

Evaluation of Seattle Public Utilities'

Public Involvement and Education Programs

Conducted under the National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit



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Prepared by



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EXECUTIVE SUMMARY

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities (SPU) is conducting a program to provide education and outreach on reducing or eliminating behaviors and practices that cause or contribute pollution to stormwater. SPU hired Cascadia Consulting Group in 2008 to evaluate the results of these programs. This report presents an evaluation of **understanding and adoption of targeted behaviors among targeted audiences** for SPU's NPDES public involvement and education program activities conducted in 2007 and 2008.

The SPU programs evaluated as part of this effort include the **Spill Kit Incentive Program**, the **Water Quality Hotline**, the **Green Your Rug** program, and the **Car Wash Kit** program. These evaluations provide the City with information about the effectiveness of these education and outreach programs.

Spill Kit Incentive Program

SPU's Spill Kit Incentive Program provides free spill kits, spill response plans, and training to businesses engaged in any high-risk pollution-generating activity, such as those that use pollutants like oil and gas in their daily operations. The spill kit program is an effort of Resource Venture, an SPU service that helps businesses conserve resources, prevent pollution, and become more sustainable. The program prepares businesses to address and respond to an on-site spill appropriately. It results in a higher number of businesses being in compliance with stormwater regulations, while augmenting SPU's inspection efforts.

Evaluation of the spill kit program included a survey of kit recipients to assess their use of spill plans and kits and their understanding of stormwater pollution prevention. Resource Venture has distributed kits to a total of 901 businesses since the beginning of the program in 2004. SPU conducted a survey of 104 spill kit recipients in 2005. The current evaluation includes findings from a survey of 301 respondents conducted in 2008 and comparisons with the 2005 baseline survey results. Key **findings** from the surveys include the following:

- The number of respondents who said that they do not wash any spills away with a hose increased in 2008 from 2005. In addition, fewer respondents say they wash away oil or coolant.
- Half of the respondents who used the spill kit said that they had replaced the materials in the kit that were used for the spill.
- Similar percentages of respondents in 2008 and 2005 said that their business had written and posted a plan for dealing with a spill, but more respondents in 2008 said that the plan was posted near the spill kit.
- Respondents in 2008 express similar confidence to respondents in 2005 about their ability to clean up spills quickly, knowledge of whom to contact for help containing or cleaning up a spill, stock of spill clean-up materials on hand, and knowledge of where to obtain and dispose of clean-up material.

- Respondents in 2008 expressed higher levels of agreement that having a spill plan and clean-up kit makes their employees more aware of surface water pollution and how their business practices can help.

The Spill Kit Incentive Program appears effective in increasing proper management of spills among businesses reached. Participating businesses not only increased their understanding of the importance of stormwater pollution prevention, but they have also increased their use of spill plans and spill kits and their proper response to spills.

Water Quality Hotline

SPU's Surface Water Quality Hotline provides a way for members of the general public, including business owners and employees, to report illicit discharges to storm drains or surface waters. Evaluation of this program included a telephone survey of people who reported complaints to the Surface Water Quality Hotline or website. The survey addressed ease of the reporting process, satisfaction with the experience, and awareness of water quality concerns among those who called the hotline. Cascadia completed a total of 80 surveys. Key **findings** from the survey include the following:

- Callers reporting incidents to the Water Quality Hotline generally were not representative of Seattle's overall population. On average, callers were more likely to be male, college-educated, white/Caucasian, and older than the general public.
- The majority of callers were satisfied with their hotline experience and the City's response, though room remains for improvement.
- Most callers expressed an understanding of water quality incidents that warrant a report to the hotline.
- Respondents reported that utility bills are their preferred method for hearing more about water quality issues in the future. Note, however, that this answer reflects the well-educated survey population and may not be true of the general public.

Green Your Rug

Property managers are responsible for polluted discharge to storm drains on or runoff from their property. This evaluation included developing a baseline measurement of property manager awareness, understanding of, and adoption of proper disposal of used wash water from carpet cleaning and general cleaning. The evaluation included surveys of commercial and multifamily property managers regarding their cleaning practices and their understanding of water disposal practices for the contractors they hire. A total of 77 property managers completed the survey. Key **findings** from the survey include the following:

- Overall, over half of property managers know that they are legally responsible for the proper disposal of wash water and that water disposed in an outside drain flows to a creek, lake, or other surface water.

- Nearly three quarters know that the best place to dispose wash water is a sink or toilet.
- In practice, most property managers say that wash water from general cleaning is properly disposed into an indoor drain when either they or contractors clean; however, some managers do not know where general cleaning contractors dispose of wash water.
- Most property managers also say that wash water from carpet cleaning is disposed into an indoor drain or hauled away for disposal elsewhere, but some do not know where the water is disposed.

Car Wash Kits

Various organizations located throughout Seattle host and lend out car wash kits. Other groups borrow these kits to conduct charity car wash events at local gas stations, convenience stores, or other parking lot locations. The car wash kit includes equipment to keep used wash water and soaps from entering storm drains or surface waters. Cascadia conducted interviews with car wash kit lenders and borrowers to assess their attitudes regarding the program and knowledge of car wash kits as well as to determine the current availability of car wash kits. A total of eight lenders and 12 school event coordinators were contacted, and ten interviews were completed. Key **findings** from these interviews include the following:

- In its current state, the Car Wash Kit program is not highly successful at achieving the goal of preventing the release of car wash soaps and polluted water to storm drains and surface waters.
- Most lenders are not actively participating in the program, and few car wash kits are available for use by the general public.
- The car wash kits that are available reportedly are difficult to use and sometimes incomplete.
- Many targeted borrowers are unaware of the program.

INTRODUCTION AND PROGRAM OVERVIEW

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities is conducting a program to provide education and outreach on reducing or eliminating behaviors and practices that cause or contribute pollution to stormwater. SPU hired Cascadia Consulting Group in 2008 to evaluate the results of these programs. This report presents an evaluation of **understanding and adoption of targeted behaviors among targeted audiences** for SPU's NPDES public involvement and education program activities conducted in 2007 and 2008.

The report includes chapters on the following programs and activities:

Chapter 1. Spill Kit Incentive Program

Chapter 2. Water Quality Hotline

Chapter 3. Green Your Rug

Chapter 4. Car Wash Kits

In cooperation with SPU, Cascadia developed evaluation plans for each of the four efforts listed above. The evaluation plans identified best management practices (BMPs) and targeted audiences. They outlined a research approach as well as key measures for tracking and reporting. The evaluation plans also included a work plan, timeline, and survey instruments as needed for conducting the evaluation.

This report includes key information from the evaluation plan as well as summarizes results of the evaluation itself. Appendices provide additional information, including copies of the survey instruments used in the evaluation.

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CHAPTER 1 SPILL KIT INCENTIVE PROGRAM

Program Overview

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities is conducting a program to provide spill kits to businesses to prevent and clean up spills of oils, chemicals, and other pollutants before they pollute waterways. Having a spill prevention plan and a spill kit is a best management practice (BMP) designed to prevent and clean up spills before oils, chemicals, and other pollutants enter storm drains and contaminate surface waters.

The **Spill Kit Incentive Program** provides free spill kits, spill response plans, and training to businesses engaged in any high-risk pollution-generating activity, such as those that use pollutants like oil and gas in their daily operations. The spill kit program is an effort of Resource Venture, an SPU service that helps businesses conserve resources, prevent pollution, and become more sustainable. Resource Venture provides outreach, education, and customized technical assistance on stormwater pollution prevention, waste prevention and recycling, water conservation, green building, and climate change. (Please see Appendix A for more information about Resource Venture and its activities from 2006 to 2008, including the spill kit program.)

The program prepares businesses to address and respond to an on-site spill appropriately. It results in a higher number of businesses being in compliance with stormwater regulations, while augmenting SPU inspection efforts. Since the beginning of the program in 2004, Resource Venture has provided a total of 920 businesses with the following:

- Up to two free spill kits, an SPU-funded voucher, or a combination of both
- Spill plans, site maps, and waste disposal diagrams
- Basic training on spill kit use and disposal options

In 2006, Resource Venture focused on furnishing free kits, drainage maps, and spill plans to all Seattle locations of major grocery store chains, including QFC, Safeway, Albertsons, Red Apple, Trader Joe's, Larry's Market, and PCC Natural Markets. Resource Venture provided 25 spill kits through this targeted effort.

Evaluation of the spill kit program included a survey of kit recipients since 2004 to assess their **understanding** of stormwater pollution prevention and their use of spill plans and kits. A previous survey was conducted among Seattle businesses in 2005. A new survey in 2008 of spill kit recipients included many elements of the previous survey to examine changes since 2005, plus added a few new questions.

Methodology

Targeted Audience

- Seattle businesses that have received spill kits since 2004.

Research Approach

In 2005, SPU conducted a survey of 104 spill kit recipients. The survey also included 201 businesses that did not participate in the spill kit program. The survey covered awareness of the spill kit program, reasons for participation or non-participation, attitudes about the program, spill-related practices, clean-up practices, inspections, and business demographics.

For 2008, we conducted a similar survey with spill kit recipients. Since 2004, the Resource Venture has distributed kits to 901 businesses. Phone contact information was recorded or obtained for all but five of these businesses. In the course of the survey, however, interviewers found that some phone numbers were no longer in service, and some businesses had closed. In total, the 2008 survey contacted 846 targeted businesses that received spill kits. The interviewers completed surveys with 301 participants, for a margin of error of $\pm 4.6\%$ at the 95% confidence level.

To enable comparisons with the 2005 baseline survey, we retained many questions from the previous survey, without editing. Questions related to non-participants were omitted from the 2008 survey, as non-participating businesses were not included in the survey population for this follow-up study. Some additional questions were also omitted in the interest of brevity and resource constraints. Pacific Market Research (PMR), a local survey research firm, fielded the surveys, using computer-assisted telephone interviewing (CATI) technique. On average, the surveys took 6.9 minutes to finish.

Prior to the regular fielding of the survey, we conducted a pre-test with 15 respondents to test how the survey worked and identify any areas that needed revisions. Following the pre-test, we made some minor revisions to improve the clarity of the survey. PMR fielded the survey in November and December 2008.

Upon completion of the phone survey, the survey research firm prepared a topline report summarizing responses for each question. Cascadia then analyzed the results, including making comparisons with 2005 data where feasible, to assess understanding and adoption of targeted behaviors.

The spill kit survey used for the 2008 program evaluation appears in Appendix B.

Measurement and Reporting

The following information was gathered in 2008 for comparison with the 2005 baseline to help evaluate the understanding and adoption of targeted behaviors among businesses that have received spill kits:

- Awareness of spill kit program and information sources
- Awareness of and participation in spill kit workshops
- Reasons for participating in spill kit program and workshops
- Spill management practices and awareness of BMPs
- Spill plans, training practices, and attitudes
- Understanding of water quality issues related to spills
- Attitudes toward SPU and spill kit program

Following completion of the survey, PMR prepared summary tables presenting the responses to all survey questions. Cascadia then analyzed these data and made comparisons with the 2005 results. Although comparisons were not individually tested for statistical significance, Cascadia used margins of error described in the 2005 report to identify apparent changes from the baseline survey. In the 2005 survey, 104 participants who recalled receiving spill kits were surveyed, resulting in a margin of error of approximately 9%. Differences less than 9% may be due to sample variability rather than true changes in behavior or attitudes. For smaller subgroups, the margin of error increases; for example, a subsample of 60 participants has a margin of error of approximately 12%.

Results

Awareness of Spill Kit Program and Information Sources

The targeted audience contained only businesses that had received a free spill kit from the City of Seattle; however, only 88% of respondents interviewed recalled receiving this free kit, as shown in Table 1 below. Among respondents that recalled receiving the kit, the main ways they learned about the program were from someone who came to their business (19%), from the City of Seattle or a City representative (16%), or from Seattle Public Utilities (10%); see Table 2 below. In 2005, spill kit recipients were more likely to have heard about the program from ECOSS (22% in 2005), direct mail (19%), or an inspector (13%).

Table 1. Do You Recall Receiving This Free Spill Kit? (Q1)

Response	n	%
Yes	265	88%
No	35	12%
Don't know	1	0%
Total Respondents	301	100%

Table 2. Where or From Whom Did You Learn About This Spill Kit Program? (Q2)

Response*	n**	%
Person came to the business (non-specific)	51	19%
City of Seattle or City representative	42	16%
SPU or Seattle Public Utilities	27	10%
ECOSS—someone called or came to my business	22	8%
Direct mail	14	5%
From an inspector	11	4%
Other business owner participating	9	3%
Website or Internet	7	3%
By phone or someone contacted me	5	2%
From the corporate office, another employee, or union	5	2%
E-mail	2	1%
Newspaper	0	0%
Chamber of Commerce	0	0%
Other	27	10%
Don't know	51	19%
Refused	0	0%
Total Respondents	265	N/A

* Of respondents who recalled receiving kit

** Multiple responses permitted

Respondents who recalled receiving a kit most commonly said that they applied through someone who called or came to their business (32%) and online (16%), as shown in Table 3. In 2005, spill kit recipients also mainly applied through someone who called or came to their business (31%) or online (27%), but many also applied by mail (18%).

Table 3. How Did You Apply for Your Free Spill Kit? (Q4)

Response*	n	%
A person called or came to my business	84	32%
Applied online	43	16%
By phone or called in	21	8%
Went to a meeting, seminar, or presentation	13	5%
By mail	11	4%
Corporate office or district manager	9	3%
Went personally to get it	6	2%
Other	13	5%
Don't know	65	25%
Refused	0	0%
Total Respondents	265	100%

** Of respondents who recalled receiving kit*

The most common reasons spill kit recipients participated were to help with spills (29%), to be prepared (28%), because their business has hazardous chemicals or the risk of spills (24%), because it is a good thing to do (20%), or because it is good for the environment (20%). Another 15% of respondents thought that participating in the spill kit program was required, as shown in Table 4 below. In 2005, recipients reported that they participated because it is good for the environment (22%), to help with spills (19%), because they thought it was required (18%), or because they felt obligated to accept the kit (16%).

