WSU WHATCOM EXTENSION

TECHNICAL MEMORANDUM

Project Title: Gardening Green: Sustainable Landscaping
Storm water Management and Outdoor Water Conservation Practices

December 2016

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BACKGROUND

WSU Whatcom County Extension entered into a contract with City of Bellingham Public Works Division to provide community outreach education about residential landscaping practices with a focus on storm water management and water conservation in March of 2016. Education and outreach are crucial to the success of these public works programs. An informed and knowledgeable community with greater understanding of the reasons why it is necessary to manage storm water and conserve potable water builds public support for programs and leads to greater compliance. This community outreach effort (*Gardening Green)* moves residents through a continuum from basic awareness to implementation of on-the-ground changes that address these management goals to becoming partners in the education and outreach of other community members.

Traditional residential landscaping with large areas of lawn and few trees and shrubs are often managed with frequent irrigation and applications of fertilizer and pesticides. These common practices have been identified as contributing to excess runoff, pesticide residue in surface waters, and phosphorus/nitrogen loading to Lake Whatcom and the Puget Sound. During the dry summer months, outdoor watering increases our community's daily average drinking water demand. This places a strain on the City's drinking water supply. Outdoor watering accounts for 80-90% of the increase. Nearly half of this water is wasted due to evaporation loss, over watering, and run off.

There are many actions that individuals can take to reduce these negative impacts while saving time, money, and protecting human and environmental health. *Gardening Green* educates participants on soil management, storm water management, appropriate plant selection and planting technique, native plants, creating wildlife habitat, maintenance techniques for low environmental impact, water conservation/rainwater harvesting, and integrated pest management. This project seeks to alter attitudes as well as practices to foster sustained behavior change.

Class participants plan the sustainable changes they intend to make to their property as a part of the curriculum. At the end of the class they have completed a written Best Management Practices (BMP's) Pledge for landscape design and low impact maintenance practices. They develop a scaled drawing of their property detailing landscape changes. On-site consultations provide participants individualized assistance to prioritized implementation of on-the-ground changes and overcome any barriers that might prevent the completion of their planned changes.

Deliverables:

1. Spring 2016 - One sustainable landscaping class comprised of six (5 hour) workshops and follow-up with participants as they implement changes to their landscape and perform their community outreach 'payback' projects.
2. Hands-on activities, demonstrations, and residential landscape tours that focus on identifying opportunities for the implementation of Best Management Practices in stormwater management and water conservations in home landscapes.
3. Sustainable landscape manual for class participants.
4. Sustainable Landscaping webpage, content draft.
5. Final report compiling learning objectives, evaluations, and attendance.

NPDES Phase II Requirements (S.5.C.1.a and b.)

This project meets the public education and outreach elements of the NPDES Phase II requirements to implement a public education program to distribute educational materials to the community and conduct outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution by residential homeowners through the adoption of best

management practices for the design and maintenance of their landscape. This project fulfills items 5-8 in the NPDES Phase II annual report.

Particular audiences and subject areas targeted by this scope of work include:

1. Educating the general public about impacts of storm water flows into surface waters, impacts from impervious surfaces, source control best management practices (BMP's) and environmental stewardship actions and opportunities in the area of landscaping and buffers (S.5.C.1.a.i.);
2. Education and outreach for homeowners on yard care techniques protective of water quality, BMP's for use and storage of pesticides and fertilizers, and low impact development techniques including site design, pervious paving, retention of forests and mature trees (S.5.C.1.a.iii.); and
3. Measuring the understanding and adoption of the targeted behaviors for at least one targeted audience in at least one subject area (S.5.C.1.b.);

Comprehensive Water Conservation Goals:

As a municipal water supplier, the City of Bellingham complies with state water use efficiency requirements that ensure safe, reliable drinking water supplies far into the future. This class accomplishes the following elements set forth by the City to achieve its comprehensive water conservation goals:

- Implement a water conservation education program.
- Encourage outdoor water conservation actions by City residents.

PROJECT GOALS

The goals of this project are to reduce negative water quality impacts to receiving water bodies associated with traditional residential landscaping as well as promote the conservation of potable water.

The objectives of the project are:

- Increased community knowledge about negative impacts to receiving water bodies associated with traditional landscaping practices.
- Increased community knowledge of the benefits sustainable landscaping practices (best management practices) have on water quality and quantity issues.
- Increased participants' skills to implement on-the-ground changes in home landscapes.
- Foster sustained behavior change and long-term commitment to environmentally sustainable landscape practices.
- Student involvement in community outreach 'payback' projects to teach others about sustainable landscape strategies.
- Gather information about the extent to which strategies are implemented and associated outcomes achieved (program evaluation).
- Determine possible program changes that may increase program success and cost effectiveness.
- Develop insight into the design of future outreach activities.

PROJECT DESIGN

In 1987 the United Nations' World Commission on Environment and Development called for changes in development practices to insure that development met the needs of the present without compromising the ability of future generations to meet their own needs. An interdisciplinary effort led by the partnership of the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center at The University of Texas at Austin, and the United States Botanic Garden have developed a certification system and educational resources (similar to LEED for buildings) for sustainable landscapes. The working definition of sustainable landscapes they developed is:

"Landscapes are considered sustainable if they reduce water demand, filter and reduce storm water runoff, provide wildlife habitat, reduce energy consumption, improve air quality, improve human health, and increase outdoor recreation opportunities."

The actions and strategies presented by *Gardening Green* meets the above definition. The scope of the project includes content in eleven topics related to landscaping and environmental issues as well as lessons and activities to build the skills necessary to complete a sustainable landscape plan and implement the changes in their home landscapes. Tours of sustainable home landscapes, mostly class alumni, provide practical examples of using landscaping to manage storm water, reducing outdoor watering, creating wildlife habitat, reducing energy consumption and air pollution, using sustainable materials, and the multiple benefits each BMP offers including protecting and enhancing human health.

The scope of curriculum is listed below.

Class 1:	Class 2:	Class 3:
Sustainable Landscaping Introduction • Human & environmental benefits • Time/Cost comparison sustainable vs traditional landscapes • Sustainable landscape guidelines **State Of Whatcom County Water** • Links - water quality and gardening • Local water issues • Demonstration of changes when forests become neighborhoods **Homework:** • Review resource materials • Draw a Site map to scale **Stimpson Forest Reserve** 1. Storm water management comparisons of a natural forest and a residential neighborhood 2. Guided native plant & identification	**Healthy Soil** • Soil characteristics • How soil protects water quality • Five ways to protect soil functions • Improving soil health • Hands-on testing of own soil sample **Conservation/Rainwater Harvesting** • Indoor water conservation • Outdoor water conservation • Rainwater harvesting options **Homework:** • Evaluate existing landscape • Site Analysis of conditions **Tour Of 3 Homes:** #1 No lawn, demonstration of cistern installation and rain garden #2 Lawn reduction, added native plants #3 Shared Master Plan and on-the-ground changes for students to inspect	**Environmentally Informed Design** • Landscape with a purpose/mitigation • Landscape design strategies manage storm water and reduce energy use • Sustainable materials • Infiltration trenches and rain gardens **Right Plant/Right Place** • Site analysis of existing conditions • Appropriate plant selection & planting • Plant establishment **Homework:** • Goals for how landscape will function • Needs Assessment for recreation **Tour of 2 Homes:** #1 Lawn reduction, reel mower, sustainable materials & covered compost #2 Small lot with no lawn, food production, pervious walks, creative outdoor living spaces, cisterns

