1 |
| 2 | 1 | 1 | - | - | 1 |
| 1- Not at all important | 2 | 2 | 1 | 2 | - |
| (Don't Know) | 2 | - | 1 | 2 | - |
| MEAN | 6.46 | 6.41 | 6.31 | 6.50 | 6.67 |

Water Quality and Salmon

94% of residents continue to agree that there is a direct link between water quality and the health of salmon.

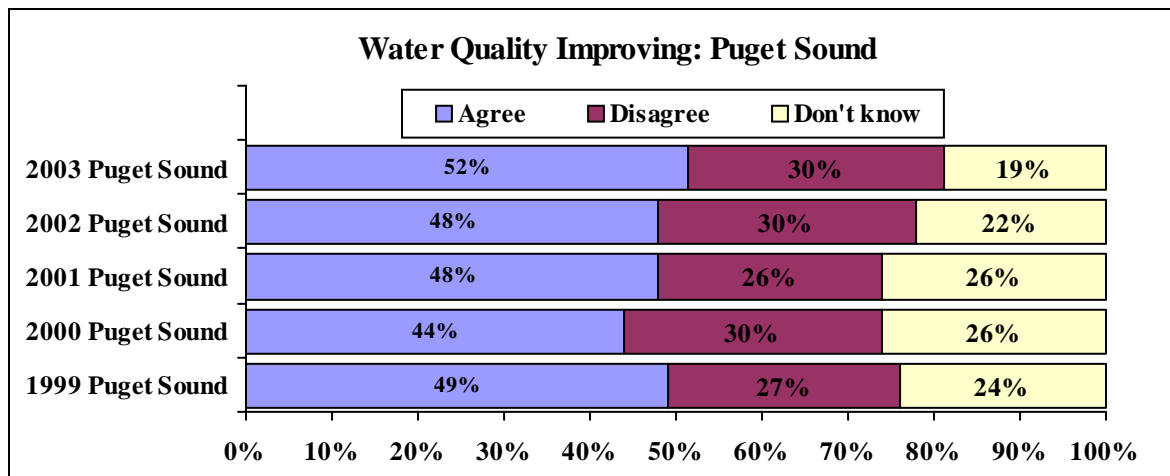
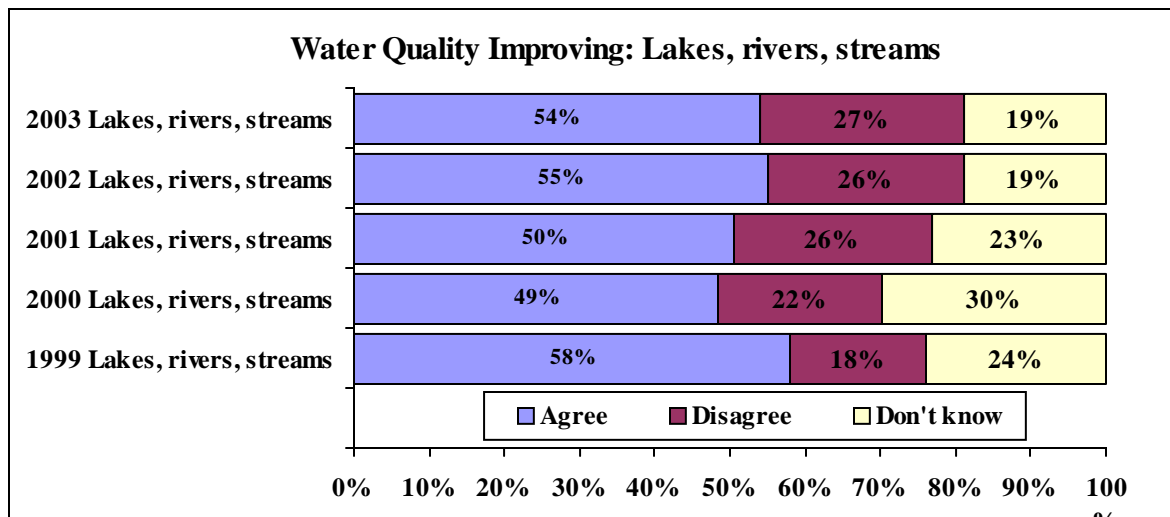
- While the overall number of those who agree has increased by four points since last year, the intensity has increased by ten points from 71% “strongly agree” to 81%. This reveals a significant attitudinal change in among residents, in that some of the “soft” opinions about the link between water quality and salmon is solidifying.



Water Quality Ratings

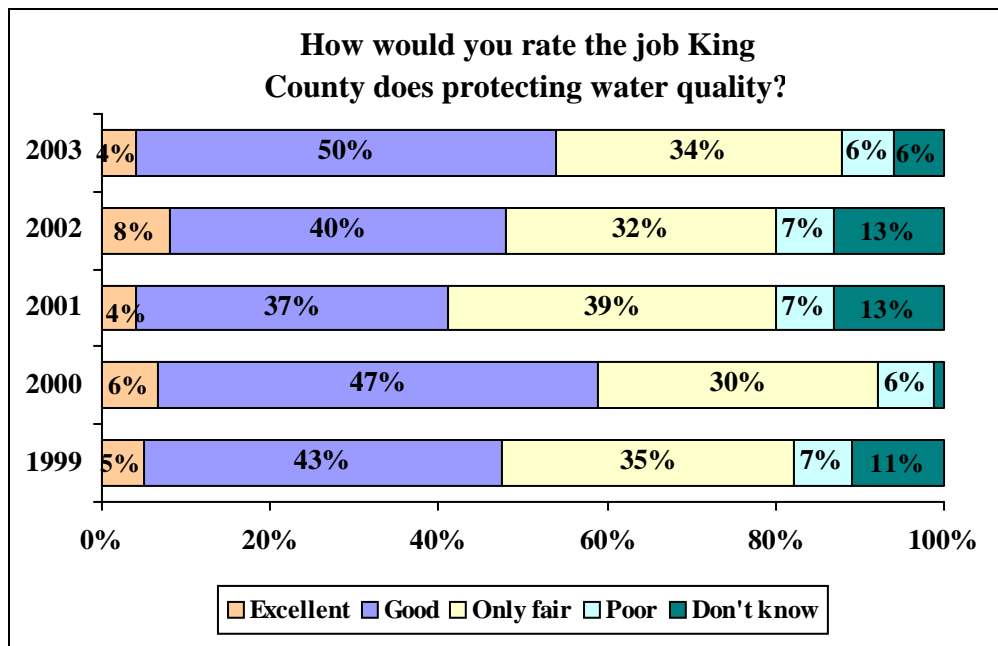
Over half of King County residents agree that water quality is improving in area lakes, rivers, and streams (54%) and in Puget Sound (52%).