Table 4. What are the Main Reasons Your Business Participated in the Spill Kit Program? (Q4a)

Response*	n**	%
To help with spills	77	29%
To be prepared	73	28%
The business has hazardous chemicals or business has risk of spills	63	24%
Good to have or good thing to do	54	20%
It is good for the environment	52	20%
It is required	41	15%
Because of business location or location of drains	22	8%
No main reason or it was just brought to us	17	6%
It was free	15	6%
I felt obligated to accept it	12	5%
We did not have a spill kit plan in place	6	2%
To avoid inspections	5	2%
To avoid fines	0	0%
Other	18	7%
Don't know	13	5%
Refused	0	0%
Total Respondents	265	N/A

* *Of respondents who recalled receiving kit*

** *Multiple responses permitted*

Just over half of survey respondents (51%) knew that spill plan materials are available in different languages besides English, as shown in Table 5 below. When asked which other languages, if any, would be useful for the spill plan materials at their business, the most common responses were none (53%) and Spanish (36%). Other languages mentioned included Vietnamese (8%) and Chinese/Mandarin (4%); see Table 6 below. These questions were not asked in 2005.

Table 5. Did You Know that the Spill Plan Materials Are Available in Different Languages besides English? (Q11a)

Response	n	%
Yes	155	51%
No	142	47%
Don't know	4	1%
Refused	0	0%
Total Respondents	301	100%

Table 6. Which Other Languages, If Any, Would Be Useful for the Spill Plan Materials at Your Business? (Q11b)

Response	n*	%
None (English only)	160	53%
Spanish	109	36%
Vietnamese	24	8%
Chinese or Mandarin	13	4%
Amharic	9	3%
Russian	5	2%
Japanese	4	1%
Other	23	8%
Don't know	2	1%
Refused	0	0%
Total Respondents	301	N/A

* Multiple responses permitted

Awareness of and Participation in Spill Kit Workshops

About 13% of survey respondents said their business had participated in a spill kit training workshop with other businesses; see Table 7. Nearly half of businesses participating in workshops said they did so to be prepared (49% of workshop participants), as shown in Table 8 below. Among business who did not report participating in a workshop, their main reasons were because they were not aware of the workshops (35%) or because they did not think the workshops were necessary or they already knew how to use the kits (23%); see Table 9 below. The workshops had not yet been offered to the 2005 survey participants and were not addressed in the previous survey.

Table 7. Has Your Business Participated in a Spill Kit Training Workshop with Other Businesses? (Q5)

Response	n	%
Yes	39	13%
No	244	81%
Don't know	18	6%
Total Respondents	301	100%

Table 8. Why Did Your Business Participate in the Training Workshop? (Q5a)

Response*	n**	%
To be prepared	19	49%
Good thing to do	9	23%
It is required	5	13%
To help with spills	5	13%
I felt obligated to attend	3	8%
It is good for the environment	2	5%
The business has hazardous chemicals or business has risk of spills	2	5%
It was free	1	3%
We did not have a spill kit plan in place	1	3%
To avoid inspections	0	0%
To avoid fines	0	0%
Other (specify)	11	4%
Don't know	1	0%
Refused	0	0%
Total Respondents	39	N/A

* Of respondents who have participated the training workshop

** Multiple responses permitted

Table 9. Why Hasn't Your Business Participated in a Spill Kit Training Workshop? (Q5b)

Response*	n**	%
Was not aware of the workshops	92	35%
Not needed; we know how to use the kit	56	21%
Too busy or no time	31	12%
Not convenient time or location	13	5%
Other	43	16%
Don't know	48	18%
Refused	0	0%
Total Respondents	262	N/A

* *Of respondents who have not participated or did not recall participating in a training workshop*

** *Multiple responses permitted*

In October 2008, Resource Venture hosted a free Spill Prevention and Preparedness Workshop for businesses who participated in the Seattle Public Utilities' Spill Kit Incentive Program. The workshop provided spill preparedness training and information on stormwater regulations. Two identical workshops were held on subsequent days at locations in north and south Seattle. The two workshops included 20 participants attended from 12 different businesses. Business categories include automobiles and transportation, manufacturing, grocery, cleaning, and property management.

Participants completed a questionnaire, ranking aspects of the workshop on a scale from one to five, where five was best. Most participants (90%) rated the workshop a four or five ("excellent") overall. They also rated the workshops highly for organization and clarity. When asked whether the workshop was too easy or too technical, 95% of participants rated it "just right." All respondents said that the workshop improved their understanding of the issues, with 85% rating it a four or five ("very much"). More than half of the participants reported that they would do something differently as a result of the workshop. Specific responses included better educating employees, improving spill kit locations, setting up a plan for the business, being more aware of ties to water quality, discussing political issues about cleaning up water bodies, understanding storm drain locations, keeping spills out of storm drains, and recycling old oil.

Spill Management Practices and Awareness of BMPs

The survey asked about spill management practices and the frequency of spills at respondents' businesses. All respondents were asked how they address spills in general. Table 10 below shows the results. Approximately two thirds (67%) of respondents said that when their business experiences a spill they soak it up with spill materials, while only 1% said they hose it into a street or drain. In 2005, similar percentages of respondents put down spill materials (68%) and called a contractor (13%), but more respondents reported that they either called 911 (11%) or hosed it into the street or drain (7%).

Table 10. When Your Business Experiences a Spill Do You Ever... (Q6)

Response	n*	%
Put down spill materials to soak it up?	202	67%
Call a contractor to clean it up?	33	11%
Call 911?	15	5%
Hose it into street or drain?	3	1%
Total Respondents	301	N/A

* Multiple responses permitted

A little over half of respondents (52%) said that their business has spills that require spill kit materials to clean up. Most of these businesses said that such spills occur rarely: 24% of all respondents experience such spills on a yearly basis, while 13% experience such spills several times a year. About 10% of respondents combined said they have spills that require spill kit materials on a daily or weekly basis.¹ See Table 11 below. Percentages in 2005 are similar to responses in 2008, except that more respondents in 2008 said they experience spills several times a year or on a yearly basis (37% in 2008 and 27% in 2005).

Table 11. How Often Does Your Business Have a Spill that Requires Spill Kit Materials to Clean up? (Q6a)

Response	n	%
Daily	10	3%
Weekly	19	6%
Monthly	18	6%
Several times a year	40	13%
Yearly	71	24%
Never	141	47%
Don't know	2	1%
Refused	0	0%
Total Respondents	301	100%

¹ Percentages in table may not sum to total due to rounding.

Among respondents who reported experiencing spills, the large majority (85%) does not wash any spills away with a hose; however, 2% of respondents wash oil or coolant spills away with a hose. See Table 12 below. These figures appear improved from 2005 when the proportion of respondents that reported that they did not wash any spill away with a hose was 65%, and 8% washed away oil and coolant spills.

Table 12. What Type of Spills Do You Simply Wash Away with a Hose? (Q6b)

Response*	n**	%
None or nothing or don't wash spills with a hose	134	85%
Water or mop water	9	6%
Soap	4	3%
Oil or coolant	3	2%
Beverages	2	1%
Food (including sauces or soups)	2	1%
Usually only use kitty litter for spills	2	1%
Don't have drains or mop everything	1	1%
Don't know	4	3%
Refused	0	0%
Total Respondents	158	N/A

* Of respondents who reported having spills that require spill kit materials

** Multiple responses permitted

Approximately 23% of respondents who both recalled receiving a free spill kit and said that their business experiences spills that require a spill kit had actually used the free spill kit. See Table 13 below. This figure is similar to 2005, when 18% of eligible respondents had used the free spill kit.

Table 13. Have You Had a Spill at Your Business for Which You Used a Free Spill Kit? (Q6c)

Response*	n	%
Yes	32	23%
No	102	74%
Don't know	3	2%
Refused	0	0%
Total Responses	137	100%

* Of respondents who reported having spills and recall receiving a free kit

Of the 32 respondents who had used the free spill kit, 41% disposed of the used clean-up materials in the trash, and 22% took them to a transfer station or hazardous waste disposal site. No respondents said they called the phone number on the spill kit. See Table 14 below. In 2005, the majority of eligible respondents (seven of nine) said they threw the materials away in the trash.

Table 14. How Did You Dispose of the Used Clean-up Materials from the Spill Kit? (Q6d)

Response*	n**	%
Threw away in trash / dumpster	13	41%
Took to a transfer station / hazardous waste disposal site	7	22%
Called another agency	4	13%
Called the City to pick up	1	3%
Gathered in barrel then picked up when full	1	3%
Other	3	0%
Called the number on the spill kit	0	9%
Don't know	5	16%
Refused	0	0%
Total Respondents	32	N/A

* Of businesses that used a free spill kit

** Multiple responses permitted

Of the respondents who had used the free spill kit, half (50%) said that they had replaced the materials in the kit that were used for the spill, as shown in Table 15. This figure is similar to 2005 when five of nine eligible respondents had replaced the materials.

Table 15. Have You Ever Replaced the Materials in the Kit that Were Used for the Spill? (Q6e)

Response*	n	%
Yes	16	50%
No	14	44%
Don't know	2	6%
Refused	0	0%
Total Responses	32	100%

* Of respondents who used the free spill kit

Spill Plans and Attitudes

The majority of respondents (72%) said that their business has a written plan for dealing with a spill, and ten respondents (3%) said that the plan is not written down but their employees know what to do. See Table 16 below. These percentages are similar to responses in 2005.

The most common reasons respondents developed written spill plans were because it became required by law (31%), to keep employees trained on what to do (29%), and for safety or preparedness (27%). Approximately 10% of respondents reported that they have written plans because the plans came with the spill kit or SPU wrote the plan. See Table 17 below. In 2005, a similar percentage of respondents said they developed a plan because it became required by law (26%), but more respondents did so because they were informed by an inspector (16%), it was required in order to get a free spill kit (12%), and as a result of a serious spill (11%).

Table 16. Does Your Business Have a Written Plan for Dealing with a Spill? (Q7)

Response	n	%
Yes	218	72%
No	64	21%
It's not written down, but my employees know what to do	10	3%
Don't know	8	3%
Refused	1	0%
Total	301	100%

Table 17. What Was the Primary Reason You Developed a Written Spill Plan? (Q7a)

Response*	n**	%
It became required by law	68	31%
To keep employees trained on what to do or everyone on same page	64	29%
Protection or be prepared or safety	59	27%
To contain spills or reduce area contamination	34	16%
Came with the kit or SPU wrote the plan	22	10%
Good for the environment	19	9%
Instructed to by corporate office or written by corporate	15	7%
Because we work with chemicals or materials that spill or the nature of the business	12	6%
I was informed to do so by an inspector	7	3%
Supposed to or they made me (non-specific)	5	2%
In order to get the free spill kit	2	1%
As the result of a serious spill	0	0%
Other	16	7%
Don't know	3	1%
Refused	0	0%
Total Respondents	218	N/A

* Of respondents who have a written spill plan

** Multiple responses permitted

Among respondents with written spill plans, the majority (89%) have posted the spill plan within their business, as shown in Table 18 below. This percentage is about the same as responses in 2005.

Most businesses that have posted spill plans have the plan posted near or directly above the spill kit.² See Table 19 below. This percentage is much higher than in 2005, when only 12% of respondents with written plans reported that they had posted the plan by or on the spill kit. In 2005, however, the question was phrased in a more open-ended manner, which affected the answers. As a result, these two figures are not directly comparable, though this desired behavior does appear to have increased since 2005.

Table 18. Do You Have the Spill Plan Posted within Your Business? (Q9)

Response*	n	%
Yes	195	89%
No	19	9%
Don't know	4	2%
Refused	0	0%
Total	218	100%

* Of respondents who have a written spill plan

Table 19. Is the Spill Plan Posted Directly above the Spill Kit, Near the Spill Kit, or Somewhere Else? (Q9a)

Response*	n**	%
Near the spill kit	78	40%
Directly above the spill kit	77	39%
Multiple locations	75	38%
Other	3	2%
Don't know	1	1%
Refused	0	0%
Total Respondents	195	N/A

* Of respondents who have posted a written spill plan

** Multiple responses permitted

Participants were asked whether they agree or disagree with statements about spills at their business that could end up in storm drains; see Table 20 below. The percentages in 2008 are similar to responses in 2005.

The vast majority of respondents strongly or somewhat agreed (96%) that they could clean up a spill quickly, so that it would not leave their site or enter a storm drain; none disagreed.

² Multiple responses were permitted; this percentage does not double count respondents who said both near and directly above the spill kit.

The majority of respondents (90%) also agreed they know whom to call for help containing and cleaning up a big spill; however, 8% of respondents disagreed that they know whom to call.

The vast majority of respondents (94%) agreed that they have spill clean-up materials in stock, and 2% said that they do not.

Most respondents (89%) agreed that they know where to obtain spill clean-up materials to restock their supply, though only 76% strongly agreed with this statement.³ In addition, 8% disagreed, saying they do not know where to obtain materials.

The majority of respondents (94%) agreed that they know how to dispose properly of spill clean-up materials, with 75% strongly agreeing. About 4% of respondents disagreed, saying they do not know how to properly dispose of materials.

Most respondents (91%) agreed that having a spill plan and clean-up kit makes their employees more aware of surface water pollution and how their business practices can help, with 70% strongly agreeing. Approximately 3% of respondents disagree with the statement.

Table 20. Please Tell Me Whether You Agree or Disagree with the Following Statements about Spills at Your Business that Could End up in Storm Drains. (Q13b-g)

Statement*	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
I can clean up a spill quickly so that it will not leave my site or enter into a drain. (Q13b)	86%	10%	2%	0%	0%
If it was a big spill, I know whom to call to get help containing and cleaning it up. (Q13c)	81%	9%	1%	6%	2%
I have spill clean-up materials in stock. (Q13d)	89%	5%	1%	1%	1%
I know where to obtain spill clean-up materials to restock my supply. (Q13e)	76%	14%	1%	4%	4%
I know how to properly dispose of these clean-up materials. (Q13f)	75%	19%	0%	2%	2%
Having a spill plan and clean-up kit makes my employees more aware of surface water pollution and how our business practices can help. (Q13g)	70%	21%	3%	2%	1%

*Percentages are of all survey participants (n=301); percentages for “don’t know” and refused are not presented.

³ Percentages in table may not sum to total due to rounding.

Understanding of Water Quality Issues Related to Spills

A little over three quarters (77%) of respondents said that they know where water and spills in their storm drains go; however, they were not asked to specify a location. See Table 21 below. In 2005, approximately 81% of spill kit recipients said they knew where their storm drains go, and 86% reported that some storm drains flow to the nearest creek, lake, or Puget Sound, and some go to the treatment plant.

