Eastern Washington Stormwater Effectiveness Studies

Quality Assurance Project Plan

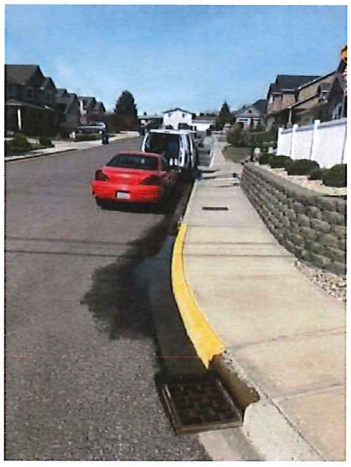
Mobile Contractor Illicit Discharge Education & Outreach Effectiveness Study

Study Classification:

☐ Structural BMP · Operational BMP ✓ Education & Outreach

Study Objective:

✓ Evaluate Effectiveness · Compare Effectiveness



Prepared By:

Jessica Shaw, Environmental Manager
Kelsey Grover, Stormwater Technician

City of Wenatchee

Public Works Department
1350 McKittrick Street, Suite A
Wenatchee, WA 98801
509-888-3225

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Quality Assurance Project Plan Public Information

The quality assurance project plan (QAPP) will be available on the regional Wenatchee Valley Stormwater Technical Advisory Committee webpage hosted by the City of Wenatchee, www.wenatcheewa.gov/wvstac.

Quality Assurance Project Plan Authors and Contact Information

Jessica Shaw
Environmental Manager
City of Wenatchee, Public Works Department
1350 McKittrick Street, Suite A
Wenatchee, WA 98801
509-888-3225
jshaw@wenatcheewa.gov

Kelsey Grover
Stormwater Technician
City of Wenatchee, Public Works Department
1350 McKittrick Street, Suite A
Wenatchee, WA 98801
509-888-3273
kgrover@wenatcheewa.gov

Signature Page

Approved by:

Jessica Shaw, Environmental Manager, City of Wenatchee — Date 10/29/18

Jason Detamore, Environmental Manager, Chelan County — Date 10/29/2018

Clayton Verellen, Natural Resource Specialist, City of East Wenatchee — Date 10/29/18

Jennifer Lange, PE, Engineering Program Manager, Douglas County — Date 10-29-18

Ray Latham, Permit/ Project Manager, Washington State Department of Ecology — Date

Brandi Lubliner, QA Coordinator Washington State Department of Ecology — Date

Distribution List

Name, Title	Organization	Contact Information: Address, Telephone, E-mail
Jessica Shaw Environmental Manager	City of Wenatchee	1350 McKittrick, Wenatchee, WA 98801 Phone: 509-888-3225 Email: jshaw@wenatcheewa.gov
Kelsey Grover Stormwater Technician	City of Wenatchee	1350 McKittrick, Wenatchee, WA 98801 Phone: 509-888-3273 Email: kgrover@wenatcheewa.gov
Jason Detamore Environmental Manager	Chelan County	316 Washington St, Ste 402, Wenatchee, WA 98801 Phone: 509-664-6415 Email: jason.detamore@co.chelan.wa.us
Clayton Verellen Natural Resource Specialist	City of East Wenatchee	271 9th St NE, East Wenatchee, WA 98802 Phone: 509-884-1829 Email: cverellen@east-wenatchee.com
Jennifer Lange, PE Engineering Program Manager	Douglas County	140 19th St NW, Ste A, East Wenatchee, WA 98802 Phone: 509-884-7173 Email: jlange@co.douglas.wa.us
Chad Phillips Assistant Engineer	City of Spokane Valley	10210 E Sprague, Spokane Valley, WA 99206 Phone: 509-720-5013 Email: cphillips@spokanevalley.org
Shilo Sprouse Stormwater Services Program Manager	City of Pullman	325 Paradise St, Pullman, WA 99163 Phone: 509-338-3314 Email: shilo.sprouse@pullman-wa.gov
Bruce Mills, PE Deputy Public Works Director	City of Kennewick	1010 E Chemical Dr, Kennewick, WA 99336 Phone:509-585-4419 Email: bruce.mills@ci.kennewick.wa.us
Ray Latham Municipal Stormwater Permit Manager	WA State Department of Ecology	1250 W. Alder St, Union Gap, WA 98903-0009 Phone: 509-575-2807 Email: rlat461@ecy.wa.gov
Brandi Lubliner, PE QA Coordinator	WA State Department of Ecology	PO Box 47600, Olympia, WA 98504-7600 Phone: 360-407-7140 Email: brandi.lubliner@ecy.wa.gov
Karen Dinicola	WA State Department of Ecology	PO Box 47600, Olympia, WA 98504-7600 Phone: 360-407-6426 Email: kdin461@ecy.wa.gov
Doug Howie, PE	WA State Department of Ecology	PO Box 47600, Olympia, WA 98504-7600 Phone: 360-407-6444 Email: doho461@ecy.wa.gov
Abbey Stockwell	WA State Department of Ecology	PO Box 47600, Olympia, WA 98504-7600 Phone: 360-407-7221 Email: abst@ecy.wa.gov

