STORMWATER RUNOFF: CITY OF BONNEY LAKE PUBLIC ATTITUDES, AWARENESS AND BEHAVIOR

December, 2009

City-wide baseline survey and re-survey summary, findings, and plan of action
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INTRODUCTION

This report summarizes the results of a random-sample base line telephone survey conducted by Elway Research for the Pierce County Public Works Department of Surface Water Management and a written re-survey conducted by the City of Bonney Lake Public Works Department to measure the understanding and adoption of targeted behaviors including water conservation, pet waste disposal, hazardous waste disposal, natural yard care, and general good best management pollution prevention practices among the City of Bonney Lake public (target audience). The survey was designed to help the City focus public education stormwater pollution prevention efforts and to comply with requirements set forth in the Western Washington NPDES Phase II Municipal Stormwater Permit. To educate our target audience, the City developed and distributed three posters and five flyers concerning all of the targeted behaviors. The City also displayed our stormwater pollution prevention materials at Bonney Lake Days and conducted three natural yard care workshops to further our public education efforts.

Residents in Pierce County and the City of Bonney Lake were asked about their awareness, attitudes and behaviors with regard to Pierce County and City water quality. Specific areas of inquiry included:

• Knowledge of stormwater issues and stormwater systems;

• Perceived impact on local water from household and construction sources as well as industrial and commercial sources;

• Willingness to change behaviors regarding:
  ~ Lawn care practices
  ~ Methods for cleaning outdoor impervious spaces
  ~ Vehicle washing practices
  ~ Disposal of vehicle fluids
  ~ Disposal of pet waste;

• Messages most likely to motivate behavior change.
KEY FINDINGS

- Few knew that stormwater was not sent to a treatment facility in the baseline survey.
  - 36% of respondents in the baseline survey indicated stormwater entered the nearest body of water without treatment.
  - 67% of respondents in the re-survey indicated stormwater entered the nearest body of water without treatment (a 31% improvement).

- An increased understanding of the causes of stormwater pollution was measured between the baseline and re-survey.
  - A 35% combined increase in awareness that the pollutants identified in the survey were significant sources of stormwater pollution.

- An improvement in yard care practices was measured in terms of a decrease in the usage of harmful yard chemicals.
  - Of the harmful yard chemicals identified in the survey including fertilizers, pesticides, and weed killer; a 34% decrease in usage was measured between the baseline and re-survey.

- An improvement regarding acceptable impervious surface cleaning practices was measured:
  - A 13% increase in acceptable cleaning practices (sweeping and blowing) was measured between the baseline and re-survey.

- An improvement in proper pet waste disposal was measured between the baseline and re-survey.
  - 96% of respondents indicated either proper pet waste disposal methods were utilized or they were not pet owners (a 24% measured increase from the baseline survey).

- Regarding acceptable practices of hazardous vehicle fluids disposal; an improvement between the baseline and re-survey was measured.
  - 93% of respondents indicated that acceptable vehicle fluid disposal techniques were performed (an 8% increase from the baseline survey).

- "Protecting drinking water and food sources for people's health" received the most "10" ratings for importance in the baseline and re-survey.
  - 75% of respondents in the baseline survey and 81% in the re-survey indicated that protecting drinking water and food sources for people's health was the most important reason to cut back on water pollution.
SUMMARY OF FINDINGS

a. Perceptions of Local Water Conditions

To evaluate our target audiences' understanding of the stormwater system, respondents were asked to indicate whether runoff that enters the storm system is sent to a treatment facility or is not sent to a treatment facility. Most did not know that stormwater run-off is untreated in the baseline survey and the results are as follows;

- 36% indicated no stormwater treatment
- 31% indicated stormwater was treated
- 33% did not know the answer

In the re-survey, the majority of respondents knew stormwater was not treated prior to entering the nearest body of water and the results are as follows;

- 67% indicated no stormwater treatment
- 30% indicated stormwater was treated
- 3% did not know the answer

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

- 40% Discharge and leaking oil from boats and ships;
- 34% Run-off from roads and parking lots;
- 27% Run-off from agriculture, including animal waste and fertilizer;

The following proportions rated these sources of local water pollution "significant" in the re-survey:

- 45% Discharge and leaking oil from boats and ships;
- 54% Run-off from roads and parking lots;
- 37% Run-off from agriculture, including animal waste and fertilizer;

Other stormwater pollutants including soapy car wash water and pet waste were rated the least significant in both the baseline and re-survey. The following proportions rated these sources of local water pollution "significant" in the baseline survey:

- 35% Pesticides and fertilizers from yards;
- 35% Oils and other fluids from vehicles;
- 19% Soapy water from washing vehicles on pavement;
- 20% Pet waste left on the ground;
- 37% Improper disposal of cleaning fluids, paint, and other household hazardous waste
The following proportions rated these sources of local water pollution "significant" in the re-
survey:
- 52% Pesticides and fertilizers from yards;
- 54% Oils and other fluids from vehicles;
- 21% Soapy water from washing vehicles on pavement;
- 20% Pet waste left on the ground;
- 47% Improper disposal of cleaning fluids, paint, and other household hazardous waste

b. Polluting Yard Products

Chemical fertilizers, pesticides, and weed killer were the most prevalent potential polluting products used on lawns and gardens. The baseline results regarding yard care practices are as follows:
- a. 6% Use chemical fertilizers a lot;
- b. 4% Use pesticides, insecticides, or fungicides a lot;
- c. 4% Use weed killer a lot;
- d. 6% Utilize natural yard care products a lot;
- e. 16% Water a lot

The re-survey results regarding yard care practices are as follows:
- f. 4% Use chemical fertilizers a lot;
- g. 1% Use pesticides, insecticides, or fungicides a lot;
- h. 5% Use weed killer a lot;
- i. 7% Utilize natural yard care products a lot;
- j. 21% Water a lot

Yard size and over-watering was directly related to chemical usage (used a lot) in the baseline survey. Watering also tended to correlate with chemical use as follows:
- 35% who watered "a lot" were heavy chemical yard product users;
- 29% who watered "a medium amount" were heavy chemical product users;
- 11% who watered "very little" were heavy chemical product users;
- 8% who never watered were heavy chemical product users.

Impervious Surface Cleaning

Almost half of the respondents in the baseline survey use water to clean outdoor impervious surfaces, such as driveways and sidewalks. The baseline results regarding impervious surface cleaning practices are as follows:
- 36% Sweep those areas
- 18% Use a blower
- 26% Hose them down
- 18% Pressure wash them
- 2% Use water with soap or another cleanser
A decrease (13%) in the usage of water to clean outdoor impervious surfaces was measured between the baseline and re-survey. The re-survey results regarding impervious surface cleaning practices are as follows:

- 39% Sweep those areas
- 28% Use a blower
- 14% Hose them down
- 17% Pressure wash them
- 2% Use water with soap or another cleanser

c. Pet Waste Disposal

To evaluate the effectiveness of the City stormwater pollution prevention materials in terms of pet waste disposal; respondents were asked how their pet waste was dealt with. Pet waste was addressed as follows in the baseline survey:

- 48% Picked up every time
- 20% Picked up most of the time
- 5% Left on the ground most of the time
- 11% Always left on the ground
- 16% Not applicable

In the re-survey, pet waste was addressed as follows:

- 40% Picked up every time
- 11% Picked up most of the time
- 2.7% Left on the ground most of the time
- 2.3% Always left on the ground
- 44% Not applicable

Pet waste was disposed of as follows in the baseline survey:

- 50% Bagged & put in the trash
- 19% Put in compost or yard waste collection
- 2% Flushed down the toilet
- 3% Tossed somewhere else
- 17% Never picked up
- 1% Not applicable

In the re-survey, pet waste was addressed as follows:

- 37% Bagged & put in the trash
- 7% Put in compost or yard waste collection
- 4% Flushed down the toilet
- 2% Tossed somewhere else
- 2% Never picked up
- 48% Not applicable
Combining all of these factors into a single index indicates that just 1 in 3 dog owners (30%) always dealt with their pets' waste properly; consistently picked it up while walking; cleaned it from the yard daily, and then disposed of it properly.

d. Vehicle Care Behaviors

In the baseline and re-survey, no significant change was measurable regarding vehicle washing practices. The baseline results are as follows;

- 45% Wash at home
- 47% Use a car wash or commercial coin operated car wash
- 3% Wash at a charity car wash
- 4% Have not washed in the past year
- 1% Do not have any vehicles

The re-survey results are as follows;

- 49% Wash at home
- 42% Use a car wash or commercial coin operated car wash
- 7% Wash at a charity car wash
- 1.6% Have not washed in the past year
- 0.4% Do not have any vehicles

Combining all the car wash behaviors into a single index indicates that 1 in 5 respondents (20%) risked getting some wash water into runoff.