Class 4	Class 5	Class 6
• **Low Impact Maintenance** • Conserve water use • Weed management, noxious weeds • Reduce green waste -pruning • Low impact lawn care **Lawn Alternatives** • Methods to eliminating lawn • Landscape alternatives to lawns • Design guidelines. **Homework:** • Create several schematic plans • Establish maintenance zones **Tour of 2 Homes:** #1 No lawn, native plants front and side yard, rain barrels, food production. #2 Changing lawn for landscaped garden rooms, mulch paths, layers of	**Wildlife Habitat** • Habitat components • Structural & Plant diversity • Wildlife need pesticide-free garden **Native Plants In The Landscape** • Introduction to PNW native plants • Use of dichotomous keys • Native plant benefits to gardener and environment **Homework:** • Complete master plan • Determine implementation timeline • Design first planting plan **Tour of 1 Home:** #1 Two acre property with native forest, no lawn, native plants in landscape, wildlife habitat, roof water to infiltrated	**Integrated Pest Management** • Four step system to manage plant pests • Managing problem wildlife • Pesticide safety **Class Participants Share Plans** Each participant presents: • Site Plan • Master Plan for landscape changes • BMP's pledged to implement • Pay-back activity **Homework:** • Go through cabinets and garden shed and check signal words on all products • Complete sustainable landscape plans • Install BMP's • Set up On-Site Consultation

canopy cover, and natural lawn care.	trenches under landscape beds, mulch paths, terraces, layered canopy	
This class group met a seventh time for an Introduction to bird watching class by North Cascades Audubon Society and a guided tour of Agate Pond Preserve in Lake Whatcom watershed. The afternoon was a visit to Fourth Corner Native Plant Wholesale Nursery.		

To achieve the benefits of sustainable landscaping, on-the-ground changes in both the design and maintenance practices must occur. Changing existing landscaping; such as replacing all or part of the lawn with more beneficial tree, shrubs, ground covering plants and woody mulch; require months of planning, long-term motivation, physical labor, money, and a huge commitment of time. Changing long-practiced maintenance practices require long-term commitment.

Key findings gathered in local focus groups and surveys helped to determine not only what knowledge and skills homeowners felt were necessary but equally important how to engage with the community to maximize the likelihood of follow through on the implementation of best management practices. The input from our community was very consistent with the actions recommended in literature critiquing watershed education programs. These findings were built into the design of Gardening Green in the following ways:

Attitude change is very difficult to achieve unless residents are engaged on an emotional basis.
Seeing other community members adopting sustainable landscaping nurtures emotional engagement and commitment as students interact with other homeowners. These homeowners tell their stories of commitment to stewardship and positive feelings about being part of the solution. Motivation is galvanized by the positive energy of being part of a group endeavor to become more effective environmental stewards.

- People are more likely to sustain behavior change when they believe that their individual actions will make a difference. Stories documenting common people's successful efforts to solve local, regional, and global environmental issues are shared with students.
- Being part of preserving of our natural habitat for descendants is a strong motivator to many people.

Make change easy. Recognize the value of small steps by many people.
Students are encouraged to develop an implementation timeline for their landscape changes. Most divided the master plan of changes into multiple phases. The class instructors acknowledge that events in our lives may change the best laid plans. Students are encouraged to not become frustrated or stressed if their project gets interrupted. Many small steps add up to make positive changes in how the landscape functions.

- Often participants want to begin with small changes due to cost, time, and personal energy. Presenters share ideas for smaller projects such as expanding existing border beds a little each year to slowly reduce the size of lawns, increase soil infiltration and reduce runoff of storm water. Another approach is to add layers of canopy cover to all landscape beds and maintaining 3-4" of woody mulch to all bare soil.
- A list of 63 best management practices provides guidance about sustainable practices and permit students the flexibility adopt ones that fit their property and goals.
- Gardening Green instructors continue student contact and assistance beyond the three-week class period by providing on-site consultations and follow up email and phone contacts to overcome barriers that could prevent on-the-ground changes and to review final project plans and the plant list.
- Our community partner, Fourth Corner Native Plant Nursery, allows students easy access to native plants and to save money by buying plants at wholesale prices. At least four group visits, open to all class alumni, are scheduled each Spring and Fall with the class instructors present to assist students. Students can also make appointments for nursery visits independently.

Break down the barriers to adopting new behaviors by strengthening confidence and building needed skills.

- Participants receive training in skills necessary for planning sustainable changes to their landscape.
- Homework assignments, during this course, encourages participants to apply the information they learned during each session to their sustainable landscape master plan.
- Students share their landscape plans with the class and receives encouragement and affirmation from fellow class members and instructors.
- Students complete a written and signed Best Management Practices pledge. Watershed outreach critiques found that making a written pledge increased the likelihood of follow through actions.

Focus on the personal benefits people receive from sustainable landscaping.

1. Gardener's benefit by spending less time on routine maintenance by appropriate plant selection, use of mulch, installation of drip irrigation for new plantings, and less lawn mowing and leaf raking.
2. Reduced costs associated with conservation of energy and water; replacement of dead and damaged plants; and decrease in manufactured fertilizer and pesticide use.
3. Human health benefits from air quality improvement by planting trees and using hand powered or electric tools and equipment; managing landscaping organically; and improving water quality for drinking and outdoor recreation.
4. Creation of outdoor living spaces for relaxation, stress reduction, and other mental health benefits derived from contact with natural settings.

Cultivating student interest and recreational enjoyment in our natural environment supports sustained behavior change. Guided tours introduced students to native plant identification and bird watching. Class alumni reported that an increase in the number and variety of birds visiting their landscape brought them joy and the desire to continue to add native plants. These guided activities allow students to meet and interact with members of our local Komo Kulshan Native Plant Society (WNPS) and North Cascades Audubon Society (NCAS). Both groups offer monthly educational presentations and frequent field trips for the community so students can continue with their education.

EVALUATION DESIGN

Evaluation is an essential component of the success of this educational outreach project. Community training activities were evaluated for changes in knowledge, skills, commitment, and implementation of best management practices in participants' landscapes. The results of the evaluation component are used to make program changes to improve outcomes and inform future outreach education efforts.

- Participants self-rated increases knowledge, skills, and commitment.
- Participants signed pledges indicating the Best Management Practices they intend to implement.
- A follow up survey of participants, six months after the class, collected information about the actions and changes they have implemented, any barriers they encountered that prevented actions, and suggestions for program improvement.

PROJECT IMPLEMENTATION: Sustainable Landscape Class and Follow-up

Marketing Plan

Participant recruitment efforts encompassed both word-of-mouth from past participants and advertisements through the following locations. Those in bold indicate where students in this class heard about the program.

Email notification of interest list	Foothills Gazette	Native Plant Society's List serve
Sudden Valley Community Association	**Cascadia Weekly**	Whatcom Birders' List serve
ReSources for Sustainable Communities	Northern Lights	**Master Gardener's List serve**

BBWARM
County Departments
Recommended by a friend

Bellingham Herald
Lynden Tribune
Leisure Guide

WSU City of Bellingham Departments
Whatcom Extension website

Gardening Green Class (6 sessions): April 19 – May 5, 2016

- Tuesdays and Thursdays from 9:00-2:00 at Bellingham's Public Works Facility classroom at 2221 Pacific Street, Bellingham. The April 26 class met at WSU Extension classroom at 1000 N. Forest Street.
- 14 students attended. One withdrew a few days before the start of class.

Gardening Green meets six times over a three-week period. All sessions began with two classroom presentations that include power point presentations, demonstrations, and hands-on activities. Afternoons were field trips to natural areas and sustainable landscapes.

Tours of sustainable landscapes utilizing the strategies discussed in class allowed students to view how other community members are implementing Best Management Practices to make their property more sustainable regardless of the "style" of landscaping.

- These hosts provide information and demonstrations on the installation of drip irrigation, setting up rainwater harvesting systems (cisterns and rain barrels), rain gardens, and the use of native plants in the landscape. Many show the landscape plans they developed in class.
- Many of these Gardening Green class alumni offer additional assistance to current class members such designing and implementing rainwater harvesting systems, allowing them to visit another time with spouses/partners, and sharing plant starts and seeds.