- There has been little fluctuation in the last five years concerning the perception of water quality in the region. In general, half of residents think water quality is improving and the other half either disagree or are uncertain.
- This is the first year a majority of residents have agreed that water quality in Puget Sound is improving. The numbers have steadily increased since the 2000 survey from a low of 44% to this year's high of 52%.



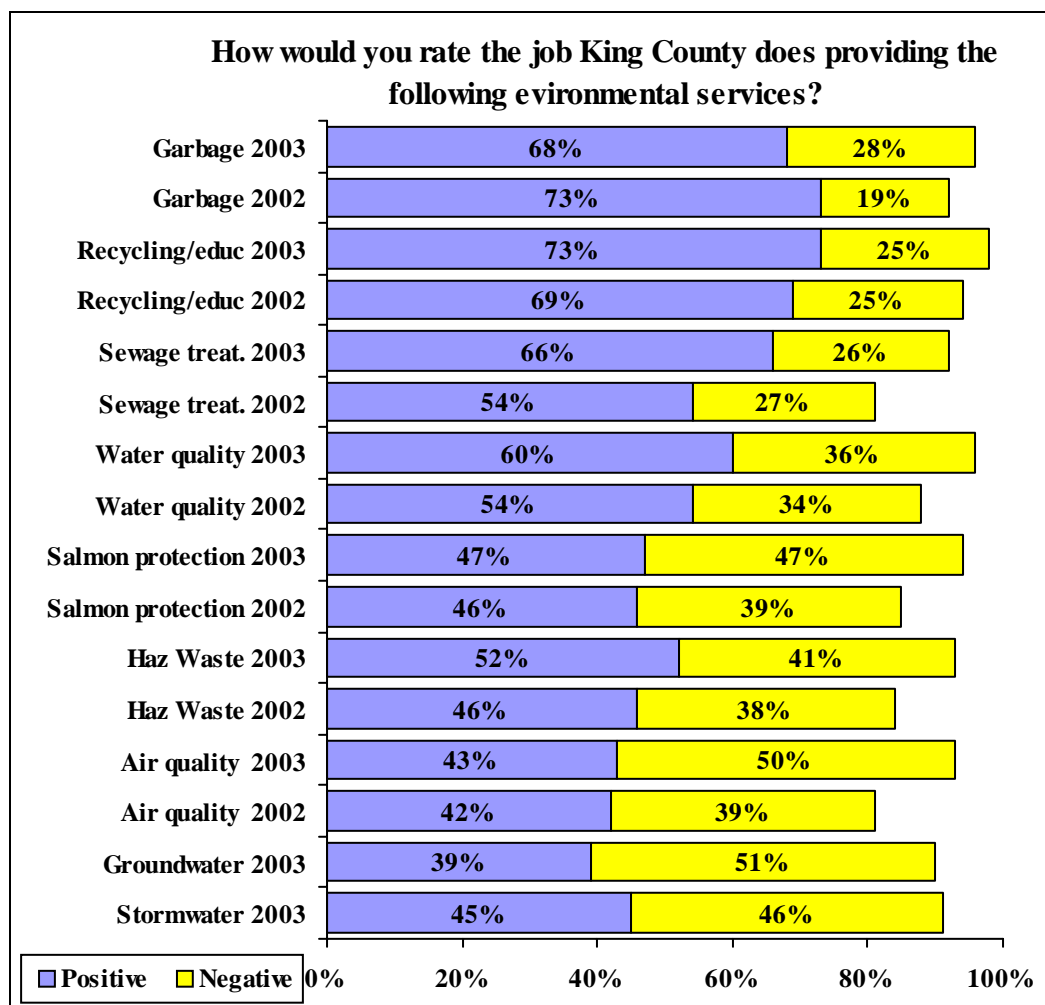
Residents remain divided over the job that King County does protecting water quality (54% positive / 40% negative).

- As with previous years, most of the movement occurs in the softer opinion where the “Good” rating increases by 10 points (40% to 50%) from the 2002 results.
- There is little intensity of opinion (“excellent” or “poor”) in residents’ rating of the job King County does protecting water quality. Over the past five years, most of the opinion has remained in the middle (2003: 84% good/only fair; 2002: 72% good/only fair; 2001: 76% good/only fair; 2000: 77% good/only fair; 1999: 78% good/only fair).



Residents continue to give King County the highest ratings in the area of recycling services and education (73 positive%), garbage disposal services (68% positive), and sewage treatment (66%).

- There have been significant positive increases in the areas of sewage treatment (54% positive to 66% positive) and water quality (54% positive to 60% positive).
- This is the first year storm water management and groundwater management have been separated out from water quality. This is likely the reason water quality experiences a six-point positive increase (54% to 60%).
- Air quality has seen a noticeable negative shift since last year's survey (39% negative to 50% negative). Also shifting significantly negative is salmon protection, which moved from 39% negative in 2002 to 47% negative in this year's survey.