Car Care Seldom Done at Home

In both the baseline and re-survey, improper disposal of car fluids was much lower than for car wash water and no significant change was measured between the baseline and re-survey. The baseline results regarding the practices associated with changing motor oil, anti-freeze, and other fluids are as follows;

- 20% Always change it at home
- 72% Always take the vehicles to a shop
- 8% Some combination of the two
- 7% Place used fluids in the trash
- 4% Pour used fluids down the drain
- 1% Pour in a ditch or down the street
- 1% Pour on the ground
- 1% Keep in the garage
- 84% Take to a collection facility
- 1% Use at home as lubricant
- 1% Do not change oil or antifreeze at home

The re-survey results regarding the practices associated with changing motor oil, anti-freeze, and other fluids are as follows;

- 14% Always change it at home
- 71% Always take the vehicles to a shop
- 15% Some combination of the two
- 2% Place used fluids in the trash
- 1% Pour used fluids down the drain
- 0% Pour in a ditch or down the street
- 1% Pour on the ground
- 1% Keep in the garage
- 45% Take to a collection facility
- 2% Use at home as lubricant
- 48% Do not change oil or antifreeze at home

**Most Knew What to Do With Spills**
The majority of respondents in both the baseline and re-survey indicated proper leak and spill cleanup practices associated with vehicle fluid spills on impervious surfaces. An improvement in spill clean up practices was measured between the baseline and re-survey. The baseline results are as follows;
- 16% Hose it off
- 66% Soak it up with an absorbent pad or other absorbent material
- 18% Probably not do anything

The re-survey results are as follows;
- 12% Hose it off
- 80% Soak it up with an absorbent pad or other absorbent material
- 8% Probably not do anything

e. **Best Motivator**
The majority of respondents in the baseline and re-survey indicated a willingness to make changes in their lifestyle to help prevent water pollution. A positive increase in public attitude regarding preventing water pollution was also measured between the baseline and re-survey. The baseline results are as follows;
  a. 39% Willing to make changes, even if it involves sacrifices
  b. 43% Willing to make changes, if the changes are fairly easy
  c. 18% Convinced that there is not more you can do to make a difference

The re-survey results are as follows;
  d. 46% Willing to make changes, even if it involves sacrifices
  e. 48% Willing to make changes, if the changes are fairly easy
  f. 6% Convinced that there is not more you can do to make a difference

**People's Health Top Motivator**
More respondents rated "Protecting drinking water and food sources for people's health" as a "10" on a zero – 10 importance scale (where "10" meant "extremely important") than the other potential reasons for "wanting to cut back on local
water pollution" in both the baseline and re-survey. The "10" ratings given in the baseline survey are as follows;

- 75% for "Protecting drinking water and food sources for people's health"
- 62% for "Maintaining the environment for future generations"
- 57% for "Protecting fish and wildlife"
- 47% for "Keeping the waters clean for recreation"

The "10" ratings given in the re-survey are as follows;

- 81% for "Protecting drinking water and food sources for people's health"
- 60% for "Maintaining the environment for future generations"
- 58% for "Protecting fish and wildlife"
- 43% for "Keeping the waters clean for recreation"

f. Natural Yard Care

Regarding natural yard care practices including rain gardens and organic yard care practices; respondents were asked to indicate whether they have heard of it or have never heard of rain gardens or organic yard care. The baseline results are as follows;

- 40% Heard of rain gardens
- 60% Never heard of rain gardens
- 63% Heard of natural or organic yard care
- 37% Never heard of natural or organic yard care

The re-survey results are as follows;

- 47% Heard of rain gardens
- 53% Never heard of rain gardens
- 78% Heard of natural or organic yard care
- 22% Never heard of natural or organic yard care
DISCUSSION

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

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

However, the great majority indicated that they were willing to change their behaviors to improve water quality.

People’s Health Most Important Message
Messages to protect drinking water and food sources for people’s health will be most effective per the survey results and attention of this message shall be highlighted in future stormwater pollution prevention public education materials. The “health” motivation remained the most popular regardless of demographic characteristics, geographic variables, or current behaviors in the baseline survey and was also the most extremely important motivator in the re-survey.

Focused Attention
In future stormwater pollution prevention public education material development; the following focused attention shall be considered based on survey findings:

- Areas with small lots are indicated as particular targets for yard care practice improvements. Respondents tended more often to use yard chemicals, and to water their property, which compounds the risk of runoff.
- Yard care companies may also be fruitful targets, as respondents who hired out yard work were 50% more likely to fall into the category of worst offenders, in terms of chemical use compounded by smaller lot sizes and watering.
- Men were less likely than women to deem neighborhood pollutants significant, and were more likely to wash their own cars and handle the yard work.
- Women may actually be the more receptive target, if they can change behaviors for the whole household.
- Residents in duplexes and triplexes were the single category most likely to allow soapy car wash water into the storm system.
PLAN OF ACTION

Question 1
The specific question regarding reporting illegal dumping, illegal discharges, and oil and hazardous waste spills in the City of Bonney was not included in the Baseline Survey as the baseline survey did not specifically survey the City of Bonney Lake target audience. However, the measured results from the re-survey are as follows (graphically displayed in Chart 1);

- 36% of respondents did not know how to report spills
- 44% of respondents knew how to report spills
- 20% of respondents did not answer the question

Goal
Increase public awareness of spill hotline and reporting procedures.

Public Education Plan of Action
Continue to distribute existing stormwater pollution prevention public education materials as all existing materials include the City spill hotline and reporting procedures. In addition, a 2011 Stormwater Pollution Prevention calendar shall be developed and distributed in December, 2010 and two of the twelve calendar images shall be dedicated to pollution / illegal dumping reporting. The City will also develop and distribute rear view mirror hangers for staff and target audience vehicles to encourage spill and illegal dumping reporting and to help publicize the City spill hotline.

Question 2
Survey question 2 measured our target audiences understanding of the causes of stormwater pollution. The City’s education effort in this regard has shown measurable improvement in awareness as shown in Chart 2. A summary of improvement in terms of pollutants identified as significant sources of water pollution are as follows;

- 5% awareness increase in discharge and leaking oil from pleasure boats in the water
- 20% awareness increase in runoff from roads and parking lots
- 10% awareness increase in runoff from agriculture, including animal waste and fertilizer

Goal
Increase public awareness that discharge and leaking oil from boats and vehicles and runoff from roads, parking lots, and yards, and animal waste and fertilizers are significant sources of water pollution.
Public Education Plan of Action
Continue to distribute the City public education pollution prevention materials including pet waste, natural yard care, and vehicle maintenance / used oil recycling flyers and the Good Practices For the Residence poster.

Question 3
Survey question three evaluates our target audiences’ understanding of the stormwater system and whether runoff that enters the storm system is sent to a treatment facility or is not sent to a treatment facility. The measured results are as follows (graphically displayed in Chart 3);

- 30% of respondents re-surveyed believed stormwater entered the nearest body of water with treatment (a 1% decrease from the baseline survey)
- 67% of respondents re-surveyed believed stormwater entered the nearest body of water without treatment (a 31% increase from the baseline survey)
- 3% of respondents re-surveyed did not know if stormwater was sent to a treatment facility (a 30% decrease from the baseline survey)

Goal
Increase public awareness that runoff from neighborhoods, streets, and yards enters the nearest body of water without treatment.

Public Education Plan of Action
Although a 31% improvement has been measured regarding the target audiences’ knowledge that stormwater runoff is not sent to a treatment facility; stormwater pollution prevention materials shall continue to be distributed including distribution of all flyers and all posters.

Question 4
Survey question four evaluates our target audiences’ understanding of various pollutants and how much each is believed to contribute to lake, stream, and stormwater pollution. Of the pollutants listed in the survey, our results indicate an increased awareness that the majority of these pollutants are significant sources of water pollution. Our measured results are as follows (graphically displayed in Chart 4);

- 17% increase in awareness that pesticides and fertilizers from yards are a significant source of water pollution
- 19% increase in awareness that oils and other fluids from vehicles are a significant source of water pollution
- 2% increase in awareness that soapy water from washing cars on pavement is a significant source of water pollution
• 0% increase in awareness that pet waste left on the ground is a significant source of water pollution
• 10% increase in awareness that improper disposal of cleaning fluids, paint, and other household hazardous wastes are significant sources of water pollution

**Goal**
Increase public awareness that stormwater carried pollutants including fertilizers, vehicle fluids, soaps and cleansers, pet waste left on the ground, and household hazardous wastes are significant sources of water pollution.

**Public Education Plan of Action**
Provide additional public education materials regarding the impact to lakes and streams from various stormwater carried pollutants via the 2011 Stormwater Pollution Prevention calendar and continued distribution of the Good Practices For the Residence Poster. The messages in the calendar shall include proper household hazardous waste disposal, used oil recycling, friendly vehicle washing, and natural yard care / water conservation.

**Question 5**
Survey question five evaluates our target audiences' lawn and garden care practices including the amount of usage of chemical fertilizers, pesticides, weed killer, organic fertilizers, and water. The measured results of usage of each of the above mentioned practices in terms of “never used” are as follows (graphically displayed in Chart 5);

• 7% decrease in chemical fertilizer usage
• 10% decrease in pesticide usage
• 17% decrease in weed killer usage
• 4% decrease in organic fertilizer usage
• 4% decrease in water usage

**Goal**
Decrease the usage of chemical fertilizers, pesticides, weed killer, and water consumption. Our goal is also to increase natural or organic yard care practices and the usage of organic or slow release fertilizers.

**Public Education Plan of Action**
Continue to distribute the Good Practices For the Residence Poster, Natural Yard Care Flyer, and Water Conservation Flyer. In addition, two out of the twelve pages of the 2011 Stormwater Pollution Prevention calendar shall be reserved for water conservation.

**Question 6**
Survey question six evaluates our target audiences' cleaning methods in terms of driveways, walkways, and decks and was asked to evaluate the effectiveness of our public
education materials regarding reversing behaviors associated with harmful impervious surface cleaning practices including pressure washing, hosing, and using soaps and cleansers. The measured results are as follows (graphically displayed in Chart 6);

- 13% increase in acceptable cleaning practices (sweeping and using a blower)
- 13% decrease in harmful cleaning practices (hosing and pressure washing)
- No change in the use of soaps or cleansers (2% usage in both surveys)

**Goal**
Continue to increase sweeping and acceptable cleaning practices and reduce the amount of harmful cleaning practices.

**Public Education Plan of Action**
Although an improvement has been measured regarding acceptable cleaning practices; the City will continue to distribute good cleaning practices materials including Good Cleaning Practices For the Residence, Auto Industry, and Restaurant Industry posters. Also, two of the twelve pages of the 2011 Stormwater Pollution Prevention Calendar shall be reserved for good cleaning practices.

