# ATTACHMENT B14: SUMMARY, MEASUREMENT AND ASSESSMENT OF 2012 EDUCATION AND OUTREACH PROGRAMS

Program/Tool	Target Audiences and	Update	Measurement	Opportunities
	Topics			
	(Permit Section			
	S5.C.10.b.i.)*			

<b>Programs</b>				
Make a Splash Grant program \$50,000 set aside for grants of up to \$4,000. Activities must be related to surface water education, protection or restoration efforts.	1a,1b,1c,2a,2b,3a,3b,3d		2012: 28 applications were submitted for a total request of \$101,289. 15 projects (meeting the maximum amount of \$50,000) were selected.	Continue to seek new audiences and inspire innovative projects.
			2011: 26 applications were submitted for a total request of \$82,125. 15 projects (capped at \$50,000) were selected.	
			See the website www.cityoftacoma.org /makeasplash for a list of past grant projects.	
EnviroChallengers Two environmental educators visit Tacoma classrooms and attend community events to spread surface water, wastewater,	1a,1b,1c,2a,2b,3a,3b	Continued to work with storm drain marking and Clean Bay Car Wash programs, in addition to teaching inschool and afterschool lessons. The EnviroChallengers also lead tours, staffed information booths and attended community speaking engagement to communicate Environmental Services	Total lessons in schools: 2011-2012: 930 inschool lessons, 10 afterschool lessons 2010-2011: 695 inschool lessons, 35 afterschool lessons	Continue to educate Tacoma youth and the community at large about issues related to surface water, wastewater, garbage and recycling. EnviroChallengers will

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garbage and recycling messages.		messages.	Community events: 2012: 35 events 2011: 30 events	move to the Office of Sustainability and will look at opportunities to expand lessons to include other sustainability messages.
Business Source Control Outreach	2a,2b,3a,3b,3c,3d,3e	Continuing efforts to educate business owners on Source Control BMPs during spill/complaint responses and regular business inspections. The intent is to make business owners and property managers more aware of the importance of regularly maintaining their onsite stormwater system and best management practices to help protect local waterways and reduce stormwater pollution.	In 2012, the City of Tacoma's Environmental Compliance team provided information regarding Source Control best management practices to 1,909 sites.	Develop additional educational materials and website resources for Source Control Inspectors to use with businesses.
Clean Bay Car Wash Kits Available to the public at no charge to ensure that dirty wash water from fundraising car washes is discharged to the sanitary sewer to be treated instead of entering our local	1c,2a	The EnviroChallengers (Tacoma's inhouse environmental educators) took over coordination of the Clean Bay Car Wash program in Summer 2010.	2012: car wash kit was loaned 35 times.  2011: car wash kit was loaned 14 times. (This does not include numbers at the permanent car wash sites.)	We are working to expand our outreach to nonprofits and community groups and find more permanent sites for car wash kits. Developing options to promote car wash ticket sales as best option, followed by using permanent car wash kit

Program/Tool	Target Audiences and Topics (Permit Section	Update	Measurement	Opportunities
	S5.C.10.b.i.)*			
lakes, streams and Puget sound via the stormwater system.  Pet Waste Program Information-based education about proper pet waste disposal and the problems pet waste causes for surface water.	1c	Continued to put pet waste messages in surface water website, EnviroChallenger lessons, EnviroTalk newsletter and utility bill inserts.  Supplied dog waste disposal stations with PSSH themed bags.	Not Available.	site, followed by borrowing a loaner kit for your own car wash site.  Planning to update kit reservation and tracking methods for increased effectiveness.  Continue education and outreach efforts, including more strategic cobranding of pet waste messages with the Puget Sound Starts Here campaign.  For the next ES survey, will explore ways to quantify answers from pet owners vs. non-pet owners.
Storm Drain Marking Program Work with volunteer groups to try to have every storm drain in Tacoma marked with	1a,1b,2b	The EnviroChallengers (Tacoma's inhouse environmental educators) took over coordination of the storm drain marking program over the summer starting in Summer 2010. In 2011, developed means of locating marked	2012: 1413 drains marked by 122 volunteers. 2011: 83 drains marked.	Continue marking drains with the goal of having every drain in Tacoma marked. A curb marking volunteer event in the Stadium High School

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a "no dumping" message.		storm drains using Street Sweepers with GIS technology to get an updated map for planning future project locations.  In 2012, installed watershed signage to reflect curb marker design.		neighborhood is planned for August in coordination with Pierce Conservation District.  The EnviroChallengers are looking into ways to enhance this program's strategy, including tracking of marked curbs, checking to see which curbs are still marked and ways to recruit volunteers to mark curbs in priority areas.
				Investigate follow-up to neighborhoods scheduled for intensive storm-line cleaning with curb marking and mailing emphasizing where the stormwater goes and how to keep it clean.

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
Watershed signs	1a,1b,2b	Finalized locations and design for watershed signs that would tie-in with curb marking graphic and include pollution hotline number.  Installed watershed signage along arterials at the borders of the watersheds in 2012.	Measurement will be indirect; meant to raise general awareness, encourage good pollution prevention behavior and get people to call pollution hotline when appropriate.  Anticipate increase in hotline calls.	Consider installing additional signs within the watershed areas or adjacent to specific water bodies.
Household Hazardous Waste Disposal Program City of Tacoma and Pierce County residents may dispose of household hazardous waste at the City's collection	2a,3b	Continuing to spread the word through Environmental Services publications and website.	In 2012, there were 4,243 City of Tacoma and 3,437 Pierce County customers who turned in household and hazardous waste at the facility, with 155 tons diverted and 97	Continue to educate public about need for proper disposal and where they can take their hazardous wastes.