Table 21. Do You Know Where Water and Spills in Your Storm Drains Go? (Q12)

Response	n	%
Yes	231	77%
No	69	23%
Refused	1	0%
Total	301	100%

Attitudes Toward SPU and Spill Kit Program

Most respondents who recalled receiving a free spill kit found the program very helpful (54%) or somewhat helpful (31%). These figures are similar to 2005, although in 2008 slightly fewer participants found the program very helpful (62% in 2005), but more found it somewhat helpful (26%). See Table 22 below.

Table 22. How Helpful or Unhelpful Was the Spill Kit Program, Either from the Kit You Received or the Knowledge That You Gained? (Q16)

Response*	n	%
Very helpful	143	54%
Somewhat helpful	83	31%
Neither helpful nor unhelpful	13	5%
Somewhat unhelpful	9	3%
Very unhelpful	12	5%
Don't know	3	1%
Refused	2	1%
Total	265	100%

* Of respondents who recalled receiving kit

Participant Demographics

Participants were asked about the type and size of their businesses. Approximately a quarter (24%) of respondents identified their businesses as automobile repair, gas stations, or auto body. Other common business types were industrial or manufacturing (14%); restaurant, bakery, or bar (13%); and sales, retail, or auto sales (13%). See Table 23 below. The mix of business types is similar to respondents in 2005, but the proportions are somewhat different. In 2005, the most common business types were automobile repair or gas stations (34%), restaurants (27%), and industrial or manufacturing (11%).

Table 23. What Is the Type of Your Business? (D1)

Response	n	%
Automobile repair / gas station / auto body, etc.	71	24%
Industrial or manufacturing	43	14%
Restaurant / bakery / bar	40	13%
Sales / retail / auto sales	40	13%
Grocery store	12	4%
Construction / painting / home materials (tile / doors / windows)	12	4%
School / child care / learning center	8	3%
Delivery / freight / shipping / warehouse	7	2%
Print shop	4	1%
Health care (dental / doctor / pharmacy)	3	1%
Swimming pool	1	0%
Outdoor / tree care / horticulture	0	0%
Other (specify)	59	20%
Don't know	0	0%
Refused	1	0%
Total	301	100%

Slightly over half of businesses (52%) have ten or fewer employees at the location that was surveyed. About 15% of businesses have more than 50 employees. See Table 24 below. In 2005, the responding businesses were generally similar in size, with 57% having ten or fewer employees and 7% having more than 50 employees.

Table 24. How Many People, Including Yourself, Work for Your Business at This Location? (D5)

Size Category	n	%
5 employees or fewer	102	34%
6 to 10 employees	55	18%
11 to 15 employees	26	9%
16 to 20 employees	23	8%
21 to 50 employees	46	15%
51 to 100 employees	23	8%
101 or more employees	21	7%
Don't know	4	1%
Refused	1	0%
Total	301	100%

Conclusions

Among respondents who reported experiencing spills that require spill kit materials, more respondents in 2008 said that they do not wash any spills away with a hose (85% in 2008 and 65% in 2005). In addition, fewer respondents say they wash away oil or coolant (2% in 2008 and 8% in 2005).

Of the respondents who have used the free spill kit, half (50%) said that they had replaced the materials in the kit that were used for the spill.

Similar percentages of respondents in 2008 and 2005 said that their business had written and posted a plan for dealing with a spill, but more respondents in 2008 said that the plan was posted near the spill kit.

Respondents in 2008 express similar confidence to respondents in 2005 about their ability to clean up spills quickly, knowledge of whom to contact for help containing or cleaning up a spill, stock of spill clean-up materials on hand, and knowledge of where to obtain and dispose of clean-up material. However, respondents in 2008 expressed higher levels of agreement that having a spill plan and clean-up kit makes their employees more aware of surface water pollution and how their business practices can help.

CHAPTER 2 WATER QUALITY HOTLINE

Program Overview

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities operates a **Water Quality Hotline** for reporting illicit discharges to storm drains, streets, and waterways.

The Water Quality Hotline is intended to provide a way for members of the general public, including business owners and employees, to report illicit discharges. Following reported violations, SPU's Environmental Compliance Inspectors conduct a site visit and prepare an appropriate response, which may include identifying corrective actions and notifying the state Department of Ecology if warranted. The inspector maintains a log and prepares a case report for each violation. At the conclusion of the process, the inspector reports back to the hotline caller on the resolution of the case.

This evaluation included a survey of people who reported complaints to the Surface Water Quality Hotline or website to measure the ease of the reporting process, satisfaction with the experience, and awareness of water quality concerns among those who called the hotline. A broader future evaluation could assess awareness of the hotline and understanding of water quality concerns among the general public. Additional program assessment could follow up with reported violators identified through the hotline.

Methodology

Targeted Audience

- Individuals that have reported illicit discharges, spills, or other water quality concerns to SPU using the Water Quality Hotline are the targeted audience for this program evaluation.

Research Approach

The analysis was conducted using telephone surveys. SPU provided records of 287 phone calls to the Water Quality Hotline received in 2007. Callers that requested to remain anonymous were excluded from the list. The log of hotline calls included the following items:

- Date of the report
- Caller's first and last name
- Caller's address
- Caller's phone number and alternate number (if available)
- Caller's e-mail address (if available)

- Reported location of the incident
- Brief description of the problem

Of the 287 records, 46 did not include phone numbers but additional phone numbers proved invalid when we tried to call them. Some hotline callers made multiple reports in 2007; repeat calls were excluded, and we attempted to complete one survey for each unique caller. The original 287 calls represented 253 unique callers. After missing or invalid phone numbers were eliminated, 166 callers remained. Some callers we contacted did not recall reporting the water quality complaint, and others routinely address water quality incidents as part of their public agency jobs and declined to participate. (Some public employees did participate in the survey, however.) After these exclusions, we conducted surveys with 80 respondents, or 56% of the targeted audience. Cascadia made at least three attempts to reach each potential respondent by phone. After repeated calls, we were unsuccessful in reaching 59 hotline callers; excluding this group raises the response rate to 94% of those contacted. Table 25 summarizes these figures.

Table 25. Summary of Survey Attempts and Responses

Non-anonymous calls to Hotline in 2007	287
Unique callers (duplicates excluded)	253
Invalid or missing phone numbers	-87 = 166 remaining
Respondents who did not recall reporting; public employees who address water quality complaints as part of their jobs (and declined to participate)	-22 = 144 remaining
Unreachable after repeated attempts	-59 = 85 remaining
Survey respondents	80 (94% of reachable targets; 56% response rate excluding wrong numbers/contacts)

Measurement and Reporting

To evaluate the ease of the reporting process using the Water Quality Hotline and website, as well as access to the hotline or website, and understanding of “illicit discharge,” respondents were questioned using the survey attached at the end of this evaluation plan. Cascadia conducted a pre-test of the phone survey with small initial group of respondents and modified the survey as needed following the pre-test.

The survey covered the following information:

- Type of caller (e.g., citizen or business)
- Neighborhood of residence or business
- How the caller heard about SPU’s Water Quality Hotline/website
- Primary concern or reason for call
- Awareness of storm drainage system and water quality impact associated with reported incident
- Suggestions for improving hotline response

Based on the results of the survey, Cascadia prepared summary tables presenting the responses to survey questions and a brief summary highlighting key findings and overall program impact covering:

- Brief description of program elements and evaluation methods
- Number of targeted audience members contacted
- Number of targeted audience responses
- Results of responses
- Conclusions based upon responses

Results

Survey Respondent Demographics

Most survey respondents contacted the Water Quality Hotline by phone (90%), and the remainder reported incidents using SPU’s website. Approximately a third of respondents (33%) stated that they had previously reported incidents, prior to the report about which they were being surveyed.

The majority of respondents contacted the Water Quality Hotline as a resident (73%), while others reported as an employee (23%) or a business owner (5%). Most residential respondents

live in a single-family residence (79%). Respondents were also categorized based on whether they worked for the government (21%) or not (73%). The single largest category of respondents (58%) called as a resident and did not work for the government. See Table 26 below.

Table 26. Type of Caller (Resident or Business)

	Not a Public Employee		Public Employee		Unknown or Unclear		Total	
Employee	9	11%	7	9%	2	3%	18	23%
Owner	3	4%	1	1%	0	0%	4	5%
Resident	46	58%	9	11%	3	4%	58	73%
Total	58	73%	17	21%	5	6%	80	100%

Hotline callers generally were not representative of Seattle’s overall population. Callers were more likely to be male, college-educated, white, and older than average. Approximately 57% of survey respondents were male. About 80% of callers had at least a four-year college degree, in comparison with 47% citywide. Among hotline callers, 79% identified themselves as white/Caucasian, compared to 70% of Seattle’s overall population. More than half of the respondents reported their age as between 35 and 54 (54%), compared to 31% citywide. Another 23% reported being between ages 55 and 64, in contrast with only 8% citywide.⁴ People who contacted the Water Quality Hotline reported incidents in a variety of neighborhoods across Seattle; callers named 47 different neighborhoods or areas in their incident reports.

How the Caller Heard about SPU’s Water Quality Hotline

Respondents reported learning about the Water Quality Hotline through a website (21%), word of mouth (11%), or an advertisement (5%). Other responses included from SPU or the City of Seattle (13%), through work (8%), or because they work for SPU or on water quality (8%). See Table 27 below.

Table 27. How the Caller Heard about SPU’s Water Quality Hotline (Q3)

Response	n	%
Website	17	21%
Word of mouth	9	11%
Advertisement	4	5%
Mail/postcard	1	1%
Utility bill information	1	1%
Don’t remember	16	20%
Other	31	39%
Don’t know/refused	1	1%
Total	80	100%

⁴ Citywide demographic statistics from the Census Bureau in “Table DP-1. Profile of General Demographic Characteristics: 2000 (Seattle city, Washington),” available at www.ofm.wa.gov/census2000/profiles/place/1605363000.pdf (accessed February 6, 2009).

Over half of respondents said that it was very easy (23%) or somewhat easy (36%) to find the hotline number or website. Another 13% of respondents said that it was somewhat difficult, and 8% said that it was very difficult. See Table 28 below.

Table 28. Ease of Finding the Hotline Number or Website (Q4)

Response	n	%
Very easy	18	23%
Somewhat easy	29	36%
Neutral	3	4%
Somewhat difficult	10	13%
Very difficult	6	8%
Don't remember	12	15%
Don't know/refused	2	3%
Total	80	100%

Respondents were asked an open-ended question about how the City could make the phone number or website easier to find. (To simplify the questions for respondents, the survey generally referred to “the City” as a whole, rather than “SPU” or “Seattle Public Utilities” specifically.) Common responses included the following:

- Making them easier to find on the City’s website or when searching the internet (9 respondents)
- Putting the number on utility bills (8 respondents)
- Putting the number on storm drains and signs near water bodies (6 respondents)
- Making the number easier to find in the phone book (4 respondents).

Primary Concern or Reason for Call

Over half of survey respondents contacted the Water Quality Hotline primarily because they witnessed dumping or a spill (54%). Approximately 16% of respondents called because they noticed negative effects of water quality or toxic substances, such as a foam or film on the water or dead birds and grass. Other respondents reported a drainage problem (9%), contaminated or construction runoff (8%), or a sewage problem (4%). See Table 29 below.

Table 29. Primary Concern or Reason for Call

Category	n	%
Dumping or spill	43	54%
Noticed negative effects (e.g., foam, plant or animal death)	13	16%
Drainage problem	7	9%
Contaminated or construction runoff	6	8%
Sewage problem	3	4%
Other	5	6%
Not recorded	1	1%
Total	80	100%

Reasons for Future Calls and Water Quality Awareness

When asked what types of incidents or problems they thought should be reported to the hotline, respondents most commonly mentioned dumping or a spill (38%) and water quality problems or pollution in general (25%), as shown in Table 30.

Table 30. Reasons to Call in the Future (Q13)

Category	n	%
Dumping or spill	30	38%
Water quality or pollution problems (non-specific)	20	25%
Contaminated or construction runoff	12	15%
Notice negative effects (e.g., smell, animal death)	9	11%
Drainage or sewage problem	9	11%
Other	12	15%
Refused or didn't know	13	16%
Total	N/A*	N/A*

* multiple responses allowed; totals not provided due to multiple responses

Satisfaction with Hotline Experience and Suggestions

When asked about the City’s response time to their water quality complaint, more than half called the response time either “fast” (30%) or “reasonable” (21%), as shown in Table 31. Among respondents, 11% characterized the response as “too slow.”

Table 31. Perceived City Response Time (Q7)

Response	n	%
Fast	24	30%
Reasonable	17	21%
Too slow	9	11%
Don’t remember	4	5%
Don’t know/refused	26	33%
Total	80	100%

The survey also asked respondents about whether they thought the problem was fixed. Nearly half (45%) said yes, and 28% said no. The remainder did not recall or did not know whether the problem had been addressed. Table 32 shows these results. (Note that the SPU inspectors are required to follow up on all complaints and ensure that any water quality problems are addressed. This question addressed hotline callers’ perceptions, rather than the actual disposition of the incident.)

Table 32. Whether They Think the Problem was Fixed (Q8)

Response	n	%
Yes	36	45%
No	22	28%
Don’t remember	5	6%
Don’t know/refused	17	21%
Total	80	100%

The survey asked respondents about their overall satisfaction with how the City handled the water quality complaint. Well over half of respondents were either “very satisfied” (36%) or “somewhat satisfied” (21%), as shown in Table 33. One quarter was either “somewhat dissatisfied” (14%) or “very dissatisfied” (11%).

Table 33. Satisfaction with How the City Handled the Complaint (Q9)

Response	n	%
Very satisfied	29	36%
Somewhat satisfied	17	21%
Neutral	11	14%
Somewhat dissatisfied	11	14%
Very dissatisfied	9	11%
Don't know/refused	3	4%
Total	80	100%

When asked when they would use the Water Quality Hotline again, the vast majority (89%) of respondents said that they would do so. A large majority (83%) also reported that they would recommend the hotline to others. Table 34 shows these results.

Table 34. Whether Respondent Would Call Again (Q10) or Recommend the Hotline/Website to Others (Q11)

Response	Call again		Recommend	
	n	%	n	%
Yes	71	89%	66	83%
No	5	6%	8	10%
Don't know/refused	4	5%	6	8%
Total	80	100%	80	100%

To help identify future outreach strategies, the survey asked respondents how they would like to hear about water quality-related issues in the future. As shown in Table 35, utility bill inserts were the preferred method, which 44% of respondents mentioned. Website and mail were ranked much lower, with 13% and 10% of respondents, respectively. Other suggestions included by e-mail (5 respondents), in flyers or mailers (3 respondents), on billboards or signs (2 respondents), and in newspapers (2 respondents).