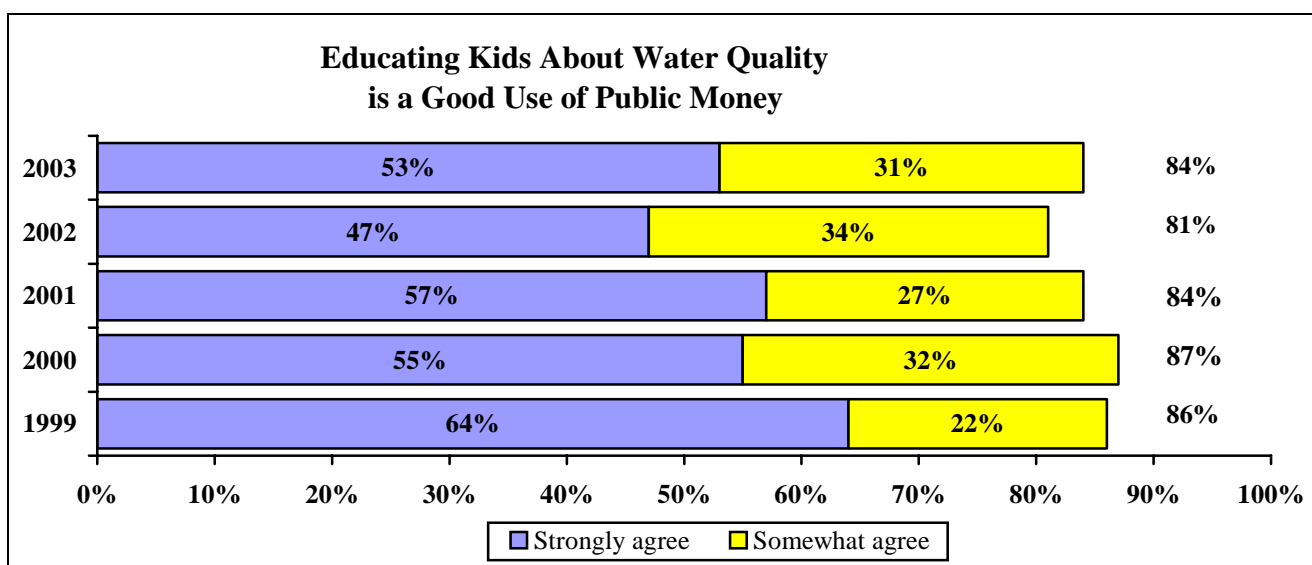


Water Quality Education

When asked how the county can improve its efforts to protect water quality, the top response continues to be “education/increase awareness” and most residents (84%) agree that water quality education is a good use of public money.

How could King County improve its efforts to protect water quality throughout the county?

| | | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|-----------------------------|---|-------------|-------------|-------------|-------------|-------------|
| Education/Make people aware | % | 19 | 16 | 18 | 21 | 22 |

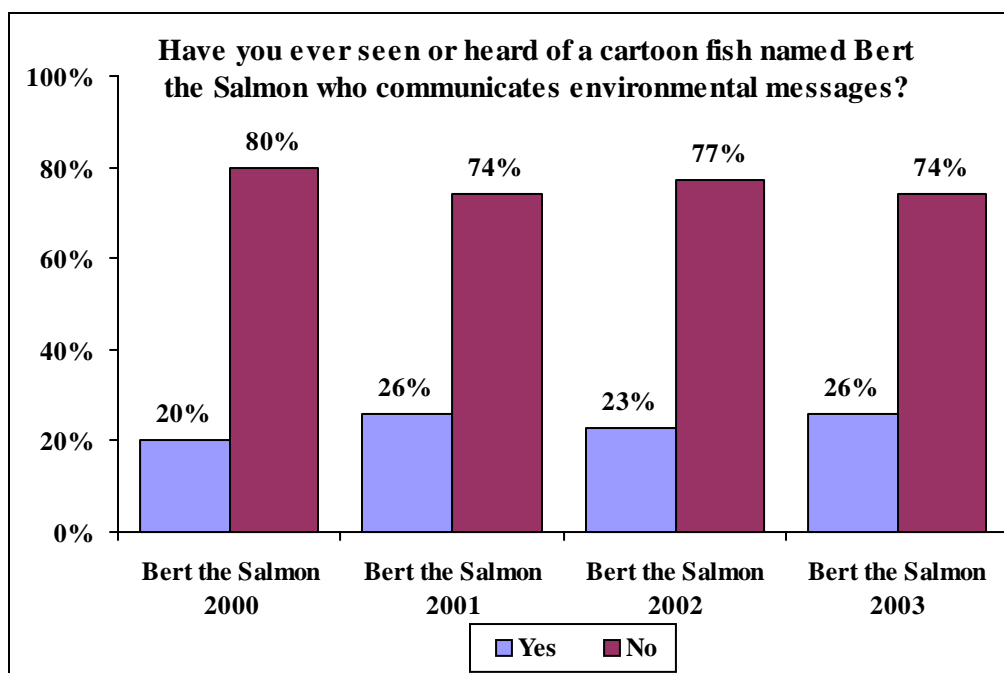


- A strong majority of residents continue to agree that “educating school children about water quality is a good use of public money” (84% agree).
- Opinion has strengthened since last year, with a six percent increase in the number of respondents who “strongly agree”.

Water Quality Advertising Awareness and Recall

One in four (26%) King County residents recall seeing advertising about “Bert the Salmon.”