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
facility free of charge. Customers must show proof of residency with a current photo ID.			tons recycled.  In 2011, there were 4,225 City of Tacoma and 3,341 Pierce County customers who turned in household and hazardous waste at the facility, with 142 tons diverted and 91 tons recycled.	
Natural Yard Care Continue to spread the word through regular Environmental Services efforts such as the EnviroHouse exhibits, booth displays, etc. Also partnering with Health Department's grant-funded natural yard care program, and coordinating closely with Tacoma Water and their natural yard care	1c,3a	Through our partnership with the Tacoma-Pierce County Health Department we co-sponsored a series of two workshops at the Tacoma Nature Center in May, two Family Fun Nights at the Tacoma Nature Center in July, and two natural yard care workshops at the EnviroHouse in September. NYC handouts and conversations were part of Wapato Healthy Homes Healthy Neighborhoods campaign and door-to-door outreach in the Fall. Please see additional information under Wapato Healthy Homes Healthy Neighborhoods Campaign in the Partnerships section.	May workshops - 20 attendees July Family Fun Nights - 78 attendees September workshops - 36 attendees.	Continue efforts and partnerships with the Tacoma-Pierce County Health Department and Tacoma Water to encourage Tacoma residents to incorporate natural yard care into their habits, as well as understand how their actions can affect the environment.  Participate in April 2013 Wapato neighborhood clean-up efforts by providing Natural Yard

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			Care tips and PSSH messages to target neighborhoods.  We are planning another spring workshop to target parents and young children as an untapped audience that might have an interest in natural yard care in coordination with the Wapato Healthy Homes Healthy Neighborhoods campaign.
			We will co-sponsor a professional training seminar in February 2013 with Pierce County and others.  We will also investigate supplementing our standard workshop series through developing a Natural Yard Care
	Topics (Permit Section	Topics (Permit Section	Topics (Permit Section

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				evaluate our current program effectiveness using an audience needs assessment and social marketing planning tools
Urban Forestry Program	1c,3d,4b	In 2012, the City continued to work on a municipal code update based upon the newly adopted Urban Forestry Policy Element.  Developed a tree coupon program with discount coupons redeemable at local nurseries as an incentive to encourage more tree planting by residential homeowners. Coupons were introduced through the Wapato Healthy Homes Healthy Neighborhoods campaign and have been offered at workshops, public events, and through the City website. Coupons are being individually tracked to verify number of trees purchased. An Arbor Day Celebration was held in collaboration with Green Tacoma Day on October 20 <sup>th</sup> including educational and family activities such as Tree Poetree and leaf stamping as well as opportunities to participate in open space restoration projects around the City.  Staff offered numerous tree selection,	Canopy Cover Goal of 30% by 2030. Starting at 12.9% in 2001. Updated canopy cover evaluation of 2009 data showed 19% coverage city-wide.  Total trees planted in 2012 on City projects: 658  Total tree coupons distributed in 2012: 143	Additional tree installation projects will be completed by City staff along slopes and arterials in the City.  Work on completion of the municipal code updates.  Continue partnership with Green Tacoma Day event.  Continue anti-topping campaign.  Continue offering tree selection, planting and pruning workshops.  Partner with PECONet members to develop a tree planting social marketing strategy to pilot in the Swan Creek

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Puget Sound Starte	10 1b 10 20 2b 20 2b	planting and pruning workshops for residential homeowners.  An Anti-topping campaign including DNR-postcards, bookmarks and street banners in downtown streets was supplemented with newspaper ads and a new website in 2012.	We will be measuring	neighborhood.
Puget Sound Starts Here (PSSH) Campaign The campaign's purpose is to educate residents about how their daily actions affect surface water quality, and empower them to make good choices throughout their day in order to keep pollution out of our local surface water resources.	1a,1b,1c,2a,2b,3a,3b,	The City is participating with neighboring cities and counties, the Department of Ecology, and the Puget Sound Partnership in a regional stormwater education campaign, Puget Sound Starts Here.  In May 2012 – PSSH Month events and activities included coasters/coffee cup sleeves distributed to restaurants throughout Tacoma, PSSH gear giveaway at Farmer's Market promotional event, PSSH table at Tacoma Marathon, PSSH PSA's and ads aired on TV Tacoma, City Council proclamation, PSSH magnets on City fleet vehicles, PSSH street banners hung in downtown business districts, and a PSSH-themed chalk-off event at Frost Park.  PSSH Night at the Rainiers included PSSH messaging in "The Dirt" baseball game program, PSA's on the gameboard, PA announcements, and information	We will be measuring behavior change over time by analyzing the results of regular surveys by the City of Tacoma, Pierce County, STormwater Outreach for Regional Municipalities and the Puget Sound Partnership.	Continue to cobrand stormwater pollution prevention messages with the PSSH campaign. Promote Phase 2 of the PSSH campaign and new PSSH website content through City social media and other tools.  Explore ways to extend the PSSH campaign within Tacoma while working with Pierce County and other jurisdictions on regional campaign efforts.  Participate in PSSH Month May 2013.