Table 35. How Respondents Would Like to Hear about Water Quality in the Future (Q12)

Response	n	%
Utility bill inserts	35	44%
Website	10	13%
Mail	8	10%
All the above	5	6%
Other	10	13%
Don't know/refused	12	15%
Total	80	100%

The survey also provided an opportunity for respondents to offer additional open-ended comments regarding water quality concerns. Table 36 on the following page lists these verbatim responses, which include both positive kudos as well as criticisms of the hotline process.

Table 36. Additional Comments from Survey Respondents (Q14)
(Verbatim Responses)

- City itself is the cause of most problems on South Lake Union; not equipped to handle flow of water and other issues.
- City responded quickly.
- Do not have such a time lag between call and follow-up.
- Employee of SPU [name] has never responded to e-mail messages or phone messages that caller left. Did not follow up on complaint until compelled by interagency demands.
- Filter water before it enters creeks; put filters on storm drains.
- Follow up, deal with problem, enforce rules.
- Frustrating process.
- Get regular people in focus group and pay them \$10 if they can find numbers on SPU website in under 5 minutes. Make website more user-friendly. People at SPU are super.
- Good luck cleaning up pollution.
- Great job!
- Has reported leaks in City pipes, and City has fixed the majority of them which is great.
- Have an easy way for people to report general construction site concerns (not only water quality).
- Have more information about incident and be more timely with follow-up.
- Hire employees who will do something.
- If number was easier to find, many more people would report problems.
- If the City wants me to answer these questions, they should have gotten back to me before 8 months had gone by.
- List problems that SPU would like to hear about on the hotline, alternate ways to dispose of what shouldn't be in water, what to keep out of toilets.
- Make sure SPU follows up. Sweep streets, require businesses to clean stoops, energize people to get out and do more in their communities. Get out and knock on doors to let people know how the City can help.
- More important to police polluters than conduct surveys.
- More severe fines and punishment for dumping, large fines and imprisonment.
- [Name] is great and very responsive.
- No comments other than that she didn't think she would have to be talking about this again.
- Offer rewards for reporting.
- People who are responsible for spills should be ticketed; City needs to educate the public.
- Publicize cases like this, print in newspaper. Caller is engineer and frequently sees construction of docks where extra wood/fiberglass is sawed off and goes right into water. Include in permit for dock construction.
- Should have leaf programs and adopt-a-drain programs.
- Show public "before" and "after" pictures of Lake Washington, enforce rules and regulations, police more.
- SPU should send out an e-mail alert as responses come in. Caller applauds SPU for conducting this survey but wants to know precisely how it is being used to improve services; otherwise caller wants to be reimbursed for his time.
- Tell City to come clean up leaves near storm drains every fall; respond quickly to complaints.
- The City should always follow up with callers who make reports.
- The mayor is evil. Dig more cleaning pits out by Northgate Mall.
- Very dissatisfied because he called the city twice and never heard back, and he does not think problem was addressed.
- Very happy with how the City handled her issue.
- When we spend millions on cleaning up Puget Sound, the garbage trucks should not be leaking fluid all over the roadways.
- Worked out very well; City was responsive.

Conclusions

Callers reporting incidents to the Water Quality Hotline generally did not compose a representative sample of Seattleites. On average, callers were more likely to be male, college-educated, white/Caucasian, and older than the general public. The majority of callers were satisfied with their hotline experience and the City's response, though room remains for improvement, particularly as noted in the open-ended verbatim comments that some respondents offered at the end of the survey (Table 36 on the previous page).

Most callers expressed an understanding of water quality incidents that warrant a report to the hotline. Respondents also reported on how they would like to hear more about water quality issues in the future, with utility bill inserts ranking much higher than the other options. This answer reflects the well-educated survey population, however, and may not be reflective of the general public.

CHAPTER 3 GREEN YOUR RUG PROGRAM

Program Overview

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities is conducting the **Green Your Rug program** to provide education and outreach to property managers regarding carpet cleaning practices and stormwater pollution prevention. Property managers are the responsible entity for polluted discharge to storm drains on or runoff from their property. (SPU also conducted a separate program for residential carpet cleaning in single-family homes.)

Best management practices (BMPs) are designed to prevent release of carpet cleaning soaps and polluted water to storm drains and surface waters. One element of this program included developing a baseline measurement of property manager awareness, understanding of, and adoption of proper disposal of used wash water from carpet cleaning.

Evaluation of this program involved a survey of property managers of commercial and residential buildings regarding their carpet and general cleaning practices, wash water disposal practices, and awareness of water quality issues. This chapter describes the evaluation of the Green Your Rug program.

Methodology

Targeted Audience

- Property managers of commercial and multifamily buildings.

Research Approach

To develop the baseline assessment, we surveyed property managers of multifamily and commercial buildings regarding their carpet cleaning practices. **Property managers** are organizations or individuals that manage properties with either a single commercial or several residential or commercial tenants. Property managers may clean their own carpets or contract for carpet cleaning services.

In preparation for a workshop with property managers in fall 2008, the Resource Venture program developed a list of contact information based on its ongoing tracking database for the program as well as additional contacts from SPU, such lists of property managers used for indoor and outdoor water conservation outreach efforts. The compiled list contained 227 property managers. In addition, Cascadia added additional contacts identified in the course of preparing for and conducting the property manager workshop, for a total of 264 property managers.

For those property managers that had e-mail addresses included in the lists, Cascadia staff members first sent a survey using an online survey mechanism, Survey Monkey. We also sent an electronic reminder message to fill out the survey. Through phone calls to the remaining property managers, Cascadia obtained 30 additional e-mail addresses to add to the electronic survey. In total, Cascadia sent electronic surveys to 195 e-mail addresses for property managers. Of these, 57 property managers responded using the online survey; 25 e-mail addresses bounced; and 100 people did not respond.

For those property managers that neither had e-mail addresses included in the original lists nor provided them by phone, Cascadia conducted telephone surveys. In addition, we also conducted phone surveys with property managers who did not respond to the electronic survey, even after receiving a reminder. After sufficient response time had passed (about two weeks), Cascadia staff made phone calls to the remaining property managers who had not responded to the survey. We sought to conduct the same survey by phone with the remaining property managers.

Cascadia attempted phone contacts to 99 property managers. Of those numbers, 33 were wrong numbers, disconnected, or otherwise not valid for the targeted property manager. From the phone calls, we obtained e-mail addresses for 30 of the property managers and sent them invitations to complete the online survey. We completed phone surveys with 20 property managers, and 14 were called at least three times with no response. Two property managers refused to participate in the survey.

Cascadia entered all survey responses, from both the electronic and telephone survey, into an electronic file for record-keeping and analysis. Table 37 summarizes the attempts to contact all property managers and the survey responses obtained. Of the 192 potentially reachable property managers in the targeted audience, 77 respondents participated in the survey, for a 40% response rate. The **Property Manager Green Your Rug survey** is attached at the end of this evaluation plan.

Table 37. Summary of Survey Attempts and Responses

Property managers on compiled contact lists	264
Invalid or missing phone numbers	-33
Invalid e-mail addresses (and no phone numbers)	-25
Unreachable after repeated attempts	-14
Targeted survey recipients	192
Survey respondents	77 (40% of reachable targets; 37% response rate excluding invalid numbers/e-mails)

Measurement and Reporting

The following information was gathered for the baseline assessment, reporting, and for the development of education and outreach materials and activities targeting property managers and/or carpet cleaning companies in the future:

- Average frequency of carpet cleanings by type of tenant (e.g., multifamily, type of business)
- Typical timing of carpet cleaning
- Disposal practices for used wash water among property managers and cleaning contractors
- Property manager awareness of proper disposal practices
- Property manager awareness of storm drainage system (linkage to water bodies) and effect of used wash water on stormwater
- Property manager awareness of responsibility for contractors' proper disposal practices

Based on the results of the survey, Cascadia prepared the following summary tables presenting the responses to survey questions along with a brief summary highlighting key findings and overall program impact.

Results

Property Manager and Building Characteristics

Property managers surveyed varied in the number and types of buildings they manage. Over a third of property managers (35%) manage only one building, while another 18% manage 20 or more buildings. The vast majority of respondents manage buildings with carpet in common areas (91%) and tenant areas (100%).

Approximately 42% of respondents manage commercial buildings, 40% multifamily residential buildings, and 16% manage both. Among commercial managers, 82% manage offices and 68% manage retail space; only one reported managing manufacturing space.

Responsibility for Cleaning Carpets and General Cleaning

Most property managers whose buildings have carpets in common areas hire another company or contractor (85%) to clean the carpets, a few (3%) clean the carpets themselves, and some (7%) do both. Other responses included that tenants or homeowners hire cleaners (three respondents) and that their building have no common areas (one respondent). See Table 38 below. For tenant areas, 38% of respondents require tenants to clean those carpets.

For general cleaning, 56% of property managers reported hiring a contractor, while 20% of property managers provide general cleaning services themselves, and another 14% say they do both. Other parties responsible for general cleaning include housekeepers or other staff (five respondents), homeowners (one respondent), and specific companies (one respondent). See Table 38 below.

Table 39 lists carpet cleaning companies that respondents reported using; Table 40 lists general cleaning companies.

Table 38. Responsibility for Cleaning Carpets and General Cleaning

Response	Carpet Cleaning		General Cleaning	
	n	%	n	%
Property manager hires company/contractor	64	85%	39	56%
Property manager cleans carpets	2	3%	14	20%
Both	5	7%	10	14%
Other	4	5%	7	10%
Total	75	100%	70	100%

Table 39. Carpet Cleaning Contractors and Companies

ABM Janitorial	Master
All Start	Metropolitan Building Maintenance
Alliance Building Services	NW Floor Care Services
American Building Maintenance	Pacific Janitorial Services
AVM	Pacific Modular dba Millicare Carpet Cleaning
Bravo Carpet Care	Professional Building Services
Carpet Cleaning Specialists	Rainbow International
Cascadian Building Maintenance	Seattle Best Services
Classic Carpet	Seattle Carpet Cleaning
Custom Solutions Carpet Care	Seattle's Finest Carpet Cleaner
DA Burns	Sergey's Deluxe
Direct Carpet	True Clean
Esteamed Services	Venturi
GCA Services	White Cleaning
Golden Wand	Whitman Global Carpet Cleaning
King Kleaning	Xtreme Clean
Koala Carpet Cleaning	

Table 40. General Cleaning Contractors and Companies

ABM Janitorial Services	N Leonard Cleaning
Alliance	New Star
American Building Maintenance	Olga's Cleaning Service
Butler Cleaning	Omar Cleaning Service
Cascadian Building Maintenance	Pacific Building Services
Environmental Services	PJ's Janitorial
Estemed Services	Refreshing Cleaning
GCA Services	Ruby's Janitorial
GCS	SBM
Maid Brigade	Seattle Best Services
Metropolitan Building Maintenance	Service Master

Frequency and Timing of Carpet Cleanings

Among property managers who hire outside contractors for carpet cleaning, 72% (47 of 65 respondents) clean as needed; the remainder use contractors to clean on a regular schedule. Property managers who manage mainly multifamily buildings typically hire a contractor to clean as needed (90% of responding multifamily managers). In contrast, managers of mainly commercial property more often use contractors to clean on a regular schedule (57% of responding commercial managers), and sometimes use contractors as needed (43%). See Table 41 below.

Table 41. Average Frequency of Carpet Cleaning by Outside Contractor

	On-call or as needed	On a regular schedule	No response	Total
Multifamily	18	2	3	23
Commercial	10	13	1	24
Both multifamily and commercial	8	0	1	9
Other property type	1	0	0	1
No response	10	3	0	13
Total	47	18	5	70

Among property managers who clean carpets themselves, three managers reported cleaning carpets yearly; two reported cleaning twice a year; two clean quarterly; and one cleans common areas as needed and tenant areas upon move-out.

Most property managers did not report the typical time of day carpets are cleaned at their properties. Among the eight respondents, four reported cleaning at night, and four clean during the day.

Disposal Practices for Used Wash Water from Carpet and General Cleaning

Overall, 37% of property managers say that wash water from carpet cleaning is disposed in an indoor drain, but another 33% do not know where the water is disposed. In addition, 19% say the water is hauled away from the cleaning site for disposal elsewhere. See Table 42 below.

Among property managers who hire contractors to clean *carpets*, over a third (36%) do not know where the wash water is disposed, while another third of this group (33%) report that it is disposed into a utility sink, toilet, or other indoor drain. Approximately a fifth (21%) of property managers that contract carpet cleaning report that the contractor hauls the water away for disposal elsewhere. A small percentage of property managers say the contractors dispose of wash either into an outdoor drain (3%) or onto the lawn or outdoor landscaping (2%). Other responses included into janitorial sinks (two respondents) and that the respondent used a dry system. Only two property managers reported that the carpet cleaning company had ever asked where to dispose wash water; those managers instructed them to use an indoor sink.

Among property managers who clean the carpets themselves using a method that produces wash water, five pour the wash water into utility sink, toilet, or other indoor drain, while one pours it down an outdoor drain.

Table 42. Carpet Wash Water Disposal

Response	Contractors		Property Managers		Total	
	n	%	n	% ⁵	n	%
Into utility sink, toilet, or other indoor drain	20	33%	5	NA	25	37%
Haul away from cleaning site for disposal	13	21%	0	NA	13	19%
Into outdoor drain	2	3%	1	NA	3	4%
On lawn or landscaping outdoors	1	2%	0	NA	1	1%
Don't know	22	36%	NA	NA	22	33%
Other	3	5%	NA	NA	3	4%
Total	61	100%	6	NA	67	100%

Overall 83% of property managers report that wash water from general cleaning is disposed in an indoor drain, while another 13% do not know where the water is disposed. See Table 43 below.

Among property managers who hire contractors for *general cleaning*, over three quarters (78%) report that it is disposed into a utility sink, toilet, or other indoor drain. Approximately 18% of these property managers do not know where the water is disposed. Other responses were into janitorial sinks (two respondents). Only three property managers reported that the general cleaning company had ever asked where to dispose wash water; one manager instructed them to use an indoor sink, while another instructed them to use the garage floor drain.

⁵ Percentages are not provided due to the small sample size.