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Executive Summary

Under the National Pollutant Discharge Elimination System permits for municipal stormwater discharges, stormwater pollution prevention education and outreach programs are important elements of an effective stormwater management program. In 2010 the Dump Smart program, a stormwater education and outreach program designed for mobile contractors, was implemented in the urban area of six eastern Washington communities, including four jurisdictions in the Wenatchee Valley. The goal of the present study is to evaluate the effectiveness of the Dump Smart program. The present study involves a phone survey of carpet cleaning businesses in the Wenatchee Valley to determine if mobile businesses are carrying spill kits and disposing of wastewater in accordance with the Dump Smart program guidelines. Carpet cleaning businesses in a control area, where the program was not implemented, will receive the same phone survey. The survey responses will be used to compare the knowledge and practices of carpet cleaning businesses in communities that implemented the Dump Smart program and businesses in communities that did not implement Dump Smart. In addition, test area and control area jurisdictions covered under the Eastern Washington Phase II Municipal Stormwater Permit will be surveyed by email. The jurisdiction survey will request information about other education and outreach programs implemented in the areas and the number of confirmed illicit discharges associated with carpet cleaning businesses. The study results will be presented in a final report and will provide recommendations for the next phase of the Dump Smart program. The study results are anticipated to show whether the Dump Smart program should be more widely implemented or if modifications to the program to improve its effectiveness are needed.

1.0 Background

Mobile contractors provide an array of services, many of which have the potential to pollute stormwater. Despite education and enforcement efforts, cities and counties continue to find illicit discharges from mobile contractors. The goal of this study is to evaluate the effectiveness of a statewide mobile business education and outreach program, Dump Smart, in eastern Washington communities. Specifically, this study will determine whether the target population who received the educational and outreach materials is implementing the best management practices emphasized by the Dump Smart program.

1.1 The Stormwater Education and Outreach (E&O) Program – Dump Smart

In 2010, the Washington State Department of Ecology awarded a Municipal Stormwater Grant of Regional or Statewide Significance (GROSS) to Snohomish County in partnership with City of Moses Lake, City of Wenatchee, City of Seattle, and Kitsap County to develop a unified pollution prevention message to mobile businesses. With the grant, stormwater professionals were surveyed from both eastern and western Washington on the issues with mobile businesses related to stormwater pollution. The results from the survey were used to identify target behaviors and the mobile businesses of concern. Focus groups were then conducted in Puget Sound and Spokane with professionals from the identified mobile businesses of concern including carpet cleaners, pressure washers, painters, and hood cleaners. The results from surveys and focus groups were used to develop the Dump Smart program which was implemented in communities statewide. In eastern Washington, the program was implemented in the urban permitted areas of Moses Lake, Spokane County, Wenatchee, East Wenatchee, Chelan County, and Douglas County.