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
Street Sweeping Program  In 2007, the Environmental Services Transmission Division took over the City of Tacoma's	1a, 1b	booth with "poo toss" game to encourage proper pet waste disposal in the garbage.  Utility bill inserts and EnviroTalk quarterly newsletter included PSSH messaging – year round  Natural Yard Care workshops used PSSH campaign messaging and PSSH stickers. A new natural yard care Family Fun Night was presented twice in July and featured an original PSSH theme song written and performed by Tacoma Pierce County Health Department employee Walt Burdsall.  Began stocking dog waste disposal stations on City-owned property with PSSH themed bags.  In 2012, continued to use the updated City of Tacoma street sweeping schedule adjusted so that we can now tell residents exactly what day their street will be swept to increase street sweeping efficiency and prevent more pollutants from entering the storm system.  In addition to an online calendar, and	Not Available	Continue efforts.
street sweeper program giving extra attention to keeping		talking about street sweeping once a year in our quarterly utility newsletter, we also mail postcards telling people:		

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pollution out of our stormwater system in addition to keeping our city streets clean. Entire city receives postcards that mention both street sweeping BMPs as well as the impacts of stormwater flows into surface waters.		1) their street sweeping date 2) what to do to make sure street sweepers can do their job more effectively (move cars, trim branches, etc.) 3) explain that "what goes down storm drains in the City of Tacoma flows directly – untreated – into local lakes, rivers, streams and Puget Sound. The Street Sweeping Program helps to pick up debris and contaminants and keep it out of the stormwater system, and out of our waterways."		

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Communic	Communication Tools				
EnviroKids website General education on stormwater, wastewater and solid waste that is targeted to youth.	1a,1b,1c	Continued to update with educational information. This site contains environmentally themed projects, activities and other information for kids, and also displays the winners of our annual EnviroKids poster contest.  In 2012, more than 140 students entered the art contest, which asked elementary and middle school students to draw positive behaviors they have learned about surface water, wastewater or solid waste from the City of Tacoma EnviroChallenger program.	Not available.	Continue to update and enhance.	
Surface Water Management website Includes information about Surface Water Management services and rates, the NPDES Municipal Stormwater Permit, the Surface Water Management Manual and permitting requirements, general best	1a,1b,1c,2b,3a,3b,3d,3e ,4a,4b,4c	Reorganized touch-down page to provide easier access to existing web content.  Continuing to update surface water pages and information as we have it.	Not available.	A new City-wide website format will be available in 2013 with more flexibility for posting documents and more user-friendly navigation and layout.	

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
management practices to prevent stormwater pollution, and more.				
Tacoma EnviroNews listserv Environmental issues listserv	1c	Continued to moderate e-mail listery for public to post environmental information related to environmental issues, events, and job or volunteer opportunities.	Approximately 285 people on the listerv including City employees, City Council members, local nonprofit organizations and other interested citizens.	Continue to maintain. Attempt to build listserv users by advertising invitation to listserv at public events, EnviroHouse, etc.
Social Media Facebook, Twitter, and YouTube	1a,1b,1c,2a,2b,3a,3b,3c ,3d,3e	Continued to post new content on Facebook, Twitter and YouTube related to stormwater education.	-Facebook: 2,300 Likes -Twitter: 5,594 Followers -YouTube: 41 Subscribers; 20,888 Video Views	Continue to utilize. Actively promote content of new PSSH website stories and content related to PSSH Phase 2 campaign in 2013.
EnviroTalk Quarterly newsletter mailed to 53,000 single family and duplex home in Tacoma to educate about surface water, wastewater and solid waste messages	1a,1b,1c,2a,2b,3a,3b,3c ,3d,3e	Cobranded stormwater pollution prevention messages with PSSH campaign messages when possible.  Specific surface water subjects covered included:  Natural yard care Rain Gardens and porous paving Scoop the poop Make a Splash grant Natural cleaners	There is a noticeable increase in calls related to newsletter topics.	Continue to education Environmental Services customers and promote behavior change to customers in engaging ways.  Continue to cobrand surface water messages with the Puget Sound Starts Here logo.

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
		<ul> <li>Proper disposal of household hazardous wastes</li> <li>Water pollution hotline</li> <li>Curb marking</li> <li>Tree maintenance</li> <li>Auto maintenance</li> <li>Car washing</li> <li>Flood prevention</li> <li>EnviroHouse</li> <li>TAGRO</li> </ul>		
Utility bill inserts Bimonthly insert distributed to 125,000 customers.	1a,1b,1c,2a,2b,3a,3b,3c ,3d,3e	Specific stormwater subjects covered were:	Noticeable increase in calls on advertised topics when inserts go out.	Continue to education Environmental Services customers and promote behavior change to customers in engaging ways.  Continue to cobrand surface water messages with the Puget Sound Starts Here logo.
TV Tacoma City-run cable channel	1a,1b,1c,2b,3a,	Aired the Puget Sound Starts Here ads and on a regular basis.  Aired "Lost and Puget Sound" video as a special broadcast.	Not available.	We will be continuing to work with TV Tacoma on stormwater education opportunities and features, as well as PSA projects.

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TV Tacoma SCALA pages Bulletin board style postings broadcast via Click! Cable TV.	1a,1b,1c	Posted several surface water related messages, including West Nile Virus, Make a Splash grant announcements and sustainable stormwater/Puget Sound Starts Here-themed best management practice messages.	Not available.	Continue to utilize.