Each topic covered in class presentations builds on the one before to create a landscape that becomes more self-sustaining with less need for inputs of fertilizers, pesticides, or regular irrigation. After each class session participants had a homework assignment to add the information learned during the class to their landscape master plan that included:

1. SITE PLAN: A scaled drawing of existing site conditions.
2. SITE ANALYSIS: Study of sun aspect, soil characteristics, soil moisture, water movement across the property, views to enhance/views to screen, impacts of winds, and off-site influences.
3. SCHEMATIC PLANS: Identifying opportunities to implements BMP's and still provide for family uses. Intentional planning to create a balance among the practical, aesthetic, and environmental landscape functions.
4. MASTER PLAN: Document intended on-the-ground changes and establish installation phases based on their time and budget.

Follow-up Consultations & Outreach to the General Public

On-site consultations were offered to participants to encourage on-the-ground actions. Opportunities for improved storm water management, water conservation strategies, plant recommendations, and finding solutions for barriers to the implementation of best management practices were the focus of the visits. Assistance prioritizing the order of the renovation phases, review of final plans, and plant lists were also frequent requests.

Past class participants are eligible to receive continuing assistance. Most people choose to renovate their landscape in phases that match both their available time and budget constraints. These are multi-year efforts.

- On-site visits to past participants to tour completed on-the-ground projects.

- On-site visits to past participants that have completed their intended landscape changes to make suggestions for additional actions they could undertake to further improve sustainability.
- Organizing buying trips, open to all class alumni, to Fourth Corner Wholesale Native Plant Nursery.

COMMUNITY OUTREACH EDUCATION WEBSITE

WSU staff is developing a sustainable landscaping website to expand this outreach education effort to the broader community beyond those that are available to take a multi-week course. A website map or outline was completed last year. A draft of the content was completed during this contract period.

The content will be similar to that covered in the Gardening Green class. Each topic area will begin with a home page that outlines the learning objectives for the section and links to more information. The format for presentation of information will include: slideshows, short videos, and documents.

WATER	HEALTHY SOIL	LANDSCAPE DESIGN	PLANT SELECTION	LANDSCAPE MANAGEMENT
Slideshow • Garden Link to Water Quality • Rain Gardens	Slideshow • Soil 101 • Soil: Don't Treat It Like Dirt	Slideshow • Environmentally Informed Design • Lawn Alternatives • Wildlife Habitat	Slideshow • Right Plant, Right Place • Native Plants	Slideshow • Integrated Pest Management • Low Impact Maintenance Techniques • Miracle of mulch
Workbook: • Site Assessment - Water	Workbook • Site Assessment - Soil	Workbook • Drawing site to scale • Landscape Planning	Workbook • Site Assessment – Sun	Workbook • Setting up a garden journal

The next steps in the website development include:
- A self-evaluation component
- Development of short "how to" videos
- Review of the website content and format by several focus groups

EVALUATION OF OUTCOMES

Participant Evaluation Of The Project Format

The evaluation results indicate that the project format is well received and that the presentation, tours and activities materials enhanced their understanding.

- 86% reported that presentation materials enhanced understanding.
- 79% reported that the class manual enhanced understanding.
- 93% reported that the presenters communicated concepts and ideas well or very well.
- 71% reported that the pace of the class was just right.
- 100% reported lectures, tours, and activities were well coordinated and enhanced understanding.
- 100% reported that they would recommend the class to others.

Participant Self-Rating Of Their Knowledge Level

All students reported an increase in knowledge necessary to design, implement, and maintain a sustainable landscape after taking part in the *Gardening Green* class.

Topics that showed the most increase in knowledge change:
- Using native plants for the home landscape.
- Landscape design strategies to manage storm water and other environmental issues.

Participant Report on Landscape Tours:

All participants reported that the landscape tours stimulated ideas for how to renovate their landscape to be more sustainable.

Development Of Skills Needed To Design A Sustainable Landscape:

All participants reported an increase in the skills needed to plan and design a sustainable landscape. The class's, *Sustainable Landscape Workbook*, provided written step-by-step instructions to supplement class discussions, activities, and demonstrations. Participants that rated their skill levels over 70% are considered to have adequate skill levels to complete these activities for the purpose of comparing readiness for planning a sustainable landscape.

- Participants demonstrated that they had mastered the skills to draw a site plan, conduct a site analysis, generate several schematic plans, and create scaled drawings on the last class day when they shared their plans with the class.

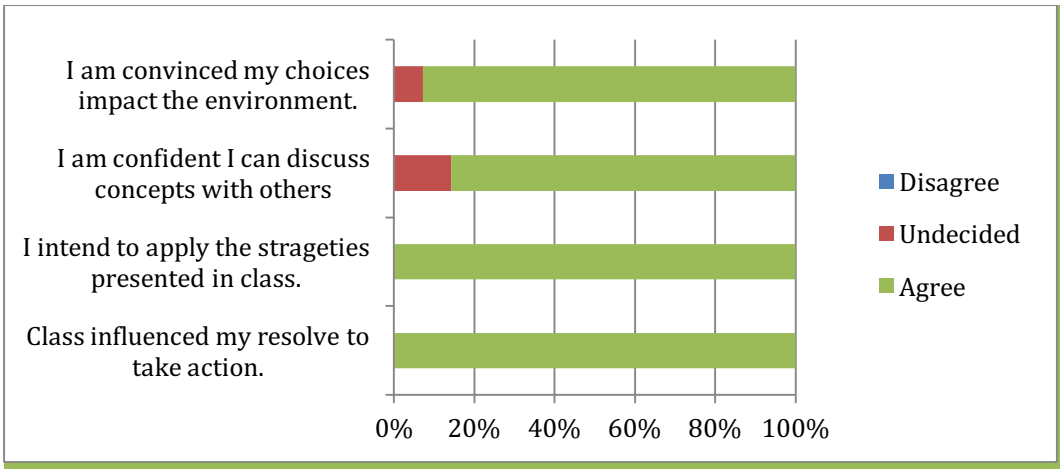
Participants reported:	**PRIOR to class**	**AFTER class**
Adequate skill levels to draw a basic site plan.	20%	80%
Perform a site analysis.	14%	86%
Generate and evaluate conceptual/schematic plans.	14%	93%
Ability to create a scaled drawing and planting plans.	36%	71%
Designing and installing a rainwater collection system.	29%	93%

Increases in Commitment And Resolve:

Many class activities are designed to increase commitment and the resolve to not only implement BMP's but to reinforce sustained independent actions to become partners in outreach about sustainable practices to protect water quality.

- *Program Staff* provide on-site consultations addressing any barriers, guidance in the selection of plants, and suggestions for mitigations that allow for family uses without impacting the goal of water quality protection.
- *Present and past participants* act as partners in community outreach by sharing their knowledge, skills, and commitment of sustainable concepts and strategies to family, friends, and neighbors.
- *Participants* leave the class with a master plan of sustainable changes to their existing landscape that they have invested a lot of time and thought in creating increasing the likelihood of it being implemented.
- *Participants* make a public statement about their commitment to change when they present their plan to their classmates. They display their landscape plan, describe the on-the-ground changes they intend to make, and share how they will implement their plan.
- *Participants* sign a pledge to implement specific Best Management Practices for the design and maintenance of their landscapes.
- *Past Participants* demonstrate long-term adoption of sustainable values by assisting with class presentations, hosting landscape tours for the current class, and sharing their reasons for and commitment to sustainable landscaping.

