

Silver Beach Creek Outreach Program

Final Report

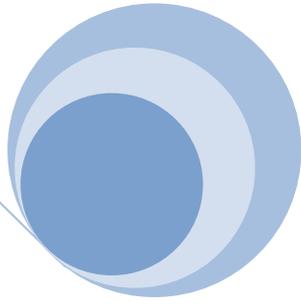
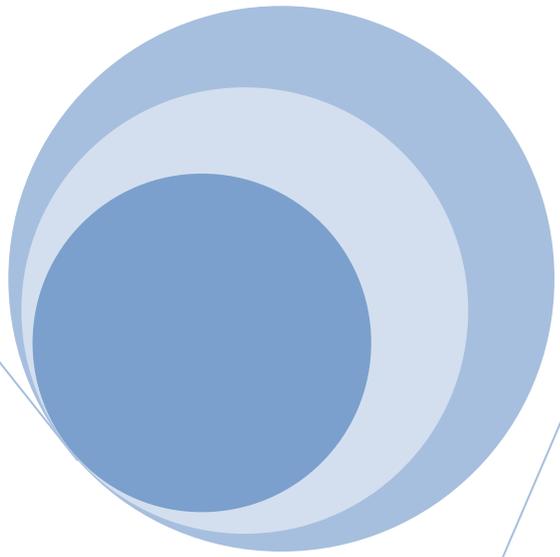


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Existing Programs Research

To assist in the design and development of the Silver Beach Creek Outreach Program, over 9 hours (under the PSP grant) were spent researching phosphorus reduction programs throughout the US and Canada. Programs highlighted below have components that maybe used in the Silver Beach Creek Watershed Outreach Program.

Sudbury, Canada

Lake Water Quality Program

The goal of the Lake Water Quality Program is to protect, conserve, enhance and restore water quality and wildlife habitat in Greater Sudbury lakes through an extensive water quality monitoring and action-oriented community stewardship program.

The Lake Water Quality Program carries out a lake water quality-monitoring program and provides a one-stop shopping resource for lake residents and stewardship groups. The Lake Water Quality Program works in a strong multi-stakeholder network, with excellent ties to its community base of lake stewardship groups and volunteers, as well as with local, provincial and federal agencies and groups.



Lake Water Quality Program activities include:

- Spring Phosphorus Sampling Program
- Lake Stewardship Assistance Grant Program
- Shoreline Stewardship Program: an extensive outreach and educational campaign aimed at informing lake residents about the benefits of healthy natural waterfront properties and shorelines. Contact is made with lakefront residents through: Dock-to-Dock Visits, Shoreline Home Visits, Hands on Shoreline Workshops, and Annual General Meeting Presentations.
- Living With Lakes Forum: an annual event held in November to update the community on the year's activities of the Lake Water Quality Program. Guest speakers are invited to discuss the latest topics and areas of concern for lake stewardship groups.
- Biodiversity survey: bug search with part-time staff and lake stewardship groups.
- Community Monitoring programs: partners with OFAH Invasive Species Awareness Program, Ministry of the Environment's Lake Partner Program and EMAN Nature Watch program.
- Lake Water Quality Website: a learning tool for lake residents and the community.

Canada, Nationwide

The Centre for Sustainable Watersheds

Shoreline Home Visit Program

(CSW) is a charitable organization that was formed to foster community involvement in conservation and protection of water resources from coast to coast to coast. They work with community groups, provincial and national NGOs, universities, industry and government across geographical, political and jurisdictional boundaries.

The Shoreline Home Visit Program is a confidential one-on-one landowner contact program, designed to advise waterfront residents on healthy shoreline living practices.

Visits can range in time - from 15 minutes to 2 hours - based on priorities and resources available. During a 1-2 hour visit, trained staff or volunteers walk about the property with the property owners and highlight simple solutions geared towards their own property. The visit is a straightforward and practical way for property owners to learn how to put conservation principles into practice, including:

- Prevention and control of shoreline erosion
- Protection of water quality from land use
- Creation of wildlife habitat
- Lawns and gardens
- Water conservation

- Docks and fisheries habitat
- Invasive species
- Lighting
- Septic system maintenance

**City of Gresham, Oregon
Streamside Property Outreach Program (SPOP)**

SPOP provides free consultations to citizens who live streamside, because water pollution and loss of wildlife habitat are serious problems threatening Gresham's streams. The program's goal is to give streamside residents the tools they need to help protect our community's urban streams.

Staff set up at-home appointments with residents who have a stream either running through their property or through a city open space that borders their property.

Participants are given a variety of free materials, information and services that will help them protect and improve Gresham streams and wildlife habitat, starting in their back yards.

Program goal is to reach all 600 streamside tax lots in Gresham by 2014.

SPOP Program Areas

- gardening with native plants
- removing invasive plants
- riparian area health and function
- managing common lawn and garden pests
- living with wildlife and creating wildlife habitat
- stormwater management and water conservation
- riparian restoration and partnership
- non-toxic lawn care and gardening
- yard debris and hazardous waste disposal

Program Freebies (when applicable)

- native plants
- compost bins
- bat houses
- seed packages
- garden center coupons
- educational handouts



**City of Springfield, Missouri
Show-Me Yards & Neighborhoods**

Show-Me Yards & Neighborhoods is an educational program designed to raise awareness about the role urban storm water runoff plays in the water quality of nearby streams, creeks, rivers, and lakes. Through voluntary educational activities, SMY&N offers environmentally responsible alternatives to traditional lawn care and construction practices that contribute to the runoff of contaminants and excess nutrients. SMY&N also recognizes and commends individuals and professionals who put the SMY&N techniques into practice - homeowners can earn an attractive yard sign and professionals can become certified. SMY&N is a part of the Choose Environmental Excellence program.

To qualify as a Show-Me Yard, the landowner may choose from a menu of approved practices to earn credits or "inches". When 36 inches have been earned, the yard is certified as a Show-Me Yard.

Landowners receive valuable information including cost-saving, environmentally-responsible lawn and landscape tips. Certified lawns will earn a handsome yard sign and positive publicity in the community. Participants have immediate access to lawn and landscape professionals.

Existing Programs Coordinator Interviews

Four hours were dedicated to contacting phosphorus outreach program coordinators from a variety of phosphorus reduction programs. Program coordinators shared techniques for marketing their local program, working with shoreline residents, incentives and focus of resident consultations. Highlights from above mentioned programs are included below.