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Partnershi	Partnerships				
EnviroHouse Hands-on showcase of green building and natural landscape ideas, materials and techniques that create a healthy home. Demonstrates rain barrels, native plants, rain gardens, pervious pavement, natural yard care techniques, "pin" foundations, and other surface water- related best management practices in action.	1a,1b,1c,3a,3d,4b	Continued to publicize EnviroHouse and messages such as stormwater and other messages through city communication vehicles, as well as advertising in local media.  Onsite rain gardens continue to mature (one managing runoff from nearby road and the other managing runoff from EnviroHouse roof.)  New construction of an outdoor kiosk nearly 75% complete including a new green roof display, rain barrel, and variety of pervious pavers.  Workshop topics included green roofs, tree planting and maintenance, pervious pavement, rain gardens, rain barrels, sustainable landscaping, composting, and more.  Refined EnviroHouse evaluation surveys and assessment tools to better define areas of success and areas of improvement.	A Post-Visit Survey was emailed to walk-in visitors who visited the EnviroHouse between August and December 2012. Survey summary results are attached at the end of the Program Summary and Measurement table.  Approximately 2,600 visitors in 2012 including approximately 1,266 walk-ins, 534 tour participants, and 800 workshop participants.  2,234 visitors in 2011 including 1,168 walk-ins, 385 scheduled tours, events, and art exhibit participants, and 681 workshop	Complete installation of kiosk demonstration project.  Redesign of landscaping signage will emphasize low impact development and natural yard care messages.  Investigating other innovative ways to finetune or add educational and inspirational displays to the EnviroHouse.	

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
	<u></u>		1	
			participants.	
Regional Community Partnerships	1a,1b,1c,2a,2b,3a,3b,3c,3d,3e,4a,4b,4c	Participating in regional conservation groups such as:  Pierce Conservation District  Chamber/Clover Creek Watershed Council  Puyallup River Watershed Council  Puget Sound Partnership  NPDES Municipal Stormwater Permittee coordinators  Interagency inspector forums  Pierce County ECONet (regional Education, Communication and Outreach Network)  STormwater Outreach for Regional Municipalities (STORM), the western Washington regional group of stormwater professionals implementing public education and outreach NPDES requirements  Puget Sound Starts Here campaign  South Sound Phase II NPDES Permit Coordinators Group.  Center for Urban Waters interagency coordination between City of Tacoma Environmental Services offices, UW-Tacoma research labs and Puget Sound Partnership headquarters.	Not Available	Partner with other municipalities on pilot vehicle leaks campaign with drip testing and leak repair discounts at participating repair shops during April 2013.
<b>Local Community</b>	1a,1b,1c,2a,2b,3a,3b,3c	Working with the Pierce Conservation	Not Available	Continue.
Partnerships	,3d	District Stream Team and Citizens for a		

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
First Creek Stewards	1a,1b, 1c	Healthy Bay, which help interested Tacoma community groups organize storm drain stenciling and curb marking efforts. The Stream Team also leads other programs such as wetland and stream bank cleanups and revegetation projects, educational workshops and tours for the public.  Participated in Green Tacoma Day. See more details under the Urban Forestry Program update.  In 2012, partnered with Tacoma Rainiers baseball team through an Environmental Services Sponsorship to provide solid waste services at Cheney Stadium and utilize PA announcements during the games, radio spots, and ads in "The Dirt" game program to promote stormwater and Puget Sound Starts Here messages.  Assisted Stewards to finalize the First Creek Action Plan to guide volunteer restoration efforts in the First Creek basin.  For the third year in a row, granted First Creek Middle School students a Make a Splash grant focused on creek monitoring and biology education, and public education.		Continue to participate in their planning efforts and assist where possible.  Finalize Action Plan.

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Wanato Healthy	12 1h 1c 22 2h 2d	Committed to the following two action items:  • Identify specific project (new and retrofit) opportunities where bioengineering and "softer" design solutions can be implemented, with multiple objectives in mind. Seek community input.  • Survey and inventory vegetation and stormwater structures along the conveyance system corridor in order to identify areas where enhancement or maintenance is needed. Items to be noted include but are not limited to: dumping, illicit discharge, invasive species, dominant species, flow, potential projects, and erosion.	Summary	In 2012, another two
Wapato Healthy Homes Healthy Neighborhoods Campaign	1a,1b,1c,3a, 3b, 3d	Americorps volunteers are coordinating door-to-door canvassing visits to provide residents living in the Wapato Lake drainage basin with information and incentives to improve the health of their homes and their neighborhoods in a variety of sustainability related topic areas including stormwater pollution prevention, natural yard care, tree planting, and others. The information offered is tailored to the interests of each homeowner. In fall 2012, the first round	Summary: -984 total homes visited -240 conversations -193 not interested/busy -512 did not answer -39 derelict or foreclosed homes  Conversation time: 1784 minutes	In 2013, another two rounds of door-to-door visits are planned as well as a series of 5 workshops on topics including water efficiency, edible gardening, trees, natural yard care and rain gardens, and composting.

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		of door-to-door visits was complete reaching about half of the basin residents.	(average of 7.4 minutes/household)	
Dump Smart Mobile Business Campaign	2a, 2b	Implemented the Dump Smart campaign in partnership with Pierce County Surface Water Management to encourage carpet cleaning and painting businesses to pledge to dispose of their wastewater properly. Included a list of pledged Dump Smart businesses in two Tacoma News Tribune ads.	Not Available	Continue efforts.
Promotion of Water Pollution Hotline Publicize the water pollution hotline operated by Citizens for a Healthy Bay (with support from Environmental Services)	1a,1b,2b	In 2012, watershed signs were installed along arterials throughout the city that include the hotline number.  Environmental Services is promoting the telephone number on the City's website, in City publications, signage at eight parks and other locations in Tacoma, as well as other areas around Commencement Bay.  The number is also promoted by Citizens for a Healthy Bay on their website and other materials.	2012: 33 2011: 28 2010: 55	Investigating other options for increased promotion of the hotline.