Changes in levels of commitment to make sustainable changes

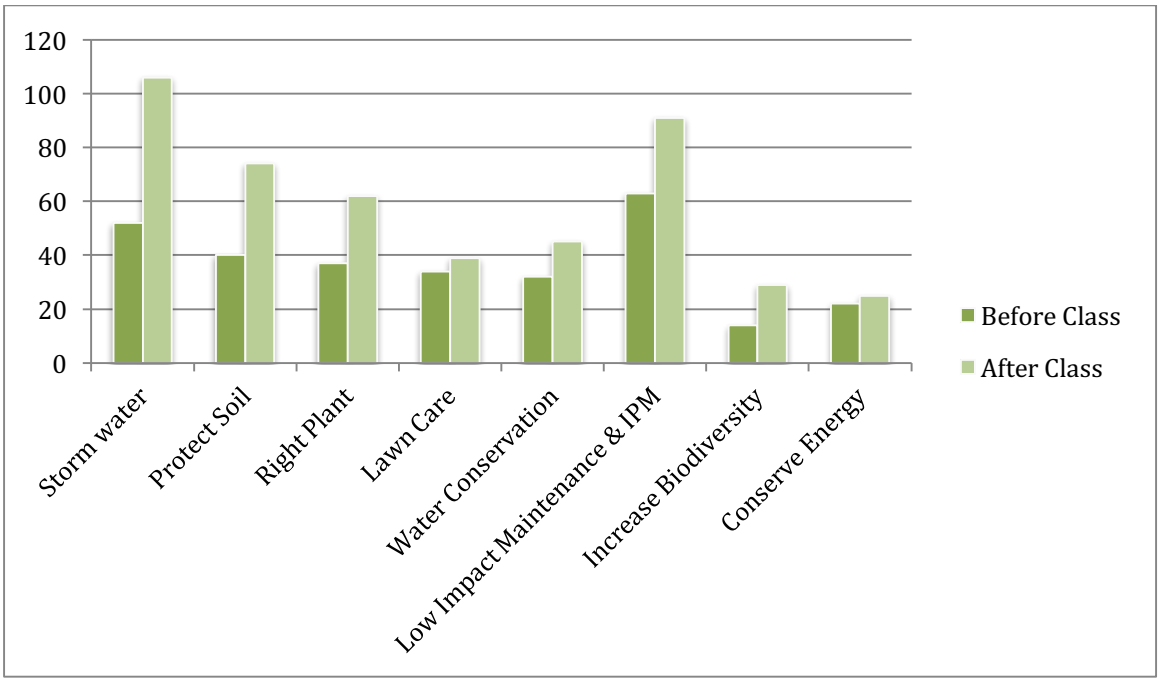


Participant's Pledged Education Outreach Plans:

1. Create a film with a friend that may be shared about the process of transforming my landscape to more sustainable practices.
2. Tell others about this class and to change the focus of my landscaping business.
3. Help my daughter and her spouse implement BMP's on their property; work with neighbors to spread the BMP message; and share landscape, 'grasslessness' with future classes if so desired by instructors.
4. Talk to friends and neighbors about sustainable landscape strategies.
5. To continue my education of my environment and to share that knowledge with others.
6. Make my future yard available to tour, create notebook of native plants with photos, talk to friend about sustainable landscaping strategies.
7. Host a neighborhood garden party with a guest speaker, help promote class and sustainable landscape gardening.
8. Talk to our friend and neighbors and show them the ongoing changes happening in our yard.
9. Sharing the idea with others (what I learned in class), adding more natives, and adding more BMP's than those already pledged – just getting started – a little at a time.
10. Talk to friends and neighbors about sustainable landscaping strategies, use my facebook page to share this information, document landscape changes and share on Extension's new sustainable landscape website, write a column for neighborhood newspaper, do a presentation to social group, host a garden party, share my landscape with future classes, and get involved in local environmental issues.
11. Encourage everyone to research sustainable landscaping and take the class. Also share the wealth of information I received in class.
12. Talk with neighbors.
13. Share information with friends, book club, neighborhood group.
14. Talk with city staff about improving HIP.

Best Management Practices Pledge (BMP)

Thirteen participants completed a Best Management Practices Pledge (63 BMP's divided into eight categories) at the end of the class indicating what BMP's they were using *before* they took the class and *additional new practices* they intended to implement based on the information they learned in Gardening Green. The Pledge shows that participants intend to increase the number of best management practices that they use. The entire BMP Pledge is in the appendix.



Collectively participants:

- Used 294 best management practices before taking *Gardening Green,*
- Pledged an additional 472 best management practices after taking *Gardening Green.*
- The combined total is 766 BMP's already in use or intended to be implemented.

BMP's favored by 100% of participants (combined - before class plus the additional pledged BMP's).

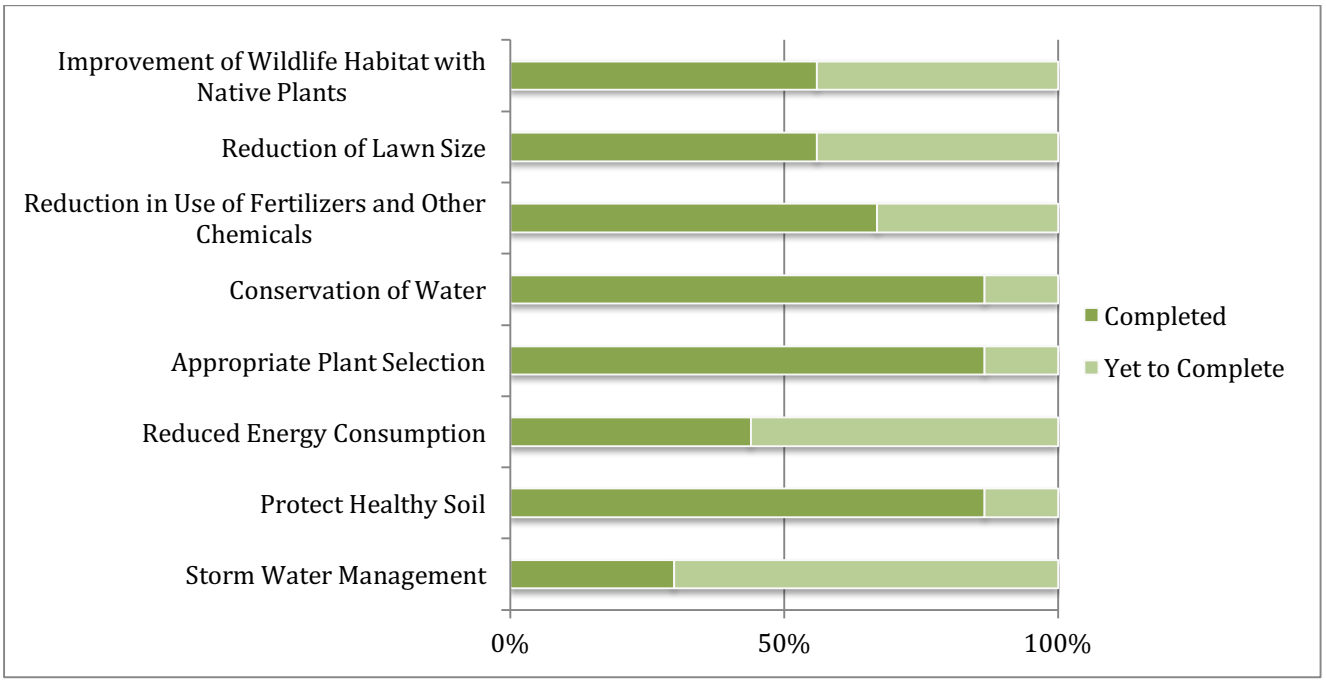
- Maintain 3 or more layers of canopy cover in landscape beds.
- Reduce or eliminate lawn.
- Mimic nature by leaving plant litter where it falls for self-sustaining soil health in permanent landscape beds. EPA reports that this practices increases storm water management by 35%.
- Maintain woody mulch cover on all landscape beds to protect soil and reduce supplemental watering.
- Group plants by sun exposure and watering needs to reduce plant stress and supplemental watering.
- Use the right planting technique.
- Select plants adapted to climatic zone for hardiness.
- Plan for mature size of plants to reduce pruning and green waste.
- Inspect plants for disease, pests, or damage prior to purchase to reduce need for pesticide use.
- Allow lawns to go dormant in the dry season.
- Eliminate the use of cosmetic pesticides such as herbicides used to manage weeds not plant health.
- Do not grow noxious weeds or aggressive exotic plants that can escape and crowd out native plants.

Follow-up Survey of BMP Pledges and Outreach Efforts

Participants were sent a survey in October, six months after the class, to determine if their commitment to making sustainable changes in their landscape resulted in on-the-ground changes and sustained commitment to making changes. Nine participants responded to the survey. The results of the entire survey are in the appendix.

