



Water Pollution Reporting Hotline Promotion

Background Research Report

Prepared for

Kitsap County Surface & Stormwater Management



And the West Sound Stormwater Outreach Group

Cities of Bainbridge Island, Bremerton, Gig Harbor, Port Angeles, Port Orchard, and Poulsbo

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Table of Contents

1. Project Overview	1
Background.....	1
Goals & Objectives	1
2. Key Findings	3
3. Detailed Findings	5
Review of Websites for Publicizing Reporting Hotlines	5
Words Used to Describe Reporting Hotlines	6
Reporting Hotline and Web Page Features	7
Effect of Features on Public Complaint Volume	11
Hotline Publicity by Jurisdictions in Washington State	11
Collateral Used to Publicize Reporting Hotlines	13
Reaching the Public through Emerging Technologies.....	15
Web-based Tools	16
4. Recommendations.....	17
References	19

1. Project Overview

Background

The NPDES Phase I and II municipal stormwater permits require jurisdictions to publicize a local telephone number for public reporting of spills and other illicit discharges. The public, however, regularly travels across jurisdictional boundaries, which requires knowing and finding phone numbers for each individual jurisdiction. Kitsap County, in partnership with several cities in the area, decided to utilize the County live call center (Kitsap 1) for the centralized regional water pollution reporting hotline number to serve all residents of the county, including the cities.

The results from a 2011 phone survey (*Residential Stormwater Survey Public Attitudes, Awareness and Behavior, 2011*) showed that 40% of the Kitsap Peninsula population knew to call either the Kitsap 1 Spill Hotline, 911, or a local city hall. The results also showed that about 25% would either do nothing, or not know where to report the spill, which indicated a need for more educational outreach to encourage use of the hotline. The other 35% would either call EPA, the State Department of Ecology or other entity.

This project aims to increase public awareness of stormwater pollution through the context of reporting water pollution. The results of the 2011 phone survey show that the public can easily grasp stormwater concepts within the context of specific actions, but are less likely to grasp concepts. This is evidenced by increased audience receptivity to messages about reporting spills, which relies on the public's understanding that stormwater flows to waterways untreated. Yet when asked where stormwater flows, outside the context of a specific action, the surveys conducted in 2008 and 2011 resulted in the same level of conceptual awareness at slightly over 50%. These results indicate that efforts focusing on simple actions may be more effective in changing behavior than attempting to educate residents about the fate of stormwater runoff.

Goals & Objectives

The overall goal of this project is to increase calls to the hotline and raise public awareness of stormwater pollution through better understanding of how to communicate with the general public about reporting illicit discharges in an efficient and cost effective manner. The project will provide communication materials and effective promotional methods, which will be made available for other jurisdictions to use. The specific objectives of the project are to:

- Identify the most efficient and cost effective methods of publicizing reporting hotlines.
- Evaluate the efficacy of various promotional methods, including traditional advertising and emerging technologies.
- Determine if increased public awareness of reporting water pollution results in increased understanding that stormwater flows untreated to local waterways.
- Provide recommended messaging, materials, and advertising strategies that are transferrable both regionally and statewide.

The Background Research Report is the first task of the project. The purpose is to research and document methods used by other Phase I and II jurisdictions across the country to publicize their reporting hotlines. The results will be used to inform the discussion guide for the two focus groups planned for December 2012.

2. Key Findings

- Government web pages are the most common method for advertising water pollution reporting hotlines. A review of 70 web pages revealed that the majority had a name for the hotline and a prominently displayed phone number.
- Half of the websites provided examples of spills and illicit discharges that should be reported. Examples that were in a list or bullet format stood out from examples embedded in a paragraph.
- Photos of common spills were less common and were found in 1 in 5 websites. Photos that were sufficiently large and labeled communicated more information than small, unlabeled photos.
- The words used to describe the reporting hotlines tended to come from the regulatory language of the permit rather than words that best communicate the purpose of the reporting hotline. Missing from the descriptive words are “spills” and “dumping”.
- About 1 in 3 web pages had a clickable link to an online complaint form.
- About 1 in 3 hotlines have a 24/7 response. These hotlines are either staffed full-time or are monitored after business hours.
- 1 in 4 web pages indicated that people should call 911 in the case of an emergency spill that required immediate response.
- About 1 in 5 web pages had a tagline for their reporting hotline.
- About 1 in 5 indicated the caller could remain anonymous.
- Toll free and easy to remember phone numbers were uncommon, and found in fewer than 1 in 5 web pages.
- Regional coordination occurred in 1 in 10 web pages. Typically the web pages had the hotline numbers of neighboring jurisdictions in addition to their own number.