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Washington Conservation Corps A six-person crew of Department of Ecology employees sponsored by Environmental Services to help maintain our stormwater facilities; work on City-owned habitat enhancement areas; and participate in a variety of stormwater outreach and education efforts.	1a,1b,	In 2012, the WCC crew participated in: native planting on restoration sites, providing public education, working with many local community groups to further their environmental efforts, and performing water quality testing of local streams.	Not available.	Continue.
Snake Lake Nature Center	1a,1b, 1c	In 2012, Environmental Services partnered with the Nature Center to host two well-attended Natural Yard Care Family Fun Nights in July.	Not Available	Investigating other options to incorporate stormwater messaging into existing interior displays and exterior interpretive signage options.

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Potential F	Program Enh	nancements		
Encourage Low- Impact Development (LID) Practices Encourage low- impact development practices and explore ways to encourage residents and businesses to implement LID practices, such as rain gardens, pervious pavement, and preserving native vegetation and open space.	3d,4b	Developed and installed interpretive signage for Cheney Stadium Sustainable Stormwater Project which was awarded Greenroads Certification presented during the pre-game events at the Rainiers baseball game on Earth Day.  Produced a pervious pavement PSA on YouTube featuring City of Tacoma staff discussing the benefits of pervious pavement in Tacoma (http://www.youtube.com/watch?v=OV6vc uR_EAU).  Developed a general information brochure about residential rain gardens with Tacoma-specific resources listed for further information.	2009 ES Customer Survey measured general awareness of LID measures such as rain gardens. We will continue long- term measurement of LID awareness.	Continue to explore opportunities and ways to promote and encourage low-impact development in our city literature, website, working on demonstration projects, updating Public Works design standards, etc.
Residential Rain Garden Rebate Program	3d	The City is partnering with the Pierce Conservation District to develop a rain garden program with rebates for residential homeowners in the Flett Creek and Leach Creek watersheds to retrofit their yards with rain gardens. Additional program assistance may include free rain	Not Available	Launch pilot program in Fall 2013.

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Internal Partnering for Stronger Messages		garden plants, design assistance and soil testing.  Tacoma Public Utilities Increase partnership opportunities with Public Utilities Water Conservation Program to better encourage natural yard care practices, use of native plants and minimizing landscape watering.  Community gardens Management of the local community garden program has transferred to the Pierce Conservation District. The community garden program manager has developed a series of gardening	Not Available	Open Space Program Management of a portion of the Open Space parcels will transfer to the Surface Water Utility for the purpose of preserving and restoring healthy forests and increasing canopy coverage. This involvement will provide more direct opportunities to facilitate stewardship activities including
		workshops including composting and gardening alternatives for pest control. Develop other opportunities to incorporate natural yard care messages in the gardening workshops and community garden outreach.		invasive vegetation removal, planting, and monitoring.  Continue efforts to strengthen ES messages through internal program partnerships.  Seek to identify other ways to provide stormwater-friendly opportunities to motivated/cohesive neighborhoods such as outreach to Neighborhood Councils.

Program/Tool	Target Audiences and Topics (Permit Section S5.C.10.b.i.)*	Update	Measurement	Opportunities
Better Education Tools for Environmental Compliance Staff and Permit Center	2a,2b,3b,3c,3d,3e,4a,4b,4c	Working with staff on materials that can be used to better educate and inform businesses and homeowners during onsite inspections or when responding to spills and complaints.  Began work on developing commercial BMP handouts focused on restaurants.	Not Available	Create handouts, brochures and website content promoting low impact development techniques and clarifying stormwater management permit requirements.  Identify opportunities to utilize new rain garden brochure and "Let the Rain Soak In" LID brochures created in partnership with Pierce County.  Investigating providing Home Owner Association training on maintenance of shared storm ponds. Coordinate with inspectors when they do HOA pond inspections.

\*Permit Section S5.C.10.b.i: Permittee shall implement or participate in an education and outreach program that uses a variety of methods to target the audiences and topics listed below. The outreach program shall be designed to achieve measurable improvements in each target audience's understanding of the problem and what they can do to solve it.

- 1) General Public
  - a. General impacts of stormwater flows into surface waters.
  - b. Impacts from impervious surfaces.
  - c. Source control BMPs and environmental stewardship, actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping and buffers.
- General public and businesses, including home based and mobile businesses
  - a. BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
  - b. Impacts of illicit discharges and how to report them.
- 3) Homeowners, landscapers and property managers
  - a. Yard care techniques protective of water quality.
  - b. BMPs for use and storage of pesticides and fertilizers.
  - c. BMPs for carpet cleaning and auto repair and maintenance.
  - d. Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
  - e. Stormwater treatment and flow control BMPs.
- 4) Engineers, contractors, developers, review staff and land use planners
  - a. Technical standards for stormwater site and erosion control plans.
  - b. Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
  - c. Stormwater treatment and flow control BMPs.

#### **EnviroHouse Program Evaluation**

#### **EnviroHouse Background**

The EnviroHouse, located near the entrance of the Tacoma Landfill, is a permanent display facility to showcase and promote "green" building components and natural lawn and garden care practices to the public. The City of Tacoma utilities of Surface Water Management, Solid Waste Management, Wastewater Management, Tacoma Power, and Tacoma Water are funding partners for the facility. The EnviroHouse has a permanent full-time staff person who promotes each utility's public outreach messages at the house through a variety of energy and water conservation displays, sustainable building materials, low impact development stormwater features and sustainable landscaping practices. The EnviroHouse has become an education hub in the City for classes on sustainable living, composting, natural lawn care, garden design and many other topics surrounding sustainability of interest to City residents.