Survey responses indicated that all of the participants had begun to implement the pledged BMP's.

- 56% had implemented SOME of the pledged actions and
- 44% had implemented MOST of the pledged actions.



Participants that have not yet made the all the changes they intend to implement:

1. I have not had time to meet with Sue. I need to do this to finish some decision making before I begin digging into my plant. I may have to wait until spring now that the weather is turning.
2. I wanted to make more changes but we have been busy with some health challenges past 6 months.
3. I have worked at using less water this season, though I have not set up irrigation or a water catchment system yet. I have made some good plant choices and this is an ongoing project. I was already not using fertilizers and I have added native plants and reduced my lawn a bit.
4. In addition, we still plan to replace a section of landscaping with natives.

Suggestions as to how the Gardening Green class could be improved included information on what people liked about the class:

- Notebook of resources to refer to as needed.
- Combination of lectures and garden tours.
- Organization and presentations spot on.
- Good examples from people who previously took the class.
- Enjoyed learning more about native plants and how to use them---for imitating nature and for decoration. Good for the land, animals, beneficial for us to eat and/or for medicinal uses, aesthetically pleasing, etc. I'd give up some lawn for natives. I also liked the idea of making fun winding paths through such plants. I'll be planting about 15 evergreen trees soon to give back and to naturalize our property.
- The rainwater harvesting was very informative and useful.
- The personal site visit was especially helpful. Teachers were great.
- The field trips were very important part of class.

Suggestions for improving the class:

1. A blog or newsletter with news, tips and policy updates
2. Maybe could reach more people thru an online format in addition to class. This is such valuable information but only people who have free time during the day can access it. Perhaps Saturday or

evening class would work for less intensive information throughout the year.

Participants' Community Outreach Activities

Community payback projects increase the capacity for outreach education. Class participants were asked to help spread the word about sustainable landscaping by at least 10 face-to-face interactions with friends, family, neighbors, and social groups. The following is their list of activities that they will undertake. All of the students reported sharing information they gained in this class with others on the Follow-up Survey. The estimate for the number of people they have already talked to is about 70. Several indicated that their outreach numbers are possibly more than reported and that they plan to continue to share information with others.

Each student provided a written list of community outreach activities:

1. Share information with friends, book club, and neighborhood group.
2. Talking with neighbors.
3. Encourage everyone to research sustainable landscaping and take this class. Also share the wealth of information I received in class.
4. Talk to friends and neighbors about sustainable landscaping strategies.
5. Use my facebook page to share sustainable landscaping information.
6. Document my landscape changes to share on Extension's future sustainable landscaping website.
7. Write a sustainable landscaping or native plant column for neighborhood newsletter.
8. Host a garden party to share my project with neighbors.
9. Share my landscape with future classes.
10. Get involved with local environmental issues.
11. Talk to friends and neighbors and show them on-going changes happening in our yard.
12. Neighborhood garden party with guest speaker.
13. Help promote class and sustainable landscape gardening.
14. Make my future yard available to tour.
15. Continue my education of my environment and to share that knowledge with others.
16. Help daughter and her spouse implement BMP on their property
17. Work with neighbor to spread BMP message.
18. Share landscape 'grasslessness' with future classes.
19. Change the focus of my landscape business and tell others about this class.
20. Create a film with a friend that may be shared about the process of transforming my landscape to more sustainable practices.
21. Share progress reports on my blog.

Class alumni continue to provide outreach education to others in the community. Some are involved in volunteer stewardship such as surveying bird populations in marine areas and during Audubon's annual December bird count for the county. Others continue to educate friends and neighbors about sustainable landscaping concepts.

INFORMING FUTURE OUTREACH

Gardening Green class participants were asked to respond to several questions that Anitra Accenturo developed to help inform the City and County about citizens preferences for how their government communicates code and policy information regarding landscaping and water issues.

Indicate your preferences for how government communicates code/policy information to residents regarding landscaping and rainwater collection. *Number of participant's selecting each option.*

	YES	NO
Flowchart	10	0
Video available on web or BTY10	10	0

Hand-out examples of other residents projects & permitting requirements	10	1
Scheduled deadline for code compliance	4	2
Workshops	11	1
Demonstration sites in city for self-guided tour with interpretative signage.	9	3

Comments:

1. The Santa Monica side by side with data was very convincing/compelling (typical lawn vs sustainable gardening.
2. What is BTV -10?

The Table below offers a look at these same communication forms questions over five separate *Gardening Green* classes.

Communication format questions:	**Apr 2016**	**Apr 2015**	**Apr 2014**	**Sep 2014**	**Apr 2013**
Flowchart	71%	87%	75%	60%	88%
Video available on web or BTY10	71%	100%	93%	80%	78%
Hand-out examples of other residents projects & permitting requirements (if any)	71%	77%	86%	100%	88%
Scheduled deadline for code compliance	29%	57%	62%	70%	57%
Workshops	79%	100%	100%	80%	100%
Demonstration sites in city for self-guided tour with interpretative signage.	64%	88%	100%	90%	100%

Class Fee

To gather additional information about the FEE, participants were asked to rate their opinion on the FEE.

Number of participant's selecting each option.

Opinion on class fee	YES	NO	UNDECIDED
Should a fee be charged for this class?	6	6	1
Do you think that a fee for the class would prevent others you know from attending?	9	5	
If a fee is charged, how much would be appropriate? $75 - $50 - $20-50 - $30 - $50 - $50 - $75 - cover costs Comments: 1. *Need to have a waiver if needed or requested.* 2. *Would not discourage if not too much. Scholarships should be available to decrease barriers for low income.* 3. *Fee that is affordable for most would be nominal and probably more cost involved in administering and turning away potential students.*			

Class Schedule

Rate your opinion on the SCHEDULE for this class.	YES	NO	UNDECIDED
Should the schedule continue to be during the weekdays?	9	1	4
If class were offered two evenings week with a tour on Saturday, would you attend?	7	8	
Do you think the current schedule prevented others you know from attending?	7	4	4

Comments:

1. *I am not really sure how it would work for others as far as the schedule. I was fortunate to have a window of time in which the days of the class I could be free.*
2. *I suggest alternating day class session and evening the next so people with day jobs could attend. Having it during typical work hours leaves so many people out.*
3. *Offer 2 different schedules.*

APPENDIX I: Class Schedule

GARDENING GREEN Apr/May 2016: Class meets at 2221 Pacific Street 9:00-2:00

We are outside every afternoon - dress in layers and be prepared for rain.

