Don't Drip and Drive. Fix that Leak! Vehicle Leak Education and Behavior Change Project

Evaluation Report

Prepared for

Stormwater Outreach for Regional Municipalities (STORM)

Prepared by

Cascadia Consulting Group

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Executive Summary

Overview

From August 2012 to June 2013, STormwater Outreach for Regional Municipalities (STORM) conducted the Vehicle Leak Education and Behavior Change Project funded substantially by the Grants of Regional or Statewide Significance (GROSS) program of the Department of Ecology. Participating STORM members, supported by a core project team, researched and developed the *Don't Drip & Drive. Fix that Leak!* campaign to address leaking vehicles that could impair regional water quality. In April 2013, a comprehensive outreach campaign was conducted that included:

- Support from local jurisdictions throughout the Puget Sound region to check vehicles at Vehicle Leaks Blitz events and promote campaign messages.
- Partnerships with local repair shops to provide free leak inspections and discounted repairs.
- A multi-media marketing campaign.

The primary outcome goal of the project was to test up to 10,000 vehicles for leaks in the Puget Sound Region. The project also sought to motivate owners of leaking vehicles to repair their leaks and to develop and assess a pilot campaign that can be used in the future and elsewhere.

During and after the campaign, local jurisdictions and automotive shops that participated in the campaign were asked to track their activities and provide input on the pilot campaign to inform the project evaluation.

Results

Project Outcomes

A total of 6,963 vehicles received free inspections for leaks through the campaign:

- 2,961 vehicles were checked at Vehicle Leaks Blitz events.
- 4,002 vehicles were checked by participating ASA automotive shops during the month of April.

Among these vehicles, 2,063 were found to have leaks, with a leak rate of 9 percent found at blitz events compared to a leak rate of 45 percent found by automotive shops. ASA shops reported repairing 709 vehicles, for a repair rate of 40% among leaking vehicles identified by shops.

When assessing the number of vehicles inspected, however, it is important to note that some participating auto shops routinely inspect vehicles for leaks; consequently, some of the reported inspections would have occurred without the campaign.

Partnerships

The campaign partnered with over 30 local jurisdictions that participate in STORM stormwater outreach groups (SOGs) or ECO Net (Education, Communication, and Outreach Network) groups as well as with

the Automotive Service Association of Washington (ASA) to promote campaign messages and assist with checking and repairing vehicles. Partners were given resources such as posters, logos, displays, and sample messaging for websites, social media, direct mailings, and newsletters. The majority of local jurisdictions surveyed said they would be likely to participate in a future phase of the campaign.

Marketing Campaign

The campaign was marketed through region-wide radio ads, earned media from events and press releases, local jurisdiction promotion, and a program website (www.fixcarleaks.org) that linked to ASA's website. The radio campaign was estimated to have received 8.6 million impressions from paid radio spots and unpaid promotions and PSAs. Earned media and promotional activities by local jurisdictions and ASA contributed another estimated 1.2 million impressions. The majority of these impressions came through local jurisdictions' efforts, including direct mail, print stories, advertisements and earned media.

Program Cost

The Washington State Department of Ecology funded the majority of this project through a $290,088 grant administered by King County on behalf of STORM. Contributions from project partners are estimated to have provided an additional $174,100 to the project. When contributions from both the Department of Ecology and local governments are included, the project is estimated to have cost approximately $100,000 for pilot-project start-up research; $140,000 for campaign development; and $220,000 for campaign implementation.

Summary and Lessons Learned

As a pilot project, this campaign appears to have achieved its goal to develop and test effective strategies intended to improve awareness and effect behavior change. The campaign also resulted in lessons learned that can improve future campaigns. Among these lessons, the key recommendations are:

- Conduct additional research to develop additional strategies and tools for overcoming barriers and motivating vehicle owners to check for leaks (outside of Vehicle Leak Blitz events) and fix identified leaks. Additional market research on how people select and decide to visit a repair shop and use of an experimental design to test effectiveness of different incentives for finding and fixing leaks (such as by varying the discount amount in different geographic areas) would help maximize "on the ground" effectiveness.
- Begin working with campaign partners earlier, providing them with outreach materials and evaluation forms several months before the campaign's launch date. Increase emphasis on fostering partnerships as well as on training and coordinating partners.
- Communicate with project partners weekly during the campaign about implementation expectations using campaign partners' preferred communication methods (such as email or phone).
- Modify the design of leak detection sheets used at blitz events to make them both easier to use in adverse weather and easier to manufacture.

- If budget is available, expand the reach of the campaign through online advertising and shop banners, partnerships with additional automotive organizations, and additional large blitz events. Engage additional business partners, such as insurance companies and restaurants, to provide additional incentives for people who inspect and repair their vehicles.
- Secure funding with longer and more flexible implementation timelines. Several partnership and opportunities and incentives that would have strengthened the campaign could not be incorporated due to the limited time available.

Overview

From August 2012 to June 2013, STormwater Outreach for Regional Municipalities (STORM) conducted the Vehicle Leak Education and Behavior Change Project funded substantially by the Grants of Regional or Statewide Significance (GROSS) program of the Department of Ecology. By developing and implementing a social marketing campaign, STORM aimed to decrease the threat from petroleum and other vehicle fluid leaks to stormwater runoff and water quality throughout the Puget Sound region. The primary goal of the project was to test up to 10,000 vehicles for leaks in the Puget Sound Region.

Campaign Goals and Approach

This project was developed and implemented by STORM members working with PRR and Cascadia Consulting Group, the project consultants, to facilitate the process. The campaign was designed to be implemented by partner jurisdictions throughout the Puget Sound area during the pilot period and to be replicated by local jurisdictions in the future. The campaign was also intended to enable STORM members to meet the education and outreach requirements of their National Pollutant Discharge Elimination System (NPDES) permits for municipal storm sewers.

The primary outcome goal of the project was to test up to 10,000 vehicles for leaks in the Puget Sound Region. The project also sought to motivate owners of leaking vehicles to repair their leaks and to develop and assess a pilot campaign that can be used in the future and elsewhere.[1]

To create an effective campaign, the project followed the 10-Step Social Marketing Process as described in *Social Marketing: Influencing Behaviors for Good* by Philip Kotler and Nancy Lee (2008):

1. Describe the background, purpose, and focus.
2. Conduct a situation analysis.
3. Select target audiences.
4. Set behavior objectives and goals.
5. Identify target audience, barriers, benefits, the competition, and influential others.
6. Develop a positioning statement.
7. Develop a strategic marketing mix.
8. Develop a plan for monitoring and evaluation.
9. Establish budgets and find funding sources.
10. Complete an implementation plan.

Additional details on project goals and on each step can be found in Attachment 1—Social Marketing Plan (which includes the Situation Analysis and Evaluation Plan).

[1] Additional details on project goals can be found in Attachment 1—Social Marketing Plan (includes Situation Analysis and Evaluation Plan).

Project Activities

The project used literature and program reviews, expert interviews and surveys, and audience research, including two focus groups and an online survey to inform campaign elements. Based on this research, the project team developed a social marketing plan including a campaign name (*Don't Drip & Drive. Fix that Leak!*), key messages, and an outreach strategy. The campaign launched publicly on April 1, 2013, with most activities concentrated in the month of April. The campaign consisted of the following activities:

- Partnership with Automotive Service Association (ASA) of Washington to:
  - Provide free visual leak inspections and discounted leak repair service (10% off repairs up to $50) at participating automotive repair shop; discounts were paid for by participating shops.
  - Promote the campaign on the ASA website with a searchable directory of participating shops.
  - Track and report project results.
- Development and implementation of a region-wide media campaign and landing webpage with a link to the list of participating ASA member repair shops.
- Development of leak detection sheets as a method for minimally trained volunteers to detect leaks.
- Coordination with more than 30 jurisdictions that participate in STORM stormwater outreach groups (SOGs) and two ECO Net (Education, Communication and Outreach Network) groups that:
  - Conducted Vehicle Leaks Blitz events using leak detection sheets.
  - Promoted the campaign through traditional media and local government channels.
  - Promoted the campaign using social media.
  - Tracked and reported project results.

The project team developed and implemented an evaluation strategy to assess the effectiveness of the project and help shape future campaigns. Additional details on planned project activities can be found in Attachment 1—Social Marketing Plan (which includes the Evaluation Plan).

Evaluation Methodology

This evaluation report summarizes campaign results and lessons learned that can improve similar campaigns in the future. The evaluation results were based on information provided by SOGs, participating ASA automotive shops, media outlets, and STORM members who participated in campaign design and implementation. In particular, data and information on project activities came from the following sources:

Multi-media Campaign

- Information provided by PRR and SOGs on traditional and social media impressions.
- Website analytics for the campaign website (www.fixcarleaks.org).
- Website analytics for the ASA website with a list of participating repair shops.

Partnership with Automotive Service Association

- Tracking sheets voluntarily completed by 49 out of 84 participating automotive shops to record the number of vehicles inspected and repaired.
- Follow-up interviews of two participating automotive shops.
- "Secret shopper" assessments conducted by volunteers at three participating automotive shops.

Vehicle Leaks Blitz Events

- Tracking sheets and online surveys completed by SOGs to record Vehicle Leaks Blitz event information.
- Survey of Vehicle Leaks Blitz event coordinators.

Overall Campaign Activities and Effectiveness

- Follow-up survey of 22 SOGs and campaign Advisory Committee members.
- Conversations with core project team members.
- Campaign documents with information on budget, project activities, and campaign materials including the Social Marketing Plan and outreach packets provided to SOGs and participating auto shops.

The accuracy of evaluation results may be affected by data limitations. In particular, the sample of vehicles checked for leaks was not entirely random. Results of follow-up interviews and secret shopper assessments of automotive shops should be considered anecdotal due to the very small sample size (two and three shops, respectively). In addition, several SOGs and mechanics that intended to participate in the program did not provide information on their activities (if any) and results.

Results

Project Outcomes

Through the campaign, a total of 6,963 vehicles received free inspections for leaks. Of these vehicles, 2,961 vehicles were checked at Vehicle Leaks Blitz events and 4,002 vehicles were checked by participating ASA automotive shops during the month of April 2013. Among these vehicles, 2,063 were found to have leaks, with a leak rate of 9 percent found at blitz events compared to a leak rate of 45 percent found by automotive shops. When leaks were identified, vehicle owners were offered information on the discount to repair their vehicle (10% off up to $50) that participating ASA shops offered. ASA shops reported that 709 vehicles were repaired, for a leak repair rate of 40% among only vehicles checked by shops.

It is important to note the following factors that may affect results:

- The average leak rates across all events may not represent the average leak rate for Puget Sound as a whole because the vehicles checked do not represent a random sampling of vehicles in the region.
- The rate of leaks found by auto shops was much higher than the rate found by volunteers; *potential* explanations include:
  - Auto shop technicians may be better able to identify all leaks and leak types, whereas event volunteers could only identify leaks that result in a fluid deposit on the 36" by 52" drip sheet that is placed under the engine and surrounding area. For example, brake fluid leaks cannot be detected when using the drip sheet methodology because the fluid leaks down the wheel.
  - Accuracy of tests decreases if a drip sheet is not placed under the vehicle within five minutes after the vehicle stops running (some leaks are less likely to be detected by the drip sheet if it is placed under a vehicle that has already cooled down).
  - Vehicles brought to auto repair shops may be more likely to have leaks compared to vehicles that are inspected at an event. Many vehicles taken to auto repair shops are there specifically because the owner already knows about a problem.
  - Vehicles that were found to have leaks at blitz events may have been later brought to participating mechanics for a second inspection and repair.
- Leak rates found by auto shops may not represent the actual average leak rates for all vehicles brought to auto repair shops because:
  - Approximately 48 percent of participating auto shops did not return any tracking forms.
  - Auto shops did not use a consistent sampling methodology: some shops inspected every vehicle brought into their shop while others inspected vehicles only at the owner's request.
- Some shops routinely check for leaks, so an unknown number of the inspections included in this report would have occurred without the campaign.

ASA Automotive Repair Shop Outcomes

The campaign formed an exclusive partnership with the Automotive Service Association of Washington (ASA) to promote the campaign and provide free inspections and discounts on leak repairs through participating ASA member repair shops. In exchange for promotion through the multimedia campaign, participating shops were required to offer customers free vehicle leak inspections during the month of April and discounts for vehicle leak repair through the end of June. Discounts provided by mechanics (at no cost to the campaign) offered ten percent off leak repairs, up to $50.

A total of 84 ASA auto repair shops registered to participate in the program. Of these shops, 49 participants (58%) returned completed tracking forms. Reporting shops documented that they inspected a total of 4,002 vehicles, finding that 45 percent (1,789) of tested vehicles had leaks. Of the leaking vehicles identified, shops reported repairing 709 vehicles for an average 40 percent repair rate.

The percentage of vehicles with leaks found by repair shops varied throughout the Puget Sound region, ranging from 40% to 57% of vehicles with leaks (among counties with shops that reported at least 90 vehicles checked). The repair rate among vehicles with leaks also varied, ranging from 20% to 71% (again, among counties with shops that reported at least 90 vehicles checked). A comparison of the vehicles checked and repaired by county is shown in Table 1. Not enough vehicles were inspected in Clallam, Thurston, Jefferson, or Mason counties to draw any conclusions.

While auto repair shops inspected more than 4,000 vehicles and repaired more than 700 vehicles, the evaluation was not able to determine whether these results were attributable to that campaign.

Table 1. Comparison of Program Shops and Vehicle Leaks by County

County (Number of Reporting Shops)	Number of Vehicles Checked	Number of Vehicles with Leaks	Percent of Vehicles with Leaks	Number of Vehicles Repaired	Percent of Leaking Vehicles Repaired
King (19)	**2,071**	**927**	45%	**247**	27%
Pierce (10)	**712**	**288**	40%	**204**	71%
Snohomish (4)	**473**	**210**	44%	**113**	54%
Whatcom (3)	**367**	**157**	43%	**65**	41%
Kitsap (3)	**153**	**64**	42%	**13**	20%
Skagit (3)	**94**	**54**	57%	**20**	37%
Clallam (1)	**54**	**14**	26%	**4**	29%
Thurston (3)	**38**	**33**	87%	**16**	48%
Jefferson (1)	**23**	**22**	96%	**20**	91%
Mason (2)	**17**	**14**	82%	**7**	50%
Total (44)	**4,002**	**1,789**	**45%**	**709**	**40%**

Vehicle Leaks Blitz Event Outcomes

Eleven Vehicle Leaks Blitz events were sponsored by local SOGs as a part of the *Don't Drip and Drive. Fix that Leak!* campaign. Event organizers partnered with local businesses and universities or hosted events at their own locations to test vehicles for leaks. The target audiences included business employees, students, government employees, and community members. Trained volunteers and local jurisdiction staff inspected cars on-site for free. A campaign information card was placed on the windshield of every vehicle that was tested. The information card notified the vehicle owner that their vehicle was tested, informed them whether or not a leak was found, and provided details about the campaign discount offered by participating ASA locations (10 percent off leak repairs, up to $50). Intructions for hosting and participating in a blitz event, including training and leak evaluation forms can be found in Attachment 2— SOG Partner Toolkit.

Overall, a total of 2,961 vehicles were checked at 10 blitz events in April and one blitz event in May. Among the vehicles checked, 274 were found to have leaks, for a leak rate of nine percent. Both the highest and the lowest leak rates occurred among student vehicles: Western Washington University (19%) and the University of Washington–Bothell (5%). Two events at Boeing accounted for more than half of all vehicles checked at blitz events: 1,826 vehicles together. The leak rates by target audience for the blitz events are shown in Table 2.

Table 2. Leak Rates for Targeted Audiences

Target Audience	Number of Vehicles Checked	Number of Leaks Found	Leak Rate
Boeing employees (Renton)	911	105	12%
Boeing employees (Everett)	915	59	6%
Students	734	80	11%
Government employees	374	27	7%
Community	27	3	11%
Overall	**2,961**	**274**	**9%**

Blitz events varied in size, location, target audience, and whether vehicle owners were asked to opt-in or opt-out of the inspection. Additional details for the blitz events are shown in Table 3.

Table 3. Vehicle Leaks Blitz Event Summary

Event Location	Event Sponsor	Number of Events	Vehicles Checked	Leaks Found	Leak Rate
Boeing Employees					
Boeing (Renton)	King County	1	911	105	12%
Boeing (Everett)	Snohomish Co. SWM	1	915	59	6%
Students					
Univ. of Wash.–Bothell	Bothell	2	429	23	5%
Western Wash. Univ.	Bellingham	1	305	57	19%
Government Employees					
City of Kent	Kent	1	22	2	9%
Dept. of Ecology SWRO	Thurston Co.	1	252	15	6%
Dept. of Ecology NWRO		1	100	10	10%
Community Members					
North Creek Forest	Bothell	3	27	3	11%
Overall		**11**	**2,961**	**274**	**9%**

Event organizers were asked to complete a survey for each event to help track the campaign's progress. Additional details on each blitz event such as date, length, time of day, number of leak detection sheets used, and number of volunteers are presented in Attachment 3—Vehicle Blitz Event Coordinator Survey Summary.

Partnerships

Local Jurisdictions

The campaign partnered with SOGs to promote campaign messages and hold blitz events. A total of 20 jurisdictions from SOGs and two ECO Net groups indicated they would promote the campaign in their jurisdictions. A toolkit containing electronic files of Vehicle Leaks Blitz instructions and forms as well as sample text for newsletters, press releases, websites, postcards, social media (e.g., Facebook and Twitter), and bill inserts was provided to participating jurisdictions and ECO Net partners through a webpage hosted by Pierce County's website on behalf of STORM (http://www.piercecountywa.org/index.aspx?NID=3339).

The campaign also provided two in-person training workshops to present the toolkit, review blitz event procedures, and answer questions about participating in the campaign.

After the campaign, all SOGs and ECO Net groups that had expressed interest in participating were asked to complete an online survey regarding the *Don't Drip & Drive. Fix that Leak!* campaign, whether or not they actually participated.

- Of the 21 survey respondents, 18 stated their jurisdiction participated in the campaign. The three jurisdictions that did not participate mentioned lack of staff time, lack of business participation, and too narrow of a vehicle testing timeframe.

- The logos and graphics provided in the SOG packet were rated as the most helpful campaign material (16 out of 18 rating them "very useful"). Respondents also rated the downloadable toolkit and talking points highly.
- More than half of respondents said their jurisdiction didn't use social media. Of the eight jurisdictions that did use it, six rated its effectiveness as neutral on a scale from one (very ineffective) to five (very effective). Some jurisdictions stated they do not have access to social media sites and others used non-jurisdictional partners to promote the campaign through social media.
- Among the seven respondents that did not coordinate a Vehicle Leaks Blitz event, six people mentioned lack of available staff as a reason.
- Most responding SOGs (15 out of 21) said they would likely participate in a future second phase of the campaign, rating their interest as at least four on a scale from one (not at all) to five (definitely).

Additional details on the SOG partnership, such as available campaign and blitz event materials and survey responses, can be found in Attachment 2—SOG Partner Toolkit and Attachment 4—SOG-Advisory Committee Survey Summary.

ASA Automotive Repair Shops

The campaign formed an exclusive partnership with ASA to promote the campaign and provide free inspections and discounts on repairs through participating members, at no cost to the campaign. The campaign worked with ASA staff to recruit ASA member repair shops to voluntarily participate in the campaign. Recruitment activities included attending ASA local and statewide meetings and contacting members individually. Some SOGs assisted with recruitment by contacting shops in their jurisdiction. In addition to facilitating the recruitment of member shops, ASA also developed a page on their website with a searchable directory of participating member repair shops and locations offering free inspections and discounted vehicle leak repair.

Participating shops were provided with campaign tools such as a poster, window cling, counter-top display, talking points about the campaign, and sample newsletter text. In exchange for promotion through the campaign, participating shops were required to offer customers free vehicle leak inspections during the month of April and discounts for vehicle leak repair through the end of June. Discounts provided by mechanics offered ten percent off leak repairs, up to $50.

Snohomish County Surface Water Management conducted interviews with two participating ASA shops after the campaign to obtain their feedback about the overall campaign. The shops were selected because they represented two extremes: one shop checked a large number of vehicles and had a low repair rate and the other shop checked a small number of vehicles and had a high repair rate. Interviews were planned but could not be completed with two additional shops (large number of vehicles checked and high repair rate; small number of vehicles checked and low repair rate). The key findings from these two interviews were:

- One shop found it very difficult to participate in the campaign, stating the process and forms were confusing; the other shop found it very easy to participate.
- The two shops said the discounts they offered were the most helpful campaign tools, while in store displays were perceived as less effective. One shop liked the sample social media language and

window cling and recommended adding a brochure with information on the discount to take home if a customer does not want to repair a leak immediately.

- The shop campaign either did not increase their business or increased it by five percent at most.
- The two shops said they already checked vehicles for leaks on arrival (even before the campaign) and that very few customers mentioned the campaign.
- Cost was the main reason customers at these shops chose not to fix leaks.
- Both auto shops said they would participate in the campaign again.

To further evaluate the ASA partnership, Snohomish County Surface Water Management, organized Secret Shopper assessments of three participating shops to obtain insight on how shops were managing the campaign. Secret shopper volunteers went through the process of visiting the ASA website to search for a shop, scheduling an appointment, and visiting the participating shop. All three secret shoppers found making an appointment easy. One secret shopper did not have an inspection performed as they had gone to a shop that did not service their vehicle brand, which was not noted on the ASA website. The remaining two secret shoppers found campaign materials prominently displayed in the shops, felt staff were friendly and welcoming, had reasonable wait times, and were satisfied with the service—including a shopper who had a leak and received a discount from the shop. The two shoppers said they felt no pressure for additional services by the shops, and the shopper with the leak decided to have their car repaired.

Details on ASA shop campaign materials can be found in Attachment 5—ASA Shop Partner Toolkit. Details on interviews and secret shopper assessments can be viewed in Attachment 6—ASA Shop Interviews and Attachment 7—Secret Shopper Assessments.

Marketing Campaign

The project team designed messaging, logos and other graphics, sample text, and other branding elements to promote the campaign. The marketing campaign was promoted by the core project team, STORM SOG partners, ECO Nets, and ASA. Marketing campaign elements included:

- A region-wide radio ad featuring local celebrity weather reporter Steve Pool.
- A program website (www.fixcarleaks.org) that directed visitors to the ASA website (www.asawa.com/leaks) with a searchable directory of participating shop locations.
- SOG and ECO Net promotion using paper and electronic newsletters, bill inserts, press releases, social media, and other methods.
- Earned print, online, and TV coverage obtained through a kick-off event and press releases.

The estimated number of impressions and coverage of the media campaign elements are listed in Table 4 (overall campaign) and Table 5 (SOG and ECO Net promotion).

Radio ads were designed to be funny and entertaining and to reach the audience when they would be most receptive to the messaging: while driving their vehicles. The paid radio campaign used local weather reporter, Steve Pool, to appeal to the target audience through a diverse group of radio stations including KWRM-FM, KJR-FM, KZOK-FM, and KOMO-AM. Spots were purchased on KMPS-FM, but the

spots were not aired due to an error by the radio station. Additional spots were purchased on other radio stations already airing the ad. Radio ads ran for the four weeks of April with 456 paid spots at a cost of $48,000, plus additional free PSAs and promotional mentions. The final number of radio impressions was 8,696,177 (see Table 4). The total value of radio buy (combining paid and unpaid spots) was $118,743, leveraging the budget by 147%.

The www.fixcarleaks.org website received 1,759 unique visitors in April and 886 visitors in May (after the radio campaign had ended).[2] The program website served as a landing page to direct visitors to the ASA-hosted website, which had a searchable directory of shops offering free inspections and discounted vehicle leak repair. The ASA website received 8,979 hits in April and 906 hits in May (as of May 22nd). ASA was unable to obtain any other data on web visits, such as number of unique visitors to the site or link from which the visit started (see Table 4).

At the beginning of the campaign, SOGs agreed to contribute to marketing the outreach campaign, indicating which promotional methods they intended to use. Marketing methods included direct mail (such as newsletters and bill inserts), electronic newsletters, social media, print, websites, and press releases as well as events such as workshops, festivals, and blitz events. Table 5 identifies the promotional activities that each SOG confirmed it conducted, with the number of impressions where available. Additional SOGs indicated they would also promote the campaign but did not confirm whether they had conducted their intended promotional activities.

Further details on marketing campaign elements, including additional statistics on www.fixcarleaks.org, can be found in Attachment 8—Marketing Campaign Data.

Table 4. Estimated Number of Impressions by Media Type and Location

Media Type	Region-wide (Paid)	Region-wide (Earned)	Local SOGs	ASA Website
Web	2,645	69,433	491	9,885
TV		29,422		
Radio	8,696,177			
Print		332,721	187,550	
e-Newsletters			45,246	
Social Media			39,022	
Direct Mail			477,737	
Events			860	
TOTAL	**8,698,822**	**431,576**	**750,906**	**9,885**

[2] The total number of unique visitors in April and May may be less than 2,645 because some people may have visited in both April and May, so they would have been counted twice as one unique visitor in April and another unique visitor in May.

Table 5. Number of Impressions by Media Type for SOGs and ECO Nets

Media Type	Direct Mail	Print	e-News-letters	Social Media	Events	Web	TV or Radio	TOTALS
King Co.	16,000							**16,000**
Pierce Co.		X		5,554		491	X (TV)	**6,045**
Skagit Co.		X	500	X				**500**
Snohomish Co.			41,200		50		X (Radio)	**41,250**
Thurston Co.	44,000	1,000	1,700	200	75			**46,975**
Auburn	100							**100**
Bellingham	3,384	64,200		X	100		X (Radio)	**67,684**
Bothell	21,000	350	500	1,200				**23,050**
Kirkland	39,953		726	79				**40,758**
Lacey	300	103,000		10,000				**113,300**
Mill Creek		19,000						**19,000**
Monroe					130			**130**
Olympia	13,000			X				**13,000**
Renton	27,000			17,724				**44,724**
Sammamish				146				**146**
Seattle	290,000			1,319				**291,319**
Shoreline	23,000				350			**23,350**
Tacoma				2,250				**2,250**
Tumwater		X						**NA**
King Co. ECO Net			500		40			**540**
Snohomish ECO Net		X	120	550	115			**785**
TOTALS	**477,737**	**187,550**	**45,246**	**39,022**	**860**	**491**	**NA**	**750,906**

X = Outreach confirmed but number of impressions not reported. The City of Redmond also indicated it would participate but did not confirm outreach.

Leak Detection Sheet

The development of a method to check vehicles for leaks at events—leak detection sheets—was a key component of the campaign. During Vehicle Leaks Blitz events, staff and trained volunteers checked vehicles for leaks by placing the leak detection sheet under the vehicle upon its arrival (ideally within five minutes) and waiting thirty minutes before carefully removing the sheet. They then noted the absence of drips or the approximate location and color of any drips that appeared and placed an information card on the vehicle's windshield indicating whether or not a leak had been found.

Leak detection sheets were developed through internet research, interviews with mechanics, trials with a plastic sheet producer, and extensive testing. The leak detection sheets used in this campaign were approximately 36 inches wide and 54 inches long. The sheets were designed to be as long as possible given the manufacturing process. Sheets were 0.006 to 0.007 inches thick and made from a proprietary biodegradable, bioplastic formula that is a translucent white. The ends along the short edge of the sheet were creased and stapled to create a sleeve, which was used to hold a piece of stiff green polyester strapping—similar to pallet strapping—to aid in weighing the sheets down and providing rigidity during breezy conditions. The project team's ideal concept was to heat-seal the creased ends together to create a sleeve for the strapping; however, the bioplastic that was used would not retain a seal when heated-sealing was attempted.

The program and participating jurisdictions purchased 2,900 drip detection sheets, as shown in Table 6, at a price of $4.25 per sheet. Based on their experience with this initial run, the manufacturer estimates that future purchases would cost approximately $5.00 per sheet, if the design were not changed to avoid manually stapling the strapping.

Table 6. Leak Detection Sheet Purchases by Jurisdiction

Funding Source	Jurisdiction	Number of Leak detection sheets Purchased
Purchased through grant funding	City of Bellingham	300
	City of Olympia	500
	King County/Seattle	500
Purchased through local government funding	City of Bothell	100
	Seattle Public Utilities (for give-away kits)	1,000
	Snohomish County	500
	Total	**2,900**

Note: Seattle purchased additional leak detection sheets to include in give-away kits for individuals who participated in automotive maintenance workshops offered by the city. These workshops address similar themes as the campaign (identifying and preventing leaks) but were funded separately.

Leak detection sheets were stored at "hubs" around Puget Sound operated by the City of Bellingham, Snohomish County, King County/Seattle, and the City of Olympia. For the blitz events, event coordinators were able to borrow leak detection sheets from the closest hub and return them after the event. The leak detection sheets are anticipated to have a life of at least 5 years.

Project Cost Analysis

The Washington State Department of Ecology funded the majority of this project through a $290,088 grant administered by King County on behalf of STORM. Contributions from project partners are estimated to have provided an additional $174,100 to the project. When contributions from both the Department of Ecology and local governments are included, the project is estimated to have cost approximately $100,000 for pilot-project start-up research; $140,000 for campaign development; and $220,000 for campaign implementation.

Grant Funding

The final distribution of grant-funded project expenditures is presented in Table 7. In February 2013, King County and the Department of Ecology reassessed the project budget based on expenditures-to-date, shifting resources from the development of outreach tools (Task 3) and the media campaign (Task 4) to additional research for the marketing strategy (Task 2), implementation of outreach programs (Task 5), and project evaluation (Task 6); these shifts are shown in Table 8.

Table 7. Grant-Funded Project Expenditures

Task	Grant Funds Labor	Grant Funds Expenses	Total
Task 1 - Manage and administer grant project	$42,348	--	$42,348
Task 2 – Research and develop marketing strategy	$51,195	--	$51,195
Task 3 – Develop outreach tools and partnerships	$18,426	$9,680	$28,106
Task 4 – Develop and deploy media campaign	$33,940	$55,704	$89,644
Task 5 – Implement targeted outreach programs	$46,976	$10,600	$57,576
Task 6 – Evaluate project	$20,780	$439	$21,219
Total grant-funded amount	**$213,665**	**$76,423**	**$290,088**

Notes: Additional contributions outside the grant amount are presented in Table 9.

Table 8. Reallocation of Grant-Funded Project Expenditures (February 2013)

Task	Original Total Eligible Cost	Revised Total Eligible Cost
Task 1 - Manage and administer grant project	$42,347	$42,348
Task 2 – Research and develop marketing strategy	$16,283	$51,195
Task 3 – Develop outreach tools and partnerships	$42,283	$28,106
Task 4 – Develop and deploy media campaign	$155,326	$89,644
Task 5 – Implement targeted outreach programs	$19,044	$57,576
Task 6 – Evaluate project	$14,804	$21,219
Total grant-funded amount	**$290,088**	**$290,088**

Additional Contributions to Project Costs

Local government partners, ASA, and radio stations used in the media campaign provided additional funding and in-kind contributions to the project. These contributions must be acknowledged to provide a complete picture of project costs for future campaign budgeting.

Contributions from local governments, including a portion of a grant from the Department of Ecology to the City of Seattle, are presented in Table 9. Except for contributions from the City of Seattle and Department of Ecology, these contributions should be considered rough approximations estimated by local government partners. In total, local governments are estimated to have contributed at least $103,400 to the project, or more than one-third of the original grant-funded amount. SOGs also

estimated that they contributed approximately nearly 580 hours of staff time, although we are unable to estimate the dollar amount associated with this labor or whether this time was included in their estimated dollar contributions.

Table 9 also presents the contribution by radio stations of free PSAs and on-air mentions, estimated to have been worth more than $70,700. The amount of the considerable contributions from ASA and participating ASA shops in partnering, web hosting, in-shop promotion, free leak inspections, and discounted repairs cannot be estimated but must be acknowledged.

Table 9. Estimated Additional Financial Contributions from Project Partners

Source	Task and Purpose	Estimated Amount*
City of Seattle	Task 2: Additional research, including focus groups	$17,000
King County	Tasks 2–5: Project leadership and support	$15,000
Snohomish County	Tasks 2–5: Project leadership and support	$50,000
City of Seattle	Task 4: Additional media purchases	$10,000
Snohomish County	Task 5: Additional leak sheet purchases and event printing	$3,200
Other SOGs	Tasks 2–5: Project support, promotion, events	$8,200
Radio Stations	Task 4: Bonus media spots	$70,700
ASA and participating repair shops	Task 5: Promotion, free leak inspections, discount on repairs	Not able to calculate
Total		**$174,100**

* Contributions from King County, Snohomish County, and SOGs are approximate. SOGs also reported contributing 580 hours of staff time. City of Seattle funds for media purchases came from a Toxics and Nutrients grant from the Department of Ecology, which included funding from USEPA. Contributing radio stations were Warm 106.9, KJR-FM, KOMO-AM/FM, and KMPS-FM.

Adding together grant-funded expenditures and project partner contributions provides a more complete picture of project costs on which to estimate the potential costs of future projects in Puget Sound or elsewhere. Table 10 summarizes the total project costs, by task, funded by the Department of Ecology and project partners. The dollar value of contributions from ASA and repair shops is substantial but cannot be calculated. The following section separates total costs into the three categories of start-up research, campaign development, and campaign implementation for further analysis.

Table 10. Total Estimated Project Costs Funded by Grant and Project Partners

Task	Grant Funds	Outside Contributions*	Total Project Costs
1 – Manage and Administer Grant Project	$42,348	--	$42,348
2 – Research and Develop Marketing Strategy	$51,195	$35,300	$86,495
3 – Develop Outreach Tools and Partnerships	$28,106	$18,300	$46,406
4 – Develop and Deploy Media Campaign	$89,644	$89,000	$178,644
5 – Implement Targeted Outreach Programs	$57,576	$31,500	$89,076
6 – Evaluate Project	$21,219	--	$21,219
Total	**$290,088**	**$174,100**	**$393,488**

Notes: Outside contributions by individual jurisdictions to Tasks 2–5 were spread evenly across those four tasks.

Cost Analysis

Total project costs were analyzed to help STORM and other jurisdictions understand the potential costs of future campaigns and the pilot campaign's unit costs for each vehicle checked for leaks.

Potential Cost of Future Campaigns

To use pilot project costs to forecast the costs of future campaigns, total expenditures were divided into three main categories based on whether a similar campaign in the future would incur the costs.

- **Pilot project start-up research** costs include background research and strategic planning that the project incurred to identify the campaign's purpose, conduct the situation analysis, select the target audience and marketing goals, and identify audience barriers and benefits. These costs can largely be considered one-time costs, as a second phase of the campaign conducted in Puget Sound or a similar campaign conducted in another region of Washington would not need to repeat this work to the same extent. However, a campaign in another region of Washington should still conduct basic research to confirm that the barriers and benefits identified for the Puget Sound audience apply equally to the new audience.
- **Campaign development** costs include the development of outreach tools, partnerships, media materials, and evaluation methods. A second phase of the campaign conducted in Puget Sound could cost less by using the existing branding, messaging, partnerships, and outreach tools. Some additional work would be necessary to refine outreach tools and media materials based on lessons learned and to re-engage project partners, but development costs of a second phase of equal scope would be substantially less. Campaign development costs of a second phase, based on the recommendations described in this report, could increase if the number and type of project partners were expanded. A similar campaign conducted in another region of Washington could cost slightly less to the extent that it were willing to use outreach tools, media materials, and evaluation methods created for the Puget Sound region; however, another campaign may require similar levels of effort to develop local branding and partnerships.
- **Campaign implementation** costs include the purchase of media advertisements and the implementation of outreach activities and evaluations methods. These costs would be incurred by a second phase of the campaign in Puget Sound or a similar campaign conducted in another region of Washington. The level of future implementation costs depends on the level of outreach, evaluation, and marketing to be conducted.

Table 11 presents total project costs (including grant and project partner funding) for the pilot project divided into these three categories. For simplicity, administration costs (Task 1) were divided evenly across the three categories.

Table 11. Estimated Project Costs by Cost Category (Grant Funds and Project Partner Contributions)

Cost Category	Task and Notes	Estimated Amount*
Pilot start-up research	▪ Task 2 (marketing strategy)	$100,000
Campaign development	▪ Task 3 (develop tools) ▪ Task 4 (media campaign), excluding media buys ▪ Task 5 (implement outreach), drip sheet purchases ($10,000) ▪ Half of Task 6 (evaluation), estimated as planning time	$140,000
Campaign implementation	▪ Task 4 (media campaign), media purchases ($48,000) and bonus spots ($70,700) ▪ Task 5 (implement outreach), excluding drip sheet purchases ▪ Half of Task 6 (evaluation), estimated as implementation time	$220,000

* Distributions are approximate and rounded to the nearest $10,000; administration costs (Task 1) were evenly distributed across the three cost categories.

Unit Cost per Vehicle Checked

Comparing campaign costs to campaign outputs provides an estimate of the unit costs that a jurisdiction could expect when repeating the campaign in the future. This project resulted in 6,963 vehicles checked and 2,063 leaking vehicles identified. Calculations for the unit costs for these outputs exclude pilot project research and planning costs, as a future campaign would not need to incur these costs. Cost-per-output is calculated in two ways: using only campaign implementation costs (for a second phase of the Puget Sound campaign) and using both campaign development and implementation costs (for a similar campaign conducted elsewhere in Washington). As shown in Table 12, the campaign implementation cost (including both Ecology and local government funding) was approximately $30 for each vehicle checked and $110 for each leaking vehicle found. A second phase of the Puget Sound campaign could expect to achieve these unit costs, if no changes were made to refine the campaign prior to implementation or to expand the campaign's scope. When campaign development costs are included (excluding pilot start-up research), the unit costs for the campaign as a whole are estimated to be approximately $50 for each vehicle checked and $175 for each leaking vehicle found. Unit costs for individual strategies (blitz events compared to repair shop inspections) could not be calculated because of uncertainty in the amount of expenditures by SOGs and ECO Nets and the distribution of project expenditures between the two strategies (such as for partnership development, branding, event coordination, and evaluation).

Table 12. Estimated Unit Cost per Output (Grant Funds and Local Government Contributions)

Output	Unit cost per output (dollars per vehicle)	
	Campaign implementation only*	Campaign development and implementation
Vehicles checked for leaks (6,963 vehicles)	$30	$50
Leaking vehicle identified (2,063 vehicles)	$110	$175

* Excludes costs to make improvements and refinements based on lessons learned described in this report. Figures should be considered rough approximations and were rounded to the nearest $5.

Lessons Learned and Recommendations

As a pilot project, this campaign was intended to both achieve project outcomes and generate lessons learned for future campaigns in Puget Sound and around Washington State. Lessons learned are presented in the categories of organizational structure, campaign planning, leak detection sheets, Vehicle Leaks Blitz events, private partnerships (ASA), local government partnerships, marketing campaign, and project evaluation.

The key recommendations based on lessons learned are:

- Begin working with campaign partners earlier, providing them with outreach materials and evaluation forms several months before the campaign's launch date.
- Communicate with project partners weekly during the campaign about implementation expectations using campaign partners' preferred communication methods (such as email or phone).
- Modify the design of leak detection sheets used at blitz events to make them both easier to use in adverse weather and easier to manufacture.
- If budget is available, expand the reach of the campaign through online advertising and shop banners, partnerships with additional automotive organizations, and additional large blitz events.
- Revise the campaign goals to focus on encouraging behavior change (routinely check for leaks, and when found, fix them), and not simply awareness building. To overcome barriers, additional market research and incorporation of an experimental design to test effectiveness of various incentives and/or disincentives will be needed to maximize "on the ground" effectiveness.
- Secure funding with longer and more flexible implementation timelines. Several partnership and opportunities and incentives that would have strengthened the campaign could not be incorporated due to the limited time available.

Organizational Structure

The organizational structure involved creation of a Steering Committee, which included lead planners and implementers as well as consultants, to guide the day-to-day operations. The Steering Committee consulted with a larger Advisory Committee, which involved over 30 partners region-wide at strategically-timed meetings (approximately every 6 weeks) and through online surveys throughout the planning, implementation, and evaluation phases of the campaign.

- **Core group for day-to-day activities**—The organizational structure allowed a core, nine-member group to undertake day-to-day planning, and implementation, and evaluation activities while obtaining feedback from the larger group of partners. Presenting key information and proposed documents by email before meetings so group members can make final decisions during meetings would streamline the review and decision-making process.
- **Region-wide input**—Involving all participating jurisdictions in project planning led to better strategies and materials and local buy-in to ensure the campaign was implemented region-wide.
- **Advisory time**—While engaging all partners was essential to the campaign's success, this engagement required additional time and effort. Document and material review periods need to be

longer to accommodate many busy schedules, multiple review periods may be needed, and extra revision time may be needed to compile and respond to edits (sometimes conflicting) from the multiple partners.

Campaign Planning

The extensive time spent on research and planning resulted in campaign messages and materials that SOGs felt were effective. Members of the Advisory Committee appreciated the opportunity to participate in regional planning and offered the following lessons learned:

- **Dedicated staff to coordinate**—The intensive involvement of two dedicated local jurisdiction representatives (Doug Rice of King County and Stef Frenzl of Snohomish County)—supporting the larger regional group and guiding consultants—was critical to the success of the campaign.
- **Meeting locations**—Jurisdictions outside central Puget Sound appreciated that meetings were rotated around the Puget Sound region and that they were able to participate in meetings remotely.
- **Funding for coordination**—Allocating more funding for partnership coordination and setting aside a contingency budget could be helpful in future pilot projects. The campaign spent more time and budget than expected on meetings and coordination as well as background research and planning, which reduced resources available for implementation and evaluation. As a result, several SOGs felt the campaign planning after the research phase and before the April launch was rushed.
- **Engaging partners**—Engaging more members of the Advisory Committee outside of meetings to assist with specific tasks, particularly in their area of expertise, could have better distributed the planning work. This would take additional time to coordinate and delegate tasks, but would potentially improve efficiencies, and create more "buy in" and engagement among project partners.
- **Campaign time window**—The project team chose a one-month campaign window to create a sense of urgency and make messaging easier (e.g., "one month only" or "this April"). It also maximized the available budget by saturating the selected media outlets during a concentrated period of time. If additional marketing funds were available, future campaigns could be extended to two months, but a limited-time campaign is still recommended. Aligning the campaign with the auto industry's auto care campaigns in spring (April—May) and fall (September—October) could improve messaging.

Leak Detection Sheets

In general, leak detection sheets were an effective way to identify leaks when they could be immediately placed upon arrival (within five minutes) and left in place under the vehicle for a sufficient period of time without interference from wind or rain (thirty minutes). However, a future project purchasing leak detection sheets should explore modifying the leak detection sheets to address the following considerations:

- **Windy weather**—The campaign used a strip of strapping to attempt to stiffen the sheets; nonetheless, leak detection sheets would blow away and were difficult to use in moderately windy or rainy weather. A heavier or stiffer material or accessory strip may help.

- **Design and cost**—The design of the detection sheet required the manufacturer to manually crease and staple the short ends of the strip to create a sleeve for the strapping. This was labor intensive and time consuming: it will increase the cost of sheets in the future if not redesigned.
- **Memory of the plastic**—Leak detection sheets tended to reroll themselves when deployed under a vehicle if the correct side was not placed facing down; however, finding a material that does not reroll may conflict with finding a material stiff enough to withstand wind.
- **Long-term storage**—The plastic manufacturer designed storage containers for each "hub" for long-term storage. The container holds sheets that lay flat, which is intended to minimize the potential for the sheets to build memory. Unfortunately the storage container is very large and cumbersome. The campaign now recommends tightly rolling stacked sheets of 20 and securing the rolls with rubber bands on each end. Ideally, rolled sheets should be stored in a cabinet with sections that hold one or a few rolls each to avoid flattening out the rolls and create creases in the plastic.
- **Possible future design considerations**
  - Use a different plastic that heat seals, so a sleeve for the stripping can be easily and quickly made.
  - Staple the stripping (or attach in another manner) directly to the drip sheet so it is permanently attached. Placing the green stripping in the sleeves when out in the field is cumbersome and time consuming.

Vehicle Leaks Blitz Events

Overall the blitz events were successful, based on feedback from event coordinators. The logistics of using leak detection sheets in adverse conditions, transporting leak detection sheets, and tracking which vehicles needed to be checked posed the main challenges. Coordinator suggestions for improving future event planning and implementation are detailed in Attachment 3—Vehicle Blitz Event Coordinator Survey Summary, and key recommendations are summarized below. Blitz event instructions should be updated and supplemented to reflect these recommendations.

Partner and Site Selection

- **Large employers and institutions**—Partnerships with large employers and institutions can result in a large number of vehicles checked at a single event. However, ample coordination time is needed because these partners tend to require more planning and impose conditions on event implementation (such as formal access agreements, permits, and liability waivers). Contact potential business partners with much advance notice before the desired event date to begin coordination and maintain close communication with them throughout the planning process.
- **Follow-up surveys**—Consider conducting follow-up surveys to obtain information on participant attitudes or actions to repair leaks that were found. Plan survey logistics at the same time as planning the event.
- **Parking lot**—A large, flat, paved parking lot makes using and transporting leak detection sheets easier. Leak detection sheets are difficult to use on grass or gravel. Avoid parking lots with "parking blocks" or curbs that limit ease of placing and retrieving leak detection sheets (though it is possible to place them from the side of the vehicle). If possible, choose a large, single parking lot area that

does not have any visual impairments (such as buildings or multiple floors), as this simplifies coordination of volunteer teams.

- **Timing**—Scheduling events for mid-summer or early fall (late June through early October) would provide more reliable weather (less wind and rain) and hotter vehicles (given the higher ambient temperatures) that make leaks easier to detect.

Volunteer Management

- **Initial communication**—Volunteers should be informed during recruitment that this project is labor intensive. Provide volunteers with knee pads, gloves, and long-handled grabbing tools. Offering food and drink can also help with recruitment.
- **Volunteer arrival**—Leak detection sheets must be placed within five minutes of a vehicle's arrival, so either ensure volunteers arrive early or begin testing using available staff members if vehicles arrive before volunteers are ready. Chalking tires or using color-coded sticky notes can help tracking which vehicles have been checked and when a leak detection sheet needs to be removed.
- **Training and orientation**—Volunteers need adequate training on leak detection sheets and tracking forms. An orientation video for volunteers to view online before the event could shorten the on-site training. A whiteboard on-site can be used to present a training agenda, event schedule, campaign talking points, and other key information. Informing volunteers that they are needed for clean-up during the orientation is essential. Without volunteer help, clean-up time could take hours with only a few people (especially for large events), and sheets are much easier to clean immediately (at the event site) rather than later.
- **Work in teams**—Coordinators recommended using teams of two or three people. One coordinator estimated that a team of two people can test 70 to 100 vehicles in a four-hour period. With a team of three, one person can record data and report cards while two people place and retrieve leak detection sheets. Additional volunteers are helpful to carry extra supplies between the event home base and vehicles to be checked.
- **Tracking forms**—Blitz coordinators and volunteers found the tracking forms and leak report cards easy to use.
- **Clean up**—Have volunteers return to the set-up area to ensure all leak detection sheets are clean, stack in piles of 20, roll tightly, and secure with rubber bands prior to placing in vehicles. A large team of people significantly shortens this process.

Participant Engagement

- **Opt-in vs. opt-out**—Opt-out events (when the site owner provides authorization to test all vehicles without asking for permission from the driver) is highly preferred, as it saves time and maximizes the ability to identify as many leaky vehicles as possible. Opt-in events reduce participation (and thus the number of leaky cars identified), but assigning outgoing volunteers, and providing "effective salesperson training" on how to engage drivers can mitigate the reduction.
- **Safety**—Very few drivers expressed concerns about their vehicles being checked, but those with concerns could be vocal and aggressive. Coordinators should ensure they have the support of the site owner or operator and they train volunteers not to engage these individuals.

Leak Detection Sheet and Vehicle Management

- **Sheet preparation prior to events**—Several coordinators recommended rolling leak detection sheets individually before the event and using a cart or a five-gallon bucket. One coordinator preferred rolling sheets in stacks of 20.
- **Cleaning sheets**—Cleaning leak detection sheets immediately next to each vehicle is easier than stacking and transporting them to a central location because it avoids getting the backside of sheets dirty. Most leak detection sheets could easily be wiped clean with a rag without a cleaning product, unless the vehicle had a severe leak.

Weather

- **Bad weather**—Blitz Events should be canceled for bad weather because leak detection sheets are not usable in very rainy or moderately windy weather. If holding an event in the rain, leak detection sheets should be dried completely before placing underneath vehicles.

Additional, detailed recommendations from blitz event coordinators can be found in Attachment 3.

Private Partnerships (ASA)

Overall, the ASA partnership resulted in many successes and accounted for more than half of the vehicles inspected through the program; however, some shops already routinely check all vehicles for leaks, so a portion of these inspections may have occurred even without the campaign. The campaign recruited 84 participating shops across the Puget Sound region, of which 49 reported results.

Lessons learned about the ASA partnership were developed by information provided by the core project team, survey of STORM member jurisdictions, and interviews with two automotive shops.

Organization Coordination

- **Strong point of contact**—Partnering with an organization that is invested in the program and having a strong point of contact makes overcoming coordination challenges to meet program needs easier.
- **Coordinate six months in advance**—Working with an industry organization and business partners requires early contact and planning. Allow at least three months from first contact with the organization to obtain their agreement to coordinate and then an additional three months to prepare the member businesses for the campaign launch.
- **Multiple partners**—Partnering with multiple industry organizations could expand the reach of the program. Engaging additional business partners, such as other automotive maintenance organizations, insurance companies, and restaurants, could provide additional incentives to people for inspecting and repairing their vehicles
- **Evaluation**—Communicate early on in the partnership about evaluation needs and metrics, including partner website analytics capabilities and data entry formats. Ensure that all evaluation metrics will be available and sufficient to conduct a thorough and complete program evaluation.

Repair Shop Recruitment and Promotion

- **Help from STORM members**—Because not all ASA members attended regional meetings that promoted the campaign, direct outreach through phone calls and site visits conducted by STORM member jurisdictions increased participation.
- **Membership meetings and trade shows**—Many ASA members were recruited after the project team invited participation through presentations at the local ASA monthly meetings. Attending tradeshows is more useful at the beginning of a recruitment process to introduce members to the campaign, rather than after most members have already signed up or heard about the campaign.
- **Reasons for participation**—The two participating shops that were interviewed both valued the campaign and were willing to participate in the future, even though they did not see a large increase in business as a result. Both supported the goals of the campaign and felt personally motivated to participate.
- **Shop promotion**—Creating a map-based searchable database may help vehicle owners find participating shops more easily.

Repair Shop Communication

- **Outreach material delivery**—Auto repair shops require outreach materials well in advance of the campaign. When possible, hand delivering outreach materials can help ensure they are displayed in store. Provide easy access to additional outreach materials, including online access to press release examples, Facebook posts, and printable tracking forms.
- **Roles**—To ensure the individuals shops understand their role in the program, campaigns should provide:
  - Consistent and direct communication based on the preference of the shop (e.g., email, phone calls, site visits).
  - Frequent reminders about the kickoff and the campaign.
  - Training on what the shops are to track with regular reminders. Clearly state what they are tracking: every vehicle that comes in or only vehicles whose owners ask about the campaign.
  - Clear communication about the role of discounts, including advertising, as some shops were concerned customers would expect more than the discount offered.

Campaign Impact

- **Campaign impact**—While auto repair shops inspected more than 4,000 vehicles and repaired more than 700 vehicles, the evaluation was not able to determine whether these results were attributable to that campaign. More research is needed to determine the extent to which the campaign influences behavior and to develop additional strategies and tools for overcoming barriers and motivating vehicle owners to check for leaks using participating repair shops and to fix identified leaks. Additional market research on how people select and decide to visit a repair shop and use of an experimental design to test effectiveness of different incentives for finding and fixing leaks (such as by varying the discount amount in different geographic areas) would help maximize "on the ground" effectiveness.

- Foundational research for the campaign suggested that vehicle owners are unlikely to take their vehicle to a repair shop unless they already perceive a problem with their vehicle (or they follow regular inspection guidelines). Similarly, anecdotal evidence from interviews with two repair shops indicated that their customers were not aware of the campaign before visiting the shop.

Local Government Partnerships

As project partners, STORM member jurisdictions helped design the campaign, promoted the campaign, assisted with ASA shop recruitment, and hosted Vehicle Leaks Blitz events. Some jurisdictions also participated in campaign planning. The partnership resulted in nearly 3,000 vehicles checked at events and an estimated 748,000 impressions. The implementation partnership would likely have been more successful if more time had been available for STORM member jurisdictions to promote and implement the campaign.

Lessons learned about the ASA partnership were developed by information provided by the core project team and survey of STORM member jurisdictions.

Partner Engagement

- **Engagement**—Continue to engage jurisdictions from across Puget Sound in regional campaign planning and implementation efforts.
- **Communication**—Communicate regularly, such as through email reminders, and provide suggestions about activities that the jurisdictions can undertake each week during the campaign.

Partner Tools

- **Timing**—Provide toolkits, including promotional materials and Vehicle Leaks Blitz event instructions, at least three months before the campaign so jurisdictions have time to arrange for publication. In a follow-up survey, SOGs requested additional time to allow them to assign staff time, promote the campaign through jurisdictional channels, organize blitz events, and recruit volunteers and businesses to participate in the campaign.
- **Contents**—Continue to provide sample tools (such as press releases, newsletter text, and social media posts) and offer ideas for how partners can tailor the language to their jurisdiction.
- **Delivery methods**—Use a dedicated "toolkit webpage" to distribute campaign materials because the toolkits were too large to distribute by email and the Dropbox site did not work for some jurisdictions. Pierce County created a toolkit website that is easily accessible. Ensure that time and resources are available to update documents as appropriate.

Marketing Campaign

The regional campaign primarily used radio advertising and a website, relying on earned media and STORM member jurisdictions to supplement the marketing with social media, direct mail, electronic newsletters, events, and other media. Radio advertisements are estimated to have accounted for the

vast majority of impressions; with additional planning time, the STORM Member jurisdictions likely could have increased their promotional reach through existing local government channels. Lessons learned and recommendations for future campaigns are described below.

Message and Materials Development

- **Messaging**—Messaging was easy to develop because of the extensive background research conducted. However, additional engagement should have been conducted to ensure campaign stakeholder needs were fully understood before designing campaign messages, logos, and other materials. Additional messages can (and should) be developed in future phases of the campaign. Funding for ad development and distribution was limited, and there is significant potential for further development of creative, fun, engaging, and effective ads using messages based on the background research.
- **Oversight**—Vendors require oversight to ensure they complete orders correctly; future campaign organizers should:
  - Obtain samples of all campaign materials before vendors begin production to ensure materials are printed correctly, such as window clings that are designed for the inside instead of the outside of a window.
  - Listen to or read the media outlets selected for the campaign to ensure that paid advertisements are aired or printed, although advertising non-fulfillment is extremely rare.

Media Channels

- **Website promotion**—The campaign and ASA websites appear to have received a relatively small number of visitors and hits compared to the number of vehicle inspected; the website may not have been a major factor in the campaign's success, but additional promotion could increase the number of people using the website to find a participating auto shop.
- **Website content**—Having two websites (the campaign site that directed users to the ASA site) created uncertainty about the number of unique visitors. The campaign would benefit from creating a single website with sophisticated website analytic capabilities to house all the key campaign information, including the searchable directory of mechanics.
- **Multiple media channels**—If budget had allowed, the regional campaign would have supplemented radio advertisements with online advertisements and outdoor banners at participating shops (though coordinators should receive orders from shops to ensure that shops will install banners).
  - Online advertisements reinforce the message by reaching the target audience through a second, visual media. Reaching people when they are already online allows them to visit the campaign website more easily.
  - Unlike window clings, banners outside participating shops can be seen by potential customers from the road, although businesses may need to obtain approval from their local city.
  - Additional media channel concepts to consider include advertisements at gas station pumps, targeted billboards, and during commute times, use volunteers to temporarily hold banners

and wave at commuters from walk/bike path bridges over roads where speeds allow drivers to read banners safely.

- **Kick-off event**—the kick-off event resulted in less earned media than expected. Coverage could have been improved by promoting the event earlier with:
  - A more exciting story hook and event visuals.
  - More time allocated to customers and mechanics sharing their personal stories.
  - Increased promotion of the environmental and safety benefits of the campaign; promoting discounts can be perceived as a sales pitch.

Social Media

- **STORM member jurisdictions**—Less than half of participating STORM Member jurisdiction promoted the campaign through social media, and those that did regarded it neutrally: neither effective nor ineffective. Social media works best when the outlet (such as a particular Facebook or Twitter account) has a large existing audience and the posts are compelling—making users want to share and respond them in a community conversation. Lessons learned and suggestions for improvement included the following:
  - Expand social media partnerships to include organizations with strong online communities, even if they do not strictly work on environmental issues. Create social media posts that individuals can easily share when they have their vehicle checked or repaired.
  - Provide social media messaging earlier so that STORM member jurisdictions have time to obtain permission to use social media and to incorporate it into their social media outreach.
  - Many local jurisdictions do not currently use social media, some are not allowed to use it, and others do not yet have a large social media presence. Jurisdictions can use partners with social media outlets to help promote the campaign if provided with posts early enough in advance.

Project Evaluation

Evaluating a behavior change campaign with a wide audience, large number of partners, broadcast media component, and short timeframe can be difficult. The evaluation plan developed as part of the Social Marketing Plan (Attachment 1) includes evaluation strategies that were able to be completed as part of this project, as well as ideas for additional strategies that could have been undertaken with additional time and budget. This evaluation was able to document the number of vehicles checked through the campaign, a portion of the vehicles repaired through the campaign, and lessons learned about campaign planning and implementation. Lessons learned address evaluation planning and data collection.

Evaluation Planning

- **Internal coordination**—Additional internal coordination would have been useful to ensure that the evaluation plan was implemented as effectively as possible.
- **Evaluation timeline**—A short outreach campaign combined with a quick reporting deadline can prevent the evaluation from obtaining complete information on campaign results. Allow at least

three months from the last campaign activity for data collection, data analysis, and report writing and review.

- **Large employers and institutions** —When conducting follow-up surveys, keep in mind that partners, such as businesses, may have an established survey system and require substantial planning time to review, approve, and implement a survey. The campaign was unable to implement a planned follow-up survey of Boeing employees due to time constraints; such a survey could have provided information on attitudes toward campaign messaging and leak repair rates among vehicles checked at events.
- **Experimental design**—Additional market research and incorporation of an experimental design to test effectiveness of various incentives would maximize "on the ground" effectiveness. For example, participating repair shops in two counties with similar characteristics could offer different levels of discounts to test how the public responds to the discount.
- **Cost analysis**—Obtaining more detailed information on the cost of individual blitz events of varying sizes and types would improve the unit cost estimates for each vehicle checked and leaking vehicle identified. Better separating program costs attributable to vehicles checked at blitz events compared to mechanics shops would help future campaigns determine which method is more cost effective.

Data collection

- **Website statistics**—If a partnering arrangement includes website hosting, determine early in the planning process what website statistics will be provided.
- **Information tracked by repair shops**—Tracking forms for mechanics were kept simple and paper-based to increase the likelihood that shops would track their data. Only one shop tried the web-based form; it then primarily used paper forms. Ideally, future tracking would also include whether shops routinely checked for leaks before the campaign and how many customers mentioned the campaign, without complicating the forms.
- **Distribution of forms to repair shops**—Repair shops vary greatly in size, so some shops needed more tracking sheets than they were provided; obtaining information on the typical number of vehicles serviced per week could help the campaign provide the correct number of tracking sheets to each shop. Additionally, by making the printable tracking forms and other materials available online and accessible to download, repair shops can obtain the materials they need without having to ask the campaign coordinators.
- **Reminders to provide data**—Both STORM member jurisdictions and auto repair shops required repeated reminders to provide their tracking information. Establish deadlines, and anticipate that some jurisdictions will likely submit data at least a week or two after the deadline.