#### **Audience survey results**

In 2012, the EnviroHouse hosted approximately 1,266 walk-in visitors. City staff evaluated and updated the EnviroHouse Visitor Survey to include questions that specifically measure understanding and adoption of sustainable stormwater practices in addition to other green building practices promoted at the EnviroHouse. The revised survey was sent out in February 2013 to 176 of the approximately 403 walk-in visitors who had visited the EnviroHouse between August 1<sup>st</sup> and December 22<sup>rd</sup> 2012 based on the number of visitors who provided legible email contact information. Sixty-one survey responses representing 15% of visitors during the test period were received as of March 2013 and are included in the attached Survey Monkey summary report.

Most survey respondents (77%) said that they had incorporated a green element at their home as a result of visiting the EnviroHouse. Approximately 19% of the subset who specified what type of green element said it was related to rainwater management, and 23% said it was related to natural landscaping. Specific answers included composting, rain barrels and lawn removal. Additionally, a remarkable 97% of the group responded with a satisfaction rating of "good" or "excellent" when asked if the EnviroHouse was an effective education resource for green building, sustainable living, and natural landscaping practices.

Although the group who responded may represent a biased subset of those more motivated to implement sustainable practices, the results suggest that the EnviroHouse is an effective tool for encouraging positive behavior change. Elements of the EnviroHouse that may have contributed to this effectiveness include the construction of the residential-scale rain garden display in 2010, construction of the new pervious paver, rain barrel and green roof displays on the new outdoor kiosk building in 2012, as well as ongoing maintenance and improvement of the native and water-efficient plant display beds.

We will use these results as a baseline with a goal of increasing the percentage of survey respondents who incorporate green building and sustainable practices, including sustainable stormwater management or natural landscaping practices, as a result of what they learn by visiting the EnviroHouse. The majority of the respondents (68%) said that cost was a barrier that would prevent them from incorporating sustainable elements in future home improvement and remodeling projects. Second most indicated barrier (32%) was technical difficulty to build and install these improvements, and third was lack of local suppliers and contractors (19%). Although the EnviroHouse program cannot easily affect cost of the improvements, the EnviroHouse can definitely help residents attain more information they need to reduce the perceived technical difficulties and work on highlighting and updating listings of local contractors that perform these types of improvements.

#### **Program Recommendations**

During the next biennium (2013-2014), we would like to see an outcome of increased numbers of EnviroHouse users that incorporate sustainable stormwater management or natural landscaping practices as a result of visiting the EnviroHouse for a long-term positive impact on stormwater quality in Tacoma. Although survey results may be affected by uncontrolled variables such as the number of the visitors interested in stormwater related topics or seasonal variation in number of visitors visiting the EnviroHouse, we can still use the survey results as an indicator of how the EnviroHouse program is working. We have three objectives we hope to meet related to the EnviroHouse elements related to sustainable stormwater management and natural landscaping practices for 2013-2014:

- 1) Attempt to build the survey response sample size to collect information about behavior change from 15% to at least 20% of the EnviroHouse users during the next two year period. We will attempt to achieve this objective by continuing to send out surveys to the group of walk-in visitors who visited six months prior. We also plan to begin surveying workshop attendees with targeted questions relative to the topics covered in the workshops.
- 2) Attempt to decrease the percent of visitors that perceive technical difficulty to be a major barrier from 32% to less than 30% of respondents. We will attempt to achieve this objective by reviewing, updating and highlighting information about low impact development and natural yard care practices. The new exterior signage being created and installed in 2013-2014 will cover natural yard care and low impact development practices and will be focused on conveying simple and straight-forward messaging about these practices. Tacoma is a member on the regional committee updating the Rain Garden Handbook for Western Washington Homeowners, and once completed, this handbook will be highlighted at the EnviroHouse.
- 3) Attempt to decrease the percent of visitors that perceive lack of local suppliers and contractors as a major barrier from 19% to less than 15% of respondents. Tacoma and Pierce County have partnered on providing Sustainable Landscaping training to professional landscapers and is compiling a list of companies that have pledged to use sustainable landscaping practices. This list will be promoted at the EnviroHouse. Tacoma is in the process of developing a residential rain garden incentive program which will be piloted in 2013. When the program is launched City-wide, the EnviroHouse will partner with this

program to promote the incentives and assistance offered by this program including rain garden construction rebates, free rain garden plants, design assistance and soil testing services. A list of contractors who attend low impact development trainings or participate in rain garden installations through the residential rain garden program will be listed at the EnviroHouse. We would also expect to see a decrease in the number of EnviroHouse visitors that perceive cost as a barrier to installing rain gardens as a result of promoting the rain garden rebates and other valuable assistance offered through the new residential rain garden program.

#### **EnviroHouse Post-Visit Survey**



#### 1. Have you incorporated a green element at your home as a result of your visit to the EnviroHouse?

Response Count	Response Percent	
47	77.0%	Yes
14	23.0%	No
61	answered question	
0	skipped question	

#### 2. If yes, what sustainable elements did you incorporate?

	Response Percent	Response Count
Energy Efficiency	78.7%	37
Renewable/Recycled-Content Materials	21.3%	10
Water Efficiency	27.7%	13
Rainwater Management (rain garden, green roof, rain barrels)	19.1%	9
Natural Landscaping	23.4%	11
	Other (please specify)	7

answered question	47
skipped question	14

#### 3. What barriers, if any, would prevent you from incorporating sustainable elements into future home improvement/remodeling projects?