**Question 7**
Survey question seven was asked to evaluate the effectiveness of the City stormwater pollution prevention materials in terms of pet waste disposal. The measured results are as follows (graphically displayed in Chart 7);

- 2.3% always leave pet waste on the ground (an 8.7% decrease from the baseline survey)
- 2.7% leave pet waste on the ground most of the time (a 2.3% decrease from the baseline survey)

**Goal**
Continue to reduce the amount of pet waste left on the ground.

**Public Education Plan of Action**
Continue to distribute the pet waste flyer and Good Practices For the Residence poster. In addition, pet waste cleanup stations including plastic bag dispensers and signage encouraging proper pet waste disposal shall be installed in City parks. Two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for proper pet waste disposal.
Question 8
Survey question eight measures our target audiences’ specific pet waste disposal methods. The measured results in terms of acceptable disposal methods combined with responses indicated as not applicable are as follows (graphically displayed in Chart 8):

- 96% of respondents indicated either proper pet waste disposal methods were utilized or they were not pet owners (a 24% increase from the baseline survey).

Goal
Continue to reduce the amount of pet waste left on the ground.

Public Education Plan of Action
Continue to distribute the pet waste flyer and Good Practices For the Residence poster. In addition, pet waste cleanup stations including plastic bag dispensers and signage encouraging proper pet waste disposal shall be installed in City parks. Two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for proper pet waste disposal.

Question 9
Survey question nine evaluates our target audiences' vehicle washing practices in terms of location including vehicle washing at home, at a commercial car wash, and at a charity car wash. The measured results are as follows (graphically displayed in Chart 9):

- 4% increase in at home vehicle washing
- 5% decrease in vehicle washing at commercial facilities
- 4% increase in vehicle washing at charity events

Goal
Increase friendly vehicle car washing practices.

Public Education Plan of Action
Continue to distribute the Good Practices For the Residence poster which includes friendly vehicle washing practices. Also, two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for friendly vehicle washing / spill cleanup.

Question 10
Survey question ten measures our target audiences’ awareness of vehicle washing discharge in terms of discharge location including discharging wash water down the street, onto dirt, gravel, or grass, and some combination of the two. The measured results are as follows (graphically displayed in Chart 10):

- 19% increase in discharging wash water down the street
- 10% increase in discharging wash water onto gravel, dirt, or grass
- 29% decrease in discharge from some combination of the two

**Goal**
Decrease the percentage of wash water discharges down the street / into the City municipal separate storm sewer system and increase the percentage of discharges onto gravel, dirt, or grass.

**Public Education Plan of Action**
Continue to distribute the Good Practices For the Residence poster which includes friendly vehicle washing techniques. Also, two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for friendly vehicle washing / spill cleanup.

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**Question 11**
Survey question eleven was asked to evaluate the practices associated with vehicle maintenance (changing motor oil, anti-freeze, and other fluids) and the locations where vehicle maintenance is performed including maintenance performed at home, at a shop, or some combination of the two. The measured results are as follows (graphically displayed in Chart 11);

- 6% decrease in vehicle maintenance at home
- 1% decrease in vehicle maintenance at a shop
- 7% increase in some combination of the two

**Goal**
Reduce stormwater carried pollutants from vehicle maintenance operations.

**Plan of Action**
Continue to distribute Good Practices For the Residence poster and household hazardous waste and used oil recycling flyers. In addition, two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for used oil recycling / household hazardous waste disposal.

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**Question 12**
Survey question twelve measures our target audiences' specific vehicle fluid disposal practices when vehicle maintenance is performed at home. The measured results in terms of acceptable disposal methods included with shop collected fluids are as follows (graphically displayed in Chart 12);

- 93% of respondents indicated that acceptable vehicle fluid disposal techniques were performed (an 8% increase from the baseline survey).
Goal
Reduce stormwater carried pollutants from vehicle maintenance operations.

Plan of Action
Continue to distribute Good Practices For the Residence poster and household hazardous waste and used oil recycling flyers. In addition, two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for used oil recycling / household hazardous waste disposal.

Question 13
Survey question thirteen evaluates our target audiences’ responsive actions associated with vehicle fluid leaks / spills. The measured results of the three responsive options including hosing the spill, soaking up the spill with absorbents, and ignoring the spill (do nothing) are as follows (graphically displayed in Chart 13);

- 4% decrease in hosing the spill
- 14% increase in soaking up spills with absorbents
- 10% decrease in ignoring the spill

Goal
Reduce the amount of stormwater pollution from vehicle leaks / spills.

Public Education Plan of Action
Continue to distribute the Good Practices For the Residence poster which includes proper spill cleanup practices. Also, two of the twelve images in the 2011 Stormwater Pollution Prevention Calendar shall be reserved for friendly vehicle washing / spill cleanup.

Question 14
Survey question fourteen evaluates our target audiences’ attitude toward making changes to help prevent water pollution. The measured results of the three options including willing to make changes even if it involves sacrifices, willing to make changes if the changes are easy, and not willing to make changes (convinced no difference can be achieved) are as follows (graphically displayed in Chart 14);

- 7% increase in willingness to make changes even if it involves sacrifices
- 5% increase in willingness to make easy changes
- 12% decrease in the attitude that nothing more can be done to make a difference

Goal
Increase the target audiences’ willingness to make changes to help prevent water pollution.
Public Education Plan of Action
Continue to distribute all stormwater pollution prevention public education materials and begin distributing the 2011 Stormwater Pollution Prevention Calendar (which will display artistic renderings of stormwater pollution prevention BMP's) in December, 2010 to businesses, schools, and residents.

Question 15
Survey question fifteen evaluates our target audiences' reasons for wanting to cut back on water pollution including protecting fish & wildlife, protecting drinking water & food sources for people's health, maintaining the environment for future generations, and keeping the waters clean for recreation. The measured results in terms of responses given as extremely important are as follows (graphically displayed in Chart 15);

- 1% increase in protecting fish & wildlife
- 6% increase in protecting drinking water & food sources for people's health
- 2% decrease in maintaining the environment for future generations
- 4% decrease in keeping the waters clean for recreation

In both the baseline and re-survey, protecting drinking water & food sources for people's health was the number one reason for wanting to cut back on water pollution as 75% in the baseline survey and 81% in the re-survey indicated the above mentioned reason as extremely important.

Goal
Increase the environmental stewardship of the target audience.

Public Education Plan of Action
Stormwater pollution prevention public education materials shall include focused attention in preventing contamination of drinking water & food sources for people's health. This focused attention shall be included in the 2011 Stormwater Pollution Prevention Calendar.

Question 16
Survey question sixteen was asked to measure the target audiences' awareness of environmentally friendly yard maintenance and water quality techniques including rain gardens and natural or organic yard care. The measured results are as follows (graphically displayed in Chart 16);

- 7% increase in rain garden awareness
- 15% increase in natural or organic yard care awareness
Goal
Increase the awareness and practice of water quality yard care techniques including rain garden and natural or organic yard care implementation.

Public Education Plan of Action
Continue to distribute rain garden and organic yard care flyers to the public. A rain garden demonstration project shall be performed in April, 2010 and cover rain garden installation techniques including ground preparation, plant selection, and maintenance. The City is also planning to host additional organic yard care workshops to provide further education and awareness and encourage environmentally friendly yard care practices.
Appendix I-A
2009 Stormwater Survey
Under the Western Washington Stormwater Permit required by the National Pollutant Discharge Elimination System (NPDES), the City of Bonney Lake is required to evaluate our stormwater education program by surveying and measuring our residents understanding of practices that impact the stormwater system. You can Help! Your answers to the following questions will be used to prioritize spending of public education resources. This will help reduce pollutants carried by stormwater that can hurt the environment and wildlife. Please, complete this survey and mail it to the City of Bonney Lake with the enclosed pre-paid envelope.

1. The City of Bonney Lake has a spill hotline for residents to report illegal dumping, illegal discharges, and oil and hazardous waste spills (253-447-4320 or Bonney Lake 311 or 253-841-5538 after hours and weekends) Do you know how to report spills and illegal dumping / discharges and to who? CIRCLE ONE  YES  NO

2. The following are some possible causes of pollution in local waters. Please indicate if you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount of pollution; or, 3) probably is Not a Significant Source of water pollution in Bonney Lake...INDICATE NUMBER NEXT TO EACH ITEM
   - Discharge and leaking oil from pleasure boats in the water
   - Run off from roads and parking lots
   - Run off from agriculture, including animal waste & fertilizer

3. Water that runs from neighborhoods and residences off streets, yards, and rooftops goes into a storm system of pipes, ditches and holding tanks or ponds. To the best of your knowledge, what happens to the water after it enters the storm system? Does that water...CIRCLE ONE
   - Go into the nearest body of water with treatment…
   - Go into the nearest body of water without treatment…

4. The following are a list of things that can get washed into the storm system and eventually into lakes and streams. Do you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount; 3) or probably is Not a Significant Source of Bonney Lake water pollution...INDICATE NUMBER NEXT TO EACH ITEM
   - Pesticides and fertilizers from yard
   - Oils and other fluids from vehicles
   - Soapy water from washing cars on pavement
   - Pet waste left on the ground
   - Improper disposal of cleaning fluids, paint, and other household hazardous waste

5. Of the list of products below that some people use on lawns and gardens, how much of each is used on your yard during a typical growing season. Would you say that, on your yard, 1) its used a lot; 2) a medium amount; 3) very little; or 4) its never used on your yard? INDICATE NUMBER NEXT TO EACH ITEM
   - Chemical Fertilizers
   - Pesticides such as Insecticides or fungicides
   - Weed & Feed or other weed killer
   - Organic or slow-release fertilizers
   - Watering