BRING TO CLASS			WEEKLY HOMEWORK
Tuesday-Apr 19	9:00	Class orientation & Introductions	
Food & Drinks	9:20	**Link Gardening/Environmental Issues - Sue Blake**	**WEEK ONE:**
Camera	10:30	**Gardening Green-Sue Taylor**	
Walking Shoes		Map Your Yard Activity	SUSTAINABLE LANDSCAPE
	11:30	TOURS	WORKBOOK pp 2-
		Stimpson Family Reserve - Guided Native Plant Walk	
		Geneva Neighborhood Walk - Forest/Landscape Comparison	**Design Development Activities:**
Thursday-Apr 20	9:00	**Rainwater Harvesting - Anitra Accenturo**	1. Basic Site Plan - Map Your Yard
Food & Drinks	10:15	**Healthy Soil - Sue T**	2. Evaluate You Yard
Camera	11:30	TOURS	3. Take a Photo Inventory
Soil Sample-Clump		Jenny & Bill - no lawn, cisterns, food, rain garden, natives	4. Site analysis: Hydrology & Soil
quart ziplock bag		Dan - Site Planning, reduced lawn, cisterns, added natives	5. Outdoor living list & size estimates
Quart Jar		Michael - reduced lawn, added natives, stormwater, cisterns	
Tuesday-Apr 26	9:00	**Right Plant/Right Place/Right Technique - Jill Cotton**	**Continue with Design Development:**
1000 N. FOREST ST Extension Classroom	10:30	**Environmentally Informed Design-Sue T** Site Analysis, BMP's, Goals	1. Finish the analysis of site conditions 2. List 3 goals for landscape FUNCTION
Food & Drinks	12:00	TOURS	3. Review BMP's form.
Camera		Ron - Replace front lawn, drip irrigation	
		Sue K- garden rooms, layered plantings, natural lawn care	
Thursday- Apr 28	9:00	**Low Impact Maintenance Techniques - Jill**	**Planning Activities:**
Food & Drinks	10:30	**Lawn Alternatives - Sue T**	1. Imagine your dream garden
Camera		Schematic Design	2. Develop a few Schematic Plans
	12:00	TOURS	3. Select BMP's for your landscape
		Bonnie - Lawn, forest, food, landscaped areas	
		Michael & Mary - sm. Lawn, cistern, pervious deck, more	
Tuesday-May 3	9:00	**Integrated Pest Management - Jill**	4. Finalize plan & create a master plan
Food & Drinks	10:30	**Landscaping with Native Plants - Sue T**	to document ideas and changes
Camera	12:00	TOURS	*Plan for low maintenance
Bring a copy of BMP pledge		Barbie - no lawn, food, cisterns, small lot, pervious walks Sue T - natives, storm water, habitat	*Do IPM garden monitoring
Thursday-May 5	9:00	**Create Wildlife Habitat**	Design first planting bed
Your Master Plan		Drawing a Planting Plan	Research Plants
Class Evaluation &	10:30	**Your Plans**	SCHEDULE YOUR ON-SITE
Tuesday-May 10		Share plans for sustainable landscape changes & pay-back	CONSULTATION!
Food & Drinks Binoculars	9:00	Tricia Otto's Agate Bay Pond Habitat **Paul Woodcock - Intro to Birding**	Meet at Bloedel-Donovan Park to carpool to Tricia's at 8:45

Appendix II: Program Evaluation

WSU Whatcom Extension - City of Bellingham

GARDENING GREEN: Sustainable Landscaping 2016

Please complete the program evaluation below to help us gage the effectiveness of the presenters, format, information, and experiences provided by this class. Your feedback assists the development and implementation of future classes. Thank you!

Where did you hear about this class?
Cascadia Weekly #3 Friend #4 WSU Extension #7 Newspaper #1 BBWarm #1
Other #1

1) Class FORMAT: Mark the most appropriate response (# of participants selecting the response)

	1	2	3	4	5
Presentation materials (power points, demonstrations, handouts, hands-on activities)	Distracted from understanding				Enhanced Understanding
			#2	#2	#10
Class manual	Distracted from understanding				Enhanced Understanding
			#3	#4	#7
The presenters communicated concepts and ideas	Poorly				Very well
			#1	#1	#12
The pace of the class was	Too slow		Just Right		Too fast
			#10	#3	#1
The lectures, tours, and activities were well coordinated and enhance understanding	Strongly disagree				Strongly agree
				#4	#10
I would recommend this class to others	Strongly disagree				Strongly agree
				#3	#11

Written Comments:
The pace of the class was perfect.

2) Rate your level of KNOWLEDGE change (NA = No Answer)

Use a percentage rating between 0% (no knowledge of topic) and 100% (complete knowledge of topic) Prior to Class / After Class													
The link between gardening practices and human / environmental health issues.													
70-80%	80-87%	30-40%	30-60%	80-95%	75-90%	50-75%	10-85%	75-80%	50-90%	40-75%	70-90%	75-95%	45-75%
The benefits the gardener gains by adopting a naturally sustainable approach to gardening.													
50-75%	80-87%	40-60%	10-70%	80-95%	60-90%	70-80%	0-30%	50-60%	40-90%	30-80%	60-90%	70-95%	50-75%

The benefits to the environment from a sustainable approach to gardening.													
75-90%	85-88%	40-59%	30-60%	80-95%	75-90%	50-75%	0-20%	85-90%	40-90%	30-90%	60-90%	70=95%	65-80%
The environmentally informed landscape strategies for storm water management, climate change, etc													
50-85%	73-83%	10-20%	30-70%	60-85%	50-90%	20-70%	10-85%	85-90%	60-90%	40-100%	50-80%	50-90%	30-75%
The function of healthy soil to water quality and plant health.													
20-60%	81-84%	20-25%	40-60%	60-85%	60-80%	40-70%	0-50%	90-90%	40-90%	30-70%	40-80%	60-95%	25-65%
Selection of plants: match plant needs to site characteristics, purchase healthy plants, use good planting technique.													
75-85%	79-82%	20-30%	20-50%	60-85%	60-80%	50-80%	10-98%	90-90%	60-90%	15-75%	50-80%	60-95%	30-80%
Use of regionally native plants in the home landscape.													
45-80%	72-76%	50-60%	10-70%	30-100%	50-80%	50-90%	0-98%	75-90%	40-90%	10-60%	50-80%	30-90%	35-80%
Use of low impact maintenance strategies: grouping plants by need, mulching, smart watering, etc.													
60-80%	74-76%	40-50%	40-60%	50-100%	60-80%	40-80%	10-80%	85-85%	60-90%	15-60%	40-80%	50-95%	25-85%
Strategies to reduce/eliminate lawns and landscaping options for lawn alternatives.													
60-90%	79-84%	40-60%	20-50%	50-85%	60-85%	50-90%	10-85%	0-95%	60-90%	DONE	40-80%	60-95%	45-80%
Integrated pest management step-by-step methods to management pests using the least toxic means.													
70-70%	71-74%	20-40%	30-60%	50-85%	60-85%	60-75%	10-75%	50-50%	60-90%	15-75%	40-80%	65-90%	40-80%
Creating wildlife habitat and supporting biodiversity in plants, animals and beneficial insects.													
65-80%	84-87%	20-25%	absent	50-85%	60-90%	NA	10-75%	50-50%	60-90%	15-65%	60-80%	75-90%	40-80%
Water consumption, conservation, and quality: rainwater harvesting.													
50-80%	73-77%	20-30%	30-70%	50-85%	60-85%	50-80%	0-50%	50-55%	60-90%	30-75%	70-80%	75-90%	40-80%
Water quality challenges.													
40-80%	75-80%	20-30%	NA	50-85%	60-85%	30-60%	10-85%	50-55%	60-90%	60-80%	40-80%	75-90%	30-80%

3) Rate the change of your SKILLS as a result of the hands-on activities and IDEAS FOR INCORPORATING SUSTAINABLE FEATURES from landscape tours.

Use a percentage rating between 0% (no knowledge of topic) and 100% (complete knowledge of topic) Prior to Class / After Class													
The landscape tours stimulated ideas for how to renovate my landscape to be more sustainable.													
10-80%	80-90%	20-60%	20-80%	40-95%	60-90%	0-75%	10-70%	80-90%	40-90%	15=80%	60-90%	70-90%	30-75%

Drawing a basic site plan showing existing conditions.

70-90%	70-75%	10-40%	0-60%	20-100%	50-90%	10-90%	0-50%	50-50%	90-95%	10-75%	40-70%	50-80%	20-80%

Performing a site analysis.

25-75%	70-75%	5-40%	10-50%	20-100%	50-90%	10-80%	10-95%	50-60%	90-95%	30-80%	40-80%	50-80%	20-55%

Generating and evaluating conceptual plans of possible sustainable site design changes.

20-70%	70-75%	20-40%	20-60%	50-95%	50-80%	10-80%	10-85%	50-60%	90-95%	10-70%	40-80%	50-80%	25-75%

Creating a scaled drawing and planting plan for individual landscape beds.

70-85%	70-75%	20-30%	10-40%	60-100%	50-70%	0-80%	0-25%	85-90%	90-95%	0-70%	40-50%	50-80%	20-75%

Designing and installing a rainwater collection system.