- Email contacts for public works staff were found in 1 in 10 web pages.
- An inquiry made on NPSINFO electronic mailing list of 1,700 members yielded a response from 8 jurisdictions. Four of them provided examples of how they publicize the reporting hotline that were in addition to the web page.
- The adoption and usage of smartphones has grown at a phenomenal rate. Vendors providing web-based customer response management systems are filling a need for jurisdictions to manage growing requests from the public. Many jurisdictions now offer this service, which often includes downloadable apps to smart phones. This system allows a person driving around town to take a photo of a spill, send it electronically to the City, and track their response.

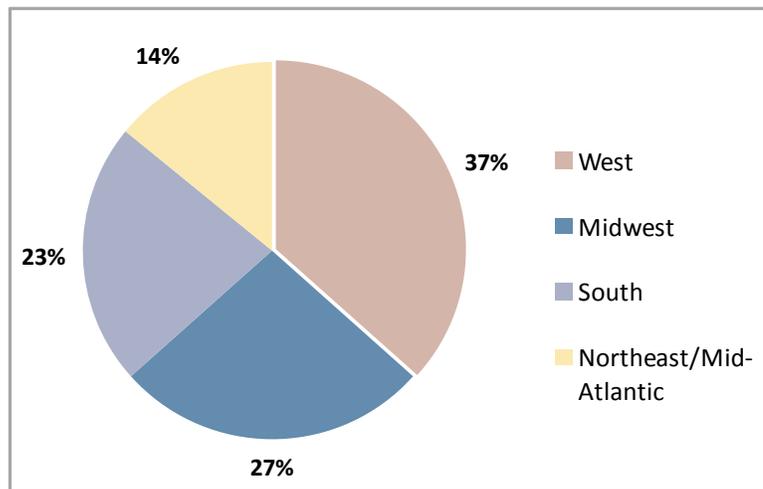
3. Detailed Findings

An internet search was conducted using the Google and Yahoo search engines to identify what other jurisdictions have done to promote their pollution reporting hotline. Search phrases included “illicit discharge water pollution reporting hotline”, “storm water pollution reporting hotline”, and “water pollution reporting hotline”. The use of these three phrases and the two search engines revealed similar websites. At around page 15 of the search results, the items listed were no longer reporting hotlines.

Since the search uncovered only jurisdictional websites, two other approaches were used to search for outreach materials. A request was made to the 1,700 members of the electronic mailing list, NPSINFO, created by EPA to discuss nonpoint source pollution control issues. The post specifically requested examples of promotional materials that have succeeded in increasing public reports of illicit discharges and spills, web pages that have effectively reached the public, and the use of emerging technologies. After receiving a small response to the NPSINFO request, seven jurisdictions (City of San Diego, Orange County, CA, ST. Lucie County, FL, Raleigh, N.C., Auburn, AL, Westchester County, N.Y., and Think Blue Maine) were contacted directly by email, and two responses were received.

Review of Websites for Publicizing Reporting Hotlines

Government websites are the most common vehicle for advertising the water pollution reporting hotline. The internet search yielded 71 websites from around the country. Some states appeared more often in the search than others. The reporting hotline websites appeared most frequently in the states of California, Washington, Texas, Tennessee, New York, and Michigan. In selecting websites, an attempt was made to develop a cross-section of jurisdictions



from different parts of the country. The pie graph shows that more than 1 in 3 of the websites comes from western states. About 1 in 4 was from the mid-western and southern states. The smallest proportion was from the northeast and mid-Atlantic states.