Summary

As a pilot project, this campaign appears to have achieved its goals—finding 2,063 leaking vehicles out of a total of 6,963 vehicles checked and resulting in at least 709 vehicles repaired. The campaign messages, marketing materials, and outreach toolkits were well-regarded by local jurisdiction partners and will provide a foundation for future phases of the campaign.

Six primary challenges have been identified by the core project team and program partners:

1. Conduct additional research to develop additional strategies and tools for overcoming barriers and motivating vehicle owners to check for leaks (outside of Vehicle Leak Blitz events) and fix identified leaks. Additional market research on how people select and decide to visit a repair shop and use of an experimental design to test effectiveness of different incentives for finding and fixing leaks (such as by varying the discount amount in different geographic areas) would help maximize "on the ground" effectiveness.
2. Begin working with campaign partners earlier, providing them with outreach materials and evaluation forms several months before the campaign's launch date. Increase emphasis on fostering partnerships as well as on training and coordinating partners.
3. Communicate with project partners weekly during the campaign about implementation expectations using campaign partners' preferred communication methods (such as email or phone).
4. Modify the design of leak detection sheets used at blitz events to make them both easier to use in adverse weather and easier to manufacture.
5. If budget is available, expand the reach of the campaign through online advertising and shop banners, partnerships with additional automotive organizations, and additional large blitz events. Engage additional business partners, such as insurance companies and restaurants, to provide additional incentives for people who inspect and repair their vehicles.
6. Secure funding with longer and more flexible implementation timelines. Several partnership and opportunities and incentives that would have strengthened the campaign could not be incorporated due to the limited time available.

Some of these challenges will be comparatively easy to overcome in future phases because materials have already been largely developed and email communication can be conducted in bulk for program participants who prefer email. Others will be more challenging and will require significant effort. For example, participants that require phone calls will be more difficult to remind about campaign activities and expanding the marketing campaign will require additional budget.

Overall, this pilot project resulted in a successful social marketing campaign that can be replicated by Puget Sound jurisdictions and modified to meet the needs of other jurisdictions in Washington that seek to reduce the threat and harm cause by vehicles leaking automotive fluids into local waterways.

Attachments

1. Social Marketing Plan (including Situation Analysis and Evaluation Plan)
2. SOG Partner Toolkit
3. Vehicle Blitz Event Coordinator Survey Summary
4. Local Jurisdiction Survey (including survey instrument and summary)
5. ASA Shop Partner Toolkit
6. ASA Shop Interviews (including survey instrument and summary data)
7. Secret Shopper Assessments (including survey instrument, key findings, and summary data).
8. Marketing Campaign Data

Don’t Drip and Drive Campaign Vehicle Leak Education and Behavior Change Project

Social Marketing Planning Process: Steps 3 – 10

Prepared for

Stormwater Outreach for Regional Municipalities (STORM)

July 2013

Table of Contents

1. VEHICLE LEAK EDUCATION & BEHAVIOR CHANGE PROJECT

STEP #3: Target Audience

Primary audience segment[1]

- Vehicle owners with vehicles that are 2005 and earlier model years and/or have over 80,000 miles; and,
  - Vehicle owners who take their vehicles to service stations, dealerships, or mechanic shops for regular maintenance and/or repair; and/or
  - Vehicle owners who don't know whether they have a leak and will either self-detect for leaks or allow others (e.g. volunteers, STORM members, ECONet members, etc.) to check for leaks for them.

Secondary audience segment(s)

- Vehicle owner that knows that their vehicle has a leak but they do not do anything about it (Potential audience segment for future campaign).
  - Segment (1): Vehicle owners with vehicles that are 2005 and earlier model years and/or 80,000 miles who take their vehicles to service stations, dealerships, or mechanic shops for regular maintenance and/or repair.
  - **Campaign strategy:** One-month Vehicle Check Campaign including media campaign and incentives for Puget Sound resident participation. Key partnerships with ASA and its members. Free leak checks at participating ASA mechanics and discount coupon of 10% off for leak repairs (up to $50 in value).
  - Segment (2): Vehicle owners with vehicles that are 2005 and earlier model years and/or 80,000 miles) who don't know whether they have a leak and will either self-detect for leaks or allow others (e.g. SOGS, ECONet members, etc.) to check for leaks for them.
  - **Campaign strategy:** Provide SOGs with Vehicle Leak kits and training on how to use the leak kits to detect vehicle leaks and engage the public where they work, live, learn, and play.

Audience evaluation

The Steering Committee conducted extensive background research on vehicle leaks, their impacts on the environment, programs that have addressed vehicle leaks, and best management practices (See Appendix A. Background Research Summary). An initial vehicle leaks mail-in questionnaire was developed and sent and/or hand-delivered to mechanics across the Puget Sound and approximately 17 mechanics responded. This formative research identified that vehicles that are 2005 and earlier model years and/or have over 80,000 miles are most likely to leak. Additionally, the majority of these vehicles are no longer under warranty, which we assume leads to less routine maintenance. Thus, the Steering Committee identified this segment of the population as its primary target audience.

[1] For a list of demographic information about the campaign's target audience, see Appendix C. Profile Report

The research also indicated that the majority (between 64-82% of Puget Sound residents) take their vehicles to a mechanic shop for repair, which led the Steering Committee to design a vehicle leaks campaign that involves key partnerships with the Automotive Service Association (ASA) and its member mechanic shops. In addition to the ASA partnership and, in order to address many of the potential barriers associated with this campaign (See Step #5, page 6) for a comprehensive list of campaign barriers), we have developed two strategies for vehicle leak identification:

- Partner with ASA to provide free vehicle leak inspections and discounts on leak repairs, and
- Meet vehicle owners at their place of employment, large events or other locations and coordinate with volunteers to test vehicles in parking lots via drip detection sheets. This segment of the campaign will focus on vehicle owners that will either self-detect for leaks or allow others to check for leaks for them.

We also conducted two focus groups and an online survey (See Appendix D: Market Research Report) to inform our target audience selection process and campaign strategy.

A comprehensive list of additional audience segments that were considered for this campaign is listed in the STORM Vehicle Leak Situation Analysis (Appendix B: Social Marketing Process: Step 2−Situation Analysis).

Background Research Highlights (Appendix A. Background Research Summary)

- 58% of respondents "make it a point" to regularly check for oil leaks under their vehicles.
- 91% of respondents said they would get a leak checked "right away" if they noticed one.
- Car owners under age 35 were less regular checkers than their elders (44% vs. 60% of those over 35).
- 62% of respondents rated "extending the life of the vehicle" as a very effective motivator for getting their vehicle checked and fixed.
- Motivators also include convenience, monetary incentives, in-store promotions and one's kids (presumably health and safety). People were more motivated to get their vehicle checked and fixed to "keep oil stains off my driveway" than concern for the environment.
- Personal preference, convenience, and costs were reported as being more important motivators than issues related to the environment.

Formative Research Findings

Key Motivators & Barriers

A critical component to developing an effective behavior change program is based on the thorough understanding of the target audience(s). In order to better understand the campaign's target audience(s), two focus groups and an online survey were conducted. The following list of motivators and barriers were identified (See Appendix D. Market Research Report for the complete list of findings).

Checking for Leaks

STRONG MOTIVATORS

- Seeing a leak in parking space (driveway, garage)
- If one hears or smells something that is not right (e.g., burning oil)

- Preparation for going on a long trip
- Coming back from a long trip
- After returning from a long trip
- If getting ready to buy or sell a car
- Free inspection from a certified mechanic
- Free Do-It-Yourself kit that allows them to test for leaks at home
- Discount on a leak repair

WEAK MOTIVATORS

- When kids start driving
- Free vehicle leaks workshop with a free inspection from a community college car expert

BARRIERS

- Belief that, if the car is leaking, they will see a leak in their driveway and would already know about it.
- Cost of repair- "ignorance is bliss"
- If gauges/indicator lights do not indicate that anything is wrong with the car, they do not feel the need to check for leaks regularly
- Take vehicle in for regular maintenance and do not need to check for leaks themselves because their mechanic does so at regular intervals (note: many believe quick-lube shops test for leaks)

Getting Vehicle Fixed

STRONG MOTIVATORS

- Safety (especially if a long distance away from home, and if with children)
- Having a reliable car
- Overall effect on car/severity of leak (if leak will greatly decrease life of vehicle or cause it to stop working)
- Mess in garage or on driveway
- Finances—if the leak would cost more in repairs down the road
- Buying or selling a car
- Safety for other drivers on the road

WEAK MOTIVATORS

- Health of humans and animals
- Pressure from kids and neighbors
- Environment

BARRIERS

- Belief that the repair is going to be expensive
- Cost of repair compared to cost of vehicle (will car be considered "totaled?")
- Cost of repair compared to anticipated remaining life of vehicle
- Belief that "topping off" fluids is a viable solution

The focus groups and the online survey also revealed additional information about the creation of messages that resonate with the campaign's target audience(s), effective methods of communicating

those key messages, and prompts and incentives that lead to actions and achieve desired outcomes. The market research for this campaign focused on enhanced understanding of the following factors:

- What facts will help the audience understand the impacts to Puget Sound?
- What facts and messages will help the audience understand and believe the potential impacts to their vehicle if leaks are not fixed?
- Who are the trusted messengers?
- What are the audiences' attitudes, beliefs, and behaviors related to this issue?
- What incentives and/or products are necessary to encourage the audience to have their vehicle inspected for leaks and repaired, if needed?
- What are the "best" communications channels to reach target audience(s)?

To learn more about what the market research discovered, please see Appendix D. Market Research.

STEP #4: Marketing Objectives and Goals

The campaign has three main goals:

- Throughout the Puget Sound region, test up to 10,000 vehicles for leaks during April and June 2013.
- Ensure the campaign will enable Stormwater Outreach for Regional Municipalities (STORM) members to meet NPDES permit education and outreach requirements.
- Implement a social marketing campaign that can be replicated by jurisdictions throughout the Puget Sound area.

The marketing objectives are as follows[2].

Behavior objectives:

- Vehicle owners go online to the program website, www.fixcarleaks.org, to find an ASA member location to get their car checked for leaks.
- Vehicle owners take vehicles into a participating mechanic to check for leaks or allow others to check for leaks at vehicle leak blitz events.
- Vehicle owners with detected leaks take vehicles in to get the leak repaired.

Knowledge objectives:

- Increase awareness about the connection between vehicle leaks and water quality.
- Increase knowledge that checking and fixing vehicle leaks will help decrease threats to water quality.
- Vehicle owners know the risks of not getting the vehicle inspected and/or repaired.
- Vehicle owners know the benefits of getting their vehicle inspected and/or repaired.
- Knowledge about where to find participating mechanics.
- Knowledge about program components (kick-off events, workshops, coupons/ discounts, etc.)

[2] Please note that the behavior objectives listed above are the only objectives that will be evaluated in Appendix E. Evaluation Plan. Knowledge objectives are not being tested as a part of this campaign.

Belief objectives:

- Vehicle owners are at risk, as their vehicle could be leaking.
- Vehicle owners will be able to get vehicle checked successfully.
- Checking for vehicle leaks can make a difference.
- The benefits of getting their vehicle checked and/or repaired outweigh the costs.

STEP #5: Barriers, Benefits, Competition

Please see Appendix F. Barriers and Benefits Matrix for comprehensive list of barriers, benefits, and competition as related to the below-mentioned target audience segments.

STEP #6: Positioning Statement

We want vehicle owners with vehicles that are 2005 and earlier and/or have over 80,000 miles to believe that getting their vehicle checked for leaks and fixed when leaks are identified is important to ensure vehicle reliability and safety, and is also a critical step in improving the health of the Puget Sound. Checking for leaks and fixing them is more beneficial than not knowing whether their vehicle is leaking, not getting their vehicle checked for leaks and/or delaying fixing by topping off fluids.

STEP #7: Strategic Marketing Mix (The 4PS)

The King County Environmental Behavior Index found that 67 percent of vehicle owners state that they will fix their leaks within three months once aware that their vehicle has an oil leak. Therefore, the Steering Committee developed a campaign focusing on three main objectives. Since this is a pilot program, objectives were loosely defined, and are as follows:

- Increase the number of vehicle owners who check for leaks with a goal of testing up to 10,000 vehicles for leaks during April and June 2013 throughout the Puget Sound region
- Educate vehicle owners on the importance of fixing vehicle leaks to ensure the longevity of their car and the health of the Puget Sound
- Increase the number of vehicle owners who fix leaks when learning that they have a leak

Campaign Strategies

The Steering Committee selected two campaign strategies to test as a part of this pilot study:

1) **ASA Repair Shop Partnership and Radio Campaign**
   STORM's consultant, PRR, brokered an exclusive partnership with the Automotive Service Association (ASA) of Washington to launch a campaign aimed at influencing Puget Sound residents to identify and fix vehicle leaks. As program partners, ASA repair shops will provide free vehicle leak inspections, as well as discounts on vehicle leak repairs of 10 percent off (up to $50) during the month of April 2013. PRR will develop radio advertisements and a website with a list of participating ASA repair shops to promote the campaign.

2) Vehicle Leak Detection Events

A second outreach strategy was also selected, which includes developing partnerships with local businesses, community colleges, city halls, and other locations with large parking lots to host vehicle leak blitz events, where STORM members, partnering ECONet members and volunteers test vehicles in a designated parking lot by placing reusable plastic sheets under vehicles for a minimum of 30 minutes. All vehicles will receive a report card with the test findings. The report card will include information about how vehicle owners can take advantage of participating ASA repair shop's 10% discount (up to $50) on leak repairs. The team has developed a partnership with The Boeing Company to hold testing events at the Renton and Everett campuses in April and May 2013. In addition to planning these two large business events, the team also will work with STORM members to provide resources, testing kits and assistance to host their own local vehicle leak blitz events.

To evaluate the effectiveness of the ASA partnership and the vehicle leak blitz events at achieving our program's objectives, a detailed evaluation plan has been developed. More information on that strategy can be found in the Evaluation Plan (Appendix E).

Campaign Name: Don't Drip & Drive. Fix That Leak!

PRR conducted formative research, including two focus groups and an online survey, to gather information on our target audiences' attitudes, awareness and behaviors related to vehicle leaks. Research also tested campaign names, slogans and materials to gain insight on how best to message the program and its benefits.

Throughout the research process, over 30 potential campaign names were identified. The campaign name *Don't Drip and Drive. Fix That Leak!* was selected. A detailed marketing strategy, outlined below, was developed, including a comprehensive outreach campaign that included graphic element design, in-store signage, advertising, website, social media, and toolkits for partner agencies.

A breakdown of the four P's (Product, Price, Place & Promotion) is included in this marketing campaign below:

Product – anything that can be offered to a market to satisfy a want/ need

- Core benefit: Vehicle reliability, vehicle safety, save money in long run, and protect the health of Puget Sound
- Actual Product: 1) checking for leaks, and 2) getting leaks repaired
- Augmented Products:
  - Free leak detection services at participating ASA member shops
  - Kits for self-detection or by volunteers
  - Discount on getting leak fixed
  - Point of Purchase Signage
  - Advertising Materials
  - Web landing page
  - Vehicle Leak Detection Blitz materials, include drip sheets and report cards

Price – cost that target market associates with adopting the desired behavior

Getting vehicles checked for leaks

- Increase monetary benefits for getting vehicle checked for leaks
  - FREE vehicle leaks diagnostic at participating mechanics = up to $80 value
- Increase non-monetary benefits for getting vehicle checked for leaks
  - Convenience- multiple ASA partner locations region-wide
  - Self-detection events – already at location for work so participant does not have to drive to another location for leak detection opportunity
  - Campaign messaging promotes as the socially and environmentally responsible thing to do
- Decrease monetary costs for getting vehicle checked for leaks
  - FREE vehicle leaks diagnostic at participating mechanics
  - Events at large employers and events for FREE self-diagnostic via Drip Detection kits
- Decrease non-monetary costs for getting vehicle checked for leaks
  - Convenience of ASA campaign (multiple locations for participants to go to)
  - Campaign partners with ASA-certified shops to reduce fear of being taken advantage of
  - Convenience of self-detection locations (Drip Detection Blitzes come to you)
- Increase monetary costs for NOT getting vehicle checked for leaks
  - Campaign promotes reliability, safety and vehicle longevity in messaging
- Increase non-monetary costs for NOT getting vehicle checked for leaks
  - Campaign messaging that stresses social irresponsibility and harm to Puget Sound's health

Getting vehicle leak fixed

- Increase monetary benefits for getting vehicle leak fixed
  - Campaign messaging stresses extending the operating life of vehicle, i.e. long-term savings
- Increase non-monetary benefits for getting vehicle leak fixed
  - Doing the right thing/ socially responsible/ protecting Puget Sound
- Decrease monetary costs for getting vehicle leak fixed
  - Vehicle leak fix discount of at least 10% off up to $50 at participating mechanics
- Decrease non-monetary costs for getting vehicle leak fixed
  - Decreases the threat to the health of the Puget Sound from vehicle leak pollution
  - Campaign partners with ASA-certified shops to reduce fear of being taken advantage of
- Increase monetary costs for NOT getting vehicle leak fixed
  - Campaign promotes reliability, safety and vehicle longevity in messaging
- Increase non-monetary costs for NOT getting vehicle leak fixed
  - Campaign messaging that stresses social irresponsibility and harm to Puget Sound's health

Place – where and when target market will perform desired behavior, acquire related tangible objects, and receive any associated services

The vehicle leaks promotion window is from April 1 to April 30, 2013. Below is a summary of the different places where the program messages would be heard and actions taken:

Message: Learn about the *Don't Drip & Drive. Fix That Leak!* campaign.

This message would be heard during the last month of May through April as advertising is running, earned media stories are being placed, and blitz events are being held. Below is a list of places where people could hear the promotional messages during the campaign:

- At an ASA-member repair shop
- On the radio while driving
- On the radio while at home or at work
- When reading the newspaper
- Online at www.fixcarleaks.org
- Online at the ASA website
- At work via internal promotional efforts (i.e. company emails or e-newsletters)
- At work or school via vehicle leak detection blitz events
- Home watching TV
- Via signage when driving or walking by a participating location
- Facebook and Twitter

Signing up for leaks check through promotional program

This promotion would also be conveyed through outreach efforts conducted from late March through April 2013. Additional testing events were taking place through May. This action could be taken in the following ways:

- At an ASA participating repair shop
- Online at home or on a mobile device
- Phone call to schedule an appointment
- Participating in an employee or public Vehicle Leak Blitz event

Getting leaks fixed at promoted sites

Research shows that 67% of people who know that their car has a leak will get it repaired. Once identified, car leaks could be fixed at the following places during the following timeframes:

- At an ASA member repair shop between April 1, 2013 and June 30, 2013 using the discount coupon offer
- At an ASA member repair shop after June 30 with no discount
- At another, non-participating mechanic at any point with no discount

Promotion – determine messages, messengers, creative strategies, and communication channels

Messaging Strategies

The following outlines the messaging strategies that were developed and utilized for the campaign.

Driver Benefits to Vehicle Leak Testing

- Don't get stranded! A leaky car isn't a reliable car.
- Whether you're on your daily commute or road tripping on a vacation, a little car maintenance could save you a lot of hassle - and money.
- Extend the life of your car. Finding and fixing vehicle leaks is a great way to keep your car on the road longer, so you have more years before you need to buy a new one.

Environmental Benefits to Testing

- Protect Puget Sound. Not only does fixing vehicle leaks help families care for their cars, over the long run, it also is good for our environment.
  - Here in Washington State, we're releasing 7 million quarts of motor oil into the Puget Sound basin annually. Think about it, *7 million* quarts of oil wasted each year!
  - Given that the average quart of motor oil costs $5-10 dollars, we estimate that consumers are pouring $53,615,500 down the drain each year. You could do so many more things with your hard-earned money than leak oil into the Puget Sound basin.

Program Offer

- Act now! Take advantage of a free and easy inspection, at a value of up to $80, from a participating Automotive Service Association (ASA) member repair shop in April.
- If the technician does discover a problem, you'll receive a coupon for discounted service at 10% off, for up to $50 in repairs. That's a total savings up to $130.
- You can take the coupon with you to use at any participating repair shop or choose to wait to have your leak fixed. There is no obligation!
- Don't Drip & Drive. Fix That Leak! For more information, visit our website at www.fixcarleaks.org.

Program Partnerships

- We're partnering with the Automotive Service Association (ASA) because ASA ensures that their technicians meet their high standards for quality of service.
- ASA's visual leak inspection involves checking under the hood and under the carriage for vehicle leaks, including hoisting it to inspect the underside. No dye testing or component removal is included.
- This is available all around the region.

Who We Are as a Group

- The Stormwater Outreach for Regional Municipalities (STORM) consortium has taken the lead on communicating 'fixing vehicle leaks' as a best practice, via a targeted regional education and behavior change campaign program called "Don't Drip & Drive."
  - This is in response to the fact that, every year, hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers, streams and the Puget Sound; most of this toxic pollution comes from small oil motor drips from our cars and trucks.
  - The STORM consortium includes members from 80+ local jurisdictions, with supporting efforts by another 400 agencies and organizations through the ECO Net network.
- "Don't Drip & Drive" is made possible by a grant from the Washington Department of Ecology.
  - King County was awarded the grant on behalf of the STORM consortium.
  - The grant is leveraged with another Ecology grant awarded to Seattle Public Utilities, with funds from the U.S. Environmental Protection Agency (EPA).
- The overall goal of the program is to build awareness and educate people throughout the Puget Sound region that it is important to check for vehicle leaks and to inspect their vehicles regularly, whether on their own or through a repair shop.

Other Potential Messaging Strategies Not Used During the Campaign:

Below please find other messaging strategies that were considered and could be of use for future campaigns:

- Emphasize fixing leaks and reinforce the cultural code for "car" in America, which equals "identity." (*The Culture Code*, Rapaille, 2006), :
  - Car- IDENTITY- freedom, independence, individualism, special
  - Health & Wellness = movement
  - Emphasize the consequences of not fixing a leak (whether known or unknown), reinforce the negative side to the cultural codes (what people don't want to happen):
  - Shackles of being dependent, no fun (opposite of IDENTITY)
  - Unexpected break-down of vehicle, miss important event (opposite of IT WORKS)
  - Losing "face" for having a "drippy" vehicle. "Are you a drip?"
  - Impact of pollution on human health
  - Pressure from children on parents to fix leaks

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Promotional Strategies

The Steering Committee worked together to develop a comprehensive promotional plan that was based on the information collected through research efforts. Due to limited budget and the fact that this was a pilot program, dollars would need to be spent in the most effective and efficient way possible. The following promotional strategies were selected:

Advertising—Radio

Messages

- Drive people to ASA-member repair shops during the month of April to get their cars tested for leaks.
- Protect the Puget Sound – get cars tested for leaks.
- Improve your cars reliability – get tested for leaks.

Messengers

- Steve Pool, local radio personality and meteorologist for KOMO News, was selected as the messenger and the voice for the radio ad.

Communication Channels

- Radio was selected as the primary vehicle for advertising the ASA partnership program.
- Radio was selected as it reaches people at a time where they are receptive to the message (in their car). It was also selected for the following reasons:
  - Cost efficiency – reach the most target audience for the least amount (target audience defined as Adults, 35-64, HHI $50+, homeowners)
  - Diversity of station formats to expand reach
  - Stations selected were: KWRM-FM, KJR-FM, KZOK-FM, KOMO-AM, and KMPS-FM
  - Added value provided through station PSAs, contests, and additional mentions
  - Inventory available during broadcast weeks
- Budget restrictions limited the advertising budget to one channel for the purposes of the pilot program.

Creative Strategies

- Radio ads were designed to be funny, memorable, and upbeat. The selected concept was a conversation between personality Steve Pool and his female GPS navigation system.

The Steering Committee also intended to post online ad banners on the Seattle Times website, but were unable due to budget limitations.

Earned Media

Earned media was utilized to spread the word about the ASA partnership.

Messages

- Messages for earned media outreach centered on reliability, cost savings, and environmental impact. A complete list of messages can be found below.

Messengers

- The earned media messages were pushed out through Stef Frenzl (STORM representative from Snohomish County), Bryan Kelley (ASA mechanic spokesperson), and Jeff Lovell (ASA spokesperson). Earned media efforts were also conducted by STORM member jurisdictions with their staff acting as messengers.

Communication Channels

- Media pitching efforts included a kick-off event aimed at broadcast television, as well as blogs, print, and radio. Coverage was secured in all channels.

Creative Strategies

- The media kick-off event was held at a local mechanic, High Lane Automotive. Spokespeople were on hand to draw in media, and visuals included leaky cars, a large sign showing the impact of oil leaks on the environment, and customers who brought their cars in to get them tested.
- Following the media event, pitching efforts focused on the limited offer and the importance of getting leaks checked for both the reliability of your car and the health of the Puget Sound.

Toolkit for Advisory Committee

To help utilize the broad STORM group in spreading our message about the campaign, a toolkit of materials was distributed to the STORM Advisory group in the weeks leading up to the campaign. The toolkit was sent via Drop Box and also housed on a website managed by Pierce County.

Messages

- The messages for the toolkit were consistent with the campaign messaging as outlined below.

Messengers

- Advisory Committee member agencies and individuals.

Communication Channels

- The toolkit included template press releases, messaging, sample social media posts, and newsletter articles.
- The toolkit also included native design files for the program logo, poster, window cling, print ad, bill insert, and coupon.

Creative Strategies

- Creative materials focused on simple, appealing messages that would cut through the clutter and encourage people to visit the program website.

Signage and Displays at ASA Member Repair Shops

Signage was developed for display at participating ASA member repair shops.

Messages

- Signage focused on the environmental impact of vehicle leaks and highlighted the free inspection and repair discount. The website was prominently highlighted.

Messengers

- ASA repair shop locations.

Communication Channels

- Signage included posters, window clings, and counter-top displays. Materials were mailed to all participating ASA repair shops where they were displayed through the month of April.

Creative Strategies

- Materials were designed to be simple, eye-catching, and to highlight the program logo and website.

Coupon- Get 10% Off Leak Repairs (Up to $50)

A coupon was designed for ASA technicians to distribute to customers identified to have a leak.

Messages

- The coupon focused on the discount message and highlighted the program logo and website.

Messengers

- Coupons were distributed by ASA technicians as well as at vehicle leak testing events and through other outreach activities, including a May Mariners game.

Communication Channels

- Coupons were distributed at ASA repair shops and other outreach and testing events.

Creative Strategies

- The coupon was designed to have a simple message about the discount and to highlight the program logo and website.

Website

A website portal, www.fixcarleaks.org, was secured for the promotion.

Messages

- The website focused on the environmental and reliability message, and prominently featured the ASA partnership and free inspections. The website linked to ASA's website for a searchable tool to help people find a location near them, and also linked to the City of Seattle's website for information about vehicle workshops.

Messengers

- The site was promoted through radio ads, public relations efforts, and promotional signage.

Communication Channels

- The website was promoted through all outreach activities as outlined above.

Creative Strategies

- The website was designed to have a simple look and feel, and highlighted the program logo and the ASA partnerships. Colors were chosen that were consistent with the other outreach materials.

Employer Outreach Events

A series of events were conducted by the team at Boeing Renton and Boeing Everett. Smaller Vehicle Leak Blitz testing events were also held by STORM team members across the region. Vehicles were tested by volunteers for leaks using reusable drip sheets. Materials were left on windshields letting people know that their car was tested, why, the results of the test and to take advantage of the ASA discount to get the leak repaired.

Messages

- Materials distributed at the events focused on the importance of identifying leaks (reliability, environmental impacts), encouraged them to go to the program website to learn more, and if a leak was found, to take advantage of the ASA discount to get the leak repaired.

Messengers

- Messengers included STORM members and employers.

Communication Channels

- Events were promoted through employee newsletters, emails and signage displays.

Creative Strategies

- Events were designed to flow quickly and with minimal impact on the employers and the employees. Cars were tested while employees were at work, and weatherproofed flyers with the results of their test were left on windshields. Materials were designed to tell a clear and simple message and highlighted the program logo and website to help tie back to the rest of the outreach campaign.

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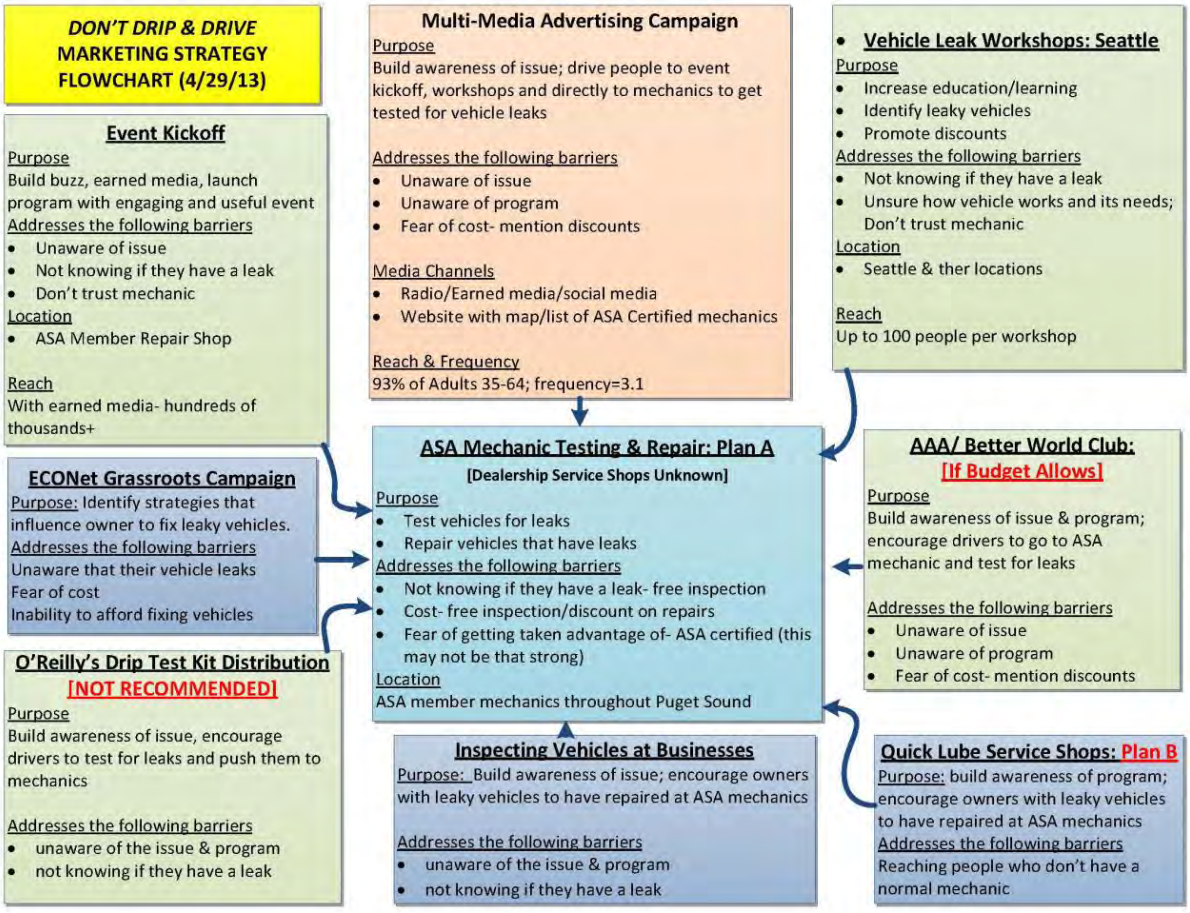
Marketing Strategy Flowchart



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STEP #8: Evaluation Plan

See Appendix E. Evaluation Plan

STEP #9: Budget

Grant-Funded Project Expenditures

	Grant Funds		
Task	Labor	Expenses	Total
Task 1 - Manage and administer grant project	$42,348	--	$42,348
Task 2 – Research and develop marketing strategy	$51,195	--	$51,195
Task 3 – Develop outreach tools and partnerships	$18,426	$9,680	$28,106
Task 4 – Develop and deploy media campaign	$33,940	$55,704	$89,644
Task 5 – Implement targeted outreach programs	$46,976	$10,600	$57,576
Task 6 – Evaluate project	$20,780	$439	$21,219
Total grant-funded amount	**$213,665**	**$76,423**	**$290,088**

Note: Additional contributions outside the grant amount are presented in Table 9.

Reallocation of Grant-Funded Project Expenditures (February 2013)

Task	Original Total Eligible Cost	Revised Total Eligible Cost
Task 1 - Manage and administer grant project	$42,347	$42,348
Task 2 – Research and develop marketing strategy	$16,283	$51,195
Task 3 – Develop outreach tools and partnerships	$42,283	$28,106
Task 4 – Develop and deploy media campaign	$155,326	$89,644
Task 5 – Implement targeted outreach programs	$19,044	$57,576
Task 6 – Evaluate project	$14,804	$21,219
Total grant-funded amount	**$290,088**	**$290,088**

STEP #10: Implementation Plan

The *Don't Drip and Drive* campaign kicked off on April 1, 2013. The detailed schedule of implementation for the various tasks, and the identity of the group responsible, is outlined below. The timeline below does not include the following tasks: conducting background research, developing the situation analysis, partnership building, developing the marketing and evaluation plans.

Task	Responsibility	Deadline
January 2013		
Conduct research survey of Advisory Group for business outreach	PRR	January 18, 2013
Complete online survey	PRR	January 25, 2013
Select Strategy for campaign kick-off	Steering Committee	January 25, 2013

Task	Responsibility	Deadline
Select cities for business events; begin recruitment for partners	Steering Committee /Advisory Group	January 25, 2013
Summary of first round of research efforts	PRR	January 29, 2013
Select campaign name/tagline	Steering Committee	January 31, 2013
Agree on campaign advertising mix	Steering Committee	January 31, 2013
Secure campaign website URL	PRR	January 31, 2013
February 2013		
First drafts of logo	PRR	February 4, 2013
Finalize creative brief	Steering Committee	February 4, 2013
Secure locations for business events	Steering Committee	February 4, 2013
First draft of the evaluation plan	Cascadia	February 11, 2013
Select campaign spokesperson	Steering Committee	Feb 15, 2013
First draft of campaign signage/advertising/radio script	PRR	Feb 15, 2013
Negotiate advertising buy	PRR	Mid-February
Conclude efforts to secure sponsor for kits/campaign	PRR	Mid-February
Select location for business event	Cascadia/PRR	Mid-February
First draft of website landing page	PRR	Feb 19, 2013
Select locations for Vehicle Leak Blitz trainings	Cascadia	Feb 19, 2013
Recruit SOGs for Vehicle Leak Blitz trainings	Cascadia/Steering Committee	Feb 19,2013
Second draft of campaign signage/advertising	PRR	Feb 19, 2013
Second draft of the evaluation plan	Cascadia	February 19, 2013
Conduct focus groups to test materials	PRR	Feb 20, 2013
Third draft of campaign signage/advertising	PRR	Feb 27, 2013
Draft toolkits for partners	PRR/Cascadia	Feb 27 , 2013
Plan training elements for ASA members and event volunteers	Cascadia	Feb 27, 2013
Finalize logistics/visuals for media event	PRR	Feb 27, 2013
Draft press materials for kick-off event	PRR	Feb 27, 2013
Finalize social marketing summary	Steering Committee	Feb 28, 2013
March 2013		
Order testing kits	King County	March 1, 2013
Finalize/distribute partner toolkits	PRR/Cascadia	March 1, 2013
Attend ASA event; assist with recruitment	Steering Committee	March 1-3, 2013
Finalize media negotiations	PRR	March 8, 2013
Finalize advertising materials/signage	PRR	March 8, 2013
Materials to print	PRR	March 11, 2013
Distribute testing kits	PRR	March 11, 2013
Develop evaluation tracking form for Vehicle Leak Blitz events	Cascadia	March 11, 2013
Conduct Vehicle Leak Blitz trainings	Cascadia/Steering Committee	March 12-13, 2013

Task	Responsibility	Deadline
Develop evaluation tracking form for ASA partners	Cascadia	March 13
Finalize campaign website/go live	PRR	March 15, 2013
Pitch media for kick-off event	PRR	March 15, 2013
Finalize details for business event. Secure volunteers	Cascadia	March 15, 2013
Finalize list of participating ASA locations	PRR	March 15, 2013
Materials delivered to ad stations/ASA partner locations	PRR	March 22, 2013
Conduct trainings of ASA partners	Cascadia	Mid-March
Conduct training for business event volunteers	Cascadia	Mid-March
Kick-off event	All	Week of March 25, 2013
Advertising begins	PRR	Late March 2013
April 2013		
Campaign launch	All	April 1, 2013
Tracking/follow-up with partners	Cascadia/PRR	April 2013
Hold business testing event at Boeing	Cascadia/Steering Committee	April 2013
Ongoing evaluation	Cascadia	April 2013
Develop evaluation report outline	Cascadia	April 2013
Develop follow-up survey for Boeing event (survey subsequently canceled)	Cascadia	April 2013
May 2013		
Coordinate with ASA partners	PRR/Cascadia	May 2013
Ongoing evaluation	PRR/Cascadia	May 2013
Develop and distribute follow-up survey for SOGs and Steering Committee	Cascadia	May 2013
Develop guide and conduct interviews with ASA partners	Cascadia/Steering Committee	May 2013
Begin drafting summary report	Cascadia/PRR	May 2013
June 2013		
Finalize results and evaluation	Cascadia	June 2013
Compile campaign recap	PRR/Cascadia	June 2013

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Appendices

Appendix A. Social Marketing Planning Process: Step 1−Background Research Summary

Appendix B. Social Marketing Planning Process: Step 2−Situation Analysis

Appendix C. Profile Report

Appendix D. Market Research Report

Appendix E. Evaluation Plan

Appendix F. Barriers and Benefits Matrix

Appendix A.
Social Marketing Planning Process:
Step 1-Background Research Summary

Vehicle Leaks Education and Behavior Change Campaign
Background Information Summary
9-18-12

I. EXTENT OF PROBLEM

- Vehicles and vehicle-related activities represent an important source of a number of contaminants. Examples include: copper and zinc from brake and tire wear, PAHs from fuel combustion, and petroleum from motor oil drips and leaks as well as refueling operations. Source control strategies should be developed around reducing contaminant inputs from vehicles (Department of Ecology, 2011, p. 19).
- Motor vehicles are a major contributor to non-point source pollution. Used motor oil is likely the main hydrocarbon source to stormwater runoff (Latimer, 1990).
- Vehicles are a significant source of polycyclic aromatic hydrocarbons (PAHs), a known carcinogen, in water bodies (Van Metre, 2000).
- Oil and grease concentrations in highway runoff are higher in segments with higher traffic volumes. Parking facilities are also a major source of water pollution from vehicle oil (California Environmental Protection Agency, 2006).
- One gallon of used motor oil can pollute one million gallons of surface water, or drinking water (which is enough to supply water for 50 people for a year) (South Carolina Department of Health and Environmental Control, 2012).
- One pint of oil can make a slick larger than a football field (Washington Department of Ecology).
- Used motor oil is the largest single source of oil pollution in our waters. Americans spill 180 million gallons of used oil each year into our waters (Washington Department of Ecology).
- There are 240 million vehicles of various types on the road now. Nearly one per person (USA Today, 2012).
- Each year, millions of gallons of improperly discharged used motor oil pollute streams, lakes, and coastal areas. This should be cause for concern since one gallon of used oil can contaminate one million gallons of water (Nixon & Saphores, 2007).
- Road runoff carries hundreds of thousands of tons of oil (Nixon & Saphores, 2007).
- An estimated 46% of US vehicles leak hazardous fluids, including crankcase oil, transmission, hydraulic, and brake fluid, and antifreeze (Victoria Transport Policy Institute , 2012).

II. CAUSES OF PROBLEM

- Oil products from automobiles and motorcycles—motor oil, gasoline, brake fluid, and transmission fluid--are only one source of petroleum products contributing to the total amount of hydrocarbons in polluted stormwater runoff (Holte, 2011).
- The Washington Department of Ecology estimates highways and industrial areas contribute more THP to the Sound per unit area than residential areas. Residential areas, however, take up such a large portion of land use in the Puget Sound Area that their total contribution overshadows that of the “dirtier” land uses (EnviroVision Corporation, Herrera Environmental Consultants, Inc., Washington State Department of Ecology, 2008).

- Refined products such as motor oil and gasoline are more toxic than crude oils. First, they disperse more readily into water. Second, soft tissues absorb them more easily. Third, used motor oil often contains contaminants, such as chemicals added to boost engine performance, compounds produced during engine operation, or wastes mixed-in during disposal (Nixon & Saphores, 2007).
- Improperly disposed used oil filters may account for 5% of used oil discarded into the environment. Yet, used oil is the "single largest environmentally hazardous recyclable material (Nixon & Saphores, 2007).
- Another source of non-point source pollution is used coolant/antifreeze, which typically consists of 95% ethylene glycol, a clear, sweet-tasting and highly toxic liquid (Nixon & Saphores, 2007).
- Millions of gallons of coolant/antifreeze are sold each year in the US yet only 12% is recycled (Nixon & Saphores, 2007).

III. QUANTITIES OF LEAKS

- It is difficult to determine how much motor vehicles and roads contribute to water pollution problems since impacts are diffused and cumulative (Victoria Transport Policy Institute , 2012).
- The contributions per vehicle differ greatly from car to car, and older cars often leak more than newer (Holte, 2011).
- Cars generally leak after they have been driven and are cooling down. For this reason some areas are considered "hot spots" of pollution—areas where many cars are parked for a short period of time through the day: gas stations, school parking lots, convenience stores, etc. (Holland, 2000)
- The Washington State Department of Ecology (DOE) report reveals that contributions from residential areas are considerable. The report estimates that 75% of the TPH and Oils released into the Sound via stormwater runoff comes from residential areas (EnviroVision Corporation, Herrera Environmental Consultants, Inc., Washington State Department of Ecology, 2008).

IV. KINDS OF FLUIDS

- Primary locations where fluids may be leaking from a vehicle include (Autobytel.com):
    - Engine oil- Drain plug hole (if not fitted properly or if gasket has failed) or sump gasket
    - Oil from filter
    - Transmission fluid/gear box
    - Antifreeze
    - Brake fluid
    - Power steering fluid

V. METHODS OF DETECTION

- It is possible to identify the leak type by color of fluid, odor, and location under the vehicle (Motortrend.com).
- Place drip pan, cardboard, ground cloths under suspected leak (Motortrend.com).
- Check pavement for markings (Diseno-art.com).

VI. COSTS OF REPAIRS

- Valve cover gaskets and drain plugs are among the most common leaks that are easy and less costly to fix (Mechanics in Puget Sound - STORM survey results, Spring 2012).
- Quantifying these costs is challenging. It is difficult to determine how much motor vehicles and roads contribute to water pollution problems since impacts are diffuse and cumulative (Victoria Transport Policy Institute , 2012).
- Even if we know the quantity of pollutants originating from roads and motor vehicles, and their environmental effects, we face the problem of monetizing impacts such as loss of wildlife, reduced wild fish reproduction, and contaminated groundwater (Victoria Transport Policy Institute , 2012).

VII. REPAIR OPTIONS

- Oil leaks (as a type) are encountered the most by 90% of mechanics, with transmission and antifreeze leaks being the second and third most common (Mechanics in Puget Sound - STORM survey results, Spring 2012).
- 64% of mechanics state that there is “no significant difference” in leaks by vehicle type (car, truck, motorcycle, commercial) (Mechanics in Puget Sound - STORM survey results, Spring 2012).
- Different places under vehicle where leaks can be detected (Autobytel.com):
    - Engine oil:
        - Oil may be leaking out of drain plug hole if the plug is not properly fitted or gasket has failed
        - Also oil can leak from sump gasket
        - Since the leak low down on engine look for oil pooling on the floor.
    - Oil from the filter:
        - Oil can leak from filters if not fitted properly or become loose over time
        - Gasket may have been damaged when being installed
    - Transmission fluid/gear box oil:
        - Oil can leak from failed seals at the inboard ends of drive shafts (CV axles)
        - Rear axle center section
        - Look around the area where the drive shafts enter the gearbox on both sides
        - Also check underneath the transmission/gearbox
    - Antifreeze (coolant):
        - Easy to identify with its color
        - Either red or green
        - Liquid is watery in consistency
        - Often leaves white, powdery crystalline deposits in the area where it leaks
        - Look for weak spots in the cooling system, around the water pump, the hoses entering and exiting the radiator, around the thermostat housing and the radiator.
    - Brake fluid:
        - Any leak found near the wheel
        - Check the hoses entering the brake calipers and brake master and brake cylinders
    - Power steering fluid:

        - It's a hydraulic fluid which may leak out of the pipe connections on the steering rack
    - Fuel leak:
        - Most dangerous type of vehicle leak
        - Identified due to the strong and distinctive odor
        - Fuel leaks, especially in the engine bay can lead to fire

VIII. MESSAGING

- Surveys in Puget Sound indicate that the public perceives oil from leaking vehicles as an important pollutant source (Stormwater Outreach for Regional Municipalites , 2012).
- BMP's (Washington Department of Ecology):
    - Keep your vehicle tuned to reduce oil use.
    - Use ground cloths or drip pans beneath your vehicle if you have leaks or are doing engine work.
    - Clean up spills immediately.
    - Collect all used oil in containers with tight fitting lids.
    - Do not mix different engine fluids.
    - Never dispose of oil or other engine fluids down the storm drain, on the ground or into a ditch.
    - Recycle used motor oil. Many auto supply stores and gas stations will accept used oil.
- How storm drains work – make this connection for people.
- The majority of education campaigns target DIYers to recycle oil, not to check vehicles for leaks.
- Outreach and education programs target non-DIY audiences; as a result, BMPs are not well-established.

IX. STRATEGY – ideas based on existing national programs and STORM steering committee brainstorm

- Many mechanics belong to the Automotive Service Association (ASA) and/or Automotive Service Excellence (ASE). Both are non-profit organizations with missions to improve the quality of vehicle repair and service.
- Partner with EnviroStar – what is their partnership with Automotive Maintenance shops? – Best Management Practices Guide for Automotive Industries
- Gas cap testing/ replacement program – part of emissions testing – E-Check
- Hotline? Help direct people to dispose of used motor oil correctly
    - Increase partnerships
        - Work with retailers to provide displays and promotions
        - Billboards, PSA's, movie theater ads
        - Partnership with television station (campaign becomes official partner)
            - Free ads
            - Brochure distribution
            - Free web advertising
        - Local utilities bill inserts

- SOGS write articles in local newspapers, magazines, etc.
- Increasing fees on lubricating oil to provide dedicated funds to help open more recycling centers, boost public education, and step up enforcement.

X. AUDIENCE

- People that take cars to service shop as majority of population take cars to service shops for vehicle maintenance.
- People who do not know that they have a leak.
- People who own vehicles older than 5 years old as they are more likely to leak; however, it may also depend on vehicle mileage (approx. 80,000 miles).
- **Mechanics Survey** (Mechanics in Puget Sound - STORM survey results, Spring 2012)
    - 46% of mechanics state that between 10-25% of vehicles brought in for a repair or service have a leak. 30% of mechanics say that between 25-50% of serviced vehicles have leak.
    - Most mechanics (90%) notify owners when they see a leak. 56% will include on an invoice.
    - 55% of mechanics will recommend delaying or not fixing a leak, usually if they feel it'll be too expensive to fix or the vehicle is nearing the end of its life cycle (though this is rare).
- **Public Opinion Surveys**
    - Between 64-82% of residents take vehicles to a service shop to have oil changed (Stormwater Outreach for Regional Municipalites , 2012).
    - Between 3-20% of residents always change the motor oil, antifreeze or other fluids at home (Stormwater Outreach for Regional Municipalites , 2012).
    - Between 5-17% sometimes change at home and sometimes take to a mechanic (Stormwater Outreach for Regional Municipalites , 2012).
    - Between 1-5% of DIYers don't know what is typically done with used fluids; all others recycle/take to a store/collection facility/etc. (Stormwater Outreach for Regional Municipalites , 2012).
    - 13-34% of residents would <u>not</u> likely put an absorbent pad on a leak on a driveway (they would hose leaks off or not do anything) (Stormwater Outreach for Regional Municipalites , 2012).
    - 58% "make it a point" to regularly check for oil leaks under their vehicles (Elway Research, Inc., 2012).
    - Homeowners were more likely than renters to regularly check (60% vs. 45%) (Elway Research, Inc., 2012).
    - Car owners under age 35 were less regular checkers than their elders (44% vs. 60% of those over 35) (Elway Research, Inc., 2012).
    - Regular checking generally rose with income, from 54% of those with incomes under $50,000 to 61% of those over $125,000 (Elway Research, Inc., 2012).
    - 91% said they would get a leak checked "right away" if they noticed one (Elway Research, Inc., 2012).
    - Women and especially women over age 50 were especially concerned about these issues (Elway Research, Inc., 2012).

XI. MOTIVATORS/ BARRIERS

- The most common reasons offered by respondents for not doing anything about the leaks is that their cars do not leak – 63% if know their car is leaking, will fix within 3 months (Stormwater Outreach for Regional Municipalites , 2012)
- Extending the life of the vehicle rated "very effective" by 62% (Elway Research, Inc., 2012)
- Knowing how to fix the leak themselves rated very effective by 55% (Elway Research, Inc., 2012)
- Knowing of damage to Puget Sound rated very effective by 46% (Elway Research, Inc., 2012)
- Portland/Vancouver Metro- motivators include convenience, money incentives, in-store promotions and one's kids (presumably health and safety). Primary motivation is about "keeping oil stains off my driveway" than concern for the environment (Regional Coalition for Clean Rivers and Streams, 2006).
- Residents want to do the right thing but they need more info and don't want to work too hard (Regional Coalition for Clean Rivers and Streams, 2006).
- Corvallis- OSU- Personal preference, convenience and costs report as being more important than issues related to the environment (Oregon State University, 2010).
- The strongest concern about the effects of storm water pollution on San Diego was related to the impact of pollution on human health, and the impact of pollution on marine life. Still, we found fairly strong responses to the cost to taxpayers, the impact on tourism, and the pollution of potentially useful water (Goodwin Simon Strategic Research, 2011).

XII. NATIONAL INFORMATION

- In the US, only half of all used oil is recycled (Nixon & Saphores, 2007; US Environmental Protection Agency, 1996).
- Atlanta's Clean Water Campaign increased the number of people likely to check their cars for leaks from 68% to 83.8% between 2001 and 2004 (O'Brien, 2005).
- San Diego- 17% of vehicle owners report seeing a leak of fluids from their vehicle in post campaign surveys, up from 9% in 2010 (Goodwin Simon Strategic Research, 2011).
- Between 3 and 25% of lubricating oil sold but not recycled is estimated to reach surface waters in California (Denton, 2006). This amounts to 6.1 million gallons as the estimated volume for an average runoff year (Denton, 2006).
- San Diego- Major barriers include a sense that one's own vehicle does not leak fluids (50%) and lack of knowledge that such leaks pollute the ocean (24%) (Goodwin Simon Strategic Research, 2011). Only 14% said too expensive to fix, another 14% said no benefit to fix small leaks (Goodwin Simon Strategic Research, 2011).
- South Carolina- Clemson University- Nearly 81% of respondents indicated they "never" operated a vehicle with a leak (Mobley, Witte, Pargas, & Green, Environmental Attitudes, Knowledge, and Behaviors of Residents of the Pee Dee Region, S.C., 2009). Males were more likely than females to indicate they "always" or "nearly always" operated a vehicle with a leak (Mobley, Witte, Pargas, & Green, Environmental Attitudes, Knowledge, and Behaviors of Residents of the Pee Dee Region, S.C., 2009).

- South Carolina- Horry & Gorgetown- 65% respondents indicated they “never” operated a motor vehicle with a leak. Males were more likely than females to indicate they “always” or “nearly always” operated a vehicle with a leak (Mobley, Witte, Pargas, & Green, Environmental Attitudes, Knowledge, and Behaviors of Residents of Horry and Georgetown Counties, S.C., 2009). Ages 18-34 were far more likely than individuals from other age groups to indicate they “always” or “nearly always” operated a vehicle with an oil leak (Mobley, Witte, Pargas, & Green, Environmental Attitudes, Knowledge, and Behaviors of Residents of Horry and Georgetown Counties, S.C., 2009).
- Corvallis- OSU- 48% report allowing cars to leak and cite the cost of repairs as the primary reason not to fix their cars right away (Oregon State University, 2010). Lack of knowledge is a significant barrier (Oregon State University, 2010).
- Very few social marketing programs with evaluation measures exist to support non-DIYers to check for leaks and fix them if found. Those programs include Atlanta’s Clean Water Campaign, San Diego, and others.
- Ad Campaign - Portland/Vancouver Metro (Regional Coalition for Clean Rivers and Streams, 2006)
    - Ad campaign needs to be personal, simple, informative and feature a website.
    - Show the problem- be crystal clear and don’t beat around the bush
    - Work with retailers to provide displays and promotions

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Appendix B.
Social Marketing Planning Process:
Step 2–Situation Analysis

VEHICLE LEAK EDUCATION & BEHAVIOR CHANGE PROJECT

SITUATION ANALYSIS

AS OF OCTOBER 31, 2012

PRODUCED BY

STORMWATER OUTREACH FOR REGIONAL MUNICIPALITIES (STORM)

Existing Conditions

The Purpose and Goal Statement

Purpose:

- To decrease the threat from vehicle leak pollution (engine oil, hydraulic and transmission fluids, etc.) into stormwater by developing and implementing a social marketing campaign.
- Design the campaign so that it can be replicated by jurisdictions throughout the Puget Sound area.
- Ensure the campaign will enable STormwater Outreach for Regional Municipalities (STORM) members to meet NPDES permit education and outreach requirements.

Our Primary Goal is to:

- Motivate vehicle owners in the Puget Sound region to test up to 10,000 vehicles for leaks, and measure a repair rate of up to 60% of vehicles determined to have leaks by June 2013.

Our Secondary Goal is to:

- Create an ongoing stable funded campaign that will provide tangible benefits to water quality in Puget Sound.

Overview of activities and role of STORM

This project will be developed and implemented by STORM members, who will work with PRR and Cascadia Consulting Group, the project consultants, to facilitate the process. STORM members have established the following committees:

Steering Committee

The Steering Committee's role is to coordinate the day-to-day activities associated with this project. Roles and responsibilities include: strategic planning, manage grant and consultant contracts, conduct background and formative research, develop marketing and evaluation plans, engage project partners, coordinate with the Vehicle Leak Advisory Committee, the STORM Core group and Seattle's Automotive Maintenance Program (AMP), coordinate project implementation throughout the Puget Sound region, and conduct evaluation to measure effectiveness of the social marketing campaign. Additionally, the Steering Committee will facilitate the Oil Leaks Near-Term Action highlighted by the newly adopted 2012 Action Agenda. Members on the Steering Committee include Doug Rice (King County), Kathy Minsch & Idris Beauregard (City of Seattle), Justine Asohmbom (Washington Department of Ecology), Stef Frenzl (Snohomish County), Peter Holte (City of Redmond), Heather Trim (FutureWise), and our consultants,

PRR and Cascadia Consulting. Janet Geer (City of Bothell) served on the Steering Committee from January-October 2012.

Advisory Committee

The Advisory Committee's role is to review the work completed by the Steering Committee and provide feedback to ensure the project is replicable by other jurisdictions throughout the Puget Sound region and compliments other regional efforts, such as the City of Seattle's AMP. Additionally, the Advisory Committee members will provide support and coordination with market research, coordination with Stormwater Outreach Groups (SOGs), ECONets and other partners, and project implementation and evaluation as needed and available. There are approximately 20+ Advisory Committee members representing jurisdictions throughout Puget Sound.

STORM Core Group

The STORM Core Group provides general support and strategic direction to STORM and its members. The STORM Core Group helps ensure that this project is strategically aligned with the *Puget Sound Starts Here* Phase II campaign.

Project Description

This project aims to decrease the impact from petroleum and other vehicular fluid leaks contaminating stormwater runoff thereby degrading water quality throughout the Puget Sound region. The project is designed to follow the 10-Step Social Marketing Process as described by Nancy Lee, co-author of *Social Marketing: Influencing Behaviors for Good*. Specific strategies and activities (strategic marketing mix) will be determined after selecting a target audience and performing the necessary research to understand barriers, benefits, and competition. The project will also employ standard marketing strategies involving commercial and sponsor agencies.

Defining the Problem

Recent studies[1] confirm that petroleum-based oil, grease and, to a lesser extent, other fluids such as transmission, power steering, brake and windshield wiper fluids are significant toxic contaminants reaching Puget Sound through stormwater runoff. Stormwater picks up these pollutants from paved surfaces and carries them into receiving waters where they accumulate in sediments, harm water quality, and kill aquatic life. The Steering Committee developed a thorough problem summary and impacts titled *Car Care: Automobile Oil Leaks* (Attachment 1).

Nixon and Saphores[2] show that some causes of non-point source pollution were unintentionally created by regulations or could be addressed by simple design changes of motor vehicles. A review of applicable

[1] [1] *Ecology and King County, 2011. Control of Toxic Chemicals in Puget Sound: Assessment of Selected Toxic Chemicals in the Puget Sound Basin, 2007-2011. Washington State Department of Ecology, Olympia, WA and King County Department of Natural Resources, Seattle, WA.*
Ecology Publication No. 11-03-055. www.ecy.wa.gov/biblio/1103055.html.

[1] *Nixon and Saphores, Impacts of Motor Vehicle Operation on Water Quality in the United States - Clean-up Costs and Policies- http://www.uctc.net/papers/671.pdf*

measures suggests that effective policies should combine economic incentives, information campaigns, and enforcement, coupled with preventive environmental measures. In general, preventing water pollution from motor vehicles would be much cheaper than cleaning it up.

Project Drivers

NPDES permit regulations encourage permitted jurisdictions to work regionally to accomplish outreach and education--targeting specified audiences and Best Management Practices (BMPs). The 2013-2018 Phase I and Phase II NPDES permits require jurisdictions to implement education, outreach, and behavior change projects to improve water quality. These permits also require jurisdictions to measure at least one project for effectiveness.

The lead agency for the GROSS Grant management and coordination (King County) is also responsible for taking the lead on the Oil Leaks Near-term Action highlighted by the newly adopted 2012 Action Agenda. The NTA reads as follows:

"Vehicle Leaks Prevention – King County, in cooperation with Seattle, Washington State Department Of Transportation (WSDOT) (spell out, used first time), the STORM Advisory Committee, and PSP will lead a regional discussion to develop options and recommendations for a new program to inspect and eliminate privately owned vehicle drips and leaks by June 2014. This work builds on the related work of existing grants to STORM and Seattle on vehicle leaks and drips".

Near-Term Action (NTA) PERFORMANCE MEASURES: By September 2012, convene first forum. By December 2013, convene up to three additional forums and use information from the STORM and Seattle grant-funded efforts to identify opportunities, challenges, options, and recommendations. By July 2014, complete a recommendation report for policy changes, public education and behavior change campaigns, and funding needs. Recommendation report will be presented to the ECB, the Science Panel, and the Leadership Council for consideration of a final near term action related to the vehicle leak issue.

Stakeholders & Potential Project Partners

The bulleted list below identifies a partial list of stakeholders and potential project partners:

- Vehicle Owners
- Vehicle Drivers
- WA Dept of Ecology
- STORM jurisdictions/ SOGs
- Puget Sound Partnership
- Local ECONets
- WSDOT
- EPA
- Puget Sound Regional Council
- Public Transit Agencies
- Automotive fleets agencies
- Automotive Service Association (ASA)
- Automotive Service Excellence (ASE)
- Automotive Aftermarket Industry Association (AAIA)
- AAA
- Auto repair shops
- Mini-lube shops
- Automobile Owner/dealers
- Automobile community clubs
- Local businesses with large number of employees
- Car rental agencies
- Car fancier groups
- Auto insurance industry
- Carwash industry
- Automobile owners/drivers
- Schools; higher education institutions
- Volunteer organizations

Strengths, Weaknesses, Opportunities & Threats (SWOT)

The Vehicle Leak Advisory Committee developed an initial one-page Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis at the April 18, 2012 meeting (Attachment 2). This analysis will be reviewed and revised after market research is conducted, and prior to development of the comprehensive social marketing plan.