	Response Percent	Response Count
Cost	67.8%	40
Selection	13.6%	8
Technical difficulty to build/install	32.2%	19
Lack of local suppliers/contractors	18.6%	11
Lack of information/contacts	11.9%	7
None	13.6%	8
	Other (please specify)	6

answered question

skipped question

59

2

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#### 4. How effective is the EnviroHouse as an educational resource for green building/sustainable living/natural landscaping?

Excellent	Good	Average	Fair	Poor	Rating Average	Rating Count
65.5% (38)	31.0% (18)	1.7% (1)	0.0% (0)	1.7% (1)	1.41	58
				answered	question	58
				skipped	question	3

5. Is there anything that the EnviroHouse does not have on display that you'd like to learn more about?	see and
	Response Count
	36
answered question	36
skipped question	25
6. If you'd like to be entered into a drawing for a compost bin, please leave your name phone number or email address. Your information will not be shared. It's for prize depurposes only.	
phone number or email address. Your information will not be shared. It's for prize d	
phone number or email address. Your information will not be shared. It's for prize d	rawing  Response
phone number or email address. Your information will not be shared. It's for prize d	Response Count

Page 2	Q2. If yes, what sustainable elements did you incorporate?	
1	Composting	Feb 18, 2013 12:13 PM
2	composting	Feb 11, 2013 5:17 PM
3	starting the process for gutter modification and rain barrel.	Feb 9, 2013 11:16 AM
4	Solatube	Feb 8, 2013 11:01 PM
5	Have plans to remove our lawn and incorporate natural landscaping and/or food, thanks for all of the great ideas!!	Feb 8, 2013 7:28 PM
6	light bulbs rain barrels compost pile	Feb 8, 2013 5:11 PM
7	Our condo building is looking to install the	Feb 6, 2013 7:34 PM

Page 3, Q3. What barriers, if any, would prevent you from incorporating sustainable elements into future home improvement/remodeling projects?			
1	Other than cost, wouldn't be an issue. Tried the heating units in the enviro house, but wiring & e-panel in our old house couldn't take the load.	Feb 18, 2013 12:16 PM	
2	Right now, we're both students and not making a lot of money, but we'll be making whatever changes we can even if it is slowly, paycheck by paycheck :)	Feb 8, 2013 7:29 PM	
3	I live in an apartment.	Feb 8, 2013 6:35 PM	
4	we are still researching and evaluating	Feb 6, 2013 6:43 PM	
5	I'm a renter, not a homeowner.	Feb 4, 2013 11:45 PM	
6	Don't know how to find reliable and cost-efficient contractors.	Dec 4, 2012 9:11 AM	

Page 4, Q5. Is there anything that the EnviroHouse does not have on display that you'd like to see and learn more about?		
1	No	Feb 19, 2013 3:50 PM
2	I like the fact that there is a wide assortment of ideas regarding energy/recycle ideas.	Feb 19, 2013 3:45 PM
3	More native landscaping/permaculture resources. I used a type of home insulation, to great effect, not represented there as I recall, Airkrete.	Feb 11, 2013 8:18 PM
4	Information about building materials to avoid such as paints with harmful ingredients. Maybe a list of general or specific websites to get more info.	Feb 11, 2013 7:31 PM
5	Not at this time	Feb 11, 2013 6:49 PM
6	wind energy ideas - DIY	Feb 11, 2013 5:20 PM
7	passive solar, super insulation, construction details and techniques to convective reduce heat loss through framing	Feb 11, 2013 12:04 PM
8	Workshops to learn things hands-on	Feb 11, 2013 11:57 AM
9	More solar/wind info	Feb 10, 2013 1:05 AM
10	more solar! I am really interest in the Dow solar shingles	Feb 10, 2013 12:25 AM
11	No	Feb 9, 2013 5:15 PM
12	artificial turf info/choices	Feb 9, 2013 4:53 PM
13	Art displays again	Feb 8, 2013 11:06 PM
14	No	Feb 8, 2013 6:59 PM
15	Solar Thermal Hot Water Radiant Heating.	Feb 8, 2013 6:36 PM
16	worm bins Also, is there any simple and cheap means for detecting heat loss in your home, like with infrared sensors?	Feb 8, 2013 5:57 PM
17	No	Feb 8, 2013 5:49 PM
18	affordable wind and solar electricity	Feb 8, 2013 5:12 PM
19	no, not at this time.	Feb 8, 2013 12:07 PM
20	cob, adobe, passive solar design information, thermal mass, volcanic rock in building (earthbag)	Feb 8, 2013 11:33 AM
21	More options for cost and where to buy the best materials	Feb 7, 2013 11:52 PM
22	Geothermal heating equipment and its benefits, possibly a unit incorporated into the envirohouse	Feb 7, 2013 11:11 PM
23	I've read that some plants can act as air filters. I've also seen some special planters that improve this quality. That would be a neat thing to learn!	Feb 7, 2013 7:05 PM

Page 4, Q5. Is there anything that the EnviroHouse does not have on display that you'd like to see and learn more about?			
24	Solar incentive possibilities	Feb 7, 2013 6:32 PM	
25	obtaining fuel from algae, using mushrooms to clean toxins, gardening vegetables, mushrooms and orcharding	Feb 7, 2013 4:43 PM	
26	composting toilet	Feb 7, 2013 3:02 PM	
27	I can't think of what might be missing.	Feb 7, 2013 1:57 PM	
28	E/House shows impressive imagination for NW residential living (new living roof, etc.); a terrific, friendly regional ed/info resource. Good for Tacoma/TPU.	Feb 7, 2013 1:35 PM	
29	heat saving drapery products	Feb 7, 2013 12:36 PM	
30	Foam and steel structural wall panels.	Feb 7, 2013 2:35 AM	
31	not that I can think of	Feb 6, 2013 5:12 PM	
32	Informational personel on sight that assist better then the ones at this time	Feb 6, 2013 12:45 PM	
33	solar energy, material and contacts	Feb 6, 2013 6:45 AM	
34	More simple home improvements, such as low-flow showerheads, so that people who don't have a lot of funds, or are apartment-dwellers, or just not ready to do big projects, can try things out.	Feb 4, 2013 11:47 PM	
35	Wind turbine	Dec 18, 2012 10:04 AM	
36	More information about variety of green paint products and green flooring products.	Dec 4, 2012 9:13 AM	

#### Page 4, Q6. If you'd like to be entered into a drawing for a compost bin, please leave your name and phone number or email address. Your information will not be shared. It's for prize drawing purposes only.

