

Results of Community Water Supply Questionnaire

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INTRODUCTION

Questionnaire Purpose

We conducted a community water supply questionnaire in Spring and Summer of 2018, to get a better idea about the general public's level of awareness about local water supply challenges and their level of support for various water conservation strategies. Our goals were 1) to gather information from a diverse audience that could help inform our work and broaden our perspective, 2) to inspire people to think more about our local water supply and the role each of us plays with how we use water, and 3) to inform and provide avenues for people interested in taking action on water conservation and restoration efforts happening locally.

Background

Whatcom County has been experiencing water supply challenges for decades. The Nooksack River and many of its tributaries have been failing to meet the instream flow requirements (set by Washington Department of Ecology) for much of the year. Flows are low for spring and fall Chinook (Endangered Species Act listed) and other salmonid species in the Nooksack River and its tributaries, decreasing their chances of successfully spawning. As such, the Nooksack River watershed was designated a "closed basin" in the 1990s, and new water rights (with the exception of interruptible water rights and permit exempt wells) have not been issued since then.

In 2013, citizen petitioners argued that Whatcom County's Comprehensive Plan was out of compliance with the Growth Management Act, because they were allowing growth to occur in rural areas without assessing how much water was available to sustain that growth or possible water quality impacts. The case eventually made its way to the State Supreme Court, which agreed that Whatcom County was improperly allowing such growth. A follow-up legislative decision in early 2018, the Streamflow Restoration Act, directed certain counties to develop collaborative stakeholder processes to address mitigation for new private domestic wells (a residential well not connected to a Water District, Water Association or Municipality).

As a result of the Streamflow Restoration Act, the conversation about the bigger picture of our water supply challenges has been brought back to life. Local agriculture currently depends partially on unpermitted water use, and farmers have no easy way to get legal water rights. Owners of undeveloped property are concerned about being able to access water to build a future home. Some well owners have had to dig deeper, to the maximum depth possible for their well, wondering what will happen if the water table drops below that depth. Tribal members are particularly affected by the impacts of low streamflows on salmon — the loss of cultural connection, livelihood, and treaty rights that would result from the loss of the salmon would be devastating. And, due to the impacts of climate change, we are all experiencing longer, drier summers along with a rapidly increasing Whatcom County population competing for water resources.

RE Sources is a member of the Environmental Caucus to the Water Resource Inventory Area #1 (WRIA 1) Planning Unit, the stakeholder body tasked with developing a plan to offset the impacts to streams from projected consumptive water use of new private wells over the next two decades. RE Sources staff are also committed to the larger water supply issue at hand: the need to identify and implement strategies that ensure legal water rights for farms (the largest user of water during salmon spawning season), while leaving plenty of water in the streams for salmon and a healthy riparian ecosystem.

Audience and Survey Techniques

Water supply decisions impact County residents living within and outside of urban areas differently so hearing from both demographics was important to us. To reach Whatcom County residents outside of Bellingham City limits, we spent time in-person at County events and parks and online via rural community group email lists and NextDoor (an online neighborhood-based forum). We reached City of Bellingham residents via Facebook, NextDoor, our email list, and at events.

In addition, we shared a digital link to our questionnaire to the RE Sources Clean Water Program email list, on our Facebook page, and through a sponsored Facebook ad to the general community.

Due to time and available resources, this questionnaire was not scientifically conducted to ensure a truly representative sample of the entire county. The results, therefore, should not be interpreted to represent the County as a whole. Nevertheless, gathering public feedback in this way still provided valuable insight and was a learning opportunity for both RE Sources staff, our community partners, and questionnaire respondents.

KEY RESULTS AT A GLANCE

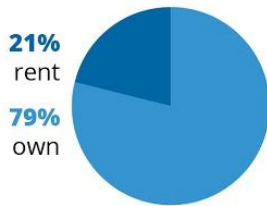
What We Learned from our Community Questionnaire:

WATER SUPPLY IN WHATCOM COUNTY*

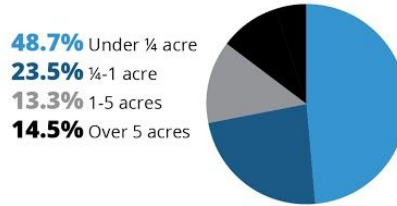
FROM **653** RESPONDENTS

WHO DID WE SURVEY?

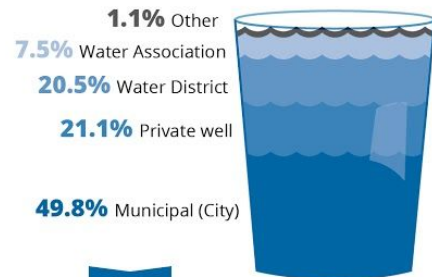
Property ownership



Property size



Water source



HOW DO THEY USE WATER?