Among property managers who perform general cleaning themselves, the vast majority (96%) dispose of wash water into utility sink, toilet, or other indoor drain, while one pours it down an outdoor drain.

Table 43. General Wash Water Disposal Location

Response	Contractors		Property Managers		Total	
	n	%	n	%	n	%
Into utility sink, toilet, or other indoor drain	38	78%	22	96%	60	83%
Into outdoor drain	0	0%	1	4%	1	1%
On lawn or landscaping outdoors	0	0%	0	0%	0	0%
Haul away from cleaning site for disposal	0	0%	0	0%	0	0%
Don't know	9	18%	NA	NA	9	13%
Other	2	4%	NA	NA	2	3%
Total	49	100%	23	100%	72	100%

Property Manager Awareness of Legal Responsibility, Proper Disposal Practices, and Stormwater System

Over half of property managers (54%) know that they are legally responsible for the proper disposal of wash water from the properties they manage. Nearly a fifth (19%) of respondents think that the cleaning company is legally responsible. Other responses included the building owner (6 respondents), don't know (6 respondents), homeowners (one respondent), the sewer (one respondent), and both the owner and manager (one respondent). See Table 44 below.

Table 44. Perceived Legal Responsibility for Proper Disposal of Wash Water

Response	n	%
Property manager	36	54%
Cleaning company	13	19%
Tenants	3	4%
Other	15	22%
Total	67	100%

When asked to select the best place for disposing wash water, most property managers (72%) chose a sink or toilet. Over a fifth of respondents (23%) did not know, but only 2% of respondents said an outdoor drain is the proper disposal location. Other responses included a recycling area for property disposal of toxic water (one respondent) and a storage container for watering landscaping (one respondent). See Table 45 below. More than half of property managers (39) said that they would like information on proper disposal practices for wash water. Resource Venture provided factsheets to these property managers in response to these requests.

Copies of the following outreach materials are included in Appendix A:

- “Stormwater Pollution Prevention” factsheet
- “Free Pollution Spill Kits Available for Seattle Businesses” flyer
- “How to Clean up a Spill” spill kit poster
- “How to Clean up Fats, Oils & Grease” (FOG) poster

Table 45. Awareness of Proper Wash Water Disposal

Response	n	%
A sink or toilet	46	72%
An outdoor drain	1	2%
Don't know	15	23%
Other	2	3%
Total	64	100%

When asked where wash water poured down an outdoor drain goes, over half of respondents (55%) said that it goes into a creek, lake, or other surface water. About a fifth of respondents (22%) did not know where outdoor drains go. Some respondents said that wash water in an outdoor drain goes to a water treatment plant (9%) or to groundwater (8%). Other responses included into storm drains (three respondents) and either to surface water or a treatment plant depending on the type of outdoor drain (one respondent). See Table 46 below.

Table 46. Awareness of Outdoor Drain Discharge Location

Response	n	%
A creek, lake, or other surface water	35	55%
Water treatment plant	6	9%
Groundwater	5	8%
Don't know	14	22%
Other	4	6%
Total	64	100%

Chemical Storage Practices

Most property managers (73%) reported that cleaning and landscaping chemicals at their properties are stored indoors. Another 17% reported that they do not store chemicals on their properties. See Table 47 below. Of those surveyed, 29 managers said that they would like information on proper storage of chemicals on their properties.

Table 47. Storage Locations for Cleaning and Landscaping Chemicals

Response	n	%
Indoors	51	73%
Outdoors	4	6%
Don't have chemicals	12	17%
Other	3	4%
Total	70	100%

Conclusions

Overall, over half of property managers know that they are legally responsible for the proper disposal of wash water (54%) and that water disposed in an outside drain flows to a creek, lake, or other surface water (55%). Nearly three quarters (72%) know that the best place to dispose wash water is a sink or toilet. In practice, most property managers (83%) say that wash water from general cleaning is properly disposed into an indoor drain when either they or contractors clean; however, 13% of managers do not know where general cleaning contractors dispose of wash water. Most property managers also say that wash water from carpet cleaning is disposed into an indoor drain (37%) or hauled away for disposal elsewhere (19%), but another 33% do not know where the water is disposed.

CHAPTER 4 CAR WASH KIT PROGRAM

Program Overview

As part of its National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit requirements, Seattle Public Utilities' **Car Wash Kit program** makes car wash kits available to organizations conducting car washes to reduce polluted stormwater runoff.

The car wash kits are a best management practice designed to prevent release of car wash soaps and polluted water to storm drains and surface waters. Different organizations, such as city offices, community centers, high schools, and nonprofits, host the car wash kits and make them available for community organizations to check out for use at car wash events. These car wash events are typically charity fundraisers held at local gas stations, convenience stores, schools, or other parking lot locations. The car wash kit includes equipment to keep used wash water and soaps from entering storm drains and surface waters. Instead, the polluted water is pumped into indoor drains, where it enters the sanitary sewer system for wastewater treatment.

This chapter describes the evaluation of the Car Wash Kit program. The evaluation assessed understanding and adoption of targeted behaviors regarding car washing as well as overall utility of the program. We conducted key informant interviews with car wash kit lenders and borrowers. We also developed surveys for car wash-sponsoring organizations as well as drivers participating in car wash events, which may be fielded during the car wash season beginning in spring 2009. The surveys are included in Appendix F.

Methodology

Targeted Audiences

The Car Wash Kit program is intended to encourage the following targeted audiences to adopt best management practices for car washing:

- Organizations sponsoring car washes (e.g., schools groups, sports teams, churches, community centers, nonprofits).
- Car drivers who do not wash their cars at car wash facilities (driver surveys were designed and are ready for fielding during the spring/summer car wash season).

Research Approach

To evaluate the effectiveness of the current program, we contacted the following groups to obtain information about their understanding and use of car wash kits:

- The eight organizations (referred to as “lenders”) that loan car wash kits free of charge to other local organizations for the purposes of protecting water quality in Seattle.⁶
- Car wash event coordinators at 12 public high schools in Seattle to assess if a car wash kit has been used at school-sponsored car wash events as well as to learn more about where the events are typically held and how many happen in an average school year.

Cascadia contacted the car wash kit lenders, shown in Table 48, regarding their experience with car washes and the Car Wash Kit program. We completed interviews with the lenders marked with asterisks.

Table 48. Seattle Car Wash Kit Lenders

Car Wash Kit Lending Organizations

Ballard High School Proyecto Saber Club
Camp Long Environmental Learning Center*
Carkeek Park Environmental Learning Center*
City of Seattle/Seattle Public Utilities
Environmental Coalition of South Seattle (ECOSS)*
Ravenna-Eckstein Community Center*
Roosevelt High School*
Samoan Community Church

⁶ Through a King County program that is no longer active, approximately 20 additional organizations in King County, outside Seattle, also host car wash kits

Cascadia also contacted activities coordinators or principals at the following Seattle public high schools that borrowed car wash kits, shown in Table 49.

Table 49. Seattle Public High School Car Wash Kit Borrowers

Seattle Public High Schools that Borrowed Car Wash Kits	
Ballard High School	Nathan Hale High School*
The Center School	Nova High School
Cleveland High School*	Rainier Beach High School
Franklin High School*	Roosevelt High School*
Garfield High School*	Sealth High School
Ingraham High School	West Seattle High School

Measurement and Reporting

Car wash kit lenders and car wash fundraiser event coordinators from Seattle public schools were targeted for key informant interviews. The interviews were intended to assess their attitudes regarding the program and their knowledge of car wash kits as well as to determine the current availability of car wash kits. Eight lenders were contacted in July and August 2008, resulting in five lender interviews. In September 2008, Cascadia contacted 12 school event coordinators, resulting in five borrower informant interviews. Interviews were conducted by telephone, and some respondents provided feedback by e-mail.

The evaluation was designed to include surveys of car wash kit lenders, borrowers (organizations hosting car washes that use that kit), and drivers who attend these events to have their cars washed. Due to the seasonal nature of car wash events, the driver survey portion of the evaluation was planned for spring/summer 2009.

Results

Responses from car wash kit lenders and fundraiser coordinators from Seattle public high schools are summarized below. Key questions focused on the current state of the Car Wash Kit program and perceived challenges to the program’s current and future success. A list of car wash kit borrowers from April to August 2008 can be found in Appendix E.

Car Wash Kit Lenders

Lenders of car wash kits were asked their impressions of the program at their particular location, specifics about the number of complete kits, and whether a designated program coordinator had been assigned. Out of the eight designated lenders, two organizations (Ballard High School Proyecto Saber Club and the Samoan Community Church) did not return multiple calls and e-mail messages requesting participation in the program evaluation. It is assumed these locations no longer have an active car wash kit program.

Car Wash Kit Availability

The interviews suggest that few kits are available to the general public. Out of multiple kits originally provided by the program, the evaluation identified only one kit that is fully stocked, functional, and actively loaned to the public (Camp Long Environmental Learning Center). A second kit is incomplete but is actively loaned to organizations that provide their own hose (ECOSS). Camp Long and ECOSS loaned these kits to a total of nine organizations hosting 14 events during the 2008 car wash season from May to August.

Two kits are each used exclusively by a single borrower (Carkeek Park Environmental Learning Center and Ravenna-Eckstein Community Center). Roosevelt High School no longer uses or loans out its kit, now that the school has begun hosting events in a nearby grocery store parking lot. The remaining kits are assumed to be no longer in use because the hosting organizations did not respond to repeated inquiries. The program participant list should be updated to reflect current program coordinators and which organizations loan their car wash kits to outside groups and the general public.

Program Communication, Coordination, and Tracking

Program ownership and communication regarding kit resupply are lacking. Interviewed lenders do not actively promote the Car Wash Kit program, and their responses indicated a general lack of communication regarding the program. The program currently lacks a method for tracking event attendees or for clearly communicating to drivers that the kits are in use. Several sites have incomplete kits, and interviewees noted that they did not know how to obtain additional materials. Only one organization, ECOSS, had a designated car wash kit coordinator that remained consistent throughout the program. One respondent explained:

We haven't had a complete carwash kit for some time. SPU borrowed one for a construction contractor who never returned it and apparently they didn't have contact info for them. The last one we have here is incomplete, as one of the businesses that borrowed it cut the hose end off. We have been loaning it out still periodically, just letting the businesses know that they need to furnish their own hose.

Kit Borrower Relationships

The program appears most effective when lender organizations have an exclusive or consistent borrower. Two lenders loaned the car wash kits exclusively to community teen centers that held regularly scheduled and frequent car wash events. This ongoing relationship allowed the kit lenders to educate the borrowers about salmon-friendly car washes and proper use of the kit. The teen groups then educated participating drivers about the use of these kits and promoted their events as good alternatives to washing cars at home.

The Carkeek Park Environmental Learning Center loans its kit exclusively to the Montlake Community Center's Teen Group, which hosts car washes every Monday during the summer months. The Ravenna-Eckstein Community Center lends its kit to the Meadowbrook Community Center's Teen Camp. One coordinator explained:

[We] love having [the car wash kit] here. It has helped our teen camp raise money for field trips. It has also been nice because it seems to bring patrons in that have not been here before. I get many comments of “Wow, I had no idea you guys were located here.”

Lenders who loaned kits to multiple borrowers expressed frustration about educating borrowers on proper kit use and the importance of salmon-safe car-washing methods. ECOSS also expressed difficulty in tracking event details, as events typically happened on weekends when its offices were closed.

Ease of Kit Use

All lenders interviewed commented that the car wash kits are difficult to use and generally require modification and instruction when given to borrowers. The Montlake Community Center needed SPU to remove a pipe in their drain to fit the kit basin properly. The Roosevelt High School kit coordinator stated that the kit was too difficult and cumbersome to use. Roosevelt has since stopped using the kit in favor of hosting events in a nearby grocery store parking lot. The two Environmental Learning Centers noted that they would not expect borrowers to be able to use the kits without training and site manipulation.

Car Wash Fundraiser Event Coordinators (Potential Borrowers)

Fundraiser coordinators at Seattle public high schools were interviewed to represent the targeted audience of borrowers that host car wash events. Key questions focused on current practices, information related to school car wash events, and knowledge of the existing Car Wash Kit program.

Program Awareness

Respondents were largely unaware of the program. The majority of interviewees have a regular car wash season, but they were unaware of proper wash water disposal methods and had not heard of the car wash kits. The only high school car wash event coordinator interviewed who was aware of the program is also a designated lender that no longer uses the kit or lends it out.

Frequency of Car Wash Events

Seattle public high schools vary in the frequency that they host car washes as fundraising events. Nathan Hale High School typically hosts two events each month during the spring and summer, and Roosevelt High School reported that it hosts frequent car washes. Franklin High School hosted two events during the 2007-2008 school year. Nova High School reported that it did not host any car wash events.

Interest in Car Wash Kits

School event coordinators interviewed are open to using the kits, however, and they requested more information about the program. Of the five coordinators with active car wash activities at

their respective schools, four responded that they would like additional information on the program. At Franklin High School, students reportedly use “environmentally friendly” soap, but the activities coordinator was not specifically aware of “salmon-friendly” car washes or the car wash kits. The coordinator requested further information on the car wash kits and how to host “salmon-friendly” car washes. The Nathan Hale High School event coordinator was not aware of the Car Wash Kit program but would like to use the kits for future events. The two quotes below were typical among interviewees regarding their level of awareness of and interest in the Car Wash Kit program.

[We have] not hosted any [car wash] events in quite some time due mainly to the lack of availability of designated car washing lots, such as Costco. I was unaware that car washing kits exist and would like to receive more information.

I'm new to this position and don't think we have had a car wash here in a long time. If we do, we'll use the kit.

Conclusions

In its current state, the Car Wash Kit program is not highly successful at achieving the goal of preventing the release of car wash soaps and polluted water into storm drains and surface waters. Most lenders are not actively participating in the program, and few kits are available for use by the general public. Kits that are available are reportedly difficult to use and sometimes incomplete. Potential borrowers (high schools) are largely unaware of the program, indicating insufficient program outreach and promotion.

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APPENDIX A RESOURCE VENTURE STORMWATER PROGRAMS

This appendix provides a brief overview of Resource Venture's education, outreach, and technical assistance activities regarding stormwater conducted between 2006 and 2008.

Resource Venture provides outreach, education, and technical assistance to help businesses conserve resources, reduce or prevent pollution, and become more sustainable. The program is a service of Seattle Public Utilities (SPU), and both general outreach services and customized assistance are offered in waste prevention and recycling, water conservation, stormwater pollution prevention, green building, and climate change.