The majority of reporting hotlines are featured on the public works pages of a city's or county's website. Four of the reporting hotlines were publicized through post-secondary institution, and environmental organizations, as listed below:

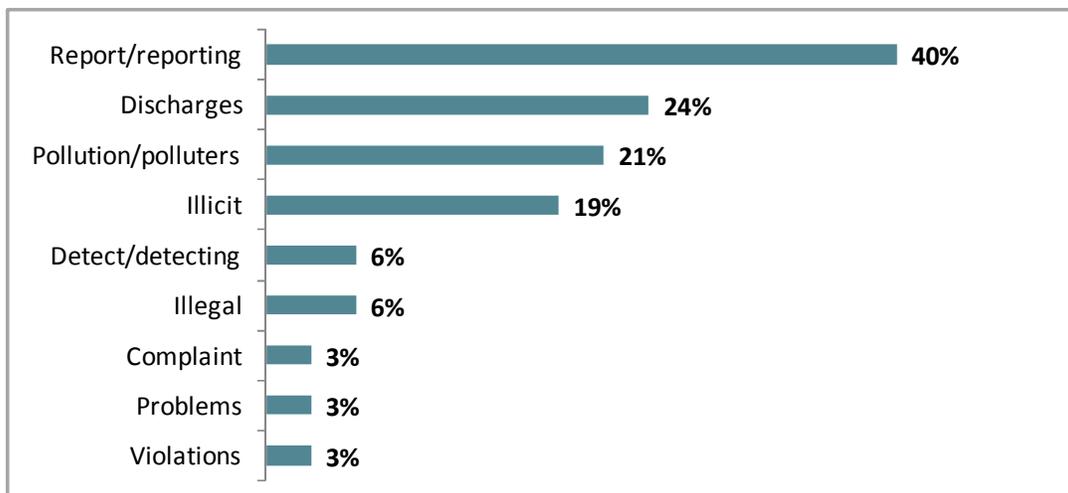
- **Mojave River Watershed Group** operates a 24-hour hotline for San Bernadino County and 3 cities.
- **Iowa State University** operates the 24-hour stormwater hotline for the community and campus.
- **Citizens for a Healthy Bay** operates a 24-hour water quality complaint line for the City of Tacoma.
- **Eastern Maine Community College** manages a stormwater hotline for communities in eastern Maine.

Words Used to Describe Reporting Hotlines

The terminology used in the websites plays an important role in communicating to the public about the purpose of a water pollution reporting hotline, how it works, and what kinds of events warrant reporting. The choice of words and phrases also has the subtle effect of communicating the urgency of the situation. Headlines are effective in giving the reader a call to action and to convey why reporting hotlines are important. About one-half of the websites had a headline. The most frequently used words were “report”, “illicit”, “discharge”, “storm water” and “pollution”.

Below is a summary of the most commonly used terms in headlines on web pages used to describe the purpose of the reporting hotline:

Commonly Used Terms for Describing Reporting Hotlines



Headlines that start with an active verb, such as “report”, outnumbered headlines using passive language, such as “reporting” and “detecting”. Other commonly used terms were “discharges”, “pollution” or “polluters”, and “illicit”. The words used to describe the reporting hotlines tended to come from the regulatory language of the permit rather than words that best communicate the purpose of the reporting hotline. Missing from the descriptive words are “spills” and “dumping”.

Reporting Hotline and Web Page Features

The 71 websites were evaluated for features that promote the reporting hotline. The features listed in the table below were found in the websites reviewed.