Existing Programs & Research Findings

Existing Programs

Research shows that 80% of vehicle owners take their cars to service providers for maintenance. However, most existing programs specifically target those that perform their own vehicle maintenance, which is only 20% of all vehicle owners. The Steering Committee found very few existing programs that target vehicle owners that take their vehicles to service providers. The City of Seattle Public Utilities' Stormwater Automotive Maintenance Program (AMP) is among the few programs that target vehicle owners; the program hosts hands-on workshops to provide comprehensive training and education to City of Seattle residents.

Many programs have conducted background research and/or identified lessons-learned that can be useful to this project. The City of Bothell produced a *2012 Vehicle Leak Research Compilation* (Attachment 3), which includes key findings from different studies at the local, state, and national level. The purpose of this document is solely to reveal some common themes and assist in pointing to potential successful program elements as well as gaps in information.

Summary of Existing Research Findings

In spring 2012, the Steering Committee and Advisory Committee conducted a survey of mechanics throughout the Puget Sound region to learn more about the issue. Although the survey findings cannot be statistically analyzed due to a small sample size, the responses are useful to aid program development (Attachment 4).

The Steering Committee also reviewed the findings from the *2012 Vehicle Leak Research Compilation* and developed *Take Home Messages Based on the City of Bothell's Research Compilation* (Attachment 5) to obtain a high-level understanding of findings from similar projects conducted across the United States.
The take home messages include:

<u>Health & Environmental Impacts</u>

- There is ample evidence that automobile leaks, in general, create significant environmental pollution problems; however specific impacts to species in Puget Sound are potentially a data gap.
- Oil leaks constitute the majority of auto-fluid leaks. Other types of leaks such as antifreeze also are contributors.

Fluid Detection & Best Management Practices (BMPs)

- The color of the fluid indicates the type of auto-fluid that is leaking.
- There is an absence of established BMPs associated with the detection and cleaning up spills caused by leaks.
- There is an emphasis on BMPs associated with the capture and disposal of auto-fluids.

Info from Mechanics in Puget Sound - From STORM survey performed in April, 2012

- Mechanics identified cars older than 5 years and/or with 80,000 miles as more likely to leak.
- Estimates of how many vehicles leak varied considerably.
- Mechanics identified the two least expensive and most common repairs as valve cover gaskets and drain plugs, ranging in cost between $25 and $300, depending on the vehicle, mechanic labor costs, and possibly other factors.
- The cost to fix a leaky vehicle is highly variable, and can range from $25 to $3,000, depending on the vehicle, the type of leak, mechanic's labor costs, cost of replacement parts, etc.
- Many suggest delaying or not fixing leaks if fixes are too expensive, or if the car is ending its life cycle.

Public Opinion and Behavior Data

- 80% of the public does not change their own oil.
- Very few programs have been developed that target car owners that take their vehicles to service stations.
- The general public readily perceives oil leaks as a stormwater pollution issue.
- Once they understand oil from cars is a problem for Puget Sound, they are more likely to get leaks fixed.
- There are examples of successful outreach programs that have partnered with automobile supply stores.

Existing Audience Research: Barriers & Motivators to Fixing Leaks

Barriers to fixing leaks

The barriers listed below have been identified from research conducted by others programs nationwide, and are not necessarily listed in priority order when considering our project's target audience.

- Perception that their vehicle does not leak (based on existing research, over 50% of owners don't believe their vehicle leaks)
- Cost to repair the leak is one of the largest barriers to act immediately
- Lack of knowledge that such leaks pollute local waterways
- Perception that their vehicle's leak probably doesn't make much of a difference
- Lack of education about how their vehicle works, functions of different vehicle parts, and a lack of general understanding about the costs of those parts. This leads to fear that a mechanic may be taking advantage of them.

Motivators to fixing leaks

The motivators listed below have been identified from research conducted by others programs nationwide, and are not necessarily listed in priority order when considering our project's target audience.

- Money incentives, in-store promotions
- Extending the life of their vehicle

- Knowing how to fix themselves
- Convenience and costs
- Knowing of damage to Puget Sound
- Impact of pollution on human health
- Pressure from children on parents to fix leaks

What incentives may be effective at getting vehicle owners to fix the leak immediately?

- Residents want to do the right thing but they need more information and do not want to work too hard.
- In-store promotions and a good website for those that are interested in finding out more.
- Messaging needs to be problem-specific, personal, simple, informative about negative impacts and how people can make a change.
- Focus on various incentives for getting leak fixed immediately:
    - Extending the life of the vehicle rated "very effective" by 62%.
    - Knowing how to fix the leak themselves rated very effective by 55%.
    - Knowing of damage to Puget Sound rated very effective by 46%.
        - Messaging must be delivered repeatedly, through a variety of media.
        - 3 in 4 claim they would use absorbent material or pad to soak up leak.

Data Gaps

The following information includes questions that would be useful to answer before developing a comprehensive marketing strategy.

What facts will help the audience understand the impacts to Puget Sound?

- An estimated percentage (or range) of the number of Puget Sound vehicles that have leaks. (e.g: "X% of cars and trucks on the road have leaks, and most drivers don't know that they have one.")
- Compelling facts about the impacts of vehicle leaks to Puget Sound's health, biota, etc.

What facts and messages will help the audience understand & believe the potential impacts to their vehicle if leaks are not fixed?

- Likelihood that a leak will cause a vehicle to stop functioning.
- How "severe" are the different types of leaks, with regard to a driver's ability to keep on driving?
- If a driver tops off the fluids regularly, does this alleviate risk to the vehicle?
- What are the average/median costs to fix each type of vehicle leak?
- What are the average/median costs to fix the most common types of leaks?
- What is the best way to message the impacts to ensure we are accurate and perceived by the audience as relevant, meaningful, important and believable?
- Can truthfully say, "most leaks could cause a car to fail" through engine seizure, brakes not working, etc. if vehicles leaks are not fixed in a timely manner?

What methods of detection can be used?

- Self-detection via detection kits- see Vehicle Leak Detection Kit Description (page 11).
- Service shops detect leaks and inform customers
    - Will service/repair shops partner with us and support incentives (such as discounts)?

Who are the Trusted Messengers?

- Who do vehicle owners trust most regarding information about the impact of leaky vehicles on Puget Sound?
- Who do they trust the most regarding information about the impact of a leaky vehicle on the vehicle's life?
- Who do they trust to check for leaks?
    - Will audience believe that mechanics are trustworthy, and not just trying to "up-sell"?
- Who do they trust to repair vehicles?

What are the Audience Attitudes, Beliefs & Behaviors?

- What mental models (motivators & barriers) do vehicle owners have that influence their willingness to inspect their own vehicle using a kit, or have another person (non-professional) inspect with a kit?
- What mental models do vehicle owners have that influence their willingness to take the vehicle to a shop to inspect for leaks?
- What mental models do vehicle owners have that influence their willingness to fix their vehicle after they learn they have a leak?

How can we develop an effective partnership with the auto service industry?

- What percentage of auto shops in the Puget Sound region are ASA certified?
- Which shops have ASE certified mechanics?
- What important shops are not certified (e.g. lube shops)?
- What is the geographic distribution of these shops?
- Will ASA be willing to give free vehicle leak inspections and discounted pricing?
- How can we develop a program that will influence the industry to make business-model changes that will decrease the number of leaky vehicles and improve water quality?

Potential Target Audience Segments

Based on an initial conversation with PRR and Cascade Consulting Group, the Steering Committee is considering two primary target audiences, which include:

1) vehicle owners of vehicles that are over 5 years old and/or have traveled over 80,000 miles.

2) vehicle owners who take their cars to service stations, dealerships or mechanic shops for regular maintenance and/or repair. This segment relies on shops to detect leaks and inform customers.
    - Between 64-82% of residents take vehicles to a service shop to have oil changed.

3) vehicle owners who are employees of businesses that participate in a Commute Trip Reduction program.

4) vehicle owners who don't know whether they have a leak and will either self-detect for leaks or allow others (e.g. volunteers, STORM members, ECONet members, etc) to check for leaks for them. This audience was selected based on the following findings: that a majority (63-91%) of owners who learn that they have a leak state that they will take the vehicle to a mechanic to repair the leak within three months.
    - 63% - 91% state that if they know that their vehicle is leaking, they will fix vehicle within 3 months.

Additional Audience Segments to Consider

Depending on the viability of the campaign options described in the section below, we may include additional audience segments to refine our marketing strategy for each audience. Potential audience segments include, but are not limited to:

Behavioral/Knowledge Segments

- Vehicle owners who do not know whether they have a leak.
- Vehicle owners who won't fix a vehicle immediately upon knowing that their vehicle leaks.
- Vehicle owners who will fix a vehicle immediately upon knowing that their vehicle leaks.
- Vehicle owners who know that they have a leak, but they don't fix it immediately.
- Vehicle owners who don't routinely take vehicles in for oil change
- Vehicle owners who commute over 150 miles per week
- Vehicle owners who use mobile devices
- First time drivers

Demographic Segments

- Income, age, gender, education, race, occupation, etc.
    - Car owners under age 35 were less regular checkers than their elders (44% vs. 60% of those over 35).
    - Women and especially women over age 50 were especially concerned about water quality and how their personal behaviors impact water quality.
    - Homeowners were more likely than renters to regularly check for leaks.

Geographic Segments

- Urban, suburban, rural, or delineated geographic boundary

Psychographic Segments

- Values and lifestyles of car owners who are most likely to fix leaks if known.
- Vehicle owners who own vehicles older than 5 years old as they are more likely to leak; however, it may also depend on vehicle mileage (approx. 80,000 miles).

Campaign Strategy Options

This section includes five campaign strategy options that the Steering Committee has identified for further inquiry prior to selecting a campaign strategy. Each of these campaign strategies may require a different marketing strategy, including different messages, messengers, media channels, partnerships and/or sponsorships, incentives, products, etc. to maximize success.

Option 1: 4-month Vehicle Check Campaign

Target Audiences

1. Vehicle owners who take their vehicles to a shop for routine maintenance. Shops detect leaks and inform customers when a repair is needed.
2. Vehicle owners who self-detect leaks (or have it done for them) and take the vehicle to shop for repair.

Concept

Launch a 4-month partnership with ASA, ASE, and service shops (e.g. Jiffy Lube, tire shops), or similar groups to encourage automobile owners to check for leaks and get them fixed. Partnering shops would offer free leak checks and inform the vehicle owner if a leak exists during a 4-month period. Repair shops will offer a percent discount to fix leaks, and non-repair shops will provide a coupon for vehicle owner to take to a repair shop and receive a discount. Partnering shops will install a *Puget Sound Starts Here* decal (or other decal) on storefront window or other signage during the campaign. The promotion would be supported by a mass media campaign providing education and encouraging people to take action to identify and fix leaks. If the budget allows, a mobile app could be created that shows the nearest partnering auto repair shops to the driver's current geographic location (downloadable by QR code). The campaign could include radio (NPR's Click and Clack advertisement), online ads, social media contests and messaging, billboards, etc., earned media, and a website with a map of partnering auto shops.

Benefits

- Would likely enable STORM members to meet NPDES compliance, assuming partners are willing to participate. STORM members could augment campaign by providing additional outreach through utility mailer inserts, advertisements, mailers to targeted areas, etc.
- Uses a multi-media campaign to reach and inspire a diverse target audience to strengthen awareness and achieve behavior change (fix vehicle leaks).
- Creates a sense of need and urgency by providing a limited-time discount.
- Uses celebrity endorsements.
- Reaches a large number of people with limited resources.
- High probability of resulting in a large number of people making the desired behavior change.
- Has the potential to drive the market to continually emphasize vehicle maintenance beyond the scope of this grant, thus maximizing the on-the-ground impact.
- Builds partnerships with key stakeholders – ASA/ ASE to help ensure sustainable program and maximize reach.

Limitations

- As with all options, it may be difficult to measure impacts from campaign on water quality.

Unknowns

- Customer reactions to having a service provider offering a test. Will it be perceived as "they are only looking to drive up business?"
- Interest among ASA and/or ASE to serve as key partners.
- ASA and/or ASE's needs in order to be actively engaged, and to possibly help fund needed market research (focus groups, etc.).
- Ability to obtain pre/post data from auto shops or ASA/ASE to measure program effectiveness (% change in vehicles inspected for leaks and/or repaired during the campaign window).
- Interest and ability for a celebrity endorsement (e.g. Click and Clack from NPR's *Car Talk*).
- Strategy to manage the campaign after grant completion. Could ASA/ASE take over the program in future years in collaboration with STORM Core?
- Long-term sustainability beyond the scope of this project may require additional funding, as well as the established relationships from PRR to continue to manage. How will this occur?

Option 2: Large Business Employer Campaign

Target Audience:

1. Vehicle owners who are willing to have leak detection done for them, and if needed, take the vehicle to shop for repair.

Concept

Identify large businesses, such as Boeing, Microsoft, Amazon, etc., to launch a vehicle leak campaign targeting their employees. Produce materials (emails, posters, promotional items, etc) to build awareness of the issue. SOGs and ECONets would coordinate and implement "vehicle leak blitzes," where employees would have their personal vehicles tested for leaks via kits during their normal working hours. SOGs/ECONet participants would identify vehicles with leaks, and would place a brochure on each vehicle notifying them that the vehicle was tested, and if leaks were found, a description of the location, color and type of leak would be provided. A map or link to a campaign website that includes a map (and QR Code to the mobile app and/or website) of participating auto shops within 20 miles would also be provided. The campaign would work best if employees are required to opt-out in order maximize the number of vehicles tested. Large businesses may require multiple days to test vehicles.

Benefits

- Would likely enable STORM members to meet NPDES compliance, assuming local businesses would be willing to participate.
- Leverages resources from SOG and ECONet networks.
- Program materials would likely be easily replicable for implementation throughout Puget Sound region.
- Businesses can actively participate as a key part of the solution.
- Key partnerships established with large businesses – to assist with raising awareness/ getting the word out about environmental priorities.

Limitations

- Mobilizing hundreds (if not thousands) of kits in such a short time frame may require a significant level of coordination with local partners and volunteers.
- Physical nature of testing vehicles (bending down repeatedly) may be challenging for people.

- There may be limits to a jurisdiction's capacity to implement detecting.
- Potentially a relatively small percentage of the Puget Sound population would be targeted; less potential to achieve measurable improvements in water quality as a result of the program. However, improvements at a localized scale would be measurable.

Unknowns

- Interest in large business participation.
- Understanding of large business' motivators (WIIFM) and barriers to participate in the campaign.
- Understanding of employee's response to an opt-out vs. an opt-in program, in addition to motivators and barriers.
- Capacity and interest of SOGs and ECONets to assist with coordination and checking vehicles.
- List of large businesses that are likely to participate.
- Costs of test kits and reliability of data.
- Would the leak detection kit work if the car sat there all day?
- What would you do about cars that don't belong to employees? What about employees that drive during their lunch hour?
- Should we have a section of the parking lot set aside for people that agree to have their car tested as an "opt-in" strategy? Will businesses allow for this?

Option 3: Retail Business, Convenience Store, Parking Garages & Public Transit Parking Lot Campaign

Target Audience:

1. Vehicle owners who are willing to have leak detection done for them, and if needed, take the vehicle to shop for repair.

Concept

Identify priority retail businesses (Lowes, Walmart, Target, grocery stores, etc), convenience stores (7-11, Johnson's Corner, etc) and public transit parking lots to launch a vehicle leaks campaign. Produce materials (emails, posters, promotional items, etc) to build awareness of the issue. SOGs and ECONets would coordinate and implement vehicle leak inspections on vehicles when owners have granted voluntary approval. SOGs/ECONet participants would identify vehicles with leaks, and would place a brochure on each vehicle notifying them that the vehicle was tested, and if leaks were found, a description of the location, color and type of leak would be provided. A map or link to a campaign website with a map (and QR Code to the mobile app and/or website) of participating auto shops within 20 miles would also be provided.

Benefits

- Would likely enable STORM members to meet NPDES compliance, assuming local businesses would be willing to participate.
- Leverages resources from SOG and ECONet networks.
- Program materials would likely be easily replicable for implementation throughout Puget Sound region.
- Businesses and public transit agencies can actively participate as a key part of the solution.
- Key partnerships established with large businesses and public transit agencies – to assist with raising awareness/ getting the word out about environmental priorities.

Limitations

- Some jurisdictions may require signed approval prior to conducting leak inspections; limits the number of people that can be reached.
- Mobilizing hundreds of kits in such a short time frame may require a significant level of coordination and resources.
- Physical nature of testing vehicles (bending down repeatedly) may be challenging for people.
- Logistics of working with a business, particularly a large business can be complicated and often involves a national office that can be hard to communicate with to get approvals.

Unknowns

- Length of time needed to adequately check for leaks using the kits.
- Would a public fee parking garage participate by allowing for a discount in parking price of each vehicle if they allow their vehicle to be checked for leaks?
- Willingness of business and public transit centers to participate in program; note- Ecology can attempt to influence public transit centers to participate, as they all have stormwater permits.
- Understanding business' motivators (WIIFM) and barriers to participate in the campaign.
- Capacity of SOGs and ECONets to assist with coordination and checking vehicles.
- List of large businesses that are likely to participate.
- Costs of test kits and reliability of data.

Option 4: Volunteer Campaign

Target Audience:

1. Vehicle owners who are willing to have leak detection done for them, and if needed, take the vehicle to shop for repair.

Concept

Volunteers from church groups, boy scouts, WRIA groups, environmental groups, retail groups and others would pledge to test numbers of vehicles and report findings as well as pass out brochures.

Benefits

- Would likely enable STORM members to meet NPDES compliance, assuming groups would be willing to participate.
- Leverage diverse members from the community to implement the program.

Limitations

- Requires extensive coordination with multiple individuals.
- Potential challenges of receiving data back from individuals.
- Ability to strategically focus efforts may be limited.
- Coordinating and disseminating kits could be logistically challenging, time consuming and inefficient.
- Implementation is dependent on multiple factors out of SOG and ECONet's control.
- Relies on unpaid individuals to fulfill commitments in a timely manner.

Unknowns

- Willingness/ interest of groups to implement program.
- Costs of test kits and reliability of data.

Option 5: School Campaign

Target Audience:

1. Vehicle owners/drivers who are willing to self-detect leaks or have leak detection done for them, and if needed, take the vehicle to shop for repair.

Concept

Develop and launch a pilot program with a local school to encourage the use of take-home kits. Students would be educated on the issue, encouraged to take kits home to test their family's cars, and compete with other students/classes/schools to test the most number of vehicles. The class/school that tests the most cars could win a prize. Students could sign a pledge to be a good "environmental steward" and those with leaks pledge with their parents to take their car in for repair. They would be provided with a discount coupon to fix the leak. The school could report on the number of leaks identified and the number of cars fixed at the end of the promotion.

Benefits

- Would likely enable STORM members to meet NPDES compliance if they participate by supporting their local program, assuming schools would be willing to participate.
- Ability to tell a good success story in a small and manageable environment.
- Good story for earned media purposes.
- Measureable results.
- Leverages resources from SOG and ECONet networks by selecting a school(s) in a key resource area.
- Key partnerships established with schools – to assist with raising awareness/ getting the word out about environmental priorities.

Limitations

- Small population segments; overall impact is small.
- Coordinating and disseminating kits could be logistically challenging, time consuming and inefficient.

Unknowns

- Willingness of schools to implement the program.
- Ability of students to encourage their parents to pay for leak repairs. Many vehicles may be old, and may not be considered a good investment to repair the leak.
- Average age/mileage of student vehicles.
- Logistics of the test kits – are they easy enough for students and their parents to do on their own?
- Costs of test kits and reliability of data.

Vehicle Leak Detection Kit Description

Detection kits would likely have a white, laminated surface with folding, stiff card weight material about 5' x 5'. 'How to' instructions could be printed directly on the kit, and might possibly include a graph to measure numbers of tests. Kits would include a brochure that would congratulate those with non-leaking vehicles but urge them to test regularly for the reasons given. Brochures would notify vehicle owners with leaking vehicles, and could possibly include colors and location on a diagram, as well as a check-box list to indicate likely types of leaking fluids). Brochure would explain where to take the car and what to ask for from a mechanic. Kits would include information about repair discount. It would address concerns and barriers that we discover about the audience and it would also direct folks to the website for more information. Kits could be wiped clean after each use to maximize its life (1,000 kits that test ten cars each would meet our grant deliverable), but kits should be sturdily-designed to test as many vehicles as possible.

Outstanding Questions Related to the Detection Kit Concept

Design Questions

- What are the appropriate kit dimensions when deployed? When in storage?
- How heavy are they?
- Will the scored sections of the kit decrease length of life (average number of uses per kit)? Will they affect the kit if a leak spills onto a scored section?
- How clear will text/graphics be underneath the kit laminate?
- What information should we include on the kits (text/graphics)?
- What information should be on the brochures?

Financial Questions

- How much will the kits cost? Are there price breaks for bulk orders?

Logistical Questions

- How much time is needed for a kit to stay underneath a vehicle in order to effectively determine if a leak is present? Does this change with the type of leak?
- How much storage space is needed to keep 1000 kits? Where will these be stored prior to the project? After project completion? Do jurisdictions have adequate room to store them?
- How will we transport kits to distribute and deploy them?
- How many can the "average person" carry at one time? Are they bulky to carry?
- How many kits can fit into an average-sized car or car trunk?
- How can we ensure inspectors will report (accurately) information back for evaluation?
- How to dispose of dirty kits individually? En masse?
- How can we minimize impact of rain on brochures that are placed on a windshield?

Audience's Willingness

- What mental models (motivators & barriers) do vehicle owners have that influence their willingness to inspect their own vehicle using a kit, or have another person (non-professional) inspect with a kit?
- How will vehicle owners respond to volunteers, jurisdictional staff, etc. placing kits underneath their cars? Are there better trusted messengers?

Volunteer's Ability to Deploy/Retrieve Kits

- What physical barriers exist for people to use the kit (ability to bend down and get on all 4s)?
- Can we devise a contraption that will enable a person to deploy/retrieve a kit under a car without having to bend down and get on all 4s?
- Will volunteers be willing to wipe off kits and then put them in their cars?
- What PPE, if any, do inspectors need?
- Are there liability concerns related to asking volunteers to use kits?

Campaign Option Assumptions

Below is a list of project assumptions related to the above-mentioned strategies:

- Following the 10-Step Social Marketing Approach, as developed by Nancy Lee, will provide the Steering Committee a framework and process for developing the social marketing mix.
- Additional funding for activities beyond the scope of the 2012 GROSS grant will be necessary to implement either local or regional marketing strategies to support a long-term, sustainable program. Funding sources may come from jurisdictions, grants, and other funding sources.
- Background and market research completed by this project will support efforts to address the Puget Sound Partnership Action Agenda's Near-term Action (NTA) C 2.4.2.
- SOG's and ECONets will assist with the campaign by helping implement program elements locally.
- We will use a market mix composed of both traditional and social marketing strategies.
- We will use radio and/or digital media mix to support program.
- If folks discover they have an auto leak, approximately 63-91% will repair the leak within three months.
- Vehicle leak detection kits will effectively identify most vehicle leaks.
- Key partners will participate as outlined in each strategy.

Logic Model for Implementation & Evaluation

Once the campaign strategy options are selected, the Steering Committee will develop logic models.

Geographical Influence and Scope

The Steering Committee will consider piloting programs in targeted geographic areas throughout the Puget Sound region. Additional research, planning and budget analyses are needed to determine priority geographic areas. Listed below are potential criteria to consider when selecting geographic areas:

- urban and rural
- population density
- population demographics
- capacity and interest from SOGs and ECONets
- ability to secure business partners

Political, Financial and Cultural realities

A number of factors may play a role in our ability to maximize our program's effectiveness. Below is a bulleted list outlining some of these factors. The Steering Committee should further elaborate on political, financial and cultural realities after market research has been completed.

Political

- The Puget Sound Partnerships commitment to addressing oil leaks as highlighted by the newly adopted 2012 Action Agenda may ensure momentum is continued to identify long-term solutions to the vehicle leak problem.
- 2012 is an election year, and WA State will elect a new governor. The results of this election may have a strong influence over state agencies' ability to financially support a long-term program in future years.
- The availability of EPA funding will be dependent on the outcome of the Presidential and Congressional races.

Financial

- Poor economic conditions have had significant financial impacts to many in our region. It is likely that many people who have older cars that leak cannot afford to fix the leak.
- State and municipal budgets are likely to continue to decrease, resulting in the potential for less funding to support this program beyond the scope of this grant.
- Other financial sources, such as private foundations, may be interested in contributing to this project in the future, especially if evaluation results indicate a significant benefit.

Cultural

- People love their cars. To most Americans, cars provide a real sense of identity. Making sure that messaging and strategies acknowledge this will be important for our success.
- People from varying ethnic cultures may respond differently to requests to test vehicles for leaks or to taking their vehicles in to service shops. The City of Seattle's AMP targeted diverse audiences, and may be able to provide additional insight.

Messaging Strategies to Consider

The best selling book, *The Culture Code: An Ingenious Way to Understand Why People Around the World Live and Buy as They Do*, by Clotaire Rapaille, may provide useful insight in the development of effective messages for this campaign. The author hypothesizes that different cultures have varying "culture codes," which are unconsciously adopted by most of the individuals within a culture. Based on his research, the American Culture Codes for the following are:

Car = IDENTITY
Quality = IT WORKS
Money = PROOF
Perfection = DEATH
Shopping = RECONNECTING WITH LIFE
Luxury = MILITARY STRIPES
Work = WHO YOU ARE
Home = RE (prefix)- (RETURN, RENEW, REKINDLE, REUNITE, etc)
Health & Wellness = MOVEMENT
Love = FALSE EXPECTATION

An important culture code to focus on may be car=IDENTITY. One approach would be to reinforce a positive identity with a car that runs clean (no drips); relate it to independence/liberation, freedom from authority figures. For many drivers, a car is not about saving money; if we focus on saving money, our messaging strategy will likely fall on deaf ears (especially because it falls within the prisoner's dilemma concept as well). IDENTITY also has to do with face or Saving Face, which could be utilized in tandem as a messaging strategy below.

Potential Messaging Strategies

1) Emphasize fixing leaks and reinforce the following cultural codes:
    a. Car- IDENTITY- freedom, independence, individualism, special
    b. Health & Wellness = movement
    c. Quality- IT WORKS- reliable

2) Emphasize the consequences of not fixing a leak (whether known or unknown), reinforce the negative side to the cultural codes (what people don't want to happen):
    a. Shackles of being dependent, no fun (opposite of IDENTITY)
    b. Unexpected break-down of vehicle, miss important event (opposite of IT WORKS)
    c. Losing "face" for having a "drippy" vehicle. "Are you a drip?"

3) Directly Address Conscious Motivators
    - People are also motivated by knowing oil is a problem for Puget Sound and fish.
    - Extending the life of their vehicle
    - Knowing how to fix themselves
    - Convenience and costs are more important than issues related to the environment
    - Knowing of damage to Puget Sound
    - Impact of pollution on human health
    - Pressure from children on parents to fix leaks

Attachments

1. Car Care: Automobile Oil Leaks
2. Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis
3. 2012 Vehicle Leak Research Compilation
4. Mechanic Survey
5. Take Home Messages Based on the City of Bothell's Research Compilation

Attachment 1

Car Care: Automobile Oil Leaks

Defining Stormwater Pollution Issues Related to Motor Oil Leaks

Defining the Problem

The measurement used to quantify the amount of petroleum in the Puget Sound and other aquatic systems is called the *Total Petroleum Hydrocarbon* (TPH). Various types of petroleum products contribute to a TPH measurement: gasoline, motor oil, fuel oil, heating oil, asphalt, asphalt sealers, etc. For this reason, when determining how automobile oil leaks have contributed to pollution load, the following needs to be considered:

- Oil products from automobiles and motorcycles, motor oil, gasoline, brake fluid and transmission fluid—are only one source of petroleum products contributing to the total amount of hydrocarbons in polluted stormwater runoff.

- Automobile motor oil is different from crude oil—the type of oil that is associated with tanker spills such as the Exxon Valdez. The manner and rate at which pollution from oil leaks occurs is much different than from a crude oil spill.

- The ingredients in automobile motor oil can vary from brand to brand. A number of materials in any particular brand may contain numerous additives that are considered proprietary and therefore not subject to public disclosure rules.

- The oils we put in our motor vehicles, like other petroleum products, contains toxic compounds that can chronically impact aquatic organisms.

Characterizing Petroleum Pollution in Stormwater

The specific impact of petroleum products on the environment varies widely according to the precise composition of the petroleum product, the organisms or habitat affected, and the circumstances of exposure (Overton, Sharp and Roberts 1994). Generally, the specific impacts on organisms—including humans—can be divided in to two broader, less specific categories:

- Acute physical, toxic impacts including those resulting from direct physical contact with petroleum products or those that result from accidental ingestion.
- The slow, persistent build-up of pollution in aquatic systems over time; leading to slowly degrading habitat and enabling toxins to enter the food chain.

The Washington Department of Ecology modeling estimates found that stormwater from industrial areas and roads contribute more THP to Puget Sound per unit area than residential areas. Residential areas, however, take up such a large portion of landuse in the Puget Sound Area that their total contribution overshadows that of “dirtier” land uses (EnviroVision et al. 2008, Herrera 2011). This fact combined with other factors, has considerable weight on this discussion.

Pollution from motorized vehicle oil leaks often occurs drop-by-drop, over a large area, and continually as opposed to all at once, as a result of a single event. The contributions per vehicle differ greatly from car to car, with older cars (car > 5 years old) often leaking more than newer cars (STORM 2012). Further, cars generally leak after they have been driven and are cooling down. For this reason some areas are considered “hot spots” of pollution—areas where many cars are parked for a short period of time throughout the day: gas stations, school parking lots, convenience stores, post offices, etc. (Center for Watershed Studies 2000).

When it rains, stormwater runoff collects oil trapped on impervious areas, aggregates it together in stormwater systems, and conveys it to our lakes, rivers, streams, ponds and the Sound. Once in these natural waterways, the oil is either trapped in sediment within the aquatic system, or

continues downstream. If the oil is not trapped further upstream, Puget Sound's sediments become the final recipient of the pollution load.

Taking into account the method and approximate rate of loading, the overriding stormwater-related environmental impact caused automobile leaks is likely: the gradual accumulation of the petroleum-related pollutants in the environment over time, resulting in a slow, cumulative degradation of aquatic habitats and an increased presence of toxins within aquatic food webs.

PAHs and Their Impact on Aquatic Systems
When petroleum products break down due to exposure to sunlight, burning or combustion, or due to decomposition by bacteria, they release a class of chemical compounds known for their toxicity: Polycyclic Aromatic Hydrocarbons (PAHs). PAHs are only a portion of a petroleum product's total weight. Values that estimate the TPH should not be confused with the amount of PAH in a system. Further, PAH concentrations reported in monitoring information cannot be assumed to have all originated from motor oil leaks.

PAH are wide spread and numerous studies have found them in the tissues of non-human mammals, birds, invertebrates, plants, amphibians, fish, and humans. The effects of PAHs on organisms vary from species to species. Some PAHs are considered carcinogenic and mutagenic, and a few are considered potent carcinogens to humans (Environmental Protection Agency 2008).

The concerns related to PAHs and aquatic habitats stems from:

- Research that has linked PAHs to liver abnormalities, cataracts, immune system impairments, genetic mutations, and other impacts on various fish species and aquatic insects (Environmental Protection Agency 2008; Eisler 1987; Fabacher et al. 1991; Weeks and Warinner 1984; 1986; O'Conner and Huggett 1988).

- The fact that PAHs accumulate in the sediments of aquatic systems over time and are slow to break down (Battelle and Massachusetts Department of Environmental Protection 2007).

- The tendency of PAHs to rapidly concentrate within organisms as they move up the aquatic food chains—i.e., they rapidly bio-accumulate and bio-magnify (Overton, Sharp and Roberts 1994, Environmental Protection Agency 2008).

Prevalence and Magnitude of the Problem

Estimates of Total Loading
A modeling exercise conducted on behalf of the Washington State Department of Ecology estimates that every year hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers stream, and Puget Sound itself. Most of this toxic pollution comes from small oil motor drips from our cars and trucks (Herrera 2011, Curt Hart 2012).

Caution should be used when conveying this information. Because of the diffuse nature by which oil leaks occur, it is very difficult to connect this pollution issues to a precise number that describes total loading. Additionally, the estimate provided by Ecology accounts for sources of petroleum pollution other than motor oil. For this reason, the estimates of this total loading to the Sound: 1) should be offered by providing an "order of magnitude" description that accurately, if not precisely, describes the magnitude of the issue, and 2) should not confuse total petroleum hydrocarbon loading in the Sound with the amount of petroleum generated solely by motor oil leaks.

Contributions per Vehicle
This literature review did not find information that provides a per vehicle average for automobile oil leaks. However, according to the Washington State Department of Licensing (2012) there are approximately 4 million registered passenger cars in the 12 counties around Puget Sound. By

simply using multiplication, we can surmise that if the average amount of oil leaked onto impervious areas per vehicle is as little as 1 tablespoons/month, the combined contribution of oil leaks would equal more than a hundred thousand gallons of oil per year. Again, this information should be conveyed carefully, and the assumption used, explained.[1]

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[1] One tbsp./car = .0039 gallons; therefore: .0039/month/car x 12 months/year x 4 million passenger cars >100,000 gallons/year.

Attachment 2

Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

SWOT Analysis Vehicle Leaks Education and Behaviour Change Campaign
From April 18, 2012 Vehicle Leaks Advisory Committee

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criteria examples

Advantages of proposition?
Capabilities?
Competitive advantages?
USP's (unique selling points)?
Resources, Assets, People?
Experience, knowledge, data?
Financial reserves, likely returns?
Marketing - reach, distribution, awareness?
Innovative aspects?
Location and geographical?
Price, value, quality?
Accreditations, qualifications, certifications?
Processes, systems, IT, communications?
Cultural, attitudinal, behavioural?
Management cover, succession?
Philosophy and values?

Strengths

- STORM coalition
- Partnerships for campaign ex Ecology, Seattle, SOGS, EcoNets etc
- PSSH
- Awarded grant: $ for consultant,materials, eval, outreach, kits
- Outreach expertise
- Data (Ecology report etc) that leaks are bad
- Support by high level State managers
- SOGS
- NPDES permit mandate

Weaknesses

- Limited staff capacity
- Limited time for grant (13mos)
- Lack of knowledge re cars/leaks
- Lack of programs to mine from/mimic
- Grant restrictions on incentives – can't fund
- Missing DIY's in research
- Not enough $
- Varied support by jurisdiction managers
- Dispersed geography – challenge for meeting locations

criteria examples

Disadvantages of proposition?
Gaps in capabilities?
Lack of competitive strength?
Reputation, presence and reach?
Financials?
Own known vulnerabilities?
Timescales, deadlines and pressures?
Cashflow, start-up cash-drain?
Continuity, supply chain robustness?
Effects on core activities, distraction?
Reliability of data, plan predictability?
Morale, commitment, leadership?
Accreditations, etc?
Processes and systems, etc?
Management cover, succession?

criteria examples

Market developments?
Competitors' vulnerabilities?
Industry or lifestyle trends?
Technology development and innovation?
Global influences?
New markets, vertical, horizontal?
Niche target markets?
Geographical, export, import?
New USP's?
Tactics: eg, surprise, major contracts?
Business and product development?
Information and research?
Partnerships, agencies, distribution?
Volumes, production, economies?
Seasonal, weather, fashion influences?

Opportunities

- PSSH
- Awareness high – people believe leaks are an issue
- Potential business for auto shops
- Recognition
- NTA in PS Action Agenda
- New partners – auto businesses, insurance industry, NGOs etc
- Incentives can be created/distributed by partners
- 81 jurisdictions – getting to non-STORMers
- Other grant sources
- SOGs
- Use STORM self-certification to engage support from jurisdictions

Threats

- Future funding availability uncertainty
- Cost of car repairs for owners
- Violators
- Auto industry
- Knowledge/awareness
- Trust
- Large issue, broad audience
- 43 of 81 NPDES jurisdictions part of STORM
- Economy
- Political environment

criteria examples

Political effects?
Legislative effects?
Environmental effects?
IT developments?
Competitor intentions - various?
Market demand?
New technologies, services, ideas?
Vital contracts and partners?
Sustaining internal capabilities?
Obstacles faced?
Insurmountable weaknesses?
Loss of key staff?
Sustainable financial backing?
Economy - home, abroad?
Seasonality, weather effects?

SWOT Analysis: STORM Vehicle Leaks Education and Behaviour Change Campaign
November 2012 Draft Update of April 18, 2012 Vehicle Leaks Advisory Committee version

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criteria examples	Strengths	Weaknesses	criteria examples
Advantages of proposition? Capabilities? Competitive advantages? USP's (unique selling points)? Resources, Assets, People? Experience, knowledge, data? Financial reserves, likely returns? Marketing - reach, distribution, awareness? Innovative aspects? Location and geographical? Price, value, quality? Accreditations, qualifications, certifications? Processes, systems, IT, communications? Cultural, attitudinal, behavioural? Management cover, succession? Philosophy and values?	• STORM coalition • Partnerships for campaign ex Ecology, Seattle, SOGS, EcoNets etc • PSSH • Awarded grant: $ for consultant,materials, eval, outreach, kits • Outreach expertise • Data (Ecology report etc) that leaks are bad • Support by high level State managers • SOGS • NPDES permit mandate • 43 of 84 NPDES jurisdictions participate in STORM • NTA in PS Action Agenda •	• Limited staff capacity • Limited time for grant (13mos) • Lack of programs to mine from/mimic • Grant restrictions on incentives – can't fund • Not enough $ • Varied support by jurisdiction managers • Dispersed geography – challenge for meeting locations • 43 of 84 NPDES jurisdictions participate in STORM •	Disadvantages of proposition? Gaps in capabilities? Lack of competitive strength? Reputation, presence and reach? Financials? Own known vulnerabilities? Timescales, deadlines and pressures? Cashflow, start-up cash-drain? Continuity, supply chain robustness? Effects on core activities, distraction? Reliability of data, plan predictability? Morale, commitment, leadership? Accreditations, etc? Processes and systems, etc? Management cover, succession?

criteria examples	Opportunities	Threats	criteria examples
Market developments? Competitors' vulnerabilities? Industry or lifestyle trends? Technology development and innovation? Global influences? New markets, vertical, horizontal? Niche target markets? Geographical, export, import? New USP's? Tactics: eg, surprise, major contracts? Business and product development? Information and research? Partnerships, agencies, distribution? Volumes, production, economies? Seasonal, weather, fashion influences?	• New PSSH Campaign • Awareness high – people believe leaks are an issue • Potential business for auto shops • Recognition • New partners – auto businesses/industry, insurance industry, NGOs, state licensing • Incentives can be created/distributed by partners • Reach 41 jurisdictions not part of STORM • Other grant sources • SOGs • Use STORM self-certification to engage support from jurisdictions •	• Future funding availability uncertainty • Cost of car repairs for owners • Violators • Auto industry • Knowledge/awareness • Trust • Large issue, broad audience • Economy • Political environment •	Political effects? Legislative effects? Environmental effects? IT developments? Competitor intentions - various? Market demand? New technologies, services, ideas? Vital contracts and partners? Sustaining internal capabilities? Obstacles faced? Insurmountable weaknesses? Loss of key staff? Sustainable financial backing? Economy - home, abroad? Seasonality, weather effects?

Attachment 3

2012 Vehicle Leak Research Compilation

Vehicle Leak Research Compilation

City of Bothell

2012

This compilation includes key findings from different studies at the local, state, and national level. The purpose of this document is solely to reveal some common themes and assist in pointing to potential successful program elements as well as gaps in information.

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Introduction

The research gathered for this document was placed into four categories; health and environmental impacts data, fluid detection and best management practices, public opinion and behavior data, and known outreach models and materials.

All of the research is listed in the references at the end of this document. The City of Bothell does not take any credit for the findings in this compilation. This compilation includes key findings from different studies at the local, state, and national level. The purpose of this document is solely to reveal some common themes and assist in pointing to potential successful program elements as well as gaps in information.

Health and Environmental Impacts Data

Key Findings- Impacts of Motor Vehicle Operation on Water Quality in the United States
http://www.sciencedirect.com/science/article/pii/S1361920907000892

Hilary Nixon from San Jose University and Jean-Daniel Saphores from Henri Samuel School of Engineering performed a literature review of known studies which calculated the impacts of motor vehicle operation on water quality. Key findings from this report are listed below:

- Annualized costs of controlling highway runoff from principal arterials in the US range from $2.9 billion to $15.6 billion per year over 20 years (1.6% to 8.3% of annualized highway transportation expenditures.)
- A review of applicable measures suggests that effective policies should combine economic incentives, information campaigns, and enforcement, coupled with preventive environmental measures. In general, preventing water pollution from motor vehicles would be much cheaper than cleaning it up.
- The US Environmental Protection Agency (EPA) (1996) estimates that up to half of suspended solids and a sixth of hydrocarbons reaching streams originate from freeways. Each year, millions of gallons of improperly discharged used motor oil pollute, streams, lakes, and coastal areas. This should be cause for concern since one gallon of used oil can contaminate one million gallons of water.
- Stormwater runoff has also generated significant public health concerns. Gaffield et al. (2003) examine impacts from heavy metals in storm-water, which can often be traced to motor vehicle sources. According to Van Metre et al. (2000), vehicles (through tire wear, oil leaks, or car exhaust) are a significant source of polycyclic aromatic hydrocarbons, a known carcinogen, in water bodies.

- Motor vehicles are a major contributor to non-point source pollution. Of the three sources considered, used oil is likely the main hydrocarbon source to runoff (Latimer et al. (1990). According to the US EPA (1996), road runoff carries hundreds of thousands of tons of oil. Used oil is the "single largest environmentally hazardous recyclable material" (MARRC 2001).
- In Washington State, the average weighted cost for implementing runoff control BMP's was $319,000 per lane mile for 18 urban and rural projects dealing with 644 lane miles.
- Another source of non-point source pollution is used coolant/antifreeze, which typically consists of 95% ethylene glycol, a clear, sweet-tasting and highly toxic liquid. Millions of gallons of coolant/antifreeze are sold each year in the US yet only 12% is recycled (Department of Toxic Substances Control 2001). Used coolant/antifreeze is especially a problem for Do-It-Yourselfers (DIY) because current engine design makes it almost impossible to avoid spilling some product when it is changed. Engine coolant/antifreeze can also contribute high biochemical oxygen demand (BOD) levels to stormwater. In spite of its toxicity, there are currently no programs to promote its recycling. A considerably less toxic coolant based on propylene glycol is popular in some European countries, but its US market share is only 10%

Based on their findings, Nixon and Saphores suggest that an effective policy is likely to combine a series of measures including public education and outreach, economic instruments (deposit refund system for used oil), and a partnership with industry.

Key Findings- "CHARACTERIZATION OF USED OIL IN STORMWATER RUNOFF IN CALIFORNIA," California EPA as well as several other state agencies.
http://oehha.ca.gov/water/reports/OilInRunoff0906.pdf

This research is on collected data from highway, parking lot, and industrial facility runoff. The methods for collecting stormwater runoff and the loading estimates they created are discussed at length, but there are several conclusions they make based on their analysis.

"There is evidence that oil and grease concentrations in highway runoff are higher in segments with higher traffic volumes."

"Occasionally, unusually high levels have been reported: for highways and parking lots, levels above 10 mg/l are considered high"

"Oil and grease concentrations reported in earlier studies (from around the 1980s to early 1990s) tended to be higher than in more recent studies. A possible explanation for this may be that less crankcase oil has been leaking from more recent years' vehicle fleets."

"In 2004, about 58 percent of the 150 million gallons of lubricating oil sold in California was recycled; about 20 to 40 percent is assumed to be combusted or leaked as a result of use."

"A simple, screening level calculation was used to derive the annual loadings estimates as the product of pollutant concentration and runoff volume. Oil and grease loadings were estimated to range from approximately 1.7 million pounds to 13 million pounds annually for Los Angeles County. These values correspond to approximately 0.23 million to 1.8 million gallons of used oil. Using these estimated values, total loadings statewide were derived mathematically to range from 16 million to 120 million pounds, an amount roughly corresponding to 2.2 million to 16 million gallons of used oil, respectively, with 6.1 million gallons as the estimated volume for an average runoff year. These volumes are about 3 to 25 percent of the 64 million gallons of lubricating oil sold but not recycled, and about 1 to 9 percent of the 176 million gallons of lubricating and industrial oil sold but not recycled."

I found the loading estimates to be the most valuable information in this article. In "Table 4" on page 25 (pg. 32 in PDF) there is a information on oil and grease concentrations by land use for 2003, showing a much higher level for highways.

I recommend closer examination of this report as it may provide more statistical information if given more time.

Key Findings- "*Transportation Cost and Benefit Analysis II – Water Pollution*" by the Victoria Transport Policy Institute http://www.vtpi.org/tca/tca0515.pdf

The next report describes the impacts of roads and parking facilities as a major source of water pollution

"An estimated 46% of US vehicles leak hazardous fluids, including crankcase oil, transmission, hydraulic, and brake fluid, and antifreeze"

"An estimated 30-40% of the 1.4 billion gallons of lubricating oils used in automobiles are either burned in the engine or lost in drips and leaks, and another 180 million gallons are disposed of improperly onto the ground or into sewers."

This report fails to show direct statistics for individual vehicles but does have cost estimates for the impact of one mile or kilometer traveled by a vehicle. Several sources are cited with respective estimates.

Key Findings- International Chemical Assessment Document 45
http://www.who.int/ipcs/publications/cicad/en/cicad45.pdf

The World Health Organization performed a literature review for the human health effects of exposure to ethylene glycol and reported the following facts:

Ethylene Glycol

1. Several products used in the operation or maintenance of automobiles typically contain ethylene glycol.
2. Concentrations ranging up to 85% may have been present in older automotive brake fluids (US EPA, 1986)
3. The ethylene glycol content of current brake fluids is less than 0.1% (ATSDR, 1997)- Agency for Toxic Substances and Disease Registry.
4. Antifreeze solutions in automobile coolant systems typically have an ethylene glycol content of 50% (Franklin Associates Ltd., 1995).
5. Windshield washer fluids intended for use during winter may contain ethylene glycol at up to 14% by weight (Flick, 1986, 1989).
6. The ethylene glycol content of automobile wax and polish can range up to 3% by weight (US EPA, 1986).

Toxicity caused due to vehicle leaks especially Antifreeze:

1. Ethylene glycol is the main ingredient in conventional antifreeze
2. It tastes and smells good attracting children, pets and wild life
3. The chemical causes irreversible kidney damage
4. 2 ounces of coolant can kill a dog
5. 1 teaspoon can be lethal to a cat

A few companies have replaces ethylene glycol with less toxic **PROPYLENE GYLCOL**.

United States:

Ethylene glycol is a relatively common cause of overdose in American emergency departments.

In 2007, 4977 single exposure cases were reported to the American Association of Poison Control Centers.

Mortality/Morbidity

According to the Annual report of the American Association of Poison Control Center's National Poison data System,

2007	2008
878 minor outcomes	780 minor outcomes
365 moderate outcomes	358 moderate outcomes
135 severe outcomes	140 severe outcomes
16 deaths	7 deaths

Causes:

Suicide attempts

Accidental ingestion

Workplace beverage container mix-ups

Effects on humans:

Minimum lethal dose in humans have ranged from approximately 0.4 g/kg body weight

Following ingestion, toxicity progress in three stages

1. Central nervous system

- Intoxication
- Lethargy
- Seizures
- Coma

2. Metabolic disturbances

- Acidosis
- Hyperkalaemia
- Hypocalcaemia
- Progressing effects on the heart and lungs

3. Renal toxicity

- Deposition of calcium oxalate
- Haematuria
- Necrosis
- Renal failure

This information was provided to explore the aspect of human and pet health from exposure to leaks of antifreeze. Based on this information, we could include health risks if we choose to

reach out concerning this type of specific leak.

Fluid Detection and Best Management Practices (BMP's)

Key Findings Example- Automotive Link to Detection Information
http://www.autobytel.com/car-ownership/maintenance-repair/identifying-automotive-fluidleaks.pdf

Research was initially focused to try and determine where leaks can be found on a vehicle. Autobytle online listed the same/similar information as many other online automotive resources and an example is provided for reference below:

Different places under vehicle where leaks can be detected

Engine oil:

- Oil may be leaking out of drain plug hole if the plug is not properly fitted or gasket has failed
- Also oil can leak from sump gasket
- Since the leak low down on engine look for oil pooling on the floor.

Oil from the filter:

- Oil can leak from filters if not fitted properly or become loose over time
- Gasket may have been damaged when being installed

Transmission fluid/gear box oil:

- Oil can leak from failed seals at the inboard ends of drive shafts (CV axles)
- Rear axle center section
- Look around the area where the drive shafts enter the gearbox on both sides
- Also check underneath the transmission/gearbox

Antifreeze (coolant):

- Easy to identify with its color
- Either red or green
- Liquid is watery in consistency
- Often leaves white, powdery crystalline deposits in the area where it leaks
- Look for weak spots in the cooling system, around the water pump, the hoses entering and exiting the radiator, around the thermostat housing and the radiator.

Brake fluid:

- Any leak found near the wheel
- Check the hoses entering the brake calipers and brake master and brake cylinders

Power steering fluid:

- It's a hydraulic fluid which may leak out of the pipe connections on the steering rack

Fuel leak:

- Most dangerous type of vehicle leak
- Identified due to the strong and distinctive odor
- Fuel leaks, especially in the engine bay can lead to fire.

Key Findings- More Descriptive Online Resource for Finding Leaks
http://www.diseno-art.com/tutorials/how_to_identify_vehicle_leaks.html

For those with some knowledge of vehicles, this more descriptive tutorial was provided online. The following information was taken directly from the website:

When you start seeing random Jackson Pollock-like bits of artwork mysteriously appearing on your garage floor or driveway it's time to start looking for vehicle leaks. There's a number of different fluids which can be seeping out, and they can come from a wide variety of locations. However there are a few problem areas and weak spots which are a good place to start looking.

Sometimes it can be hard to track down the source of a leak, especially if the engine is dirty, as most are. Always check around - and most importantly above - the area where you see fluid deposits, as the liquid may have leaked from a different area, but pooled in a more visible location.

Here's some good places to start looking, and a guide on what the liquid might be.

Sump Oil - Engine oil may be leaking out of the drain plug hole if the plug was incorrectly fitted or the gasket has failed. Or it can be leaking from the sump gasket itself. Both of these leaks are very low down on the engine so will often not leave oil pooling anywhere on the engine - just the floor. To check this location you'll have to get under the vehicle and have a look around. You will need a flashlight to see clearly.

Oil from the Filter - Sometimes oil can be leaking from the oil filter if it has been incorrectly fitted or has become loose over time. The gasket may also have been damaged during

installation. If this is the source of the leak it's usually very easy to fix. To check this area, locate the oil filter and look closely around the point at which it screws into the engine block. If possible wipe a clean cloth around the base of the filter and look for fresh oil runs or deposits.

Transmission Fluid / Gearbox Oil - While engine oil is usually the culprit of oily spots, it can also be gearbox oil. If gearbox oil is the offending liquid, it usually finds its way out though failed seals at the inboard ends of the driveshafts (CV axles). Basically look around the area where the driveshafts enter the gearbox on both sides and check for runs from this point. Also check the underneath of the transmission/gearbox to see if any other gaskets may have failed.

Antifreeze (Coolant) - Antifreeze leaks are generally relatively easy to identify due to the distinctive color - almost always either red or green - and the watery consistency of the liquid. Leaking coolant often leaves white, powdery crystalline deposits in the area, or areas, it is leaking from. Weak spots in the cooling system which are a good place to start the leak hunt are; around the water pump (check the pump's bearings and gasket), the hoses entering and exiting the radiator, around the thermostat housing, and the radiator itself.

Brake Fluid - Brake fluid - on a dirty vehicle - can look very similar to leaking engine oil. The key difference is the areas in which the leaks will be found. Any leak found near the wheel will almost certainly be brake fluid. Check the hoses entering the brake calipers and brake master and slave cylinders.

Power Steering Fluid - Power steering fluid is a hydraulic fluid which may leak out of the pipe connections on the steering rack. It can leak from other areas, but this is a good place to start looking.

Fuel Leak - Fuel leaks are perhaps the most dangerous type of vehicle leak. Fuel leaks generally make themselves known due to the strong and distinctive odor. Fuel leaks, especially in the engine bay can lead to a fire resulting in loss of the vehicle. If a fuel leak is expected do not drive the vehicle - have it towed immediately to a garage where a professionally can perform a repair.

Any vehicle leak can turn into an expensive repair if it is not repaired quickly. The liquids in a vehicle's engine are essential to its operation. Low levels of oil or coolant can lead to overheating and seizing of the engine - usually meaning a whole new engine is needed. And it could have all been avoided for the price of a five dollar gasket and 30 minutes of work - if you're lucky!

Key Findings- Identifying leak by color and odor
http://www.motortrend.com/womt/112_9609_leaky_fluids/viewall.html

Through the initial research, we also found that knowing the color and odor of a leak was also key evidence as to what part of the vehicle most likely was experiencing a leak. A synopsis is listed below from information provided by Motortrend:

Bright green or yellowish green- radiator coolant

Black or dark brown- engine oil

Bright blue- windshield washer fluid (can also be orange, pink, or yellow depending on product)

Light brown- gear lube (if accompanied by strong odor of rotten eggs)

Red fluid- automatic transmission or power steering fluid

Clear- power steering fluid or water from condenser on the A/C unit

Light yellow to dark muddy brown- brake fluid is yellow when new and dark muddy brown as it absorbs water

Amber- gasoline (if accompanied by strong odor)

Best Management Practices Guide from Pollution Prevention team in Portland
http://www.greenbiz.com/sites/default/files/document/O16F11482.pdf

The thought of using the mechanics themselves as an appropriate target audience and possible mechanism for dissemination has been discussed and utilized in both the Seattle and Portland programs. An example of Portland's Best Management Practices Guide has been provided for reference below:

A Best Management Practices Guide for Automotive Industries

This manual was prepared by the Pollution Prevention Outreach Team

Changing Automotive Fluids

DO:
• Drain and replace motor oil, coolant and other fluids in areas where there are no floor drains. If you must use floor drains, connect them to a holding tank. If drains connect to the sewer system, install an oil/water separator.

• Collect the spent fluids, store them in separate containers and recycle them when possible.

• Collect leaking or dripping fluids in drip pans. Remove materials from drip pans often.

• Separate oils that can be reused, from those that can't. Store them in labeled containers that read "Reusable Oil Only" and "Used Oil Only." Send used oil to an oil processor. Used oil handled in accordance with DEQ requirements does NOT count toward your hazardous waste generator status.

• Store hazardous waste fluids separately in a specifically designated hazardous waste storage area. Know which fluids are safety risks when stored next to each other.

• Try not to mix leaking fluids. Mixing can contaminate the fluids and turn it all into hazardous waste.

DON'T:
• Don't incorrectly dispose of any hazardous waste. Recycle used antifreeze. Chlorinated and other solvents are considered hazardous wastes if not immediately recycled in your shop.

• Don't dispose of automotive fluids to storm drains, septic tanks, or dry wells. Never pour fluids on the ground.

• Don't mix any wastes other than automotive oils with used oil if it is used for shop heating.

Antifreeze

DO:
• Determine if filters and other recycling by-products are hazardous waste and manage them accordingly if you recycle antifreeze on the premises.

DON'T:
• Don't mix waste antifreeze with any other waste. DEQ policy prohibits mixing antifreeze waste with used oil.

Brake Fluid

DO:
• Recycle brake fluids with your used oil if the material is going to a recycler. It is also permissible to mix hydraulic fluid and lubricants with your used oil before recycling. Call your used oil recycler for their requirements.

DON'T:

• Don't mix brake fluids with other fluids if they are contaminated with a chlorinated brake or carburetor cleaner. Store and label them separately as a hazardous waste.

• Don't mix brake fluid with your used oil if the shop is heated with a used oil burner.

Crude-Based Fluids

DO:
• Manage used crude-based fluids like you do used oil – reuse and recycle.

DON'T:
• Don't mix crude-based fluids with used oil if they are contaminated with brake or carburetor cleaner, or other wastes.

Radiator Fluids

DO:
• Recycle radiator fluids with antifreeze. If necessary, switch brands to make recycling possible.
• Reuse radiator fluids through distilling or recycling onsite to minimize waste generation.

DON'T:
• Don't mix radiator fluids with used oils - it violates DEQ policy and limits the ability to reuse and easily dispose of the resulting mixed material.

Key Findings- South Carolina Department of Health and Environmental Control
http://www.scdhec.gov/environment/lwm/recycle/pubs/oil_tool_kit.pdf

South Carolina's Department of Health and Environmental Control produced a motor oil recycling curriculum for their schools to try and encourage recycling. Key findings from this program include:

* In South Carolina used motor oil must be recycled. It is the LAW. (The S.C solid waste policy and the management act of 1991)

* The largest single source of oil pollution harming the nation's waters is from Do-It-Yourself (DIYers) according to the U.S. Environmental Protection Agency (EPA).

* South Carolina has one of the best and most comprehensive programs targeting DIYers with nearly 900 collection sites that accept used motor oil.

* One gallon of used motor oil that is improperly disposed can pollute 1 million gallons of drinking water which is enough to supply 50 people for a year.

* It takes 42 gallons of crude oil to produce 2.5 quarts of new lubricating oil, whereas the same amount can be generated from just 1 gallon of used motor oil.

* 1 gallon of used motor oil generates as much as power as about 15 pounds of coal according to the Santee Cooper electric utility in South Carolina.

* According to the EPA, about 200 million gallons of used motor oil are improperly disposed each year.

* Recycling locations are majority offered by local governments but retail outlets such as Advance Auto Parts and Auto Zone also collect used motor oil from DIYers.

* The S.C. Department of Health and Environmental Control's (DHEC) office of solid waste reduction and recycling developed a statewide public awareness campaign to promote used motor oil recycling as well as the recycling of oil filters and bottles.

* The campaign included other partners such as Santee Cooper's Give Oil For Energy Recovery (GOFER) program and the S.C department of transportation.

* In 2010, DIYers in South Carolina recycled 984,437 gallons of used motor oil.

* South Carolina became one of the first states to collect used motor oil bottles, beginning a program in 1995 with two counties.

* Anti-freeze is accepted in many recycling programs throughout the state.

* Lead acid batteries must also be recycled in South Carolina.

* Incentive: If you return your old battery when you buy a new one, you will receive a $5 credit

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Key Findings- Water Environment Research, Volume 82, Number 2 "Performance Assessment of a Street-Drainage Bioretention System" Cameron Chapman, Richard R. Horner.

A report on the effectiveness of a bioretention project in Seattle. A sampling was conducted at the inlet and outlet of a street-side bioretention facility in Seattle to assess its ability to reduce street runoff quantity and pollutants." The report does not deviate much to the causes of runoff but it is a good example of LID tactics preventing motor vehicle pollution from entering streams.

"Motor oil was removed most effectively, with 92 to 96% of the incoming motor oil not leaving the system."

Zinc was effective with 72 to 86% removal, and copper with 58 to 79% removal. Nitrogen and phosphorus were roughly 60 to 80%. It is interesting the motor oil was removed most effectively.

"The results from the 110th Cascade suggest that bioretention systems are capable of achieving a high level of treatment in realweather conditions. In this case, the system was small enough to
fit into an existing street right-of-way."

This research was funded by Seattle Public Utilities and it is possible they have more information and statistics on why this method of biofiltration was called for and why they chose the specific sites. A larger municipality might be more likely to have their own comprehensive road runoff study.