- “There are a variety of ways we invite residents to participate in our program. The webpage is one method. We also cold-call residents and sometimes send fact sheets/invitations via snail mail within prioritized streamside neighborhoods. We also include SPOP information and sign-up sheets with other tabling materials at outreach events.”
- “We do a free and confidential consultation with the home owners, giving them information on natural species to plant around the shoreline to promote healthy waterfront living. We have a checklist and information package that gives suggestions and alternatives for better septic use and products. The key issue we want to address is phosphorus, limiting as much as possible from the use of fertilizers and soaps.”
- “We give the home owner a bag of natural products and information. There is really no incentive because for the most part the home owners on the lakes use that water as their primary water source, they need to take care of it or they won't be able to use it and their property value will decrease. Blue Green Algae is also on the rise in this area so we really need to address the phosphorus levels and get it reduced as much as possible.”
- “We try and get as many people from the lake groups involved as possible. There seems to be a lot of interest from individuals that want to help, but the trouble is getting the message out that there are services available. Word of mouth works best.”
- “The list of topics we include in our program can be found on our website.”
- “Barriers to securing appointments include: reluctance to have help from city on private property, difficulty overcoming salesperson-like sound of our approach over the phone, and mistrust.”
- “Barriers to behavior change among participants include: lack of time, health constraints, and lack of expertise.”
- “Consider using the Community Based Social Marketing (CBSM) approach, founded in social psychology. This is the approach we use in our program, and follow up surveys of participants have demonstrated its successfulness with regard to fostering lasting behavior change related to water quality and wildlife.”



Key Survey Findings

250 surveys were mailed to SBC watershed residents and additional residents were surveyed over the phone. We received 69 responses to the mail survey and 87 to the phone (5 partial completes), a very respectable response (37%).

- **High frequency fertilizer users.** A small number of households reported fertilizing their lawns (q5) and gardens (q17) more than 2x per year. In one case, the respondent reported fertilizing the garden more than 30 times a year (q17). There is an opportunity to build norms around fertilizer use occurring only 1-2x per year and bring down the very high-application users to the norm. However, this is a small group and may be difficult to target. It would be useful to learn from the focus group what they think is happening and who those high-frequency fertilizer people are.
- **Unaware of phosphorus content.** A substantial number of people are not aware of the phosphorus content of their fertilizers and soaps (q7, q19, q49). This is an easy key point to make and could become core to the program, with 15% or more of all respondents being eligible to learn from it.
- **Lawn size reduction willingness.** The incidence of lawn size reduction is very high (q10: 51%). There is a reasonable portion of people considering lawn size reduction to warrant this being a focus of the program (q12). This is surprising since it is a high-barrier behavior. It would be beneficial to learn from the focus group what they think drives this willingness. It is likely NOT the needs of the lake.
- **Yard waste.** A substantial portion of the intended audience is keeping yard waste on their property (q21, 33%). Furthermore, 56% of households reported living next to or within 100 feet of a ditch, stream, pond or lake (q23 and q25). Although they are not dumping in or near the water (q24).
- **Composting.** A substantial number of households also compost on their property (42% q26b). Many keeping compost in an uncovered pile (15% q27). Although few are willing to switch to a compost bin (q28) or food plus curbside pick up (q29), the project could ask people to cover their compost heaps.
- **Septic.** Septic users are rare (q31), though 3 of the 10 did not have their system inspected in the past two years and 1 in 10 was not considering doing so (q34). The impact of failing septic systems may warrant considering this in the project.
- **Pet waste.** Most households have pets that go outside (q35 60%), and many have dogs (q38 48%). This finding is in keeping with expectations for the area. However, people in this area are already picking up their pets' waste (84% pick up all or most of it – q39, q40). Many also bag and trash the waste all or most of the time (65% of all dog owners). Those who do not pick up waste are not likely to be considering it, and those who do not bag and trash the waste are not likely to be considering doing so.
- **Car washing.** Car washing at home is quite prevalent (q47, 62%), though it's likely shared with commercial washing (q45, 69%). Key reasons for washing at home are cost and convenience, but also concerns about the quality of commercial car washes and risks to vehicles. There is a good indication that a reasonable number of folks would be interested in all commercial car washing (q50), but cost is the most common barrier. Creative solutions are recommended.
- **Phosphorus.** People in the intended audience are fairly aware of pollution problems at Lake Whatcom (q52, q53), but not terribly concerned about them. They are aware of phosphorus being a problem for Lakes and streams, but their understanding of phosphorus sources is very limited (q57 – open ends). Since the focus of the program is private households' contributions, keeping with the awareness of cleaners and fertilizers being sources may be helpful, and perhaps more helpful than trying to educate people on all the sources of phosphorus. This may be a good point to review with the focus group.
- **Concern.** Concern over the effects of phosphorus are not terribly high. Patterns showed that people tended to give all items a high concern score, or none of them a high concern score. This is a key segment in the intended audience. The program needs to speak to both.
- **Silver Beach Creek Watershed recognition.** People are mostly aware their homes are in the Lake Whatcom Watershed, but many are unaware of their relationship to Silver Beach Creek (q55, 55% said no or don't know). There may be an opportunity to create a stronger identity for these households as part of the program.

- **Storm water strategies.** Storm water controls were met with mixed reviews. Many people were unwilling to suggest which method would be most effective (q67, 26%). Rain barrels are well known (q62), considered most effective by some (q67, 17%) and in use by a number of households (q70, open ends). Layered plantings were also already in use, and thought to be both effective (q67 33%) and appealing (q68 40%). Many people responded that “nothing” might stop them from using the method at their home, while others mentioned costs, concerns about flooding and site conditions (q69, open ends). A substantial portion of people were considering using one of the methods (q71, 20%). Program elements should focus on those already believed to be effective and appealing.
- **Program information.** There is relatively high level interest in following the program development and implementation (q73, 67%) with people fairly split between email communications (q74, 47%) Mail communications (45%) and community meetings (26%). Extension staff topped the list of trusted sources (q76, 47%) followed by county staff (29%) and Watershed stewards (27%). The neighborhood association and city were less often noted as trusted sources (about 20% each), though some respondents ONLY noted county and city staff as trusted sources.
- **Program elements.** Interest in the proposed model of a creek side steward visit was moderate (18% extremely or very, q77). Coupon incentives were well liked, along with free or discounted yard waste pick up (q78).
- **Monitoring information.** Interest in monitoring information is good, with 50% being extremely or very interested in learning the results of the monitoring (q79). Methods of contact are similarly distributed with email and mail being most appealing to folks (q80).

Complete survey and results included in Appendix A. See attached excel document for open ended responses.

Focus Group Findings

Applied Research Northwest facilitating a focus group on June 22 to obtain more in depth knowledge of SBC residents action, motivation and perceived barriers. Highlights are included below.