- There is no significant change in the number of residents who recall seeing advertising about Bert the Salmon, however, the percentage of respondents who can recall the advertisement has increased three points since last year (23% to 26%).
- Ad recall is identical across all regions in King County, but is significantly higher among those under 50 years old (31% recall).
- Overall, one-fourth (26%) of King County residents recall seeing or hearing about “Bert the Salmon” compared to 23% in 2002, 26% in 2001, and 20% in 2000.



- Of those who have seen or heard of Bert the Salmon (26%: n=105), 52% say they saw the advertisement on television, 7% in print media, and 5% have heard it from their children.
- This recall is remarkable considering that Bert the Salmon has not run on television in the last three years.

- Of those who have heard of “Bert the Salmon” 75% are able to recall a specific environmental message.
- Of those who could name specific environmental messages they heard from Bert the Salmon, “protect streams/keep water clean” was the most frequent (19%), followed by “don’t use fertilizers/pesticides (18%)”, “don’t dump in the storm drains/prevent run-off (13%)”, and “conserve water (12%)”.

What environmental messages do you remember from Bert the Salmon?

2003

n=105/403

| | |
|---|----|
| Protect streams/keep water clean | 19 |
| Don’t use fertilizers/Pesticides | 18 |
| Don’t dump in storm drains/Prevent run-off | 13 |
| Conserve water/Turn off water while brushing your teeth | 12 |
| Don’t wash you car in the street/use car wash | 7 |
| Protect salmon/pollution kills fish | 6 |
| Others | 1 |
| Nothing/Don’t remember | 24 |

2002

n=92/400

| | |
|---|----|
| Protect the water | 16 |
| Be careful what you put down the drain | 14 |
| Don’t use chemicals and oils that pollute water | 9 |
| Protect salmon/salmon are at risk | 8 |
| Stop use of pesticides/hazardous lawn products | 4 |
| Recycle yard waste/use mulch mower | 4 |
| Dispose of weed killers properly | 2 |
| Others | 11 |
| Nothing/no | 4 |
| Don’t know | 26 |

2001

n=211/803

| | |
|---|----|
| Do not use chemical fertilizers on lawn | 16 |
| Don’t dump oil down the drains | 11 |
| Conserve water | 10 |
| Don’t pollute the water | 9 |
| Don’t put anything down storm drains | 7 |
| Don’t over water your yard | 4 |
| Recycle yard waste | 3 |
| Tips on ecology | 3 |
| Others | 8 |
| Don’t know | 29 |

Watersheds

When read response choices, three-quarters of residents (75%) can successfully identify what a watershed is, but most do not know which watershed they live in.

- A large majority (75%) of residents can identify the definition of a watershed. This number has increased nine points since last year (66% to 75%) and the number of respondents who say they “don’t know” has decreased by twelve points (18% to 6%)
- When asked what watershed they live in, half (50%) say they don’t know.

Which of the following three definitions best describes a watershed?

| | 2001 | 2002 | 2003 |
|--|-------------|-------------|-------------|
| A shed that contains water pumps | 4 | 5 | 7 |
| A facility where water is purified | 16 | 11 | 11 |
| An area of land that drains water to a common outlet | 72 | 66 | 75 |
| (Don’t know) | 7 | 18 | 6 |