85% use water outdoors in the summer for...

56% garden or orchard



52% lawn or landscaping



14% livestock or commercial farm



87% have attempted reducing their water consumption

WHAT DO THEY THINK ABOUT WATER SUPPLY ISSUES?

86% 
said water conservation is **important** or **very important**

 **10.6%**
Have struggled to get the water they need at some point

Why did they try to reduce water consumption?

Concern for future water supply in Whatcom

66%

34% Increasing cost of water

Other **8%**

* This questionnaire was not conducted scientifically and does not necessarily represent Whatcom County as a whole.

RESULTS

Information gleaned from the questionnaire are presented in the following pages in these categories:

Section 1. Raw Data

Section 2. Result Themes

Section 3. Suggested Approaches

Raw Data

We received a total of 653 completed questionnaires.

Outreach Method

- Online: 402
- In person: 251

Property Ownership

- Own: 79%
- Rent: 21%

Property Size

- Less than ¼ acre: 48.7%
- ¼-1 acre: 23.5%
- Over 1 acre: 27.8%
 - 1-5 acres: 13.3%
 - 5-10 acres: 9.6%
 - Over 10 acres: 4.9%

Water Source

- Private Well: 21.1%
- All other water sources: 78.9%
 - Municipal (city) water: 49.8%
 - Water District: 20.5%
 - Water Association: 7.5%
 - Other: 1.1%

Use of Outdoor water in the summer

Q. Do you have outdoor water use in the summer?

85.4% of respondents reported outdoor water use in the summer, over half of whom reported some form of on-site food production (note: percentages will not add up to 100 due to many respondents reporting multiple uses of water outdoors):

- Garden or Orchard: 55.6%
- Landscaping: 35.3%
- Lawn: 16.3%
- Livestock: 10.2%
- Commercial farm: 3.9%
- Other outdoor water use: 3.1%

14.6% of respondents reported they had NO outdoor water use in summer.

Metering

Q. Is your water use metered?

(Note: an example of “have both” would be a respondent who has a well for irrigation and a connection to a water association for potable, household use)

- Water is on a meter: 64.4%
- Water is not on a meter: 22.7%
- Have both: 4.9%
- Don't know if water is metered: 8%

Water conservation

Q. Have you ever tried to reduce your water consumption?

Note: a few people checked “no” and in the comments mentioned that they had never tried to reduce consumption simply because they have always been conservative.

- Yes: 86.9%
- No: 13.1%

Water conservation motivation

Q. What motivated you to reduce your water consumption? (note: some people checked more than one box)

- Concern for future water supply in Whatcom County: 66.1%
- Increasing cost of water: 34.3%
- Other: 8.5%

Opinion on the importance of water conservation

Q. Do you believe water conservation in Whatcom County is:

- A very important issue: 52%
- An important issue: 34%
- Not a very important issue: 8%
- Not important at all: 3.7%
- No opinion: 2.3%

Personal experience with water scarcity

Q. Have you ever struggled to get the water you need?

- No: 89.4%
- Yes: 10.6%

Support for water conservation approaches

Q. Which approaches to water conservation do you think are most appropriate for Whatcom County? (check all that apply)

- Voluntary water restrictions recommended by local agencies: 55.2%
- Subsidies to encourage people to purchase more water-efficient household fixtures: 53.2%
- Mandatory watering restrictions such as sometimes imposed during summer months: 52.1%
- Water meters to increase awareness and encourage conservation: 48.2%
- Higher water rates for water bills based on how much an individual or business is using: 31.5%
- No watering restrictions: 7%

Thoughts about requiring water meters

Q. Should all water users be required to be on a meter?

60% were supportive; 25% were opposed:

- Absolutely: 29.2%
- I'd support it: 30.9%

- No opinion: 14.9%
- I don't think so: 16.5%
- Never: 8.5%

Result Themes

Metering

Private well owners, who are the main un-metered water users in the County, were much more opposed to the idea of requirements for all water users to be metered. 59% of the total responses were in favor of metering with 25% opposed, while only 25% of private well owners were in support versus 58% opposed.

A large percentage, 70.5%, of respondents who live on acreage and are already on a meter, supported metering for all water users. 60% of farmers and gardeners who are already on a meter supported metering for all water users. This illustrates resistance from the those who would be potentially most impacted if metering were required.