- Extension is believed to be “politically neutral” and very knowledgeable. Their advice is based on science. They are accessible and experts. City, county, and Public Works are “Not on board.” Some had very negative experiences with the City where they were unable to get help to solve certain problems that affected water quality. The problem of the complexity of what the city can and can’t do because of regulations was raised by one participant and acknowledged.
- Home visits not so popular
- Ongoing demonstration at Bloedel Donovan encouraged – sort of an interpretive walk with composting, proper use of fertilizers, layered plantings, rain barrels etc all available and in use.
- Big Rock Garden Park for community event. Website and Open house really positively received. Multiple modes of communication encouraged (mail, email, community buzz etc.).
- Hold a public meeting to build consensus. Don’t decide where to start, let people come together (maybe a street or cul de sac) and agree to buy into the project themselves. Mary Dumas might be just the person to help with such a process.
- There was a lot of interest in how effective washing the car on the lawn is. One member raised the issue of other pollutants (he mentioned hydrocarbons and asbestos) going with it – he is a die-hard commercial car washer as a result. Two like to wax their cars and are going to great lengths to wash their car at a commercial wash, then bring it home, clean off any road dust, and wax it. Can the city provide a wash and wax area – a place for people to do it themselves but that doesn’t drain directly to creeks? Gets to cost, less so convenience, but definitely quality issue.

Focus Group Questions included in Appendix B

Educational Materials, Displays and Incentives

Interpretive Signs

Interpretive signs for the demonstration landscape at Bloedel Donovan Park are included below. The demonstration display, signs and guided tours will serve as a model to support residential efforts in run-off reduction techniques.

BACKYARD BUFFERS

WHEN YOU LOOK across Lake Whatcom, you'll see many houses close to the water that have no plant buffers between the lawns and the lake. Without this buffer, when stormwater drains into the lake there is nothing to slow down and filter pollutants before they enter the water.

Planting a buffer with a mix of trees, shrubs, and perennials can protect the lake from many pollutants while also helping to slow down erosion, provide fish habitat, and frame your lake view in a pleasing manner.



Many Lake Whatcom properties have mowed lawns that stretch to the edge of the lake. The water has no buffer from fertilizer, pesticides, and other pollutants. There is little food or shelter for wildlife.



Transform your lakescape with a buffer zone. You may want to consider extending it into the water. Start off by planting small sections with site-appropriate shrubs and grasses, which will filter stormwater and provide wildlife habitat.



Eventually your shoreline will strike a balance between grass and site-appropriate plants, with lawn in the areas that you actively use. Trees, shrubs and grasses will add privacy and a colorful frame to your view of the lake while protecting water quality and preventing erosion.

Whatcom County Public Works www.lakewhatcom.whatcomcounty.org

GOOD AGENTS

WHILE THE PLANTS in these demonstration areas have been chosen for their natural resistance to pests, sometimes a yard will need help from other sources. Birds and beneficial insects are "good agents" that can help you combat common unwanted garden pests—without resorting to insecticides or herbicides that can contaminate the lake.

Recruiting these good agents is just one of the tools of Integrated Pest Management, a least-toxic approach that discourages unwanted intruders from destroying your garden.



LADY BUG



GROUND BEETLE



HOVER FLY



GOLDEN TORTOISE



LACEWING



SOLDIER BUG

Whatcom County Public Works www.lakewhatcom.whatcomcounty.org

SELECTING PLANTS

THE FIRST AND MOST IMPORTANT decision when planning a garden is choosing the right plant for the right place. It is important to consider many factors that may affect the growth and longevity of your plants such as the kind of soil the location has, type of sun exposure, and amount of foot traffic. If your plant can't thrive where you've planted it, it doesn't matter how much fertilizer, pesticides, or water it gets—it will never be healthy.

The planting beds in this demonstration landscape include alternatives to invasive plants, low-maintenance alternatives to turf, drought-resistant varieties, and pest-resistant plants. Choosing the right plant for the right place prevents you from having to constantly battle with your yard so that you can enjoy your landscape as a watershed-friendly gardener.



RED FLOWERING CURRANT



CREeping THYME



BUNCHBERRY



LONGLEAF OREGON GRAPE



VINE MAPLE



RED TWIG DOGWOOD

Whatcom County Public Works www.lakewhatcom.whatcomcounty.org

Educational Materials, Displays and Incentives, cont.

Coupons

Survey results identified coupons as desired incentive. Coupons will be used at workshops, home visits and tours to support behavior change. Coupons for native plants, phosphorus free fertilizer and watershed friendly car washes will be use to target 80 to 100 residents.

GIFT CERTIFICATE

_____ is entitled to

One bag of Lake Whatcom Blend Fertilizer from

Whatcom Farmer's Coop
Courtesy of Lake Whatcom Management Program

Redeemable at Whatcom Farmer's Coop
3500 Meridian Street
Bellingham, WA 98225
360-734-4010 www.wfcoop.com

Expires December 2010



GIFT CERTIFICATE

_____ is entitled to

\$24 of native plants from

Plantas nativa, LLC
Courtesy of Lake Whatcom Management Program

Redeemable at Plantas nativa, LLC
210 East Laurel Street
Bellingham, WA 98225
360-715-9655 www.plantasnativa.com

Expires December 2010



**Bellingham / Whatcom County
Silver Beach Creek
Watershed Program**

**Good for one basic car wash at:
AT ANY OF THE FOLLOWING BELLINGHAM CAR WASHES**

SUNSET CAR WASH
1204 E. SUNSET DR.

MASTER LUBE
1111 E. MAPLE ST.

SEHOME CAR WASH
839 LINCOLN ST.

CAR WASH KING
4150 MERIDIAN ST.

Educational Materials, Displays and Incentives, cont.

Dog Waste Removal Incentives

Four dog waste bag dispensers have been purchased along with a year's supply of bags. Site selection will be determined by the results of water quality testing and resident support.



Dog Owner Flashlights

The survey showed a majority of dog owners remove waste properly. We want to continue to encourage that behavior and reach the folks not picking up pet waste. Modeling after Snohomish County's very successful dog waste reduction program, we chose to encourage proper pet waste disposal and reward behavior with battery free flashlights. Flashlights will be given out to people who return a portion of a dog waste educational postcard that we will send to SBC residents. Returned mailings will help us gauge our audience's receptiveness to our dog waste education messages and our delivery method.

Rain Barrels

Rain barrels are a dual-purpose application, and have proven to be effective in both stormwater control and water conservation practices. They have also been an excellent tool in educating the public about stormwater issues and indoor & outdoor water consumption. Twenty-three rain barrels, purchased through this grant, will be installed on residential properties identified as having the highest run off reduction needs.



Logic Model

Research, survey and focus group results helped guide the development of the broad program logic model. This version of the logic model will help staff look at short, medium and long term goals. It will also help staff to organize program components and find potential gaps in the program. This version of the logic model will be followed by more detailed versions fleshing out each program component.