Hotline Features	Web Page Features
Name of hotline	Tagline to brand the hotline
Prominently displayed number	On-line complaint form
Toll-free number	Description provided of common spills
Number is easy to remember	Photos provided of common spills
Mentions 911 for emergencies	Publicizes phone numbers of neighboring jurisdictions
24/7 response	Email address provided for staff contact
Callers can remain anonymous	

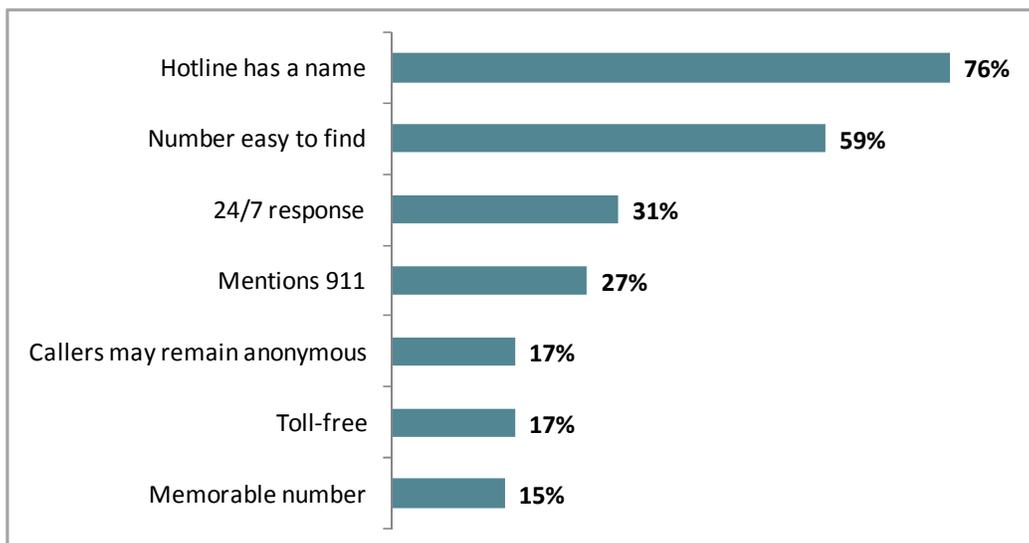
The premise of counting the number of features on each website was that there might be a connection between the number of features and number of calls to the hotline. For example, a website that mentions the reporting hotline, but does not even bold the phone number or provide an explanation of why the public may want to report stormwater pollution is probably less effective in reaching the public than one that provides the features listed in the table.

Hotline Features

The two most common hotline features were that the hotline had a name and the number was easy to find, meaning that the number was either bolded or enlarged, or both. Not surprisingly, the name most frequently given name was “Stormwater Hotline”. A few jurisdictions that have a 24/7 hotline advertised it as the “24 Hour” hotline. Only one jurisdiction, the City of San Diego, used a brand developed for their overall stormwater program, and called it the “Think Blue Hotline”.

Nearly 1 in 3 of the hotlines featured a 24/7 response system. Many of these 24/7 hotlines are staffed during business hours and monitored by an on-call duty officer after business hours and on weekends. About 1 in 4 mentions that 911 should be called in the case of an emergency. About 1 in 5 state that the caller can remain anonymous and need not provide personal information. Toll free and easy to remember phone numbers were also not very common.

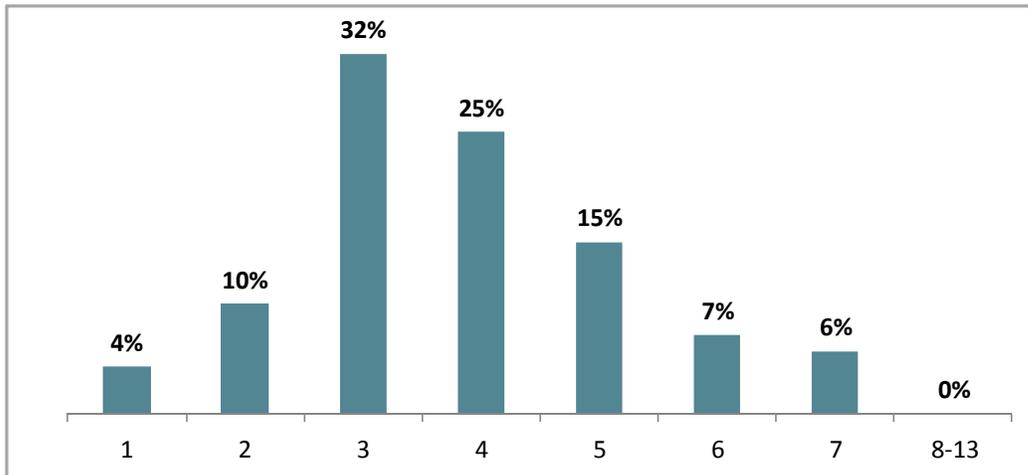
Hotline Features



Web Page Features

The majority of web pages (71%) contained 4 or fewer web page features considered to be potentially effective in communicating the importance of stormwater issues and use of the reporting hotline. About 1 in 4 web pages (28%) included 5 to 7 features. None of the web pages had more than 7 features.