The idea of metering for awareness-raising (but not for fees) had slightly higher support from well owners at 32%, but many of those who did not support this approach expressed a belief that any type of meter would eventually lead to an entity charging them for their water use. Taking into consideration those comments, it is possible that a higher percentage would support meters if there were assurances that they would not be used to assess fees.

Water Conservation Strategies

There was strong support for various community-wide water conservation strategies, with only 7% of respondents answering that "no watering restrictions" were appropriate in Whatcom County.

Support for various options was relatively consistent across demographic groups, with voluntary conservation (based on agency guidance), mandatory watering restrictions, and subsidies for water efficiency upgrades being the most popular (all were supported by 52-55% of the respondents). Adding personal water meters to raise awareness about water use was less popular with private well owners (many of whom expressed concern that they would eventually be charged for their water) at 32% but still popular with the general public at 48%. The least popular strategy, charging a higher fee to those who use more water, had 31% support (21% by private well owners, who currently pay no fee for their water use).

Combining all of the respondents who supported at least one of the above categories, renters were the demographic that most supported some type of water use restrictions (with 95% supporting water conservation measures) and private well owners were the demographic least in support of water use restrictions (with 85% still supporting at least one of the listed water conservation measures). Farmers/gardeners and people on acreage were in the middle, supporting water conservation measures at 90.6% and 88.9%, respectively.

Public Sentiment About the Importance of Water Conservation

86% of respondents reported that water conservation in Whatcom County is an important or very important issue. This included 72% of private well owners, 80% of farmers and gardeners, and 76% of folks on properties larger than one acre. 90% of respondents living on less than 1 acre, which tend to be those in the more urban areas, felt that this was an important or very important issue.

Only 6% of the total respondents felt that water conservation was not very important or not at all important, compared to 17-20% of the three rural groups listed above.

Outdoor summer water use

Of all the 653 questionnaires, 558 respondents reported that they had some type of outdoor summer water use, with 244 of those reporting as irrigating a farm, garden, orchard, or livestock. On properties of an acre or more, 75% of the respondents reported watering a farm, garden, or orchard. On properties of less than ¼ acre, 45% of respondents reported watering a garden or orchard.

Other types of outdoor summer water use that were reported primarily fell into three categories: 1) recreation (sprinklers for children, backyard pool), 2) cleaning (car washing, pressure washing), and 3) flowers.

Personal Stories of Struggles to Get Water

We received 68 responses from people who reported having experienced struggles to get the water they need. Ten people shared stories of their wells running dry regularly or during dry summers in recent years. Another six reported water quality problems (some getting worse in recent years) with their well. Here are the comments from private well owners who have experienced water struggles:

- "Well casing broke 14 years ago; had to dig a new well"
- "Our well seems sick, we buy water and carry it home"
- "When living out in Deming on a well year ago, we had to ration in the late summer"
- "Some years back the well went dry"
- "My well runs out of water in the summer and I have to buy water".
- "Used to use well water, but would run out every summer."
- "When I lived at Lake Samish I was on a shallow well that went dry every summer. I hauled water from Bellingham, strictly conserved the water I did have."
- "During the dry summer a few years ago, BC Well/Drilling came out & lowered our well pump as far as they could. We were told there was no more drillable water on our 5 acres. Very scary."
- "We always run out of well water during summer months"
- "We are on an old shallow well. It often runs dry in summer. We are installing two storage tanks for domestic use."
- "Too rapid withdrawal from our well leads to siltation with very fine particles, requiring us to shut the well down for a period and bring in a commercial supply. This phenomenon is more likely to occur during low water periods."
- "We can run out in summer"
- "Poor quality well"
- "expanded commercial farming, day watering versus night watering, impact shallow wells."
- "Our well ran dry two summers ago in late June, water tables are definitely impacted in summer months, broad approaches to encourage water conservation, elimination of unnecessary water uses, restoration of native vegetation in water recharge areas, etc."
- "In 2015 our well went dry in August. Fortunately we were able to lower the pump an additional 10 ft without drilling deeper, but it let us know how close we are to the limits of our well."
- "My well will only pump water for one hour before it runs out."
- "Our water has gotten incredibly hard and leaves red rust stains on our sinks, tubs, and toilets. It tastes very metallic. This just started about three years ago."

Water Conservation Efforts

The vast majority of respondents (87%) reported having made efforts to reduce their water usage, and two-thirds of those reported doing so out of concern for Whatcom County's future water supply.