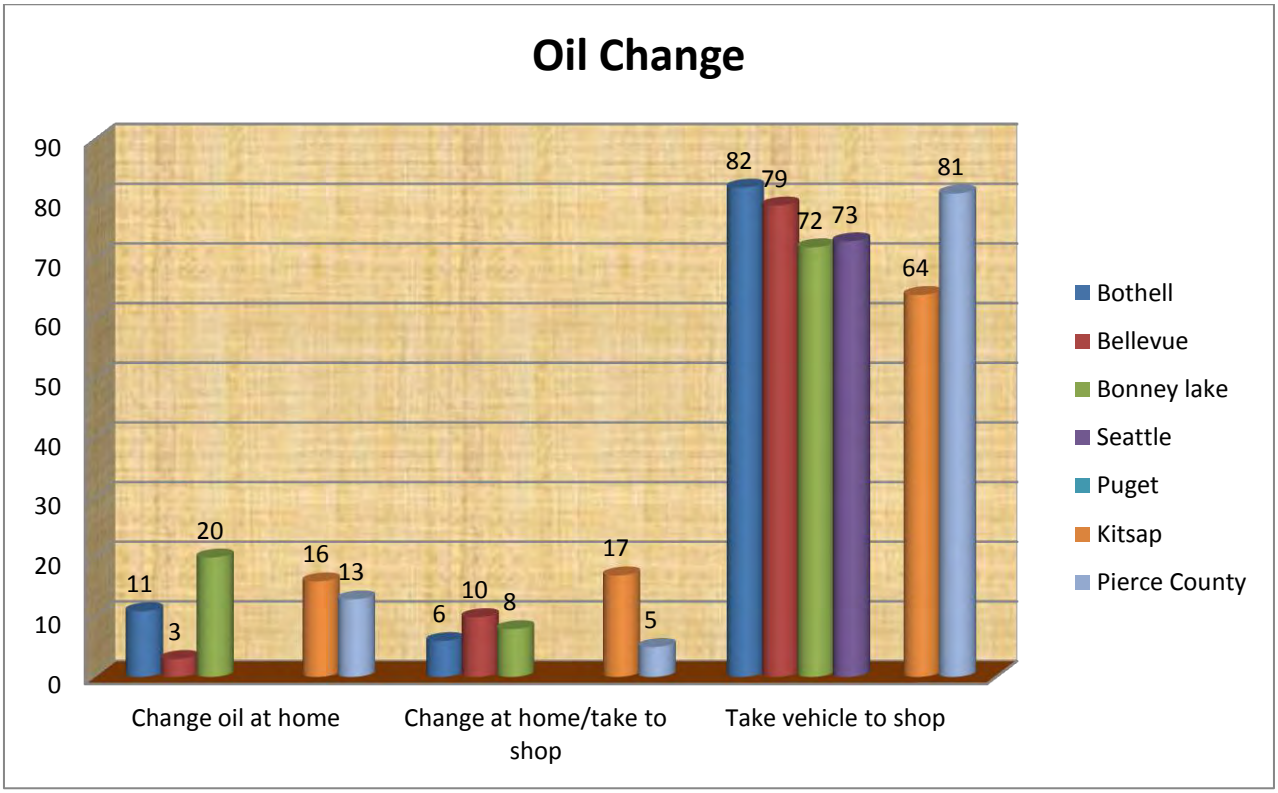
Public Opinion and Behavior Data

Compilation of Seven Western Washington Surveys

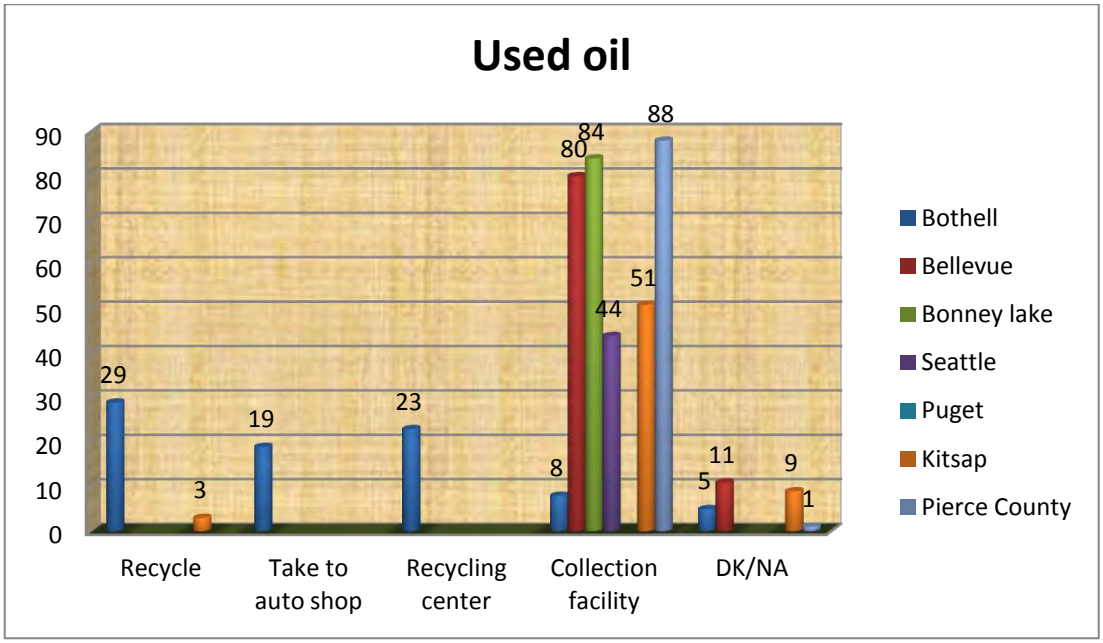
Data was compiled by an intern in Bothell from seven different surveys taken around the Puget Sound region and correlations were placed on the table below:

Vehicle maintenance	Bothell	Bellevue	Bonney Lake	Seattle	Puget	Kitsap	Pierce County
Do you change the motor oil, anti-freeze or other fluids at home or at the service shop?							

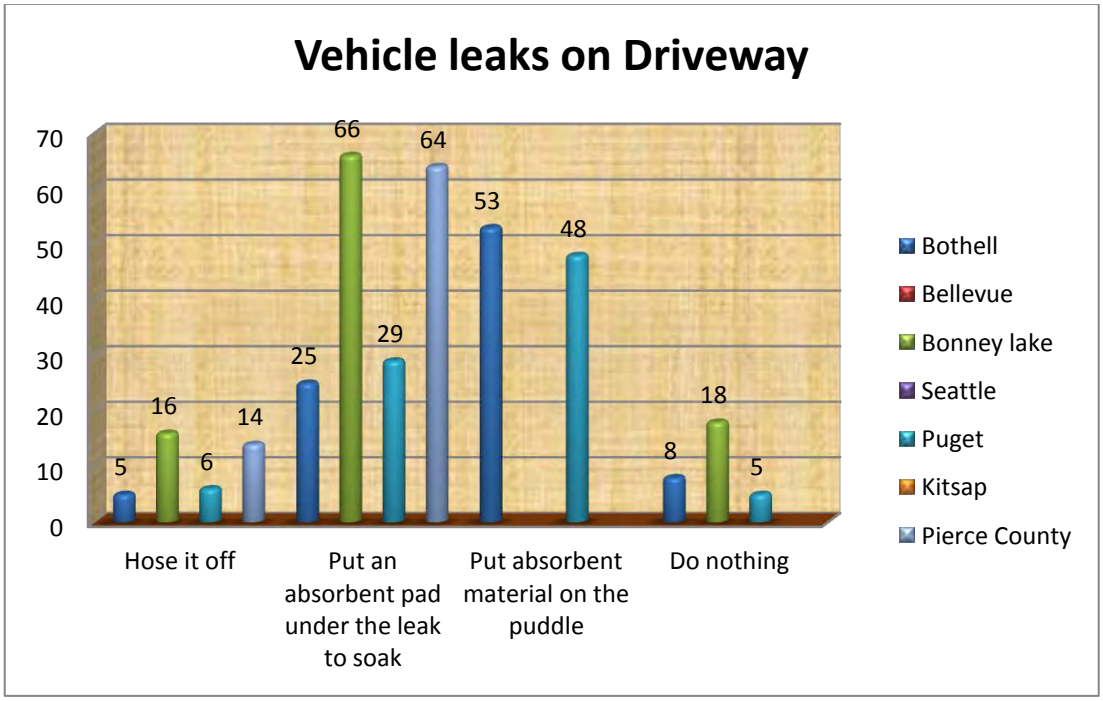
* Someone in the household changes the oil at home	11	3	20			16	13
* Sometimes at home/sometimes take the vehicle to the shop	6	10	8			17	5
* Take vehicles to service shop to have oil changed	82	79	72	73		64	81
* DK/NA	0	3				4	1
If motor oil is changed at home, what is typically done with the used fluids?							
* Recycle	29					3	
* Take to auto part store/ auto shop	19						
* Recycling center	23						
* Collection facility	8	80	84	44		51	88
* DK/NA	5	11				9	1
If your vehicle leaked or spilled or antifreeze onto your driveway, which of the following would you most likely do?							
* Hose it off	5		16				14
* Put an absorbent pad under the leak to soak it up	25		66				64
* Put some absorbent material on the puddle	53						
* Probably not do anything	8		18				10



Bothell had an 82% of residents taking their vehicles to a service shop for changing their motor oil, anti freeze etc. comparing to only 11 % of them doing it at home. In general Bothell, Bellevue, Bonney lake, Seattle, Puget, Kitsap and the Pierce County resident all had a higher percentage of the residents taking the vehicle to a service shop rather than doing it at home.



The motor oil and the antifreeze when changed at home, were taken 19% to an auto shop, 29% recycled, 23% taken to a recycling center and 8% to a collection facility on Bothell, whereas 80%, 84% and 88% of the changed motor oil were taken to a collection facility in Bellevue, Bonney Lake and Pierce county respectively



Vehicle leaks or spills on the driveways were managed 25% by putting an absorbent pad under the leak to soak it up and 53% putting an absorbent material on the puddle in Bothell comparing to 66% and 64% putting an absorbent pad under the leak to soak in Bonney lake and Pierce County respectively.

Key Findings from the Making a Splash Clean Water Campaign in Atlanta
http://www.cleanwatercampaign.com/

The challenge of the Clean Water Campaign (aligns with the STORM campaign) is to educate residents and businesses in the 16-county area about ways to reduce storm water pollution and to change behavior to affect the health of area water bodies. The following information was taken from this campaign:

- Within metropolitan Atlanta, more than 1,000 stream miles in the 16-county area of metro Atlanta are impaired and fail to meet water quality standards due to polluted storm water runoff.
- The primary source of this pollution is not wastewater or industrial discharges (known as "point" sources), but is the result of many actions taken at our homes and businesses. This "nonpoint" source pollution is the greatest threat to the health and viability of the water sources.
- The Metropolitan North Georgia Water Planning District board adopted the existing Clean Water Campaign as a primary vehicle for educating the public about storm water pollution, watershed problems, and solutions.
- The Clean Water Campaign includes three major elements: a public awareness campaign, outreach and education to key target groups and primary and secondary education.

Public Awareness Campaign

The Clean Water Campaign purchased 142 television spots and received 208 spots in public service airtime. In 2004, the media campaign reached an estimated 4 million viewers at least 10 times through the course of the run. As a summer promotion, a station distributed thousands of preprinted cards with information about the Clean water Campaign.

The key to success of this campaign was through the placement of spots during a season of high viewership such as Olympic games and the Presidential debates airing on T.V.

A website was developed as a comprehensive source of information for visitors to access information of water pollution. The website has been viewed over one million times since 2002. The website's popularity has grown over 240% since its launch in 2001.

Campaign uses a list of 10 simple messages called the "Top 10 Things You Can Do To Be a Solution to Water Pollution"

1. Never dump anything on the street, down a storm drain or drainage ditch.

2. Scoop up after your pet. Bag it and throw it away in the trash.

3. Compost or bag grass clippings and leaves for curbside collection.

4. Use fertilizers and pesticides sparingly. Do not apply on paved areas.

5. Check your vehicles for leaks and repair them.

6. Reduce, reuse and recycle the amount of cleaning and maintenance chemicals used at home.

7. Recycle motor oil and other vehicle fluids.

8. Throw litter in its place.

9. Wash cars at a commercial car wash or on a grassy area, not your driveway.

10. Tell a friend or neighbor about how to prevent stormwater pollution and get involved.

Outreach and education to key target groups

- Use of brochures and fact sheets
- Brochures have been distributed through local governments and partnering organizations and businesses.
- Over 20 brochures on different topics have been distributed to more than 150,000 people.
- Brochures both in English and Spanish
- In addition educational workshops have also been conducted

Primary and secondary education

This has enabled the campaign to reach school-aged students through materials, curriculum, events and appearances by the campaign mascot.

Success of the campaign

- The number of people who identified storm water runoff as the main source of water pollution over factories/industrial discharges and over landfills grew from 9.5% to 21.5% (126% change) between 2001 and 2004.

- The number of people who were likely to check their cars for leaks grew from 68% to 83.3%.
- The number of people who were likely to pick-up after their pets grew from 32.2% to 55.8% (73% change)
- The number of people who were likely to recycle used motor oil changed 55%

Key Findings- 2011 San Diego City Storm Water Survey
http://www.sandiego.gov/stormwater/pdf/2011ressurveyfinalreport.pdf

Think Blue San Diego, a program of the San Diego Storm Water Pollution Prevention Division, asked Goodwin Simon Strategic Research (GSSR) to conduct a telephone survey of adult residents living in San Diego to determine awareness and behaviors.

- More than half (52%) said they saw a Think Blue TV commercial, with 35% who heard a radio ad.

- The reported changes in behavior that were made include using less water (28%), using a carwash instead of washing cars at home (19%), picking up trash and litter (18%), recycling more (13%), disposing of used motor oil properly (10%), and disposing of dog waste properly (4%).

- 17% of vehicle owners report seeing a leak of fluids from their vehicle in 2010, up from 9% of vehicle owners in the 2010 survey

- Those with leaks were asked if they had taken action to stop them, and the proportion who had done so, at 86% of leakers, was higher than the 70% found in the 2010 survey. So more people admitted to having leaks, and more leakers said they did something about it.

- When it comes to fixing oil and other vehicle leaks, we found the major barriers to action to be a sense that one's vehicle does not leak fluids, and lack of knowledge that such leaks pollute the ocean.

Does This Reason to Not Always Fix Vehicle Leaks Apply to You?

- Vehicles do not leak – 50%

- Did not know it causes pollution of beaches-24%

- Amount of pollution too small to worry about- 14%

- No benefit to fix small leak- 14%

- Too expensive to fix-14%
- Do not have reliable mechanic-11%
- Too much trouble to fix-8%

Note first that the most important barrier to taking action to fix vehicle leaks was that half the vehicle owners say it does not happen to their vehicles. This alone is valuable information, as it tells us that awareness that most cars leak is the first thing the city needs to increase.

Key Findings -A Sustainability Vision for the Automotive Services Industry
http://www.ecobiz.org/aboutP2.htm

Using The Natural Step Framework to Develop a Plan Toward Sustainability for Automotive Mechanical and Collision Repair Shops.

In 1997 Oregon Department of Environmental Quality (DEQ) began development of the Automotive Eco-Logical Business Program to encourage automobile services and collision repair shops to take extra voluntary steps in protecting the environment.

Participants from fifteen automotive shops and service organizations were invited to meet in a series of six two-hour meetings in Wilsonville to create a vision of what a fully sustainable automotive service operation might look like if it met the four system conditions of The Natural Step.

This Sustainability Implementation Plan gives both the auto shops and DEQ valuable insights as to how to apply The Natural Step four system conditions to reduce environmental liability, improve worker safety and increase profits within the auto services industry.

Eco-Business Program

- In 1997, as a proactive attempt to deal with these environmental concerns, the Portland area Pollution Prevention Outreach (P2O) Team, an inter-agency group comprised of DEQ and seven local agencies, began development of the Automotive Eco-Logical Business Program to encourage automobile services and collision repair shops to take extra voluntary steps in protecting the environment beyond those that are required by state regulation.

- Those shops that participated received P2O certification of their accomplishments, P2O supported advertising and promotion, and free technical assistance.

- The program was launched in the Portland metropolitan region in 1999 with the combined support of DEQ; the cities of Gresham, Portland and Troutdale; the Unified Sewerage Agency; Washington County; Clackamas County; and Metro.

- By the fall of 2000, twenty-two shops had been certified in the Portland area and there was interest within DEQ to extend the program to Salem as a first step in reaching other parts of the state. At the same time there was a growing interest from within DEQ and with a few auto repair shops to extend the program's vision beyond just pollution prevention toward one of environmental sustainability

The Natural Step

The Natural Step is a concept that was developed by Swedish oncologist, Karl Henrik Robèrt in 1989. Dr. Robèrt was seeing cancer symptoms in children that he knew were not due to lifestyle and he began to suspect the causes were environmental.

Twenty-one drafts later, he and fifty of Sweden's leading scientists agreed that Dr. Robert's thesis provided a scientific foundation for guiding society toward sustainability. Dr. Robèrt used this foundation to create four system conditions that can guide any organization or enterprise toward sustainability. He called these four principles, The Natural Step.

These four system conditions are:

1. *In order for a society to be sustainable, nature's functions and diversity are not systematically subject to increasing concentrations of substances extracted from the earth's crust.*
2. *In order for a society to be sustainable, nature's functions and diversity are not systematically subject to increasing concentrations of substances produced by society.*
3. *In order for a society to be sustainable, nature's functions and diversity are not systematically impoverished by over-harvesting or other forms of ecosystem manipulation.*
4. *In a sustainable society resources are used fairly and efficiently in order to meet basic human needs globally.*

The intention of this project was to go beyond pollution prevention by encouraging automotive shops to head in the direction of sustainability based on the four system conditions of The Natural Step.

Area	Item	Violation examples	TNS System Condition Area Item Violation examples 1 2 3 4

Materials	*Parts – metal*	Use of less abundant, virgin mined metals & minerals	X		X	
		Use of heavy metals (mercury, lead, cadmium)	X			
	Parts - plastic	Use of persistent, synthetic, petroleum-based materials	X	X		
	Consumables	Use of petroleum based products (solvents, oils, paints, rubber gloves)	X	X		
	Packaging	Use of virgin mined metals (cans)	X		X	X
		Use of persistent, synthetic, petroleum-based plastic	X	X		X
		Use of cardboard & paper from non-sustainably harvested forests			X	X
	Office equipment	Use of electronic equipment with virgin and heavy metals, petro-based persistent plastics (PVC)	X	X	X	X
	Office supplies	Use of bleached paper, plastic diskettes/CD-ROMs, etc.		X	X	X
	Solid Waste	Landfill disposal of parts, consumables and packaging that mixes toxins, persistent synthetics and compostable materials			X	X
Fluids	*Lubricants*	Petroleum based (oil, transmission, hydraulic, brake)	X		X	
	Cleaning agents	Use of persistent, synthetic solvents		X		
	Liquid Waste	Disposal in rivers and ground of liquids containing petro-based and persistent synthetic substances	X	X	X	X
Gases	*Coolants*	Use of persistent, synthetic materials (CFC, HCFC)		X		
	Propellants	Use of persistent, synthetic materials (aerosol sprays)		X	X	
	Waste	Toxic, global warming (auto exhaust)			X	
Energy	*Sources*	Non renewable (Coal, gas, nuclear, diesel)	X			
		Large scale hydro			X	
	Usage	Inefficient building, machines, lighting				X

Key Findings- Public Awareness Campaign messages and concepts from focus group research with Portland/Vancouver Metro area residents
http://74.120.152.95/bes/index.cfm?a=250706&c=29323

* Most people say they are fixing oil leaks and recycling motor fluids
* Residents say newsletters/bill stuffers and schools are among the best sources of information about water quality issues.
* Key motivators to change behavior include money incentives, in store promotions and one's kids.
* Residents agree the most effective ads are simple, informative and prominently feature a website where they can learn more
* Telling a story is also appealing.

Repairing oil leaks – the immediate motivation often is more about 'keeping oil stains off my driveway' than concern for the environment.

Using tunnel car washes- the chief motivator is convenience, not protecting the waterways. "they wash my car for me when I get my oil changed."

Key conclusions and recommendations

1. Residents want to do the right thing, but they need more information on what to do and they don't want to work too hard.
2. Ad campaign needs to be personal, easy to grasp, and include basic information as well as a clear website URL.
3. Be crystal clear in showing the problem- don't beat around the bush
4. Work with retailers to provide in store displays and promotions
5. Expand on the native plants trend by promoting water wise plant choices
6. Partner with schools. Community groups to ensure kids help motivate parents to change
7. Get the word out about the mechanic certification program
8. Work to undermine the tyranny of the perfect lawn
9. Who's behind the campaign is irrelevant-just provide clear, informative ads, in store promotions, and a good website for those interested in finding out more.

Key Findings- from four telephone surveys in South Carolina conducted by Clemson University to determine opinions about the environment:

Environmental Attitudes, Knowledge, and Behaviors of Residents of the Pee Dee Region, S.C.
http://media.clemson.edu/public/restoration/carolina%20clear/reports/finalreport_peedee.pdf

- The main goal of the survey was to obtain information about residents' attitudes, knowledge, behaviors, and intentions as they relate to the environment.

- Nearly 81% of respondents indicated they “never” operated a motor vehicle with a leak.

- Males were more likely than females to indicate they “always” or “nearly always” operated a motor vehicle with a leak

Environmental Attitudes, Knowledge, and Behaviors of Residents of Horry and Georgetown Counties, S.C. http://media.clemson.edu/public/restoration/carolina%20clear/reports/finalreport_horrygtown.pdf

- Nearly 2/3 of respondents (65.7%) of respondents indicated they “never” operated a motor vehicle with a leak.

- Fuel and oil leaks were identified as having the greatest impact on water quality with 55% of respondents indicated that this activity had a “great” impact on water quality

- A large majority of respondents indicated they “never” participated in potentially negative activities, including operating a vehicle with an oil leak (65.7%)

- Males were more likely than females to indicate they “always” or “nearly always” operated a vehicle with a motor oil leak, a potentially negative behavior.

- Individuals with a high school education or less were much more likely than individuals with higher levels of education to indicate they “always” or “nearly always” operated a vehicle with a motor oil leak.

- Individuals age 18-34 were far more likely than individuals from other age groups to indicate they “always” or “nearly always” operated a vehicle with an oil leak and this relationship was very strong, with nearly 1/3 of 18-34 year olds indicating they did so, as compared to between 0% and 2.5% of the other age groups
- Renters were more likely than owners to say they “always” or “nearly always” operated a vehicle with an oil leak

Environmental Attitudes, Knowledge, and Behaviors of Residents of Charleston, Berkeley, and Dorchester Counties, S.C. http://media.clemson.edu/public/restoration/carolina%20clear/reports/finalreport_cbd.pdf

- Respondents were most likely to say fuel and oil leaks from trucks, buses or automobiles (86.5%) had either a great impact or some impact on water quality.

- A large majority of respondents indicated they “never” participated in potentially negative activities, including operating a vehicle with an oil leak (86.0%).

- Regarding potentially more negative behaviors, females were more likely than males to indicate they “always” or “nearly always” operated a vehicle with a motor oil leak

- Individuals with a high school education or less were much more likely than individuals with higher levels of education to indicate they “always” or “nearly always” operated a vehicle with a motor oil leak.

Environmental Attitudes, Knowledge, and Behaviors of Residents of the Midlands Region, S.C.
http://media.clemson.edu/public/restoration/carolina%20clear/reports/finalreport_midlands.pdf

- Respondents were most likely to say fuel and oil leaks from trucks, buses or automobiles (82.9%) had either a great impact or some impact on water quality.

- Nearly 82% (81.7%) of respondents indicated they “never” operated a motor vehicle with a leak.

- Females were more likely than males to indicate that three practices had a “great” or “some” impact on water quality: fuel and oil leaks from trucks, buses and automobiles, pet waste, and waste from birds

- A large proportion of respondents (81.7%) indicated they “never” operated a car with a motor oil leak.

- Individuals with a high school education or less were much more likely than individuals with higher levels of education to indicate they “always” or “nearly always” operated a vehicle with a motor oil leak.

Key Findings- Stormwater Pollution Prevention Behavior of Corvallis Residents
Oregon State University http://www.ci.corvallis.or.us/downloads/pw/SWP_Stormwater_Behavior_Survey.pdf

- Barriers tend to be related to lack of knowledge about specific kinds of behavior related to somewhat complicated practices like the use of chemicals and native landscaping, although some respondents view cost as a barrier to using a car wash or immediate repair of leaking cars.

- The *City* newsletter, websites, and the Gazette-Times were all identified as sources of information to which they turn for information about stormwater pollution prevention. They are less likely to participate in activities like stream clean-up, booths at community activities,

- Of the 233 respondents who wash their cars at home, 40% indicated that it was to save money. Likewise, those who report allowing cars to leak (48%) cite the cost of repairs as the primary reason not fix their cars right away.

- If the resources exist, provision of vouchers or coupons for car care to citizens might eliminate this source of stormwater pollution.

- More than three-quarters (82%) report they repair leaks from their cars quickly

- Environmental concerns was rated as a relatively low concern for the other practices with personal preferences, convenience, and costs usually reported as more important than issues related to the environment.

Repair leaks from car?		**Use car wash?**	
Good car Maintenance	57%	Convenience	37%
Dislike stains and Messes	15%	Cost	18%
Environmental Concerns	12%	Environment	11%

- Overall, our results suggest that lack of knowledge continues to be a significant barrier to implementing stormwater BMPs in Corvallis.

- There do appear to be practices, however, those are perceived by some respondents as costing too much including using a car wash or fixing leaky cars. Increased knowledge about the environmental impacts of these practices may only change these behaviors if the cost barriers are also addressed.

- Cost appears to be a barrier for a portion of our respondents when it comes to using a car wash and fixing car leaks immediately. The City of Corvallis may want to consider programs that provide incentives for residents to use car washes and garages that manage stormwater appropriately.

Outreach Models and Materials

Key Findings- LA oil recycling program partnership with Kragen
http://dpwprod2.co.la.ca.us/epd/ea/usedoil/oil_whyrecycle.cfm

Los Angeles County partnered with Kragen to introduce an oil recycling program. Key findings from this effort include:

* In 2002, Kragen franchises started accepting used oil filters from public. In the first year 30 participating Kragen franchises collected about 4,250 used oil filters.

* In 2003, phases 2 of this unique partnership lead to a 182% increase in filter collection over the year before.

* Each Kragen store hosts one or two oil filter exchange events per month.
* Incentive: during these events, customers receive a free new oil filter whenever they bring in used oil filters and oil. The city then reimburses stores for the cost of all new filters given away during events.

* Two weeks before each event, city employees provide promotional flyers to Kragen franchises announcing filter exchange events

* City employees also distribute flyers at nearby homes, apartment complexes, businesses, schools and churches within host Kragen service areas.

* During oil filter exchange events, city employees hand out questionnaires to determine participants' awareness of products made from recycled filters

* Oil filters were given one per customer.

* In order to reimburse host Kragen for oil filters they give away at exchange events without burdening them with paperwork, the city issued a credit card to one of its staff which is solely used for store filter reimbursement.

* During each event, Kragen employees scan the bar codes on all filters given to DIYs into their computers at a value of $0. They then tally all entries at the end of the event and are reimbursed for the actual value of the filters that day via a credit card payment by the city.

Key Findings- Colorado Regional Air Quality Council "Put a Cap on Ozone" Program
http://raqc.org/postfiles/newsroom/resources/OzoneOutreachProgramSummary.pdf

In Colorado, they partnered with the vehicle testing stations and NAPA stores to reduce air pollution by providing gas caps to those with a faulty or missing cap at the time of inspection.

- This program gave free gas caps to any motorist whose vehicle failed its emission test because of a faulty or missing gas cap, at any Air Care Colorado testing stations or independent testing stations. Drivers whose vehicles require unusual or specialized gas caps not readily available at the testing facility were issued a voucher for a $5 credit toward the purchase of the desired gas cap at any NAPA store in the metropolitan area.
- At the end of the ozone season, approximately 9,500 gas caps had been replaced and nearly 3,000 gas cap vouchers had been handed out. Of those handed out, more than 1,200 vouchers were redeemed at area NAPA stores. This is estimated to reduce VOC emissions by 660 pounds per day or nearly 2,300 trips between Denver and Boulder and back.

EPA makes available a "Preliminary Data Summary of Urban Storm Water Best Management Practices," and in addition NPDES and other regulations, Chapter 4 Environmental Assessment fails to go into details or show test results for oil runoff in section 4.2 "Pollutants in Urban Storm Water."
http://water.epa.gov/scitech/wastetech/guide/stormwater/index.cfm
http://water.epa.gov/scitech/wastetech/guide/stormwater/upload/2006_10_31_guide_stormwater_usw_b.pdf

Many municipalities have very little on their websites for environmental hazards, such as vehicle leak/spill and runoff. Most online searches online display similar messaging like this:

-Fix all leaks as soon as possible.
-Do not allow vehicles to drip fluids onto street, or into the gutter or storm drain.
-Use plastic tarps and drip pans when your car is leaking, and when you are working on it.
-Empty drip pan regularly, and protect it when it rains.
-Use an absorbent such as sawdust or kitty litter for spills. Sweep it up, place in a plastic garbage
bag, and put it in the garbage. Do not allow absorbent to be washed down into the street, gutter or storm drain.

The following are links for commercials, videos, and outreach materials:

http://www.stormwatercoalition.org/html/et/index.html

http://www.iowastormwater.org/index.php?option=com_content&view=article&id=85&Itemid=208

http://basineducation.uwex.edu/centralwis/stormwater.htm

http://www.stormwatereducation.com/lawtonok/stormwater_psas.html

http://www.flowstobay.org/cs_videos.php

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Nixon, H. & Saphores, J . (2007). Impacts of Motor Vehicle Operation on Water Quality in the United States Clean up Costs and Policies. *Transportation Research Part D: Transportation and Environment*, Volume 12 (8), 564-576. http://dx.doi.org/10.1016/j.trd.2007.08.002

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S.C. Department of Health & Environmental Control Office of Solid Waste Reduction & Recycling. (2012) "Action for a cleaner tomorrow: A South Carolina Environmental Curriculum Supplement" 2012 OR-0850 4/12 South Carolina. Retrieved from: http://www.scdhec.gov/environment/lwm/recycle/pubs/oil_tool_kit.pdf

Vehicle leak detection- different places on a vehicle where leaks can be detected. Retrieved from:

http://www.autobytel.com/car-ownership/maintenance-repair/identifying-automotive-fluidleaks.pdf

Attachment 4

Mechanic Survey

1. We have heard that older vehicles are more likely to leak various oils and fluids. In your experience, as a rough rule of thumb, when do you start seeing leaks?

	Response Percent	Response Count
After 5 years	**44.4%**	**16**
After 10 years	19.4%	7
After 15 years	2.8%	1
No general time when they start leaking	33.3%	12
Other (please specify)		14
answered question		**36**
skipped question		**5**

2. Of the total number of vehicles brought in for repair or service, what percentage (approximately) actually have a noticable leak?

	Response Percent	Response Count
0-10%	12.8%	5
10-25%	**43.6%**	**17**
25-50%	30.8%	12
More than 50%	12.8%	5
Other (please specify)		4
answered question		**39**
skipped question		**2**

3. Is there one type of leak you encounter most?

	Response Percent	Response Count
Oil	**92.3%**	**24**
Antifreeze	3.8%	1
Brake	0.0%	0
Transmission	3.8%	1
Power steering	0.0%	0
Other (please specify)		22
answered question		**26**
skipped question		**15**

4. What is the second most frequent type of leak you encounter?

	Response Percent	Response Count
Oil	15.4%	4
Antifreeze	38.5%	10
Brake	0.0%	0
Transmission	**46.2%**	**12**
Power steering	0.0%	0
Other (please specify)		19
answered question		**26**
skipped question		**15**

5. Is there a certain type of vehicle that is more likely to leak?

	Response Percent	Response Count
Truck	11.4%	4
Car	14.3%	5
Motorcycle	0.0%	0
Commercial	5.7%	2
No Significant Difference	**65.7%**	**23**
Don't Know	2.9%	1
	Other (please specify)	11
	answered question	**35**
	skipped question	**6**

6. Are there any leaks you see regularly that are easy and less costly to fix?

	Response Count
	41
	answered question	**41**
	skipped question	**0**

7. What is the range of cost for those inexpensive leaks?

	Response Count
	38
	answered question	**38**
	skipped question	**3**

8. If you detect a leak, what is your standard operating procedure (please select all that apply)?

	Response Percent	Response Count
Always tell customers they have a leak if you detect one	**90.0%**	**36**
ONly tell them if it is serious	5.0%	2
List leaks on invoice	52.5%	21
Other (please specify)		5
answered question		**40**
skipped question		**1**

9. Are there situations in which you recommend delaying or not fixing a leak?

	Response Percent	Response Count
Yes	**48.7%**	**19**
No	**48.7%**	**19**
Don't Know	2.6%	1
Other (please specify)		8
answered question		**39**
skipped question		**2**

10. IF YES, Why?

	Response Count
	23
answered question	**23**
skipped question	**18**

11. IF YES, how often do you make such a recommendation?

	Response Count
	21
answered question	**21**
skipped question	**20**

12. Do you currently belong to any auto related organizations?

	Response Percent	Response Count
Yes	**48.8%**	**20**
No	**48.8%**	**20**
Don't Know	2.4%	1
	Other (please specify)	2
answered question		**41**
skipped question		**0**

13. IF YES, what organizations?

	Response Count
	23
answered question	**23**
skipped question	**18**

14. Have you received professional training or certification through organizations independent from your auto shop (please select all that apply)

		Response Percent	Response Count
School		13.5%	5
Professional Training		**78.4%**	**29**
Certification		75.7%	28
Self Taught		32.4%	12
		Other (please specify)	9
		answered question	**37**
		skipped question	**4**

15. What type of shop do you work in (please select all that apply)?

	Response Percent	Response Count
Fleet	13.2%	5
Independent shop	**81.6%**	**31**
Dealership	2.6%	1
Service station	10.5%	4
Commercial vehicle service station	0.0%	0
Motorcycle dealership/service station	0.0%	0
Other (please specify)		4
answered question		**38**
skipped question		**3**

16. How many years have you been an auto mechanic?

	Response Percent	Response Count
1-3	0.0%	0
3-5	5.1%	2
5-7	2.6%	1
7-10	15.4%	6
more than 10	**76.9%**	**30**
Other (please specify)		7
answered question		**39**
skipped question		**2**

17. Please complete the following information for survey purposes (we will not provide this information to any outside group)

	Response Percent	Response Count
Name of Business	92.3%	36
Business Address	**94.9%**	**37**
	answered question	**39**
	skipped question	**2**

18. Are you a member of the Envirostar Program?

	Response Percent	Response Count
Yes	0.0%	0
No	**66.7%**	**10**
Don't Know	33.3%	5
	Other (please specify)	0
	answered question	**15**
	skipped question	**26**

19. Please provide us with additional contact information if you are interested in participating in a 1-3 hour meeting with other auto mechanics to further discuss this topic. Participants will be compensated for their participation (Please provide your name, address, phone number, and email in space provided below)

		Response Percent	Response Count
Name		**100.0%**	**19**
Address		84.2%	16
Phone Number		84.2%	16
Email Address		63.2%	12
		answered question	**19**
		skipped question	**22**

Attachment 5

Take Home Messages Based on the City of Bothell's Research Compilation

Take Home Messages Based on
City of Bothell's Vehicle Leak Research Compilation
**This document is for internal purposes only,
and is not intended to be used to develop specific messages

Health & Environmental Impacts

There is ample evidence that automobile leaks create significant environmental pollution problems.

- Used motor oil is likely the main hydrocarbon source to stormwater runoff
- Vehicles are a significant source of polycyclic aromoatic hydrocarbons (PAHs), a known carcinogen, in water bodies.
- Oil and grease concentrations in highway runoff are higher in segments with higher traffic volumes. Parking facilities are also a major source of water pollution from vehicle oil.
- Between 3 and 25% of lubricating oil sold but not recycled is estimated to reach surface waters in California. This amounts to 6.1 million gallons as the estimated volume for an average runoff year.
- Victoria attempted to estimate costs for the impact of one mile traveled by a vehicle.
- One gallon of used motor oil can pollute one million gallons of surface water, or drinking water (which is enough to supply water for 50 people for a year)

Oil leaks are only one type of auto-fluid leaks that can cause pollution.

- Estimates of the number of vehicles in the US that leak hazardous fluids, including crankcase oil, transmission, hydraulic, brake fluid and/or antifreeze vary widely, (5-46%+).
- Several products used in O&M of automobiles contain ethylene glycol, a highly toxic substance that can be lethal to dogs, cats and children if consumed in relatively small amounts.

Fluid Detection & BMPs

The color of the fluid provides insight to the type of auto-fluid that is leaking.

- It is possible to identify the leak type by color of fluid and location under the vehicle
- Primary locations where fluids may be leaking from a vehicle include:
    - Engine oil- Drain plug hole (if not fitted properly or if gasket has failed) or sump gasket
    - Oil from filter
    - Transmission fluid/gear box
    - Antifreeze
    - Brake fluid
    - Power steering fluid
    - Fuel leak

There are fewer BMPs associated with the detection and cleaning of spills caused by leaks.

- Very few vehicle leak outreach and education programs target non-DIY audiences; as a result, BMPs are not well-established.
- Biofiltration facilities can be effective at removing motor oil from surface waters.
- Atlanta's Clean Water Campaign increased the number of people likely to check their cars for leaks grew from 68% to 83.3% between 2001 and 2004.
- San Diego- 17% of vehicle owners report seeing a leak of fluids from their vehicle in post campaign surveys, up from 9% in 2010.

There are numerous BMPs associated with the capture and disposal of auto-fluids.

- BMPs have been developed for DIYers (Portland, South Carolina, etc)

Info on Mechanics in Puget Sound - From STORM survey

As a rule of thumb, mechanics in our survey identified cars older than 5 year and with 80,000 as more likely to leak.

- Vehicles older than 5 years old are more likely to leak; however, it may also depend on vehicle mileage (approx 80,000 miles)

The surveyed mechanics' estimates of how many vehicles leak vary considerably

- 46% of mechanics state that between 10-25% of vehicles brought in for a repair or service have a leak. 30% of mechanics say that between 25-50% of serviced vehicles have leaks.

The surveyed mechanics identified two least expensive common repairs involved: valve cover gaskets and drain plugs.

- Oil leaks (as a type) are encountered the most by 90% of mechanics, with transmission and antifreeze leaks being the second and third most common.
- Valve cover gaskets and drain plugs are among the most common leaks that are easy and less costly to fix.
- 64% of mechanics state that there is "no significant difference" in leaks by vehicle type (car, truck, motorcycle, commercial).

Many of mechanics in our survey will suggest delaying or not fixing leaks if fixes are too expensive, or if the car a car is ending its life cycle.

- Most mechanics (90%) notify owners when they see a leak. 56% will include on an invoice.
- 55% of mechanics will recommend delaying or not fixing a leak, usually if they feel it'll be too expensive to fix or the vehicle is nearing the end of its life cycle (though this is rare).
- Many mechanics belong to the Automotive Service Association (ASA) and/or Automotive Service Excellence (ASE). Both are non-profit organizations with missions to improve the quality of vehicle repair and service.

Public Opinion and Behavior Data

A large majority of the public does not change their own oil.

- Public opinion surveys have been conducted in Bothell, Bellevue, Bonney Lake, Seattle, Kitsap County, Pierce County and Puget Sound-wide. Below are take home messages from these studies when looked at the aggregate (note: take home messages are for internal use only).
    - Between 64-82% of residents take vehicles to a service shop to have oil changed.
    - Between 3-20% of residents always change the motor oil, antifreeze or other fluids at home.
    - Between 5-17% sometimes change at home and sometimes take to a mechanic.
    - Between 1-5% of DIYers don't know what is typically done with used fluids; all others recycle/take to a store/collection facility/etc.
    - 13-34% of residents would not likely put an absorbent pad on a leak on a driveway (they would hose leaks off or not do anything)

The general public readily perceives oil leaks as a stormwater pollution issue.

- Surveys in Puget Sound indicate that the public perceives oil from leaking vehicles as an important pollutant source.
- South Carolina- Horry & Gorgetown- 55% believe fuel and oil leaks have the greatest impact on water quality.

The perception that one's own car is *not* leaking (the "not me factor") and the potential cost of a fix have been identified potential barriers.

- San Diego- Major barriers include a sense that one's own vehicle does not leak fluids (50%) and lack of knowledge that such leaks pollute the ocean (24%). Only 14% said too expensive to fix, another 14% said no benefit to fix small leaks.
- South Carolina- Clemson University- Nearly 81% of respondents indicated they "never" operated a vehicle with a leak. Males were more likely than females to indicate they "always" or "nearly always" operated a vehicle with a leak
- South Carolina- Horry & Gorgetown- 65% respondents indicated they "never" operated a motor vehicle with a leak. Males were more likely than females to indicate they "always" or "nearly always" operated a vehicle with a leak. Ages 18-34 were far more likely than individuals from other age groups to indicate they "always" or "nearly always" operated a vehicle with an oil leak
- Corvallis- OSU- 48% report allowing cars to leak and cite the cost of repairs as the primary reason not to fix their cars right away. Lack of knowledge is a significant barrier

Convenience and cost incentives have been identify as potential motivators.

- Portland/Vancouver Metro- motivators include convenience, money incentives, in-store promotions and one's kids (presumably health and safety). Primary motivation is about "keeping oil stains off my driveway" than concern for the environment.
- Residents want to do the right thing but they need more info and don't want to work too hard.

- Corvallis- OSU- Personal preference, convenience and costs report as being more important than issues related to the environment

There have been a number of examples of successful outreach programs that have partnered with automobile supply stores.

- The majority of education campaigns target DIYers to recycle oil, not to check vehicles for leaks.

Very few programs have been developed that target car owners that take their vehicles to service stations.

- Very few social marketing programs with evaluation measures exist to support non-DIYers to check for leaks and fix them if found. Those programs include Atlanta's Clean Water Campaign, San Diego, and others.
- Ad Campaign - Portland/Vancouver Metro-
  - Ad campaign needs to be personal, simple, informative and feature a website.
  - Show the problem- be crystal clear and don't beat around the bush
  - Work with retailers to provide displays and promotions

Appendix C. Profile Report

Scarborough Research

PRIME Lingo--Profile Report

Market/Release: Seattle, WA 2012 Release 2 *Total (Sep 2011 - Aug 2012)*
Base: Total Adults 18+ **Projected:** 3,783,915 **Respondents:** 4,378
Target: Model year 2005 or older, no dealership service
Projected: 985,850 **Respondents:** 1,278 **Percent of Base:** 26.1%

	Target Pop	Target %	Index
Base Total	985,850	100.0%	100
Age of respondent			
18 - 20	78,575	8.0%	**130**
21 - 24	42,973	4.4%	84
25 - 29	34,517	3.5%	45
30 - 34	46,299	4.7%	48
35 - 39	68,646	7.0%	83
40 - 44	99,183	10.1%	95
45 - 49	87,747	8.9%	98
50 - 54	117,835	12.0%	**121**
55 - 59	92,033	9.3%	**116**
60 - 64	95,269	9.7%	**115**
65 - 69	78,172	7.9%	**141**
70 or older	144,601	14.7%	**133**
Mean			
Age of respondent	49.46	0.0%	410
Median			
Age of respondent	51.48	0.0%	428
Sex of respondent			
Men	512,413	52.0%	105
Women	473,437	48.0%	95
Household income (HHLD)			
Less than $10,000	23,120	2.3%	62
$10,000 - $19,999	31,185	3.2%	71
$20,000 - $24,999	44,866	4.6%	**116**
$25,000 - $29,999	32,681	3.3%	76
$30,000 - $34,999	46,556	4.7%	81
$35,000 - $39,999	69,927	7.1%	84
$40,000 - $44,999	39,090	4.0%	93
$45,000 - $49,999	48,778	4.9%	80
$50,000 - $74,999	194,382	19.7%	**105**
$75,000 - $99,999	178,545	18.1%	**114**
$100,000 - $149,999	184,121	18.7%	**120**
$150,000 - $249,999	71,380	7.2%	**112**
$250,000 or more	21,219	2.2%	99
Household size (HHLD)			
One	112,388	11.4%	81
Two	368,740	37.4%	**115**
Three	199,896	20.3%	98
Four	177,130	18.0%	**110**
Five	75,729	7.7%	74
Six	31,128	3.2%	**108**
Seven	15,552	1.6%	**118**
Eight	2,569	0.3%	38
Nine or more	2,718	0.3%	28
Own or rent residence (HHLD)			
Own	771,335	78.2%	**115**
Rent	177,238	18.0%	62
Other	37,277	3.8%	**120**
Presence of children by age (HHLD)			
Age under 2	26,807	2.7%	41
Age 2 - 5	84,787	8.6%	65
Age 6 - 11	154,867	15.7%	91
Age 12 - 17	218,282	22.1%	**118**
Age 5 and under	101,738	10.3%	62

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	Target Pop	Target %	Index
Type of dwelling (HHLD)			
Single family house (unattached)	755,377	76.6%	**114**
Townhouse or attached home	42,726	4.3%	70
Condominium	38,464	3.9%	93
Apartment	73,301	7.4%	55
Cooperative	122	0.0%	2
Mobile home or manufactured home	68,898	7.0%	88
Other type	6,962	0.7%	**178**
Detailed occupation codes			
Management	93,793	9.5%	110
Business Operations Specialists	14,788	1.5%	94
Financial Specialists	10,359	1.1%	82
Computer and Mathematical	31,674	3.2%	114
Architecture and Engineering	27,570	2.8%	112
Life, Physical, and Social Science	9,194	0.9%	142
Community and Social Services	6,400	0.6%	69
Legal	5,905	0.6%	73
Education, Training, and Library	38,361	3.9%	88
Arts, Design, Entertainment, Sports, and Media	13,018	1.3%	96
Healthcare Practitioners and Technical	18,848	1.9%	55
Healthcare Support	10,669	1.1%	89
Protective Service	6,313	0.6%	58
Food Preparation and Serving	13,420	1.4%	66
Building and Grounds Cleaning & Maintenance	14,060	1.4%	90
Personal Care and Service	19,354	2.0%	85
Sales and Related Occupations	35,541	3.6%	74
Office and Administrative Support	48,604	4.9%	90
Farming, Fishing, and Forestry	4,986	0.5%	221
Construction Trades	25,589	2.6%	113
Extraction Workers	0	0.0%	0
Installation, Maintenance, and Repair Workers	16,131	1.6%	86
Production	11,973	1.2%	68
Transportation and Material Moving	47,217	4.8%	161
Military Specific	18,443	1.9%	147
Professionals Not Otherwise Specified	13,450	1.4%	93
Employment status			
Employed full-time (35 hours or more)	430,929	43.7%	103
Employed part-time (less than 35 hours)	124,731	12.7%	76
Not employed	430,190	43.6%	107
Ever attended special/technical/vocational school			
Yes	292,809	29.7%	90
No	693,041	70.3%	105
Level of education			
Grade school (8th grade or less)	15,453	1.6%	84
Some high school (not graduate)	31,401	3.2%	83
High school graduate (12th grade or GED)	291,397	29.6%	105
Some college (1-3 years-not Graduate or AA/Associates)	306,602	31.1%	88
College graduate (4 year college)	191,811	19.5%	110
Some post graduate (no advanced degree)	26,992	2.7%	113
Post graduate degree	122,194	12.4%	116
Marital status			
Married	627,764	63.7%	111
Never married (single)	222,988	22.6%	84
Widowed	45,712	4.6%	93
Legally separated	11,326	1.1%	152
Divorced	78,060	7.9%	81
Occupation summary			

Scarborough Research

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Target: Model year 2005 or older, no dealership service
Projected: 985,850 **Respondents:** 1,278 **Percent of Base:** 26.1%

	Target Pop	Target %	Index
Management, Business and Financial Operations	118,940	12.1%	105
Professional and Related Occupations	164,420	16.7%	90
Service	63,816	6.5%	78
Sales and Office	84,145	8.5%	83
Farming, Fishing, and Forestry	4,986	0.5%	221
Construction, Extraction, and Maintenance	41,720	4.2%	101
Production, Transportation and Material Moving	59,190	6.0%	126
Military Specific	18,443	1.9%	147
White collar	367,505	37.3%	92
Blue collar	188,155	19.1%	102
Race			
White	840,551	85.3%	103
Black/African American	23,143	2.3%	59
Asian	68,628	7.0%	109
Other	53,528	5.4%	78
Activities past 12 months			
Adult continuing education	148,992	15.1%	88
Basketball	101,550	10.3%	109
Bicycling	228,072	23.1%	88
Bowling	192,219	19.5%	86
Camping	235,830	23.9%	84
Casino gambling	331,882	33.7%	97
Fishing	184,636	18.7%	105
Football	76,572	7.8%	123
Gardening	529,043	53.7%	105
Golf	124,797	12.7%	108
Hiking - backpacking	260,838	26.5%	95
Hunting	54,696	5.5%	109
Jogging - running	230,832	23.4%	82
Photography	305,568	31.0%	93
Play a musical instrument	122,370	12.4%	75
Powerboating	134,314	13.6%	123
Sailboating	21,983	2.2%	82
Self-enrichment seminar	38,642	3.9%	55
Sewing - crafts	265,039	26.9%	103
Snow skiing - snowboarding	98,380	10.0%	88
Soccer	66,150	6.7%	91
Softball - baseball	65,983	6.7%	109
Swimming	241,064	24.5%	87
Tennis	59,001	6.0%	116
Volunteer work	292,759	29.7%	93
Yoga - pilates	127,759	13.0%	87
Events attended/places visited past 12 months			
Art museum	167,741	17.0%	83
Boeing Classic (Champions Tour)	6,235	0.6%	81
Busch Gardens	2,230	0.2%	33
CenturyLink Field event (Current Release Only)	N/A	N/A	N/A
Circus	20,428	2.1%	113
Clearwater Casino	43,114	4.4%	100
Comcast Arena at Everett event	62,187	6.3%	115
Comedy club	61,082	6.2%	108
Country music concert	65,780	6.7%	94
Dance or ballet performance	81,022	8.2%	102
Disney World (Orlando)	15,836	1.6%	91
Disneyland (Anaheim)	45,953	4.7%	120
Emerald Downs (for horse races)	29,257	3.0%	70
Emerald Queen Casino	74,128	7.5%	92
Everett AquaSox baseball game	21,644	2.2%	127
Everett Raptors (Seattle Timberwolves) football game	0	0.0%	0
Everett Silvertips hockey game	23,367	2.4%	127
Evergreen Speedway (for motorsports) (Current Release Only)	N/A	N/A	N/A
Evergreen State Fair (Monroe)	74,342	7.5%	107
Experience Music Project	44,742	4.5%	114
Great Wolf Lodge	60,927	6.2%	116
Health/wellness/fitness expo	18,816	1.9%	77
High school football game	133,156	13.5%	128
High school sports event	194,645	19.7%	133
Ice show	1,175	0.1%	12
International soccer match	784	0.1%	14
Job fair/recruitment fair	18,472	1.9%	52

Scarborough Research

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	Target Pop	Target %	Index
KeyArena event	74,496	7.6%	117
Live theater	190,805	19.4%	97
Mexican Soccer National Team game	0	0.0%	0
Monster Trucks	9,690	1.0%	54
Muckleshoot Casino	85,090	8.6%	97
The Museum of Flight	116,260	11.8%	139
NASCAR	5,318	0.5%	61
NHRA Drag Racing	4,756	0.5%	46
Northwest Trek	42,735	4.3%	88
Pike Place Market	343,499	34.8%	88
Point Defiance Zoo (Tacoma)	184,396	18.7%	110
Portland Trail Blazers basketball game	688	0.1%	20
Pro Bull Riding (PBR)	4,666	0.5%	31
Pro rodeo	25,732	2.6%	129
Puyallup Fair	194,737	19.8%	94
R&B/rap/hip-hop concert	45,183	4.6%	116
Rock 'n' Roll Seattle Marathon	25,710	2.6%	177
Rock concert	125,079	12.7%	79
Safeco Field event (Current Release Only)	N/A	N/A	N/A
Sea World	34,822	3.5%	120
Sea World (San Diego)	17,796	1.8%	91
Seattle Center event	98,845	10.0%	81
Seattle International Film Festival	23,461	2.4%	93
Seattle Marathon	1,046	0.1%	31
Seattle Mariners baseball game	208,175	21.1%	110
Seattle Seahawks football game	81,271	8.2%	112
Seattle Sounders FC soccer game	80,983	8.2%	102
Seattle Storm basketball game	8,722	0.9%	72
Seattle Thunderbirds hockey game	16,822	1.7%	57
Seattle University sports event	10,636	1.1%	175
ShoWare Center event	43,184	4.4%	82
Six Flags	2,486	0.3%	44
Six Flags Magic Mountain	2,486	0.3%	118
Snoqualmie Casino	101,776	10.3%	123
Supercross/Motocross	25,472	2.6%	260
Symphony concert, opera, etc.	82,741	8.4%	97
Tacoma Rainiers baseball game	57,610	5.8%	94
Tacoma Stars soccer game (Current Release Only)	N/A	N/A	N/A
Times Square (in New York City)	34,994	3.5%	134
Trade show	56,386	5.7%	78
Tulalip Casino	114,190	11.6%	85
U.S. Soccer National Team game	536	0.1%	15
Universal Studios (Los Angeles)	8,067	0.8%	87
Universal Studios Florida	2,507	0.3%	47
University of Washington basketball game	16,305	1.7%	91
University of Washington football game	65,211	6.6%	116
Vancouver Canucks hockey game	0	0.0%	0
Victoria Clipper	31,613	3.2%	113
Washington Stealth lacrosse game	4,945	0.5%	259
Whistler - Blackcomb	32,624	3.3%	111
Wild Waves	29,486	3.0%	86
Woodland Park Zoo (Seattle)	177,429	18.0%	91
WWE (pro wrestling)	4,879	0.5%	149
Zoo	351,343	35.6%	104
Other high school sports event	118,473	12.0%	141
Other museum	99,019	10.0%	77
Other musical concert (jazz, big band, etc.)	118,864	12.1%	88
Other nightclub	50,343	5.1%	60
Other professional sports event	16,889	1.7%	97
Other Sea World	17,026	1.7%	180
Other Six Flags	0	0.0%	0
Other ski resort	32,870	3.3%	116
Other theme park	39,238	4.0%	92
Other zoo	47,099	4.8%	80
Any golf resort	79,809	8.1%	140
Any paid ticket music concert	125,371	12.7%	88
Any professional sports event	376,177	38.2%	99
Any Washington ski resort	110,950	11.3%	108
County of residence			
Chelan, WA	3,542	0.4%	34
Clallam, WA	13,822	1.4%	130

Scarborough Research

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	Target Pop	Target %	Index
Douglas, WA	8,972	0.9%	95
Grays Harbor, WA	23,374	2.4%	133
Island, WA	15,027	1.5%	91
Jefferson, WA	3,618	0.4%	48
King, WA	380,833	38.6%	95
Kitsap, WA	61,266	6.2%	119
Lewis, WA	23,315	2.4%	119
Mason, WA	8,481	0.9%	77
Pacific, WA	3,563	0.4%	115
Pierce, WA	170,182	17.3%	107
San Juan, WA	5,534	0.6%	250
Skagit, WA	32,469	3.3%	121
Snohomish, WA	139,663	14.2%	97
Thurston, WA	57,884	5.9%	110
Whatcom, WA	34,305	3.5%	81
Malls shopped/visited past 3 months			
Alderwood Mall	175,586	17.8%	91
Bellevue Galleria	32,140	3.3%	83
Bellevue Square	188,411	19.1%	108
Bellis Fair Mall	43,817	4.4%	106
Cascade Mall (Burlington)	43,387	4.4%	95
Centralia Factory Outlets	61,448	6.2%	107
The Commons at Federal Way	61,419	6.2%	72
Crossroads Shopping Center	84,219	8.5%	103
Everett Mall	71,726	7.3%	95
Factoria Square Mall	65,756	6.7%	84
Factory Stores at North Bend	50,022	5.1%	93
Gilman Village	20,690	2.1%	88
Kent Station	40,775	4.1%	88
Kitsap Mall	74,270	7.5%	121
Lakewood Towne Center	82,490	8.4%	101
The Landing (Renton)	91,097	9.2%	133
Lincoln Square	70,277	7.1%	139
Marysville Mall	14,264	1.4%	76
Northgate Mall	66,843	6.8%	57
The Outlet Shoppes at Burlington	33,870	3.4%	74
Pacific Place (downtown Seattle)	85,132	8.6%	97
Parkway SuperCenter (Tukwila)	26,567	2.7%	69
Pickering Place (Issaquah)	9,556	1.0%	80
Redmond Town Center	82,008	8.3%	122
Seattle Premium Outlets	72,622	7.4%	111
The Shops at the Bravern (Bellevue)	39,656	4.0%	172
South Hill Mall (Puyallup)	100,615	10.2%	111
SuperMall	86,916	8.8%	116
Tacoma Mall	177,761	18.0%	114
Totem Lake Mall	9,546	1.0%	49
Town Center at Lake Forest Park	32,682	3.3%	102
University Village	92,989	9.4%	93
Westfield Capital	42,311	4.3%	86
Westfield Southcenter	156,914	15.9%	100
Westlake Center (downtown Seattle)	81,480	8.3%	81
Westwood Village	15,114	1.5%	93
Other downtown Seattle	101,802	10.3%	103
Other shopping center or area	98,970	10.0%	90
Did not shop	141,405	14.3%	104
Any Adspace Mall	284,911	28.9%	91
Any Akoo Mall	363,323	36.9%	96
Any enVu Mall	200,880	20.4%	92
Any General Growth Mall	252,963	25.7%	88
Any Macerich Mall	192,694	19.5%	112
Any mall/shopping center past 3 months (inc month)	844,445	85.7%	99
Any PlaceWise Mall	237,089	24.0%	98
Any Simon Mall	330,618	33.5%	95
Any Westfield Mall	186,938	19.0%	96
Department stores:Stores shopped past 3 months			
Babies 'R' Us	105,369	10.7%	113
Best Buy	252,294	25.6%	106
Big Lots	128,676	13.1%	106
Burlington Coat Factory	70,147	7.1%	115
Costco	720,138	73.0%	116
Dollar Tree	256,357	26.0%	92
Fred Meyer	631,182	64.0%	96
Fry's Electronics	96,113	9.7%	148
The Home Depot	527,639	53.5%	118
IKEA	108,962	11.1%	116

Scarborough Research

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	Target Pop	Target %	Index
JCPenney	287,843	29.2%	105
Kmart	149,329	15.1%	94
Kohl's	177,517	18.0%	100
Lowe's	343,881	34.9%	106
Macy's	291,567	29.6%	98
Marshalls	86,376	8.8%	85
Neiman Marcus	6,251	0.6%	139
Nordstrom	160,247	16.3%	110
Nordstrom Rack	90,661	9.2%	90
Ross Dress For Less	194,013	19.7%	83
Sam's Club	43,311	4.4%	123
Sears	199,895	20.3%	96
Target	525,630	53.3%	104
TJ Maxx	92,853	9.4%	92
Walmart	438,874	44.5%	94
Other major store	116,373	11.8%	91
Did not shop	38,356	3.9%	80
Any department store past 3 months (inc month)	947,494	96.1%	101
Broadcast TV networks/stations watched past 7 days			
ABC (KOMO, channel 4)	719,060	72.9%	116
AccuWeather (KCPQ - DT2)	41,304	4.2%	116
Azteca America (KFFV - DT2)	4,700	0.5%	47
CBS (KIRO, channel 7)	631,866	64.1%	110
CW (KSTW, channel 11)	179,233	18.2%	117
FOX (KCPQ, channel 13)	574,180	58.2%	108
Independent (KONG, channel 16)	160,807	16.3%	122
ION (KWPX, channel 33)	80,410	8.2%	97
MeTV (KVOS, channel 12)	56,759	5.8%	108
MyNetworkTV (KZJO, channel 22)	26,622	2.7%	131
NBC (KING, channel 5)	633,400	64.2%	118
PBS (KBTC, channel 28)	129,489	13.1%	102
PBS (KCTS, channel 9)	281,470	28.6%	96
THIS TV (KOMO - DT2)	33,792	3.4%	121
Univision (KUNS, channel 51)	19,983	2.0%	69
Any broadcast viewing past 7 days	884,384	89.7%	108
Any listed ABC station(s)	719,060	72.9%	116
Any listed Azteca America station(s)	4,700	0.5%	47
Any listed CBS station(s)	631,866	64.1%	110
Any listed CW station(s)	179,233	18.2%	117
Any listed FOX station(s)	574,180	58.2%	108
Any listed Independent station(s)	160,807	16.3%	122
Any listed ION station(s)	80,410	8.2%	97
Any listed MyNetworkTV station(s)	26,622	2.7%	131
Any listed NBC station(s)	633,400	64.2%	118
Any listed PBS station(s)	318,085	32.3%	100
Any listed THIS TV station(s)	33,792	3.4%	121
Any listed Univision station(s)	19,983	2.0%	69

Appendix D.
Market Research Report

FINAL

VEHICLE LEAKS EDUCATION AND BEHAVIOR CHANGE

Market Research Report

Background

The Washington Department of Ecology (Ecology) estimates that up to 9,200 tons of petroleum-related compounds are released in the Puget Sound region every year. According to the Puget Sound Toxics Assessment, Ecology has determined that about two-thirds – or about 6,100 tons a year – comes from motor oil drips and leaks from our cars and trucks.