The Dump Smart program focuses on the proper disposal of wastewater and spill clean-up. Businesses were provided the following:

- An information packet was mailed to mobile businesses which included a fact sheet on best management practices for wastewater disposal and spill clean-up (Appendix A), a window cling with the Dump Smart logo, and a pledge.
- A website (dumpsmart.org) was created to provide an online resource for businesses and a hotline was set-up to connect businesses with local jurisdictions.
- Businesses were asked to sign a pledge: *I pledge to dispose of my business' wastewater properly and follow the Dump Smart tips.* For businesses who completed the pledge, their business contact information was added to the website and a newspaper ad was ran in the local paper with the business' name.

The Dump Smart program utilizes the components of the community-based social marketing (CBSM) model. CBSM is a process composed of five steps: selecting behaviors; uncovering barriers and benefits to the desired behaviors; developing a strategy; piloting the program, and then evaluating the program again once it has been broadly implemented. CBSM highlights the importance of strategically delivering information to specifically targeted segments of the public to overcome barriers preventing the public from engaging in a desired behavior (McKenzie-Mohr, Smith, 1999).

1.2 Problem Description

The key stormwater pollution issue with many mobile contractors is their management practices associated collection, transportation, and disposal of wastewater. Mobile businesses can serve a large area and may not have a location to discharge wastewater near the job site. In 2016, a survey of eastern Washington Phase II communities found that illicit discharge complaints were primarily generated from four types of mobile businesses: painting contractors, carpet cleaners, concrete contractors, and food vendors. Given the variety of mobile business and subsequently the different types of waste and wastewater management needs, designing a program to meet the specific issues and types of wastewater generated is challenging.

1.3 Results of Prior Studies

The use of informational campaigns for education and outreach have been widely used because the material is relatively easy to distribute through various forms of media (Larson & Massetti-Miller, 1984). Informational campaigns are important to raise awareness of an issue and provide information, however reliance on informational campaigns alone is unlikely to change behavior. While changing behavior is the ultimate goal of education and outreach, many studies have shown that traditional information campaigns are not effective (McKenzie-Mohr, 2011). To address the gap between information and action, community-based social marketing (CBSM) has been become an attractive alternative to promoting positive environmental behavior. CBSM approaches have been widely used to address issues of recycling, energy use, and pollution prevention.

Education and outreach campaigns across the country have used the CBSM approach to address stormwater pollution at a residential level. Through an extensive literature search, it has been determined that there have been no published effectiveness studies of CBSM strategies to address carpet cleaners or any type of mobile businesses.

1.4 Regulatory Requirements

The Eastern Washington Phase II Municipal Stormwater Permit S8.B requires each city and county listed in the permit to collaborate on Ecology-approved studies to evaluate the effectiveness of the permit-required stormwater management program activities and best management practices. S5.B.1.a and S5.B.1.a.ii requires permittees to implement a public education and outreach program to target businesses on the impact and prevention of illicit discharges as well as the proper management and disposal of waste. In 2016, eastern Washington communities covered under the permit submitted to Ecology a ranked list of fourteen effectiveness study ideas. The Mobile Contractor Illicit Discharge Education and Outreach study was proposed by the Wenatchee Valley permitted jurisdictions and was ranked fourth. The study then moved forward to a detailed study design proposal which was approved by Ecology in November of 2017.