Many of these respondents provided additional reasons they have made an effort to conserve water. From this we may glean some information about what motivates community members to make personal changes in water use. Common sentiments included:

- Concern for water supply around the country and world
- Environmental reasons: including mentions of climate change, concern for fish needs, reducing one's footprint, the embedded energy in water production, and sustainability
- General mindset and upbringing around conserving resources, minimizing waste, seeing water as a precious gift, and good stewardship of the earth
- Experience living somewhere with water challenges (California, the Southwest, Africa, etc)
- As a principle of sustainable farming, to minimize unnecessary water use and grow fewer weeds
- Desire to have a positive impact and conserve for the greater good, "because we all live downstream"
- Personal reasons: to reduce draw on the well, to prevent well from getting too low (numerous people), personal resilience, health of septic system, minimize wear and tear on water pump
- Summer drought
- Decision to remove or stop watering lawns for convenience purposes

Water Supply Strategies Suggested by Respondents

This questionnaire served as a good community brainstorming tool, with respondents offering up many ideas about how they would like to see our County water supply issues addressed. A large number of comments called for educational approaches, incentivizing water conservation, policies that encourage low impact development strategies (including composting toilets, greywater systems, and rainwater catchment), and prioritizing conservation and water for food production and the environment.

The following are the suggestions we received, and do not necessarily represent the opinions of RE Sources for Sustainable Communities:

Priorities and General Approach

- Better data is needed to identify where the shortages occur and how various activities impact them
- Incentivize conservation
- Eliminate unnecessary water uses first
 - Address lawns, landscaping, golf courses, etc. first.
 - Prioritize food security and food sovereignty as human necessities (crops and salmon for a robust local food system)
 - Identify whether there is a need to water lawns to protect from forest fires in settings such as Sudden Valley.
- Community collaboration ("we will only solve our collective problems together")
- Prioritize education, assistance, and incentives over mandates, restrictions, fines, fees, rule changes, and cost increases
- Different approaches for those with septic systems that replenish groundwater versus sewer systems.

- Use holistic, interconnected, watershed-focused solutions
- Changes that help a family's bottom line will be the most successful in the long run.

Homeowner Education

- People need to understand *why* we have a problem
- People don't understand the water schedule signs
- Water purveyors should provide more feedback to homeowners.
 - Monthly graphs of water usage instead of yearly.
 - Use terms easy to visualize, not just numbers on a page.
 - Provide feedback on how your family compares to others of similar size and acreage.
- Provide more seminars on water conservation strategies for outdoor water users (rainwater catchment, native plant landscaping, hose timers, drip irrigation, mulch, identifying & fixing leaks, etc.)
- Initiate NextDoor neighborhood discussions and neighborhood group forums
- Highlight real people's stories to help others understand the problem and experiences of others

Homeowner Incentives & Policy Changes

- Require Low Impact Development
- Incentivize composting toilets, greywater systems, and rainwater catchment
- Change policies to allow for more flexibility in the use of composting toilets, greywater systems, and rainwater catchment, so that they are affordable and accessible to more people

Water Meters

A number of respondents commented that a private well owner should not be metered & charged like someone getting the infrastructure and water treatment provided by a water purveyor. Many others felt that meters and charging by the gallon were very good tools for raising a person's consciousness about their water consumption and for reducing water use. Additional proposals for using new and existing water meters as a tool for water conservation were to:

- Ensure that the fee structure for metered water incentivizes conservation (i.e. a high enough proportion of the bill should be dependent on actual water use rather than base fees, to encourage water conservation)
- Eliminate collective metering (such as in condos) because there is no incentive to conserve water
- Encourage or require "no fee" meters for all un-metered water users, as a method of raising awareness and encouraging conservation.

General Policy Changes

- Eliminate the City of Bellingham water right to the Middle Fork river
- Implement stronger zoning laws to limit development and agriculture where water is scarce
- Re-assess the instream flow rule using best available science
- Do not expand the boundaries of cities; farmers need the water
- Ensure that metering and conservation efforts benefit the streams and salmon rather than enabling more development

Agricultural Water Use

- Incentivize and educate about Agricultural Water Use Efficiency
- Research and promote crop growing methods that reduce water use and retain more soil moisture
- Incentivize and promote more efficient irrigation infrastructure
- Implement pilot projects to demonstrate to reluctant farmers the efficacy of improved methods and equipment
- Change policy to eliminate the unlimited stock watering exemption for private wells

- Implement a surcharge on water used for crops not grown to directly feed people, such as livestock silage and hay.
- Create a community-wide water bank system
- Several expressed concern about increasing cost of water for already struggling small farmers.