6. When you clean places like your driveway, walkways, or deck, do you typically...CIRCLE ALL THAT APPLY
   - Sweep Those Areas
   - Use A Blower
   - Hose Them Down
   - Pressure Wash Them
   - Use water with soap or another cleanser

7. If you own a dog and go for walks, how is the dog waste dealt with? Would you say the waste is ...CIRCLE ALL THAT APPLY
   - Picked up Every Time
   - Picked up Most of The Time
   - Left on the ground Most of the time
   - Always Left on the ground
   - Not applicable
8. If the dog waste is picked up, how is it typically disposed of? Is it... **CIRCLE ALL THAT APPLY**
   - Bagged and put in the Trash
   - Put in compost or yard waste collection
   - Flushed down the toilet
   - Tossed somewhere else
   - Never picked up
   - Not applicable

9. At which of the following have you washed your car or had it washed most often in the past year... **CIRCLE ALL THAT APPLY**
   - Home
   - A Car Wash Or Commercial Coin Operated car wash
   - A charity car wash, such as a school or other fundraiser
   - Haven't washed in past year
   - Don't have any vehicles

10. If you wash your vehicles at home, where does the wash water go? **CIRCLE ONE**
    - Down the Street
    - Onto Gravel, Dirt or Grass
    - Other area__________________________

11. When it comes to changing the motor oil, anti-freeze, and other fluids in the vehicles in your household, do you or someone else, **CIRCLE ONE**
    - Always change it at home...
    - Always take the vehicles to a shop...
    - Or, some combination of the two...

12. If the motor oil or anti-freeze is changed at home, what is typically done with the used fluids? **CIRCLE ALL THAT APPLY**
    - Placed in the trash
    - Poured down the drain inside the house
    - Poured down a drain or ditch outside or in the street
    - Poured on the ground
    - Kept around the house/garage
    - Take to a collection facility/gas station/shop
    - Used at home on fences or as lubricant
    - Don't change oil or anti-freeze at home

13. If one of your vehicles leaked or spilled oil or antifreeze onto pavement, which of the following would you be most likely to do:  **CIRCLE ALL THAT APPLY**
    - Hose It Off...
    - Soak it up with an Absorbent Pad or other absorbent material ...
    - Probably Not Do Anything...

14. Which of the following best describes your attitude toward making changes to help prevent water pollution: Are you... **CIRCLE ONE**
    - Willing to make changes in your lifestyle, even if it involves sacrifices...
    - Willing to make changes, if the changes are fairly easy...
    - Convinced that there is not more you can do to make a difference...

15. Of the following reasons that some people give for wanting to cut back on water pollution, how important is it for you personally using a scale from 0 to 10? "10" means "extremely important" and "0" means "not important at all."
   **INDICATE NUMBER NEXT TO EACH ITEM**
   - Protecting fish and wildlife
   - Protecting drinking water and food sources for people's health
   - Maintaining the environment for future generations
   - Keeping the waters clean for recreation

16. The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called...? Please indicate: 1) Heard of it; Or, 2) Never heard of that term
   **INDICATE NUMBER NEXT TO EACH ITEM**
   - Rain gardens
   - Natural or organic yard care
Appendix I-B
Baseline & Re-survey Tabulated Results
**2009 Stormwater Survey**  
**Baseline and Re-survey results**

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### Question 1

The City of Bonney Lake has a spill hotline for residents to report illegal dumping, illegal discharges, and oil and hazardous waste spills (253-447-4320 or Bonney Lake 311 or 253-841-5538 after hours and weekends). Do you know how to report spills and illegal dumping / discharges and to who? **CIRCLE ONE**  
- Yes  
- No

<table>
<thead>
<tr>
<th>Response</th>
<th>No</th>
<th>Yes</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-Survey</td>
<td>36</td>
<td>44</td>
<td>20</td>
</tr>
</tbody>
</table>

---

### Question 2

The following are some possible causes of pollution in local waters. Please indicate if you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount of pollution; or, 3) probably is Not a Significant Source of water pollution in Bonney Lake... **INDICATE NUMBER NEXT TO EACH ITEM**

<table>
<thead>
<tr>
<th>Cause of Pollution</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge &amp; Leaking Oil from pleasure boats in the water</td>
<td>0.4</td>
<td>0.45</td>
</tr>
<tr>
<td>Runoff from roads and parking lots, including animal waste and fertilizer</td>
<td>0.34</td>
<td>0.54</td>
</tr>
<tr>
<td>Runoff from agriculture, including animal waste and fertilizer</td>
<td>0.27</td>
<td>0.37</td>
</tr>
<tr>
<td>Significant source of water pollution</td>
<td>0.35</td>
<td>0.37</td>
</tr>
<tr>
<td>May contribute some small amount</td>
<td>0.5</td>
<td>0.42</td>
</tr>
<tr>
<td>Not a significant source of water pollution</td>
<td>0.25</td>
<td>0.23</td>
</tr>
</tbody>
</table>

---

### Question 3

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

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go into the nearest body of water with treatment</td>
<td>31</td>
<td>30</td>
</tr>
</tbody>
</table>
Go into the nearest body of water without treatment

<table>
<thead>
<tr>
<th></th>
<th>36</th>
<th>67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't Know</td>
<td>33</td>
<td>3</td>
</tr>
</tbody>
</table>

### Question 4

The following are a list of things that can get washed into the storm system and eventually into lakes and streams. Do you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount; 3) or probably is Not a Significant Source of Bonney Lake water pollution... **INDICATE NUMBER NEXT TO EACH ITEM**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pesticides and fertilizers from yard</td>
<td>0.35</td>
<td>0.52</td>
<td>0.35</td>
<td>0.54</td>
<td>0.19</td>
<td>0.21</td>
<td>0.2</td>
<td>0.37</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Significant source of water pollution</td>
<td>0.53</td>
<td>0.38</td>
<td>0.15</td>
<td>0.09</td>
<td>0.26</td>
<td>0.32</td>
<td>0.41</td>
<td>0.23</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>Not a significant source of water pollution</td>
<td>0.33</td>
<td>0.4</td>
<td>0.13</td>
<td>0.3</td>
<td>0.49</td>
<td>0.48</td>
<td>0.37</td>
<td>0.32</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>May contribute some small amount</td>
<td>0.15</td>
<td>0.46</td>
<td>0.43</td>
<td>0.46</td>
<td>0.34</td>
<td>0.48</td>
<td>0.37</td>
<td>0.32</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>Organic or slow release fertilizers</td>
<td>0.1</td>
<td>0.07</td>
<td>0.18</td>
<td>0.26</td>
<td>0.17</td>
<td>0.18</td>
<td>0.35</td>
<td>0.35</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Watering</td>
<td>0.08</td>
<td>0.21</td>
<td>0.48</td>
<td>0.23</td>
<td>0.25</td>
<td>0.16</td>
<td>0.13</td>
<td>0.08</td>
<td>0.06</td>
<td></td>
</tr>
</tbody>
</table>

### Question 5

Of the list of products below that some people use on lawns and gardens, how much of each is used on your yard during a typical growing season. Would you say that, on your yard, 1) its used a lot; 2) a medium amount; 3) very little; or 4) its never used on your yard? **INDICATE NUMBER NEXT TO EACH ITEM**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Fertilizers</td>
<td>0.06</td>
<td>0.04</td>
</tr>
<tr>
<td>Medium amount</td>
<td>0.15</td>
<td>0.23</td>
</tr>
<tr>
<td>Very Little</td>
<td>0.39</td>
<td>0.4</td>
</tr>
<tr>
<td>Never Used</td>
<td>0.4</td>
<td>0.33</td>
</tr>
</tbody>
</table>

### Question 6

When you clean places like your driveway, walkways, or deck, do you typically... **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweep those areas</td>
<td>36</td>
</tr>
<tr>
<td>Use a blower</td>
<td>18</td>
</tr>
<tr>
<td>Hose them down</td>
<td>26</td>
</tr>
<tr>
<td>Pressure wash them</td>
<td>18</td>
</tr>
<tr>
<td>Use water with soap or another cleanser</td>
<td>2</td>
</tr>
</tbody>
</table>
### Question 7
If you own a dog and go for walks, how is the dog waste dealt with? Would you say the waste is ... **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Picked up every time</th>
<th>Picked up most of the time</th>
<th>Left on the ground most of the time</th>
<th>Always left on the ground</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Survey</strong></td>
<td>48</td>
<td>20</td>
<td>5</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td><strong>Re-Survey</strong></td>
<td>40</td>
<td>11</td>
<td>2.7</td>
<td>2.3</td>
<td>44</td>
</tr>
</tbody>
</table>

### Question 8
If the dog waste is picked up, how is it typically disposed of? Is it... **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Bagged &amp; put in the trash</th>
<th>Put in compost or yard waste collection</th>
<th>Flushed down the toilet</th>
<th>Tossed somewhere else</th>
<th>Never picked up</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Survey</strong></td>
<td>58</td>
<td>19</td>
<td>2</td>
<td>3</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td><strong>Re-Survey</strong></td>
<td>37</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>48</td>
</tr>
</tbody>
</table>

### Question 9
At which of the following have you washed your car or had it washed most often in the past year ... **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Home</th>
<th>Car wash or commercial coin operated car wash</th>
<th>Charity car wash</th>
<th>Haven't washed in the past year</th>
<th>Don't have any vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Survey</strong></td>
<td>45</td>
<td>47</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td><strong>Re-Survey</strong></td>
<td>49</td>
<td>42</td>
<td>7</td>
<td>1.6</td>
<td>0.4</td>
</tr>
</tbody>
</table>