Logic model included in Appendix C

Expenses

Description	Quantity	Cost
City staff time	89.5 hours	\$3,351.16
Survey and focus group	Phone and mail surveys and focus group	\$16,320.00
Run off reduction demonstration site signs	3 signs	\$3,033.23
Rain barrels and accessories	23 barrels	\$4,556.78
Dog waste bag dispensers and bags	4 dispenser and 12 cases of bags	\$2,805.42
Native plant coupons	80 coupons	\$1,920.00
Car wash coupons	100 coupons	\$900.00
Fertilizer coupons	80 coupons	\$1,193.50
Rechargeable flashlights	200 flashlights	\$1,731.66
Misc. expenses	grant administration	\$955.04
	Total	\$36,766.79

Matching Funds

Description	Quantity	Cost
Sign design	Staff time 20.5 hours @ \$58.44/h Design work \$5,452	\$6,650.08
WSU extension staff	35 hours at \$31.43	\$1,100.00
Design, survey and permitting Lahti Drive bio-infiltration swale	Engineers, Surveyors and Planners - Salaries and Benefits (\$23,936.04) Equipment Rental (\$440)	\$24,356.04
Stormwater staff time - Silver Beach programmatic(Engineering Manager and Planner)	300 hours - Salaries and Benefits	\$16,350.00
County PDS Staff: Background research, site visits, & correspondence for Conservation Program for Ag Lands (CPAL)	Parcel (1): 2.5 hours @ \$100/h Parcel (2): 2.5 hours @ \$100/h (Rate based on Unified Fee Schedule)	\$500.00
	Total	\$45,155.12

Appendix A



Water Quality Survey

LAWN CARE PRACTICES

These questions are about your yard care practices. { Percent of N Percent of all}

Q1. Do you have a lawn on your property? (N=156)

- Yes – 96%
- No → **Skip to Q13** – 5%
- Don't know → **Skip to Q13**

Q2. Do you typically collect the clippings when your lawn is mowed? (N=149)

- Yes 64% 62%
- No → **Skip to Q4** 35% 33%
- Don't know → **Skip to Q4**

Q3. Do you collect all of them or leave some of them on the ground? (N=98)

- All or Most of them – 72% 46%
- Some of them - 27% 17%
- Don't know

Q4. Do you use fertilizer on your lawn? (N=148)

- Yes – 46% 44%
- No → **Skip to Q9** - 54% 51%
- Don't know → **Skip to Q9**

	Frequency	Percent	Valid Percent
0	5	3.2	7.1
1	25	16.0	35.7
2	28	17.9	40.0
3	7	4.5	10.0
4	2	1.3	2.9
5	1	.6	1.4
97 Don't know	2	1.3	2.9
Total	70	44.9	100.0

Q5. How many times a year do you fertilize your lawn? (Please enter "0" if less often than once a year.)

Q6. During which seasons do you use lawn fertilizer? (Please check all that apply.) (N=69)

	N	% of N	% of All
winter	4	6%	3%
spring	59	86%	37%
summer	16	23%	10%
fall	30	43%	19%
Don't know	5	7%	3%

Q7. Do you know if your lawn fertilizer is phosphorus-free? (N=69)

- Yes it is → **Skip to Q9** - 64% 28%
- No it isn't 6% 3%
- I don't know if it's phosphorus free 30% 14%**

Q8. Have you or anyone in your household talked about or considered using a phosphorus free lawn fertilizer? (N=29)

- Yes 45% 8%
- No 35% 6%
- Don't know 21% 4%

Q9. Do you use any type of weed and feed on your lawn? (N=149)

- Yes 31% 30%
- No 67% 64%
- Don't know 2% 2%

Q10. Have you ever taken steps to reduce the size of your lawn by replacing grass with planting beds or other ground cover? (N=149)

- Yes 53% 51%**
- No → **Skip to Q12** 47% 45%
- Don't know → **Skip to Q12**

Q11. Is the reduction more than half, about half or less than half of what the lawn used to be? (N=79)

- More than half 9% 5%
- About half 18% 9%
- Less than half 71% 36%
- Don't know 3% 1%



Skip to Q13

Q12. Is reducing the size of your lawn something that you or anyone in your household have been talking about or considering? (N=89)

- Yes 25% **14%**
- No 74% 42%
- Don't know 1% 1%

GARDEN AND PLANT BEDS

Q13. Do you have a garden or other plant beds that you maintain on your property? (N=156)

- Yes 89% 89%
- No → **Skip to Q21** 11% 11%
- Don't know → **Skip to Q21**

Q14. Are any of the plant or garden beds in raised beds?

- Yes 44% 39%
- No → **Skip to Q16** 56% 51%
- Don't know → **Skip to Q16**

Definition: Raised beds are contained, for example, by wood panels or another type of wall. They are usually at least 8" higher than the ground around them.

Q15. What portion of your plant or garden beds are raised? (N=62)

- All or Most 29% 12%
- Some 71% 28%
- Don't know

Q16. Do you use any kind of fertilizer or compost on your garden or plant beds? (N=139)

- Yes 63% 56%
- No → **Skip to Q21** 35% 31%
- Don't know → **Skip to Q21** 1% 1%

Q17. How many times a year do you fertilize or compost your garden or plant beds? (Please enter "0" if less often than once a year.) (N=91)

# of times	N	% of N	% of all
.0	5	5%	3%
1	48	53%	31%
2	20	22%	13%
3 or more (max 36)	14	15%	9%

Q18. During which season do you use fertilizer or compost in your garden or plant beds? (Please check all that apply.) (N=91)

	N	% of N	% of All
winter	5	5%	3%
spring	78	86%	49%
summer	25	27%	16%
fall	16	18%	10%
Don't know	3	3%	2%

Q19. Do you know if your fertilizer or compost is phosphorus-free? (N=91)

- Yes, it is → **Skip to Q21** 64% 37%
- No, it isn't 3% 2%
- No, I don't know if it's phosphorus free** 33% 19%

Q20. Are you, or anyone in your household, talking about or considering using a phosphorus-free fertilizer or compost? (N=36)

- Yes 44% 10%
- No 28% 6%
- Don't know 28% 6%

YARD WASTE DISPOSAL

Q21. Where do you usually dispose of yard waste such as leaves, plant trimmings or lawn clippings? (Please check all that apply.) (N=155)

	N	%
Yard-waste pile on the property	51	33%
Recycle with Clean and Green Recyclers	46	30%
Something else (Please describe)	39	25%
Recycle with curbside yard waste pick up	25	16%
Trash can or take it to the dump	23	15%
Don't know	3	2%

Q22. Is there any water, for example a ditch, stream, pond or lake on or touching your property? (N=154)

- Yes 31% **30%**
- No → **Skip to Q25** 68% 66%
- Don't know → **Skip to Q25** 1% 1%

Q23. Which is it? (Check all that apply.) (N=47)

- Ditch 53% 16%
- Stream 28% 8%
- Pond 13% 4%
- Lake 6% 2%

Q24. When you have yard waste such as leaves, plant trimmings or lawn clippings to dispose of, do you ever dump it in or near the water on your property? (N=48)