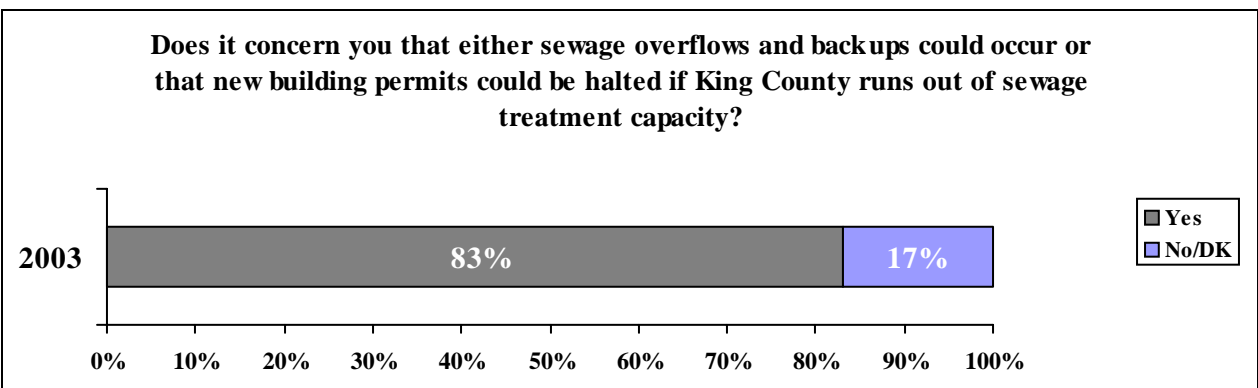
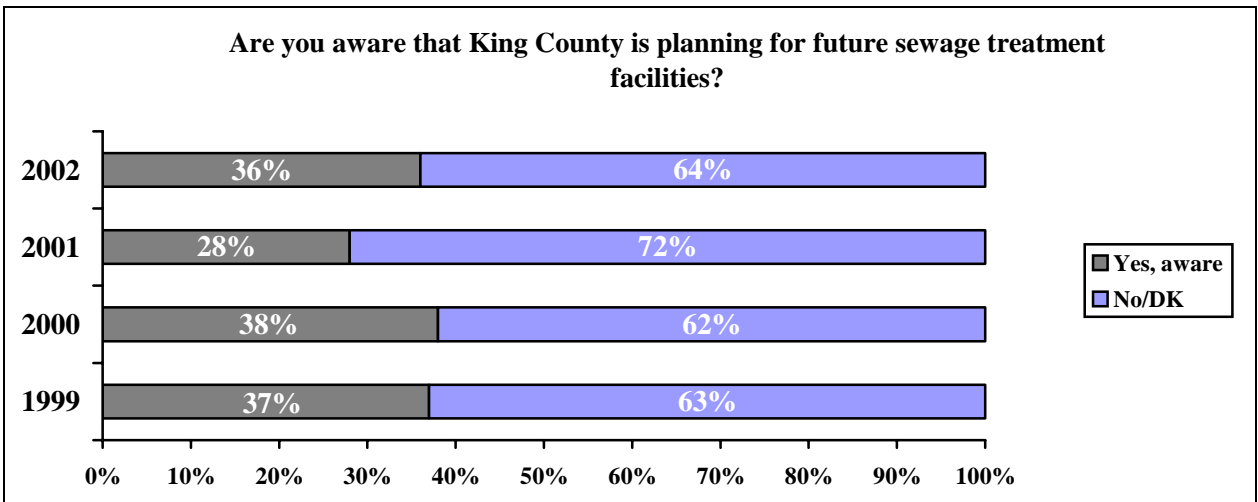
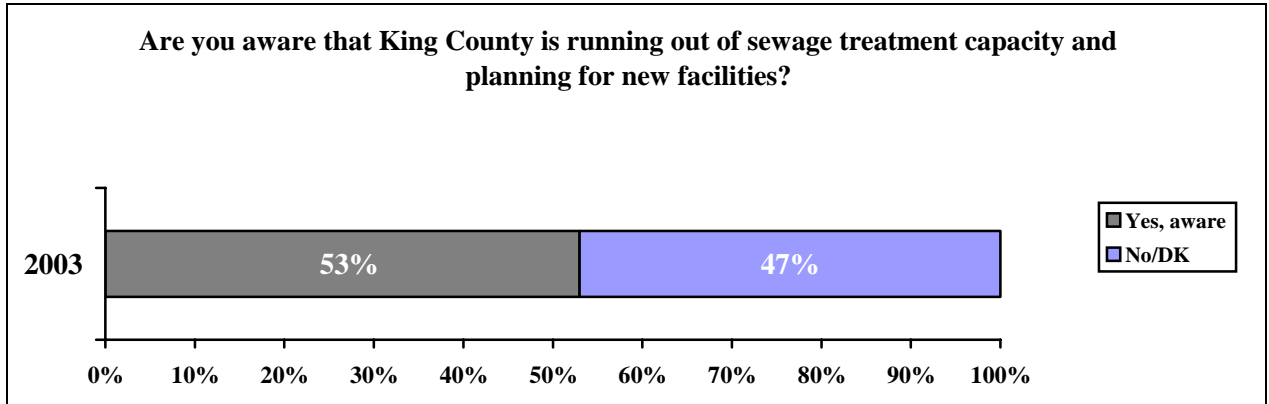
**Asked open-ended from 1999-2000.*

As you may know, a watershed is an area of land that drains water to a central outlet. Can you tell us what watershed you live in?

| | 1999 | 2000 | 2001 | 2002 | 2003 |
|-------------------|-------------|-------------|-------------|-------------|-------------|
| Cedar/Cedar River | 8 | 10 | 12 | 12 | 14 |
| Lake Young | | 2 | 2 | 1 | 3 |
| Tolt River | 2 | 5 | 3 | 3 | 2 |
| Thornton Creek | | | 1 | 1 | 2 |
| Soos Creek | 2 | 1 | 1 | 2 | 2 |
| Puget Sound | 2 | 2 | 1 | 1 | 2 |
| Piper Creek | | 2 | 2 | 1 | 1 |
| King County | | 2 | 1 | 1 | 1 |
| Green River | 2 | 4 | 3 | 3 | 1 |
| Lake Washington | | | 1 | 1 | 1 |
| Sammamish | | | 1 | 1 | 1 |
| Redmond | | | 1 | 1 | |
| Other Mentions | 20 | | 8 | 18 | 18 |
| Don’t know | 64 | 71 | 62 | 54 | 50 |