When it rains, stormwater picks up and carries these toxic chemicals into storm drains and from there into streams, lakes and Puget Sound.

To tackle the problem of chronic oil drips and leaks from vehicles, Seattle Public Utilities, and the Department of Ecology (Ecology) have combined efforts with community colleges to launch an incentive-based automotive education and outreach program, the Automotive Maintenance Program (AMP). It is designed to raise awareness and provide vehicle owners with the tools necessary to check for and fix car leaks. AMP aims to help reduce the amount of automotive contaminants that wash into our local streams and ultimately Puget Sound. This will also help reduce vehicle emissions that contribute to air pollution problems in the Puget Sound region.

Purpose

Seattle Public Utilities and Ecology partnered with the larger Stormwater Outreach for Regional Municipalities (STORM) Vehicle Leaks Outreach Campaign, to help leverage funds and increase awareness and spark action.

The Stormwater Outreach for Regional Municipalities (STORM) consortium is taking the lead on this initiative by focusing on outreach and education. The consortium has selected 'fixing vehicle leaks' as the best management practice for a targeted regional education and behavior change campaign. Therefore, the campaign will focus on three main objectives:

- Get vehicle owners to check for leaks
- Educate vehicle owners on what kind of leaks they may have and where they can take their vehicles to get the leaks fixed
- Get vehicle owner to repair their vehicles

Achieving the desired behavioral progression will require the development of an effective behavior change program based on a thorough understanding of the target audience(s), the creation of messages that resonate with audience(s), effective methods of communicating those key messages, and prompts and incentives that lead to actions and achieve desired outcomes. The market research for this campaign was focused on enhanced understanding of the following factors:

- What facts will help the audience understand the impacts to Puget Sound?
- What facts and messages will help the audience understand & believe the potential impacts to their vehicle if leaks are not fixed?
- Who are the trusted messengers?
- What are the audiences' attitudes, beliefs, and behaviors related to this issue?

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- What incentives and/or products are necessary to encourage the audience to have their vehicle inspected for leaks and repaired if needed?
- What are the "best" communications channels to reach target audience(s)?

Methods

PRR used a multi-method approach to the market research, involving focus groups and an online survey.

1. Phase 1 focus group – The purpose of this first focus group was to:
    - Identify the biggest challenges people experience with their vehicles
    - Discuss their experience with vehicle leaks
    - Identify barriers to and motivators for addressing vehicle leaks
    - Identifying trusted information sources and communication medium preferences

2. Online survey – The purpose of the online survey was to test several of the findings from the first focus group on a larger sample of persons who own vehicles that are 2005 models or older, or which have 80,000 miles or more on the odometer. PRR developed and pre-tested the online survey questions. We used the ResearchNow™ online panel to target this respondent profile in the four-county Puget Sound region. A total of 367 qualified respondents completed the online survey.

3. Phase 2 focus group – The purpose of this second focus group was to:
    - Identify attitudes, beliefs, feelings, and behaviors related to vehicle leaks
    - Identify best ways to advertise the workshops
    - Identify best times to hold auto leaks workshops
    - Gather thoughts on drip sheet testing
    - Test campaign names and taglines
    - Test preferred URLs for the campaign website
    - Test radio ads
    - Test logos
    - Test posters
    - Test workshop curriculum
    - Test workshop materials

Key Findings

1. Phase 1 Focus Group Key Findings

Participant profile

- 8 participants (4 men and 4 women, age range from 30-59, 7 white and 1 black)
- 3 live in suburban areas, 3 in rural changing to suburban, 1 rural, and 1 urban
- Own cars ranging from 1998 to 2006 with mile ranges from 40,000 to 180,000
- 3 would repair their car themselves and 5 would take it to a dealership/repair shop
- Mix of incomes ranging from $10,000 to $125,000

Biggest challenges with vehicles

- Keeping up with maintenance (especially in very old cars that are out of warranty)
- Knowing when to change the snow tires and brakes
- Having an older car means that a lot more needs to be done more often
- Changing basic things-making sure the kids check
- Oil, brakes
- Making sure tires are safe
- Going to the dealership
- Some mentioned leaks were a challenge, but mostly it was about maintenance of basic car related issues.

Story about a car leak experience

All participants completed a brief online survey designed to get them to report on whether they ever had a vehicle leak, what their feelings were about having a leak, and what they did in response to the leak. This pre-group exercise allowed us to prime the participants for the group, to use the focus group time most efficiently, and to understand key issues about vehicle leaks among the participants before the focus group.

Once in the group, each participant relayed their story about a vehicle leak they had experienced. The types of leaks mentioned were brake fluid, anti-freeze, transmission fluid, and oil. Most participants noticed a puddle, stain or drops of fluid on their driveway or garage floor. Another way some realized they had a leak was by smelling burning oil. One participant wrote that he ran out of brake fluid and transmission fluid as he was driving and that was when he discovered his vehicle was leaking.

Thoughts about the leaks were about costs to fix the problem, needing their car to run, and having to take it in for repair—needing a loaner. Wanting to know what was going on, where the leak was coming from, and if it was an easy fix were other concerns.

Feelings about leaks were panic, feeling shaken, not happy, nervous, anger, worry, anxious, concerned (but not too much because the leak puddle on the floor did not grow bigger) and frantic. One participant wrote that he felt guilty his vehicle had been leaking all over the roads making it unsafe during rain and

also contributing to environmental pollution. Another participant reported being dismayed about not knowing about the leak sooner and guilty about not checking the oil level regularly. Some reported feeling fearful because they did not know how the leak would affect their car and their safety while driving. Fear of the expense to fix the leak was also reported.

Most respondents took their car in right away to have it fixed. One participant currently did not have the leak fixed and he just keeps topping the oil off until he can afford to replace the car. One participant checked the level of coolant, cleaned his driveway puddle and then watched the car for a while, but did not take it in for repair as it did not leak again. Another participant had two leaks and chose to fix the least expensive one (radiator fluid), but continues to have an oil leak.

First thoughts when participants discover they have a leak:

- Hard to clean up
- Another expense
- Irritation
- How to fix it, look for a cheap fix
- Is it worth fixing, does it have to be fixed right away, how much will it cost (in the long run) if not fixed right away
- Why is it leaking and from where?

Barriers and motivators for addressing leaks

Participants seek out information from the internet, owners manual, friends, family, or their mechanics about leaks when they have them and they all believe that a leak will affect the life of their vehicle.

Barriers to checking for leaks were fear of cost to fix it if a leak was found and not wanting to find something wrong—"ignorance is bliss." Some participants reported that they check the gauges and nothing looks unusual, so they do not feel the need to check for leaks regularly. Others said they have regular maintenance and do not need to check for leaks themselves because their mechanic does so at regular intervals.

The number one barrier to fixing car leaks is cost. For most participants, cost is an issue and they weigh the cost of fixing a leak with the total value of the car. They also factor in the cost of ignoring the leak. Distance to the repair shop is less of a factor, but influences the decision of when to take the car in for fixing if a loaner is needed to get back home or for the duration of the repair.

Motivation to check for leaks:

- If going on a long trip
- Coming back from a long trip
- If getting ready to buy or sell a car
- When kids start driving
- If one hears or smells something that is not right (e.g., burning oil)
- Seeing a leak in parking space (driveway, garage)

Some participants would be interested in using the testing kit to check for leaks, but some would not be simply because they would leave the checking to their regular mechanic. There were many questions surrounding this kit and the program that would be offered in public places. What was clear was that those who were interested would like to use it by themselves at home, rather than signing up for a program that used volunteers to check their vehicles. There was fear of being tracked by the government or being told there was a leak so that a particular shop would get money to fix it. Overall, they were not trusting of other non-professionals checking for leaks on their vehicle.

The environment was not a big motivating factor. A few participants recognized that the leaks have an impact on the environment, but knowing this did not motivate them to fix their leaks. There seemed to be a lack of understanding that even a little leak impacts the environment and that when driving the vehicle may be leaking even more due to engine pressure. Even knowing that the cumulative effects of leaks impact our waters greatly, many were not motivated by this and maintained that their little leak, far away from any waterways was not as harmful to the environment. Some were aware of the impact of leaks on the environment, but costs of fixing a leak outweigh concern for the environment.

Pressure from neighbors was also explored as a possible motivator. Two participants shared stories about their neighbors who had a permanently leaking vehicle and they shared that not only was it an eyesore, but one participant said that it looked irresponsible. But when asked if they would be embarrassed that a neighbor could see their leak, they only would be embarrassed if the leak was huge or if there was black smoke coming out of the vehicle which was caused by a leak.

Motivation to fix leaks:

- Safety (especially if a long distance away from home, and if with children)
- Having a reliable car
- Overall effect on car/severity of leak (if leak will greatly decrease life of vehicle or cause it to stop working)
- Finances—if the leak would cost more in repairs down the road
- Buying or selling a car
- Safety for other drivers on the road
- Health of humans and animals
- Mess in garage
- Pressure from kids and neighbors
- Environment

Trusted information sources and communication preferences

Participants get information about car maintenance from the internet, car manuals, friends, family, and dealerships/mechanics. They determine trustworthiness of these sources by reading reviews (Yelp.com, Angie's List), word of mouth (especially true for small towns) and trial and error (not returning to a mechanic who did not do a good job).

Participants would trust their repairman and/or someone with a background in biology, and/or scientific journals to give them information about vehicle leaks and their impact on the environment.

Most participants reported that they did not trust dealership mechanics (especially when the car was out of warranty). Many had had experiences of being “up-sold” at dealerships as opposed to independent repair shops. Many also frequented quick-lube shops and thought that they either did check for leaks or should check for leaks. When informed that most quick-lube shops did not check for leaks, many believed it and one participant even thought it made sense since there was not enough time to do a thorough check.

Some participants were aware of ASA (Automotive Service Association) but most were not. They thought that it was something good for a mechanic to have (and some had mechanics who were ASA qualified). However, those who had a trusted mechanic (who was not ASA qualified) would not switch to a mechanic who was. ASA qualification is useful information to have for the future if they needed to find a new mechanic.

2. Online Survey Key Findings

Most respondents reported having one (51%) or two (35%) vehicles that were 2005 or older or had at least 80K miles, while less than one fifth (14%) reported owning three or more such vehicles.

Inspection for vehicle leaks

Four fifths of respondents (80%) reported that either they or a mechanic regularly inspect their vehicle for leaks; one fifth (20%) reported that they did not inspect of have their vehicle regularly inspected for leaks.

Those who were more likely to report that they or a mechanic regularly inspected their vehicle for leaks were:

- Respondents who had experienced a leak (86%) compared to those who had not (73%).

Those who reported that they did not inspect of have their vehicle regularly inspected for leaks were asked why they did not do so. Below are the reasons reported (note that multiple responses were allowed):

- I know there is nothing wrong because I check the gauges on the car and nothing looks unusual (48%)
- I cannot do it myself, and I do not have a mechanic (21%)
- I fear the cost to fix a potential leak (19%)
- I do not want to know if something is wrong with my car (14%)
- I do not trust mechanics (10%)
- Other (33%)

Those who did not regularly inspect their vehicle for leaks indicated that they would be most motivated to regularly inspect their vehicle:

- If they saw a spill in their parking space (82%)
- If they heard or smelt something that was not right like burning oil (78%)
- If they were going on a long trip (51%)
- If they were getting ready to buy or sell a car (34%)

Only one fifth (15%) reported that they would be motivated to regularly inspect their vehicle if they learned that vehicle leaks enter Puget Sound and harm wildlife and habitat.

Most respondents who did not regularly inspect their vehicle for leaks reported that they would either be somewhat likely (45%) or very likely (19%) to inspect their own vehicles with a kit. Over one third (36%) reported that they would be unlikely to inspect their vehicle using a kit for reasons such as they would just use their driveway, that it didn't seem like it would be that simple, no car knowledge (didn't want to mess with cars or their spouse did it for them).

Most respondents who did not regularly inspect their vehicle for leaks reported that they would either be somewhat likely (45%) or very likely (29%) to allow another person (a non-professional volunteer) to

inspect their vehicle with a kit. Over one quarter (26%) reported that they would be unlikely to do so mostly because they would not trust a non-professional to inspect their car.

Respondents who did not regularly inspect their vehicles for leaks reported that they would be most encouraged by the following incentives (note that multiple responses were allowed):

- Free inspection from a certified mechanic (73%)
- Free Do-It-Yourself kit that allows them to test for leaks at home (64%)
- Discount on a leak repair (45%)
- Free vehicle leaks workshop with a free inspection from a Community College car expert (25%)

Repair of vehicle leaks

Over three fifths (63%) of respondents would take their vehicle to a repair shop if it had a leak and they needed it repaired. Less than one tenth (9%) reported that they would repair it themselves or have someone in their household repair it. Over one quarter (28%) reported that they would use a combination of self-repair and a vehicle repair shop.

Over half (55%) respondents reported having experienced a vehicle leak, while less than half (45%) reported that they had not. Most (83%) reported that they had the leak repaired within one month after detecting it while less than one fifth (17%) reported that they did not.

Those who did not repair their vehicle leak within one month reported that some of the reasons for doing so were:

- The leak was too expensive to repair (50%)
- The cost of repair was more than the value of the car (35%)
- Repaired it after one month (21%)
- Did not have time (18%)
- Did not think it would affect how my car functions (12%)

Having a reliable car (80%), if the leak would cause more damage and increase the cost of repair (72%), safety for self and family (72%) and increasing the life of the car were the biggest motivators for repairing a vehicle leak within one month of detection. Nearly two fifths (39%) indicated that learning that vehicle leaks enter Puget Sound and harm wildlife and habitat would motivate them to repair vehicle leaks within one month.

Almost two fifths (38%) would be interested in participating in a vehicle leaks workshop. Most respondents however (62%), were not interested mostly because of time constraints (either they have no time, work on Saturdays or think 4 hours is too long), inconvenient locations, or they do not like to work on cars (or want to).

Those who were interested in the workshops were asked to list three kinds of additional information they would like to receive at workshops. Top themes were:

- General car maintenance (changing oil, tire maintenance, belt maintenance, battery maintenance, radiator flush, wiper maintenance, etc.)

- Good/reputable repair shops
- How to diagnose and prevent and clean up leaks
- How to troubleshoot car problems (e.g., unusual noises, fuel injection)
- How to prioritize repair jobs
- Where to dispose used vehicle fluids
- Best vehicle products to use

Many respondents who are interested in the workshops would like to learn about them via the internet/websites or direct mail like a postcard. Other popular modes of communication were utility bill insert, radio advertisements, promotional advertisements on cable TV, and social media such as Facebook or Twitter.

- Hispanic respondents were more likely (61%) compared to non-Hispanic respondents (37%) to be interested in attending a workshop.
- Younger participants aged 39 and below (54%) were more likely to be interested in attending a workshop compared to older respondents aged 40 and above (31%).

Trusted information sources

Respondents get their information about car maintenance from the following sources (note, multiple responses were allowed):

- Mechanic (56%)
- Owner's manual (53%)
- Internet (39%)—Google or other search engine, YouTube, car forums, car brand name websites
- Dealership (33%)
- Family (32%)
- Friends (27%)

Respondents mostly trust independent mechanics (65%), dealerships (50%), themselves (37%), family (33%), quick lube shops (32%), and friends (20%) to check for leaks in their vehicle. They trust independent mechanics (73%) and dealerships (59%) the most to repair the leaks.

Over three quarters (77%) reported that having a list of reputable, certified mechanics in their local area would be useful for dealing with vehicle leaks. Those that did not think it would be useful (23%), did so mainly because they already had a trusted mechanic.

Those who were more likely to report that having such a list would be useful were:

- Respondents who had not experienced a leak (83%) compared to those how had (72%).
- Respondents who take their vehicle to a repair shop (79%) and those who both do repairs themselves or take their vehicle to a repair shop (78%) compared to those who repair it themselves (59%).

Campaign name testing

Top campaign names (received the most "most motivating" ratings) were:

- Don’t Drip and Drive (30%)
- Drive Clean Puget Sound (28%)

Top taglines (received the most “most motivating” ratings) were:

- Take a Peek, Check for Leaks (39%)
- For a Drip Free Puget Sound (26%)

3. Phase 2 Focus Group Key Findings

Participant profile

- 8 participants:
    - 4 men and 4 women
    - Age range from 25-66
    - 6 white (1 with Hispanic background), 1 Asian, 1 Black
- 3 live in suburban areas, 1 rural, and 4 urban
- Mix of incomes ranging from $25,000 to $75,000
- All are the decision makers about maintenance of their older/80K miles or more vehicles
- For simple repairs, 5 would do it themselves. For more major repairs, all 8 would take to the dealership or a repair shop.

General attitudes, beliefs, feelings, and behaviors about vehicle leaks

a. How do you discover if you have a leak?
    - Spots on driveway or garage floor
    - Might see something actually dripping
    - Parking garage attendant let me know
    - Put cardboard on floor of garage
    - See if level down on dipsticks or fluid reservoirs

b. What is the first thing that comes to mind if you have a leak?
    - Oh crap!
    - Is it going to be expensive?
    - How serious is it?
    - Where is it coming from?

c. Do you regularly check or have your vehicles checked for leaks?
    - Some check driveway/garage floor when they back up
    - Others have repair shop check as part of regular maintenance

d. If you found a leak, what would you do about it?
    - Depends on cost of the repair

e. What impacts do you think vehicle leaks have?
    - Big emphasis on environmental impact
    - Concerns about pets being affected
    - Concerns about the bigger cost if they do not repair soon

Drip sheet testing

- *Option 1: Automotive Service Association* -- People were very skeptical, both at the beginning and later in the group (when the participation of ASA was further explained). They saw this as possibly a way for ASA to drum up business. Also concerned about who is certifying/qualifying them? There seemed to be more trust of Triple A. None were familiar with EnviroStars.

- *Option 2: Non-professional volunteers* (from non-profits) at events/shopping locations – more people were more interested in this option because:
  - Just providing information about if there is a leak, no sales pitch
  - Can be done at my convenience

  But, one person indicated an interest in needing to know more about who the non-profits were that were participating. She also was concerned about the volunteers scoping out what I had in my vehicle.

- *Option 3: Employer site* – Lots of interest here because:
  - Very convenient
  - Doesn't interfere with an event I want to attend (as in option2)

  But, there was concern that such a program would not help those who are not employed or do not take their car to work.

- Option 4: Use drip sheet themselves – lots of interest here because:
  - Can be done at one's convenience

Other insights about drip sheet process:

- All vehicles checked should get the brochure, regardless of whether they had a leak or not.
- Most would trust the leak report to take it to their trusted mechanic for further discussion.
- Some concern that the sheet does not absorb the fluid and that it might run off.
- One person suggested doing the tests in neighborhoods to increase convenience. This was met with broad acceptance.

Top preferred options:

- Options 3 and 4:
  - Convenient
  - Don't interfere with other things doing, such as attend event, shopping, etc.
  - Take pride in doing things ourselves
  - These seem to have less strings attached
- If had to choose just one option, 4 would go with Option 4. The others would go with options 2 or 3. None would go with option 1.

Campaign name and tagline

Campaign name – Don't Drip and Drive

- Lots of support for this
- Love the alliteration
- Catchy phrase, gets attention
- Like the link to "Don't Drink and Drive"
- Deals with a serious manner in a humorous way
- Message is that it is telling you what to do
- Some concern that this might suggest that vehicle leaks might become illegal and that people will have to have "drip checks," similar to emission checks

Tagline – Find it. Fix it.

- Less enthusiasm for this compared to campaign name
- It is a call to action, but too general, not clearly about vehicle leaks
- Not as catchy as campaign name
- Some thought the campaign name was a better tagline. The campaign name needs to more clearly indicate that this is about vehicle leaks.

Name and Tagline Together

- Don't seem to go together that well
- Ok, but need visuals with it to work effectively
- Need to tell me more about what this is and then hit me with the call to action
- Need to use the word 'car' and not 'auto.' Auto will not be as familiar to immigrant groups.

URLs

- Confusion with how to write dontdripanddrive.org
    - Should there be an apostrophe in the work "don't?
    - Should it be spelled "and" or use an ampersand?
- Finditfixit.org worked better, but there was concern that "find it fix it" is too general – doesn't identify the issue of vehicle leaks
- People suggested and liked carleaks.org or fixcarleaks.org better

Radio ads

- There was a clear preference for ad #5, which included Steve Poole. He is a recognized local celebrity and people will listen to him with a message about vehicle leaks. In fact, there seemed to be a preference for a straight message from Steve Poole without the additional clever/humorous aspects of the ad.
- There was also support for the 3rd ad involving the Coho family (reference to the Mafia). They thought this was clever and liked the reference to impact of vehicle leaks on salmon. More people will know about salmon than who know Steve Poole.

- Overall though, there seemed to be some concern with the overemphasis on different accents, which seemed to distract from the underlying message.
- The other important issue is that all of the ads mentioned ASA mechanics and there needs to be a clear message that you can choose to not get the leak fixed at that shop.
- Regardless of which ad is used, the emphasis should be less on oil leaks and more on vehicle leaks in general.

Logo

- Of the 4 logos, there was a clear preference for logo #1. This one most clearly showed a vehicle leak and the wheels on the car were in the correct place (as compared to the other 3 logos). They also liked the car face on #1. The faces on the others looked to happy for a car that was leaking.
- Improvements to #1 would include:
    - Make the drip look more like a series of drips to the pool of fluid below
    - Making the "D's" bigger in the campaign name
    - The discussion also identified a new preferred tagline –" Fix that leak!" It is a clear call to action.

Posters

- Of the 4 posters, the clear preference was for #4, in which the family with dog is seen in driveway where the man is working on the car.
- #1 –oil sheen could be improved by:
    - Making the rainbow aspect clearer. Difficult to see with the poster being so dark.
    - The white line on the right doesn't clearly indicate road striping
    - Incorporate salmon somehow into this poster, possibly as part of the storm drain cover.
- #2 – intervention – was not liked due to "bad joke" about mental health. Also, the connection between an intervention and vehicle leaks is not clear.
- #3 – jeans – didn't seem to like much about this one, and didn't seem to have any clear connection to vehicle leaks
- #4 – family/dog -- gets the point across and it is brief. Direct connection to taking care of one's vehicle and the impact of vehicle leaks on loved ones (family and dog)

Workshops and Materials Testing

- First concern was -- how long is the workshop? About 5-6 would be interested, even without knowing how long the workshop is.

- As they learned the *general* purpose of the workshop, interest seemed to wane a bit.

- When shown the specific topic areas covered in the workshop, interest stayed about the same. Most important topics to cover:
    - How to identify and prevent leaks (5)
    - Tips on repairing common minor leaks (4)
    - Preventative maintenance (4)

- When shown the kit, there was some slight increased interest in attending workshop. The funnel seemed to be of the most interest, as well as the absorbent pad.

- Some concern among some that the workshop would be too basic to be worth the time. Some others just want to take to their mechanic and not have to learn this info.

- Other things of most interest to include in the kit:
    - Drip sheet (6)
    - Fluid test strips (4)
    - Tire gauge (4)

- Best days and times:
    - Weekends are better than weeknights
    - 4 hours seems too long for most people
    - 3 hours seems a bit better
    - Splitting across two days is of no interest
    - 2 hours seemed best, even if not everyone gets their car tested
    - They are OK with all students learning by looking at one car

- How want to hear about workshops
    - Bus boards, wrapped bus
    - Radio
    - Community blogs
    - Television news
    - Newspaper reporters
    - Movie theatre ads was of no interest

- Attitudes toward workshop materials:
    - Poster
        - Want to know more about where the coupons are good at. Would like coupons that can be used anywhere.
        - Liked the “oil and water don’t mix” message
        - Like emphasis on salmon impact
        - Think the car should be red so that the poster isn’t all so blue
    - Postcard
        - Interest in expanding program beyond King County
        - Liked the sponsors because some of them tie into other campaigns they are already aware of
    - Brochure
        - Liked emphasis on protecting wildlife
        - Liked the ability to turn in your oil for free

Recommendations

Vehicle Leaks Campaign:

- Be sure to include messaging about reliability and safety in campaign materials, rather than just focusing on the environment. Environment was not shown a big motivator with any of the groups.
- Choose Don't Drip & Drive as the campaign name. Focus groups liked it because it was simple and straight forward.
- Change the tagline of the campaign to Fix That Leak! Participants found that it was simple, easy to understand, and action-oriented.
- Consider looking at different URL options for the campaign, like fixcarleaks.org.
- Look to secure a celebrity, like Steve Poole, to voice the radio spots. Participants liked the idea of hearing a trusted advocate selling the benefits of the program.
- Focus on simple, straightforward creative. Logos, posters, or other creative should provide a clear connection to vehicle leaks.
- During vehicle leaks testing events, make sure it is very clear that there are opt-out options. Be sure to clearly explain who is conducting the testing to address concerns of legitimacy.
- Partnering with a certified mechanic association will help relieve concerns about the validity of the program and trust that the program, and any discounts, are legitimate.

Vehicle Leaks Workshops:

- Consider looking at different timeframes for the workshops. The four-hour block was seen as too much of a commitment, but three hours was more doable.
- Workshop curriculum should focus on: How to identify and prevent leaks, Tips on repairing common minor leaks, and Preventative maintenance.
- Consider providing home testing kits, regardless of workshop attendance. With the proper information provided, individuals are likely to test their car themselves.
- Consider advertising the for the workshops through the following mediums:
    - Bus boards
    - Radio Ads

- Community Blogs
- Television
- Newspaper

Advertising in movie theatres was of no interest and should not be considered.

Vehicle Leak Education & Behavior Change

Phase 1 - Focus Group Moderator Guide

I. Introduction/Warm-Up (10 minutes)

- [Moderator introduces herself/himself.]
- [Explain:] A focus group is a group discussion where we can learn more in-depth about peoples' ideas and opinions (compared to telephone or written surveys).
- My job is to facilitate the discussion and make sure that everyone has an opportunity to speak **and to make sure that no one dominates the conversation**.
- Housekeeping – Toilets and refreshments.
- [Mention ground rules.]
  - There are no right or wrong answers; we're interested in your honest and candid opinions and ideas.
  - Our discussion is totally anonymous. We will not use your names in any report.
  - Our discussion today is being recorded. These recordings allow us to write a more complete report, and to make sure we accurately reflect your opinions. However, please only speak one at a time, so that the recorder can pick up all your comments.
  - That is a one-way mirror behind me and a couple of my colleagues are observing our discussion
  - It is important to tell us YOUR thoughts, not what you think others will think, or what you think others want to hear.
  - Please turn off cell phones
  - Your stipend will be provided as you leave.
  - Relax and enjoy

- Very generally, we're going to spend our time today talking about vehicle leaks. Any questions about the purpose of our focus group or the ground rules before we begin?

I'd like you each to introduce yourselves. Please tell us:

- Your first name
- Make, model, and year of your vehicles
- Approximately how many miles on your vehicles?
- Who typically repairs your vehicle – you, family member, friend, or do you take it to a vehicle repair shop?

II. Attitudes, Beliefs and Feelings About Vehicle Leaks (40 minutes)

1. What are the biggest challenges you face with your vehicle(s)? If no one mentioned vehicle leaks as a challenge, ask why not.

   Participants will have written a short story (pre focus group) about how they would know if their vehicle had a leak, what they would think and feel if they found a leak, and what they would do in response to a leak. They will submit these online and the moderator will print them out and provide each participant a copy of theirs.

   Pre-group story instructions to be sent to participants one week ahead of the group:

   Q1: Have you ever experienced a vehicle leak (oil, brake fluid, transmission fluid, etc.)?
   - o *Yes*
   - o *No*

   *Q2: [IF Yes] Please describe in a short story (500 words) how you found out you had a leak, what you **thought** about having a leak, how you **felt** about having a leak, and what you did in response to the leak.*

   *Q2: [IF no] Please describe in a short story (500 words) how you would find out whether you had a leak, what you would **think** about having a leak, how you would **feel** about having a leak, and what you would do in response to the leak.*

2. Ask each participant to briefly share their story (15 minutes)
   a) Listen for first thoughts when they or their mechanic finds a leak
   b) Listen for feelings when they or their mechanic finds a leak
   c) Listen for inaction (e.g., leave it alone and hope it doesn't get worse)

3. How do you discover if you have a leak? (listen for fluid on garage floor or driveway, smell of oil burning, etc.)

4. What is the first thing that comes to mind if you have a leak? Why is that the first thing? What is the next thing that comes to mind?

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

III. Barriers to and Motivators for Addressing Vehicle Leaks (30 minutes)

5. Do any of you regularly check or have your vehicles checked for leaks? Why or why not?

6. Have any of you had a leak and chosen not to fix it? Why? What were your thoughts and feelings? Listen and probe for lack of knowledge, lack of trust in repair shops, cost, whether they believe the leak actually affects the life of the car or if the situation can be ignored for a while.

7. Is cost a factor in your decision to address a leak? Why or why not?

8. Does location/distance of repair shop influence your decision to address a car leak?

9. How informed are you about vehicle maintenance as it pertains to leaks? (Probe on knowledge of different type of leaks [oil, brake fluid, transmission fluid, etc.])
    a. Would you seek out information if you found out you had a leak? Why or why not?
    b. Do you believe that a leak will affect the life of your vehicle? Why or why not?

10. Would you be willing to inspect your own vehicle using a kit or have another person (non-professional) inspect it with a kit? Why or why not? (*A kit is a plastic sheet you roll out under the car for a few hours to see if there is any dripping*)

11. What would motivate you *to have your car checked for leaks*? Listen for and probe on:
    a. Knowing that you have a leak (seeing stains on driveway/parking spot, garage floor)
    b. If checking for a leak was convenient
    c. If checking for a leak was affordable
    d. If neighbors or co-workers could see leaks on your driveway or parking spot
    e. knowing that leaks are dangerous to the environment

12. What would motivate you *to have your vehicle fixed* when you find out you have a leak? *Open ended, moderator to list on flip chart. If those below are not mentioned, add them, and then ask participants to pick their top 2 and ask about why those are most motivating. [Listen and probe for what about these things makes them motivated or not to fix their leaks*]. *Ask about the least motivating ones and why they are least motivating to participants.*
    a. Knowing what kind of leak you have and how complicated (or not) it is to fix
    b. If you knew the leak would cause more damage to your vehicle
    c. Pressure from children, relatives, neighbors to fix the leak
    d. Knowing the negative impacts of leaks on the environment
    e. Knowing the negative impacts of leaks on pollution on human (and animal) health and safety

13. What are the most compelling reasons for fixing a leak? Why? Listen for and probe on the following if not mentioned:
    a. Saving money in the long run
    b. Repairing a leak will increase the life of the vehicle
    c. Having a reliable car
    d. Protecting the environment

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

IV. Trusted information sources and communication preferences (20 minutes)

14. Where do you currently get information about car maintenance? If you don't currently get information, where would you go if you needed to get car maintenance information? (Moderator to list on flip chart.)

15. How do you determine if these sources are trust worthy?

16. Who or what type of person would you trust to give you information about vehicle leaks and their impact on the environment?

17. Who do you trust to check for leaks? (Probe on trustworthiness of mechanics and quick-lube shops if not mentioned [do participants feel like mechanics are trying to "up-sell"? Do participants think quick-lube shops check for leaks?])

18. We talked about checking or having your vehicle checked for leaks using a kit. Would you be interested in a program that involved your employer facilitating a way to have this check done at your workplace parking lot? This would occur while you were at work by having a volunteer place a sheet of plastic under your car for a couple hours and then placing a brochure on your windshield with info about whether a leak was found. Would you volunteer to participate? Why or why not? Would you trust this check enough to take your car to a mechanic if a leak was found?

19. Who do you trust to check for and/or repair your vehicle(s)?

20. Do you know about ASA (Automotive Service Association) certification? Does knowing that a mechanic is ASA certified give them more confidence in the mechanic?

21. If a free workshop was conducted to give you an opportunity to learn more about vehicle leaks, would you attend? Why or why not?
    a. What kinds of information would you like to receive at this workshop?
    b. What time of day/night and what day of the week would you prefer to attend such a workshop?
    c. How would you prefer to learn about these free workshops?
        i. Promotional ads on Comcast cable TV network via targeted zip codes.
        ii. Promotional Ads in Movie Theaters geo-targeted to zip codes
        iii. Radio Ads
        iv. Other

22. Would a list of reputable mechanics available to you be useful information for dealing with vehicle leaks? Why or why not?

23. Would you be interested in a website about vehicle maintenance and leaks? What kind of information would be useful to have on such a website?

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

Wrap-up (5 min)

24. Now that we've completed our discussion, is there anything that particularly stands out for you? Any other thoughts or comments?

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS

Online Survey Questions

A coalition of city, county and state stormwater professionals is conducting this survey as a part of the *Puget Sound Starts Here* campaign in order to better understand the public's opinions and attitudes about vehicle leaks. Your answers will help guide the design of a vehicle leaks education campaign.

Please take a moment to complete this short survey. The survey will take 10 minutes or less to complete. Please be assured that all answers are kept confidential.

The bar at the bottom of each page tells you how much of the survey you have completed. Please do not exit the survey until you have completed it. The survey is best viewed by maximizing your computer screen. Please be sure to scroll down to the bottom of each page and click the "Next" button to proceed. Please click "Done" at the end of the survey so that your answers will be saved in our database.

Please complete by **Sunday, January 20th, 2013.**

1. How many vehicles do you or someone in your household own that are a 2005 or older or have at least 80,000 miles?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6 or more

2. Do either you or a mechanic regularly inspect your vehicle(s) for leaks?

- ○ No
- ○ Yes

3. Please indicate why you or a mechanic do not regularly inspect your vehicle(s) for leaks. (choose all that apply)

- ☐ I know there is nothing wrong because I check the gauges on the car and nothing looks unusual
- ☐ I do not trust mechanics
- ☐ I fear the cost to fix a potential leak
- ☐ I do not want to know if something is wrong with my car
- ☐ I cannot do it myself, and I do not have a mechanic
- ☐ Other (please specify)

4. What would motivate you to inspect or have your vehicle(s) inspected regularly for leaks? (choose all that apply)

- ☐ When my children start driving
- ☐ If I am coming back from a long trip
- ☐ If I hear or smell something that is not right (e.g., burning oil)
- ☐ If I am going on a long trip
- ☐ If I am getting ready to buy or sell a car
- ☐ If I see a spill in my parking space (driveway, garage)
- ☐ If I learn that vehicle leaks enter Puget Sound and harm wildlife and habitat
- ☐ Other (please specify)

5. How likely would you be to inspect your own vehicle(s) with a kit (a plastic sheet you roll out under the car for about 15 minutes to see if there is any dripping)?

- ○ Very unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Very likely

6. Why would you be [Q5] to inspect your own vehicle(s) with a free kit (a plastic sheet you roll out under the car for about 15 minutes to see if there is any dripping)?

7. How likely would you be to allow another person (a non-professional volunteer) to inspect your vehicle(s) at no charge with a leak detection kit? The kit consists of a plastic sheet that is rolled out under the car for about 15 minutes to see if there is any dripping. After the test is complete, the volunteer would leave a brochure on your windshield with test results.

- ○ Very unlikely
- ○ Somewhat unlikely
- ○ Somewhat likely
- ○ Very likely

8. Why would you be [Q7] to allow another person (non-professional) to inspect your vehicle(s) with a free kit (a plastic sheet you roll out under the car for about 15 minutes to see if there is any dripping)?

9. What incentives would encourage you to inspect or have your vehicle(s) inspected regularly for leaks? (choose all that apply)

- [ ] Free inspection from a certified mechanic
- [ ] Discount on a leak repair
- [ ] Free Do-it Yourself kit that allows you to test for leaks at home
- [ ] Free vehicle leaks workshop with a free inspection from a Community College car expert
- [ ] Other (please specify)

10. If your vehicle needed a leak repaired, how would you get it done?

- ○ You or someone in your household would repair it
- ○ You would take it to a vehicle repair shop
- ○ A combination of the above

11. Have you ever experienced a vehicle leak?

- ○ No
- ○ Yes

12. Did you have the leak repaired within one month after detecting the leak?

- ○ No
- ○ Yes

13. What kept you from getting the leak repaired within one month after detecting the leak? (choose all that apply)

- [ ] I did repair the leak, but it was after one month of detecting the leak
- [ ] I did not have the time
- [ ] The cost of repair was more than the value of the car
- [ ] The leak was too expensive to repair
- [ ] The nearest mechanic was too far away
- [ ] I did not think it would affect how my car functions
- [ ] I did not know what to do
- [ ] Other (please specify)

14. If you learned you had a vehicle leak, what would motivate you to get it repaired within one month? (choose all that apply)

- [ ] Safety for yourself and/or your family
- [ ] Pressure from children to fix it
- [ ] Pressure from neighbors
- [ ] Encouragement from a family member, friend or colleague
- [ ] To increase the life of the car
- [ ] If the leak would cause more damage and increase the cost of repair
- [ ] To have a reliable car
- [ ] Learning that vehicle leaks enter Puget Sound and harm wildlife and habitat
- [ ] Other (please specify)

In the near future, free 4-hour (Saturdays from 9am-1pm) automotive training workshops will be offered by professional car experts at the following locations - South Seattle Community College, Renton Technical College, Shoreline Community College, Auburn High School Automotive Center, and West Seattle High School Automotive Center.

Using their own vehicles, participants will learn preventative maintenance, pre-trip inspection, how to identify sources of leaks, and how to repair minor leaks. Participants will also learn how to clean up spills, proper disposal of used auto fluids and how auto leaks affect the Puget Sound.

Benefits include:

- A free car inspection where you can ask specific questions and receive expert advice
- A jumpstart of your auto care knowledge
- A free toolkit comprising an absorbent pad, reusable oil drain pan, oil dry, a funnel, and a ‘How To Guide’ for checking for auto leaks, spills cleanup, how to properly change and recycle used oil

15. Would you be interested in participating in such a workshop?

- ○ No
- ○ Yes

16. Why would you not be interested in participating in a workshop?

17. What are the top three kinds of additional information that you would like to receive at this workshop?

1.

2.

3.

18. We are trying to decide the best ways to advertise the free auto leaks workshops. How would you prefer to learn about these free workshops or other vehicle leaks incentive programs? (choose your top three options)

	1st choice	2nd choice	3rd choice
Internet/website	○	○	○
Newspaper	○	○	○
Promotional advertisements on cable TV	○	○	○
Direct mail (e.g., postcard)	○	○	○
Utility bill insert	○	○	○
Social media such as Facebook or Twitter	○	○	○
Radio advertisments	○	○	○
Promotional ads in movie theaters	○	○	○
Other	○	○	○

Please specify your 'other' choice below

19. Where do you currently get your information about car maintenance? (choose all that apply)

- ☐ Quick-lube shop attendant
- ☐ Television
- ☐ Internet
- ☐ Owner's manual
- ☐ Family
- ☐ Dealership
- ☐ Friends
- ☐ Mechanic
- ☐ I do not get any information about car maintenance
- ☐ Other (please specify)

20. Please list the internet sites from which you get information about car maintenance:

21. Who do you trust to check for leaks in your vehicle(s)? (choose all that apply)

- ☐ Volunteers or staff working for an environmental non-profit organization
- ☐ Dealership
- ☐ A friend
- ☐ A family member
- ☐ A quick-lube shop
- ☐ Other (please specify)
- ☐ Yourself
- ☐ A college student
- ☐ Independent mechanic
- ☐ Local government employees

22. Who do you trust to repair leaks in your vehicle(s)? (choose all that apply)

- ☐ A friend
- ☐ A family member
- ☐ Yourself
- ☐ Other (please specify)
- ☐ Dealership
- ☐ Independent mechanic

23. Would a list of reputable, certified mechanics in your local area be useful for dealing with vehicle leaks?

- ○ No
- ○ Yes

24. Why would a list of reputable, certified mechanics in your local area <u>not</u> be useful for dealing with vehicle leaks?

25. Which of the following phrases would capture your attention and motivate you to check for and repair vehicle leaks? Please rank the following phrases in order from most motivating (1) to least motivating (5).

	1 - Most motivating	2	3	4	5 - Least motivating
Drive Clean Puget Sound	○	○	○	○	○
Don't Drip and Drive	○	○	○	○	○
Find it. Fix It.	○	○	○	○	○
Look Before You Leak	○	○	○	○	○
Don't Leak in Public	○	○	○	○	○

26. Thinking about what would get your attention and motivate you to check for and repair vehicle leaks, please rank the following phrases in order of preference from most motivating (1) to least motivating (5).

	1 - Most motivating	2	3	4	5 - Least motivating
Take a Peek, Check For Leaks	○	○	○	○	○
Is your Car Leaking in Public?	○	○	○	○	○
A Leaky Car Isn't Slick	○	○	○	○	○
Fix that Leak!	○	○	○	○	○
For a Drip Free Puget Sound	○	○	○	○	○

Your answers to the following questions will be strictly confidential and used for statistical analysis only.

27. What is your gender?

- ○ Male
- ○ Female

28. Which of the following broad ranges includes your age?

- ○ Under 25
- ○ 25-29
- ○ 30-39
- ○ 40-49
- ○ 50-59
- ○ 60-65
- ○ 66 and older

29. What is your home zip code?

Zip: [ ]

30. Which of the following best describes the area in which you live?

- ○ Urban
- ○ Suburban
- ○ Rural changing to suburban
- ○ Rural

31. Which of the following ranges includes your approximate household income before taxes in 2012?

- Less than $10,000
- $10,000 to less than $15,000
- $15,000 to less than $25,000
- $25,000 to less than $35,000
- $35,000 to less than $50,000
- $50,000 to less than $75,000
- $75,000 to less than $100,000
- $100,000 to less than $150,000
- $150,000 and over

32. Are you from a Hispanic, Latino, or Spanish-speaking background?

- No
- Yes

33. What race would you classify yourself as?

- Black/African American
- White/Caucasian
- American Indian or Alaska Native
- Asian
- Native Hawaiian or other Pacific Islander
- Some other race or combination of races (please specify)

Appendix C – Online Survey Respondent Demographics

Gender (n=360):

- Male (46%)
- Female (54%)

Age (n=360):

- Under 25 (4%)
- 25-29 (10%)
- 30-39 (17%)
- 40-49 (18%)
- 50-59 (27%)
- 60-65 (10%)
- 66 and older (14%)

Area (n=357):

- Urban (26%)
- Suburban (60%)
- Rural changing to suburban (8%)
- Rural (6%)

Income (n=357):

- Less than $10,000 (1%)
- $10,000 to less than $15,000 (1%)
- $15,000 to less than $25,000 (4%)
- $25,000 to less than $35,000 (6%)
- $35,000 to less than $50,000 (13%)
- $50,000 to less than $75,000 (20%)
- $75,000 to less than $100,000 (28%)
- $100,000 to less than $150,000 (20%)
- $150,000 and over (8%)

Hispanic/Latino (n=359)

- No (95%)
- Yes (5%)

Race (n=360):

- Black/African American (1%)
- White/Caucasian (85%)
- American Indian or Alaska Native (0.3%)
- Asian (11%)
- Native Hawaiian or other Pacific Islander (1%)
- Some other race or combination of races (2%)

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Vehicle Leaks Education & Behavior Change

Phase 2 - Focus Group Moderator Guide

I. Introduction/Warm-Up (8 minutes)

- [Moderator introduces herself/himself.]

- [Explain:] A focus group is a group discussion where we can learn more in-depth about peoples' ideas and opinions (compared to telephone or written surveys).

- My job is to facilitate the discussion and make sure that everyone has an opportunity to speak **and to make sure that no one dominates the conversation**.

- Housekeeping – Toilets and refreshments.

- [Mention ground rules.]
    - There are no right or wrong answers; we're interested in your honest and candid opinions and ideas.
    - Our discussion is totally anonymous. We will not use your names in any report.
    - Our discussion today is being recorded. These recordings allow us to write a more complete report, and to make sure we accurately reflect your opinions. However, please only speak one at a time, so that the recorder can pick up all your comments.
    - That is a one-way mirror behind me and a couple of my colleagues are observing our discussion
    - It is important to tell us YOUR thoughts, not what you think others will think, or what you think others want to hear.
    - Please turn off cell phones
    - Your stipend will be provided as you leave.
    - Relax and enjoy

- Very generally, we're going to spend our time today talking about vehicle leaks (such as oil leaks). Any questions about the purpose of our focus group or the ground rules before we begin?

  I'd like you each to introduce yourselves. Please tell us:
  - Your first name
  - Who in your family typically makes decisions about the maintenance on your vehicles that are 2005 or older, or which have more than 80,000 miles?
  - Who typically repairs your vehicle – you, family member, friend, or do you take it to a vehicle repair shop?

II. General Attitudes, Beliefs, Feelings, and Behaviors About Vehicle Leaks (7 minutes)

1. How do you discover if you have a leak? (listen for fluid on garage floor or driveway, smell of oil burning, etc.)

2. What is the first thing that comes to mind if you have a leak? Why is that the first thing? What is the next thing that comes to mind?

3. Do you regularly check or have your vehicles checked for leaks? Why or why not?

4. If you found a leak, what would you do about it? (Listen for seek out further information, get it fixed, etc.)

5. What impacts do you think vehicle leaks have? (Listen for damage to vehicle, damage to environment.)

III. Drip Sheet Testing (25 minutes)

6. Do you know about ASA (Automotive Service Association) qualification?

7. Does knowing that a mechanic is ASA qualified give you more confidence in the mechanic? Would having a list of reputable, ASA qualified mechanics in your area be useful to you? What would be the best way to provide this list? [*Moderator to probe on link on ASA website, searchable map on smartphone device, etc.*]

READ -- A coalition of cities and counties across Puget Sound is working in partnership with local mechanic shops to develop a program that will help people learn whether they have a leak, and if they do, provide incentives for them to fix it within a one-month time period. We would like your feedback on several options for how we may organize and run the campaign.

8. Option 1: ASA member shops have offered to provide free inspections to the public for a one-month period. The inspection includes a visual, under hood and hoist inspection, and would be a value of up to $80, depending on the type of car. Would you take your vehicle to an ASA member mechanic to get a free inspection? Why or why not?

9. Option 2: Partnering organizations (such as non-profit organizations) have offered to recruit non-professional volunteers to inspect vehicles with a drip sheet at public events, such as festivals, sports events, food/shopping centers, etc. The volunteers would first receive approval from the owner to conduct the test (moderator show drip sheet and explain how it works). The volunteers would leave the drip sheet under the car for half an hour. If they find a leak, they would place a brochure on the windshield with information about whether a leak was found and where the owner could go to have it fixed at a discount. Volunteers would guarantee that they

would not record license-plate information or any other way to track whether a particular vehicle had a leak.

a. If such a program was offered to you, would you allow a volunteer to test your car for leaks? Why or why not? [*Moderator to probe for concerns and what assurances participants would need to have in order to make them more comfortable with the program.*]
b. If you would not, if the campaign organizers could address your concerns, would that change your mind?
c. Would you trust this check enough to take your car to a mechanic if a leak was found to get further information about the leak? Why or why not?

10. Option 3: The campaign organizers are also considering partnering with businesses to encourage their employees to participate in a one-day event where volunteers, such as high school and/or college age students, would voluntarily test employees' cars while they're working. You would not need to be there while the test was being done. The volunteers would use the same drip sheet we just showed, and leave it under the car for half an hour. If they find a leak, they would place a brochure on the windshield with information about whether a leak was found and where the owner could go to have it fixed at a discount. Volunteers would guarantee that they would not record license-plate information or any other way to track whether a particular vehicle had a leak.
    a. If your employer offered this program to you, would you allow a volunteer to test your car for leaks while you're at work? Why or why not? [*Moderator to probe for concerns and what assurances participants would need to have in order to make them more comfortable with the program.*]
    b. If you would not, if the campaign organizers could address your concerns, would that change your mind?
    c. Would you trust this check enough to take your car to a mechanic if a leak was found to get further information about the leak? Why or why not?

11. Option 4: Would you be willing to use the drip sheet yourself to check for leaks? Why or why not? Would you trust this check enough to take your car to a mechanic if a leak was found to get further information about the leak? Why or why not?

12. Individually write on your pad what the top two of the four options you would be most likely to use. (Moderator tally top two and then discuss why that ranking. BE SURE TO CAPTURE PEOPLE'S FEELINGS ABOUT EACH OPTION. ALSO IF THEY DON'T LIKE ANY OF THEM.)

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

IV. Campaign Name and Tagline Testing (40 minutes)

As I mentioned earlier, the campaign organizers are developing a program that will help people learn whether they have a leak, and if they do, provide incentives for them to fix it within a one-month time period. We would now like your feedback on our campaign name and tagline.

13. [*Moderator instructs participants to write their individual thoughts and then open up for discussion*] Our campaign name is **Don't Drip and Drive**. What is the very first thing that comes to mind when you see it? What message does it convey to you?

14. [*Moderator instructs participants to write their individual thoughts and then open up for discussion*] Our campaign tag line is **Find it Fix it**. What is the very first thing that comes to mind when you see it? What message does it convey to you?

15. What do you think of the campaign name and tagline together? **Don't Drip and Drive – Find it. Fix it.** *[Moderator to probe on "fatal flaws"—misunderstandings, duplicative meanings, negative connotations, etc.)*

16. We have two urls reserved for this campaign – (Moderator to READ these and ask participants to write down how the url would look.)
    - finditfixit.org
    - dontdripanddrive.org (ask about the use of the ampersand)

    Which one appeals to you more? Why?

17. (*Moderator hands out radio ad ranking form. Moderator to play each of the 5 radio ads.)*
For each ad ask –
    - What is this advertisement asking you to do?
    - What do you like about this radio advertisement.
    - What do you dislike about this radio advertisement.

    When all 4 ads have been individually assessed, ask participants to rank order the ads from 1 (most motivating) to 4 (least motivating) in regard to which would most motivate them to seek more information about the vehicle leaks program/workshops. (Moderator to tally rankings and then open up to discussion on why that ranking.)

18. *Now I'd like to show you a few graphic images that could potentially accompany the campaign name and slogan. (Moderator to present both name and tagline together as they would appear in branding – 4 looks.)* Individually rank order your top two choices. *(Moderator to tally rankings and then open up to discussion as to why those rankings. PROBE ON WHAT WOULD MAKE THEM EVEN BETTER. BE SURE TO PROBE ON IF THEY DON'T LIKE ANY OF THEM.)*

19. [*Moderator to present 4 posters one at a time.*] What do you like or dislike about these advertising options? [*Moderator asks each participant to write their initial thoughts on a pad, identify their top two preferences, tally and then open up for discussion.*]

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

V. Workshops and Materials Testing (35 minutes)

20. Would you be willing to take a free class offered by a certified professional auto instructor (from a local community college) where you could learn more about your car, identify the sources of leaks and feel better prepared to have a conversation about car leaks with your mechanic? Why or why not?

21. What if you knew that these free classes are offered throughout King County. They presently teach people about how their car works, when to know there is a problem and when to take it to a mechanic. The workshops also teach people how to identify leaks and how much a possible repair would cost. Participants also have their cars inspected for free. Would you do it now? Why or why not?

22. What would be most important to cover in the workshops?

23. What if you knew that the following are the current topics included in the workshop? (Moderator hands out list. Ask them to individually identify the top 3 most important topics.) Would you do it now? Why or why not?
    - Basics of the engine system and lubrication-How it works
    - Preventive Maintenance
    - Sources of vehicle leaks and why they occur
    - How to identify and prevent leaks
    - Impacts of leaks on your vehicle
    - Tips on repairing common minor leaks
    - Potential safety hazards of vehicle leaks
    - Impacts of auto leaks on Puget Sound
    - How to properly clean-up oil & fluid leaks
    - Selecting appropriate fluids for routine maintenance
    - How to properly change your oil
    - Proper disposal of automotive fluids and oil related materials
    - Steps for a pre-trip inspection

24. Each workshop participants also goes home with a free 'vehicle maintenance check kit'. [*Moderator shows kit and explains items*] The current kit contains the following items:
    - An absorbent pad
    - Reusable oil drain pan
    - Oil dry (similar to kitty litter)
    - A funnel

    NEW ITEMS: We would like to include other items in the kit. Here is a list of other items we are considering [Moderator pass out list with the bulleted items below]

- 'How to Guide' with information about how to check for oil leaks, cleanup spills, how to properly change your oil and recycling locations.
- Safety glasses
- Tire pressure gauges
- Fluid test strips
- Gloves
- Vehicle leak drip sheet - A plastic sheet you roll out under the car for a half hour to see if there is any dripping.

Is this kit useful to you? Are there items on this list or in the kit that will not be useful for you? What else would be useful to include in the kit?

25. Each workshop is limited to 15 participants and is currently 4 hours long. This time includes free inspection of each participant's car. Thinking about your daily schedule, would you attend a 4 hour workshop? If not, why? How about if it was 3 hours, would that make any difference for you? What if it was two 2-hour workshops, but that to do so meant that not everyone car would be inspected?

26. The free workshops are currently held on Saturday mornings and afternoons. What other days and times would be convenient?

27. How would you like to hear about these free workshops? (Listen for and probe on radio ads, TV ads, movie theatre ads, bus boards, etc.). Why those methods?

28. We would like to show you some of the materials used at the workshops. *[Moderator to pass out brochure, postcard and poster. Focusing on one material type at a time, moderator to probe on clarity of the materials, feedback about the look of the materials, what participants like or dislike, what could be written better, what should be emphasized versus not, etc.]*

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS AT THIS POINT

Wrap-up (5 min)

29. Now that we've completed our discussion, is there anything that particularly stands out for you? Any other thoughts or comments?

ASK OBSERVERS IF THEY HAVE ANY ADDITIONAL QUESTIONS

Appendix E. Evaluation Plan

Vehicle Leaks Campaign Monitoring and Evaluation Plan

This document describes how the results and activities of the vehicle leaks campaign will be assessed. The four-step planning process used to create the evaluation plan incorporates all elements described in *Social Marketing: Influencing Behaviors for Good (fourth edition)* by Nancy Lee and Philip Kotler:

1. Determine evaluation purpose and audience.
2. Confirm program audience, goals, and logic.
3. Identify indicators for measuring program results, activities, and other evaluation questions.
4. Create a data collection plan.

Completing this evaluation within the $15,000 budget relies heavily on assumptions that data items are very basic, that all surveys (except mechanics' forms) will be web-based, that surveys will be brief and have limited open-ended questions, and that we can create the survey instruments with only two rounds of review. This plan was created assuming that approximately 30–50 ASA mechanics participate and that 5 SOGs participate.

1. Determine Evaluation Purpose and Audience

In Step 1 we determine what we want the evaluation to accomplish: who will use the resulting information, and how will they use it? There is no point spending budget on information that will never be used.

We are conducting this evaluation for the following **purposes** and **audiences**:

1. To assess the effectiveness of pilot program elements so **program partners** can **improve** the program in the future.
2. To obtain support for **future funding** from **state and municipal officials** to continue to program, including by demonstrating success and (if possible) estimating return on investment.
3. To compile information that will motivate and help **non-participating organizations** to **replicate** the program in their jurisdiction.
4. To enable **STORM member** jurisdictions to **meet NPDES Permit reporting requirements** for measuring the understanding and adoption of the targeted behavior (check for vehicle leaks and repair if needed).
5. To fulfill **grant requirements** by delivering a report to the **Department of Ecology** that measures outputs and outcomes using an evaluation methodology developed by the Kellogg Family Foundation. The grant contract identifies the following elements to address, organized using Kellogg Family Foundation evaluation categories:

a. **Deployment of leak detection sheets (or other diagnostic tools) to test up to 10,000 vehicles for leaks and education of up to 10,000 vehicle owners in the Puget Sound basin about the importance of vehicle leaks and how to test for them. (Output Evaluation)**
b. Decrease in the trend of water quality impairment in the Puget Sound region attributable to oil, grease, or other fluids from vehicles and increase in awareness over the next five years as measured using the King County Environmental Behavior Index and other surveys. (Outcome and Impact Evaluation) *[Note: Measuring these long-term outcomes is outside the current scope of the grant; however, identifying potential evaluation measures is useful for requesting future program funding. Evaluation items related to long-term outcomes and impacts that will not be measured through the current grant are shaded in grey.]*
c. Effectiveness of employed methods of moving people from awareness of the problem to a change in behavior—actually detecting and fixing vehicle leaks. (Implementation Evaluation)
d. Level of participation by volunteers, agencies, and individuals in testing vehicles including encouraging others to do so. (Implementation Evaluation)
e. Analysis of use of and participant response to website and social media, such as Facebook and Tweets (Implementation Evaluation). *[Note: This evaluation is able to track impressions (use) as far as SOGs provide the information, but we are not able to analyze actual reach (unique impressions) or response (e.g., user perceptions) to website and social media]*
f. Participant demographics. (Implementation Evaluation). *[Note: It is not feasible to obtain demographic information on participants for this project due to privacy concerns.]*

2. Confirm Program Audience, Goals, and Logic

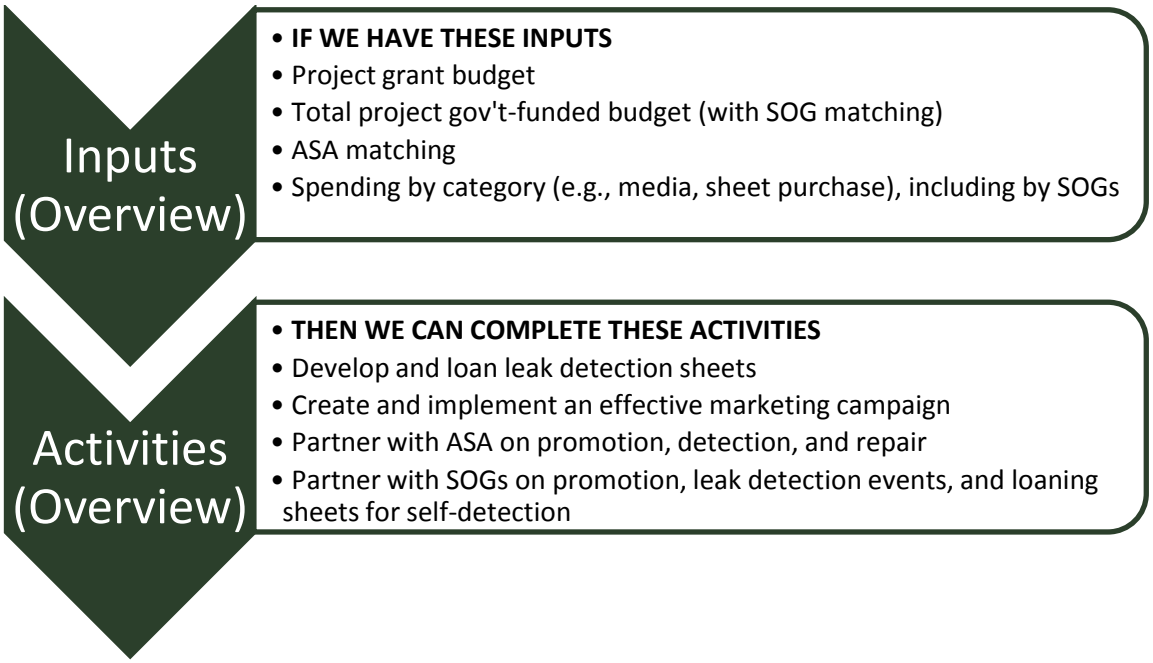
In Step 2 we confirm the program audience, goals, and logic (from inputs and activities to outputs, outcomes, and impact). The logic model used here can be thought of as a series of if-then statements that describes how our planned work will lead to the results we hope to achieve.