- Yes 4% 1%
- No 96% 30%
- Don't know



Skip to Q26a

Q25. Is there a ditch, stream, pond or lake within 100 feet of your property? (N=111)

- Yes 37% **26%**
- No 62% 44%
- Don't know 1% 1%

COMPOSTING

Q26a. Do you use the Food Plus Curbside yard waste pick up service? (N=155)

- Yes 21% 21%
- No 79% 79%
- Don't know 1% 1%

Q26b. Do you compost any food or yard waste on your property? (N=155)

- Yes 42% 42%
- No, I haul it away or have it taken away → **Skip to Q31** 58% 58%
- Don't know → **Skip to Q31**

Q27. Is your compost in a bin or container, in a pile covered with a tarp or other material, or in an uncovered pile? (N=65)

- Bin or container → **Skip to Q29** 57% 24%
- Pile covered with a tarp 6% 3%
- Uncovered pile 37% 15%
- Something else → *please describe* _____
- Don't know

Q28. Are you, or anyone in your household, talking about or considering using a compost bin or container? (N=28)

- Yes 43% 8%
- No 57% 10%
- Don't know

Q29. Have you or anyone in your household talked about or considered using the Food Plus curbside Yard Waste pick up service instead of composting yourself?

- Yes 10% 4%
- No → **Skip to Q31** 89% 35%
- Don't know → **Skip to Q31** 2% 1%

Q30. What has kept you from using the Food Plus curbside service instead? – See open ends

SEPTIC SYSTEM

Q31. Is there a septic system on your property? (N=156)

- Yes 6% 4%
- No → **Skip to Q35** 94% 94%
- Don't know → **Skip to Q35**

Q32. How would you rate your understanding of day-to-day care of your septic system? (For example, what can be put into the system, what shouldn't, excess water use and landscaping cautions.) (N=10) counts only provided

- Excellent 3
- Very good 4
- Good 2
- Fair 1
- Poor

Don't know
Q33. Has your septic system been inspected in the past two years?

- Yes → *Skip to Q35* 7
- No 3
- Don't know

Q34. Have you or anyone in your household talked about or considered having your septic system inspected at least every two years?

- Yes 2
- No 1
- Don't know

ANIMAL WASTE

Q35. Do you have any pet animals that go outside? (N=156)

- Yes 60%
- No 40%
- Don't know

Q36. Do you have any other animals or livestock that live on your property? (N=156)

- Yes 7%
- No 93%
- Don't know

Q37. Do wild ducks and geese come to your property? (N=156)

- Yes 14%
- No 85%
- Don't know 2%

Q38. Do you have a dog? (N=156)

- Yes 48%
- No → *Skip to Q45* 52%
- Don't know → *Skip to Q45*

Q39. Do you ever pick up any of the waste that your dog leaves in your yard? (N=75)

- Yes 93% 45%
- No → *Skip to Q43* 7% 55%
- Dog doesn't leave waste in yard (walked elsewhere) → *Skip to Q45*
- Don't know → *Skip to Q43*

Q40. Would you say you pick up most of the waste or some of it? (N=70)

- All or Most 90% 40%
- Some 10% 5%
- Don't know

Q41. When you pick up the waste do you ever bag it and put it in the trash? (N=70)

- Yes 82% 37%
- No → *Skip to Q44* 17% 8%

Don't know → *Skip to Q44*

Q42. Would you say you bag it and put it in the trash most of the time or some of the time? (N=57)

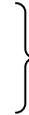
- All or Most 86% 31%
- Some 25% 5%
- Don't know



Skip to Q45

Q43. Have you or anyone in your household talked about or considered picking up the waste your dog leaves in the yard? (N=7 – numbers reported only)

- Yes 2
- No 5
- Don't know



Skip to Q45

Q44. Have you or anyone in your household talked about or considered bagging the dog waste and putting it in the trash? (N=12) numbers reported only

- Yes 1
- No 11
- Don't know

CAR WASHING

Q45. In the past year, have you or others in your household used a commercial or coin-operated car wash when you washed your cars, trucks or other vehicles? (N=156)

- Yes 69%
- No → *Skip to Q47* 31%
- Don't know → *Skip to Q47*

Q46. Was a commercial or coin-operated car wash used most of the time or just some of the time? (N=109)

- All or Most 65% 46%
- Some 35% 24%
- Don't know

Q47. In the past year, have you washed any of your cars, trucks or other vehicles at home? (N=156)

- Yes 62%
- No → *Skip to Q52* 38%
- Don't know → *Skip to Q52*

Q48. What is the main reason you wash your vehicles at home rather than at a commercial or coin operated car wash? (N=99)

	N	% of N	% of all
Cost	41	41%	26%
Ease/convenience	31	31%	20%
Quality	10	10%	6%
Other	17	17%	11%

Q49. Do you know if the soap used when you or others wash your cars at home is phosphorus free or not?

- Yes it is 45% 28%
- No it isn't 3% 2%
- I don't know if it is phosphorus free or not 49% 30%

Q50. Have you or others in your household talked about or considered using a commercial or coin operated car wash for all your vehicle washing?

- Yes 29% 18%
- No 66% 41%
- Don't know

Q51. What would it take for you to be willing to use a commercial or coin operated car wash for all your vehicle washing? See open ends

WATER QUALITY

These next questions have to do with water quality in Lake Whatcom.

Q52. How much have you heard or read about pollution in Lake Whatcom? (N=155)

- A great deal 25%
- A lot 30%
- Some 32%
- A little 10%
- Nothing at all → *Skip to Q54* 3%
- Don't know → *Skip to Q54* 1%

Q53. Based on what you've heard or read, how serious would you say pollution is in Lake Whatcom? (N=150)

- Extremely 12%
- Very 34%
- Somewhat 42%
- Not Very 6%
- Not at all 2%
- Don't know 4%

Q54. Do you know if your home is in the Lake Whatcom Watershed? (N=155)

- Yes it is 83%
- No it is not 7%
- No, I don't know if it is in the watershed 10%

Q55. Do you know if your home is in the Silver Beach Creek Watershed? (N=155)

- Yes it is 45%
- No it is not 12%
- No, I don't know if it is in the watershed 43%

You may have heard that the Washington State Department of Ecology has placed Lake Whatcom on the state's list of polluted waters. The listing triggered a study to determine how much pollution running into the lake needs to be reduced. Phosphorus is the main cause of Lake Whatcom's problem. The study is also looking at fecal coliform bacteria and pollution in the creeks and rivers that run into Lake Whatcom.