0-70%	60-65%	5-20%	30-70%	70-100%	40-70%	0-80%	10-75%	85-90%	90-95%	20-85%	20-70%	50-80%	15-75%

Rainwater Harvesting Designing and installing a rainwater collection system.

20-60%	60-65%	10-30%	NA	70-100%	50-75%	0-60%	10-75%	85-90%	90-95%	30-85%	20-70%	70-85%	20-75%

Home composting

80-80%	75-78%	40-45%	NA	80-100%	60-80%	70-75%	95-98%	50-50%	90-95%	70-90%	70-70%	80-90%	40-55%

Written Comment:

1. *Landscape tours were inspirational and reinforced classroom instruction. My ability to recognize some native plants improved significantly. Hands-on activities were informational and useful like soil characteristics, etc and tours were real demonstrations of successful application of materials provided in class.*
2. *Definitely feel more able to make changes.*
3. *I felt fairly knowledgable of these skills but have learned a lot through this class.*

4) Rate your level of COMMITMENT: Mark the most appropriate response

	Strongly disagree 1	Disagree 2	Undecided 3	Agree 4	Strongly agree 5
This class has influenced my resolve to take actions that will protect human and environmental health.				**#5**	**#8**
I intend to apply the strategies presented in this class to the design and management of my landscape.				**#7**	**#5**
I am confident that I can discuss sustainable landscape concepts to friends and neighbors.			**#2**	**#8**	**#4**
I am convinced that I can positively impact environmental issues by my landscape choices and maintenance practices.			**#1**	**#8**	**#5**
I intend to install a rainwater system at my home.			**#3**	**#5**	**#4**

5) Please circle your preferences for communicating code/policy information to residents regarding landscaping and rainwater collection.

	YES	NO
Flowchart	**#10**	
Video available on web and BTV10	**#10**	
Hand-out examples of other residents' projects and permitting requirements (if any)	**#10**	**#1**
Scheduled deadline for code compliance	**#4**	**#2**
Workshops	**#11**	**#1**
Demonstration sites on a city block available for self-guided tour with interpretative signage (e.g. Sea Streets in Seattle, http://www2.cityofseattle.net/util/tours/seastreet/slide1.htm)	**#9**	**#3**
Other: 1. *The Santa Monica side by side with data was very convincing/compelling (typical project Lawn vs Sustainable Gardening) provided in class.* 2. *What is BTV-10?*		

6) Rate your opinion on the FEE for this class: Mark the most appropriate response

	YES	NO	UNDECIDED
Should a fee be charged for this class?	**#6**	**#6**	**#1**
Do you think a fee for the class would prevent others you know from attending?	**#9**	**#5**	

If a fee is charged, how much would be appropriate?
$75 - $50 - $20-50 - $30 - $50 - $50 - cover costs - $75

1. *Need to have waiver if need or requested*
2. *Would not discourage if not too much. Scholarships should be available to decrease barriers for low income.*
3. *Fee that is affordable for most would be nominal and probably more cost involved in administering and turning away potential students.*

7) Rate your opinion on the SCHEDULE for this class.

	YES	NO	UNDECIDED
Should the schedule continue to be during the weekdays?	**#9**	**#1**	**#4**
If class were offered two evenings a week with a tour on Saturday, would you attend?	**#7**	**#8**	
Do you think the current schedule prevented others you know from attending?	**#7**	**#4**	**#4**

1. *I am not really sure how it would work for others as far as the schedule. I was fortunate to have a window of time in which the days of the class I could be free.*
2. *I suggest alternating day class session and evening the next so people with day jobs could attend. Having it during typical work hours leaves so many people out.*
3. *Offer 2 different schedules – weekdays – Spring and weeknights – Fall to capture those with full work schedules.*

8) Your comments are always appreciated. Please make suggestions for improving the class.

1. *Enjoyed the informative presentations. Learned a lot. Loved the field trips.*
2. *Maybe a specific class on "Lake Whatcom Regulations" that would assist in gaining required permits.*
- *A direct effort to bring City on board.*
- *A simple list/table that would prioritize Lake Whatcom actions with regards to their lake benefits.*
- *A continuing education activity focused on graduate sharing and answering evolving questions.*
- *Establish continuing resource thru City/County as a "place to go" for further education, help with design, maintenance questions.*

3. *A good class. Learned some new things. Don't like the word "environmental" or environmentalist. Would rather see "good stewards or something else. Enjoyed the field trips. Got some good ideas. Didn't enjoy answering the percentages questions! I don't know what percent.*
4. *I thought it was very well done.*
5. *This was a excellent class. The instructors were knowledgeable, personable and accessible. The tones were wonderful. Great job!*
6. *The class leaders were organized, informed, and allowed for much interaction and learning. Garden tours were invaluable. Resource lists will be helpful, too. I am looking forward to consulting with Sue Taylor. Sun study analysis was a little difficult.*
7. *Location is a little inconvenient due to the visitor security check in /check out. *Overall very impressed with this class. Excellent information and very knowledgeable teachers. The feed back form could be greatly simplified!*
   - *This class should be mandatory for all property owners.*
8. *I learned alto and I am grateful for the information I received and how it will help me crate the landscape I want to be in harmony with nature.*
9. *I've never been in a class so tightly organized, so determined to give students as much knowledge/information/hands-on experience as possible. A wonderful experience and I'm <u>very</u> grateful. Instructors clearly passionate and very knowledgeable. And calmly starting the class on time – no waiting on people – wonderful and respectful of everyone's efforts. <u>Thank you</u>.*

APPENDIX III: Best Management Practices Pledge

APRIL 2016 GARDENING GREEN: Best Management Practices Pledges

Check the BMP's that you used PRIOR to the class in the 1st column.
Check the BMP's that you INTEND TO IMPLEMENT due to information from the class in the 2nd column.

Prior to Class	After Class	STORM WATER MANAGEMENT
3	11	Maintain 3 or more layers of canopy cover in landscape beds.
5	8	Plant more trees including conifers.
4	7	Locate landscape beds or French drains to intercept runoff at the base of slopes.
3	5	Locate landscape beds to capture runoff from lawn areas.
2	4	Locate landscape beds (can be on mounded soil) around the property perimeter to create a final barrier to run-off.
2	6	Direct run-off from impervious surfaces to densely vegetated landscape beds with healthy soil that can infiltrate it.
2	4	Remove impervious surfaces & replace them with pervious ones.
4	5	Moderate steep slopes with terracing to slow down run-off & allow the soil to absorb it & prevent erosion.
4	2	Put French drains under your paths, especially in established landscapes or lawns to enhance infiltration.
2	5	Put curves in paths that go downhill to slow rainwater runoff so it can be absorbed into the soil.
3	10	Expand the size of densely vegetated landscape beds to reduce lawn area.
4	5	Create native plant buffers near all water resources.
4	7	Create a woodland area.
0	3	Infiltrate run-off from vegetable gardens, covered compost piles & dog kennels to capture nutrients in run-off.
3	4	Install a dry well, dispersion trench, French drain, seasonal pond or rain garden to infiltrate rooftop storm water.
7	10	Reduce or eliminate your lawn.
0	10	Install a rain barrel or cistern for storm water reuse in landscape.
52	**106**	**Subtotal**

		PROTECT HEALTHY SOIL FUNCTION
7	8	Compost yard wastes for reuse on landscape beds.
6	10	Mimic nature by leaving plant litter where it falls for self-sustaining soil health in permanent landscape beds.
6	9	Top-dress soil with compost covered by woody mulch to improve soil function.
4	7	Till in 2-3" compost (depth of 8") in areas of *severely damaged* soil from compaction
1	11	Inoculate native plant beds with mycorrhizae.
6	9	Maintain a woody mulch cover on all landscape beds to protect soil.
5	9	Create pervious paths that are separate from planting areas even through lawn areas to prevent soil compaction.
5	12	Feed the soil, not the plants. Reduce/eliminate fertilizer use.
40	**75**	**Subtotal**

RIGHT PLANT / RIGHT PLACE / RIGHT TECHIQUES

8	10	Group plants by sun exposure and watering needs to reduce plant stress & maintenance.
4	10	Use native plants as the backbone of the landscape.
5	11	Inspect plants for diseases, pests, & root problems before purchase.
3	13	Use the right planting techniques.
11	8	Select plants adapted to your climatic zone for hardiness.
6	10	Plan for mature size of plants to reduce pruning.