1	Armando Lopez Lopezpapa@yahoo.com	Feb 28, 2013 4:30 PM
2	Christina Zinkgraf czinkgraf11@hotmail.com	Feb 19, 2013 3:50 PM
3	Vickie J Welch 253.678.8150, vwmocha@,msn.com	Feb 19, 2013 3:45 PM
4	Georgia Pope gpope@wamail.net	Feb 16, 2013 2:32 PM
5	Randy Tompkins sumpumpkin@gmail.com	Feb 13, 2013 8:30 PM
6	nancy hunter 2534742347	Feb 12, 2013 6:52 PM
7	Scott Welsh 253-209-9101 Scott@goodyeartacoma.com	Feb 11, 2013 8:37 PM
8	Tom Manley 253-566-5495 tmanley@ieee.org	Feb 11, 2013 8:18 PM
9	Sybille Tomlin 253-752-8043	Feb 11, 2013 7:31 PM
10	Watter5@yahoo.com	Feb 11, 2013 6:49 PM
11	Sandra Brumbaugh 253 442 3650 sandra.brumbaugh@comcast.net	Feb 11, 2013 5:20 PM
12	dmryba@aol.com	Feb 11, 2013 12:04 PM
13	Lilith Piri genericbusiness@gmail.com	Feb 11, 2013 11:57 AM
14	michael@necessary.us	Feb 10, 2013 1:05 AM
15	Tracy Kamradt raspberrybrat@yahoo.com	Feb 10, 2013 12:25 AM
16	Racingnana3@yahoo.com Deanne Sullivan, 253-224-9905	Feb 9, 2013 5:15 PM
17	Dan Switalski 253-318-3502	Feb 9, 2013 4:53 PM
18	Bob Reinhard 253-927-0089 bobreinhard@harbornet.com	Feb 9, 2013 11:17 AM
19	j.l.r.dilworth@gmail.com	Feb 8, 2013 11:06 PM
20	Judy Handy piebaldsatil@gmail.com	Feb 8, 2013 11:01 PM
21	Leeruro@msn.com	Feb 8, 2013 6:59 PM
22	Kaitlin Carlson K_Carlson1026@hotmail.com	Feb 8, 2013 6:52 PM
23	Pete Kaslik pkaslik@mathhandyman.com	Feb 8, 2013 5:57 PM
24	rfewing@hotmail.com	Feb 8, 2013 5:49 PM
25	Lgenschow@gmail.com 253.254.1275 Liz Genschow	Feb 8, 2013 5:46 PM
26	Michelle Hayes mikimm@me.com	Feb 8, 2013 5:12 PM
27	larry Krank larrykr22@hotmail.com	Feb 8, 2013 5:02 PM

Page 4, Q6. If you'd like to be entered into a drawing for a compost bin, please leave your name and phone number or email address. Your information will not be shared. It's for prize drawing purposes only.

28	Karen Hausrath karen.hausrath@gmail.com	Feb 8, 2013 12:07 PM
29	Shannon Duran; sduran1980@gmail.com	Feb 8, 2013 11:33 AM
30	Amanda Scott Amanda.Scott17@gmail.com	Feb 7, 2013 11:52 PM
31	Joe boni Joe.w.boni@gmail.com	Feb 7, 2013 11:11 PM
32	Aida Reyes aida.reyes@live.com	Feb 7, 2013 7:05 PM
33	Kerry Jamieson boatguy.jamieson@gmail.com	Feb 7, 2013 6:32 PM
34	Evan Templeton edtemple98409@yahoo.com	Feb 7, 2013 5:19 PM
35	Janet Higbee 253-973-2306	Feb 7, 2013 4:43 PM
36	gleebee253@gmail.com	Feb 7, 2013 3:02 PM
37	Doug Culbert 253-405-5739 Doug.Culbert@centurylink.com	Feb 7, 2013 1:57 PM
38	253-588-5880	Feb 7, 2013 1:35 PM
39	Patricia King 253 375 7150 firstmate015@live.com	Feb 7, 2013 12:36 PM
40	Gloria L. Morris 3807 233rd st Ct E. Spanaway, WA 98387	Feb 7, 2013 12:21 PM
41	Irene Brewer 253-474-8916	Feb 6, 2013 8:11 PM
42	charles gould/Chuckgould058@comcast.net	Feb 6, 2013 5:12 PM
43	William M Gleason 929 S Grant Ave Tacoma, WA 98405-3360 253-376-7999 billg@harbornet.com	Feb 6, 2013 6:45 AM
44	Steve Tilka 253-208-8173 Tilka1@Yahoo.com	Feb 5, 2013 3:06 AM
45	Amy Allison 253-973-0751	Feb 4, 2013 11:47 PM
46	Randy LaBrune rlabrune@gmail.com	Dec 18, 2012 10:04 AM