Spill Kit Incentive Program

Resource Venture's Spill Kit Incentive Program provides free spill kits, spill response plans, and training to businesses engaged in any high-risk pollution-generating activity, such as those that use pollutants like oil and gas in their daily operations. The program prepares businesses to address and respond to an on-site spill appropriately. It results in a higher number of businesses being in compliance with stormwater regulations, while augmenting SPU inspection efforts. Since the beginning of the program in 2004, Resource Venture has provided a total of 920 businesses with:

- Up to two free spill kits, an SPU-funded voucher, or a combination of both
- Spill plans, site maps, and waste disposal diagrams
- Basic training on spill kit use and disposal options

In 2006, Resource Venture focused on furnishing free kits, drainage maps, and spill plans to all Seattle locations of major grocery store chains, including QFC, Safeway, Albertsons, Red Apple, Trader Joe's, Larry's Market, and PCC Natural Markets. Resource Venture provided 25 spill kits through this targeted effort.

Mobile Businesses

Resource Venture and SPU coordinated with the Seattle Fire Department (SFD) and jointly developed a brochure for all food service establishments explaining proper maintenance activities concerning hood and vent cleaning. Resource Venture also conducted surveys of both carpet cleaners and hood and vent cleaners regarding their wastewater disposal methods and their reactions to city assistance to encourage appropriate wastewater disposal.

Fats, Oils, and Grease

SPU spends hundreds of thousands of dollars every year cleaning out sewer pipes clogged by fats, oils, and grease (FOG). Reducing this cost requires proactive education and outreach to businesses and residents that may be washing or pouring FOG down sinks or floor drains. In 2006, Resource Venture developed educational materials to support FOG education, including

posters, door hangers, maintenance how-to information, and stickers in multiple other languages: Chinese, Japanese, Korean, Russian, Tagalog, Thai, and Vietnamese.

In addition, Resource Venture worked with the Washington Restaurant Association to discuss side sewer code changes and their potential impact on restaurants. The program continues educational efforts regarding FOG by answering e-mail and hotline inquiries and by updating FOG information on its website (www.resourceventure.org), which averages 2,400 visitors per month. The FOG page is the top-viewed webpage on the Stormwater section of the Resource Venture website.

Technical Assistance

Resource Venture provides in-depth assistance to businesses to bring them into compliance with Seattle's stormwater regulations. This work included addressing specific corrective actions identified by SPU inspectors, helping businesses develop Stormwater Pollution Prevention Plans (SWPPPs), providing necessary information for completing waste characterization tests (TCLP test) for solids, and developing strategies for redesigning facilities to minimize stormwater pollution and runoff from substances that accumulate in stormwater treatment systems. In addition, Resource Venture coordinates with King County's Voucher Incentive Program for business vouchers.

Property Manager Outreach Materials

Resource Venture mailed outreach materials to property managers who requested more information about proper disposal of wash water as a result of the Green Your Rug survey. Survey respondents were also encouraged to visit www.resourceventure.org for additional resource conservation information and strategies.

The remainder of this appendix includes copies of the following outreach materials for stormwater pollution prevention:

- “Stormwater Pollution Prevention” factsheet
- “Free Pollution Spill Kits Available for Seattle Businesses” flyer
- “How to Clean up a Spill” spill kit poster
- “How to Clean up Fats, Oils & Grease” (FOG) poster

Stormwater Pollution Prevention

Pollution Sources

When it rains, stormwater can pick up pollutants and sediments from surfaces such as parking lots, roofs, streets, sidewalks and construction sites. These pollutants and sediment flow directly to streams, lakes and Puget Sound. Stormwater regulations require businesses to take steps to control the volume of runoff from their sites and to make sure that the stormwater is not polluted when it enters the City's drainage system. Businesses can accomplish this by implementing "source control" measures that not only prevent pollution, but can prevent expensive treatment and maintenance expenses as well.

Requirements for All Businesses

Seattle's Stormwater Code requires certain structural source control measures for new construction of sites involving high-risk activities. However, all Seattle businesses who conduct these same high-risk activities are required to implement the basic "good housekeeping practices" listed below and on the reverse side, as well as the operational source controls listed in the code.

Maintain Drainage Control Systems

Maintain drainage facilities such as catch basins, oil/water separators, stormwater vaults and other systems on a regular basis to prevent them from falling. Without adequate maintenance, sediment and other debris quickly clog drainage facilities, reducing their ability to regulate and treat stormwater runoff.

Identify and Eliminate Illicit Connections to Storm Drains

Toilets, sinks, appliances, showers, shop floors and industrial process drains should not be connected to the storm drain system. These connections send pollutants such as oxygen-depleting materials, heavy metals, high temperature water, toxic organic compounds, nutrients and pathogens to the storm drain system and nearby waterways.

Street, Driveway, Parking Lot and Sidewalk Maintenance

Regularly sweeping paved areas and removing waste materials helps keep these areas clean. Inspecting and cleaning gutters, drains and catch basins is also very important. Stormwater runoff from these areas contains oil and grease from automobiles, nutrients, litter, leaf debris, weed killer and de-icing products.

Drainage Systems

Storm drains are the grated openings you see along curbs and in streets and parking lots. But where the water goes from there depends on what part of Seattle you are in. There are three types of drainage systems within the City of Seattle and yet the inlet for these stormwater systems all look the same. Call Resource Venture to find out which system your property drains to.

Storm Drain System: The storm drain system was built to prevent flooding by collecting and transporting rain, or stormwater, away from urban areas. Any residue or debris on pavement flows into the storm drain system and goes directly into our lakes, rivers, creeks and Puget Sound, without treatment.

Combined Sewer System: The combined system carries both sanitary sewage and stormwater runoff in a single pipe to a treatment facility. The water is treated before it's discharged into Puget Sound; however, during heavy rainfall, when the combined sewers reach their capacity, the excess stormwater and untreated sewage overflow into Puget Sound.

Sanitary Sewer System: The sanitary sewer carries waste water and sewage from internal floor drains, toilets and sinks in homes and businesses to a treatment facility. The water is treated before it is discharged into Puget Sound.



Green Business Solutions

a service of Seattle Public Utilities

High-Risk Activities

The Code identifies eight activities that pose a high risk of polluting stormwater. Businesses whose operations involve any of these activities are required to implement specific operational source control measures — and spill prevention measures — unless their sites drain only to the public combined sewer system.

Fueling Operations: Transferring fuel into mobile vehicles or equipment at permanent stations (such as gas stations), temporary stations (such as construction sites) and mobile fueling stations (such as mobile tank trucks).

Example Best Management Practice (BMP): Develop and implement a spill clean up and response plan and train employees.

Washing and Cleaning Vehicles, Equipment & Buildings: Mobile vehicle steam cleaning, washing vehicles at commercial car washes and permanent parking facilities (rental car lots and fleet lots), washing tools or equipment outside, outdoor cleaning of commercial cooking equipment, washing the outside of buildings and mobile interior building cleaning.

Example BMP: Temporarily block off storm drains and collect and dispose of all wash water to the sanitary sewer with prior approval.

Loading and Unloading Liquids or Solid Materials by Truck or Rail: Transferring non-containerized bulk liquids from truck or rail and loading and unloading materials at a commercial or industrial loading dock.

Example BMP: Install and clearly mark emergency shut off valves in case of a spill and provide employee training on how to operate the valves. Train employees in proper transfer procedures to avoid spills.

Storing Liquids in Stationary Above-Ground Tanks: Storing liquids such as chemicals, fertilizers, pesticides, solvents, grease or petroleum products in stationary tanks above the ground.

Example BMP: Use drip pans and absorbent pads at taps and spigots in case of incidental spills.

Storage of Liquids, Food Wastes or Dangerous Wastes in Outside Portable Containers: Outside storage of vegetable grease, animal grease, other food wastes, used oil, liquid feedstock, cleaning compounds, chemicals, solid waste or dangerous waste.

Example BMP: Liquids should be stored with tight fitting lids in covered areas to avoid contact with stormwater. The storage area should have secondary containment in case of a spill where, at minimum, 110% of the volume of the largest tank or 10% of the total volume of liquids can be contained.

Outside Storage of Non-Containerized Materials, By-Products or Finished Products: Storing things like non-liquid pesticides or fertilizers, contaminated soil, food products or food wastes, metals, building materials, sand, gravel, road salt and topsoil.

Example BMP: Store stockpiled materials indoors and away from contact with stormwater. If materials are stored outdoors, cover the stockpile with plastic sheeting or tarps and secure them with sandbags or ties to avoid damage from wind and rain.

Outside Manufacturing: Processing, fabrication and maintenance or repair of vehicles and equipment. Other examples include sand blasting, painting, coating or finishing of vehicles, products and equipment.

Example BMP: Sweep the work area to remove accumulated material on a frequent basis or, if possible, hire a vacuum truck sweeper service to clean the area. Whenever possible, cover the area. Do not wash materials down a drain.

Landscaping Construction or Maintenance: Landscape construction and other "land disturbing" activities, also fertilizer and pesticide application and disposal of yard waste near a public drainage system.

Example BMP: Place leaves, grass clippings, and other vegetation into yard waste bins or compost them; do not wash or blow materials into the street or storm drains.

Resource Venture Contact Information:

www.resourceventure.org
(206) 343-8505

Free Pollution Spill Kits

Available for Seattle Businesses

Seattle is a city defined by water. Puget Sound, Lake Washington, Lake Union and the Ship Canal, the Duwamish Waterway, urban creeks and small lakes each enhance the quality of life for those who live and work here. Seattle's major waterways bustle with water-oriented businesses and support one of the premier industrial seaports on the West Coast.

Oil, chemicals and other pollutants that spill into the storm drainage system may go directly into our waterways — without any treatment. One way you can prevent and clean up spills is by having a spill kit and plan. To make it easy, the City of Seattle is offering free spill kits to qualifying businesses as part of the Mayor's "Restore our Waters" initiative.

All Seattle businesses that manufacture, store, use or transport liquids have the potential for a spill. Even drips, leaks and fluid splashes can add up to a big mess and must be cleaned up as they occur. Creating a spill kit and plan is the most cost-effective way to prevent and deal with a potential spill. Most clean ups cost between \$5,000 – \$10,000.



Spill Kit Contents

- Gloves
- Goggles
- Instruction sheet (for cleaning up spill)
- Two sorbent booms (each about 2' long)
- Pads
- Plastic sheeting (for drain cover)
- Garbage bags & zip ties
- Grate hook (for lifting storm drain cover)
- Spill kit poster

How To Order Your Free Spill Kit

To receive your free spill kit, visit www.resourceventure.org/links/spillkit and complete a spill plan.

Questions about the spill kit?

Call the Resource Venture at 206-343-8505.

It's the law

Cleaning up is not just the right thing to do; it's the law. If there is a chance that pollutants could be carried by rainwater off your site, your business is required to:

- Create and follow a spill prevention and clean up plan
- Keep a spill kit with response equipment anywhere spills may occur
- Train your employees in how to prevent and respond to spills

Once your spill plan is received, an Environmental Coalition of South Seattle (ECCOSS) staff member will contact you to set up a site visit. During the visit, you will receive your spill kit, a laminated copy of your business' spill plan, a laminated map of your facility showing the location of the spill kit and storm drains, and training on how to use and dispose of the spill kit contents. The Spill Kit Incentive Program is a partnership of the "Restore our Waters" Initiative and Seattle Public Utilities and is being administered by Resource Venture and ECCOSS.

Resource
Venture

Green Business Solutions

a service of Seattle Public Utilities

How to Clean Up a Spill



Evaluate the situation. Put on protective equipment. Implement your site specific spill plan.



Stop the source of the spill.



Protect the storm drain. If material has entered a storm drain, notify agencies listed on the back of this poster.



Apply kit materials to spill.



Clean up and dispose of used spill kit materials appropriately. For help, call Resource Venture: 206-343-8506.



Replenish the spill kit. See reverse side for vendor information.



For more information, visit www.resourceventure.org or contact Resource Venture at 206-343-8506

Important Phone Numbers

To report a spill please contact:

Seattle Fire Department	911	(24 Hours)	For injuries or hazardous materials spills
Washington State Department of Ecology	(425) 649-3000	(24 Hours)	If spill reaches creek, river, or Sound
Seattle Public Utilities Dispatch	(206) 266-1600	(24 Hours)	To report a spill that enters a storm drain
Seattle Dept. of Transportation Dispatch	(206) 266-1219	(24 Hours)	If a spill enters a city street or right-of-way
Seattle Surface Water Quality Hotline	(206) 684-3527	(M-F, 8am-4pm)	To report a surface water quality complaint
US Coast Guard			
Seattle Spill Line	(206) 217-6230	(24 Hours)	For marine spills
National Response Center	(800) 424-8602	(24 Hours)	For marine spills

Private Spill Response Contractors:

Marine Vacuum	(800) 540-3464	(24 hours)	Emergency spill response
HRC Environmental Services	(800) 337-7455	(24 Hours)	Land and marine spill response
PSC	(877) 573-2669	(24 hours)	Emergency spill response

To replenish a spill kit:

Advanced Environmental Solutions	(800) 275-2549	http://www.advantenvironmental.com
Boshead Manufacturing	(800) 606-2677	http://www.shopboshead.com
Interstate Products, Inc.	(800) 474-7294	http://www.interstateproducts.com
New Pig	(800) 468-4647	http://www.newpig.com
SeaCor Environmental Products	(888) 644-2677	http://seacorholdings.com

For assistance with spill material disposal:

King County's Business Waste Waste Line	(206) 296-2976	Free, anonymous help with proper disposal of used spill kit materials in King County
Seattle/King County Public Health	(206) 296-4600	Solid waste disposal information in King County
Resource Ventures	(206) 243-8505	Free technical assistance and online help for spill prevention and response
ICOSS	(206) 767-0432	Free technical assistance and online help for spill prevention and response

How to Clean up **Fats, Oils & Grease**

Right Way



Wipe pots, pans, and work areas prior to washing.



Dispose of food waste directly in the trash.



Collect waste oil and store for recycling.

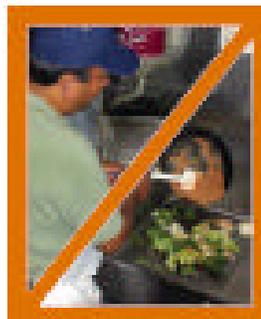


Clean mats inside over a utility sink. Use dry clean up for spills.