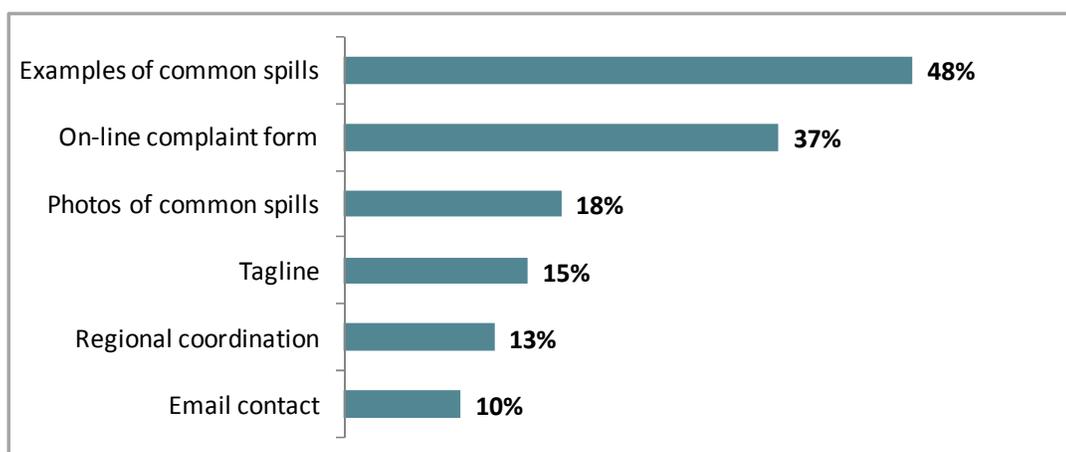
Number of Features on Reporting Hotline Web Pages



Some of the websites devoted several pages to the reporting hotline, while others gave it a half page or less. Half of the jurisdictions provided examples of common discharge violations. Examples that were listed in bullet format were easier to find than those listed in paragraph format. Some of the jurisdictions also listed types of discharges that are exempt from the illicit discharge and detection regulation. Snohomish County had the most web page features for their reporting hotline, including a list of “Mysterious ... But Not Dangerous” situations that might alarm the public but actually be naturally occurring conditions that are not harmful to fish, wildlife of humans.

The graph shows the frequency of reporting hotline features.

Web Page Features



More than one in three of the jurisdictions featured a complaint form that the user clicks on, fills out the information online and sends it. This feature may be more user-friendly than a hotline during non-business hours as it is responsive to the immediacy of the situation and allows for more elaboration than a voice message.

Photos of common spills were provided by 1 in 5 jurisdictions. Some of the photos were small making it difficult to figure out what they were showing. Larger photos with captions were more useful.

About 1 in 5 had a tagline for their reporting hotline web page. Some of taglines were:

- Be Part of the Solution to Stormwater Pollution (Hingham, MA)
- Be a Stormwater Hero (San Bernadino County, CA)
- Pollute Your Water, Pollute Yourself (State of NC)
- You are the Solution to Stormwater Pollution (Spokane County, WA)
- The Drain is Just for Rain (Kitsap County, WA)
- It all ends up in the Grand River (East Lansing, MI)
- Our Water, Our Future, Ours to Protect (Decatur, IN)
- If it doesn't look Right or Smell Right, Then it isn't Right for our River (Menomonee Falls, WI)

One in 10 coordinates the reporting hotline with other jurisdictions. The jurisdictions within a county may share a hotline number, or the county may publish the individual hotline numbers

for each jurisdiction. For example, Napa County, CA posts the hotline numbers for all jurisdictions within the County, including numbers for after business hours. In Orange County, CA all jurisdictions use the same online reporting form which gets submitted to the County Public Works Department.