Q56. Have you ever heard or read about phosphorus being a problem in lakes and streams? (N=154)

- Yes 87%
- No 10%
- Don't know 3%

Q57. Based on what you know, what do you believe to be the sources of phosphorus? See open ends

Q58. One thing that excess phosphorus does in lakes is to cause plants and algae to grow more quickly. When the plants and algae grow too quickly, they use up the oxygen in the water that fish and other animals need to live. How serious do you think this problem is for Lake Whatcom and the community? (N=154)

- Extremely 22%
- Very 37%
- Somewhat 28%
- Not Very 5%
- Not at all 1%
- Don't know 7%

Q59. Another thing that the excess plants and algae do is to leave a scum on the surface of the water. That scum is oily looking and can be green, blue or brown. How serious do you think this problem is for Lake Whatcom and the community? (N=154)

- Extremely 12%
- Very 24%
- Somewhat 29%
- Not Very 16%
- Not at all 3%
- Don't know 16%

Q60. When algae grows too fast it also dies fast and leaves a smell like something rotting. How serious do you think this problem is for Lake Whatcom and the community? (N=154)

- Extremely 11%
- Very 18%
- Somewhat 32%
- Not Very 22%
- Not at all 4%
- Don't know 13%

Q61. Lake Whatcom is also the source of Bellingham's drinking water. How serious do you think the pollution in the lake is for people who use the city's water supply? (N=154)

- Extremely 24%
- Very 28%
- Somewhat 27%
- Not Very 14%
- Not at all 3%
- Don't know 4%

ATTITUDES

One way that phosphorus can be reduced is to limit how much storm water goes directly into the Lake. There are many ways this can be done.

Q62. Have you ever heard of using rain barrels to store rain water that comes off the roof and through the gutters of a house for storm water control? (N=154)

- Yes 88%
- No 12%
- Don't know 1%

Q63. Have you heard of using a rain garden to hold rain water and keep it from running off the property for storm water control? (N=154)

- Yes 56%
- No 43%
- Don't know 1%

Q64. A cistern captures and stores rain and water from your sink so you can use it in your yard or to flush your toilets. Have you ever heard of using a cistern for storm water control? (N=154)

- Yes 41%
- No 57%
- Don't know 2%

Q65. Disconnecting your home's downspouts from the storm drain system can allow water to stay on your property rather than going directly into the storm drains. Have you ever heard of disconnecting your downspouts for storm water control? (N=154)

- Yes 40%
- No 59%
- Don't know 1%

Q66. Installing layers of plants such as low ground cover along with medium high shrubs and then trees is another way to prevent storm water from leaving your property. Have you ever heard of using layered plantings for storm water control? (N=154)

- Yes 55%
- No 43%
- Don't know 2%

Q67. Of the methods listed on the previous page, which ONE method do you think would be most effective in managing storm water in your neighborhood? (N=151)

- Cisterns 7%
- Rain barrels 17%
- Rain gardens 5%
- Disconnecting downspouts 11%
- Installing layered plantings 33%
- Don't know 26%

Q68. Which ONE method do you think would be the most appealing for managing storm water? (N=152)

- Cisterns 5%
- Rain barrels 19%
- Rain gardens 8%
- Disconnecting downspouts 7%
- Installing layered plantings 40%
- Don't know → Skip to Q70 18%

Q69. What might stop you from using that method at your own home? See open ends

Q70. Are you currently using any of these methods to control storm water at your home right now? (N=151)

- Yes 44% which one(s)? _see open ends_ → Skip to Q73
- No 54%
- Don't know 2%

Q71. Have you or anyone in your household talked about or considered using any of these methods at your home? (N=93)

- Yes 30% 20% which one(s)? _see open ends_ _____
- No → Skip to Q73 70% 41%
- Don't know → Skip to Q73 1%

Q72. What has kept you from using it? See open ends

PROGRAM

The Lake Whatcom Management Program is launching a program to help people reduce the amount of phosphorus that drains from their property into Silver Beach Creek.

Q73. There will be opportunities for residents to be involved in the program as it is developed and implemented. Would you be interested in learning more about the program as it develops? (N=152)

- Yes 67%
- No → Skip to Q77 31%
- Don't know → Skip to Q77 2%

Q74. Program information could be shared in several ways. Which of these do you think you would be interested in? (Please check all that apply.) (N=100)

	N	% of N	% of all

Community Meetings	26	26%	17%
Newsletter	45	45%	30%
Email	47	47%	31%

Q75. Is there any other way you'd like to be involved? See open ends

Q76. Who would you trust most to provide accurate and up to date information about the project? (Please choose one, two or three of the following.) (N=98)

	N	% of N	% of total
Extension Staff	46	47%	30%
County Staff	28	29%	19%
Watershed Stewards	26	27%	17%
Neighborhood Assoc.	22	22%	15%
City Staff	19	19%	13%
Other	10	10%	7%
Don't know	4	4%	3%

The program could include a home visit from a creekside steward who will help residents learn about ways to prevent phosphorus runoff and ways the program team can help them make changes if they need it. The program is completely voluntary.

Q77. If the program were underway, how interested would you be in having a creekside steward come to your home? (N=149)

- Extremely 7%
- Very 11%
- Somewhat 22%
- Not Very 25%
- Not at all → **Skip to Q79** 30%%
- Don't know 5%

Q78. There are several incentives that the project could provide to participants. Would you be interested in any of the following? (Check all that apply.) (N=104)

	N	% of N	% of all
Store coupons	80	77%	54%
Yard waste pick up	72	69%	48%
Rain Barrel	66	63%	44%
Food waste pick up	55	53%	37%
Compost bin	41	39%	28%
Other	8	8%	5%

Q79. The city and county will be monitoring pollution levels in Silver Beach Creek for the next two years. How interested are you in learning the results of that monitoring as it happens? (N=149)

- Extremely 22%
- Very 28%
- Somewhat 38%

- Not Very 7%
- Not at all → **Skip to Q81** 6%

Q80. The program team can provide the information to you in several ways. Would you prefer to get the results by email, mail, or at a community meeting? (All your answers will be kept confidential.)

- Email – please provide an address 39% 33%
- Mail – please provide an address 38% 31%
- Community meeting 16% 13%

These last questions help us understand better who responded to the survey.

Q81. Do you own or rent your residence? (N=149)

- Own 97%
- Rent 3%

Q82. What is your age? (N=149)

- Under 30 5%
- 30-39 14%
- 40-49 22%
- 50-59 30%
- 60-69 17%
- 70-79 7%
- 80+ 3%

Q83. Are you male or female? (N=149)

- Male 47%
- Female 53%

Q84. How much schooling have you completed? (N=149)

- Less than high school 0%
- High school 19%
- Community or technical college degree or certificate 24%
- Bachelors degree 37%
- Graduate degree 20%

That's all the questions. If you have any additional comments, please write them in the box below.