Worktable 1.
Confirm your target audience and goals for change (Goals in Nancy Lee's Step 4.4)

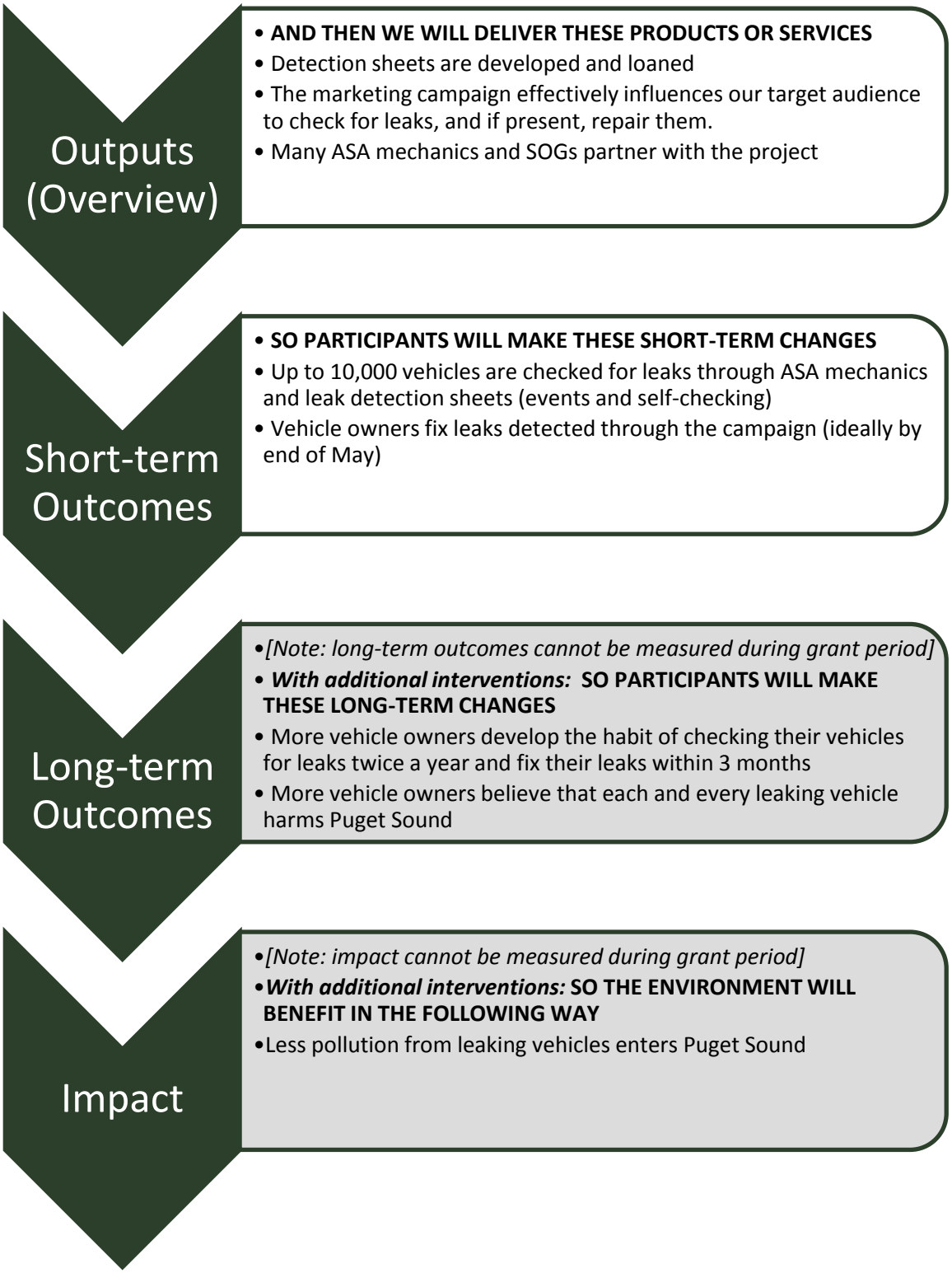
Who is your target audience	What do you want them to know, believe, or do?
People who own or drive vehicles that are 2005 and earlier or have been driven 80,000 miles or more	**SHORT-TERM ACTIONS (DURING THE CAMPAIGN)**
	Have their vehicle checked by an ASA mechanic, at a leak detection event, or with a detection sheet on their own
	By end of May, fix leaks (by a mechanic or self) found through campaign
	BELIEFS AND LONG-TERM ACTIONS (REQUIRES ADDITIONAL INTERVENTIONS) *[Measuring beliefs and medium-term actions is outside the current scope of the grant]*
	Believe that each and every leaky vehicle harms Puget Sound *[Belief will be updated after campaign messaging is finalized.]*
	Check their vehicles for leaks twice a year
	If they find leaks, fix leaks within 3 months of detection

Worktable 2.
Confirm Your Planned Work – Inputs and Activities (Logic Model Part 1)

This logic model provides an overview of inputs and activities; additional details are contained in separate project plans and budgets, such as the communications campaign plan.



Worktable 3.
Confirm Intended Results—Outputs, Outcomes, and Impacts (Logic Model Part 2)



3. Identify Indicators for Program Results, Planned Work, and Key Questions

In Step 3 we identify and assess potential indicators for measuring the results and activities identified in the logic model (Step 2). We also consider what addition items outside the logic model (Worktable 2 and Worktable 3) should be evaluated. The additional evaluation questions often address why a program element worked (or didn't work) and how cost-effective the program was.

Indicators that cannot be measured during the current grant or are definitely too expensive are presented at the end of the list, shaded in grey.

Worktable 4.
What impacts, outcomes, outputs, and inputs will you measure? How?

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
Did we achieve the PRIMARY GRANT OUTCOME?	Up to 10,000 vehicles are checked for leaks through ASA mechanics and leak detection sheets	1. Number of cars checked for leaks by ASA mechanics, at leak detection events, and by individual use (e.g., borrowing) of leak sheets	Grant requirement; future funding, replication, improvement	**Tracking by ASA mechanics and SOGs** holding detection events and managing sheet loans.
		2. Number of leaking cars detected by ASA mechanics, at leak detection events, and by individual use (e.g., borrowing) of leak sheets; assume equivalent to number of people who learn they have leaks		**Tracking by ASA mechanics and SOGs** holding detection events. *Potential method for future projects: user surveys of sheet borrowers by organizations managing detection sheet loans.*
		3. Number of leak detection events held		**Tracking by SOGs** holding detection events.

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
Did we achieve our SHORT-TERM OUTCOMES?	People fix leaks found through the campaign before the campaign ends	4. People who find leaks through leak-check events, ASA mechanics, or independent use of detection sheets fix their vehicles (by self or mechanic) before the campaign ends (end of May)	Future funding; replication; grant requirement	**Data from ASA mechanics** on number of cars fixed (based on coupons redeemed); present as a percentage of cars found to be leaking. Through Boeing, conduct **brief, web-based, follow-up survey** of Boeing employees with no more than one open-ended question; ask SOGs to conduct this survey with event participants, as feasible. *[Note: The survey was designed but not implemented due to timing constraints]* It is not feasible within this project and budget to obtain complete information about people who fix leaks themselves or at a non-participating shop.

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
What OUTPUTS did we deliver?	The media campaign is effective	5. Potential impressions (e.g., estimated TV viewers) and actual exposures (e.g., website hits)	Grant requirement; improvement; future funding; replication	**Data from media outlets, SOGs, ASA, website manager**.
		Potential indicator for future projects 6. Campaign reach (percent of target audience reached)		*Potential method for future projects:* Divide actual exposures (not just impressions) by estimated size of target audience.
		7. Number of people who respond to campaign (e.g., seek information on website, download coupons)		**Data from SOGs and ASA (**DD&D landing page) on web hits, social media usage, coupon downloads and, phone and email inquiries. Note that SOGs are conducting the social media campaign. Include as feasible the bounce rate and number of clicks on the link to the ASA map.
What OUTPUTS did we deliver?	Many mechanics and SOGs partner with the project	8. Number of ASA mechanic and SOG partners. Number of volunteers recruited by SOG partners	Grant requirement; improvement	**Project tracking**; **data from ASA (number of mechanics) SOGs (number of volunteers)**.
What OUTPUTS did we deliver?	Leak detection sheets are developed and loaned	9. Number of sheets loaned to each partner organization (paid for by grant)	Grant requirement	**Project tracking** (invoices).
		10. Number of additional sheets purchased by SOGs as part of pilot	Context for inspection counts	**Project tracking** (requests from SOGs).

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
What INPUTS did we use?	How much would it costs to continue, expand, or export this program?	11. Estimated cost to modify campaign for a permanent, expanded, or exported program (program design), based on the design for the pilot	Future funding; replication	Output measures (above); **program expenditures**; **spending information from SOG**s, as available. We will need to define the scope of costs (e.g., what matching by partners to include).
		12. Cost to purchase a set of 500 sheets	Future funding; replication	**Project tracking** (invoices).
		13. Media campaign costs	Future funding; replication	**Project tracking** (invoices).
		14. Implementation costs (*Potential method for future projects:* report separately for events, ASA mechanics, and detection sheet loans)	Future funding; replication	**Program tracking**; program spending; spending information from SOGs, as available. Obtain data to calculate time required to test X number of vehicles *Potential method for future projects:* Track costs for individual events, including event coordination.
Was the program COST EFFECTIVE?	Program cost per vehicle inspected	15. Total vehicles checked (by all methods) divided by program cost	Grant requirement; improvement, future funding; replication	Output measures (above); program spending; spending information from SOGs, as available. We will need to define the scope of costs (e.g., what matching by partners to include). *Potential method for future projects:* If possible to separate costs by type of cost (labor vs. supplies), detection method, calculate cost effectiveness for detection events vs. ASA mechanics.
	Program cost per leaking vehicle detected	16. Leaking vehicles detected (by all methods) divided by program cost		
	Program cost per vehicle fixed	17. Vehicles fixed (by ASA mechanics) divided by total program cost (minus pilot program design costs)		

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
How well did each campaign element work? What IMPROVEMENTS can we make?	Detection events	18. Narrative of key factors for a successful detection event and pitfalls to avoid	Improvement, replication	**Brief, web-based, follow-up survey** of SOGs that held detection events, with no more than two open-ended questions.
	Mechanics	19. Narrative of strength and challenges mechanics element (detection, coupons, promotion)	Improvement, replication	**Input from program staff.** **Interviews with** participating mechanics. **Web-based evaluation form** by volunteer "secret shoppers" on topics such as messages used, promotional materials, offers to check for leaks, coupon offers and redemption, customer satisfaction, with no more than one open-ended question. *Potential method for future projects:* Brief, phone or web-based, follow-up survey of a large share of participating mechanics (and mechanics that agreed to participate but did not return tracking forms).
	Marketing campaign	20. Narrative of strength and challenges of traditional and social media campaign	Improvement, replication	**Brief, web-based, follow-up survey** of Advisory/Steering Committee with no more than four open-ended questions. **Brief, web-based, follow-up survey** of SOGs that used social media, with no more than two open-ended questions.

Worktable 5.
Results and key questions that cannot be measured feasibly through this grant

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
What IMPACT did we have?	Less vehicle-leak-related pollution entering Puget Sound	*Potential indicator for future projects* Pounds or gallons of petroleum-related compounds entering Puget Sound	Future funding; replication	Data not available. Not possible to measure or attribute changes to behavior change campaign.
Did we achieve our LONG-TERM OUTCOMES?	Owners of high-risk vehicles develop habit of checking for leaks and fixing leaks quickly	*Potential indicator for future projects* People with vehicles from 2005 or earlier check for leaks twice a year *Potential indicator for future projects* People with vehicles from 2005 or earlier fix leaks within 3 months of finding them	Future funding; replication	*Potential method for future projects:* Large-scale phone survey (dedicated VL survey, KC EBI, or question appended to shared survey). If possible, segment by interactions with campaign (e.g., media only, event, mechanic), type of leak, detection method, and owner and vehicle demographics.
Did we achieve our LONG-TERM OUTCOMES?	More vehicle owners believe that each and every leaking vehicle harms Puget Sound	*Potential indicator for future projects* Percent of people who agree with value statements about the harm caused by their own leaking vehicles	Future funding; replication	*Potential method for future projects:* Large-scale phone survey (dedicated VL survey or question appended to shared survey). If possible, segment by interactions with campaign (e.g., media only, event, mechanic) and owner and vehicle demographics.
What OUTPUTS did we deliver?	The media campaign is effective	*Potential indicator for future projects* Number of people who recognize and recall campaign (remember campaign message with/without prompting)	Improvement; future funding; replication	*Potential method for future projects:* Large-scale phone survey (dedicated VL survey or question appended to shared survey). If possible, segment by interactions with campaign (e.g., media only, event, mechanic) and owner and vehicle demographics.

Results OR Key Questions		Indicator	Purpose	Data Sources and Notes
Was the campaign EQUITABLE in reaching various subgroups of the target audience?	Participant demographics, such as race and ethnicity, income, gender, age, home zip code	*Potential indicator for future projects* Demographic information of vehicle owners whose cars are checked at leak-check events; by mechanics, and independent use of detection sheets	Grant requirements; improvement	*Potential method for future projects:* Survey by SOGs and mechanics during detection. Mechanics and SOGs unlikely to want to collect these sensitive data; vehicle owners may not be at their cars during detection events.
		Potential indicator for future projects Demographic information of vehicle owners who fix their cars after leak detection		*Potential method for future projects:* If the program conducts any follow-up surveys, include demographic questions.
Was the campaign EQUITABLE in reaching various subgroups of the target audience?	Demographics of potential event participants	*Potential indicator for future projects* Demographics (race/ethnicity and income) of residents in neighborhoods adjacent to events, employees at partnering businesses, or members of partnering organizations	Grant requirements; improvement	*Potential method for future projects:* From SOGs, obtain event addresses and names of partnering businesses and organizations. Ask SOGS to request race/ethnicity information from partnering businesses and organizations, where feasible. Analyze Census data for event neighborhoods.

It's also important to consider assumptions and factors outside your control that might affect program outcomes. The table below presents other factors that could affect the results of the campaign.

Worktable 6.
How might these results be affected by outside factors?

Outside factor or assumption	How results might be affected
According to the Environmental Behavior Index, 67 percent of people responded that they will fix leaks within 3 months of knowing they have a leak	If the percentage of people who actually fix detected leaks is higher, detection sheets would prevent more leaks; if the percentage is lower, detection will cause fewer people to fix leaks than anticipated.
ASA mechanic participate as expected (number who sign up, compliance with reporting requirements)	Low participation would reduce the value of incentive coupons and create barriers to one pathway for detecting and fixing leaks. More mechanics will increase the level of work needed by SOGS to contact, coordinate with ASA members and support evaluation activities.
SOGs participate as expected by hosting events, managing local leak sheet distribution, and participating in local promotion	Low participation would reduce one primary detection method (events)
STORM members help promote the campaign as described in the value arsenal	Lack of promotion by STORM members would reduce campaign reach
The public, businesses, and organizations allow volunteers to check vehicles – no privacy or private property issues	Privacy or private property issues would reduce one primary detection method (events)

4. Create a Data Collection Plan

After finalizing what to measure in Step 3, we create a data collection plan in Step 4 to clarify how data will be collected. The proposed data sources are:

- **Limited data tracking by ASA mechanics** on cars checked, leaks detected, and leaks fixed, tracked using paper forms (scannable or very very basic check-off forms).
- **Extensive data tracking by SOGs** on:
  - Leak detection events (cars checked, leaks detected, detection volunteers), tracked electronically (i.e., Survey Monkey).
  - Expenditures, provided electronically (e.g., Excel form or Survey Monkey)
  - Impressions from traditional and social media campaigns (e.g., Excel form or Survey Monkey)
- **Brief post-event web-based survey of Boeing employees** (if they are interested and able), with no more than one open-ended question. *[Note: The survey was designed but not implemented due to timing constraints]*
- **Secret shopper survey** of volunteers evaluating their experience with participating mechanics, with no more than one open-ended question.
- **Extensive data tracking by Steering Committee** on sheets, spending, campaign partners, media campaign success, and website success.
- **Qualitative assessment of lessons learned** from:
  - Brief, web-based, follow-up survey of Advisory/Steering Committee members and SOGS, with no more than four open-ended questions.
  - Phone interviews with two participating ASA mechanics.

The costs of collection, analysis, and reporting depend on the quantity of data, the type of data (qualitative information is more costly to analyze), and data entry methods (web-based surveys are less costly than paper forms).

Appendix F.
Barriers and Benefits Matrix

Barriers and Benefits Matrix

Target audience: Vehicle owners with vehicles that are 2005 and earlier vehicle models and/or have over 80,000 miles

Desired Behavior	Action	Motivators	Barriers	Strategies to Address Barriers
Awareness of campaign	Go to the website to find a list of participating mechanics	• Increase life of vehicle • Save money in long run • Protecting the environment/ water quality/ doing the "right" thing • Have a reliable car • Know if car has a leak or not • Know what kind of leak and how easy/ complicated it is to get it fixed • Convenience and cost • Impact of pollution on human health &/or safety • Puget Sound region is healthier/ safer • Pressure from kids on parents to fix leaks • Reliable mechanic (member of ASA so is meeting ASA requirements) • Oil stains on driveway, garage	• Have to go online to access • Can't remember the URL • Mess up typing in the URL • Messaging not compelling enough to motivate target audience to go to campaign website to learn more • Messaging confusing – don't know where to go to get additional information/ coupon • There's lots of information on the DD&D landing site- overwhelming; calls to action are unclear • Is site compatible with my mobile device?	• Have mobile-accessible site • Give easy-to-remember campaign name web URL, QR codes when possible, • Make sure URL is short and easy to read • Compelling messaging (as listed in "Strategies to Engage Motivators" column • Clear messaging that drives target audience to website for additional campaign information • Calls to action need to be simple, direct, clear, concise and visually-oriented (graphic); include 3 simple steps: 1) choose a mechanic, 2) call a mechanic and schedule an appointment, 3) print coupon. • Link goes from DD&D landing page directly to the list of mechanics, not the ASA main web page • List of mechanics has map and search function by location (zip?) and name[3]
Awareness of campaign	Select an ASA-certified, participating mechanic from the website	• See a participating mechanic near you • See mechanic on the list that you have already been to and trust • Have been looking for a new mechanic and have heard of ASA and think it is a trust-worthy organization with trust-worthy participating mechanic locations • Website messaging stresses urgency/ importance in participating in campaign • One-month campaign so must act now	• Long list of participating ASA members to search from • Can't find a mechanic near my home/work • Hard to find a mechanic that works nights/weekends • It's a new mechanic- can I trust them? I like my own mechanic. • Concern that when you go in, they will then find five more problems with your car • I have to leave the DD&D webpage to get to the list of mechanics? (one extra click)	• On ASA form, include general location, shop name, address, phone, and other relevant info all in one place on the screen; don't force the viewer to go to the mechanic website if they don't want to. • Have as many mechanic locations as possible • Website provides links to each participating mechanic website – easy to access customer reviews (or yelp, etc.) • Info on the landing page about what ASA certification means & why they can be trusted • Hotline to call with questions • Easy to navigate/search site so website helps you find the right mechanic for you (most convenient location/ best hours of operation for your schedule, map-based search, etc). • Label/clearly identify mechanics that have late night or weekend hours on the screen (with a symbol, text, or other)

[3] Items in blue will not be implemented during this pilot study due to lack of funds, but are recommended for future phases of the campaign.

Desired Behavior	Action	Motivators	Barriers	Strategies to Address Barriers
Awareness of campaign	Contact ASA mechanic to schedule inspection	• Eager to learn whether or not your vehicle has a leak and what kind of leak it is • Know you have a leak and would like to learn what kind of leak it is • Would like to learn how much it would cost to get leak fixed • Website messaging stresses urgency/ importance in participating in campaign • One-month campaign so must act now • FREE leak check @ up to $80 value/ offer is so good, you feel the need to act now	• Can't find/read phone number on screen • Can't call during business hours to schedule an appt- I work • ASA mechanics don't pick up the phone • Not able to schedule appointment b/c timing doesn't work for potential participant • Not able to schedule an appointment b/c ASA mechanic shop fully booked	• All contact info easy to see and read in one place • Ability to leave message and have mechanic call back at preferred time • ASA list of participating mechanics is extensive so potential participants have many options re: scheduling/ availability • Trainings with ASA - ASA mechanics are fully onboard/ briefed about program/ deliverables so process is seamless for potential participant • If call to schedule appointment during month-long campaign and mechanics can't fit you in, mechanics able to honor campaign incentives beyond that month.
Find out if you have a leak	Find out if you have a leak (relevant to all options below)	• Have a reliable car • Increase life of vehicle • Save money in long run • Protecting the environment/ water quality/ doing the "right" thing • Know if car has a leak or not • Know what kind of leak and how easy/ complicated it is to get it fixed • Convenience and cost • Impact of pollution on human health &/or safety • Puget Sound region is healthier/ safer • Reliable mechanic (member of ASA so is meeting ASA requirements) • Oil stains on driveway, garage • Pressure from kids on parents (or pressure from others) to fix leaks	• Fear that cost may be prohibitive/high • Perceived cost/ perception that car isn't leaking • Time to get vehicle checked • Perception that leak doesn't make much impact/difference • Trust- fear of getting taken advantage of • Laziness and inertia/complacency • Web access • Not know where to go to have leak tested • Waiting time to get vehicle inspected (potential) • Poor customer service • Feel program is not relevant to them • Don't have time during day • ASA mechanic is too far away • Competing mechanic- I like my own mechanic	• Discounts for fixing leak; free leak check, messaging related to perceived cost? • Messaging, providing opportunity for free checks, convenience • Have as many ASA members participating as possible; make sure checks can be scheduled with mechanic (appointment) • Use a trusted messenger • Advertise workshops for owners to learn more and minimize fear • Website, hotline, mailers, Facebook, utility bill inserts, etc. • Appointments, evenings • Free inspection, discounts • Compelling, relevant, catchy/fun advertising branding, advertising at right places to meet audience where they are • Messaging, make the impact visible, website • Awesome multi-media campaign; advertise in ASA shops (window clings, signs, etc), and other partners like EnviroStars, DOL • ASA member- why they're reliable, high standards, good customer service?, can choose between different ASA members (options, at least in urban areas)
	Option 1: Go to ASA mechanic to inspect	• Free inspection by mechanic • Monetary value of free service = X • ASA certified- they won't miss something • Bring in vehicle because want to learn more about your vehicle • Taken all necessary steps (selecting mechanic/ scheduling appointment, etc) so want to complete task and actually get vehicle tested • Been on your list for a long time and now campaign's finite length and FREE check motivates you to act now • See mechanic on the list that you have already been to and trust	• Lost the coupon • Forgot about the appointment • Have to drive to new shop; need directions • Have to wait while vehicle is being inspected • Lack of trust; fear of being taken advantage of • Fear of finding out that you have a very expensive repair to fix • Mix-up with scheduling (mechanic has you down for different time than you thought) so have to come back • So busy that your scheduled slot gets pushed back and delayed timeslot doesn't work for you	• Coupons can be accepted on mobile devices; can print off coupon at shop if lost • Inspections should take 15 min max; include in messaging • Include short comment on high standards for ASA mechanic certification on printed coupon • Mechanics (and website/ messaging) are clear about time it will take to check vehicle and schedule accordingly to minimize delays • Mechanics don't over-book • Scheduling is accurate and mechanics stick to schedule • ASA mechanics training – mechanics briefed on program/ participant expectations/ ASA deliverables • Appointment invitation via email/outlook with address of shop location hyperlinked to Google map for smart phones/address and map of shop automatically prints on the coupon • Identify any ASA mechanics on the website that offer alternative transportation when vehicle is in the shop • Mechanics make reminder calls the day prior to those who have scheduled.

Desired Behavior	Action	Motivators	Barriers	Strategies to Address Barriers
Find out if you have a leak	Option 2: Allow vehicle to be tested at a Vehicle Leak Detection Blitz	• Free inspection by trained volunteers • No cost. • Easy to participate (leak detection happening while you are at work/ at sports event)	• Businesses not interested in participating • Employees didn't know about the program ("I never heard about it") • Don't trust volunteers • They feel strongly about maintaining privacy • Vehicle not there long enough to detect leaks via the drip sheet • Fear of finding out you have a leak • Laziness/ lack of interest in participating • Fear of getting fined by the government • Test may not be accurate if the drip sheet is placed under the vehicle when cool	• Work with businesses that have Industrial NPDES stormwater permits or are involved in the Commuter Trip Reduction Program • Potential PR for participating businesses • Make as easy as possible for businesses to participate. Work with them at whatever level of interaction that they prefer. • Partnering with business to test vehicles while vehicle owners are at work or host at sporting event where vehicles are parked for several hours • Guarantee to vehicle owners that leaks cannot be traced back to the owner (no license plate number recorded) • Work with business admin to notify employees multiple weeks in advance and repeatedly; reminder the day prior with clear directions on how to participate to all targeted employees (along with who is involved and what to anticipate); include A-frame signage at parking lot several days in advance • Promote discounts on leak fixes • Compelling campaign/ messaging • Compelling campaign – too costly NOT to act/ participate in campaign
	Option 3: Attend a workshop	• Easy online registration • Free inspection by independent mechanic • Monetary value ($45) of free workshop • Knowing basics of how their car functions and how to identify leaks • Know if car has a leak or not • Know what kind of leak and how easy/ complicated it is to get it fixed • Learn about preventive maintenance, pre-trip inspection • Several workshops in many locations • Free leaks kit with resources	• Have to go online to register. • Participants register and forget to attend • The workshops they are available to attend are full • Date and time of week workshop is offered • Length of workshop- too much time to spend out of my day	• The Ad should be very catchy that will make people want to go online and register. • Advertise free Inspection by the instructor mechanic who is not going to try and sell you something you don't need • Have easily accessible website site with URL that is easy to remember. Once they register they receive confirmation. • Call or send out reminders closer to the dates of the workshops • Offer two workshop lengths (2 hours and 4 hours), where the 4-hour workshop allows for a mechanic to inspect vehicle • Website will send email confirmation and Outlook appointment

Desired Behavior	Action	Motivators	Barriers	Strategies to Address Barriers
Get leaks fixed		• Limited time 10% discount (up to $50) • Increase life of vehicle • Save money in long run • Protecting the environment/ water quality/ doing the "right" thing • Have a reliable car • Know what kind of leak and how easy/ complicated it is to get it fixed • Convenience and cost • Impact of pollution on human health &/or safety • Puget Sound region is healthier/ safer • Pressure from kids on parents to fix leaks • Reliable mechanic (member of ASA so is meeting ASA requirements) • See a participating mechanic near you • See mechanic on the list that you have already been to and trust • Have been looking for a new mechanic and have heard of ASA and think it is a trust-worthy organization with trust-worthy participating mechanic locations • Website messaging stresses urgency/ importance in participating in campaign • One-month campaign so must act now	• Cost/expensive • Don't have money right now, but will have it later • Need car for chores, commute to work, etc. • Can continually top off the fluids and my car will be okay. • My car isn't going to last much longer; it's not worth the expense • My little leak isn't a big problem; it's the big leaks that are the problem.	• Limited time 10% discount (up to $50). Discount applies to anyone who schedules the appointment within the window; appointment can be after campaign marketing ends June 30, 2013 • 10% coupon can be redeemed at any participating ASA repair shop; not just the shop you went to that found the leak. • Convincing messaging that all leaks impact Puget Sound. • Have coupons easily visible at repair shops for those who have not heard of campaign previously • Create a brochure for mechanics to give to vehicle owners with leaks; brochure has info on the campaign, impact of a leaky car, and the 10% coupon. Owners can take home and think about it (no pressure). • Appointment invitation via email/outlook with address of shop location hyperlinked to Google map for smart phones/address and map of shop • Identify any ASA mechanics on the website that offer alternative transportation when vehicle is getting fixed • Provide even better incentives/discounts.

Don't Drip & Drive

Fix That Leak!

Identifying Common Car Leaks

Car leaks often can be identified by observing the color, texture, and location of the fluid.

1. Carefully place the reusable "Drip Test Sheet" under your car.
2. Leave the car in place for a few hours or even better, overnight.
3. If you see drips, use the guide chart to identify the type of leak.
4. Take note of the color, texture, and location in order to properly identify it.
5. Use the 'leaks guide chart' to find out what your results mean
6. Wipe off the fluid(s) and throw the rag or tissue in the trash
7. Contact your mechanic for further evaluation

What's leaking under my car?

Here are six fluids that are likely to drip from your car, and how to recognize them.

Engine Oil
Light brown to black,
very greasy and slick,
under front half of car

Transmission Fluid
Reddish and thin
or brown and thick,
middle and towards the front of car

Power Steering Fluid
Amber or reddish or
light brown and thin,
very front of vehicle

Brake Fluid
Clear to brown,
slightly yellow and slick,
often appears near a wheel

Coolant (Anti-freeze)
Yelow, green, or pink,
greasy and slimy,
front-most part of car, near radiator
or under the engine

Water
Clear and thin,
under front of car -
condensation from air-conditioning system

DEPARTMENT OF ECOLOGY
State of Washington

For more information go to: www.fixcarleaks.org

Puget Sound Starts Here.org

MEDIA ADVISORY
March 14, 2013

Contact: Diana Steeble
Tel: (206) 462-6389
Email: dsteeble@prrbiz.com

"DON'T DRIP & DRIVE" PROGRAM KICKS OFF CAMPAIGN TO HELP LOCAL DRIVERS AND PUGET SOUND

Prime Visuals to Help You Help Your Audience "Fix That Leak" & Protect the Sound

SEATTLE – Vehicle leaks can cause havoc for drivers and the environment, but a new program called "Don't Drip & Drive" puts Western Washington residents in the driver's seat for finding an affordable fix. This April, drivers can take their vehicle to a participating repair shop, located all around the region, for a free and easy visual inspection (a diagnostic service valued at up to $80). If there is a problem, the driver will receive a coupon for 10 percent off service (up to $50) to fix the problem. All participating technicians are members of the Automotive Service Association (ASA).

A leaky car isn't a reliable car. Media can help their readers and viewers avoid the headache – and expense – of calling a tow truck and a taxi during a family road trip or daily commute to work. **Don't let them get stranded!** Fixing that leak also extends car life, a significant boost for **the family budget**. Protecting Puget Sound is also a key part of "Don't Drip & Drive." Here in Washington State, our vehicles release 7 million quarts* of motor oil from drips and leaks into the **Puget Sound** basin, every year.

■ *Don't Drip & Drive Media Availability*

WHEN: 11 a.m., Thursday, March 28
RSVP by March 27 to Diana Steeble (contact info above)

WHERE: High Road Automotive, 1531 NW Leary Way, Seattle, WA 98107
(Just north of the Ballard Bridge, 10 minutes from downtown Seattle)
Directions: http://high-road.com/contact/
Parking: On arrival, look for a "Don't Drip & Drive" representative to direct you

VISUALS: Car hoisted for undercarriage inspection; a repair shop that's open and airy and keeps their own motor oil from draining into the Sound; high-impact visuals on how consumers with vehicle leaks **release 7 million oil quarts into the Puget Sound basin each year, which is like pouring more than $53 million (estimated) of their hard-earned money down the drain.**

*Sources for statistics throughout this advisory are available at: www.fixcarleaks.org

SPEAKERS:

- Stef Frenzl, on behalf of the STORM consortium (described below), which is organizing the "Don't Drip & Drive" program
- Jeff Lovell, President of ASA-WA
- Bryan Kelley, ASA member technician, Valley Service Automotive
- Consumers and auto repair technicians onsite

# # #

About STORM and the Don't Drip & Drive Program

The Stormwater Outreach for Regional Municipalities (STORM) consortium has taken the lead on communicating 'fixing vehicle leaks' as a best practice, via a targeted regional education and behavior change campaign program called "Don't Drip & Drive." This is a response to the fact that, every year, hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers, streams and the Puget Sound; most of this toxic pollution comes from small oil motor drips from our cars and trucks.

"Don't Drip & Drive" is made possible by a grant offering from the Washington Department of Ecology. King County was awarded the grant on behalf of the STORM consortium, which includes members from 80+ local jurisdictions, with supporting efforts by another 400 agencies and organizations through the ECO Net network. The grant is leveraged with another Ecology grant awarded to Seattle Public Utilities, with funds from the U.S. Environmental Protection Agency.

The overall goal of the program is to build awareness and educate people throughout the Puget Sound region that it is important to check for vehicle leaks and to inspect their vehicles regularly, whether on their own or through a repair shop. To learn more about the "Don't Drip & Drive" program, visit www.fixcarleaks.org. To learn more about the STORM consortium, visit www.pugetsoundstartshere.org.

Don’t Drip & Drive. Fix That Leak!
Toolkit

Template Materials

Sample Newsletter/Email/Website Copy

APRIL 2013

Don’t Drip & Drive. Fix That Leak!
Don’t miss your chance for a free vehicle leak inspection! Improve your cars safety and reliability by checking for vehicle leaks. This month only, visit any participating local Automotive Service Association (ASA) member repair shop and get a free visual leak check, at a value up to $80! And if repairs are needed, it’s 10 percent off (up to $50). **That’s total savings up to $130!**

[ENTER ORGANIZATION] is working with more than 40 local jurisdictions, non-profits and businesses to support the *Don’t Drip & Drive. Fix That Leak!* campaign.

[USE THIS SECTION TO CUSTOMIZE INFORMATION SPECIFIC TO YOUR JURISDICTION’S ACTIVITIES – LOCAL TESTING EVENTS, LOCAL ASA SHOPS, ETC]

The more you wait the more you’re losing. Take advantage of this limited offer—it’s free and it’s easy! Visit www.fixcarleaks.org to find a participating ASA mechanic near you!

Is that oil leak harming more than your car?

Don't Drip & Drive

Fix That Leak!

Puget Sound Starts Here

ASA Northwest

If your car is leaking oil, it not only means your engine may be at risk

– it also means that leaking oil is going directly to the Puget Sound. And that's not good for anybody.

Don't Drip & Drive. Fix That Leak!

Visit a participating local Automotive Service Association (ASA) member repair shop this April to get a **FREE visual vehicle leak inspection** – up to an $80 value! Plus, should a leak be found, you can get 10% off repairs (up to $50). But only for a limited time.

Visit **www.fixcarleaks.org** to find a participating ASA shop near you!

DEPARTMENT OF ECOLOGY State of Washington

Funded by a grant from the Department of Ecology

If your car is leaking oil, it not only means your engine may be at risk – it also means that leaking oil is going directly to the Puget Sound. And that's not good for anybody. **Don't Drip & Drive. Fix That Leak!**

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DEPARTMENT OF ECOLOGY State of Washington
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Puget Sound Starts Here.org

ASA Northwest

Is that oil leak harming more than your car?

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Is that oil leak harming more than your car?

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Visit a participating local Automotive Service Association (ASA) member repair shop this April to get a **FREE visual vehicle leak inspection** – up to an $80 value! Plus, should a leak be found, you can get 10% off repairs (up to $50). But only for a limited time.

Visit **www.fixcarleaks.org** to find a participating ASA shop near you!

DEPARTMENT OF ECOLOGY
State of Washington
Funded by a grant from the Department of Ecology

Puget Sound Starts Here.org

ASA Northwest

Is that oil leak harming more than your car?

If your car is leaking oil, it not only means your engine may be at risk – it also means that leaking oil is going directly into Puget Sound. And that's not good for anybody. **Don't Drip & Drive. Fix That Leak!**

Visit a participating local Automotive Service Association (ASA) member repair shop this May and June and get **10% off leak repairs** (up to $50). But only for a limited time.

Visit **www.fixcarleaks.org** to find a participating ASA shop near you!

DEPARTMENT OF ECOLOGY
State of Washington
Funded by a grant from the Department of Ecology

Puget Sound Starts Here.org

ASA Northwest

FOR IMMEDIATE RELEASE
DATE

Contact: YOUR PIO'S NAME
TELEPHONE
EMAIL ADDRESS

"DON'T DRIP AND DRIVE" CAMPAIGN COMES TO YOUR CITY

Free Inspections and Discounted Solutions Encourage Drivers to "Fix That Leak" in April

DATE, [Your City, WA] Vehicle leaks can cause havoc for drivers and the environment, but a new program called "Don't Drip and Drive" puts Western Washington residents in the driver's seat for finding an affordable fix, including drivers right here in CITY. During the month of April, drivers can take their vehicle to a participating mechanic for a free and easy visual inspection (a diagnostic service valued at up to $80). The free inspection is especially recommended for vehicles that are 2005 models or earlier.

If there is a problem, the driver will receive a coupon for 10 percent off service to fix the problem, a total savings of up to $130. All participating mechanics are members of the Automotive Service Association (ASA) to ensure they meet ASA's standards of quality.

Local representative FULL NAME of local STORM rep from their ORGANIZATION highlighted a few reasons why this service offers real value to the average driver in the community. "CUSTOMIZE* THIS SO IT SOUNDS NATURAL FOR YOU: First of all, no one wants to get stranded! A leaky car isn't a reliable car. A little car maintenance could save you a lot of hassle and money later."

LAST NAME continued, "CUSTOMIZE* THIS SO IT SOUNDS NATURAL FOR YOU: This is also important for helping our residents stretch their budgets. Finding and fixing vehicle leaks is a great way to keep your car on the road longer, so you have more years before you need to finance buying a new one." Studies show that 67 percent of drivers who find a leak will fix it, so LAST NAME noted this program is really about arming people with the information to make smart choices for their families' budget and well-being.

Protecting Puget Sound is also a key part of "Don't Drip and Drive." Not only does solving vehicle leaks help families care for their cars, over the long run, it also is good for our environment.

To take advantage of the free visual inspection for vehicle leaks, visit one of these participating ASA mechanics in April:

- BULLET POINT LISTING: INCLUDE EACH COMPANY'S NAME, ADDRESS, PHONE, WEBSITE (IF AVAILABLE) AND HOURS THEY'RE OPEN
- COMPANY TWO
- COMPANY THREE
- COMPANY FOUR
- COMPANY FIVE

For more information, visit www.fixcarleaks.org.

About

Boilerplate from PIO's organization goes here.

# # #

*PLEASE CUSTOMIZE QUOTES SLIGHTLY SO THAT EACH JURISDICTION'S SPOKESPERSON ISN'T SAYING THE SAME THING WORD FOR WORD – AND ALSO MAKE IT SOUND NATURAL FOR YOU! NOTE THAT THE QUOTES ARE DESIGNED TO STRESS THE BENEFITS OF A) VEHICLE RELIABILITY AND B) EXTENDED CAR LIFE.

Don’t Drip & Drive. Fix That Leak!
Toolkit

Template Materials

Social Media: Facebook and Twitter Posts

All participating STORM jurisdictions are encouraged to utilize their Facebook and/or Twitter pages to help spread the word about the *Don’t Drip & Drive. Fix That Leak!* campaign. Sample posts are below. Be sure to customize with any local information or activities that are taking place in your jurisdiction in support of the program as well.

Sample Facebook Posts

MARCH 2013

- *Don’t Drip & Drive. Fix That Leak!* Visit participating local ASA member repair shops this April and get a free visual oil leak check, at a value of up to $80! And if repairs are needed, it’s 10 percent off (up to $50). That’s total savings up to $130! Visit www.fixcarleaks.org for more information.
- Save the date and save some money! April is free vehicle leak inspection month! Visit participating ASA member repair shops and get a free visual leak check—and 10 percent off (up to $50) if repairs are needed. You could save up to $130! Visit www.fixcarleaks.org to find a location.
- Don’t get stranded! A leaky car isn’t a reliable car. This April visit participating ASA member repair shops and get a free visual leak check—and 10 percent off repairs (up to $50). You could save up to $130! Visit www.fixcarleaks.org to find a location.

APRIL 2013

- Is your car leaking? This month ONLY you can get a free visual leak check by visiting any participating ASA member mechanic. If repairs are needed, it’s 10 percent off (up to $50). That’s total savings up to $130! Visit www.fixcarleaks.org
- Don’t miss your chance! The more your car leaks the more you’re losing. Take advantage of a free vehicle leak inspection limited offer! Visit www.fixcarleaks.org to find a participating ASA repair shop near you!
- Extend the life of your car. Finding and fixing vehicle leaks is a great way to keep your car on the road longer. Take advantage of this free vehicle leak inspection limited offer! Visit www.fixcarleaks.org to find a participating ASA repair shop near you!
- Protect Puget Sound—get your car checked for free! 6,100 tons of oil a year comes from cars and trucks. Visit www.fixcarleaks.org to find a participating ASA repair shop near you and get your car inspected for leaks today.
- We’re releasing 7 million quarts of motor oil into the Puget Sound basin annually. Think about it, 7 million quarts of oil wasted each year! You can help—this April, get your car checked for leaks, for FREE. Visit www.fixcarleaks.org to find a participating ASA retail location near you!

Sample Twitter Posts

March 2013

- Free vehicle leak inspections this April! Learn more at: www.fixcarleaks.org #Don'tDrip&Drive #FixThatLeak!
- Protect Puget Sound—get your car checked for leaks for free this April. Learn more at fixcarleaks.org #FixThatLeak!
- Save money & the environment with a free car leak inspection this April. Visit fixcarleaks.org to find out how. #Don'tDrip&Drive

April 2013

- Free and easy vehicle leak inspections available now: a value of up to $80! Learn more at fixcarleaks.org. #FixThatLeak!
- Get your car inspected for leaks for free this month only Visit www.fixcarleaks.org to find a participating ASA shop. #Don'tDrip&Drive
- Don't Drip & Drive! Get a free vehicle leak inspection today! Find a location at fixcarleaks.org #FixThatLeak!

Don't Drip & Drive Talking Points

Driver Benefits to Vehicle Leak Testing

- Don't get stranded! A leaky car isn't a reliable car.
    - Whether you're on your daily commute or road tripping on a vacation, a little car maintenance could save you a lot of hassle - and money.
- Extend the life of your car. Finding and fixing vehicle leaks is a great way to keep your car on the road longer, so you have more years before you need to buy a new one.

Environmental Benefits to Testing

- Protect Puget Sound. Not only does fixing vehicle leaks help families care for their cars, over the long run, it also is good for our environment.
    - Here in Washington State, we're releasing 7 million quarts of motor oil into the Puget Sound basin annually. Think about it, *7 million* quarts of oil wasted each year!
    - Given that the average quart of motor oil costs $5-10 dollars, we estimate that consumers are pouring $53,615,500 down the drain each year. You could do so many more things with your hard-earned money than leak oil into the Puget Sound basin.

Program Offer

- Act now! Take advantage of a free and easy inspection, at a value of up to $80, from a participating Automotive Service Association (ASA) member repair shop in April.
- If the technician does discover a problem, you'll receive a coupon for discounted service at 10% off, for up to $50 in repairs. That's a total savings up to $130.
    - You can take the coupon with you to use at any participating repair shop or choose to wait to have your leak fixed. There is no obligation!
- Don't Drip & Drive. Fix That Leak! For more information, visit our website at www.fixcarleaks.org.

Program Partnerships

- We're partnering with the Automotive Service Association (ASA) because ASA ensures that their technicians meet their high standards for quality of service.
    - ASA's visual leak inspection involves checking under the hood and under the carriage for vehicle leaks, including hoisting it to inspect the underside. No dye testing or component removal is included.
    - This is available all around the region.
- We'd like to thank several large-scale businesses for signing on, including The Boeing Company and [X, Y, Z]. They're hosting free vehicle leak inspections for their employees [add any other details depending on who signs on to do what].
- Testimonials
    - Pending Boeing's approval and confirmation of Everett campus participation: "Finding and fixing vehicle leaks is an important way to prolong the life and reliability of your car while protecting the Puget Sound at the same time. Local leaders such as The Boeing Company support this effort. That's why they're hosting a vehicle leaks testing day at their Renton and Everett campuses, free of charge to employees who wish to participate."
    - Approved quote: Jeff Lovell, President of ASA-WA says, "The Automotive Service Association of Washington is extremely proud to partner on this initiative. We know that vehicle fluids like motor oil belong in your car, not the Puget Sound. As an association, we're comprised of qualified, independent, local automotive technicians who want to help drivers maintain their cars and trucks. A little leak, left unattended, can really cause havoc over time. That's why more than 60 of our local repair shops have signed on to provide free visual leak inspections in April, and are standing by to help fix that leak."

Who We Are as a Group

- The Stormwater Outreach for Regional Municipalities (STORM) consortium has taken the lead on communicating 'fixing vehicle leaks' as a best practice, via a targeted regional education and behavior change campaign program called "Don't Drip & Drive."
    - This is in response to the fact that, every year, hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers, streams and the Puget Sound; most of this toxic pollution comes from small oil motor drips from our cars and trucks.

    - The STORM consortium includes members from 80+ local jurisdictions, with supporting efforts by another 400 agencies and organizations through the ECO Net network.

- "Don't Drip & Drive" is made possible by a grant from the Washington Department of Ecology.
    - King County was awarded the grant on behalf of the STORM consortium.
    - The grant is leveraged with another Ecology grant awarded to Seattle Public Utilities, with funds from the U.S. Environmental Protection Agency (EPA).
- The overall goal of the program is to build awareness and educate people throughout the Puget Sound region that it is important to check for vehicle leaks and to inspect their vehicles regularly, whether on their own or through a repair shop.

Workshops

- In addition to the ASA partnership, the Department of Ecology and Seattle Public Utilities have also teamed up with community colleges and some high schools to offer FREE monthly auto leaks workshops to help Puget Sound residents learn about their cars and make sound choices.
    - The workshops are valued at $125.
- Certified automotive instructors teach the workshops at fully equipped auto-repair training centers at South Seattle Community College, Shoreline Community College, Renton Technical College, Auburn High School and West Seattle High School.
    - Workshop dates vary by location. Most classes are on Saturday mornings and afternoons. Auburn workshops are on Monday evenings.
- Classes are open to EVERYONE in Puget Sound region who drives a car! Whether you are a new driver, a do-it-yourselfer, just got a car or maybe you have a question about a problem with your car, the workshop will increase your knowledge about your car and auto leaks. You'll learn basic car care that can help you catch problems – like leaks – before they become big and expensive.
    - In just 2-4 hours, the workshops take you through the basics of vehicle maintenance. You can attend for only 2 hours if you want to skip the free car inspection.
    - Besides peace of mind and a FREE professional inspection of your car, you also receive a FREE vehicle maintenance check kit.
    - Visit www.fixcarleaks.org for more information or to sign up for the workshops.


Don't
Drip & Drive
Fix That
Leak!
Is that oil leak harming more than your car?
If your car is leaking oil, it not only means your engine may be at risk. It also means that leaking oil is going directly to the Sound. And that's not good for anybody. Don't Drip & Drive. Fix That Leak!
Visit a participating local Automotive Service Association (ASA) member repair shop this April to get a FREE visual vehicle leak inspection – up to an $80 value! But only for a limited time.
Visit www.fixcarleaks.org to find a participating ASA shop near you!
Puget Sound Starts Here
ASA Northwest
Funded by a grant from the Department of Ecology
DEPARTMENT OF ECOLOGY
State of Washington

Don't Drip & Drive

Fix That Leak!

Hosting a Vehicle Leaks Blitz

11 steps to success

Prior to the event:

1 Find a business, organization, school, or faith-based entity to partner with.

2 Work with your partner to identify an appropriate location for the event.

- ❑ Parking lot or garage? Consider flow of traffic, parking orientation, and safety.
- ❑ Check in with your partner about specifics, such as parking approval and security concerns.
- ❑ Physically visit the site and look for other possible challenges, such as ability to deploy drip sheets under cars (some lots have medians or other obstructions). Plan ahead to address potential challenges.

3 Get the word out!

- ❑ Pick a date!
- ❑ Work with your partner to determine desired participation levels.
- ❑ Based on anticipated participation, determine an appropriate event length and time of day.
- ❑ Coordinate with your partner to get the word out to their employees and visitors. Two weeks notice is ideal, with a repeat notice one or two days prior.
- ❑ Use the campaign toolkit for talking points, communications write-ups AND MORE!

4 Determine staffing needs and recruit volunteers.

- ❑ How many vehicles are you hoping to test?
- ❑ How many volunteers will you need?
- ❑ Advise volunteers to wear clothes that can get dirty—and wear good walking shoes.

5 Prepare event materials.

- ❑ Assemble event materials sufficient for the number of vehicles to be tested. (See the "pre-event checklist" for a full list of event materials.)

Note: Campaign materials—including leak report cards, Ziploc bags, drip sheets, and evaluation/tracking forms—are available during the month of April at campaign hubs in the City of Bellingham, Snohomish County, King County/Seattle, and City of Olympia.

Visit **www.fixcarleaks.org** to learn more!

Puget Sound Starts Here.org

ASA

Hosting a Vehicle Leaks Blitz

11 steps to success

The day of the event:

6 Set up the volunteer station (base camp).

- ❑ Prepare the tent and equipment so it is ready-to-go by the start of the event.

7 Prepare and train volunteers.

- ❑ Educate volunteers about safety and security considerations, a work-flow for directing "opt in" and "opt out" traffic, and logistics around communication, break times, and emergency response. Include instructions on use of safety equipment. (20 minutes)
- ❑ Assign volunteers to teams. If possible, one person should be a designated "rover," available to provide additional drip sheets and other equipment to maintain efficiencies. (5 minutes)
- ❑ Walk through the **vehicle leak detection kit** and procedure. (10 minutes)
- ❑ Provide volunteers with safety equipment (safety vests and gloves) along with vehicle leak detection kits.

8 Deploy volunteer teams.

- ❑ Lead volunteers to their assigned locations and remain available for questions or emergencies.
- ❑ Assign pairs of volunteers to manage specific parking rows and provide a goal for number of vehicles to test.
- ❑ Enforce use of safety equipment.

9 Volunteers test vehicles.

- ❑ Incoming vehicles are directed to "opt-in" and "opt-out" parking locations.
- ❑ As soon as each "opt in" car is parked (ideally within 5 minutes), approach the front of the car and unroll a drip sheet directly under the hood, positioning the edge of the sheet one hand length from the front bumper.
- ❑ After 30 minutes, carefully pull the sheet out from beneath the vehicle.
- ❑ On the **leak report card**, indicate 1) whether or not a leak was found; 2) the location of the leak; and 3) the color of the leak. Place the report card in a plastic bag and secure it to the windshield.
- ❑ If leaks were found, clean the drip sheet by spraying with soap/water mix and dry with a paper towel. Place paper towel in trash bag.
- ❑ Mark findings on the **volunteer tracking form**.
- ❑ Move to next "opt in" vehicle and repeat.

10 Volunteers return to the volunteer station and celebrate!

- ❑ Collect **volunteer tracking forms** from volunteers.
- ❑ Collect trash bags from volunteers and dispose of trash bags properly.

11 Post-event follow-up.

- ❑ Thank your volunteers!
- ❑ Share your results! Submit the **event coordinator evaluation form** using the directions provided.

Visit **www.fixcarleaks.org** to learn more!

Puget Sound Starts Here.org ASA

Vehicle Leaks Blitz

Event materials list

Equipment and Supplies

Provided By Campaign Hub:
- ❑ Drip sheets (prepped, rolled, rubber banded)
- ❑ Leak report cards
- ❑ Ziploc bags for leak report cards
- ❑ Event banner
- ❑ Drip sheet roller (if available)

Notes

Provided By You:

Travel/Getting Around
- ❑ Truck(s) to move drip sheets and equipment
- ❑ Gator (off road vehicle to haul supplies)

At Base Camp & Parking Lot Entrance(s)
- ❑ Pop-up tent
- ❑ Bungee cords (to hold banner to pop-up tent)
- ❑ Folding tables (2 minimum to clean sheets)
- ❑ Chairs
- ❑ Event signage (on A-frames)
- ❑ Duct tape
- ❑ Invitation to participate cards (if needed)

Safety Equipment
- ❑ Orange vests for volunteers
- ❑ Box of rubber gloves
- ❑ First aid kit
- ❑ Headlamps (for early morning shifts)

To Direct Traffic
- ❑ Signal flags
- ❑ Safety cones
- ❑ Flagging tape

To Clean Drip Sheets at Base Camp
- ❑ Rags
- ❑ Spray bottles with soapy water
- ❑ Trash bags

To Test Vehicles for Leaks
- ❑ Extra large rubber bands to hold kits
- ❑ Cart(s) (to carry sheets)
- ❑ Buckets- 5-gallon (to carry sheets)
- ❑ Clip boards
- ❑ Pencils
- ❑ Data sheets (on Rite on Rain paper)
- ❑ Fanny packs (to hold report cards & bags)
- ❑ Knee pads for volunteers
- ❑ Trash grabbers (to grab sheets under cars)

Volunteer Support
- ❑ Snacks & drinks for volunteers
- ❑ Umbrellas
- ❑ Walki-Talkis/cell phones
- ❑ Hand warmers

Thank you for participating!

More than 7 million quarts of motor oil enter Puget Sound each year, washing into storm drains from roadways, driveways, and parking lots. Detecting and fixing vehicle leaks is the best way to prevent this pollution from impacting our waters.

Please review the back of this card to learn what we discovered about your vehicle. This information is yours to act on—license plates are not recorded.

Visit **www.fixcarleaks.org** to learn more.

Puget Sound Starts Here.org

ASA

We checked under your vehicle and we:

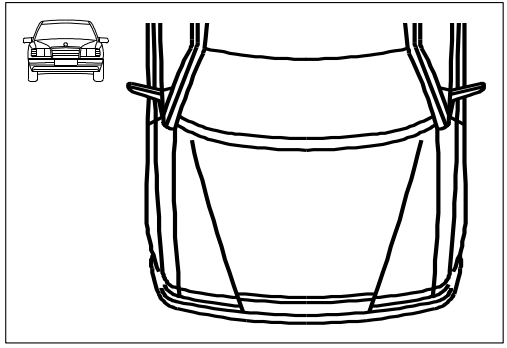
Don't Drip & Drive

Fix That Leak!

- ☐ detected no leak*
- ☐ detected a leak…

***Please note:** This 30-minute leak check is *not* a replacement for a professional inspection .

The leak was located here:



and it looked:

- ☐ black
- ☐ brown
- ☐ yellow
- ☐ green
- ☐ red
- ☐ orange
- ☐ other

Other Notes:

Bring these results to a participating ASA technician during the month of April for a **free visual leak inspection** (up to an $80 value!). Plus, if you choose to have your leak repaired, you will get 10% off—up to $50. **Only for a limited time.**

Visit **www.fixcarleaks.org** to find a participating ASA technician near you.

Puget Sound Starts Here.org

ASA

We checked under your vehicle and we:

Don't Drip & Drive

Fix That Leak!

- ☐ detected no leak*
- ☐ detected a leak…

***Please note:** This 30-minute leak check is *not* a replacement for a professional inspection .

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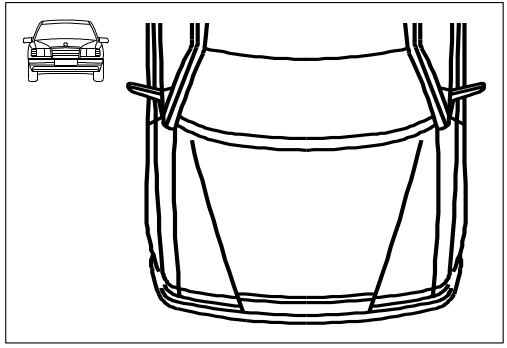


and it looked:

- ☐ black
- ☐ brown
- ☐ yellow
- ☐ green
- ☐ red
- ☐ orange
- ☐ other

Other Notes:

Bring these results to a participating ASA technician for a **free visual leak inspection** (up to an $80 value!). Plus, if you choose to have your leak repaired, you will get 10% off—up to $50.
Only for a limited time.

Visit **www.fixcarleaks.org** to find a participating ASA technician near you.

Puget Sound Starts Here.org

ASA

Vehicle Leaks Blitz
Volunteer Tracking Form

For use by volunteers:

Date of Event: _____ **Name of Volunteer:** _____

Event Name: _____

Instructions: As you fill out the leak report card for each vehicle, use this tracking form to create a tally of vehicles with leaks and without (example below):

Leak Detected:	5	5	5
No Leak Detected:	5	5	5

At the end of the event, return your completed tracking form to the event coordinator.

LEAK Detected

Every time a vehicle check results in detection of a leak, cross out a "drip" symbol below.

5	10	15	20	25	30
35	40	45	50	55	60
65	70	75	80	85	90
95	100	105	110	115	120
125	130	135	140	145	150

NO LEAK Detected

Every time a vehicle check does not result in detection of a leak, cross out a "thumbs-up" symbol below.

5	10	15	20	25	30
35	40	45	50	55	60
65	70	75	80	85	90
95	100	105	110	115	120
125	130	135	140	145	150

For use by event coordinators:

Number of leaking vehicles	Number of "leak free" vehicles	Total number of vehicles checked

Vehicle Leaks Blitz

Event Coordinator Evaluation Form

6 Steps to Success

Before the event

1. Print this **event coordinator evaluation form** so you can track information the day of the event.
2. Print a **volunteer tracking form** for every volunteer you expect (plus a handful of extras).
3. Obtain a clipboard and pen for each volunteer you expect.

The day of the event

4. Prepare and train the volunteers:
   a. Give every volunteer a clipboard, pen, and **volunteer tracking form**.
   b. Explain how to fill out the **volunteer tracking form**.
5. At the end of the day, retrieve completed forms from volunteers and compile the information into the **event coordinator evaluation form**.
6. Report your results! Enter your event data here: www.surveymonkey.com/s/VehicleLeaksBlitz

Basic Event Information

Date		
Time	Start:	End:
Event name		
Location/address		
Sponsoring jurisdiction		
Partner businesses or organizations		

Event Resources

Number of test kits used	
Number of volunteers	
Number of paid staff	

Event Outcomes

Number of leaking vehicles (💧)	
Number of "leak free" vehicles (💧)	
Total number of vehicles checked	

Event Outcomes

What are your recommendations or lessons learned that can help other "Vehicle Leaks Blitz" organizers be successful?

To submit this information, please visit www.surveymonkey.com/s/VehicleLeaksBlitz

Yes! Please check my vehicle for leaks.

Please place this card face up inside your car on your dashboard where it will be visible to event volunteers.

I understand that this is a voluntary program intended to give me information only, that this 30-minute check is not a replacement for a professional inspection, and that license plates are not recorded.

Visit **www.fixcarleaks.org** to learn more.

When you return, you should find a completed **Vehicle Leak Report Card** on your windshield.

If for some reason your car was missed, we apologize! We may have been short on volunteers, or couldn't get to your car in time for your return, or didn't see this card.