Wrong Way



Do not pour cooking residue directly into drain.



Avoid using the garbage disposal. Place greasy food in the trash.



Do not pour waste oil down the drain, or into street or parking lot.



Do not wash floor mats outside where water will run off into storm drains, or rinse spills into the street.

Seattle
 Public
Utilities

For more information, visit www.resourceventure.org
or contact Resource Venture at 206-343-8505

APPENDIX B. SPILL KIT INCENTIVE PROGRAM SURVEY

Numbering is not consecutive because it follows the 2005 survey for ease of comparison, even though some questions have been deleted (and numbering was not consecutive in the original 2005 survey).

November 2008

Caller Introduction and Screening

INTRO 1 Hello, this is _____ with Pacific Market Research, calling about the spill prevention kit you received from Seattle Public Utilities.

(IF NEEDED: The spill prevention kit includes materials to clean up spills, such as oil or chemicals that could enter storm drains or waterways. Seattle Public Utilities and its Resource Venture program have given free spill kits and training to businesses since 2004.)

May I please speak with [name on list] [if contact no longer works there or not available long-term, then ask for owner / manager]?

- 1 Yes
- 2 Not available at this time (schedule for callback/leave message)
- 3 No (Skip to THANK9)
- 9 Don't know/refused (Skip to THANK9)

(IF NEEDED: Let me assure you that this is not a sales call. Pacific Market Research does not sell any consumer products or services. We are conducting this study to assist in planning a stormwater program. Everything you say will remain strictly anonymous. None of your personal information will be released, and your name and telephone number will not end up on any list as a result of your participation.)

GENDER Enter Gender

- 1 Male
- 2 Female

S1 My first question is for classification purposes only. First, what is the zip code at your business address?

- 981__
- 99999 Don't know/refused

Awareness & Acceptance of Spill Kit Program

Q1 Our records show that in 200_, Seattle Public Utilities and the Resource Venture provided your business with a free spill kit and help with spill plans for preventing and cleaning up spills that may occur on your site. Do you recall receiving this free spill kit?

(Read if necessary: By “spill” I mean any type of spill, such as oils, chemicals, or other pollutants that could end up in storm drains or waterways.)

- 1 Yes
- 2 No (Skip to Q5)
- 8 Don't know (Skip to Q5)
- 9 Refused (Skip to Q5)

Q2 (Ask if Q1 =1) How did you learn about this Spill Kit Program? *(Select all that apply; do not read list)*

- 1 Direct mail
- 2 Newspaper
- 3 Website / Internet
- 4 E-mail
- 5 By Phone / Someone contacted me
- 6 Other business owner participating
- 7 From an inspector
- 8 ECOSS [*pronounced “ee-kose”*—someone called or came to my business
- 9 Person came to the business (non-specific)
- 10 SPU/Seattle Public Utilities
- 11 City of Seattle / City Representative
- 12 Chamber of Commerce
- 13 From the corporate office / another employee / union
- 14 Other (*specify*)
- 15 Don't know
- 16 Refused

Q4 (Ask if Q1 =1) How did you apply for your free spill kit? *(Select one response; do not read list)*

- 1 Applied online
- 2 By phone / called in
- 3 By mail
- 4 A person called/came to my business
- 5 Corporate office / district manager
- 6 Went to a meeting / Seminar / Presentation
- 7 Went personally to get it
- 8 Other (*specify*)
- 9 Don't know
- 10 Refused

Q4a (Ask if Q1 =1) What are the main reasons your business participated in the Spill Kit Program? (*Select all that apply; do not read list; probe for clarity*)

- 1 It was free
- 2 It is good for the environment
- 3 It is required
- 4 To avoid inspections
- 5 To avoid fines
- 6 To help with spills
- 7 We did not have a spill kit plan in place
- 8 I felt obligated to accept it
- 9 Good to have / good thing to do
- 10 To be prepared
- 11 The business has hazardous chemicals / business has risk of spills
- 12 Because of business location / location of drains
- 13 No main reason / it was just brought to us
- 14 Other (*specify*)
- 15 Don't know
- 16 Refused

Q5 Has your business participated in a spill kit training workshop with other businesses?

- 1 Yes
- 2 No (Skip to Q5b)
- 8 Don't know (Skip to Q5b)
- 9 Refused (Skip to Q5b)

Q5a (If Q5 =1) Why did your business participate in the training workshop? (*Do not read list*)

- 1 It was free
- 2 It is good for the environment
- 3 It is required
- 4 To avoid inspections
- 5 To avoid fines
- 6 To help with spills
- 7 We did not have a spill kit plan in place
- 8 I felt obligated to attend
- 9 Good thing to do
- 10 To be prepared
- 11 The business has hazardous chemicals / business has risk of spills
- 12 Other (*specify*)
- 13 Don't know
- 14 Refused

Q5b (If Q5 =2) Why hasn't your business participated in a spill kit training workshop? (*Do not read list*)

- 1 Was not aware of the workshops
- 2 Too busy / no time
- 3 Not convenient time or location
- 4 Not needed; we know how to use the kit
- 5 Other (*specify*)
- 6 Don't know
- 7 Refused

Q6 When your business experiences a spill, do you ever... (*Select all that apply; rotate response options 1 to 4; do not read other options*)

- | | | |
|---|---|----------|
| 1 | Hose it into street or drain? | Yes / No |
| 2 | Put down spill materials to soak it up? | Yes / No |
| 3 | Call a contractor to clean it up? | Yes / No |
| 4 | Call 911? | Yes / No |

(*Do not read rest of list below*)

- 5 Sweep or mop up and dispose of in garbage
- 6 Depends on the type of spill
- 7 Don't have spills
- 8 Other (*specify*)
- 9 None of the above
- 10 Don't know
- 11 Refused

Q6a How often does your business have a spill that requires spill kit materials to clean up?
[IF NEEDED: Spill kit materials include pads, floor dry, or kitty litter.] (*Read list1-6*)

- 1 Daily
- 2 Weekly
- 3 Monthly
- 4 Several times a year
- 5 Yearly
- 6 Never (skip to Q7 intro)
- 8 Don't know (skip to Q7 intro)
- 9 Refused (skip to Q7 intro)

Q6b What type of spills do you simply wash away with a hose? (*Open-ended, probe for clarity; do not read list*)

- 1 None / Nothing / don't wash spills with a hose
- 2 Oil / coolant
- 3 Food (sauces / soups)
- 4 Beverages
- 5 Water / mop water
- 6 Soap
- 7 Usually only use kitty litter for spills
- 8 Don't have drains / mop everything
- 98 Don't know
- 99 Refused

Q6c (Ask if Q1 =1) Have you had a spill at your business for which you used the free spill kit?

- 1 Yes
- 2 No (skip to Q7 intro)
- 3 Don't know (skip to Q7 intro)
- 9 Refused (skip to Q7 intro)

Q6d (Ask if Q6c =1) How did you dispose of the used clean-up materials from the spill kit? (*Select all that apply; do not read list*)

- 1 Threw away in trash / dumpster
- 2 Took to a transfer station / hazardous waste disposal site
- 3 Called the City to pick up
- 4 Called the number on the spill kit
- 5 Called another agency
- 6 Other (*specify*)
- 7 Gathered in barrel then picked up when full
- 8 Don't know
- 9 Refused

Q6e (Ask if Q6c =1) Have you ever replaced the materials in the kit that were used for the spill?

- 1 Yes
- 2 No
- 3 Don't know
- 4 Refused

Spill Plans and Practices

Q7 Intro The next few questions concern spills that might happen at your business and could reach storm drains nearby.

Q7 Does your business have a written plan for dealing with a spill? (*Do not read list*)

- 1 Yes
- 2 No (skip to Q10)
- 3 It's not written down, but my employees know what to do (skip to Q10)
- 8 Don't know (skip to Q10)
- 9 Refused (skip to Q10)

Q8 (Ask if Q7 =1) What was the primary reason you developed a written spill plan? (*Select all that apply; do not read list*)

- 1 It became required by law
- 2 As the result of a serious spill
- 3 I was informed to do so by an inspector
- 4 Good for the environment
- 5 In order to get the free spill kit
- 6 Because we work with chemicals / materials that spill / nature of the business
- 7 Instructed to by corporate office / written by corporate
- 8 To keep employees trained on what to do / everyone on same page
- 9 Protection / be prepared / safety
- 10 To contain spills / reduce area contamination
- 11 Came with the kit / SPU wrote the plan
- 12 Supposed to / they made me (non-specific)
- 13 Other (*specify*)
- 14 Don't know
- 15 Refused

Q9 (Ask if Q7 =1) Do you have the spill plan posted within your business?

- 1 Yes
- 2 No (skip to Q10)
- 8 Don't know (skip to Q10)
- 9 Refused (skip to Q10)

Q9a (Ask if Q9 =1) Is the spill plan posted directly above the spill kit, near the spill kit, or somewhere else? (*allow multiple responses; do not read list*)

- 1 Directly above the spill kit
- 2 Near the spill kit
- 3 Multiple locations (*clarify if any copies are located above or near the spill kit*)
- 5 Other (*specify*)
- 8 Don't know
- 9 Refused

Q11a Did you know that the spill plan materials are available in different languages besides English?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

Q11b Which other languages, if any, would be useful for the spill plan materials at your business? (*Do not read list*)

- 1 None (English only)
- 2 Spanish
- 3 Chinese/Mandarin
- 4 Japanese
- 5 Vietnamese
- 6 Russian
- 7 Amharic
- 8 Other (*specify*)
- 9 Don't know
- 10 Refused

Q12 Do you know where water and spills in your storm drains go?

- 1 Yes
- 2 No
- 9 Refused

Q13 Intro Please tell me whether you agree or disagree with the following statements about spills at your business that could end up in storm drains. (*Rotate Q13b to Q13g*)

Do you agree, disagree, or neither agree nor disagree with...

Q13b I can clean up a spill quickly so that it will not leave my site or enter into a drain.

Would that be somewhat (agree /disagree) or strongly (agree / disagree)?

- 1 Strongly disagree
- 2 Somewhat disagree
- 3 Neither agree nor disagree
- 4 Somewhat agree
- 5 Strongly agree
- 8 Don't know
- 9 Refused

Q13c If it was a big spill, I know who to call to get help containing and cleaning it up.

Q13d I have spill clean-up materials in stock.

Q13e I know where to obtain spill clean-up materials to restock my supply.

Q13f I know how to properly dispose of these clean-up materials.

Q13g Having a spill plan and clean-up kit makes my employees more aware of surface water pollution and how our business practices can help.

Q16 (Ask if Q1=1) How helpful or unhelpful was the Spill Kit Program, either from the kit you received or the knowledge that you gained? Would you say it was helpful, unhelpful, or neither? Would that be very (helpful / unhelpful) or somewhat (helpful / unhelpful)?

- 1 Very unhelpful
- 2 Somewhat unhelpful
- 3 Neither helpful nor unhelpful
- 4 Somewhat helpful
- 5 Very helpful
- 8 Don't know
- 9 Refused

Business Demographics

D Intro The following questions are for demographic purposes only.

D1 What is the type of your business? *[IF NEEDED: What kind of business is it? Or, what is its primary business function?]* (Select one response; do not read list; probe to clarify if necessary)

- 1 Automobile repair / gas station / auto body, etc.
- 2 Restaurant / bakery / bar
- 3 Industrial or Manufacturing
- 4 Print shop
- 5 Grocery store
- 8 Other (*specify*)
- 9 Don't know
- 10 Refused
- 11 Sales / Retail / Auto sales
- 12 Swimming pool
- 13 Delivery / Freight / Shipping / Warehouse
- 14 Health care (dental / doctor / pharmacy)
- 15 School / child care / learning center
- 16 Construction / painting / home materials (tile / doors / windows)
- 17 Outdoor / tree care / horticulture

D3 How long have you been with this company?

- ___ Enter in number of years (enter "0" for less than one year)
- 98 Don't know
- 99 Refused

- D4 What is your job title?
- 1 President / CEO / Owner
 - 2 Vice president
 - 3 General Manager (GM) / “the” manager
 - 4 Assistant / Shift manager
 - 5 Other manager
 - 6 Director
 - 7 Other (*specify*)
 - 8 Don’t know
 - 9 Refused

- D5 How many people, including yourself, work for your business at this location?
- _____ Enter number of employees
 - 9998 Don’t know
 - 9999 Refused

Closing / Thank Yous

Thank Those are all of the questions I have. Thank you very much for your time today

Thank 9 Thank you for your time. Have a good day / night.

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APPENDIX C. WATER QUALITY HOTLINE SURVEY

Introduction

Hi, I'm calling to follow up on a report you made to the Surface Water Quality hotline or website last year on [date]. The questions only take a few minutes, and your answers will help Seattle track how it's doing and improve its services. Is this a good time? *[If not, find out when to reschedule.]*

If more explanation is needed: This is not a marketing call, and your information will be kept confidential. We are gathering information to help meet Seattle's permit requirements under the national Clean Water Act *[don't say, unless someone asks or needs more clarification: National Pollutant Discharge Elimination System (NPDES) Phase I Municipal Stormwater Permit]*. The information will be used to develop education and outreach programs. In this case, we are asking you and other Water Quality Hotline callers about how you knew about the Hotline and your experience with calling it. None of your personal information will be released, and your name and telephone number will not be used for any marketing purposes as a result of your participation.

Caller Information

First, I'd like to verify information that was recorded at the time of your original report. Were you the reporting party? Your answers to this survey are anonymous and will not be associated with any information that identifies you or your business. The City would like to confirm this information to help track the accuracy of its reporting system, but this information will be separated from the rest of your answers. *[If not, ask for correct person and restart.]*

- Were you calling as a resident or as an employee or owner of a business?
- Neighborhood of residence or business
- Are you a government employee?
- Brief description of problem as included in the spreadsheet of Water Quality Hotline Complainants provided by SPU.

Record gender (not a question)

Reporting Experience

Now I'd like to ask you some questions about your report to the Hotline/website.