About 1 in 10 web pages publishes the email of a public works staff to contact about a discharge. The email contact is always an additional point of contact to the hotline number.

Effect of Features on Public Complaint Volume

Ideally, the number and type of website features could be reviewed and compared to the number of hotline calls to determine if there was a correlation between the two. Due to the different methods jurisdictions use to track and report water quality complaints, it was not possible to compare the data. For example, many jurisdictions enhance the reporting system by making available on their website the ability to report a spill using an online complaint form, or to contact a staff member directly by phone or email. These complaints would be tracked separately from the calls to a hotline.

The effect of website features will be tracked pre and post outreach used in the pilot campaign. Those results will be detailed in a separate report.

Hotline Publicity by Jurisdictions in Washington State

The web pages of stormwater hotlines in Washington State were assessed to see if there was any noticeable difference between the Phase I and Phase II jurisdictions. Phase I jurisdictions, which are the larger and more urbanized than their Phase II counterparts, have more resources to devote to educational outreach about stormwater runoff.

The research showed that there are multiple state numbers for reporting spills. The Washington Department of Ecology provides a system for the public to report complaints through the Environmental Report Tracking System (ERTS). The Ecology home web page has a link for reporting an environmental problem that takes the user to a webpage. Users have the option of calling a hotline that is staffed 24/7, reporting online, or sending an email. Ecology responds to emergency spills and will refer a report of a non-emergency spill or illicit discharge to the jurisdiction where it is located. The State also operates an emergency spill hotline through the Washington Emergency Management Division. Both of these state hotlines are intended for spills or discharges that present a threat to human health, welfare, or the

environment. Multiple phone numbers are provided to correspond to geographic areas of the State.

The Washington Department of Health operates a hotline for a spill or discharge that might cause bacterial contamination of shellfish. There is also a national reporting system operated by the National Response Center.

Some jurisdictions, such as Clark County, publicize the Ecology reporting hotline on their web page. Clark County does not publicize a local reporting hotline.

Comparison of Web Page Features between Phase I and Phase II Jurisdictions

	Hotline Tagline	On-line Complaint Form	Examples of Spills	Photos of Spills	24/7 Response	Regional Coordination	Email contact
Department of Ecology		X			X	X	X
Phase I Jurisdictions							
Seattle		X					
Tacoma			X		X		
King County		X	X			X	X
Pierce County			X	X			X
Snohomish County		X	X	X			
Phase II Jurisdictions							
Bellingham			X				
Bothell		X					
Wenatchee		X				X	
Kitsap County	X		X	X			X
Spokane County	X		X	X			
Thurston County		X					

Based on this small sample of jurisdictions, the publicity of the hotline on the websites is not very different between the Phase I and II jurisdictions. The most common web page features found in this sample were the on-line complaint form and examples of spills.

Some of these jurisdictions use other means for publicizing the reporting hotline. Based on a review of their websites, several jurisdictions advertise the number on the back of the water

quality inspector's business cards, publish it in flyers, and other publications that are distributed to all households. The City of Bothell has developed door hangers, bottle openers, and magnets, which are presented in the following section.

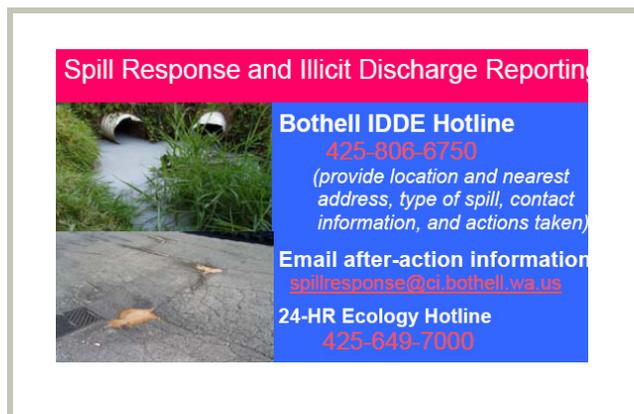
Collateral Used to Publicize Reporting Hotlines

The background research included an information request to the 1,700 members of the electronic mailing list, NPSINFO, created by EPA to discuss nonpoint source pollution control issues. The post specifically requested examples of promotional materials that have succeeded in increasing public reports of illicit discharges and spills, web pages that have effectively reached the public, and the use of emerging technologies.