If you're still interested in having your vehicle checked for leaks, make an appointment with a **participating ASA technician** for a **free visual leak inspection.**

If you choose to have your leak repaired, you will get 10% off--up to $50. **Only for a limited time.**

Vehicle Leak Report Card example:

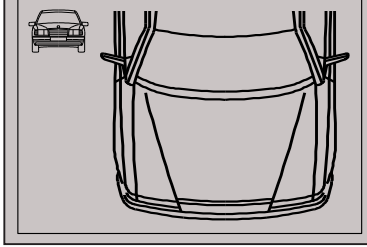
We checked under your vehicle and we:

☐ detected no leak*

☐ detected a leak...

*__Please note:__ This 30-minute check is *not* a replacement for a professional inspection

The leak was located here:



and it looked:

☐ black
☐ brown
☐ yellow
☐ green
☐ red
☐ orange
☐ other

Visit **www.fixcarleaks.org** to find a participating ASA technician near you.

If you have questions about this event, please contact Emily Johnson, Environmental Educator for the City of Bellingham Public Works at eejohnson@cob.org or 360-778-7970.

"Vehicle Leaks Blitz" Event Evaluation

Basic Event Evaluation

Thank you for organizing a Vehicle Leaks Blitz!

Please complete this survey for every event you hold, so we can track the campaign's progress.

*1. When was this Vehicle Leaks Blitz held?

	MM	DD	YYYY
Date of the event		/ /	

2. Approximately what time of day did the event start and end?

	HH	MM	AM/PM
Start time		:	
End time		:	

3. Where was the event held?

Location Name	
Street Address:	
City/Town:	
ZIP:	

4. Who was involved in this event?

Sponsoring jurisdiction/SOG	
Partner business/organization #1	
Partner business/organization #2	
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	

Event Resources and Outcomes

5. How many test kits, volunteers, and paid staff were involved on the day of the event?

How many test kits were used?	
How many volunteers attended?	
How many paid staff attended?	

6. During this event, how many vehicles were found to be...

LEAKING vehicles	
LEAK-FREE vehicles	

"Vehicle Leaks Blitz" Event Evaluation

7. In total, how many vehicles were checked during this event?

TOTAL number of vehicles checked

8. What are your recommendations or lessons learned that can help other "Vehicle Leaks Blitz" organizers be successful?

Thank you! If you have any questions about this form, please contact Jessica Branom-Zwick at jessica@cascadiaconsulting.com

Vehicle Blitz Event Coordinator Survey Summary

Event Location Name/City	Event Date	Length	Time	Number of Paid Staff	Number of Volunteers	Number of Test Kits Used	Number of Vehicles Checked
Boeing (Renton)	04/03	6 hours	4:00am-10:00am	1	15	500	911
North Creek Forest	04/06	2 hours	10:00am-12:00pm	0	1	10	12
University of Washington Bothell	04/10	2.5 hours	9:30am-12:00pm	1	5	200	145
University of Washington Bothell	04/11	3.5 hours	8:30am-12:00pm	2	8	200	284
North Creek Forest	04/13	2 hours	10:00am-12:00pm	0	1	10	8
City of Kent	04/22	2 hours	8:00am-10:00am	3	0	22	22
Dept. of Ecology NWRO	04/23	3.5 hours	6:30am-10:00am	8	0	40	100
Western Washington University	04/24	7 hours	8:00am-3:00pm	3	7	300	305
North Creek Forest	04/27	2 hours	10:00am-12:00pm	0	1	10	7
Dept. of Ecology SWRO	04/30	2.75 hours	7:00am-9:45am	7	4	70+	252
Boeing (Everett-Bomarc Building)	05/08	6.25 hours	5:45am-12:00pm	14	8	700	915

Date of the event	04/03/2013
Start time	4:00 AM
End time	10:00 AM
Location Name	Boeing - Renton
Street Address	N 6th St and Logan Ave N
City/Town	Renton
ZIP	98055
Sponsoring jurisdiction/SOG	King County
Partner business/organization #1	Boeing Corporation - Renton campus
Partner business/organization #2	King County Eco-Net
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	500
How many volunteers attended?	15
How many paid staff attended?	1
LEAKING vehicles tested	105
LEAK-FREE vehicles tested	806
TOTAL number of vehicles checked	911
Recommendations or lessons learned	•The drip sheets, Volunteer Tracking Forms, and the Leak Report Cards all worked well. •It really helped to have the drip sheets rolled and ready to go before the event. •The cart/box combo for carting around the drip sheets worked well (Doug will send a photo). •Carrying around rags to clean the drip sheets and cleaning the drip sheets on the spot worked better than bringing the dirty drip sheets back to the Campaign Event Hub and cleaning them later. • We needed 15 people with the size parking lot!! •Most Boeing employees had not heard about the event (don't read the weekly bulletin and had not seen the posters that had been hung up around Boeing campus). •Get Boeing to provide volunteers!!! •Every car parked in Lot 8 and Lot 11 was eligible to be tested by us. There was no "opt in" versus "opt out" option. We believe that this is why our leak detection percentage was much higher than the Bellevue event (tested 400 vehicles and found 4 leaks) which had an "opt in" "opt out" option.

Date of the event	04/06/2013
Start time	10:00 AM
End time	12:00 PM
Location Name	North Creek Forest
Street Address	112th Ave NE
City/Town	Bothell
ZIP	98011
Sponsoring jurisdiction/SOG	Bothell
Partner business/organization #1	Friends of North Creek Forest
Partner business/organization #2	ECO Net
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	10
How many volunteers attended?	1
How many paid staff attended?	0
LEAKING vehicles tested	1
LEAK-FREE vehicles tested	11
TOTAL number of vehicles checked	12
Recommendations or lessons learned	Everybody I talked to was open to being tested--not surprising since the testing was being done at a restoration event. This sounds like a different experience than the opt-in event in Bellevue. I didn't have any of the stiffening rods for the ends, so wind was a nightmare. The sheets kept blowing out of position, and thus needed constant tending. It will be interesting to see how well the rods work in the real world. Wet leaves and needles stuck to the underside. I didn't have a problem with oil on the underside, except for the vehicle that was leaking (i.e., fresh oil stuck to the underside, weathered oil didn't). Some people parked partly on grass by the side of the road. The sheets did not roll well through the grass, so I had to poke the sheets to get them more or less flat. I had a similar leak rate at my event as we had at Boeing. However, with a small pool of vehicles to test, I only found one that was leaking. The King ECO Net has been talking about doing small group events, so we'll need to keep in mind that even if we test 50 cars, we shouldn't expect more than about five that leak. Unlike at Boeing, we won't find "many" at small events. Doing testing at an event where people need to sign in anyway is likely to make follow-up easier (we asked for e-mail addresses at sign in, and required people to sign a waiver that included their mailing address, but in this case we did not link test results with individuals, so they are lost to follow up. I don't think it would be hard to add that step once the social marketing grant gets going). The rain occurred in the middle of our event. Thus the cards that were put on windshields early on when it was dry got rained on. They appeared to hold up well in the rain. Volunteers who arrived early for their shift during the rain hid out in their cars. Thus it was too late to test them by the time they got to our registration table, given the advice that the sheets be placed while the cars are still warm. It would have been better to meet them at their cars than wait for them to sign in (assuming they wouldn't get upset about getting wet while talking to us). Many of the volunteers did not travel far to get to our event, so their cars may not have been up to normal operating temperature by the time they arrived.

Date of the event	04/10/2013
Start time	9:30 AM
End time	12:00 PM
Location Name	University of Washington Bothell
Street Address	18115 Campus Way NE
City/Town	Bothell, WA
ZIP	98011
Sponsoring jurisdiction/SOG	City of Bothell
Partner business/organization #1	Sno County ECOnet
Partner business/organization #2	H20 and Sustainability Class
Partner business/organization #3	Sustainability Club
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	200
How many volunteers attended?	5
How many paid staff attended?	1
LEAKING vehicles tested	5
LEAK-FREE vehicles tested	140
TOTAL number of vehicles checked	145
Recommendations or lessons learned	Don't roll sheets individually, roll sheets in sets of 20 for deploying, shipping, and storing. Flat carts worked best for equipment, using chalk on tires to mark when the came in worked well, some kind of litter grabber or stick with rubber tip helped a lot to move, remove, and place sheets, should've purchased knee pads, should've used a better degreaser like simple green, blue shop towels worked much better than single use regular towels for cleaning, more volunteers would've allowed us to get to the vehicles much faster (they all seemed to come at once)

Date of the event	04/11/2013
Start time	8:30 AM
End time	12:00 PM
Location Name	University of Washington Bothell
Street Address	18115 Campus Way NE
City/Town	Bothell, WA
ZIP	98011
Sponsoring jurisdiction/SOG	City of Bothell
Partner business/organization #1	Sno County ECOnet
Partner business/organization #2	H20 and Sustainability Class
Partner business/organization #3	Sustainability Club
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	200
How many volunteers attended?	8
How many paid staff attended?	2
LEAKING vehicles tested	18
LEAK-FREE vehicles tested	266
TOTAL number of vehicles checked	284
Recommendations or lessons learned	Getting onsite before students arrived and having more people to help deploy sheets worked really well. Using students for credit brought people in that weren't the "choir" but also brought volunteers that were less than enthusiastic to help. Working in a covered garage was essential for rain event (wouldn't have worked outside). The rain and wind the first day made it difficult to keep the sheets in place and made reading the sheets much more difficult (cars were dripping road grease so it was harder to determine a leak vs. dripping someone else's leak), getting under the car within 15 minutes was essential to detecting leaks (people were coming in so fast that we had a hard time the first day getting to the cars in the first 15 minutes, then when we tested we found some drips on the bottom of the sheets but none on top), doing events two days in a row was hard on the volunteers participating in both events (only two but noticed they were much slower), clean as you go for sheets was essential (one group piled them up to clean at the end and it made a huge mess which was harder to clean up).

Date of the event	**04/13/2013**
Start time	10:00 AM
End time	12:00 PM
Location Name	North Creek Forest
Street Address	112th Ave NE
City/Town	Bothell
ZIP	98011
Sponsoring jurisdiction/SOG	Bothell
Partner business/organization #1	Friends of North Creek Forest
Partner business/organization #2	ECO Net
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	10
How many volunteers attended?	1
How many paid staff attended?	0
LEAKING vehicles tested	1
LEAK-FREE vehicles tested	7
TOTAL number of vehicles checked	8

Recommendations or lessons learned

Date of the event	**04/22/2013**
Start time	8:00 AM
End time	10:00 AM
Location Name	City of Kent
Street Address	220 Fourth Avenue South
City/Town	Kent
ZIP	98032
Sponsoring jurisdiction/SOG	City of Kent
Partner business/organization #1	
Partner business/organization #2	
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	22
How many volunteers attended?	0
How many paid staff attended?	3
LEAKING vehicles tested	2
LEAK-FREE vehicles tested	20
TOTAL number of vehicles checked	22
Recommendations or lessons learned	The only feedback I have is positive. Everything went really smoothly. Of course, we had great weather and no wind which probably made it easier. However, It was clear that the program was really well thought out.

Date of the event	**04/23/2013**
Start time	6:30 AM
End time	10:00 AM
Location Name	Ecology NWRO
Street Address	3190 160th Avenue SE
City/Town	Bellevue
ZIP	98008
Sponsoring jurisdiction/SOG	
Partner business/organization #1	WA Department of Ecology
Partner business/organization #2	
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	40
How many volunteers attended?	
How many paid staff attended?	8
LEAKING vehicles tested	10
LEAK-FREE vehicles tested	90
TOTAL number of vehicles checked	100
Recommendations or lessons learned	send a reminder email to staff the day before (we tried an Outlook meeting reminder--was ok but email is better) positive attitude wins participants! buckets on handcarts work well sticky note with time of deployment is helpful (thanks for suggestion, Laurie!) have one volunteer act as 'runner' among teams leaks are easy to clean up on the spot--send a few rags out with each team

Date of the event	04/24/2013
Start time	8:00 AM
End time	3:00 PM
Location Name	Western Washington University
Street Address	C lots, Bill McDonald Pkwy, S College Dr, W College Way
City/Town	Bellingham, WA
ZIP	98225
Sponsoring jurisdiction/SOG	City of Bellingham
Partner business/organization #1	Western Washington University
Partner business/organization #2	
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	300
How many volunteers attended?	7
How many paid staff attended?	3
LEAKING vehicles tested	57
LEAK-FREE vehicles tested	248
TOTAL number of vehicles checked	305
Recommendations or lessons learned	Ours was an opt-in event and we handed out cards people left on their dashboard if they wanted to participate. The lots filled quickly in the morning. Given those variables, it would have helped to have double the volunteers in the first part of the day to hand out more opt-in cards. It was difficult to catch everyone. Our first drip sheets weren't put down until those cars had been parked for 45-60 minutes already so we left the sheets out for at least 60 minutes before collecting them. Our lot was too tight and bumpy to have any kind of rolling cart be helpful. Volunteers simply carried a 5 gallon bucket with 10-20 sheets at once - that worked well. In such a large lot, it was difficult to always get back to the sheets before students returned to their cars to leave. Around 50 sheets were left behind without those drivers receiving a report card. We noted any leaks detected or not (about 5 leaks were found on abandoned sheets). If we'd had double or triple the volunteers for the size of the lot (about 1,000 car capacity) I think we would have gotten more people to opt-in and gotten the drip sheets out sooner and collected in time. Despite these shortcomings, we all felt the event was still very successful and worthwhile! We would do this again!

Date of the event	**04/27/2013**
Start time	10:00 AM
End time	12:00 PM
Location Name	North Creek Forest
Street Address	112th Ave NE
City/Town	Bothell
ZIP	98011
Sponsoring jurisdiction/SOG	Bothell
Partner business/organization #1	Friends of North Creek Forest
Partner business/organization #2	ECO Net
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	10
How many volunteers attended?	1
How many paid staff attended?	0
LEAKING vehicles tested	1
LEAK-FREE vehicles tested	6
TOTAL number of vehicles checked	7
Recommendations or lessons learned	The green slats helped some, but things still moved when the wind gusted. Leaving the sheets flat until the morning of the event, then rolling them, prevented them from developing a memory, and allowed them to be quickly deployed. Total time involved in rolling for quick deployment or starting flat and sliding the sheet around is about the same. If a lot of cars per volunteer come in at once, pre-rolling is worthwhile. Otherwise, it makes for a shorter day, but more time on your knees, if you start from relatively flat sheets.

Date of the event	04/30/2013
Start time	7:00 AM
End time	9:45 AM
Location Name	Dept. of Ecology SW Regional Office
Street Address	300 Desmond Dr SE
City/Town	Lacey
ZIP	98503
Sponsoring jurisdiction/SOG	Thurston County SOG
Partner business/organization #1	Department of Ecolgy SW Regional Office
Partner business/organization #2	
Partner business/organization #3	
Partner business/organization #4	
Partner business/organization #5+	
How many test kits were used?	70+
How many volunteers attended?	4
How many paid staff attended?	7
LEAKING vehicles tested	15
LEAK-FREE vehicles tested	237
TOTAL number of vehicles checked	252
Recommendations or lessons learned	Knee pads and trash grabbers were quite helpful. We had cars arriving at various times. We wrote the time on the Report Card when the drip sheet was placed under the car so that we would know when it was OK to pull it. To make it a little more clear, we would choose to use a small sheet of colored paper to write the time on, that way there would be no confusion about whether or not the drip sheet had been removed later on. We also assigned someone to check the lot later in the afternoon after cars began leaving for the day to check for leftover over mats. We found three leftover over mats. We should have brought more drip sheets so that we could have placed the drip sheets sooner under the cars. Instead we had to go and pull some drip sheets before we could place some under new cars that had arrived. We transported the drip sheets in 5 gal. buckets. I think that using the taller boxes fixed to hand carts would have been an easier way to transport the supplies.

Date of the event	05/08/2013
Start time	5:45 AM
End time	12:00 PM
Location Name	Boeing Everett- Bomarc Building
Street Address	9819 Airport Road
City/Town	Everett
ZIP	98204
Sponsoring jurisdiction/SOG	Snohomish County SWM
Partner business/organization #1	The Boeing Company
Partner business/organization #2	City of Everett
Partner business/organization #3	King County
Partner business/organization #4	Futurewise
Partner business/organization #5+	WSU Extension
How many test kits were used?	700
How many volunteers attended?	8
How many paid staff attended?	14
LEAKING vehicles tested	59
LEAK-FREE vehicles tested	856
TOTAL number of vehicles checked	915
Recommendations or lessons learned	See the email I'm going to send you. My recommendations and lessons learned are approx. 3 pages long, and I figured I'd just write it in a Word doc and send it your way. Suzi, who attended the event, is currently reviewing.

May 8, 2013
Vehicle Leak Detection Blitz
Boeing-Everett Bomarc Building
Lessons Learned

Volunteers
Recruit volunteers early on, and be clear with them when you need them to show up. It may be tough to find a lot of volunteers willing to show up at 5:00am, so the ideal businesses to work with are the ones that have "normal" office hours.

Make sure you have enough able-bodied volunteers for your particular site. We tested 915 vehicles and had 22 people testing. This was an adequate number of volunteers. This is physical labor, as it requires at least one team member to do lots of bending over, getting down on one or two knees, and sometimes being on hands and knees, and getting up. We utilized our Washington Conservation Corps crew and teamed them up with volunteers who were mostly retired to test vehicles.

Anticipate that one team of two can test around 70-100 vehicles within a 4 hour period. This includes deploying and retrieving the drip sheets. It also includes time for short rest (and restroom) breaks.

Make sure to bring food and drinks for volunteers, as the work is labor-intensive.

Event Set Up
We scouted the site prior to the event to learn how cars tend to fill in the parking lot over the course of the morning. This is highly recommended, as it'll help you know your appropriate start-time, and help you plan how quickly you will need to place drip sheets underneath vehicles. There may be a significant difference in the number of volunteers needed and number of drip sheets depending on how quickly cars fill in. For slow and extended arrival times (e.g., vehicles slowly and consistently arrive between 5:00am and 8:00am), you will need fewer volunteers and drip sheets (drip sheets can be re-used at the same event) compared to parking lots that fill up within a half-hour. (if you have a contact at the site, you can probably drop of info such as banners and a-frame boards that the site contact can set up two or three days prior.)

For large events with multiple volunteers that are unfamiliar with how to test for vehicles, it's very important to make sure the "home base" is set up and well-organized before volunteers arrive. This includes set up of all food, and having the materials organized in a way that's easy to access. This allows you to fluidly give the orientation and keeps confusion down to a minimum.

For events at businesses where vehicles start arriving at a particular time, plan for at least one hour to set up and give the orientation prior to sending teams out to place drip sheets underneath the cars. It's important to place the sheets underneath the vehicles within 5 minutes or less after the vehicle stops. It's wise to anticipate that some volunteers will arrive late, and so plan to provide more than one orientation for volunteers. Don't wait for all volunteers to arrive before starting the orientation if it will cause teams to place drip sheets after the vehicles have been stopped for more than 5 minutes.

Orientation
Creating a short orientation video on the basics of how to test for vehicles, along with various approaches for moving drip sheets around and placing and retrieving the drip sheets would be very

useful. We could send volunteers the link to the video prior to the event, which would help speed the orientation along.

I used an "orientation outline," which was essential due to the complicated "rules" that Boeing required that we follow at the site. It helped ensure I covered everything I needed to cover.

As part of the orientation, in addition to the "thank you for volunteering" confirmation email, tell volunteers that it's important that they help take things down after the vehicles are all tested. By getting their help, it can save you hours of work rolling sheets and putting things away.

Volunteers also need to know that the event is solely for awareness-building, and that the employer/site manager is in support. These events are not steps toward enforcement action for the car owner or for the site manager.

We chose not to individually roll the drip sheets prior to the event. This worked well for the coordinator (saved hours of time), but was a slight annoyance to those deploying in the field. This approach minimizes the tendency of the drip sheets to gain "memory" and curl in on itself after deployed underneath a car. However, some coordinators may choose to pre-roll sheets to make it more efficient for volunteers in the field, which isn't as much of a problem if only testing a couple hundred vehicles, and with a couple volunteers, pre-rolling sheets won't take much time. If the coordinator wants to pre-roll sheets, make sure that the sheet is rolled up in a manner that will enable the sheet to have the staples face-down and memory pushing toward the ground when unrolled underneath a vehicle.

Parking Lot Configuration- if possible, choose a large parking lot with one level, not multiple adjacent parking lots, or a parking garage with multiple levels (unless you have enough dedicated volunteers for each lot/level). Complex parking arrangements add complexity to planning and the number of volunteers needed. It's definitely possible to manage several lots (we tested vehicles in three adjacent lots that surrounded a building on all sides), but it caused confusion. Make sure each lot has enough drip sheets to deploy for their lot, as one team took more drip sheets than they needed and it resulted in mild panic among another team that didn't have enough drip sheets to test their cars.

Moving Drip Sheets

Flat Carts-The most efficient method for moving drip sheets is to use a large flat cart and place a pile of the drip sheets, unrolled, on top of the cart. This allows for easy deploying and retrieving.

Hand Carts-Place one or two boxes on the hand cart and place a bungee cord around the box to secure it to the cart. Then place the drip sheets, up to 20 rolled together in one roll, or rolled individually and held by rubber bands in the box(es). It's important to have secure boxes that have enough rigidity to hold the drip sheets securely in place. Some of the boxes at our event had been used at previous events and were pretty beaten up. Their ability to hold drip sheets was limited. Using deep, 5-gal buckets and securing them with a bungee cord to a hand cart also works, but it's important to make sure your bucket is deep enough.

Gator- We had a gator (off road vehicle with a flatbed) available to move sheets around quickly from one lot to the other, but we didn't end up using it because it wasn't necessary. We did drive from lot-to-lot with a van with drip sheets, which was just as easy (we tested vehicles in three adjacent lots).

Drip Sheet Placement
If the drip sheet has "memory," unroll the sheet in the opposite direction of the memory so the sheet's tension is toward the ground. This keeps the sheet from rolling in on itself.

People have different preferences for how to deploy the drip sheets:

1) Roll up individually and unroll it underneath the vehicle
2) Lay the drip sheet flat and slide it underneath the vehicle. This approach works well if the ground is dry, but would not likely work as well when wet.

If the drip sheet won't fully unroll underneath the vehicle, you can use a trash grabber or a PVC pipe with a rubber stopper on one end to push the sheet down and move it around underneath the vehicle. This strategy also works for vehicles that are parked close to the curb, and for "low-riding" vehicles by pushing the drip sheet in place from the side of the vehicle.

Wind- do not bother placing drip sheets underneath vehicles if it's even moderately breezy. The sheets will blow away. The green strips work somewhat well to keep the sheet down when there's a slight breezes, but is insufficient for moderate-to-strong winds.

Rain-it is possible to test vehicles in the rain, although it will add several layers of complexity. However, if you are relying on volunteers, it's recommended that you cancel the event, as volunteers won't want to work in the rain (and they may leave on you even if you ask them to stay). Use paid crews if you plan to test vehicles in the rain.

If raining, take down will require another pop-up tent and more tables. One team will dry drip sheets, making sure they're fully dry. Then a pile of dry sheets will be rolled.

Green Strips
this design is cumbersome and frustrating for volunteers if they need to insert the green strips in the field. Suggestions included placing the green strips in prior to the event, but this may be unnecessary. Finding a better drip sheet prototype, where the drip sheets can easily slide in and out, would be a significant improvement. Unfortunately, the plastic we used does not heat-seal, which is why we stapled them. Short-term fix- we should place more staples in the drip sheet to make it easier to slide the green strips in and out, now that we know that most leaks are minor and won't cause issues with keeping the drip sheets clean. Additionally, stapling one end of the "hole" where the green strips are placed would help ensure that the green strip doesn't slip out the other end. Caution would need to be used here, as each drip sheet would need to have the staple on the exact same side to minimize confusion and frustration when trying to insert the green strip.

Retrieving Drip Sheets
Kneed pads are essential for all volunteers that are retrieving drip sheets.

Work in teams to retrieve drip sheets:

- One person to record data (volunteer tracking sheet and the report card), and to place report cards underneath windshield wipers
- One or two people to retrieve drip sheets (and clean them if necessary)

Teams of 3 are more efficient than teams of two, assuming the data recorder can keep up with those retrieving the drip sheets.

Depending on people's ability to bend down, there are different approaches to retrieve drip sheets:

1) Bending over, grabbing the drip sheet with your hands and pulling the drip sheet out. Knee pads are essential for this.
2) Grabbing the drip sheet from a semi-standing position with a trash grabber and pulling the drip sheet out. In windy weather, the drip sheets can blow around, and so even people using the trash grabbers should anticipate kneeling on the ground to retrieve the drip sheets.

Most vehicle leaks/drips are small and can be wiped up immediately with a rag. Because the plastic sheets do not absorb the oil, very few drips will require the use of a degreaser or cleaning agent.

Do not collect all the dirty sheets and transport them for cleaning later. This is inefficient and causes a mess. Just clean the sheets as you pull them out from underneath the vehicle.

If using a hand cart and box/bucket to move drip sheets around, it may be easier to individually roll the drip sheets prior to placing back into the box. Rubber bands may be useful for keeping the sheets rolled together, but will depend on how many drip sheets are already in the box. If already fairly full, rubber bands aren't needed.

Report Card- prior to the event, and prior to printing, add the coordinator's name and contact information to the report card.

Take Down and Clean Up

Take all the equipment and materials to the "base camp" and use a series of tables to create enough of a platform to line up two or three sheets side-by-side on the tables. You can also use the ground, but that's not as easy, and harder to keep the sheets clean.

Use your volunteers to clean and dry drip sheets, and as you go, pile approximately 20 sheets in a straight-and-even stack of twenty sheets. Then roll the stack of sheets as tight as possible. . Have people work together, and take down goes fairly quickly.

It's important to make sure the drip sheets are dry before rolling because:

1) They could get mold/mildew between the sheets if they sit over time
2) When unrolled later on, a wet sheet is much harder to deploy if you're trying to slide it on the ground.

Debrief

We had a debrief session at the tail end of our event after everything was put in our vans. The debrief session helped volunteers contribute their thoughts about how to make improvements and helped project partners strengthen their commitment to participating at future events. Our debrief session lasted almost a half hour, but could be done in 15 minutes or less. Some coordinators purchased chocolate fish as a "thank you" gift for volunteers at the end of the event. This is a great idea. If interested, you can purchase chocolate fish at Gosanko Chocolate, located in Auburn. They are really fast, and fingerlings are about $1.25 each. http://www.gosankochocolate.com/Foil_Fish.asp

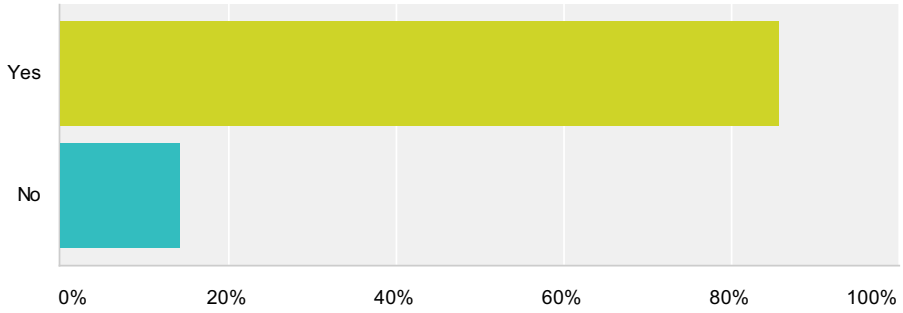
Q1 What jurisdiction are you responding for?

Answered: 21 Skipped: 0

#	Responses	Date
1	Renton	6/11/2013 8:36 PM
2	City of Seattle	6/3/2013 3:31 PM
3	City of Monroe	5/30/2013 12:14 PM
4	City of Kirkland	5/30/2013 9:59 AM
5	Newcastle	5/29/2013 2:49 PM
6	City of Auburn	5/29/2013 2:45 PM
7	Snohomish County	5/29/2013 2:44 PM
8	City of Tacoma	5/28/2013 1:21 PM
9	City of Bellingham	5/28/2013 12:47 PM
10	City of Bothell	5/28/2013 8:41 AM
11	Ecology, Lacey	5/28/2013 8:28 AM
12	Pierce	5/24/2013 3:46 PM
13	King County	5/23/2013 11:58 AM
14	Department of Ecology headquarters	5/23/2013 11:14 AM
15	SeaTac	5/22/2013 4:25 PM
16	Tumwater	5/22/2013 3:39 PM
17	Bellevue	5/22/2013 3:29 PM
18	City of Olympia	5/22/2013 2:59 PM
19	City of Mill Creek	5/22/2013 2:35 PM
20	Sammamish	5/22/2013 1:50 PM
21	Ecology	5/22/2013 1:48 PM

Q2 Did your jurisdiction promote or participate in the Don’t Drip & Drive campaign?

Answered: 21 Skipped: 0



Answer Choices	Responses	
Yes	**85.71%**	18
No	**14.29%**	3
Total		21

Q3 What prevented your jurisdiction from participating in the Don't Drip & Drive campaign? Select all that apply.

Answered: 3 Skipped: 18

Answer Choices	Responses	
We are implementing our own campaign on auto leaks.	**0%**	0
We have been focusing our outreach efforts on other stormwater topics this spring.	**0%**	0
We are not implementing any stormwater campaigns this year.	**0%**	0
We did not have budget available to participate.	**0%**	0
Our staff did not have time to participate.	**33.33%**	1
We weren't aware of the campaign.	**0%**	0
Other (please explain) **Responses**	**66.67%**	2
Total Respondents: 3		

#	Other (please explain)	Date
1	We had no participating businesses.	5/22/2013 4:26 PM
2	I tried to participate and wanted to, but the time frame for the vehicle testing was too small of a window	5/22/2013 1:50 PM

Q4 On a scale from 1 to 5, rate the extent to which you felt the messages used in the campaign promotional materials were:

Answered: 18 Skipped: 3

Answer Choices	Responses	
1 - Not at all compelling for residents in my jurisdiction	**0%**	0
2	**0%**	0
3	**38.89%**	7
4	**55.56%**	10
5 - Very compelling for residents in my jurisdiction	**5.56%**	1
Total		18

Q5 On a scale from 1 to 5, please rate the usefulness of campaign materials provided to your jurisdiction.

Answered: 18 Skipped: 3

	Not at all useful1	2	3	4	Very useful5	Don't know or didn't use	Total
Vehicle Leak Blitz event instructions and materials	0% 0	0% 0	11.11% 2	27.78% 5	44.44% 8	16.67% 3	18
Sample press release	0% 0	11.11% 2	16.67% 3	11.11% 2	38.89% 7	22.22% 4	18
Sample text for newsletters	0% 0	5.56% 1	11.11% 2	16.67% 3	33.33% 6	33.33% 6	18
Sample Facebook/Twitter posts	0% 0	0% 0	11.76% 2	17.65% 3	11.76% 2	58.82% 10	17
Talking points	0% 0	0% 0	22.22% 4	16.67% 3	55.56% 10	5.56% 1	18
Poster	5.56% 1	0% 0	11.11% 2	27.78% 5	22.22% 4	33.33% 6	18
Sample utility bill inserts	0% 0	0% 0	5.56% 1	5.56% 1	22.22% 4	66.67% 12	18
Logos and graphics	0% 0	0% 0	0% 0	5.56% 1	88.89% 16	5.56% 1	18
Toolkit website with downloadable materials	0% 0	5.56% 1	5.56% 1	27.78% 5	61.11% 11	0% 0	18

Q6 How can we improve the campaign materials?

Answered: 8 Skipped: 13

#	Responses	Date
1	Thought they were very good and the process of developing was fun!	6/3/2013 3:32 PM
2	Continue to refine messages and materials. The Vehicle Leak Blitz checklist needs to be updated/improved, and we also need to include a "volunteer orientation" document- ask me for it (Stef)	5/29/2013 2:46 PM
3	Native or editable files are always nice in case there are any local specifics that need to be added or changed.	5/28/2013 12:48 PM
4	The materials were great but they came way too late for me to use most of them. If we do this next year I will be able to help promote a lot more simply by having the materials on time.	5/28/2013 8:43 AM
5	Thought they were great!	5/28/2013 8:29 AM
6	Did not like the poster/flyer. Loved the DD&D logo. Would like to see future poster/flyer built around that logo. Press release was too wordy.	5/22/2013 3:47 PM
7	Toolkit came at the "11th" hour. Ideally, it would have been ready two months earlier. i know this was the rush, pilot year - now that the materials are created, future years won't have this problem. Also, the toolkit was too large in part because of a folder full of mostly bad photos from the kick off event. Once, i deleted that folder, the tool kit was much smaller.	5/22/2013 2:59 PM
8	Toolkit with instruction and press materials came out too close to start of event date so the City of Mill Creek was unable to use it. We needed the materials at least a month before in order to get it in our recreation magazine.	5/22/2013 2:37 PM

Q7 On a scale from 1 to 5, would you rate the effectiveness of your jurisdiction's use of Facebook, Twitter, and other social media in your promotion of the Don't Drip & Drive campaign as:

Answered: 17 Skipped: 4

Answer Choices	Responses	
1 - Very ineffective	**0%**	0
2	**5.88%**	1
3	**35.29%**	6
4	**5.88%**	1
5 - Very effective	**0%**	0
NA - My jurisdiction didn't use social media	**52.94%**	9
Total		17

Q8 What are your recommendations for using social media effectively in a future vehicle leaks campaign?

Answered: 11 Skipped: 10

#	Responses	Date
1	I think there were some good social media efforts but needs to be a bit more catchy to fit in that format. Maybe better email and website based for us.	6/3/2013 3:33 PM
2	Getting an earlier start on those we can use but my jurisdiction doesn't allow the use of Facebook.	5/30/2013 1:27 PM
3	Encourage people to send out once a week, with new and compelling information each time.	5/29/2013 2:47 PM
4	Due to our limited access to social media due to city policy (because of public disclosure laws) we asked our partner organizations (WWU, RE Sources) to post promotional materials on social media sites on behalf of the event. We could have started this earlier.	5/28/2013 12:50 PM
5	We should offer incentives for a response, ask questions instead of just pushing out information, offer "insider" info just to social media folks to encourage participation	5/28/2013 8:45 AM
6	We would have used them if we were going outside the building.	5/28/2013 8:30 AM
7	Depends on how effective our overall social media use is. Pierce County does not have a great social media presence, so it was less affective than other organizations that have a greater presence would have been.	5/24/2013 3:48 PM
8	We use an interjurisdictional Facebook page, but it is not managed by my jurisdiction.	5/22/2013 3:49 PM
9	i can't answer this question. we put it on Stream Team's facebook page, but i have no idea how effective it was.	5/22/2013 2:59 PM
10	Use Puget Sound Starts Here campaign on Facebook more since many small jurisdictions don't have the capability to use social media yet.	5/22/2013 2:40 PM
11	time it carefully so that the reminder comes at an opportune moment (hey, that sounds like a good idea)	5/22/2013 1:50 PM

Q9 Did your jurisdiction help recruit automotive shops to participate in the campaign?

Answered: 18 Skipped: 3

Answer Choices	Responses	
Yes	**55.56%**	10
No	**44.44%**	8
I'm not sure	**0%**	0
Total		18

Q10 Did your jurisdiction coordinate any leak testing events (aka Vehicle Leak Blitz)?

Answered: 18 Skipped: 3

Answer Choices	Responses	
Yes	**61.11%**	11
No	**38.89%**	7
Total		18

Q11 What prevented your jurisdiction from coordinating a leak testing event? Select all that apply.

Answered: 11 Skipped: 10

Answer Choices	Responses	
We did not have budget available.	**18.18%**	2
We did not have staff available.	**54.55%**	6
We could not find an appropriate site.	**9.09%**	1
We could not find an appropriate partner (such as a business or civic organization).	**9.09%**	1
We could not find enough volunteers.	**9.09%**	1
It was too difficult to obtain leak detection kits.	**0%**	0
We could not obtain final approval from all parties in time to hold our event.	**0%**	0
My jurisdiction was not interested in holding an event.	**18.18%**	2
I participated in an event that was coordinated by another jurisdiction	**9.09%**	1
Other (please explain) **Responses**	**63.64%**	7
Total Respondents: 11		

#	Other (please explain)	Date
1	It might have gotten more traction if we had members of public works management in the room during the leak testing presentation. Public education staff were unable to convince management that it wouldn't anger car owners to receive the report card.	5/28/2013 1:26 PM
2	We had a great leak testing event which was co-cordinated and implemented by the Thurston County group.	5/28/2013 8:31 AM
3	Bad timing - we will try to use the model for leak testing events this summer when our workplan opens up a little and we can count on good weather for outdoor events.	5/24/2013 3:49 PM
4	we did an event at Ecology in coordination with Thurston Co Stream Team	5/23/2013 11:17 AM
5	I supplied materials for an event coordinated by another jurisdiction.	5/22/2013 3:50 PM
6	On Q9 I said I did an event but the survey still asked me this question which doesn't apply to me.	5/22/2013 3:32 PM
7	weather: the event i coordinated was called off because of rain and wind.	5/22/2013 3:00 PM

Q12 What parts of the campaign do you think worked especially well?

Answered: 15 Skipped: 6

#	Responses	Date
1	Radio ads, leaks blitzes, workshops in 4 locations, leak kits, promotion materials especially the website and videos.	6/3/2013 3:40 PM
2	I think the message (Don't Drip and Drive) and efforts by the county were good.	5/30/2013 1:29 PM
3	Boeing employee event	5/30/2013 10:35 AM
4	I think the vehicle leak blitz events worked well, except we have no way of knowing if/how people who had leaks went and got them fixed. Improving this portion of the project is really key, and maybe it'd be something like "get a free bowl of chowder at Ivar's for fixing your leak." Sounds funny, but it also may work to at least create an index moving forward to gauge progress.	5/29/2013 2:57 PM
5	Logo and tagline were catchy and fun.	5/28/2013 1:27 PM
6	Having shared resources - digital files and drip sheets - was a huge help. We wouldn't have done this without the regional effort.	5/28/2013 12:53 PM
7	Liked the volunteer testing, liked the workshops in conjunction with the campaign, liked sending people to an Association over a chain or specific type of shop	5/28/2013 8:49 AM
8	The promo and implementation materials were awesome...right along with the coordinators and volunteers.	5/28/2013 8:32 AM
9	Leak testing blitzes and working with ASA, who was a great advocate with their shops.	5/24/2013 3:49 PM
10	Great radio ad, great team work and cooperation between jurisdictions	5/23/2013 12:02 PM
11	DD&D logo. Participating shops good in quality and number. Radio spots. Support materials appreciated (but need some tweaking).	5/22/2013 3:55 PM
12	I appreciate all of the material and information that was available.	5/22/2013 3:33 PM
13	i liked the regional collaboration. Kudos to STORM group and the Leak Committee for creating a steering/advisory(?) committee.	5/22/2013 3:00 PM
14	I liked that we found Steve Pool to do a radio ad. I heard from friends that they heard the message.	5/22/2013 2:43 PM
15	discount coupon, making it optional, quick, visual proof	5/22/2013 1:52 PM

Q13 How could the campaign have been improved?

Answered: 14 Skipped: 7

#	Responses	Date
1	More catchy/provocative images and taglines. But can we do this as government agencies? We had a lot of discussion of avoiding a fear based campaign and environmental issues but this made it very hard to push the graphics and talking points. Also the kick-off press event getting more coverage. Maybe more events involving the general public. The ASA relationship was very nice but also led to certain outcomes that took the campaign in a certain direction.	6/3/2013 3:40 PM
2	Personally I could have started promoting it earlier in my city.	5/30/2013 1:29 PM
3	Even though we had 84 mechanics, which is good, we learned from our focus groups that a 10% discount is very unlikely to persuade people to go to a new mechanic. The more mechanics, the merrier. Try getting ASA and AAA next time around, as AAA has better brand recognition, and would cover more mechanics. Also, having one website for all aspects of the campaign would be nice, as well as a searchable map to find a mechanic (not just the text search field).	5/29/2013 2:57 PM
4	More prep time for muni's and not scheduled right before PSSH month.	5/28/2013 1:27 PM
5	While I think it made sense to have the auto shops mainly communicating with ASA about the program, I felt like I wasn't sure what was going on with them as much as I should have been. Our Local Source Control staff helped to contact shops originally to follow up on ASA's original outreach. I would have liked to know more quickly from ASA who was signing up and who we could have contacted again before the campaign started.	5/28/2013 12:53 PM
6	Would really like to work with oil change companies (the people are already there) and have an inspector under the vehicle to test and report on leaks.	5/28/2013 8:49 AM
7	Tracking the drip pads that were placed and when and whether they had been checked needed some work.	5/28/2013 8:32 AM
8	Longer timeline for implementation (more lead time from DOE on grants)	5/24/2013 3:49 PM
9	More involvement by more jurisdictions. More intensive ad runs. more events	5/23/2013 12:02 PM
10	Having the materials a little earlier would've helped. (Shouldn't be a problem next time.) Change the poster/flyer to focus on DD&D logo (drop the old car on Puget Sound photo).	5/22/2013 3:55 PM
11	I wish everything would have come out earlier so there would have been more time to plan events.	5/22/2013 3:33 PM
12	ASA was a good partner for this first year, but future years need to include AAA with a guarantee that they put something in their magazine and do other publicity through AAA.	5/22/2013 3:00 PM
13	The campaign needs to run longer so that we can advertise longer and at summer festivals.	5/22/2013 2:43 PM
14	instructions (and more detailed suggestions re: kit contents) for volunteers	5/22/2013 1:52 PM

Q14 Did you participate in the Don’t Drip & Drive campaign Advisory Commitee?

Answered: 18 Skipped: 3

Answer Choices	Responses	
Yes	**72.22%**	13
No	**27.78%**	5
Total		18

Q15 What parts of the campaign planning do you think worked especially well?

Answered: 11 Skipped: 10

#	Responses	Date
1	Good format, good agenda and note taking. Very good discussions that led to clear goals and talking points.	6/3/2013 3:42 PM
2	I liked the Don't Drip and Drive Training ie campaign toolkit walk-through, Top 10 Steps to Hosting a Don't Drip and Drive Event, and the kit demo.	5/30/2013 1:35 PM
3	Support provided by the consultants	5/30/2013 10:36 AM
4	I really appreciated all the efforts that were put into background research. It was very thorough and was a huge benefit to the campaign.	5/30/2013 10:03 AM
5	I'm biased, but I think we did a good job engaging STORM members on this campaign, and we listened to their suggestions and incorporated them as much as we could. I'm curious to hear what others think! I also think we did a good job at only meeting when there was a reason to meet, and we made a point to use their time well. Each meeting had specific goals and expected outcomes that required the Advisory Committee's input. I also think our structure of having a Steering Committee and an Advisory Committee worked well.	5/29/2013 3:00 PM
6	I appreciated being able to be involved remotely via phone.	5/28/2013 12:54 PM
7	Beginning planning was good and people felt a part of the process	5/28/2013 8:50 AM
8	scheduling was very good. Covering all bases, good input	5/23/2013 12:03 PM
9	Use of the Nancy Lee method. Good communication throughout. Quality staff. Thank you!	5/22/2013 3:59 PM
10	regional collaboration. thanks to Doug and Steph.	5/22/2013 3:00 PM
11	The campaign coordinators did a great job researching the project idea. That helped the program be successful.	5/22/2013 2:46 PM

Q16 How could the campaign planning have been improved?

Answered: 8 Skipped: 13

#	Responses	Date
1	I would like to have seen more 'press' on this. Did we get any articles in the Everett Herald or Seattle area?	5/30/2013 1:35 PM
2	We weren't as successful with engaging people on the advisory committee outside of the meetings to perform specific tasks, especially if they had a particular area of expertise that would have been useful to tap into. Mostly this was due to time limitations.	5/29/2013 3:00 PM
3	I only attended one meeting, so I'm not sure I could say. It seemed to work well to me.	5/28/2013 12:54 PM
4	The middle to before the launch of materials was a bit chaotic and hard to understand where things were and were we are going.	5/28/2013 8:50 AM
5	More jurisdictions participating would have been better	5/23/2013 12:03 PM
6	Being in South Sound, it's always a challenge for us to get to the meetings. Appreciate having some in Federal Way. Thank you!	5/22/2013 3:59 PM
7	i'm trying to remember: i recall being surprised that between the spring/early summer meeting and fall meeting - i thought more would have been worked out. And i knew at the latter meeting, that things were going to be rushed. i was not behind the scenes, so do not know all the problems encountered to find a partnering automotive group, etc...	5/22/2013 3:00 PM
8	No comments.	5/22/2013 2:46 PM

Q17 Please provide a ball-park estimate of the budget and number of staff hours your jurisdiction spent implementing the Don't Drip & Drive campaign.

Answered: 16 Skipped: 5

Answer Choices		Responses	
Budget ($)	**Responses**	**93.75%**	15
Staff hours	**Responses**	**100%**	16
Total Respondents: 16			

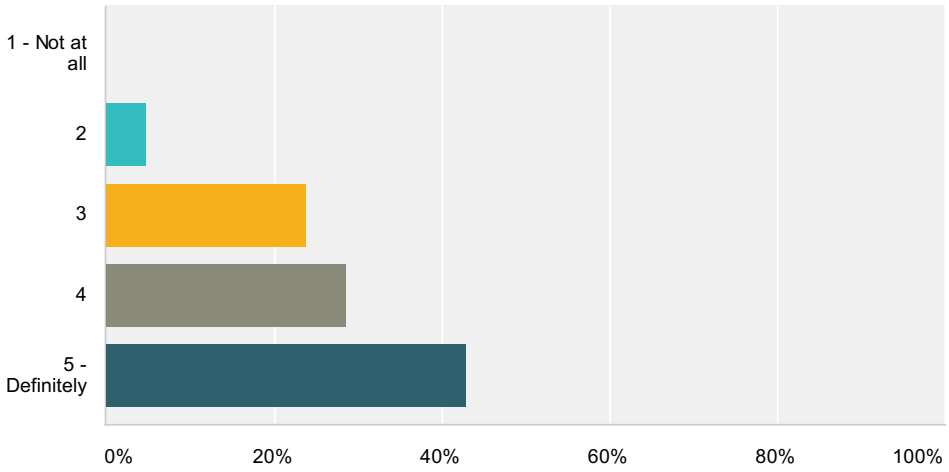
#	Budget ($)	Date
1	$25,000	6/3/2013 3:43 PM
2	0	5/30/2013 1:36 PM
3	2,000	5/30/2013 10:37 AM
4	?	5/30/2013 10:04 AM
5	50,000	5/29/2013 3:01 PM
6	500	5/29/2013 2:51 PM
7	NA	5/28/2013 1:28 PM
8	600	5/28/2013 12:57 PM
9	500	5/28/2013 8:51 AM
10	400	5/24/2013 3:50 PM
11	$300,000	5/23/2013 12:04 PM
12	$600	5/22/2013 4:02 PM
13	4000	5/22/2013 3:34 PM
14	0	5/22/2013 3:00 PM
15	100	5/22/2013 2:49 PM

#	Staff hours	Date
1	200	6/3/2013 3:43 PM
2	12	5/30/2013 1:36 PM
3	40	5/30/2013 10:37 AM
4	10	5/30/2013 10:04 AM
5	1000	5/29/2013 3:01 PM
6	10	5/29/2013 2:51 PM
7	10	5/28/2013 1:28 PM
8	50	5/28/2013 12:57 PM
9	100+	5/28/2013 8:51 AM
10	10	5/24/2013 3:50 PM
11	600	5/23/2013 12:04 PM
12	40	5/22/2013 4:02 PM
13	25	5/22/2013 3:34 PM

#	Staff hours	Date
14	40	5/22/2013 3:00 PM
15	2	5/22/2013 2:49 PM
16	30	5/22/2013 1:52 PM

Q18 To what extent would your jurisdiction want to participate in a future second phase of the Don't Drip & Drive campaign?

Answered: 21 Skipped: 0



Answer Choices	Responses	
1 - Not at all	**0%**	0
2	**4.76%**	1
3	**23.81%**	5
4	**28.57%**	6
5 - Definitely	**42.86%**	9
Total		21

Q19 Thank you for your time. Do you have anything else you'd like to share about the campaign?

Answered: 11 Skipped: 10

#	Responses	Date
1	great job to the entire team and especially Doug, Stef and Justine.	6/3/2013 3:44 PM
2	I believe regionally this was an excellent intro. Drivers need to be made aware of why they need to get their leaks fixed. I really liked what was done at Boeing and believe more events like that are beneficial (combined with press). Thank you.	5/30/2013 1:40 PM
3	Thanks, Jessica, for your hard work behind the scenes.	5/29/2013 3:02 PM
4	Wish we could have done more, will try for another time to plan an event or partner with another jurisdiction.	5/29/2013 2:52 PM
5	Would like to see more ideas around how to get the logo out there. The logo with tagline seems like a piece that could be pretty effective for give-aways like funnels to replace oil in your car, bumper stickers, or other. Also, might like to help promote some more "get to know your car" type workshops in the south end.	5/28/2013 1:32 PM
6	Great job Doug and Stef! You guys have done so much with so little with a great resulting program that should make a great tool for all of our partners!	5/24/2013 3:50 PM
7	Great Pilot, great partners	5/23/2013 12:05 PM
8	Thank you so much! We'd been wanting to do such a campaign, and you gave us the tools to make it happen!	5/22/2013 4:04 PM
9	i didn't put in a budget amount, because i don't know. i thought i bought a web ad in The Olympian, but i never saw it and i think it didn't get processed. The ad was animated and very cute. We put articles in the utility insert and Stream Team newsletter, but didn't think i could get a dollar amount for these two things.	5/22/2013 3:04 PM
10	no. Thank You for all your work and effort!!!	5/22/2013 2:50 PM
11	I think it was a great campaign and well done to the folks that worked so hard on it, I just wish it was not over at the end of April. With annual reporting taking up a good chunk of my first quarter it was hard to get an event organized, being a one woman show.	5/22/2013 1:52 PM

Don’t Drip & Drive. Fix That Leak!

ASA Participant Packet

Dear ASA Member,

Thank you for signing up as a participating repair shop for the *Don’t Drip & Drive, Fix That Leak!* campaign.

Throughout the month of April 2013, Puget Sound residents will be encouraged to visit participating Automotive Service Association (ASA) of Washington repair shops to get a free vehicle leak inspection. If a leak is detected and repairs are needed, a coupon for a 10 percent discount (up to $50) will be provided. The campaign will be supported by a radio campaign running for four weeks on KJR-FM, Warm 106.9, KZOK-FM, KMPS-FM and KOMO-AM/FM, as well as through point-of-purchase signage and public relations efforts. Advertising will launch April 1 and will run until April 30, 2013.

As a participating shop, this packet will provide you with everything that you need to promote this campaign to your customers. Inside this envelope you will find:

- **Poster** – please display this poster in your window in a prominent location. Posters must be displayed from April 1 – 30, 2013.
- **Window Cling** – this window cling identifies you as a participating shop. Please display in your front window. Window clings must be displayed from April 1 – 30, 2013.
- **Counter Card Display** – the counter card display can be set up at your register or other tabletop in your reception area. Display must be up from April 1 – April 30, 2013.
- **Coupons** – please give these coupons to any customers who have a leak. They can bring back this coupon any time before June 30, 2013 to get 10% off the leak repair. It is up to participating shops if they want to honor this coupon after the expiration date.
- **Talking Points** – these talking points give some background on the campaign for your reference.
- **Sample Newsletter Copy** – please feel free to utilize this copy in your newsletters to reach out to your customers! Contact Katherine Diers at kdiers@prrbiz.com if you need logos or other images for your outreach materials.
- **Sample Facebook/Twitter posts** – if you use social media to reach out to your customers, please consider using these Facebook and Twitter posts during April.
- **Tracking Forms & Return Envelopes** – finally, enclosed you will find a set of tracking forms and a return envelopes. As a participating shop, you are REQUIRED to track all the leak checks and repairs that you conduct from April 1 – 30, 2013. Instructions are included with the tracking forms packet.

For more information on the campaign or questions on the enclosed materials, please contact Katherine Diers at kdiers@prrbiz.com or (206) 462-6391.

Thanks again for participating in this important campaign! We are glad to have you on board.

Talking Points

Driver Benefits to Vehicle Leak Testing

- Don't get stranded! A leaky car isn't a reliable car.
    - Whether you're on your daily commute or road tripping on a vacation, a little car maintenance could save you a lot of hassle - and money.
- Extend the life of your car. Finding and fixing vehicle leaks is a great way to keep your car on the road longer, so you have more years before you need to buy a new one.

Environmental Benefits to Testing

- Protect Puget Sound. Not only does fixing vehicle leaks help families care for their cars, over the long run, it also is good for our environment.
    - Here in Washington state, we're releasing 7 million quarts of motor oil into the Puget Sound basin annually. Think about it, 7 million quarts of oil wasted each year!
    - Given that the average quart of motor oil costs $5-10 dollars, we estimate that consumers are pouring $53,615,500 down the drain each year. You could do so many more things with your hard-earned money than leak oil into the Puget Sound basin.

Program Offer

- Act now! Take advantage of a free and easy inspection, at a value of up to $80, from a participating Automotive Service Association (ASA) member repair shop in April.
- If the technician does discover a problem, you'll receive a coupon for discounted service at 10% off, for up to $50 in repairs. That's a total savings up to $130.
    - You can take the coupon with you to use at any participating repair shop or choose to wait to have your leak fixed. There is no obligation!
- Don't Drip & Drive. Fix That Leak! For more information, visit our website at www.fixcarleaks.org.

Program Partnerships

- We're partnering with the Automotive Service Association (ASA) because ASA ensures that their technicians meet their high standards for quality of service.
    - ASA's visual leak inspection involves checking under the hood and under the carriage for vehicle leaks, including hoisting it to inspect the underside. No dye testing or component removal is included.
    - This is available all around the region.
    - Approved quote: Jeff Lovell, President of ASA-WA says, "The Automotive Service Association of Washington is extremely proud to partner on this initiative. We know that vehicle fluids like motor oil belong in your car, not the Puget Sound. As an association, we're comprised of qualified, independent, local automotive technicians who want to help drivers maintain their cars and trucks. A little leak, left unattended, can really cause havoc over time. That's why more than 60 of our local repair shops

have signed on to provide free visual leak inspections in April, and are standing by to help fix that leak."

Who is STORM?

- The Stormwater Outreach for Regional Municipalities (STORM) consortium has taken the lead on communicating 'fixing vehicle leaks' as a best practice, via a targeted regional education and behavior change campaign program called "Don't Drip & Drive."
    - This is in response to the fact that, every year, hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers, streams and the Puget Sound; most of this toxic pollution comes from small oil motor drips from our cars and trucks.
    - The STORM consortium includes members from 80+ local jurisdictions, with supporting efforts by another 400 agencies and organizations through the ECO Net network.
- "Don't Drip & Drive" is made possible by a grant from the Washington Department of Ecology.
    - King County was awarded the grant on behalf of the STORM consortium.
    - The grant is leveraged with another Ecology grant awarded to Seattle Public Utilities, with funds from the U.S. Environmental Protection Agency (EPA).
- The overall goal of the program is to build awareness and educate people throughout the Puget Sound region that it is important to check for vehicle leaks and to inspect their vehicles regularly, whether on their own or through a repair shop.

Outreach Templates

Sample Newsletter/Email/Website Copy

Don't Drip & Drive. Fix That Leak!
This April, improve your cars safety and reliability by checking for vehicle leaks. Every drip counts—even a single drop of oil on your driveway can have a negative impact on the life of your car. Plus vehicle leaks are bad for our environment—and every year hundreds of tons of oil and other petroleum-related products make their way to our lakes, rivers, streams, and the Puget Sound. That's why [ENTER BUSINESS NAME] is participating alongside more than 40 local jurisdictions, non-profits and businesses to promote the *Don't Drip & Drive. Fix That Leak!* campaign this spring.

This April, visit [ENTER BUSINESS NAME] and get a free visual oil leak check. And if repairs are needed, it's 10 percent off (up to $50). That's total savings up to $130!

The more you wait the more you're losing. Take advantage of this limited offer! Visit [ENTER BUSINESS WEBSITE] for more information or check out www.fixcarleaks.org.

Social Media: Facebook and Twitter Posts

All participating businesses are encouraged to utilize their Facebook and/or Twitter pages to help spread the word about the *Don't Drip & Drive. Fix That Leak!* campaign. Sample posts are below.

Sample Facebook Posts

- *Don't Drip & Drive. Fix That Leak!* Visit [business name] this April and get a free visual oil leak check, at a value of up to $80! And if repairs are needed, it's 10 percent off (up to $50). That's total savings up to $130! Visit www.fixcarleaks.org for more information.
- Save the date and save some money! April is free vehicle leak inspection month! Visit [business name] and get a free visual leak check—and 10 percent off (up to $50) if repairs are needed. You could save up to $130!
- Don't get stranded! A leaky car isn't a reliable car. This April visit [business name] and get a free visual leak check—and 10 percent off repairs (up to $50). You could save up to $130!
- We're releasing 7 million quarts of motor oil into the Puget Sound basin annually. Think about it, 7 million quarts of oil wasted each year! You can help—this April, get your car checked for leaks, for FREE. Schedule an appointment at [business name] today!

Sample Twitter Posts

- Protect Puget Sound—get your car checked for leaks for free this April. Make an appt today at [business name]. #FixThatLeak!
- Free and easy vehicle leak inspections available now: a value of up to $80! Make an appt at [business name] today. #FixThatLeak!
- Get your car inspected for leaks for free this month only. Make your appointment at [business name] today! #Don'tDrip&Drive

Don’t Drip & Drive. Fix That Leak!

Tracking Form Instructions

Dear ASA Member,

As a participating member in the *Don’t Drip & Drive. Fix That Leak* campaign, you are **required** to track all the leak checks and repairs that you conduct from April 1 – 30, 2013.

Please use the enclosed tracking forms to track every car that you check for leaks. You will also use this form to track any leak repairs that are conducted during April. Once you have conducted a leak check or repaired a leak, simply check off the appropriate box (leak-free vehicle checked, leaking vehicle checked, or vehicle repair). It’s that simple!

Please mail in any completed tracking forms using the enclosed, postage paid envelopes on **April 15** and **May 1**. If you need additional tracking forms, use the contact information provided below.

Store Managers/Owners are asked to explain the program to their technicians, including the importance of tracking every car that is checked and/or repaired as part of this campaign. Make sure to post this tracking form (along with a pen) in a convenient place for technicians to use.

If you prefer to track your leak checks and repairs online, use the URL provided on the tracking form. Please make sure that technicians fill out the online form as soon as they finish checking or fixing a vehicle as part of this campaign.

For more information on the tracking process, please contact Katherine Diers at kdiers@prrbiz.com or (206) 462-6391 or Jessica Branom-Zwick at jessica@cascadiaconsulting.com or (206) 449-1126.

Thanks again for your support of this important campaign!

Automotive Shop Tracking Form

Your Shop Name: _____

Form Dates: ____/____/2013 to ____/____/2013

Instructions: Technicians have two easy ways to tally when they check and repair vehicles as part of the Don't Drip & Drive campaign:

OPTION 1: Visit the online form at https://www.surveymonkey.com/s/DripFreeASA

OPTION 2: Use this form, posted in a convenient place in your shop.

For OPTION 2, use these three categories when you inspect and fix vehicles as part of this campaign.

Vehicle Check – No Leak	Vehicle Check – Leak Found	Vehicle Repaired
Checked and found no leak.	Checked and found a leak.	Repaired a leak.

Leak-free Vehicle Checked: Cross out a "thumbs up" ( ) symbol each time you check a vehicle and find **no leak**.

					5						10						15					20
					25						30						35					40

TOTAL: _____

Leaking Vehicle Checked: Cross out a "droplet" ( ) symbol each time you check a vehicle and **find a leak**.

					5						10						15					20
					25						30						35					40

TOTAL: _____

Vehicle Repair: Cross out a "wrench" ( ) symbol each time you **repair a leaking vehicle**.

					5						10						15					20
					25						30						35					40

TOTAL: _____

Thank you for participating in our campaign!

At the end of each week, mail the completed form using the pre-addressed envelope provided and post a new tracking form in a convenient place in your shop.