37 62 Subtotal

LOW IMPACT LAWN CARE

4	9	Establish pathways through lawn areas to reduce soil compaction.
9	6	Allow lawns to go dormant in the dry season.
0	3	Use eco-lawn as turf alternative.
4	7	Use only phosphorus-free fertilizer.
7	5	Hand weed lawn or tolerate a few weeds (no weed & feed).
2	2	Aerate compacted lawns & add a little compost.
8	7	Limit lawn watering to 1" per week including rainwater or less

34 39 Subtotal

WATER CONSERVATION

4	5	Separate lawn irrigation system from irrigation for trees and shrubs, which need much less frequent watering.
7	7	Use smart watering techniques – water in the mornings, water deeply and infrequently to encourage root growth.
3	7	Use drip irrigation to water only landscape plants not weeds.
5	4	Use soaker hoses instead of overhead sprinklers.
3	8	Plant drought tolerant plants.
4	4	Inspect automatic irrigation systems for leaks and adjust sprinkler head direction each monthly.
3	10	Reduce need for irrigation by using 3" of mulch and planting 3 or more layers of canopy cover in all landscape beds.

32 45 Subtotal

LOW IMPACT MAINTENANCE & INTEGRATED PEST MANAGEMENT

7	9	Eliminate the use of cosmetic pesticides such as herbicides used for appearance not plant needs.
7	8	Reduce the use of all pesticides. Select pest and disease resistant native or plants that are well adapted to region.
6	10	Do not fertilize woody plants unless they have been diagnosed as deficient. Use phosphorus-free fertilizer.
5	10	Regularly monitor landscape for pests. Hand pick while infestations are small.
2	7	Have pests & diseases correctly identified by Master Gardeners at WSU Extension.
8	5	Only use slug bait that is safe for pets & wildlife.
7	9	Practice tolerance for minor infestations that cover less than 30% of the plant.
6	8	Manage not control of pests and diseases. Practice I.P.M.

5	9	Remove diseased plants (Clean Green) rather than using pesticides.
3	8	Pay attention to “signal words” on pesticides. Use and dispose of according to manufacturer's directions.
7	8	Hand weed and mulch to reduce weed seed germination.

63 91 Subtotal

SUPPORT BIODIVERSITY

5	9	Create a wildlife habitat sanctuary to address the decline in bird, amphibian, and beneficial insect species.
3	10	Grow a species rich landscape of regional native plants to address the loss of local flora.
6	10	Do not grow noxious weeds or aggressive exotic plants that can escape and crowd out native species.

14 29 Subtotal

REDUCE ENERGY CONSUMPTION

6	6	Use hand tools or electric power tools whenever possible and reduce use of gas powered equipment.
8	4	Use motion detectors to activate outdoor lights rather than timers.
4	5	Plant buffers to block northeast winds in the winter to lower heating needs.
4	10	Plant deciduous shade trees on the south & west sides to cool the house & impervious surfaces.

22 25 Subtotal

294 Total BMP's used before taking class

472 Total NEW BMP's pledged due to information learned in class

APPENDIX IV: Six Month Follow Up Survey

Follow-up Survey sent to all class participants. Nine participants responded

Question	Percentage of Participants	Number of Responses
Do you remember the BMPs actions you pledged to take at the end of the Gardening Green class?		
• Yes	6	67%
• No		
• Somewhat	3	33%
If you answered yes or somewhat to the previous question, how many of these actions have you put into practice?		
• None	0	0%
• Some	5	56%
• Most	4	44%
• All	0	0%
Have you used any of the strategies taught in the Gardening Green class for (choose as many as applicable)?		
• Storm water management	3	33%
• Management or protection of healthy soil	7	78%
• Reduced energy consumption	4	44%
• Appropriate plant choices for the site	7	78%
• Conservation of water	7	78%
• Reduction in use of fertilizers and other chemicals	6	67%
• Reduction of lawn size	5	56%
• Improvement of wildlife habitat through the use of native plants	5	56%
If you did not make any changes to your gardening practices after completing the Gardening Green class, please tell us why not.		
1. I have not had time to meet with Sue. I need to do this to finish some decision making before I begin digging into my plan. It may have to wait until next spring now that the weather is turning. 2. I wanted to make more changes but we have been busy with some health challenges past 6 months.		
Have you shared any of the information you gained in this class with others?		
• **Yes**	9	100%
• **No**		
If you answered yes, with approximately how many others. 1. I have talked to friends family and acquaintances, maybe 15 or so people. I plan to continue with this and have a friend who has mentioned making a film of my garden project. 2. 4 3. Two, our neighbors and friends 4. 9-12 maybe more 5. 9 6. 5 or so folks 7. 5-6 8. 5 9. 2		
If you initiated any of the gardening practices discussed in class, did you find that you needed additional information not taught in class or provided in your notebook or CD?		

1. *No* 2. *No not for now* 3. *No but typically use multiple sources or references in addition to those provided* 4. *No really, but I did consult other resources mentioned in class, mostly books on native plants* 5. *There were plenty of resources.* 6. *no*		
Do you have any suggestions as to how the Gardening Green class can be improved?		
3. I really got a lot out of the class. I am grateful for my notebook of resources that I can refer to as needed. I just need to make the time and money to work on my garden plan. 4. After talking to people about GardeningGreen practices, they love their lawns and want to keep them. I understand GardeningGreen but might there be a better way to emphasis lawn reduction without total elimination as we saw in some of our field trips? I remember, in the reading material, it says we don't have to tear out our entire landscape but that was still the impression. Several of those gardens were not attractive but a few were well done. A favorite was the lady (Sue K's on Cedarwood? near old Albertson's) because it was very natural, green with trees, bushes, colorful, and fun. Not all rocks or full of plastic buckets and pipes. But it was all interesting. 5. blog or newsletter with news, tips and policy updates 6. No as I feel it was very well done and thorough. I especially liked the combination of lecture and garden tours. The instruction and materials provided were spot on and complete. Great organization and presented well. 7. It's a great class. I don't really have any suggestions. 8. Maybe could reach more people thru an online format in addition to class. This is such valuable information but only people who have free time during the day can access it. Perhaps Saturday or evening class would work for less intensive information throughout the year.		
Do you have any additional comments or reviews you'd like to share with us?		
1. excellent class 2. I would like to meet with Sue briefly soon and then delve more deeply into my plans next spring. I have hesitated in scheduling a meeting before I am ready to get the bulk of the work done and yet I would like to start on parts of my garden plan sooner. I need to work on it in bits and pieces, but also want to be prepared to get the most out of meeting with Sue. 3. I enjoyed the class, and got good examples from people who previously took the class (site visits). 4. I especially enjoyed learning more about native plants and how to use them---for imitating nature and for decoration. Good for the land, animals, beneficial for us to eat and/or for medicinal uses, aesthetically pleasing, etc. I'd give up some lawn for natives. I also liked the idea of making fun wind ing paths through such plants. And the rainwater harvesting was very informative and useful. I'll be planting about 15 evergreen trees soon to give back and to naturalize our property. Thank you for the opportunity to take the class. I learned a lot. 5. a discount at plant suppliers would be nice 6. The personal site visit was especially helpful. Teachers were great. 7. The field trips were very important part of class.		

APPENDIX V: Class List

GARDENING GREEN CLASS LIST APRIL 2016

NAME	ADDRESS	PHONE	EMAIL
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Kay Fast	2625 Brown Rd, Ferndale 98248	360-380-3278	jdkfast2@yahoo.com
Terri Heiler	2315 Birch St., Bham 98229	360-671-3156	bhamterri@gmail.com
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Appendix VI: Sustainable Landscaping Website Outline