1. Did you make your report by phone or through the website?
 - Phone
 - Website
 - Other (please specify)
 - Don't know/refused

2. Have you ever reported a water quality complaint in the past?
Yes (If yes, how many times? ___)
No
Don't know/refused

3. How did you first hear about the Water Quality Hotline phone number or website?
Advertisement
Utility bill information [*Curb Waste & Conserve newsletter*]
Mail/postcard
Website
Word of mouth
Other (*please specify*)
Don't know/refused

4. How easy or difficult was it for you to find the phone number to call or the website to make your report?
Very easy
Somewhat easy
Neutral
Some difficult
Very difficult
Don't know/refused

5. What could the City do make the phone number or website easier to find? (*open-ended*)

Follow-up Experience

6. Did you hear back from the City regarding your water quality report?
Yes
No
Don't know/refused

7. Did you think the City's response to you was...
Fast
Reasonable
Too slow
Don't know/refused

8. To your knowledge, was the problem you called about fixed?
- Yes
 - No
 - Don't know
 - Refused
9. Overall, how do you feel about how the City handled your water quality complaint?
- Very satisfied
 - Somewhat satisfied
 - Neutral
 - Somewhat dissatisfied
 - Very dissatisfied
 - Don't know/refused
10. Would you call the Water Quality hotline again?
- Yes
 - No
 - Don't know/refused
11. Would you recommend the Water Quality hotline or website to others?
- Yes
 - No
 - Don't know/refused
12. How would you like to hear about water quality in the future?
- Mail
 - Utility bill inserts
 - Website
 - Other (*please specify*)

Awareness of Water Quality Concerns

13. What kinds of incidents or problems do you think should be reported to the Water Quality Hotline? (*open-ended*)
14. Do you have any additional comments you'd like to share on this topic?

Demographics

Finally, to help us improve our outreach, and make sure that our programs reach all of Seattle, I'd like to ask a few demographic questions.

For Businesses (Employees, Managers, and Owners)

- D1 What is your type of business? (*Select one response; do not read list; probe to clarify if necessary*)
- 1 Automobile repair / gas station / auto body, etc.
 - 2 Construction / painting / home materials (tile / doors / windows)
 - 3 Education (school / child care / learning center)
 - 4 Grocery store
 - 5 Health care (dental / doctor / pharmacy)
 - 6 Industrial or manufacturing
 - 7 Landscaping / tree care / outdoor
 - 8 Restaurant / bakery / bar
 - 9 Sales / retail (except grocery)
 - 10 Warehouse / freight / shipping / delivery
 - 11 Other (*specify*)
 - 98 Don't know
 - 99 Refused

For Residents

- D2 Which of the following best describes your home? Is it a...
- Single family house
 - Duplex [don't read unless needed to clarify: two-family house]
 - Townhouse
 - Apartment or condo
 - Other (*please specify*)
- D3 Please let us know which of the following best identify your race or ethnicity (*allow multiple answers, if given*):
- Hispanic/Latino
 - White/Caucasian
 - Black /African American
 - American Indian/Alaskan Native
 - Asian Pacific Islander/Native Hawaiian
 - Other
 - Refused

- D4 What is the highest level of education you have completed?
- Some high school or less
 - Graduated from high school
 - Some college
 - Two-year degree (*AA, community college*)
 - Four-year college degree (*BA, BS*)
 - Some graduate/professional school
 - Graduate/professional degree
- D5 What is your preferred language for written materials? (*do not read list*)
- Amharic
 - Cambodian
 - Chinese/Mandarin/Cantonese
 - English
 - Japanese
 - Korean
 - Lao
 - Russian
 - Somali
 - Spanish
 - Tagalog
 - Thai
 - Vietnamese
 - Other (*please specify*)
- D6 What is your age?
- 18-24
 - 25-34
 - 35-54
 - 55-64
 - 65 years of age or older
 - Decline to answer

Those are all of the questions I have. Thank you very much for your time today. Your answers will be helpful as Seattle works to keep the city clean. Have a good day / night.

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APPENDIX D. GREEN YOUR RUG SURVEY

SPU Cleaning Survey for Property Managers

1. Introduction to Cleaning Survey for Property Managers

Your responses to this survey will help Seattle Public Utilities improve its programs and help keep Seattle clean.

This survey should take about 5 to 8 minutes. Thank you for your time!

How many buildings do you manage?

- 1
- 2-3
- 4-5
- 6-10
- 11-19
- 20 or more

Do the building(s) you manage have carpets in the common areas, such as entry halls?

- Yes (all buildings)
- Some buildings, but not all
- No
- Don't know

SPU Cleaning Survey for Property Managers

2. Carpet in Tenant Areas

Do the building(s) you manage have carpets in the tenant areas, such as individual apartments or offices?

- Yes (all buildings)
- Some buildings, but not all
- No
- Don't know

If there are carpets in tenant areas, are tenants required to do any carpet cleaning?

- Yes
- No
- No carpets in tenant areas

SPU Cleaning Survey for Property Managers

3. Carpet Cleaning Provider(s)

Who cleans the carpets in the common areas, such as entry halls?

- Property manager hires company/contractor
- Property manager cleans carpets
- Both
- Other

If other, please specify below

SPU Cleaning Survey for Property Managers

4. Carpet Cleaning by Property Manager

How often are the carpets usually cleaned in your building(s) by your property management company?

- Yearly
- Twice a year
- Quarterly
- Monthly
- Other (please specify)

(If there is carpet in more than one area of the building) Is the frequency of cleaning different for the common areas and the individual tenant areas?

- Yes (please explain below)
- No
- Carpet is not in both areas
- Don't know

If yes, please explain below

Are the carpets usually cleaned during the day or at night?

- Day
- Night

The method you use for cleaning...

- Produces wash water
- Is completely chemical (produces no wash water)
- Other (please specify)

If wash water is produced, how do you dispose of the used wash water when you're finished with the cleaning?

- Pour into utility sink, toilet, or other indoor drain
- Pour into outdoor drain
- Pour on lawn or landscaping outdoors
- Haul away from cleaning site for disposal (please explain below)

(If hauled away or other, please explain where wash water is disposed of)

SPU Cleaning Survey for Property Managers

5. Carpet Cleaning by Contractor or Other Company

How does the company that cleans your carpets provide service?

- On a regular schedule (for example, every three months)
- On-call or as needed

Which company do you contract with to clean carpets? (Remember that your answers are confidential and will not be connected with any identifying information about your business.)

Has the carpet cleaning company ever asked where to dispose of used wash water?

- Yes
- No
- Don't know

If yes, what did you tell them?

Where does the used wash water usually go when they clean your carpets?

- Into a utility sink, toilet, or other indoor drain
- Into an outdoor drain
- On the lawn or landscaping outdoors
- Company hauls away from cleaning site for disposal
- Don't know
- Other (please specify)

SPU Cleaning Survey for Property Managers

6. General Cleaning Provider(s)

Who usually does the general cleaning (other than carpets) in your building(s)?

- Property manager hires company/contractor
- Property manager does general cleaning
- Both
- Other

If other, please explain below

SPU Cleaning Survey for Property Managers

7. General Cleaning by Property Manager

For general cleaning (other than carpets, such as mopping), how do you dispose of used wash water when you're finished with the cleaning?

- Pour into utility sink, toilet, or other indoor drain
- Pour into outdoor drain
- Pour on lawn or landscaping outdoors
- Haul away from cleaning site for disposal

(If hauled away or other, please explain where wash water is disposed of)

SPU Cleaning Survey for Property Managers

8. General Cleaning by Contractor or Other Company

How does the company that conducts general cleaning provide service?

- On a regular schedule (for example, weekly)
- On-call or as needed

Which company do you contract with to provide general cleaning? (Remember that your answers are confidential and will not be connected with any identifying information about your business).

Has the general cleaning company ever asked where to dispose of used wash water?

- Yes
- No
- Don't know

If so, what did you tell them?

Where does the used wash water usually go when they clean?

- Into a utility sink, toilet, or other indoor drain
- Into an outdoor drain
- On the lawn or landscaping outdoors
- Company hauls away from cleaning site for disposal
- Don't know
- Other (please specify)

SPU Cleaning Survey for Property Managers

9. Water Quality and BMP Understanding and Attitudes

Is it better to put used wash water into...

- An outdoor drain
- A sink or toilet
- Don't know
- Other (please specify)

Where does used wash water go after it flows into an outdoor drain?

- A creek, lake, or other surface water
- Groundwater
- Water treatment plant
- Don't know
- Other (please specify)

Who is legally responsible for proper disposal of waste water from your property?

- Cleaning company
- Property manager
- Tenants
- Other (please specify)

Would you like information on proper disposal practices for used wash water from cleaning?

- Yes
- No

Where do you store cleaning and landscaping chemicals?

- Outdoors
- Indoors
- Don't have cleaning or landscaping chemicals
- Don't know
- Other (please specify)

SPU Cleaning Survey for Property Managers

Would you like information on the proper storage of chemicals on your property?

- Yes
 No

How would you prefer to receive more information and assistance?

- Mailing
 Website
 Phone
 In-person
 Other (please specify)

If you would like to receive information by mail, please list your mailing address(es) below. (Your survey responses are confidential, and any contact information you provide will be kept separately.)

Do you have any additional information you'd like to share on this topic?

SPU Cleaning Survey for Property Managers

10. Demographic and Contact Information

All responses are confidential, and no identifying information about your business will be shared with the City or SPU. In a completely separate place, Resource Venture keeps a list of property managers to provide assistance on ways to save money and keep our city clean.

Your name

Company name

Types of properties managed

- Multi-family
 Commercial
 Both
 Other (please specify)

If commercial properties, type(s) of businesses included

- Retail
 Office
 Manufacturing
 Other (please specify)

Property locations (names of neighborhoods is sufficient)

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APPENDIX E. CAR WASH KIT BORROWERS LIST

The following organizations and events borrowed car wash kits between April and August 2008.

Dates Borrowed	Location of Event	Name of Organization
5/9/08	Alki Elementary School	Alki PTA
5/17/08, 8/09/08	Grocery Outlet (Martin Luther King Jr. Way & E. Union St.)	Spiritual Israel Church
6/7/08	West Seattle	West Seattle High School
7/12/08	Grocery Outlet (Martin Luther King Jr. Way & E. Union St.)	Family Car Wash
7/19/08, 7/26/08	Montlake 76 Gas Station	University of Washington Oceanographic Society
8/17/08	West Seattle	Restoration of Arts
5/18/08, 6/1/08, 6/21/08	4811 Wallingford Ave. N.	St. Benedict School
5/31/08, 6/17/08	7501 35th Ave. SW	Swedish Automotive
6/21/08	2204 S. Jackson St.	1504 Club
Ongoing	Montlake Community Center	Montlake Community Center Teen Camp
Ongoing	Meadowbrook Community Center	Meadowbrook Community Center Teen Camp

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APPENDIX F. CAR WASH KIT SURVEYS



Lender Site Information (to be completed by lending staff)

- Camp Long ELC Carkeek Park ELC Ravenna-Eckstein CC
 Ballard High School ECOSS City of Seattle/SPU
 Samoan Community Church Check-out date _____
 Roosevelt High School Staff name _____

Car Wash Kit Evaluation Survey

Thank you for filling out our car wash kit survey! Please fill out the front of this survey when you check out the car wash kit, and return it to the staff person when you are finished. When you return the kit, please fill out the back of the survey.

Borrower Survey 1: Kit Check-out

Borrower Information

Name _____ Organization _____

Mailing address (Street, State, Zip) _____

Telephone number _____ Email _____

Event date(s) _____ Host business/organization _____

Event location (address) _____

Borrower type

- School club Sports team Community organization
 Other (please specify) _____

Event type

- Fundraiser Other (please specify) _____

1. Has your organization used the car wash kit before?

- Yes No

2. How did you learn about the car wash kit? (select all that apply)

- Local event Web Someone told me about it
 Publication I've seen it used before Other (please specify) _____

3. Why are you borrowing the kit? (select all that apply)

- Host site required or requested it
 To educate drivers about fish-friendly car washing
 To meet legal requirements
 To keep soap and wash water out of storm drains and water bodies
 To protect water quality
 Other

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Borrower Survey 2: Kit Return

Date returned _____

Total number of cars washed (or best estimate) _____

Approximate number of attendees (or best estimate) _____

Number of driver surveys completed (turn in surveys to lender) _____

1. Would you use the kit in the future?

- Yes (skip to Question 3) No

2. If you would not use the kit again ("No" in Question 1), why not?

- Too difficult or cumbersome to use
 Don't think it's important
 Not conducting car washes in the future
 Other (please specify) _____

3. Were the instructions clear in the kit?

- Yes No

4. Was the kit easy to use?

- Yes No (Why not? _____)

5. Did you know who to contact if you needed help?

- Yes No

6. Where was the used water discharged?

- Indoor drain Storm drain Lawn
 Other (please specify) _____

7. Did wash water go anywhere besides the storm drain where the kit was set up?

- No Yes (Where? _____)

8. Do you have any other comments to share that could improve the car wash kit?

(Thank you for helping us figure out what is working!)

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Driver Survey

1. How many people of driving age (16 and up) are in your vehicle today, including you?
O 1 O 2 O 3 O 4 O 5 O 6 or more (how many? _____)

2. Why did you stop for a car wash here instead of going elsewhere or washing your car at home? (choose all that apply)
O Convenient/car needed a wash O Environmental reasons
O I wanted to support your organization O Cost savings
O Other (please specify) _____

3. Have you heard of "salmon friendly" car washes? O Yes O No

4. Were you aware that this is a "salmon friendly" car wash? O Yes O No (skip to Question 6)

5. If yes in Question 3, how did you know it was salmon friendly? (choose all that apply)
O Saw sign O Saw "Bert the Salmon" O Saw equipment
O Other (please specify) _____

6. Were you aware that "salmon friendly car washes help keep pollutants out of our creeks, lakes, and Puget Sound? O Yes O No

7. How often do you wash your car?
O Once a week or more O 1-2 times a month O Every other month
O 2-5 times a year O Once a year or less

8. Where do you most often wash your car?
O Full-service (professional) car wash facility O Charity car wash (like today's) O At home
O Self-service (do-it-yourself) car wash facility O Automated drive-through car wash

9. When you wash your car at home, where does the water go? (choose all that apply)
O Never wash car at home O Lawn or gravel O Creek, lake, or other surface water
O Storm drain O Sanitary sewer O Don't know
O Other (please specify) _____

10. How concerned are you about the effect of car washing on water quality in creeks, lakes, and Puget Sound?
O Not at all concerned O Not very concerned O Somewhat concerned O Very concerned

11. Please rate how likely you are to use these car wash alternatives next time you need to wash your car. (1="highly unlikely" and 5="very likely")
Table with 5 columns (1-5) and 4 rows (a-d) of car wash alternatives.

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