Don't Drip & Drive Campaign
Follow-up Questions for Auto Shops

Interview List

Start with the shops in **bold**; if you can't reach one, call the alternate. Complete only one interview per group.

Group	Shop Name	Leaks Found	Vehicles Checked	Vehicles Repaired	Leak Rate	Repair Rate	Contact	Phone	County
Large and high repair rate	***Confidential***	**57**	**209**	**38**	**27%**	**67%**	***Confidential***		**KING**
	Confidential	34	62	20	55%	59%	*Confidential*		SNOHOMISH
	Confidential	12	52	9	23%	75%	*Confidential*		PIERCE
Large and low repair rate	***Confidential***	**50**	**124**	**7**	**40%**	**14%**	***Confidential***		**KING**
	Confidential	11	104	3	11%	27%	*Confidential*		WHATCOM
Small and high repair rate	***Confidential***	**14**	**16**	**9**	**88%**	**64%**	***Confidential***		**THURSTON**
	Confidential	13	13	10	100%	77%	*Confidential*		JEFFERSON
Small and low repair rate	***Confidential***	**28**	**40**	**2**	**70%**	**7%**	***Confidential***		**KITSAP**
	Confidential	5	22	1	23%	20%	*Confidential*		PIERCE

Interview Guide

Business Name
Contact Name
Contact Phone
Interviewer
Interview Date
Notes and attempts

Introduction

Is [CONTACT NAME] available? *(If not ask for a good time to call back AND leave a message. Note: shops may prefer to be interviewed just before they open and just after they close, but I'd first call them during business hours.)*

My name is _____, and I work on the Don't Drip and Drive campaign.

I'm calling to thank you for participating this April and to get your feedback on the campaign from an auto shop's perspective. Because this was a pilot project, we want to learn what worked and what can be improved.

Do you have about ten minutes to answer a few questions? (IF NEEDED: I can call back at a different time if that would be more convenient—SCHEDULE THE TIME.)

Questions

1. What motivated your shop to participate in the Don't Drip and Drive campaign?

2. I'd like to ask you to rate some aspects of the campaign on a scale from one to five, where one is negative and five is positive.

1	2	3	4	5	Activity
					How difficult or easy to **understand** were the **instructions** for how to participate in the campaign? 1 means very difficult and 5 means very easy.
					How difficult or easy to **use** were the **tracking forms**? 1 means very difficult and 5 means very easy.

3. Which of the campaign materials did you find **most** useful? *(Mark all items mentioned)*

	Poster
	Counter Card Display
	Window Cling
	Sample text for newsletters
	Sample Facebook/Twitter posts
	Coupons
	Talking points

4. Would you say the Don't Drip and Drive campaign increased, decreased, or didn't change your level of business?

	Increased
	Decreased
	Didn't change

Probe: By how much would you estimate your business increased/decreased (allow them to say "a lot" or "a little"): _____

5. Did you personally interact with customers who had their vehicles checked or repaired as part of the campaign?
IF NO: I'd like to learn about your customers' reactions to the campaign. When we're done, could I ask three questions of someone who did interact with customers? [SKIP to Question 9]
IF YES: GO to Question 6.

6. Based on your interactions with customers, what seemed to motivate them to have their vehicles **checked for leaks**?

Probe: Do you recall about what share of customers asking for leak inspections mentioned the Don't Drip and Drive Campaign?

7. Based on your interactions with customers who **had leaks and had your shop repair them**, what seemed to motivate them to have their vehicles repaired?

Probe: Do you recall about what share of customers who had a leak repaired asked for the discount before you offered it?

8. Again, based on your interactions with customers who **had leaks and chose NOT to repair them**, what seemed to be the main barrier keeping them from fixing the leak?

Probe: Do you recall about what share of customers who chose <u>not</u> to have a leak repaired intended to repair the leak later or on their own?

9. Based on your experience, would your shop want to participate in a similar campaign in the future?

	Yes
	No
	Not sure

10. IF YES (WOULD participate again): What are the main reasons your shop would participate again?
    IF NO (would NOT participate again): What would prevent your shop from participating again?
    IF NOT SURE: What factors would affect your decision to participate again?

11. How could we improve the campaign?

12. About how many cars does your shop work on in an average week?
    a. _____

13. Before the campaign, did your shop do a visual leak inspection as a standard practice on every vehicle that came into your shop?

	Yes
	No
	Not sure

14. Thank you for your time. Do you have anything else you'd like to share about the campaign?

Interview #1	Small shop with high repair rate
Question	**Response**
1. What motivated your shop to participate in the Don't Drip and Drive campaign?	We were getting frustrated with ASA and were thinking about canceling their membership with ASA because we weren't getting much for our dues, and then the DD&D campaign came along. This campaign has been phenomenal. We found a lot of new customers, especially ones that didn't know of us before
2a. How difficult or easy to understand were the instructions for how to participate in the campaign? 1 means very difficult and 5 means very easy.	5
2b. How difficult or easy to use were the tracking forms? 1 means very difficult and 5 means very easy.	5
3. Which of the campaign materials did you find most useful?	The coupons were the most effective. People saw those and were really drawn to them. We had the other display items, and I'm not sure how effective those were. The coupons were effective.
4. Would you say the Don't Drip and Drive campaign increased, decreased, or didn't change your level of business ?	Increased
4a. Probe: By how much would you estimate your business increased/decreased (allow them to say "a lot" or "a little"):	5%
5. Did you personally interact with customers who had their vehicles checked or repaired as part of the campaign?	Yes
6. Based on your interactions with customers , what seemed to motivate them to have their vehicles checked for leaks?	The coupon benefit, and acknowledging where the oil goes (into the environment)
6a. Probe: Do you recall about what share of customers asking for leak inspections mentioned the Don't Drip and Drive Campaign?	I don't recall; I don't know
7. Based on your interactions with customers who had leaks and had your shop repair them, what seemed to motivate them to have their vehicles repaired?	The coupon benefit, and acknowledging where the oil goes (into the environment)
7a. Probe: Do you recall about what share of customers who had a leak repaired asked for the discount before you offered it?	I don't know. There were many customers that didn't know that they had a leak, and then we told them about it we also told them about the discount.
8. Again, based on your interactions with customers who had leaks and chose NOT to repair them, what seemed to be the main barrier keeping them from fixing the leak?	There weren't many (maybe 4 or 5); the greatest barrier was when there was a huge cost. A couple subarus with head gaskets with a $2500 repair, some of them ran the other way (laughing)
8a. Probe: Do you recall about what share of customers who chose not to have a leak repaired intended to repair the leak later or on their own?	Maybe half of them chose to wait and said that they'd fix later or on their own (2 or 3).

Interview #1, continued	Small shop with high repair rate
Question	**Response**
9. Based on your experience, would your shop want to participate in a similar campaign in the future?	Yes, immediately
10. IF YES (WOULD participate again): What are the main reasons your shop would participate again?	Finding new customers
11. How could we improve the campaign?	For the first time shot, it was really good. I don't have much. Maybe making it even easier for people to find our business on the list. Even as it was, they still found us.
12. About how many cars does your shop work on in an average week?	200
13. Before the campaign, did your shop do a visual leak inspection as a standard practice on every vehicle that came into your shop?	Yes, we try to do a really quick look if the car is lifted in the air. Most cars are lifted in the air.
14. Thank you for your time. Do you have anything else you'd like to share about the campaign?	Everything worked really well. Thanks!

Interview #2	Large shop with low repair rate
Question	**Response**
1. What motivated your shop to participate in the Don't Drip and Drive campaign?	Opportunity for more marketing, and I like the concept. I care about protecting the environment.
2a. How difficult or easy to understand were the instructions for how to participate in the campaign? 1 means very difficult and 5 means very easy.	1 (I had to actually call because I was totally confused). I don't understand why you didn't ask us to track how many people came in because they heard about the campaign. Our shop (as well as most ASA shops) already track this because we're business-minded. That would have been helpful).
2b. How difficult or easy to use were the tracking forms? 1 means very difficult and 5 means very easy.	1 (The forms were confusing)
3. Which of the campaign materials did you find most useful?	I liked the sample facebook/twitter posts, and the window cling. The coupons weren't as effective. It's nice to have all of these, but what would have been really helpful would have been a brochure explaining the program with a coupon inside (or as a part of the brochure somehow). Most of the people at my shop don't wait around, so this could be helpful for when they get home and think about the repair a bit more.
4. Would you say the Don't Drip and Drive campaign increased, decreased, or didn't change your level of business ?	Didn't Change at all.
4a. Probe: By how much would you estimate your business increased/decreased (allow them to say "a lot" or "a little"):	Zero
5. Did you personally interact with customers who had their vehicles checked or repaired as part of the campaign?	No

Interview #2, continued	Large shop with low repair rate
Question	**Response**
6. Based on your interactions with customers , what seemed to motivate them to have their vehicles checked for leaks?	n/a
6a. Probe: Do you recall about what share of customers asking for leak inspections mentioned the Don't Drip and Drive Campaign?	We didn't have one person come in an say "I heard about the campaign"
7. Based on your interactions with customers who had leaks and had your shop repair them, what seemed to motivate them to have their vehicles repaired?	n/a
7a. Probe: Do you recall about what share of customers who had a leak repaired asked for the discount before you offered it?	n/a
8. Again, based on your interactions with customers who had leaks and chose NOT to repair them, what seemed to be the main barrier keeping them from fixing the leak?	n/a
8a. Probe: Do you recall about what share of customers who chose not to have a leak repaired intended to repair the leak later or on their own?	n/a
9. Based on your experience, would your shop want to participate in a similar campaign in the future?	Yes
10. IF YES (WOULD participate again): What are the main reasons your shop would participate again?	Any advertising is good, I guess, and there's always an opportunity to be introduced to new customers. I also want to help the environment, and I care about clean water, and this is something I can do
11. How could we improve the campaign?	I like the brochure/coupon idea, as well as creating mailer postcards for us to put our labels on and mail out to our clients, and having a press release available for us to do more advertising ourselves with the local newspapers/blogs would be helpful.
12. About how many cars does your shop work on in an average week?	40-50; not as many as we used to. People don't have as much money.
13. Before the campaign, did your shop do a visual leak inspection as a standard practice on every vehicle that came into your shop?	Yes, of course.
14. Thank you for your time. Do you have anything else you'd like to share about the campaign?	No

Don't Drip & Drive
ASA Repair Shop Secret Shopper Summary Report

Background

In an effort to augment the *Don't Drip & Drive* campaign's evaluation strategy, Snohomish County Surface Water Management (SWM) invited volunteers to participate in a pilot Secret Shopper Program. The goals of the secret shopper program were to help the Steering Committee:

1) Learn how to efficiently and effectively implement a region-wide secret shopper program for future phases of the *Don't Drip & Drive* campaign.
2) Improve our understanding of the experience that vehicle owners have when they visit an ASA shop for a leak inspection, and
3) Assess if and how ASA member repair shops are promoting the campaign in order to identify potential areas for improvement in future phases of the campaign.

Prior to launch of the campaign, Snohomish County SWM staff, Stef Frenzl, invited volunteers from WSU Extension to participate in the secret shopper campaign. Seven volunteers signed up to serve as secret shoppers. Stef notified the volunteers the first week of the campaign that he would ask them to visit a repair shop as a secret shopper during the second half of the month-long campaign, which in theory, would enable repair shops to "work out the bugs" of the program, if they needed to and proactively decided to do so. Two weeks into the campaign, Stef contacted the volunteers via email, provided a survey questionnaire and instructions (attachment A), and assigned specific repair shops to each volunteer based on the volunteers' preferred region within Snohomish County. Secret shoppers were asked to pretend that they were the target audience, and to go through the entire process of finding the mechanic on the website, making a phone call to schedule an appointment, and visiting the repair shop to have their vehicle inspected. Immediately after their experience, they were asked to complete a questionnaire (paper copy) and then when available later on, go online to enter their responses on survey monkey.

Stef was unable to make follow-up phone calls to volunteers who had not yet scheduled an appointment with their designated repair shop until a week later (three weeks into the campaign), which gave volunteers who had not yet scheduled a visit only a week to do so. As a result, only two of the seven volunteers were able to schedule an appointment. Stef was able to recruit one additional Snohomish County staff to volunteer for one shop, which totaled only three repair shops that had secret shoppers visit their shop.

Stef also invited King ECONet members and volunteers to participate in the secret shopper program in King County; however, no survey responses were submitted from these groups.

Results

Due to the very limited sample size (n=3), the results are very limited; however, secret shoppers still identified several important areas for program refinement for future phases of the campaign. One of the secret shoppers actually knew his vehicle already had a leak. Below is a results summary:

Ease of Scheduling an Appointment

All three secret shoppers responded that scheduling an appointment was easy.
One of the three shops unknowingly scheduled a visit with a repair shop that only services Subaru vehicles, but the secret shopper did not have a Subaru. This is the description of her experience:

"I called for an appointment and was told to come between 7:30am and 9:00am in the morning at my convenience. I got to the shop and was met by the receptionist who came out to the car to tell me that they only work on Subaru cars. It did not note that in the information about the shop. She was polite but confused about why I was there because my vehicle was newer - still under warrantee and that it wasn't a Subaru. So next time add that they only work on Subaru cars on your list. I did not have an inspection completed by this shop as I didn't own a Subaru vehicle."

Waiting time to have them accept the keys to the vehicle
The remaining secret shoppers had no waiting time. The keys were accepted immediately.

Window Clings

The window clings were visible from the outside of the shop at both repair shops.

Posters & Displays

One out of the two secret shoppers said that posters and displays were visible inside the repair shop.

Friendly and Welcoming

Both remaining secret shoppers stated that the repair shop staff were friendly and welcome.

Waiting Time

One secret shopper waited 20-25 minutes to complete the inspection, and the other waited approximately one hour. The secret shopper who waited an hour provided this comment:

"The inspection took an hour and they were very thorough and checked many items beside the oil leaks, including brakes, tie rod ends, light bulbs etc."

Pressure from Repair Shop

Neither of the secret shoppers felt pressure from the repair shop to have any other business done with them, including the secret shopper with the vehicle that had a leak.

Customer Service

Of three responses total, two ranked their repair shop's customer service as "excellent" and one ranked as "good."

The mechanic who had the secret shopper with a leak physically sat down with the secret shopper to review the inspection results, and then physically handed him a coupon. The mechanic told the secret shopper that the coupon could be redeemed at any ASA shop. The secret shopper left the repair shop feeling thankful and empowered, and as a result, the secret shopper actually decided to have this mechanic fix the leak (compared to the mechanic he's trusted for years).

Overall Experience

Of the three who rated their overall experience on a scale from 1-5, with 1 being the worst and five being the best, one rated their experience as a "5", one ranked "2), and another unknown. (note- it appears the third score was tallied in the total number of rankings, but the actual ranking score was not recorded).

"Confirmed leaks identified by a competitor. Explained the 10% discount and timeframe applicable. Seemed genuinely proud of the campaign and their participation in it."

Recommendations

Based on the secret shopper responses, SWM offers the following recommendations related to each goal below:

Goal: Learn how to efficiently and effectively implement a region-wide secret shopper program for future phases of the Don't Drip & Drive campaign.

- Strong oversight and coordination is necessary to ensure you have a high participation rate. Stef was unable to provide enough oversight and coordination to ensure the secret shopper program would be successful. As a result, we received a very low participation by volunteers.
- Frequent and proactive coordination and communication is essential to ensure success. Use both email and follow up immediately with phone calls. Phone calls are more likely to be effective reminders and motivators because it helps volunteers realize that you are depending on them personally.
- If using volunteers, consider hosting a training workshop to teach people the process, review the survey questionnaire, and to address any questions or fears. A training workshop may result in having secret shoppers helping out at multiple repair shops.
- Plan ahead and keep momentum with the volunteers. One month prior to the campaign launch, Stef gave a presentation about the campaign to volunteers and began recruiting secret shopper volunteers. This was approximately six weeks prior to the actual date of needing secret shoppers. This was too much of a time delay, as interest and momentum among the volunteers was lost. A recommended strategy would be to

start registration one month prior to when secret shoppers would be needed. Two weeks prior, host a training workshop and provide all the resources they need. One week prior send an email reminder with all the resources in digital form, and ask people to confirm via email that they still plan to participate. Two days before the secret shopper program begins, make personal phone calls. The day the campaign begins, send an email reminder. Track participation after the first week, and call any volunteers who have not submitted responses online.

- Make sure instructions are in writing and are easy, clear and as simple as possible. If hosting a training workshop, use the instruction sheets to help volunteers learn how to use the materials.
- Consider revising the existing questionnaire by creating more ranking-type responses. Simple "yes" "no" responses may not "tell the story" as effectively as possible.
- If using volunteers, understand that this is unusual for a volunteer. Because a volunteer is alone during this experience, it feels different than other volunteer-type activities. As a result, there is less of a sense of kinship during the volunteering-time itself. Support this by hosting a training workshop, sharing results, and possibly holding a "party" after the data is tallied for secret shoppers to see the total results, and to recap how the process went for them and how to improve the program in the future.
- If paid staff can serve as secret shoppers, results are more likely to be guaranteed.

Goal: Improve our understanding of the experience that vehicle owners have when they visit an ASA shop for a leak inspection

- Our original anticipated wait-time for someone coming in to have a vehicle inspection, based on feedback from ASA, was only 15 minutes. This is not likely to be accurate. Messaging should state that the inspection, on average, may take approximately a half an hour.
- Most of the time, finding a mechanic and scheduling an appointment is likely to be simple and easy for our target audience; however, because not all shops work on all vehicle types, when listing repair shops on the website, include a flag (such as a footnote) on shop names s that do not accept all vehicle types, ages, nationalities (American vs. European), etc.
- The ASA repair shops that were a part of this pilot study were professional and promoted the campaign appropriately to their customers in a non-pressuring manner.

Goal: assess if and how ASA member repair shops are promoting the campaign in order to identify potential areas for improvement in future phases of the campaign.

- The presence of promotional items inside the repair shop may be variable. Campaign managers should spend more time emphasizing the promotional materials, and where possible, deliver materials directly to the repair shop at a scheduled time so the campaign managers can speak with the appropriate people about the campaign prior to launch. This would take lots of time and energy, but would likely result in more promotions inside the repair shops.

- The mechanic who had the secret shopper with a leak physically sat down with the secret shopper to review the inspection results, and then physically handed him a coupon. The mechanic told the secret shopper that the coupon could be redeemed at any ASA shop. Campaign managers should consider using this example approach as a model for how mechanics can best promote the campaign.

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Be A Secret Shopper

6 Fun & Easy Steps

1) Go to www.fixcarleaks.org, and click on the "ASA Repair Shops" button.

2) When on the ASA page, search for the intended repair shop, and call using the number on the webpage.

3) Schedule an appointment with the repair shop for a free vehicle leak inspection. Tell them that you heard the radio ad and that you would like a free inspection (obviously, don't indicate that you are a secret shopper).

4) Take your vehicle in for the free vehicle leak inspection. Immediately before you go in, review the questionnaire. Again, don't blow your cover. ☺

5) Immediately after you leave the repair shop, complete the questionnaire (pages below). Complete one questionnaire for each repair shop.

6) Enter your findings on our surveymonkey page for each repair shop you go to: (surveymonkey hyperlink included here)

Secret Shopper Questionnaire

Secret Shopper Name:_____

Repair Shop Name:_____

Contact Name:_____

Address:_____

1) Was it easy to find their contact information from the website? ☐ Yes ☐ No
2) Was it easy to schedule an appointment? ☐ Yes ☐ No If no, please explain in the space below:
3) How long beyond your appointment time did you have to wait for them to accept your keys and begin the inspection? ☐ I had no wait ☐ 0-5 minutes ☐ 5-10 minutes
4) Were window clings visible from outside the shop (on the door or window)? ☐ Yes ☐ No
5) Were posters/displays visible inside the shop? ☐ Yes ☐ No
6) Were they friendly and/or welcoming? ☐ Yes ☐ No ☐ No ☐ No If no, please comment in the space below:

7) Once they accepted your vehicle key, how long did you have to wait for them to complete the inspection?

- ☐ 0-5min
- ☐ 5-10 min
- ☐ 10-15min
- ☐ 15-20 min
- ☐ 20-25 min
- ☐ 25-30 min

8) Did you feel pressured to have any other business done with them?

- ☐ Yes
- ☐ No

If yes, please explain:

9) How was their customer service?

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor

10) On a scale from 1-5, with 1 being the worst and 5 being the best, please rate your overall experience.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

Please provide any other comments if necessary:

Don't Drip and Drive

Outreach Summary: Number of People Reached (Impressions)

	Program-wide	King County	Pierce County	Skagit County	Snohomish County	Thurston County	Auburn	Bellingham	Bothell	Kirkland	Lacey	Mill Creek	Monroe	Olympia	Redmond	Renton	Sammamish	Seattle	Shoreline	Tacoma	Tumwater	King County ECO-NET	Snohomish ECO-NET	Totals
Publications																								
Magazines												19,000												19,000
Direct Mail								3,384			300													3,684
Newsletters (mailed)		16,000				44,000			21,000	39,953				3,000	X	27,000	X	290,000	23,000				WEC Protects Newsletter	463,953
eNewsletters				500	41,200	1,700			500	726												500	120	45,246
Events and Conferences																								
Events						75									X			X						75
Vehicle Leak Blitz Events																							40	40
Conferences, Workshops & Public Meetings					50			100					30					X	X			40	75	295
Fairs and Festivals													100						350					450
Collateral																								
Bill Inserts														10,000	X									10,000
Flyers/Postcards							100																	100
Advertising																								
Print						1,000		64,200	350		103,000													168,550
Radio	8,696,177							X																8,696,177
Social Media																								
Facebook			599	X		100			1,000	79						6,010		1,291	X				550	9,629
Twitter			4,874					X	200							1,714		14	X					6,802
Websites, Blogs & Micro-communities	2,645		81	X	X	100			X	X	10,000			X	X	10,000	146	14	X	2,250				25,236
Earned Media																								
Press Release			X	X	X			X		X	X								X		X		X	0
Print	332,721																							332,721
Radio					X																			0
Television	29,422		X																					29,422
Online	69,433		491																					69,924
Totals	9,130,398	16,000	6,045	500	41,250	46,975	100	67,684	23,050	40,758	113,300	19,000	130	13,000	0	44,724	146	291,319	23,350	2,250	0	540	785	9,881,304

Snohomish County e-newsletters include: County Executive e-newsletter (2,000), Sustainable Snohomish e-newsletter (200) and Boeing employee email (39,000)

Lacey: print (Fort Lewis Ranger), website (City of Lacey homepage)

Bellingham: Interviewed for KGMI, news releases distributed to 20 local media outlets

Pierce County: Distributed on Pierce County TV (# unknown)

Outreach confirmed to have occurred, although number of impressions may not be available

Outreach that SOGs indicated they would undertake but for which completion was not confirmed

"Dont' Drip and Drive"
Fix That Leak!
Coverage Report

	Outlet	Date	Description	URL	Estimated Impressions	Estimated Value
Print						
1	Ballard News Tribune	3/28/2013	Protect te environment, get your car checked for oil leaks in April	http://www.ballardnewstribune.com/2013/03/28/features/protect-environment-get-your-car-checked-oil-	1,542	$2,338
2	Kitsap Sun	4/3/2013	Kitsap auto shops offer free oil-leak inspections	http://www.kitsapsun.com/news/2013/apr/03/kitsap-auto-shops-offer-free-oil-leak/#axzz2PWhb0ZK8	69,802	$10,659
3	The News Tribune	4/3/2013	Puget Sound residents can take advantage of free vehicle leak checks	http://www.thenewstribune.com/2013/04/03/2541462/puget-sound-residents-can-take.html	187,000	$7,483
4	The Olympian	4/3/2013	Puget Sound residents can take advantage of free vehicle leak checks	http://www.theolympian.com/2013/04/03/2489666/puget-sound-residents-can-take.html	74,378	$3,080
4	**TOTAL PRINT:**				**332,721**	**$23,560**
Online						
5	The SunBreak	3/25/2013	Don’t Drip & Drive this April	http://thesunbreak.com/2013/03/25/dont-drip-drive-this-april/	280	$8
6	Ballard News Tribune	3/28/2013	Protect te environment, get your car checked for oil leaks in April	http://www.ballardnewstribune.com/2013/03/28/features/protect-environment-get-your-car-checked-oil-	280	$8
7	KMAS 1030 AM/Mason County Daily News	3/28/2013	"Don't Drip And Drive" - Free Inspections And Discounted Repairs Encourage Drivers To "Fix That Leak" In April	http://www.masoncountydailynews.com/news/public-notices/53221-qdont-drip-and-driveq-free-inspections-and-discounted-repairs-encourage-drivers-to-qfix-that-leakq-in-april	184	$5
8	Warm 106.9	3/30/2013	Don't Drip & Drive. Fix That Leak!	http://warm1069.com/events/dont-drip-drive-fix-that-leak	340	$10
9	Thurston Talk	4/1/2013	Bron’s Automotive Promotes ‘Don’t Drip And Drive’	http://www.thurstontalk.com/2013/04/01/brons-automotive-promotes-dont-drip-and-drive/	240	$7
10	West Seattle Blog	4/1/2013	West Seattle Autoworks: AAA-approved; also in ‘Don’t Drip & Drive’	http://westseattleblog.com/2013/04/west-seattle-autoworks-aaa-approved-also-in-dont-drip-drive	4,620	$129
11	MyBallard	4/2/2013	“Don’t Drip and Drive” program will help locals fix their leaks	http://www.myballard.com/2013/04/02/dont-drip-and-drive-program-will-help-locals-fix-their-leaks/	2,140	$60
12	Kitsap Sun	4/3/2013	Kitsap auto shops offer free oil-leak inspections	http://www.kitsapsun.com/news/2013/apr/03/kitsap-auto-shops-offer-free-oil-leak/#axzz2PWhb0ZK8	3,943	$110
13	The News Tribune	4/3/2013	Puget Sound residents can take advantage of free vehicle leak checks	http://www.thenewstribune.com/2013/04/03/2541462/puget-sound-residents-can-take.html	10,319	$289
14	The Olympian	4/3/2013	Puget Sound residents can take advantage of free vehicle leak checks	http://www.theolympian.com/2013/04/03/2489666/puget-sound-residents-can-take.html	4,095	$115
15	Lake Stevens Journal	4/4/2013	Don't Drip & Drive' campaign urges drivers to fix leaks	http://www.lakestevensjournal.com/county-state/article.exm/2013-04-04__don_t_drip___drive__campaign_urges_drivers_to_fix_leaks	128	$4

"Dont' Drip and Drive"
Fix That Leak!
Coverage Report

	Outlet	Date	Description	URL	Estimated Impressions	Estimated Value
16	Inside Bainbridge	4/5/2013	Don't Drip and Drive Campaign Gives You Repair Discounts and a Free Fluid Leak Check	http://www.insidebainbridge.com/2013/04/05/dont-drip-and-drive-campaign-gives-you-repair-discounts-and-a-free-fluid-leak-check/	540	$15
17	City of Bellevue	4/15/2013	Don't Drip and Drive campaign comes to Bellevue	http://www.ci.bellevue.wa.us/10557.htm	509	$14
18	City of Bellingham	4/15/2013	"Don't Drip and Drive" campaign comes to Bellingham	http://www.piersystem.com/go/doc/1264/1744171/	520	$15
19	South Puget Sound News	4/15/2013	Take care of the environment and Don't Drip and Drive	http://www.southpugetsoundnews.com/news/take-care-of-the-environment-and-dont-drip-and-drive/	46	$1
20	Bellevue Patch	4/16/2013	Don't Drip & Drive': Bellevue Auto Shops Offering Free Inspections	http://bellevue.patch.com/articles/dont-drip-drive-bellevue-auto-shops-offering-free-inspections	461	$13
21	Gig Harbor Patch	4/16/2013	Mackert Automotive Offering Free Inspections, Discounted Services Through April	http://gigharbor.patch.com/articles/mackert-automotive-offering-free-inspections-discounted-services-through-april	461	$13
22	Lakewood-JBLM Patch	4/16/2013	Lakewood Mechanics Offering Free Inspections, Discounted Services through April	http://lakewood-jblm.patch.com/articles/lakewood-mechanics-offering-free-inspections-discounted-services-through-april	461	$13
23	Renton Patch	4/16/2013	Renton Technical College Offers Free 'Don't Drip & Drive' Oil Leak Inspections	http://renton.patch.com/articles/renton-mechanics-offering-free-inspections-discounted-services-through-april	461	$13
24	Sammamish Issaquah Patch	4/16/2013	Don't Drip & Drive': Eastside Auto Shops Offering Free Inspections	http://sammamish.patch.com/articles/dont-drip-drive-eastside-auto-shops-offering-free-inspections-cf58a96b	461	$13
25	Shoreline-Lake Forest Park Patch	4/16/2013	"Don't Drip & Drive': Shoreline, LFP Auto Shops Offering Free Inspections	http://shoreline.patch.com/articles/dont-drip-drive-kirkland-auto-shops-offering-free-inspections-a5a86c93	461	$13
26	Stanwood Camano News	4/16/2013	'Don't Drip & Drive'	http://www.scnews.com/news/2013-04-16/Health_%28and%29_Wellness/Dont_Drip__Drive.html	50	$1
27	University Place Patch	4/16/2013	McCabe's Automotive Offering Free Inspections, Discounted Services Through April	http://universityplace.patch.com/articles/mccabes-automotive-offering-free-inspections-discounted-services-through-april	461	$13

"Dont' Drip and Drive"
Fix That Leak!
Coverage Report

	Outlet	Date	Description	URL	Estimated Impressions	Estimated Value
28	City of Kirkland	4/17/2013	"Don't Drip and Drive" campaign comes to Kirkland; Fix car leaks	http://www.kirklandwa.gov/News_Room/NR0417DripDrive.htm	360	$10
29	F1rst to Know	4/17/2013	Be a Green Driver: Eco-Friendly Auto Products & Practices	http://firsttoknow.com/be-a-green-motorist-eco-friendly-auto-products-practices/	16,240	$455
30	Kirkland Patch	4/17/2013	Don't Drip & Drive': Kirkland Auto Shops Offering Free Inspections	http://kirkland.patch.com/articles/dont-drip-drive-kirkland-auto-shops-offering-free-inspections	461	$13
31	One News Page	4/17/2013	"Don't Drip & Drive': Shoreline, LFP Auto Shops Offering Free Inspections	http://www.onenewspage.us/n/US/74vspvnx6/Don-Drip-Drive-Shoreline-LFP.htm	4,300	$120
32	Edmonds Patch	4/18/2013	Don't Drip & Drive': Local Auto Shops Offering Free Inspections	http://edmonds.patch.com/articles/dont-drip-drive-local-auto-shops-offering-free-inspections	461	$13
33	Kirkland Views	4/18/2013	"Don't Drip and Drive" campaign comes to Kirkland	http://www.kirklandviews.com/archives/35404/	66	$2
34	Stanwood Washington American Towns	4/18/2013	'Don't Drip & Drive'	http://www.americantowns.com/wa/stanwood/news/lsquodonrsquot-drip-amp-driversquo-13835527	13,600	$381
35	Bellevue Reporter	4/19/2013	Bellevue asks drivers to not 'drip and drive'	http://www.bellevuereporter.com/news/203785681.html	580	$16
36	PC-TV	4/19/2013	New transit service, major I-5 ramp closure covered in Pierce County News video	http://wa-piercecountytv.civicplus.com/index.aspx?NID=289	46	$1
37	Tacoma Weekly	4/19/2013	New transit service, major I-5 ramp closure covered in Pierce County News video	http://www.tacomaweekly.com/dailymashup/view/new-transit-service-major-i-5-ramp-closure-covered-in-pierce-county-news-vi/	180	$5
38	Woodinville Patch	4/20/2013	Don't Drip & Drive': Eastside Auto Shops Offering Free Inspections	http://woodinville.patch.com/articles/dont-drip-drive-eastside-auto-shops-offering-free-inspections-62dc24ca	461	$13
39	Go Skagit	4/22/2013	Got a leak? 'Don't Drip and Drive'	http://www.goskagit.com/news/got-a-leak-don-t-drip-and-drive/article_11eca0c2-ab7d-11e2-a034-0019bb2963f4.html?mode=jqm	580	$16
40	KGMI 790 News Talk	4/22/2013	Oil leak campaign "Don't Drip and Drive"	http://kgmi.com/Oil-leak-campaign-Don-t-Drip-and-Drive-/16109927	373	$10
41	Kirkland Reporter	4/24/2013	Kirkland auto shops participating in 'Don't Drip and Drive' campaign	http://www.kirklandreporter.com/business/204577971.html	230	$6
42	Puget Soundkeeper Alliance	4/25/2013	Don't Drip and Drive. Fix That Leak!	http://www.pugetsoundkeeper.org/2013/04/25/dont-drip-and-drive/	34	$1
43	North Sound Baykeeper	4/26/2013	Don't Drip and Drive. Fix That Leak!	http://northsoundbaykeeper.blogspot.com/2013/04/fix-that-leak.html	N/A	N/A
40	**TOTAL ONLINE:**				**69,433**	**$1,944**
Broadcast						
41	KCPQ-TV	3/28/2013		http://mms.tveyes.com/Transcript.asp?stationid=1505&DateTime=03%2F28%2F2013+16%3A38%3A59&mediapreload=14&playclip=true\	29,422	$1,214
42	KGMI 790 News Talk	4/22/2013	Oil leak campaign "Don't Drip and Drive"	http://kgmi.com/Oil-leak-campaign-Don-t-Drip-and-Drive-/16109927	N/A	N/a
2	**TOTAL BROADCAST:**				**29,422**	**$1,214**
	GRAND TOTAL: 42 STORIES				**431,577**	**$26,719**

Fixcarleaks.org Webhost Stats

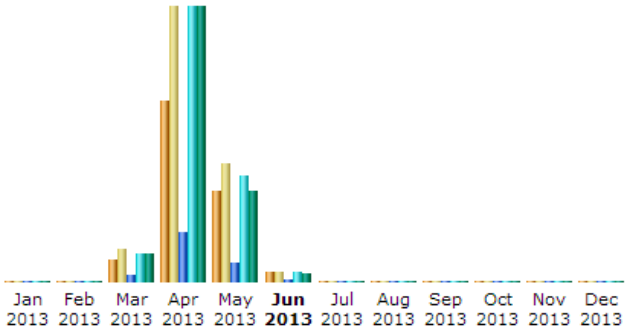
Summary

Reported period	Year 2013
First visit	22 Mar 2013 - 11:30
Last visit	04 Jun 2013 - 07:11

	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Viewed traffic *	**<= 2,953** Exact value not available in 'Year' view	**4,234** (1.43 visits/visitor)	**4,989** (1.17 Pages/Visit)	**27,222** (6.42 Hits/Visit)	**368.06 MB** (89.01 KB/Visit)
Not viewed traffic *			**1,172**	**8,065**	**21.17 MB**

* Not viewed traffic includes traffic generated by robots, worms, or replies with special HTTP status codes.

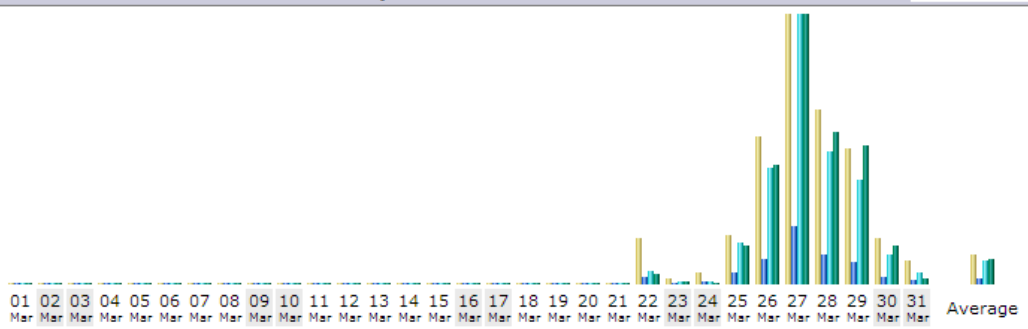
Monthly history



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2013	0	0	0	0	0
Feb 2013	0	0	0	0	0
Mar 2013	211	314	429	1,871	25.48 MB
Apr 2013	1,759	2,670	3,199	17,807	251.97 MB
May 2013	886	1,149	1,249	6,916	82.95 MB
Jun 2013	97	101	112	628	7.66 MB
Jul 2013	0	0	0	0	0
Aug 2013	0	0	0	0	0
Sep 2013	0	0	0	0	0
Oct 2013	0	0	0	0	0
Nov 2013	0	0	0	0	0
Dec 2013	0	0	0	0	0
Total	2,953	4,234	4,989	27,222	368.06 MB

March

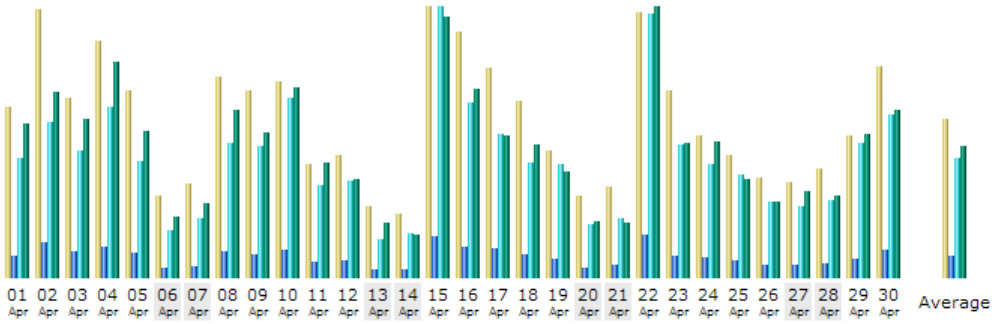
Days of month



Day	Number of visits	Pages	Hits	Bandwidth
01 Mar 2013	0	0	0	0
02 Mar 2013	0	0	0	0
03 Mar 2013	0	0	0	0
04 Mar 2013	0	0	0	0
05 Mar 2013	0	0	0	0
06 Mar 2013	0	0	0	0
07 Mar 2013	0	0	0	0
08 Mar 2013	0	0	0	0
09 Mar 2013	0	0	0	0
10 Mar 2013	0	0	0	0
11 Mar 2013	0	0	0	0
12 Mar 2013	0	0	0	0
13 Mar 2013	0	0	0	0
14 Mar 2013	0	0	0	0
15 Mar 2013	0	0	0	0
16 Mar 2013	0	0	0	0
17 Mar 2013	0	0	0	0
18 Mar 2013	0	0	0	0
19 Mar 2013	0	0	0	0
20 Mar 2013	0	0	0	0
21 Mar 2013	0	0	0	0
22 Mar 2013	16	19	34	347.20 KB
23 Mar 2013	2	2	7	97.54 KB
24 Mar 2013	4	4	4	12.03 KB
25 Mar 2013	17	28	107	1.24 MB
26 Mar 2013	51	65	300	3.94 MB
27 Mar 2013	93	150	699	8.88 MB
28 Mar 2013	60	77	344	4.99 MB
29 Mar 2013	47	56	270	4.56 MB
30 Mar 2013	16	19	77	1.24 MB
31 Mar 2013	8	9	29	193.41 KB
Average	10	13	60	841.72 KB
Total	314	429	1,871	25.48 MB

April

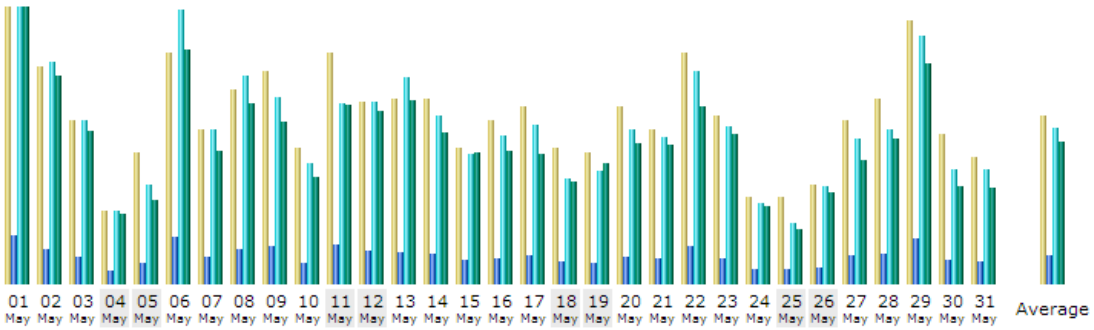
Days of month



Day	Number of visits	Pages	Hits	Bandwidth
01 Apr 2013	96	112	592	9.86 MB
02 Apr 2013	151	179	772	11.87 MB
03 Apr 2013	101	128	634	10.17 MB
04 Apr 2013	133	156	849	13.80 MB
05 Apr 2013	105	122	576	9.35 MB
06 Apr 2013	46	50	239	3.90 MB
07 Apr 2013	53	56	294	4.72 MB
08 Apr 2013	113	132	672	10.71 MB
09 Apr 2013	105	119	656	9.28 MB
10 Apr 2013	110	140	894	12.14 MB
11 Apr 2013	64	75	460	7.30 MB
12 Apr 2013	69	83	479	6.33 MB
13 Apr 2013	40	40	192	3.46 MB
14 Apr 2013	36	38	224	2.70 MB
15 Apr 2013	152	208	1,345	16.66 MB
16 Apr 2013	138	155	871	12.06 MB
17 Apr 2013	118	146	717	9.07 MB
18 Apr 2013	99	116	570	8.49 MB
19 Apr 2013	71	94	563	6.74 MB
20 Apr 2013	46	50	263	3.63 MB
21 Apr 2013	51	65	297	3.54 MB
22 Apr 2013	149	212	1,309	17.27 MB
23 Apr 2013	105	110	665	8.54 MB
24 Apr 2013	80	102	564	8.68 MB
25 Apr 2013	69	85	510	6.31 MB
26 Apr 2013	56	62	380	4.86 MB
27 Apr 2013	54	65	354	5.51 MB
28 Apr 2013	61	68	386	5.19 MB
29 Apr 2013	80	96	666	9.18 MB
30 Apr 2013	119	135	814	10.66 MB
Average	89	106	593	8.40 MB
Total	2,670	3,199	17,807	251.97 MB

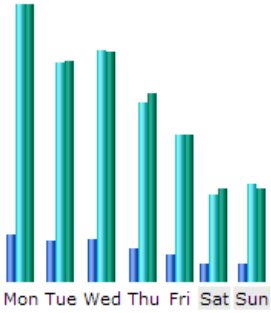
May

Days of month



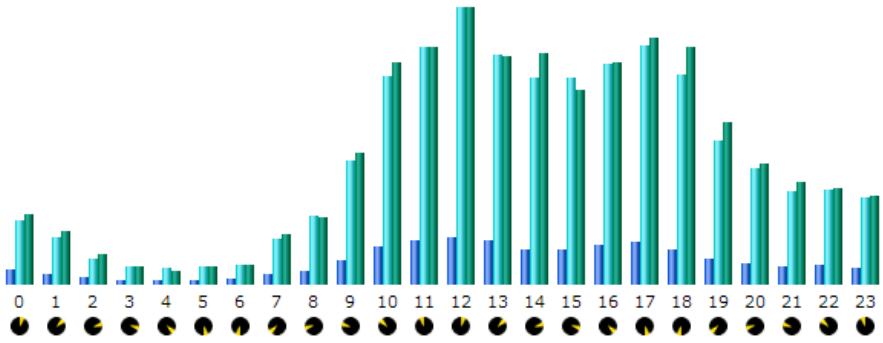
Day	Number of visits	Pages	Hits	Bandwidth
01 May 2013	61	70	394	5.18 MB
02 May 2013	48	50	317	3.90 MB
03 May 2013	36	39	234	2.85 MB
04 May 2013	16	19	105	1.31 MB
05 May 2013	29	29	141	1.58 MB
06 May 2013	51	67	390	4.39 MB
07 May 2013	34	39	220	2.50 MB
08 May 2013	43	49	297	3.39 MB
09 May 2013	47	54	265	3.04 MB
10 May 2013	30	30	171	2.00 MB
11 May 2013	51	56	257	3.35 MB
12 May 2013	40	47	259	3.24 MB
13 May 2013	41	45	294	3.44 MB
14 May 2013	41	43	240	2.82 MB
15 May 2013	30	35	185	2.46 MB
16 May 2013	36	36	211	2.50 MB
17 May 2013	39	41	226	2.42 MB
18 May 2013	30	31	150	1.91 MB
19 May 2013	29	30	161	2.27 MB
20 May 2013	39	39	219	2.62 MB
21 May 2013	34	36	209	2.60 MB
22 May 2013	51	54	303	3.33 MB
23 May 2013	37	37	224	2.81 MB
24 May 2013	19	20	114	1.46 MB
25 May 2013	19	20	87	1.03 MB
26 May 2013	22	23	140	1.71 MB
27 May 2013	36	40	206	2.32 MB
28 May 2013	41	42	220	2.71 MB
29 May 2013	58	64	353	4.13 MB
30 May 2013	33	33	162	1.84 MB
31 May 2013	28	31	162	1.81 MB
Average	37	40	223	2.68 MB
Total	1,149	1,249	6,916	82.95 MB

Days of week



Day	Pages	Hits	Bandwidth
Mon	46	274	3.68 MB
Tue	40	218	2.94 MB
Wed	42	229	3.07 MB
Thu	32	177	2.50 MB
Fri	27	145	1.94 MB
Sat	17	85	1.24 MB
Sun	18	96	1.24 MB

Hours



Hours	Pages	Hits	Bandwidth	Hours	Pages	Hits	Bandwidth
00	130	576	8.16 MB	12	427	2,500	32.49 MB
01	86	423	6.25 MB	13	395	2,073	26.79 MB
02	59	224	3.58 MB	14	307	1,862	27.10 MB
03	41	161	2.06 MB	15	316	1,862	22.85 MB
04	39	149	1.56 MB	16	356	1,998	26.13 MB
05	35	166	2.05 MB	17	384	2,159	29.02 MB
06	46	167	2.32 MB	18	319	1,900	27.93 MB
07	85	405	5.85 MB	19	229	1,297	19.01 MB
08	116	623	7.91 MB	20	182	1,049	14.11 MB
09	214	1,123	15.40 MB	21	155	834	12.01 MB
10	347	1,880	26.14 MB	22	174	849	11.19 MB
11	399	2,152	27.81 MB	23	148	790	10.34 MB

Visits duration

Number of visits: 4,234 - Average: 95 s	Number of visits	Percent
0s-30s	3,973	93.8 %
30s-2mn	49	1.1 %
2mn-5mn	32	0.7 %
5mn-15mn	49	1.1 %
15mn-30mn	48	1.1 %
30mn-1h	55	1.2 %
1h+	25	0.5 %
Unknown	3	0 %

File type

File type		Hits	Percent	Bandwidth	Percent
jpg	Image	13,932	51.1 %	277.10 MB	75.2 %
html	HTML or XML static page	4,988	18.3 %	13.06 MB	3.5 %
css	Cascading Style Sheet file	4,701	17.2 %	7.09 MB	1.9 %
js	JavaScript file	2,752	10.1 %	575.98 KB	0.1 %
png	Image	610	2.2 %	15.77 MB	4.2 %
pdf	Adobe Acrobat file	238	0.8 %	54.48 MB	14.8 %
Unknown		1	0 %	0	0 %

Downloads (Top 10) - Full list

Downloads: 1	Hits	206 Hits	Bandwidth	Average size
/KCVLcoupon_031513.pdf	270	0	63.30 MB	240.07 KB

Operating Systems (Top 10) - Full list/Versions - Unknown

Operating Systems	Hits	Percent
Windows	19,322	70.9 %
Macintosh	4,639	17 %
Linux	2,492	9.1 %
Unknown	556	2 %
Java	97	0.3 %
BlackBerry	81	0.2 %
Java Mobile	20	0 %
Unknown Unix system	7	0 %
WebTV	6	0 %
BSD	1	0 %
Others	1	0 %

Browsers (Top 10) - Full list/Versions - Unknown

Browsers	Grabber	Hits	Percent
MS Internet Explorer	No	13,133	48.2 %
Google Chrome	No	4,045	14.8 %
Firefox	No	3,497	12.8 %
Safari	No	3,462	12.7 %
Android browser (PDA/Phone browser)	No	1,622	5.9 %
Unknown	?	360	1.3 %
Mozilla	No	328	1.2 %
IPhone (PDA/Phone browser)	No	264	0.9 %
LG (PDA/Phone browser)	No	147	0.5 %
Opera	No	131	0.4 %
Others		233	0.8 %

Connect to site from

Origin			Pages	Percent	Hits	Percent
Direct address / Bookmark / Link in email...			3,481	70.1 %	4,032	71.5 %
Links from an Internet Search Engine - Full list			757	15.2 %	803	14.2 %
- Google	609 / 649					
- Microsoft Bing	83 / 83					
- Yahoo!	31 / 32					
- Unknown search engines	13 / 15					
- Yandex	7 / 7					
- Ask	5 / 6					
- AOL	4 / 5					
- Dogpile	2 / 3					
- MyWebSearch	2 / 2					
- Centrum.cz	1 / 1					
Links from an external page (other web sites except search engines) - Full list			726	14.6 %	795	14.1 %
- http://xfinity.comcast.net	56	56				
- http://aww.ecology/news/2013/04/n07.htm	40	40				
- http://www.facebook.com/l.php	39	39				
- http://www.ballardnewstribune.com/2013/03/28/features/protect-en...	35	35				
- http://atyourservice.seattle.gov/2013/03/27/dont-drip-drive-big-...	25	25				
- http://www.goskagit.com/news/got-a-leak-don-t-drip-and-drive/art...	21	21				
- http://abtasty.com	21	35				
- http://www.wastormwatercenter.org/news/	21	21				
- https://www.facebook.com	20	20				
- http://www.streamteam.info/actions/vehiclecare/	17	17				
- http://www.smart-service.com/index.php	16	16				
- http://m.facebook.com/l.php	15	15				
- https://m.facebook.com	15	15				
- http://web.mail.comcast.net/zimbra/mail	13	13				
- http://www.asawa.com	11	11				
- http://us-mg6.mail.yahoo.com/neo/launch	10	10				
- http://www.kirklandwa.gov/News_Room/NR0417DripDrive.htm	9	21				
- http://warm1069.com/dont-drip-drive-win-a-vehicle-leak-detector-...	8	8				
- http://links.govdelivery.com/track	8	8				
- http://www.monroeforeignautorepair.com	8	8				
- http://www.heraldnet.com/article/20130410/NEWS01/704109936	7	7				
- http://www.co.snohomish.wa.us/documents/departments/executive/ne...	7	7				
- http://westseattleblog.com/2013/04/west-seattle-autoworks-aaa-ap...	7	7				
- http://olympiawa.gov/city-utilities/storm-and-surface-water/educ...	7	7				
- http://www.kirklandreporter.com/business/204577971.html	6	12				
- Others	284	321				
Unknown Origin			1	0 %	2	0 %

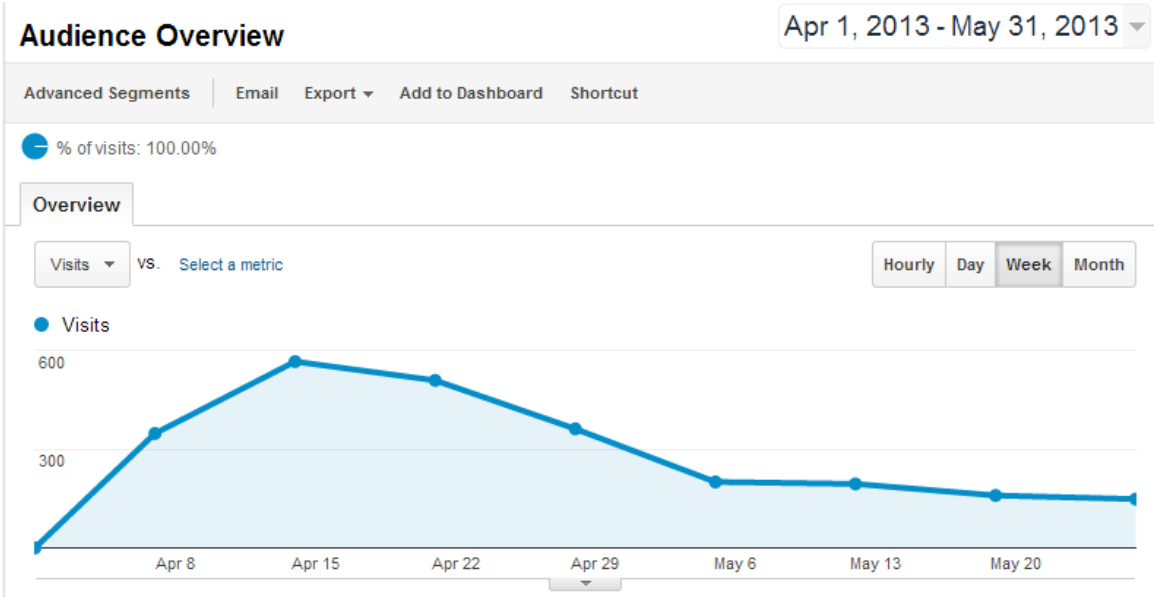
Search Keyphrases (Top 10)
Full list

186 different keyphrases	Search	Percent
fixcarleaks.org	88	17.7 %
fix car leaks.org	40	8 %
fix car leaks	29	5.8 %
www.fixcarleaks.org	18	3.6 %
fixcarleaks	17	3.4 %
fixcarleak.org	14	2.8 %
fixcarleaks.com	11	2.2 %
vehiclr drip	9	1.8 %
dont drip and drive	8	1.6 %
fix car leak	8	1.6 %
Other phrases	253	51.1 %

Search Keywords (Top 25)
Full list

172 different keywords	Search	Percent
car	167	13 %
fix	161	12.6 %
leak	91	7.1 %
fixcarleaks.org	89	6.9 %
leaks	78	6.1 %
leaks.org	48	3.7 %
oil	30	2.3 %
drip	28	2.1 %
auto	23	1.8 %
a	22	1.7 %
sound	20	1.5 %
www.fixcarleaks.org	19	1.4 %
drive	19	1.4 %
puget	19	1.4 %
fixcarleaks	18	1.4 %
and	18	1.4 %
to	17	1.3 %
in	16	1.2 %
how	16	1.2 %
free	15	1.1 %
repair	15	1.1 %
fixcarleak.org	14	1 %
cars	11	0.8 %
fixcarleaks.com	11	0.8 %
don	10	0.7 %
Other words	302	23.6 %

Google Analytics



Vehicle Leaks

2013 Media Plan

February 7, 2013

Overview

Objective – Use advertising to:

- Drive Puget Sound residents to participating specified mechanics to have a free inspection for vehicle fluid leaks
- Encourage Puget Sound residents to repair vehicle oil leaks
- Increase the awareness of the impacts of vehicle leaks to Puget Sound
- Increase the awareness of the importance to routinely check vehicles for leaking engine fluids and to get the leaks fixed

In addition, a portion of the advertising and/or added value will be used to drive people to the campaign website to sign up for Seattle's auto workshops

Target Audience

- Primary – Adults 35-64, HHI $50K+, homeowner- research shows this group are more likely to own a vehicle made before 2005 and use an independent mechanic for vehicle maintenance

Overview

Geography

- Puget Sound

Timing

- Late March through April 2013

Budget

- $68K

Use a mix of media to reach Puget Sound residents when they are most receptive to the vehicle's leak message

- Use radio to deliver the message while residents are in their cars increasing message relevance and top of mind awareness
- Reach residents at home when they are online where additional information on free inspections is easily accessed

Use a mix of radio and online ads to increase reach and exposure to the message

Radio

- Radio is recommended for broad reach and to reach residents while in their cars when the message is most relevant. Radio stations are selected based on:
  - #1 criteria – Cost efficiency – reach the most target audience for the least amount
  - Target Audience – Adults 35-64, HHI $50+, homeowners
  - Diversity of station formats to expand reach
  - Added value, including but not limited to PSAs, station's promotions and contests, on-air sponsorships, online presence and social media support
  - Inventory availability during our broadcast weeks

Radio Buy Overview

Overview	Combined Total
Campaign Weeks	4/1, 4/8, 4/15 & 4/22
Number of Stations	5
Weeks on Air	4 weeks (3 weeks/station)
Total Spots & Promos	1,014
Paid Spots	549
Bonus Spots/PSA	222
Streaming	30
Promo Mentions	213
Schedules	
Adults 35-64	
Reach	93% of Adults 35-64
Frequency	3.1
Impressions	5,069,806
All Adults 18+	
Impressions	7,975,715
GRAND TOTAL	
Total Impressions (w/ promos)	10,265,315
Cost	$48,000
Value	$128,333
Leveraged	167%

Radio Station Rankers

PRIMARY AUDIENCE

Adults 35-64
Population 1,735,700

Rank	Station	Weekly Cume Audience
1	KRWM-FM	426,800
2	KJR-FM	361,900
3	KZOK-FM	317,300
4	KJAQ-FM	315,100
5	KPLZ-FM	295,800
6	KBKS-FM	272,200
7	KISW-FM	271,500
8	KQMV-FM	271,300
9	KMTT-FM	270,800
10	KOMO-AM/FM	267,100
11	KKWF-FM	263,600
12	KMPS-FM	230,100
13	KIRO-FM	226,000
14	KLCK-FM	223,800
15	KNDD-FM	221,700

Adults 35-64 own home, HHI $50K+
Population 1,028,200

Rank	Station	Weekly Cume Audience
1	KRWM-FM	214,600
2	KJR-FM	193,500
3	KOMO-AM	170,000
4	KZOK-FM	163,800
5	KPLZ-FM	161,000
6	KJAQ-FM	158,600
7	KMTT-FM	151,300
8	KIRO-FM	135,900
9	KBKS-FM	135,400
10	KNDD-FM	131,700
11	KISW-FM	131,300
12	KKWF-FM	127,000
13	KQMV-FM	119,900
14	KCMS-FM	114,300
15	KMPS-FM	113,400

Men 35-64
Population 864,400

	Station	Weekly Cume Audience
1	KZOK-FM	201,100
2	KJR-FM	198,400
3	KJAQ-FM	182,400
4	KISW-FM	182,200
5	KRWM-FM	178,000
6	KIRO-AM	159,000
7	KOMO-AM	148,100
8	KMTT-FM	145,700
9	KPLZ-FM	138,400
10	KJR-AM	137,600
11	KNDD-FM	131,300
12	KKWF-FM	127,100
13	KIRO-FM	126,500
14	KBKS-FM	120,300
15	KQMV-FM	117,600

Recommended stations

Media Plan $60K Budget

Total budget: $48K

Timing: April 1-21, 2013

Radio: $48K budget

- 3 weeks on air, 4-5 stations
- Top ranking stations for Adults 35-64
- Variety of formats to maximize reach
- Added value messaging can drive listeners to workshops
- Goal 100 GRPs per week

KZOK 102.5 FM Classic Rock

Selection Rationale

- Ranks # 3 for Adults 35-64
- Ranks #1 for Men 35-64
- Competitive ad pricing

Added Value

- Lunch sponsorship- including 12 mentions and 2 open/close billboards
- PSA's – 10 per week, 30 total

Schedule Details

Weeks of:	4/1, 4/8 & 4/22
Total # spots:	156
Paid spots:	96
PSAs/mentions:	
Efficiency:	reaches 20.2% (350,611) Adults 35-64 an average of 3 times 1,051,834 impressions

Cost: $9,333
Total impressions: 2,161,986
Value: $23,476 (leveraged 152%)

KJR- FM 95.7 Oldies

Selection Rationale

- Ranks # 3 for Adults 35-64
- Ranks #1 for Men 35-64
- Competitive ad pricing

Added Value

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Next Steps

- *Client to approve media buy by Wednesday, 5/9*
- *PRR to complete media buy and contracts, 5/9-5/10*
- *PRR to coordinate media memo bills, 5/10-5/17*
- *PRR coordinates with stations regarding spot and added value components, 5/10-5/25*