Thank You!!
Please return your completed questionnaire to:

Applied Research Northwest
1313 E Maple St, Suite 201
Bellingham, WA 98225

Appendix B

Silver Beach Creek Watershed Focus Group discussion

Welcome

Research recently completed

Lake Whatcom Cooperative Management project – City, county and water district 10

Pilot area for a program that could be implemented throughout the watershed. Could become a model for other communities around Puget Sound. Puget Sound Partnership funding.

Ground rules –

No right answers – please share your thoughts.

Please leave other people with opportunities to share their thoughts. Consider if everyone has spoken before you speak more than once.

Confidential

Need to return survey results at end.

-
1. Names – how long lived in Silver Beach. Aware of the creek? Any stories about it?

Seven attending. Two lived in SB for 4 years, four for more than 20 years, and one was from outside the neighborhood but lived on Whatcom Creek. Creek was not a point of awareness except for one who lived there for more than 20 years and remembers kids going up the creek to play. Remembers the city using the creekside area as a dump into the 1990s. Remembers people dumping cars and car batteries there previously. The dump area is East of Britton Rd fairly close to the shore. Participants were wondering if that has been cleaned up or what the status is.

2. What do you think are the problems affecting water quality based on what you see in your neighborhood?

Several were curious about how well the new sidewalks are working with the drainage and filters – very impressed with the project. One participant knew of city information that said it was exceeding expectations.

One questioned whether we can really impact phosphorous.

Later in the discussion **the issue of geese was raised**. A great deal of concern (4 of the 7 participants) about the large non-migrating population there and the waste they are leaving.

3. Review findings
 - a. Lawn Fertilizer use.

Surprised at the number of folks who don't know if their fertilizer is Phosphorus Free (PF).

- i. Review sign

Sign feedback – too many words. Hard to read the yellow panel “look for the zero.” Red type “Attention:” noticed. All given too much equal weight – not sure where to look. Like the headlines and the lake graphic. Two would like more detail on the ordinance. No one there had ever seen the sign before.

- ii. Free bag of fertilizer if you sign up for a workshop – good? How much/many?

Coupon is insufficient and would go unused. Better to give people who are using fertilizer a bag for free so they will try it out. Don't give it to people who aren't using fertilizer.

Need a convincing demonstration of the efficacy of the zero phosphorus blend. Side by side turf samples? Some discussion of soil PH and how fertilizer works with area soils.

Concerned about timing of fertilizing. Why are people using it 4x a year? Why in the winter?

- b. Reduced lawn size
 - i. True for you? Motivation?
 - ii. True for someone you know? Their motivation?

One of the seven had reduced her lawn size, primarily for watershed protection. Belief is that most people don't want to do all the maintenance of a lawn. Observed that plantings are more work until they are established. Several wanted help establishing sufficient ground cover to prevent weeds.

Group spent a lot of time talking about the new tree planting ordinance. Concern is that there is confusion everywhere about who it applies to – new construction? Existing landscaping? 3 felt the ordinance felt punitive. One felt it was unnecessary (plenty of trees around the lake).

- iii. Native plant coupons for \$24 each if you attend a workshop. – Good?

Not enough. How about a **2 hour consult on landscape design** instead? Use Master Gardeners, Nursery owners to volunteer (Plantus Nativa thought to be amenable).

No strong list of native species is available. Very much needed.

- c. Compost/fertilizer for gardens – non-issue except freq and DK if PF
- d. Yard waste pile or compost pile on the property + Something else
 - i. What are you doing? Details.

One Takes prunings to Clean and Green, two compost bins.

Compost pile demonstration. Compost heat production competitions.

- ii. Cover your pile – ok?

One has too much acreage to use Clean and Green – large (20 yards) compost heap, uncovered – takes 3 years to break down. Has trouble keeping it wet enough. Might be willing to water it and cover it. Seems reluctant.

- iii. Dumping has been seen – have you seen it?

Lots of illegal dumping in the area – furniture, brush etc. Not from people who are permanent residents. Younger folks, many of them. Not so much on people's property.

Most in the group use Clean and Green to recycle. Feel the value is well beyond the \$2 fee.

Still, offer **Free \$2 coupons to people for the Clean and Green.**

- e. Skipping septic and animals
- f. Car washing – very common, main reasons, cost, convenience, quality
 - i. DK if PF

There was a lot of interest in how effective washing the car on the lawn is. One member raised the issue of other pollutants (he mentioned hydrocarbons and asbestos) going with it – he is a die-hard commercial car washer as a result. Two like to wax their cars and are going to great lengths to wash their car at a commercial wash, then bring it home, clean off any road dust, and wax it. **Can the city provide a wash and wax area – a place for people to do it themselves but that doesn't drain directly to creeks?** Gets to cost, less so convenience, but definitely quality issue.

- ii. Attend a workshop and get \$9 car wash coupon – good? How many/much?

\$9 coupons were not thought to be enough to be a long term solution.

4. Review pollution findings – awareness of watershed
 - a. Your interpretation? How does this community feel about the lake and pollution?

No surprises. Somewhat concerned. Somewhat of a problem. There is some memory of what the lake used to be like, which was worse (overtly) than now and some people wonder about the fuss. The second basin intake/GP flushing issues came up but only as examples of why people are only moderately concerned.

Running out of time here:

5. Review program pieces – Layered plantings and rain barrels
6. Interest in involvement about 2/3rds, and monitoring data
7. Trust – findings – what do they think?
 - a. What do they think of county/city staff image?
 - b. Who do they think of?
 - c. Public Works – what do they think of?
 - d. Extension - what do they think of?

Extension is believed to be “politically neutral” and very knowledgeable. Their advice is based on science. They are accessible and experts. City, county, and Public Works are “Not on board.” Some had very negative experiences with the City where they were unable to get help to solve certain problems that affected water quality. The problem of the complexity of what the city can and can’t do because of regulations was raised by one participant and acknowledged.

8. Home visits not so popular – assess program elements
 - a. Website with monitoring info, site visit info and how to get one, how tos of composting and building PF garden beds. Other stuff?
 - b. Workshops – learn about problems of pollution on LW, what is special about SBC, how to help. Get coupons.
 - c. Site visit, customized packet, more coupons
 - d. Interpretive tour of the creek
 - e. Open house (location?) – with demonstration pieces, recruiting for workshops and site visits.
 - f. Fertilizer reminder card

These were very positively received. **Ongoing demonstration at Bloedel Donovan encouraged – sort of an interpretive walk with composting, proper use of fertilizers, layered plantings, rain barrels etc all available and in use.**

Big Rock Park for community event. Website and Open house really positively received. Multiple modes of communication encouraged (mail, email, community buzz etc.).

9. What area of the watershed to start in?

Biggest awareness opportunity at the city-county line, where people don’t see themselves as being part of the watershed.

Consider impact versus ability to make a difference – Tweed Twenty (mostly paved) versus many of the homes that are on more naturalized lots, more permeable area. Which would be better discussion ensued.