Sewage Treatment Facilities

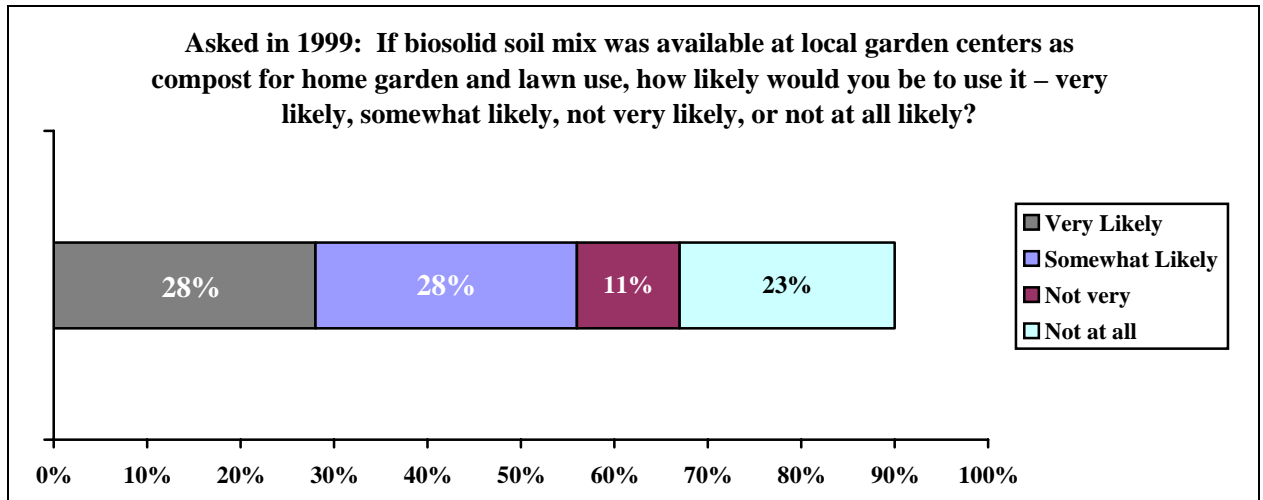
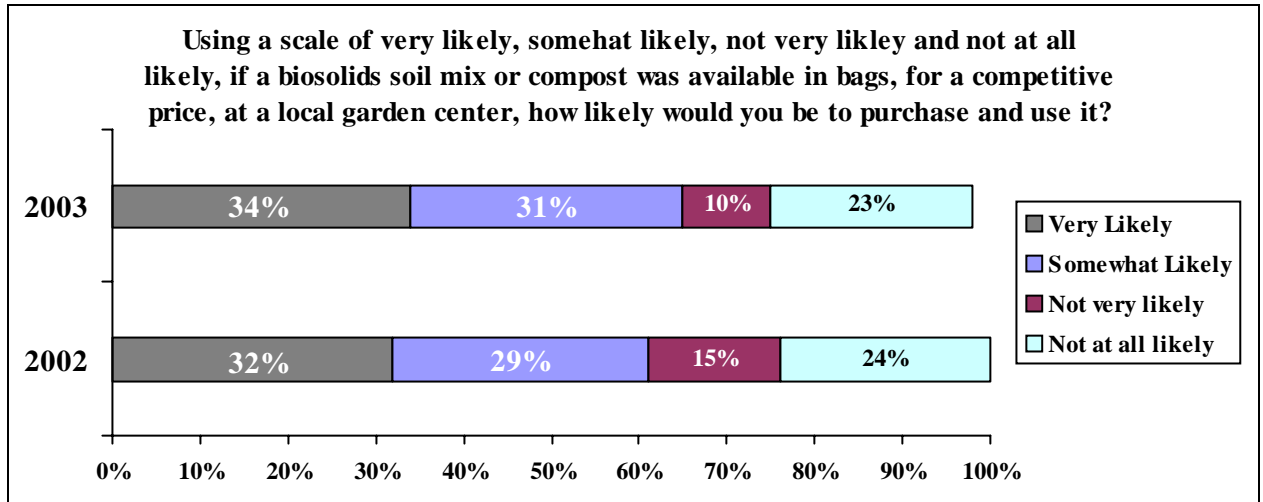
Awareness that the County is running out of sewage treatment capacity and planning for new facilities is at an all-time high of 53%



Biosolids

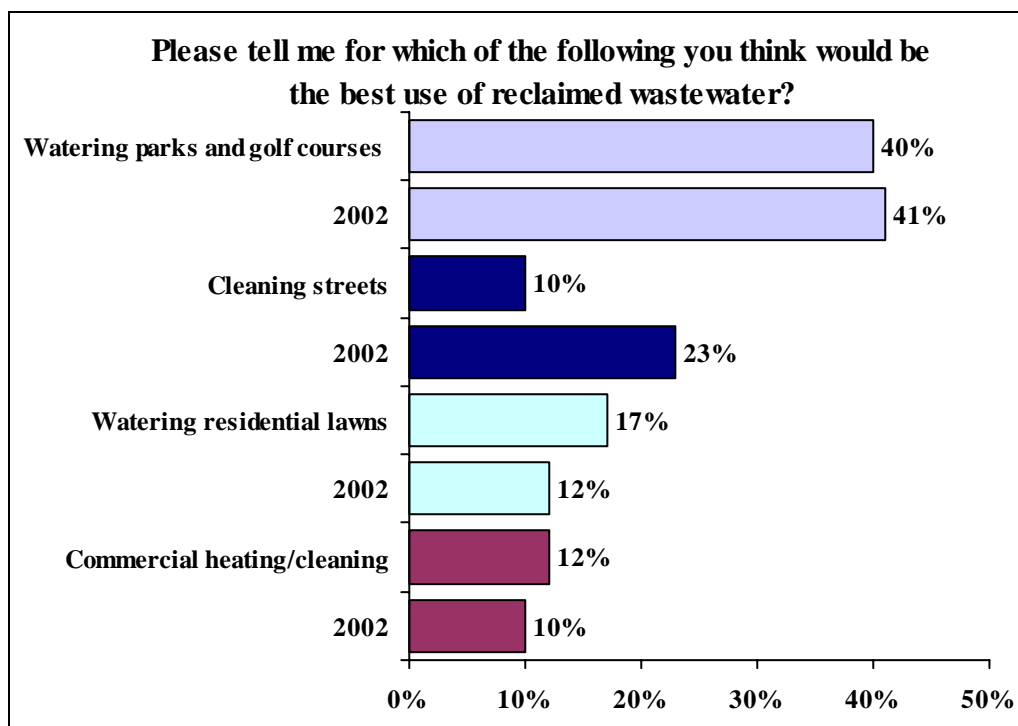
After a brief description of biosolids, a plurality (40%) of respondents think that the best use of biosolids and compost is for agriculture and forestry purposes.

- A majority (65%) say they would be at least somewhat likely to purchase biosolids soil mix or compost if it were available at a competitive price.



Reclaimed Water

After being informed about the difference between treated wastewater and reclaimed water, 40% of residents think that reclaimed wastewater should be used for watering parks and golf courses among the choices given. In a follow up question, 80% agree that reclaimed wastewater should be required to be used for watering parks and golf course, if it is reasonably available.