The request yielded 8 responses with 4 jurisdictions pointing to their web page and 4 providing additional outreach materials. The additional promotional materials are listed below.

Bothell, WA developed cards, door hangers and magnets to publicize the reporting hotline. A business card was created for all City staff to hand out to the public. The spill hotline business card was turned into fridge magnets. This year Bothell plans to develop magnetic bottle openers. The hotline was also publicized in the Fall 2011 Bothell News and Recreation Guide and other city publications.

Hotline Business Card



Magnets and Bottle Openers



Notice in Local Publications

REPORT SPILLS CALL 425-806-6750

Whatever enters Bothell storm drains travels directly to the nearest lake, stream, or wetland without treatment. Please report any spills as quickly as possible so we can minimize the damage to our residents and our environment. **Remember, Nothing but Rain Down the Drain!**

Bothell City staff also created door hangers and fact sheets in the neighborhood of a spill to educate residents about what to do in the event of a future spill.

Door Hanger

<p style="text-align: center;"></p> <p style="text-align: center;">ATTENTION: SPILL FOUND IN YOUR AREA!</p>  <p>Last week approximately 5 gallons of paint was poured into the storm water detention system. This paint traveled through over a half mile of pipe before discharging into a stream and neighboring pond with fish.</p> <p>The stream and pipe system drain untreated into Horse Creek, the Sammamish River, and eventually Puget Sound.</p> <p>Dumping or allowing anything but stormwater into the storm system is an illicit discharge, which is prohibited by City code (BMU 18.04.260).</p> 	<p style="text-align: center;"></p> <p>City of Bothell storm drains do not connect to the sewer system, so anything that enters the storm drain passes directly to the nearest pond, river, or wetland without treatment. This is why it's so important to keep all pollutants out of our storm water system.</p> <p style="text-align: center;"><i>Remember, Nothing but Rain Down the Drain</i></p> <p>Report Spills: Reporting spills right away helps us to minimize the damage to ourselves and our natural systems. Please call us as soon as possible if you see or smell something in your storm drains. 425-806-6750</p> <p>Latex Paint Disposal: For latex paint, you can add cat litter to dry out the remaining material and place it in your garbage for collection.</p> <p>Water-based Paint Disposal: Wash brushes and equipment in sink. Dried paint can be disposed of in the trash.</p> <p>Oil-based Paint Disposal: Clean brushes with thinner, then dispose of paint sludge and thinner as hazardous waste (check local disposal sites for King and Snohomish County).</p> <p>For more information contact: Kristin Terpstra, P.E. kristin.terpstra@ci.bothell.wa.us 425-486-2768</p> 
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Durham, NC produced a training video. The video, which is still under development, was created to train municipal employees about how to identify and report illicit discharges. The video creators may edit it down and produce a short version that local governments can use in giving presentations to watershed groups and others.

Orange County, CA publicizes their hotline number on their media outreach, including brochures, posters, key chains, and print media ads. This year they created an iPhone App called OC Works, which allows the public to report on a variety of issues, including water pollution problems. The County has been receiving a steady stream of reports through this App, and a Public Works representative mentioned that reports through the App may one day exceed calls to the hotline.

Arvada, CO uses a network based customer response management system to manage customer complaints on a range on public works issues, including the reporting of spills and illicit discharges. This is discussed in more detail in the following section.

Hamilton County, OH created a mascot, “Stormy”, to help publicize the reporting hotline. Stormy is featured on billboards, educational displays, their web page, and other media to advertise the water pollution hotline.