### Question 10
If you wash your vehicles at home, where does the wash water go? **CIRCLE ONE**

<table>
<thead>
<tr>
<th></th>
<th>Down the street</th>
<th>Onto gravel, dirt, or grass</th>
<th>Some combination of the two</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Survey</strong></td>
<td>15</td>
<td>44</td>
<td>41</td>
</tr>
<tr>
<td><strong>Re-Survey</strong></td>
<td>34</td>
<td>54</td>
<td>12</td>
</tr>
</tbody>
</table>

### Question 11
When it comes to changing the motor oil, anti-freeze, and other fluids in the vehicles in your household, do you or someone else, **CIRCLE ONE**

<table>
<thead>
<tr>
<th></th>
<th>Always change it at home</th>
<th>Always take the vehicles to a shop</th>
<th>Some combination of the two</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline Survey</strong></td>
<td>20</td>
<td>72</td>
<td>8</td>
</tr>
<tr>
<td><strong>Re-Survey</strong></td>
<td>14</td>
<td>71</td>
<td>15</td>
</tr>
</tbody>
</table>
### Question 12

If the motor oil or anti-freeze is changed at home, what is typically done with the used fluids? **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placed in the trash</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Poured down the drain</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Poured on the ground</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Kept around the house</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Take to a collection</td>
<td>84</td>
<td>2</td>
</tr>
<tr>
<td>Used at home on fences</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>Don't change oil</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Question 13

If one of your vehicles leaked or spilled oil or antifreeze onto pavement, which of the following would you be most likely to do? **CIRCLE ALL THAT APPLY**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose it off</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Soak it up with an</td>
<td>66</td>
<td>80</td>
</tr>
<tr>
<td>Probably not do</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>anything</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Question 14

Which of the following best describes your attitude toward making changes to help prevent water pollution: Are you... **CIRCLE ONE**

<table>
<thead>
<tr>
<th></th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing to make changes in your</td>
<td>39</td>
<td>46</td>
</tr>
<tr>
<td>lifestyle, even if it involves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sacrifices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willing to make changes, if the</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>changes are fairly easy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convinced that there is not more</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>you can do to make a difference</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Question 15

Of the following reasons that some people give for wanting to cut back on water pollution, how important is it for you personally using a scale from 0 to 10? "10" means "extremely important" and "0" means "not important at all." **INDICATE NUMBER NEXT TO EACH ITEM**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Extremely Important (10)</th>
<th>Important (8-9)</th>
<th>Somewhat Important (5-7)</th>
<th>Not Important (0-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting Fish &amp; Wildlife</td>
<td>Baseline Survey</td>
<td>0.57</td>
<td>0.22</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Re-Survey</td>
<td>0.58</td>
<td>0.25</td>
<td>0.14</td>
</tr>
<tr>
<td>Protecting Drinking Water &amp;</td>
<td>Baseline Survey</td>
<td>0.75</td>
<td>0.17</td>
<td>0.06</td>
</tr>
</tbody>
</table>

2009 Stormwater Survey  
Baseline and Re-Survey Results  
Page 4 of 5
| Question 16 |
|------------------|------------------|------------------|------------------|------------------|
| **Baseline Survey** | **Re-Survey** | **Baseline Survey** | **Re-Survey** |
| Rain gardens | Rain gardens | Natural or organic yard care | Natural or organic yard care |
| Heard of it | 40 | 47 | 63 | 78 |
| Never heard of that term | 60 | 53 | 37 | 22 |

The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called... Please indicate: 1) Heard of it; Or, 2) Never heard of that term. **INDICATE NUMBER NEXT TO EACH ITEM**
Appendix I-C
Baseline & Re-survey Graphical Comparison
Chart 1
Survey Question 1

The City of Bonney Lake has a spill hotline for residents to report illegal dumping, illegal discharges, and oil and hazardous waste spills (253-447-4320 or Bonney Lake 311 or 253-841-5538 after hours and weekends) Do you know how to report spills and illegal dumping/discharges and to who? CIRCLE ONE YES NO
The following are some possible causes of pollution in local waters. Please indicate if you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount of pollution; or, 3) probably is Not a Significant Source of water pollution in Bonney Lake...INDICATE NUMBER NEXT TO EACH ITEM
Water that runs from neighborhoods and residences off streets, yards, and rooftops goes into a storm system of pipes, ditches and holding tanks or ponds. To the best of your knowledge, what happens to the water after it enters the storm system? Does that water...CIRCLE ONE

![Chart 3](chart3.png)

**Chart 3**

Survey Question 3

Go into the nearest body of water with treatment: Baseline Survey 31, Re-Survey 30

Go into the nearest body of water without treatment: Baseline Survey 67, Re-Survey 36

Don't Know: Baseline Survey 33, Re-Survey 3
Chart 4
Survey Question 4

The following are a list of things that can get washed into the storm system and eventually into lakes and streams. Do you believe that it is: 1) a Significant Source of water pollution in Bonney Lake; 2) it May contribute some Small Amount; 3), or probably is Not a Significant Source of Bonney Lake water pollution...INDICATE NUMBER NEXT TO EACH ITEM

- Not a significant source of water pollution
- May contribute some small amount
- Significant source of water pollution

<table>
<thead>
<tr>
<th>Item</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pesticides and fertilizers from yard</td>
<td>12%</td>
<td>10%</td>
<td>15%</td>
<td>9%</td>
<td>26%</td>
<td>32%</td>
<td>41%</td>
<td>42%</td>
</tr>
<tr>
<td>Oils and other fluids from vehicles</td>
<td>53%</td>
<td>38%</td>
<td>50%</td>
<td>37%</td>
<td>55%</td>
<td>47%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Soapy water from washing cars on pavement</td>
<td>35%</td>
<td>52%</td>
<td>35%</td>
<td>54%</td>
<td>19%</td>
<td>21%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Pet waste left on the ground</td>
<td>23%</td>
<td>40%</td>
<td>23%</td>
<td>37%</td>
<td>20%</td>
<td>47%</td>
<td>23%</td>
<td>47%</td>
</tr>
<tr>
<td>Improper disposal of cleaning fluids, paint, and other household hazardous waste</td>
<td>16%</td>
<td>37%</td>
<td>16%</td>
<td>47%</td>
<td>16%</td>
<td>37%</td>
<td>16%</td>
<td>47%</td>
</tr>
</tbody>
</table>

City of Bonney Lake Stormwater Survey

Chart 4
Of the list of products below that some people use on lawns and gardens, how much of each is used on your yard during a typical growing season. Would you say that, on your yard, 1) its used a lot; 2) a medium amount; 3) very little; 4) its never used on your yard?

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Fertilizers</td>
<td>40%</td>
<td>33%</td>
</tr>
<tr>
<td>Chemical Fertilizers</td>
<td>39%</td>
<td>40%</td>
</tr>
<tr>
<td>Pesticides such as insecticides or fungicides</td>
<td>56%</td>
<td>30%</td>
</tr>
<tr>
<td>Pesticides such as insecticides or fungicides</td>
<td>46%</td>
<td>43%</td>
</tr>
<tr>
<td>Weed and feed or other weed killer</td>
<td>34%</td>
<td>49%</td>
</tr>
<tr>
<td>Weed and feed or other weed killer</td>
<td>17%</td>
<td>30%</td>
</tr>
<tr>
<td>Organic or slow release fertilizers</td>
<td>12%</td>
<td>39%</td>
</tr>
<tr>
<td>Organic or slow release fertilizers</td>
<td>35%</td>
<td>32%</td>
</tr>
<tr>
<td>Watering</td>
<td>41%</td>
<td>48%</td>
</tr>
<tr>
<td>Watering</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>Chart 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Never Used**
- **Very Little**
- **Used a lot**
When you clean places like your driveway, walkways, or deck, do you typically... **CIRCLE ALL THAT APPLY**

**Chart 6**

Survey Question 6

- Sweep those areas
- Use a blower
- Hose them down
- Pressure wash them
- Use water with soap or another cleanser

- Baseline Survey
- Re-Survey
Chart 7
Survey Question 7

If you own a dog and go for walks, how is the dog waste dealt with? Would you say the waste is ... CIRCLE ALL THAT APPLY

<table>
<thead>
<tr>
<th>Response</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picked up every time</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>Picked up most of the time</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Left on the ground most of the time</td>
<td>11</td>
<td>2.7</td>
</tr>
<tr>
<td>Always left on the ground</td>
<td>11</td>
<td>2.3</td>
</tr>
<tr>
<td>Not applicable</td>
<td>44</td>
<td>16</td>
</tr>
</tbody>
</table>
Chart 8
Survey Question 8

If the dog waste is picked up, how is it typically disposed of? Is it...CIRCLE ALL THAT APPLY

- Bagged & put in the trash: 58%
- Put in compost or yard waste collection: 37%
- Flushed down the toilet: 2%
- Tossed somewhere else: 4%
- Never picked up: 17%
- Not applicable: 48%

City of Bonney Lake Stormwater Survey
At which of the following have you washed your car or had it washed most often in the past year ... CIRCLE ALL THAT APPLY

- Home
- Car wash or commercial coin operated car wash
- Charity car wash
- Haven't washed in the past year
- Don't have any vehicles

Baseline Survey
Re-Survey
If you wash your vehicles at home, where does the wash water go? CIRCLE ONE

- Down the street: 15%
- Onto gravel, dirt, or grass: 54%
- Some combination of the two: 41%

Baseline Survey: 34%
Re-Survey: 44%
When it comes to changing the motor oil, anti-freeze, and other fluids in the vehicles in your household, do you or someone else, CIRCLE ONE

![Bar chart showing responses to Survey Question 11.](chart11)

- **Always change it at home**: Baseline Survey - 20%, Re-Survey - 14%
- **Always take the vehicles to a shop**: Baseline Survey - 72%, Re-Survey - 71%
- **Some combination of the two**: Baseline Survey - 8%, Re-Survey - 15%
If the motor oil or anti-freeze is changed at home, what is typically done with the used fluids? **CIRCLE ALL THAT APPLY**