Large Scale Community Infrastructure

- Water catchment projects
 - Off-channel storage (i.e. off-channel storage, converted gravel pits, and other large-scale water catchment)
- Recycled water projects (i.e. cities could treat wastewater and pipe it back to near the point of withdrawal upstream)
- Assistance and incentives for water associations that are volunteer run and struggling

Some Residents Believe That Whatcom County Has Plenty of Water

A number of respondents expressed a belief that there is plenty of water in the Pacific Northwest and that we do not have a water supply problem. Some of those sentiments included:

- Western Washington/the Pacific Northwest has plenty of water.
- Whatcom County does not have a water shortage problem. If anything, Whatcom County has a water storage problem.
- Humans only borrow water, moving it from one place to another.
- The dry July-October-ish period is natural for this area and is not something to combat or otherwise "do" anything about.
- Having to pay for water is silly, this should be the cheapest utility bill by far.
- Water shortages in Whatcom County are fake, attempts to meter are just a government money grab
- People in the city should mind their own business and not implement regulations on rural residents.
- This effort seems to be intended to limit growth in the County. Clean up Lake Whatcom- your own reservoir-first!

CONCLUSION

Through this outreach effort we have learned that many Whatcom County residents are thinking about water issues, making personal efforts to do their part, and experiencing water struggles themselves. Many have gone so far as to brainstorm both personal and community-wide strategies and solutions that would move us towards better water certainty for all. Harnessing support for water conservation strategies and personal behavioral changes will be important in creating solutions to address our water supply challenges.

Innovative, bold, collaborative actions are needed to move Whatcom County forward on ensuring all water users have secure access to water while restoring and protecting salmon populations and riparian habitat. And it is more urgent than ever as the impacts of climate change increase. RE Sources will continue to engage the community, agency staff and elected officials on taking action to to implement effective science-based solutions.

APPENDIX A: Better Understanding Whatcom Water Use Questionnaire



RESOURCES
FOR SUSTAINABLE COMMUNITIES
PROTECT. ACTIVATE. INNOVATE. THRIVE.

Better Understanding Whatcom Water Use

(Answers will remain confidential)

1. Zip code _____

2. Do you ___ own or ___ rent your place of residence?

3. About how large is the property where you live?

___ Average sized city lot (less than ¼ acre, including an apartment or condo)

___ Larger than average city lot (¼ acre to 1 acre)

___ Very large city lot or country property (between 1-4 acres)

___ Between 5-10 acres

___ Over 10 acres

4. What is Your Water Source?

___ Private Well

___ Water District

___ Water Association Hook-up

___ Municipal Water (provided by a City)

___ I don't know

___ Other Ag water (ex: surface water withdrawal from a stream or ditch)

5. Do you have outdoor water use in the summer?

___ I irrigate a commercial farm

___ I water a garden or orchard

___ I water the lawn

___ I water the landscape

___ I use water for Livestock

___ Other outdoor water use _____

___ No outdoor water use

6. Is your water use metered?

___ All

___ Some (have multiple water sources, both metered and non-metered)

___ None

___ I don't know

7. Have you ever tried to reduce your water consumption?

___ Yes ___ No

8. If Yes, what motivated you to reduce your water consumption:

___ Increasing cost of water

___ Concern for future water supply in Whatcom County

___ Other _____

9. Do you believe water conservation in Whatcom County is:

- ☐ A very important issue
☐ An important issue
☐ Not a very important issue
☐ Not important at all
☐ No opinion

10. Have you ever struggled to get the water you need?

- ☐ Yes (If Yes, please enter details in comments) ☐ No

11. Which approaches to water conservation do you think are most appropriate for Whatcom County? Check all that apply.

- ☐ Voluntary restrictions recommended by local agencies
☐ Mandatory watering restrictions such as sometimes imposed during summer months
☐ No watering restrictions
☐ Subsidies to encourage people to purchase more water-efficient household fixtures
☐ Higher rates for water bills based on how much an individual or business is using
☐ Water meters to increase awareness and encourage conservation
☐ Other strategies _____

12. Should all water users be required to be on a meter? Circle one.

Absolutely I'd support it No opinion I don't think so... Never

Additional comments: _____

The State Legislature recently passed the Streamflow Restoration Law, which tasks Whatcom County with updating the Watershed Management Plan to address current and future water supply challenges in the Nooksack watershed (most of the county). This may affect the water accessible to you. We would like to keep you updated as that process moves forward and share information on ways you can get involved or learn more.

Can we contact you with more information?

Name _____ Phone _____

Email Address _____

Providing your contact information welcomes you to RE Sources for Sustainable Communities' monthly Clean Water e-news. We look forward to keeping you updated on local water supply and water quality issues.