Stormy, the Mascot



Reaching the Public through Emerging Technologies

The adoption and usage of smartphones has grown at a phenomenal rate. According to the Pew Internet & American Life Project research, nearly half (46%) of American adults own smartphones as of February 2012, an increase of 11 percentage points over the 35% of

Americans who owned a smartphone in May 2011. Two in five adults (41%) own a cell phone that is not a smartphone, meaning that smartphone owners are now more prevalent within the overall population than owners of more basic mobile phones.

Nearly every major demographic group, including men and women, younger and middle-aged adults, urban and rural residents, the wealthy and the less well-off experienced a notable uptick in smartphone penetration over the last year. Overall adoption levels are at 60% or more within several cohorts, such as college graduates, 18-35 year olds and those with an annual household income of \$75,000 or more.

Although this overall increase in smartphone ownership is relatively widespread, several groups saw modest or non-existent growth in the last year. Chief among these are seniors, as just 13% of those ages 65 and older now own a smartphone. (Pew Internet & American Life Project, 2012).

Web-based Tools

Web-based tools that make it easy for constituents to report issues to the government and for them to respond in a timely fashion have become widely available in recent years. These tools are known generally as Citizen Response Management (CRM) Systems and build on the 311 systems that many municipalities have adopted to report a non-emergency. The idea behind CRM is to make government accessible and responsive to citizen concerns. Several vendors offer this fee-based platform to municipalities. Some, though not all, use custom web interfaces, GPS coordinates, and downloadable applications for smart phones to make it convenient for citizens to file complaints on a wide range of issues and to track government response to complaints.

While many municipalities around the country are using web-based tools for handling citizen complaints, this report includes a description of how this system works in two communities.

Bainbridge Island, WA

The City of Bainbridge Island, WA (population 22,000) started using SeeClickFix three years ago. Citizens can report on code enforcement issues, potholes, downed signs as well as spills and illicit discharges. A free downloadable app is available for iPhone, Android, and Blackberry mobile phones. Citizens can take a picture of the violation on their phone and send it to the website, where it appears on a map and gets transmitted to the responsible city staff. The

service is advertised on the City's website. Traffic has been consistent since the City introduced this service. There have been only 2 illicit discharge complaints during the 3 year timeframe.

Arvada, CO

The City of Arvada, CO (population 107,000) uses the Government Outreach tool that allows citizens to send in complaints 24/7. Citizens can get answers to common complaints through an FAQ on the City's website and then be directed to a hotline manned 24/7 or file an online complaint. The City staff is notified about the complaints through their phone. This tool also has the option for citizens to take a photo of the violation and send it through their smart phone.

Since the system went live in September 2007, the City has received about 350 views on their FAQs about illegal dumping and spills but only a handful of citizens have made a service request. The low number of service requests may be due, in part, to the extensive FAQs on their website which was effective in answering the customer's question.

4. Recommendations

The findings of this report will be used to inform the focus group discussion. The following aspects of promoting a reporting hotline should be investigated further during the focus groups:

- Test terminology that relates best with the public. Are the regulatory terms used by Public Works staff, e.g. illicit discharge, illegal discharge, violations, the most accessible terms to use with the general public?
- Where are the best places to promote the hotline? This report focused on websites, but are there other affordable places to advertise the hotline that would be effective?
- Determine if it's important for the public to understand that drains and ditches lead to surface waters.
- Investigate the role photos of common spills and discharges plays in communicating the urgency to use a reporting hotline.

- Test web page features and determine which ones appear to be most important:
 - Clickable link to a on-line complaint form
 - 24/7 response
 - Photos of common spills
 - Ability to remain anonymous
 - Email address to contact water quality inspector
 - Examples of spills and discharges that should be reported
 - Publicizing phone numbers of neighboring jurisdictions
 - Incorporating web-based customer response management system for use with and without smartphones.

References

Cunningham Environmental Consulting. *Residential Stormwater Survey Public Attitudes, Awareness and Behavior*. Prepared for Kitsap Peninsula Clean Runoff Collaborative. December 2011.

Pew Internet & American Life Project. *Nearly Half of American adults are smartphone users*. March 1, 2012. <http://www.pewinternet.org/Reports/2012/Smartphone-Update-2012.aspx>.