- [ ] Placed in the trash
- [ ] Poured down the drain inside the house
- [ ] Poured down a drain or ditch outside or in the street
- [ ] Poured on the ground
- [ ] Kept around the house/garage
- [84] Take to a collection facility/gas station/shop
- [45] Used at home on fences or as lubricant
- [48] Don't change oil or anti-freeze at home
Chart 13
Survey Question 13

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

- Hose it off
- Soak it up with an absorbent pad or other absorbent material
- Probably not do anything

Chart 13
City of Bonney Lake Stormwater Survey
Chart 14
Survey Question 14

Which of the following best describes your attitude toward making changes to help prevent water pollution: Are you... CIRCLE ONE

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

City of Bonney Lake Stormwater Survey

Chart 14
Chart 15
Survey Question 15
Of the following reasons that some people give for wanting to cut back on water pollution, how important is it for you personally using a scale from 0 to 10? "10" means "extremely important" and "0" means "not important at all." INDICATE NUMBER NEXT TO EACH ITEM

<table>
<thead>
<tr>
<th>Reason</th>
<th>Baseline Survey</th>
<th>Re-Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protecting Fish &amp; Wildlife</td>
<td>57%</td>
<td>58%</td>
</tr>
<tr>
<td>Protecting Drinking Water &amp; Food Sources for People's Health</td>
<td>22%</td>
<td>25%</td>
</tr>
<tr>
<td>Maintaining the Environment for Future Generations</td>
<td>16%</td>
<td>14%</td>
</tr>
<tr>
<td>Keeping the Waters Clean for Recreation</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Not Important (0-4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Somewhat Important (5-7)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Important (8-9)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extremely Important (10)</td>
<td></td>
</tr>
</tbody>
</table>

City of Bonney Lake Stormwater Survey

Chart 15
The following are techniques to filter surface water before it enters a waterway. Would you say you are familiar with a technique called...Please indicate: 1) Heard of it; Or, 2) Never heard of that term. INDICATE NUMBER NEXT TO EACH ITEM.
Appendix I-D
Stormwater Pollution Prevention Public Education Materials
Good Cleaning Practices
For the Auto Industry

Cleaning Up & Preventing Spills & Leaks
Use drip pans and ground cloths under vehicles. Drain and recycle fluids from wrecked or leaking vehicles as soon as possible. Label all hazardous materials clearly. Train employees on spill prevention and response procedures. Maintain a fully stocked spill kit near any cleaning agents or hazardous materials.

Metal Grinding & Polishing
Keep a bin under your lathe or grinder to capture metal filings. Send uncontaminated filings to a scrap metal recycler for reclamation. When using a spray gun or sand blaster, work inside, not outdoors.

Cleaning Auto Parts
Scrape parts with a wire brush or use a bake oven rather than liquid cleaners. Arrange drip pans, drying racks, and drain boards so that fluids are directed back into the sink or the fluid holding tank. Recycle used solutions through a licensed hazardous waste hauler.

Prevent Wash Water from Entering Storm Drains
Use a commercial car wash facility for cleaning vehicles. Allowing car wash runoff to flow into the storm drain is illegal. Prevent mop water from going into parking lots, alleys, sidewalks, and streets.

Operate a Clean, Dry Shop & Dumpster Area
Sweep, mop, or vacuum instead of hosing down garage floors or outdoor work areas. Keep dumpster areas clean and the lids closed. Do not fill dumpster areas with liquid waste or hose them out.

Dispose of Hazardous Waste Properly
Recycle oil, paint, oil filters, and antifreeze. Never mix hazardous wastes and label all hazardous materials clearly. Contact a licensed hazardous waste hauler to dispose of saturated absorbents.

Protect Outdoor Work & Storage Areas
Cover equipment, materials, and work/storage areas. Place bulk fluids in secondary containment. All hazardous materials and hazardous waste must be stored where they are protected from rain.

Clean Water Starts Here
To Report a Spill Call (253) 447-4320 or Bonney Lake 311 or (253) 841-5538 (After Hours & Weekends)
The City of Bonney Lake gratefully acknowledges the City of Los Angeles for the use of their artwork.
Good Practices For the Residence

Our actions within our watersheds have a direct impact on our lakes, streams, and wetlands. These Best Management Practices help conserve water and prevent pollution from going down the storm drain and into our water bodies.

Properly dispose of household chemicals. Never wash or pour chemicals, cleaners, or solvents into the storm drain. Take hazardous substances to an approved location. Two approved locations include the Hidden Valley Transfer Station Hazardous Waste Facility located at 17925 Meridian Street East, Puyallup WA (253) 867-7305 and Tacoma Hazardous Waste Facility located at 3510 South Mullen, Tacoma WA (253) 561-5543. There is no fee to dispose of household hazardous waste at the Hidden Valley Transfer Station Hazardous Waste Facility and Tacoma Landfill Hazardous Waste Facility, but you must show proof of Pierce County residency (driver's license).

Properly recycle used oil at one of the following locations in the Bonney Lake area; Bonney Lake Auto Parts (253) 893-0468, Schuck's Auto Supply (253) 891-4856, Jiffy Lube (253) 891-2494, or South Prairie Transfer Station (253) 862-1704. Jiffy Lube and Schuck's accept up to 5 gallons. Tacoma Landfill and transfer station sites accept larger volumes. Most sites are self-serve and you will empty your own container into the tank. Use 5 gallon or smaller oil containers (No drums or barrels). Puncture used oil filters and let the oil drain out for at least 24 hours. Then place the oil filter in the garbage. Never mix oil with any other substance. Use dry methods for drip and spill cleanup (For example, absorb spills with cat litter and sweep it up). Don't hose down driveways.

Just Do It; clean up after your pet. Cleaning up after your pet can be as simple as taking plastic bags along with you on your next walk. Then choose one of the following disposal options; When Walking - Bag It. Bring plastic bags with you when you walk your dog. Use a bag to pick up the pet waste. Tie bag closed and place in the trash. Options at Home; Trash It - Double bag dog waste or kitty litter, tie securely and place in garbage. Flush It - Flush dog and cat waste down the toilet if you are on a sewer system (not on a septic system). Kitty litter should not be flushed because it can clog your toilet. Bury It - Dig a hole in your yard at least one foot deep and 100 feet from any well, ditch, stream, or lake. Cover pet waste with plenty of soil.

Conserve water at home - wasted water is wasted money. Water your lawn only when it needs it. If you leave footprints on the grass, it is usually time to water. Apply as little fertilizer to your lawn as possible and always sweep up excess fertilizer from the street, sidewalk, and driveway. Applying excess fertilizer increases water consumption and creates more mowing. Use iron-based fertilizers to simply "green-up" your lawn instead. Pay attention to your water bill and become familiar with your water meter - use them to track your water use and to detect leaks. Try to keep showers under 5 minutes and switch to an ultra low-flow showerhead. Turn faucets off while shaving, lathering hands, and brushing teeth. In the kitchen, let pots and pans soak instead of letting the water run while you clean them. Thaw foods in the refrigerator or in a bowl of water instead of using running water.

Wash your vehicle on a lawn or at a licensed facility. Car wash water contains dirt, road grime, heavy metals, oils, and soaps which are toxic to fish and aquatic life. Sending soap runoff down the driveway and into a storm drain is not only harmful to the environment, it is a violation of state, local, and federal laws. Use a broom to sweep up debris instead of hosing off or pressure washing your driveway. Not only is the sediment harmful, but there can also be residue from vehicles on the driveway. Use kitty litter, sawdust, or commercial absorbent pads to dry up any spilled oils or hazardous liquids, then sweep it up and place it in the garbage. Don't wash it into the street or storm drain. Inspect your vehicle and driveway for leaks and repair all leaks as soon as they are discovered.

Please report pollution. It is illegal to dump oils, hazardous wastes, and other materials. If you notice a spill, call the City of Bonney Lake Spill Hotline at (253) 447-4320 or Bonney Lake 311 during business hours or call (253) 891-5538 to report a spill after hours and on weekends. Pick up litter and clean up any trash to reduce the chance of litter or contaminants entering the stormwater system. Share the importance of adopting water conservation and stormwater pollution prevention practices with your neighbors.

Clean Waters Start Here
Good Cleaning Practices
For the Restaurant Industry

Pour wash water into a utility sink or curbed cleaning facility with a floor drain. Don't pour it out onto a parking lot, alley, sidewalk, or street.

Use dry methods for spill cleanup (For example, absorb spills with cat litter and sweep it up). Don't hose down spills.

Clean floor mats, filters, and garbage cans in a utility sink or curbed cleaning facility with a floor drain. Don't wash them in a parking lot, alley, sidewalk, or street.

Recycle grease and oil. Don't pour it into sinks, floor drains, or onto a parking lot or street.

Keep waste container area clean and lid closed. Don't fill it with liquid waste or hose it out.

Clean Waters Start Here
To Report a Spill Call (253) 447-4320 or Bonney Lake 311 or (253) 841-5538 (After Hours & Weekends)
Artwork courtesy of Environmental Services, City of Portland, Oregon.
Household Stormwater Pollution Prevention

What is Household Stormwater Pollution?

Household stormwater pollution happens when contaminants from our homes and cars go down the storm drain. This can happen through illegal dumping into storm drains, or more commonly, when rainwater washes pollutants and other debris from our yards and driveways to the storm drain and into our streams, lakes, and wetlands. Common sources of household pollution are motor oil and antifreeze left on driveways, soapy water from car washing, fertilizers and pesticides in lawns and pet waste left in yards.

What You Can Do

You can protect our water quality by following these simple, but effective steps in this brochure.