Hold a public meeting to build consensus. Don’t decide where to start, let people come together (maybe a street or cul de sac) and agree to buy into the project themselves. *Mary Dumas might be just the person to help with such a process.*

Participants have experiences of city acting without talking to/consulting with residents – missing out on local knowledge and wisdom.

Compelling messages (dots):

Belief and knowledge objectives. **Bold**=best choices, *Italics*=potential, *but use with caution*

Are any of these statements particularly compelling? Moving? Thought provoking? If so, please check the box next to the statement. Cross out any statement you don't like.

- I can make a difference in how much pollution is in Lake Whatcom/Silver Beach Creek. Personal actions matter.**
5/7 like this
- I am not the only person trying to prevent pollution going into Lake Whatcom/Silver Beach Creek – many others are doing it too.
4/7 like this
- What I put on my lawn, people drink.
4/7 like this 2/7 don't like it
- What washes off my yard, people drink.
2/7 like this 2/7 don't like it
- There are lots of things I can do to help improve water quality in the Lake/creek.
4/7 like this 1/7 don't like it
- What I do at home impacts the natural environment well beyond my door.**
6/7 like this
- The watershed is a special place. Living in the watershed comes with special responsibilities, like learning how to prevent pollution from getting into the lake.*
5/7 like this 1/7 don't

- Clean drinking water is important.** 5/6 like this
- Federal state and local laws constrain what the city and county can do. 2/6 like this, 3/6 don't like it.
- Making changes in laws and policies is difficult and complex. Sometimes the city and county cannot do what they want to in order to protect the Lake. 2/6 like this, 1/6 don't like it.
- The health of Lake Whatcom is an indicator of how healthy our drinking water is.* 4/6 like this, 1/6 don't
- The city, county and other Bellingham households support what I'm doing to improve water quality in Lake Whatcom. 3/6 like this, 2/6 don't
- The quality of the water in the Lake has degraded very fast in the last decade. 2/6 like this, 2/6 do not
- Treating water to remove pollution is expensive. As pollution increases, costs of treatment increase. 3/6 like this

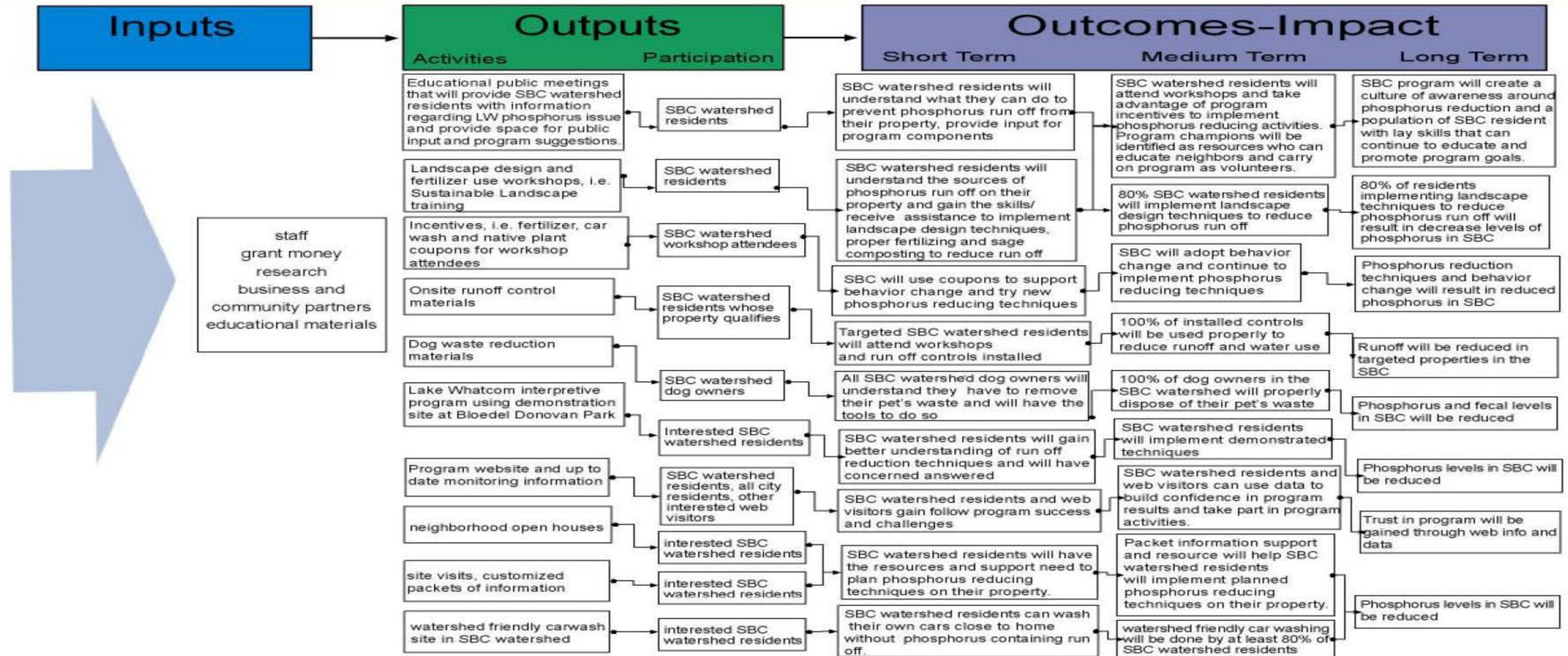
Appendix C

Silver Beach Creek Outreach Program

Situation: Silver Beach Creek is experiencing increased runoff and priority water quality problems associated with phosphorus and fecal coliform. Practices on both public and private properties have been identified as contributing to the problems identified. The program is focusing on reducing impacts associated with residential property.

Program Goals: Reduce impacts from residential development on phosphorus and fecal coliform levels in Silver Beach Creek, through residential involvement.

Background: A baseline survey, focus group results, monitoring results and a creek assessment were used to identify existing behaviors/conditions, perspectives on barriers/benefits, knowledge, and desires - key findings from this work were used to guide the development of this education strategy.



Program Evaluation Tools

Front-End (Needs Assessment)
SBC residents have high level of interest in program development and implementation, and creek monitoring results. Currently no real mechanism to accommodate these needs.

Process Evaluation
Review implementation of activities to determine if they are being accomplished as intended and reaching the audiences intended. Include an evaluation of the number of people attending community meetings, receiving newsletter, visiting the website, and participating in the projects

Short-Term Evaluation
Follow-up survey after one year targeting above

Pre and post workshop questionnaires

Medium-Term Evaluation
On ground surveys
Streambank assessments
Neighborhood assessments

Long-Term Evaluation
Water quality/quantity monitoring shows decrease in fecal coliform, phosphorus, and reduced runoff .