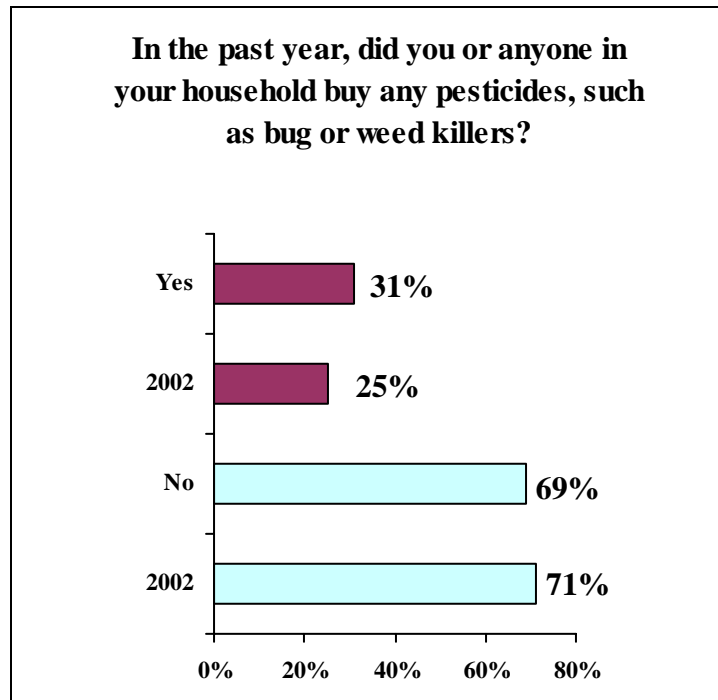
**These questions were asked differently in years prior to 2002.*

- Overall, respondents agree that there are safe uses for reclaimed water. 40% think that reclaimed water should be used for watering golf courses and parks. One tenth (10%) think it should be used for cleaning streets, 17% for watering residential lawns, and 12% for commercial heating and cleaning.
- 17% of residents responded “all of the above” even though the response was not offered.

Pesticide Use

Just under a third (31%) of King County residents report having bought pesticides in the past year. In addition, 58% say that they have decided to stop using pesticides in their yard.

- The number of residents who claim to have purchased pesticides in the last year has increased 6% since last year's survey.

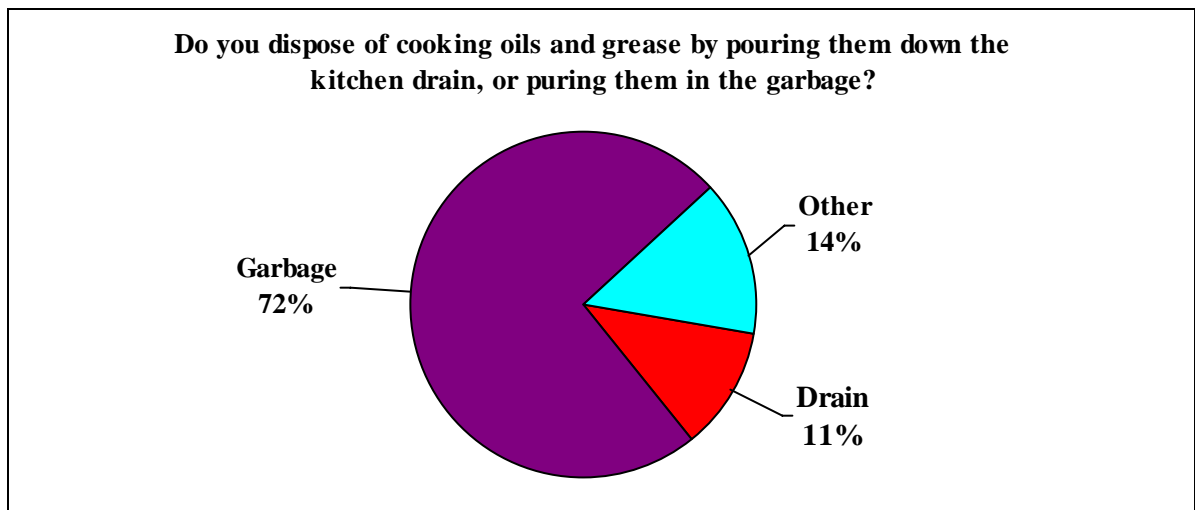


- Of the 31% of residents who have bought pesticides in the past year, 37% purchased them at Home Depot.
- The top reasons why residents say they have stopped using pesticides in their yard are “runoff pollutes water (21%),” and other non-specific environmental concerns (16%).

Fats, Oils, and Grease (FOG)

2003 marks the first year King County has investigated the behavioral and attitudinal characteristics concerning fats, oils, and grease disposal. In general, a strong majority (72%) of residents in King County claim to dispose of their fats, oils, and grease in the garbage. Nine out of ten residents (89%) are aware of the damage that can be caused by pouring cooking oils and grease down the drain.

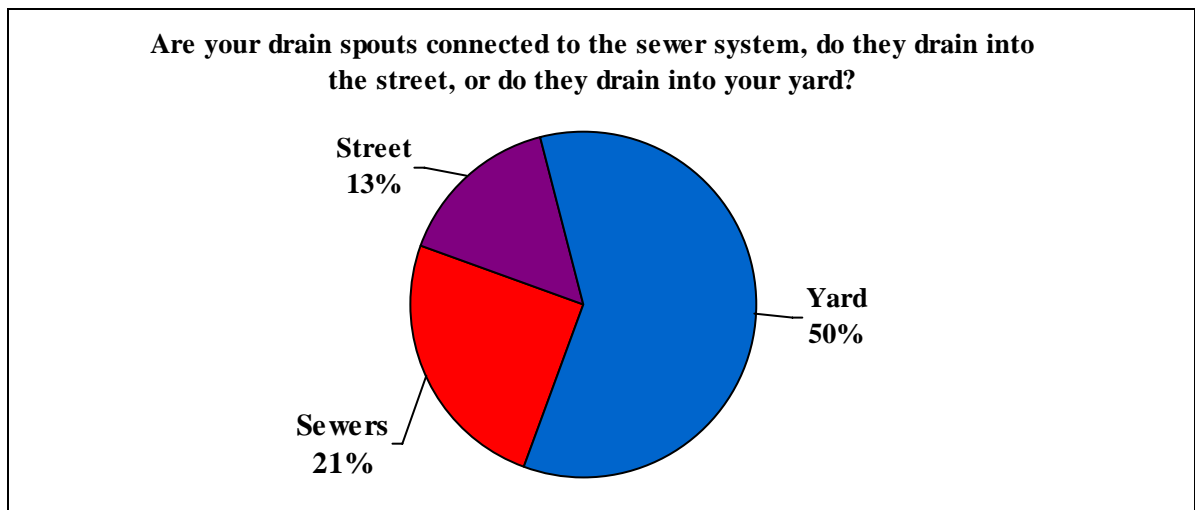
- Among the 11% who are unaware the of the damage caused by pouring cooking oils and grease down the drain, % said they would be likely to use the garbage instead of the drain.