It's Up to You!

Your actions make a difference! You have a direct impact on the health of our natural water ways.

Spill Response

Spills of Oil or Hazardous Materials **MUST** be reported

Who to Call

National Response Center: 1-800-424-8802

AND

Washington Emergency Management Division: 1-800-258-5990 OR 1-800-OILS-911

AND

Ecology Southwest Region: 1-360-407-6300

AND

City of Bonney Lake: 253-447-4320 OR City of Bonney Lake 311 OR After Hours & Weekends 253-841-5538

City of Bonney Lake
Around the House

Properly dispose of household chemicals. Never wash or pour chemicals, cleaners, or solvents into the storm drain. It is toxic to aquatic life and it is also illegal. Take antifreeze, solvents, gas, brake fluid, and other hazardous substances to an approved location. Two approved locations include:

Hidden Valley Transfer Station Hazardous Waste Facility
17925 Meridian Street East
Puyallup, WA (253) 847-7555

Tacoma Hazardous Waste Facility
3510 South Mullen
Tacoma, WA (253) 591-5543

There is no fee to dispose of household hazardous waste at the Hidden Valley Transfer Station Hazardous Waste Facility and Tacoma Landfill Hazardous Waste Facility, but you must show proof of Pierce County residency (driver’s license).

Materials accepted at Hidden Valley and Tacoma Landfill:

Antifreeze, Automotive Products, Cooking Oil, Flammable Liquids, Fluorescent Light Bulbs, Glues, Household Cleaners, Motor Oil (Used), Ni-Cad Batteries, Oil Based Paints, Yard Chemicals, Pet Products

Sweep your driveway. Sweep up debris instead of hosing off or pressure washing your driveway. Not only is the sediment harmful, but there can also be residue from vehicles on the driveway.

Working on Vehicles

Wash your car on a lawn or at a licensed facility. Car wash water contains dirt, road grime, heavy metals, oils and soaps which are toxic to fish and aquatic life. Sending soap runoff down the driveway and into a storm drain is not only harmful to the environment, it is a violation of state, local, and federal laws.

Maintain your vehicle. The liquids from leaky cars are harmful to aquatic life and are washed directly into the storm drain every time it rains. Test to see if your vehicle is leaking by placing clean cardboard on the ground under your engine and checking it the next day. Repair all leaks as soon as they are discovered.

Properly dispose of oil and other auto waste at an approved waste facility. Don’t pour liquids down the drain.

Clean up Spills. Use kitty litter, sawdust, or commercial absorbent pads to dry up any spilled liquid, then sweep it up and place it in the garbage. Don’t wash it into the street or storm drain.

In the Lawn & Garden

Pick up after your pets. The rainwater can wash bacteria and parasites from pet waste into the storm drain which flows untreated into our natural waterways.

Avoid pesticides and herbicides when possible. Not only is it better for the health of our lakes and streams, but it is also better for the health of your family. If you must use pesticides, use them sparingly and only where needed to ensure excess will not be washed into the storm drain. Always follow the label directions.

Use organic, time-release fertilizers. These fertilizers slowly release nutrients to your lawn, reducing the amount of pollutants washed into our waterways.

Dispose of yard waste properly. Compost yard debris or have it hauled away. Yard debris can release excess nutrients which promotes algae growth in the waterways.

Use a mulching mower. By using a mulching lawnmower you can decrease your use of fertilizers by 25 percent.

Around the Neighborhood

Pick up litter. Clean up any trash to reduce the chance of litter or contaminants entering the storm water system.

Report pollution. It is illegal to dump chemicals or other materials in the storm drain. If you notice illegal dumping, call the Spill Hotline at (253) 447-4320 OR City of Bonney Lake 311.

Educate neighbors. Share the importance of adopting stormwater pollution prevention practices with your neighbors.
Spill Response

Spills of Oil or Hazardous Materials **MUST** be reported

Who to Call

**National Response Center:** 1-800-424-8802

**AND**

**Washington Emergency Management Division:**
1-800-258-5990 OR 1-800-OILS-911

**AND**

**Ecology Southwest Region:**
1-360-407-6300

**AND**

**City of Bonney Lake:**
253-447-4320 OR City of Bonney Lake 311 OR After Hours & Weekends 253-841-5538

**REMEMBER. It's All Connected!!**

**Pet Waste Affects Water Quality**

Dog and Cat Waste Pollutes Our Watersheds! Dog and Cat waste left on the street or lawn does not just go away or fertilize the grass. The bacteria in animal waste is often washed down storm drains and into ditches, streams, lakes, and can travel for miles in the water. This waste contributes to all sorts of problems, from sick kids to mucky algae that suffocates fish and is sometimes poisonous to humans. Kitty litter dumped outside can also be washed into streams. The bacteria in pet waste can make it unsafe to swim in our waters.

A little pet waste goes a long way: In a city the size of Bonney Lake, dogs generate as much as 1,000 pounds of feces per day.
The City of Bonney Lake is working with citizens and businesses to prevent stormwater pollution. We hope you will join us in keeping pollutants out of our waterways.

In Bonney Lake, runoff from rain or snowmelt flows down our catch basins and into our lakes, streams and wetlands with little to no treatment.

Common pollutants in stormwater runoff include: fluids from vehicles such as oil and antifreeze, bacterial pollution from pet wastes, and other pollutants including pesticides, fertilizers, herbicides, and paint.

Remember, our actions within our watershed have a direct affect on our streams, lakes and wetlands.

Pet waste also contains nutrients that encourage weed and algae growth. Nutrient loaded waters can become cloudy, green and unattractive for swimming, boating and fishing.

Most importantly, pet waste can carry diseases and bacteria, which are unsafe for humans, pets, and wildlife. These diseases and bacteria include:

- Campylobacteriosis - bacterial infection
- Salmonellosis - bacterial infection
- Toxocariasis - round worm infection
- Toxoplasmosis - protozoan parasite infection
- Giardiasis - protozoan parasite infection
- Fecal Coliform - bacteria in feces
- E.coli - bacteria in feces

Did You Know?

When pet waste is washed into lakes or streams, the waste decays, using up oxygen and releasing ammonia. Low oxygen levels and ammonia, combined with warm water temperatures, can kill fish and other aquatic life.

Cleaning up after your pet can be as simple as taking plastic bags along with you on your next walk. Then choose one of the following disposal options:

**When Walking – Bag It!**

Bring plastic bags with you when you walk your dog. Use a bag to pick up the dog waste. Tie bag closed and place in the trash.

**Options at Home:**

- **Trash It** – Double bag dog waste or kitty litter, tie securely and place in garbage. Long-handled “pooper scoopers” are available at pet stores to make it easier to pick up after your dog without stooping over.
- **Flush It** – Flush dog and cat waste down the toilet if you are on a sewer system (not on a septic system). Kitty litter should not be flushed because it can clog your toilet.
- **Bury It** – Dig a hole in your yard at least one foot deep and 100 feet from any well, ditch, stream or lake. Cover pet waste with plenty of soil. To avoid digging you can install a dog waste composter, available at pet stores or on-line. Do not use composted pet waste in your vegetable garden.

**Remember, Pets Can’t Flush**

Cleaning up after your pet can be as simple as taking plastic bags along with you on your next walk. Then choose one of the following disposal options:

**When Walking – Bag It!**

Bring plastic bags with you when you walk your dog. Use a bag to pick up the dog waste. Tie bag closed and place in the trash.

**Options at Home:**

- **Trash It** – Double bag dog waste or kitty litter, tie securely and place in garbage. Long-handled “pooper scoopers” are available at pet stores to make it easier to pick up after your dog without stooping over.
- **Flush It** – Flush dog and cat waste down the toilet if you are on a sewer system (not on a septic system). Kitty litter should not be flushed because it can clog your toilet.
- **Bury It** – Dig a hole in your yard at least one foot deep and 100 feet from any well, ditch, stream or lake. Cover pet waste with plenty of soil. To avoid digging you can install a dog waste composter, available at pet stores or on-line. Do not use composted pet waste in your vegetable garden.
Used Oil Recycling Locations

Bonney Lake Area

Bonney Lake Auto Parts
8520 182nd Avenue East
253-863-0466

Schuck’s Auto Supply
9727 214th Avenue East
253-891-8856

Jiffy Lube
19210 SR 410 East
253-891-2494

South Prairie Transfer Station
22400 South Prairie Road
253-862-1704

How much oil can I bring?
Jiffy Lube and Schuck’s accept up to 5 gallons. Tacoma Landfill and transfer station sites accept larger volumes. For other sites listed, please call ahead.

Most sites are self-serve and you will empty your own container into the tank. Use 5 gallon (or smaller) oil containers. No drums or barrels.

All you have to do is:
Use a clean container for draining oil from your vehicle, boat, or lawn mower. Hint: Use a reusable container (5 gallon maximum) with a good lid.

Puncture used oil filters and let the oil drain out for at least 24 hours. Then place the oil filter in the garbage.

Never mix oil with any other substance. Take antifreeze, solvents, gas, brake fluid, and other hazardous substances to an approved location. Two approved locations include;

Hidden Valley Hazardous Waste Facility
17925 Meridian Street East, Puyallup, WA 253-847-7555

Tacoma Landfill Hazardous Waste Facility
3510 South Mullen, Tacoma, WA 253-591-5543

There is no fee to dispose of household hazardous waste at these facilities, but you must show proof of Pierce County residency (driver's license).

Materials Accepted at Hidden Valley & Tacoma Landfill
- Antifreeze
- Automotive Products
- Cooking Oil
- Flammable Liquids
- Fluorescent Light Bulbs
- Glues
- Household Cleaners
- Motor Oil (used)
- Ni-Cad Batteries
- Oil Based Paints
- Yard Chemicals
- Pet Products

Spills of Oil or Hazardous Materials MUST be Reported
To report a spill please call (253) 447-4320 or Bonney Lake 311 or to report a spill after hours or on weekends call (253) 841-5538
**Native Soil and Forests of Western Washington**

Washington store, filter, and slowly release cool, clean water to streams, wetlands, and the largest estuary on the west coast—Puget Sound. The rich diversity of life in marine and fresh water, as well as on land, depends on clean water to thrive.

As the region grows, native forests and soils are replaced with roads, rooftops and other hard surfaces. When it rains or snows, more water flows from these areas, carrying oil, fertilizers, pesticides, sediment and other pollutants downstream. In fact, much of the pollution in streams, wetlands and Puget Sound now comes from stormwater (water flowing off developed areas). The added volume of water and associated contaminants from developed land are damaging water resources and harming aquatic life in western Washington.

**WHAT IS A RAIN GARDEN?**

A rain garden acts like a native forest by collecting, absorbing, and filtering stormwater runoff from roof tops, driveways, patios, and other areas that don't allow water to soak in. Rain gardens are designed as shallow depressions that:
- Can be shaped and sized to fit your yard.
- Are constructed with soil mixes that allow water to soak in rapidly and support healthy plant growth.
- Can be landscaped with a variety of plants to fit the surroundings.

Rain gardens are one of the most versatile and effective tools in a new approach to managing stormwater called low impact development (LID). An LID project may incorporate several tools to soak up rain water, reduce stormwater runoff, and filter pollutants. Some examples of these tools include permeable paving, compost-amended soils, vegetated roofs, rainwater collection systems and rain gardens.

**Anatomy of a rain garden**

Water flowing off impervious surfaces (e.g. roof or driveway) can be directed to the rain garden through a swale, pipe or across landscaped areas.

**Rain gardens provide multiple benefits, including:**

- Filter oil and grease from driveways, pesticides and fertilizers from lawns, and other pollutants before they reach the storm drain and eventually streams, wetlands, lakes and marine waters.
- Reduce flooding on neighboring property, overflow in sewers, and erosion in streams by absorbing water from impervious surfaces.
- Provide habitat for beneficial insects and birds.
- Increase the amount of water that soaks into the ground to recharge local groundwater.

---

**Selected native plants or hardy cultivars**

**Ponding depth (6" to 12" typical)**

**Mulch layer**

**Rain garden soil mix**

**Grass**

**Existing ground**

**Rain garden soil mix depth (12" to 24" typical)***
Five steps to... Natural Yard Care

Why go natural?
Our yards are great spaces for relaxing. But in taking care of them, we often use water inefficiently, produce a lot of waste and overuse chemicals that are bad for the environment and our families' health.
The good news is that by making some simple changes we can:
- Save money
- Save time
- Protect the environment
- Protect our families' health
- Make a healthy, beautiful yard without working too hard!

1. Build healthy soil with compost and mulch
   Soil is alive, and soil life matters. A teaspoonful of soil contains about 4 billion organisms! They keep soil loose, recycle nutrients for plants, help store water and protect plants from disease.
   - Feed your soil with compost. Dig 1-4 inches of compost into beds when planting.
   - Make compost at home, or buy it in bags or bulk.
   - Mulch it! Spread 1-3 inches of compost, leaves, grass, bark, wood chips - or the City of Tacoma's TAGRO Mulch - to conserve water, prevent weeds, and feed the soil.
   - Need fertilizer? Go organic! Organic fertilizers feed plants longer and are less likely to wash off into our streams.
   Remember: healthy plants grow in healthy soil.

2. Plant right for your site
   Get to know your yard. Where is it sunny or shady? Is the soil dry or soggy? Then choose the right plant for the right place. Select plants that grow well in the Northwest and in the conditions in your yard.
   - Pick plants that resist pests and use less water.
   - Group plants by their needs for water, sun and soil.
   - Lawns and vegetables are picky. They'll only grow in sunny, well drained, level sites.
   - Give plants a good start by preparing the soil with compost.
   - Make space for wildlife by using trees and native plants.

3. Practice smart watering
   Many plant problems are caused by overwatering. Save money on water bills and grow healthier plants by watering deeply, but infrequently.
   - Moist the whole root zone, then let the soil dry before watering again.
   - Make every drop count by mulching, selecting drought-tolerant plants, using soaker hoses and water timers and watering only in the early morning or evening to reduce evaporation.
   - Use automatic irrigation systems efficiently. Have a test and adjust annually. Check for leaks every month. Don't water if it's rained recently.
   - Let the rain soak in. Direct downspouts out into lawns or garden beds. Use open pavers. Help soil absorb rainfall by building rain gardens or using compost and mulch.

The City of Tacoma's all natural TAGRO soil products are good choices for earth-friendly gardening practices.
Think twice before using pesticides

Scientists have found 23 pesticides (weed and bug killers) in our local streams. Overuse of these products is bad for the soil, bad for fish, and bad for our families' health.

- Start with prevention. Select disease-resistant plants, and pull weeds by hand before they spread.
- Identify the problem before you spray, squash or stomp. Most bugs are good bugs!
- Accept a little damage — give natural predators time to control pests.
- Select the least toxic control method. Many less toxic products are now available.
- Replace problem plants with more pest-resistant ones.
- Only use pesticides as the last resort. Pesticides can seep down into the groundwater that supplies our local wells with drinking water.

Practice natural lawn care

It's easy to put all these steps to work in our lawns, where we often use the most chemicals and water, produce the most waste and work too hard!

- Mow higher (1-2 inches) and leave the clippings. "Grasscycling" doesn't cause thatch, and it makes lawns healthier and provides free fertilizer!
- Add nutrients to your soil or fertilize moderately in May and September with a "natural organic" or "slow release" fertilizer, such as SoundGRO.
- Water deeply, to moisten the whole root zone, but infrequently.
- To repair damaged lawns or to keep lawns healthy during water shortages spread ¼ inch of TAGRO Mix over the top, then reseed.
- Think twice before using "weed and feed" or other pesticides. Long-handled weed pullers pop weeds out easily.
- Consider alternatives to lawns for steep slopes, shady areas or near streams and lakes.

Want to know more?

Resources
- TAGRO soil products: www.tagro.com, (253) 502-2150
- SoundGRO fertilizers: www.soundgro.com, (253) 798-3089
- Composting: www.cityoftacoma.org/composting
- Natural lawn & garden care: www.cityoftacoma.org/naturalyards
- Water conservation, indoors and outdoors: www.tacomawater.com, (253) 502-8723
- Washington State University Master Gardener information: http://gardening.wsu.edu, (253) 798-7170
- Yard and garden chemical disposal: www.cityoftacoma.org/hazwaste, (253) 591-5418
- Choosing the right plant for the right place: www.greatplantpicks.org, www.dnr.metrokc.gov/groundcover
- Native plant information: http://gardening.wsu.edu/native or www.wnps.org
- Local nurseries and garden centers
- Natural landscape exhibit: EnviroHouse (Tacoma Landfill), www.cityoftacoma.org/envirohouse, (253) 573-2426

When it comes to your yard, act naturally!

Thanks to King County Department of Natural Resources and Parks and Seattle Public Utilities for providing content and for permission to reprint. Thanks to Washington State Department of Ecology for funding this publication.

For more information, contact Geoff Rinehart, Natural Yard Care Program, at (253) 798-4587.
Spill Response

Spills of Oil or Hazardous Materials MUST Be Reported

Who To Call

National Response Center:
1-800-424-8802

And

Washington Emergency Management Division:
1-800-258-5990 Or 1-800-OILS-911

And

Ecology Southwest Region:
1-360-407-6300

And

City of Bonney Lake:
Business Hours
(253) 447-4320 Or Bonney Lake 311
After Hours & Weekends
(253) 841-5538
The City of Bonney Lake is developing a calendar to promote pollution prevention and water conservation practices. To help us convey this message, we are conducting an art contest open to all students in grades K-12 attending schools or home schooled in the City of Bonney Lake. Twelve drawings will be selected to develop the calendar. From the entries submitted, the City will select drawings depicting each of the following messages (one message per drawing please):

1. Pollution / Illegal Dumping Reporting
2. Friendly Vehicle Washing
3. Water Conservation
4. Pet Waste Disposal
5. Used Oil Recycling
6. Household Hazardous Waste Disposal

Qualifying Schools:
Bonney Lake Elementary School
Emerald Hills Elementary School
Mountain View Middle School
Bonney Lake High School
All Bonney Lake Home Schools

How Do I Enter The Contest?
Draw or paint an original picture depicting one of the six messages above (each student may submit one drawing only).

Deadline:
Entries shall be sent to:
City of Bonney Lake
8720 Main Street East
Bonney Lake, WA 98391
Entries must be received by:
April 26, 2010

Criteria: Please Read - This Is Very Important!

Page Orientation:

Artwork MUST be ORIGINAL & HORIZONTAL on an 8.5" x 11" sheet of white paper with no lamination or protruding parts.

Medium:
Drawings are created on WHITE paper with crayons, paint, color pencils, and/or magic markers. For calendar production purposes, full color drawings are preferred (but not required) over black and white drawings. No computer-generated artwork please.

Official 2010 Entry Form is required:
Each entry must have a copy of the Entry Form filled out entirely. Tape the Entry Form to the back of the drawing - no staples please. Submitted artwork becomes property of the City of Bonney Lake and may not be copyrighted. The City also reserves the right to accept or reject any submittal. Artwork and artist's name may appear in newspapers, on the City Website, and in other communications.

Attention: Artists
If you wish to have your artwork returned; all submitted artwork will be available for pick up after June 1, 2010.

Cash Prize:
The artists of the selected drawings will be contacted and awarded a $50 cash prize.