Peak Wastewater Flows: Inflow and Infiltration

Also being tested for the first time is behavioral and attitudinal characteristics concerning drain spouts. Half (50%) of residents channel runoff from rain into their yards, 21% connect the drain spout directly to the sewer, and an additional 13% into the street. Most residents (61%) are likely to pay for repairing or replacing the sewer line that serves their property if it is faulty.

- 74% of residents are not aware that more than half the extra flows that enter local agency systems are from private property sources, such as sewer lines in need of repair, roof and yard drains, basement sump pumps or foundation drains connected to the sewer system.



APPENDIX A: ADDITIONAL COMMENTS

Having completed this survey with us, is there anything that you would like to add about the topics we talked about – the environment, water quality, or the government’s role in managing natural resources?

| | % |
|--|----|
| Need more government involvement | 5 |
| More education about environmental issues | 4 |
| Spend too much money on the wrong things/manage money better | 4 |
| Happy with the survey/Glad to participate | 3 |
| Doing a good job/everything is fine | 3 |
| Control growth/development | 2 |
| Reduce sources of pollution--use mass transit | 2 |
| Sewage facilities and treatment mentions (generic) | 2 |
| Clean water/better water quality | 2 |
| Unhappy with Bush and his environmental policy | 1 |
| More strict laws/law enforcement | 1 |
| More recycling | 1 |
| Save the salmon | 1 |
| Stop deforestation | 1 |
| Nothing | 56 |
| Other | 8 |

APPENDIX B: DEMOGRAPHICS

| | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|
| Gender | | | | | |
| Male | 48 | 48 | 48 | 49 | 50 |
| Female | 52 | 52 | 52 | 51 | 50 |
| Homeowner | | | | | |
| Own/buying | 72 | 66 | 72 | 69 | 72 |
| Rent | 28 | 32 | 27 | 29 | 27 |
| (DK/Refused) | 2 | 2 | 1 | 2 | 1 |
| Length of residency | | | | | |
| <2 yrs | 8 | 8 | 8 | 9 | 7 |
| 2-5 yrs | 10 | 15 | 12 | 9 | 11 |
| 6-10 yrs | 10 | 10 | 10 | 12 | 9 |
| 10-20 yrs | 16 | 19 | 16 | 17 | 19 |
| >20 yrs | 56 | 48 | 52 | 50 | 55 |
| (DK/Ref) | 2 | 2 | 1 | 3 | 0 |
| Children living at home | | | | | |
| Yes | 31 | 36 | 32 | 33 | 27 |
| No/(Refused) | 69 | 64 | 68 | 67 | 73 |
| Education | | | | | |
| Some grade school | 2 | 0 | 0 | 0 | 0 |
| Some high school | 6 | 5 | 5 | 5 | 1 |
| Graduated High School | 19 | 17 | 18 | 21 | 18 |
| Technical/Vocational | 4 | 4 | 3 | 4 | 2 |
| Some College | 28 | 26 | 24 | 24 | 30 |
| Graduated College | 27 | 35 | 31 | 30 | 32 |
| Graduate/Professional | 14 | 13 | 17 | 15 | 15 |
| (Don't Know/Refused) | 2 | 1 | 1 | 1 | 1 |
| Job status | | | | | |
| Employed | 63 | 63 | 62 | 58 | 59 |
| Unemployed | 5 | 5 | 6 | 8 | 7 |
| Retired | 23 | 20 | 20 | 23 | 21 |
| Student | 3 | 4 | 4 | 4 | 2 |
| Homemaker | 5 | 7 | 6 | 5 | 6 |
| Other | 2 | 0 | 2 | 2 | 4 |
| (Don't Know/Refused) | 1 | 1 | 0 | 1 | 1 |

| | <u>1999</u> | <u>2000</u> | <u>2001</u> | <u>2002</u> | <u>2003</u> |
|------------|-------------|-------------|-------------|-------------|-------------|
| Age | | | | | |
| 18-24 | 8 | 10 | 8 | 8 | 7 |
| 25-29 | 6 | 9 | 10 | 9 | 7 |
| 30-34 | 9 | 10 | 8 | 9 | 10 |
| 35-39 | 10 | 11 | 8 | 8 | 10 |
| 40-44 | 13 | 12 | 12 | 12 | 8 |
| 45-49 | 14 | 10 | 9 | 10 | 12 |
| 50-54 | 8 | 12 | 11 | 10 | 11 |
| 55-59 | 7 | 6 | 7 | 6 | 9 |
| 60-64 | 5 | 6 | 5 | 3 | 8 |
| 65+ | 18 | 13 | 18 | 21 | 16 |
| (Refused) | 3 | 3 | 3 | 4 | 2 |