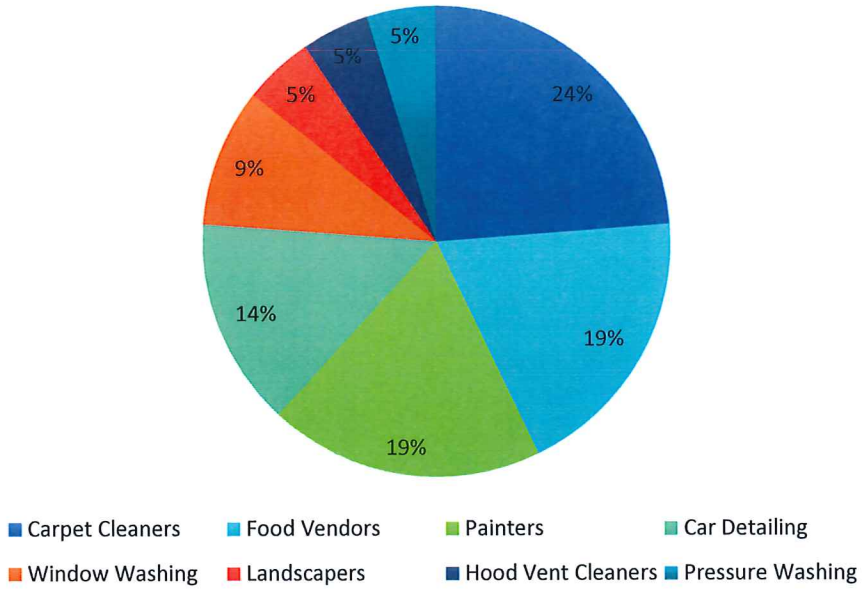
Under the first issuance of the Eastern Washington Phase II Municipal Stormwater Permit, permitted communities had until August 16, 2009 to adopt illicit discharge regulations. All of the permitted communities included in this study prohibit the discharge of carpet cleaning wastewater and chemicals to the municipal separate storm sewer system under city or county code.

2.0 Project Overview

2.1 Study Goal

The goal of this study is to assess the effectiveness of the Dump Smart education and outreach program in eastern Washington for carpet cleaning businesses. From 2011 to 2016, carpet cleaning businesses accounted for the highest number confirmed mobile contractor illicit discharges documented in Wenatchee, WA (refer to Figure 2.1). Based on a survey of eastern Washington communities for the same time period, carpet cleaning businesses were the second most frequent source of illicit discharges. Illicit discharges associated with carpet cleaners have been found to contain sediment, hair, bodily fluids, volatile organic chemicals, oil, grease, and bacteria (Bishop, 2003).

Figure 2.1 City of Wenatchee Mobile Contractor Illicit Discharges, 2011-2016



This study will target carpet cleaning businesses in communities that implemented the Dump Smart program. Businesses in communities that did not implement the Dump Smart program will be the control population. Effectiveness will be measured based on two criteria presented by McKenzie-Mohr (2011), the impact and penetration. The impact of the Dump Smart Program will be measured through a comparison of the confirmed carpet cleaning business illicit discharges before and after the implementation of the program. The penetration of the program will be measured through the use of surveys to determine what percentages of carpet cleaning businesses report engaging in proper disposal of wastewater and carrying of spill kits. The penetration of the study will likely be shown as a range of percentages representing participation in desired activities. Behaviors that have fewer business engaged will provide the most potential for adaptations to the program.

Based on the evaluation of the effectiveness of the Dump Smart program for carpet cleaners, communities already implementing the program would be encouraged to continue supporting the

program and other communities may choose to begin implementation. On the other hand if the program is found not to be effective, the data could be used to modify or develop a more effective program for carpet cleaners.

2.2 Study Description and Objectives

A survey will be developed by the lead jurisdiction and administered by a consultant by phone to carpet cleaning businesses in at least two communities in eastern Washington for the target population and at least one community for the control population. In communities where the phone surveys are conducted, an email survey will be sent to the corresponding jurisdiction to gather data on illicit discharges from carpet cleaners and all education and outreach programs regarding the prevention of illicit discharges. Additionally, jurisdictions will be asked about education and outreach programs that have targeted mobile contractors and specifically, carpet cleaning businesses.

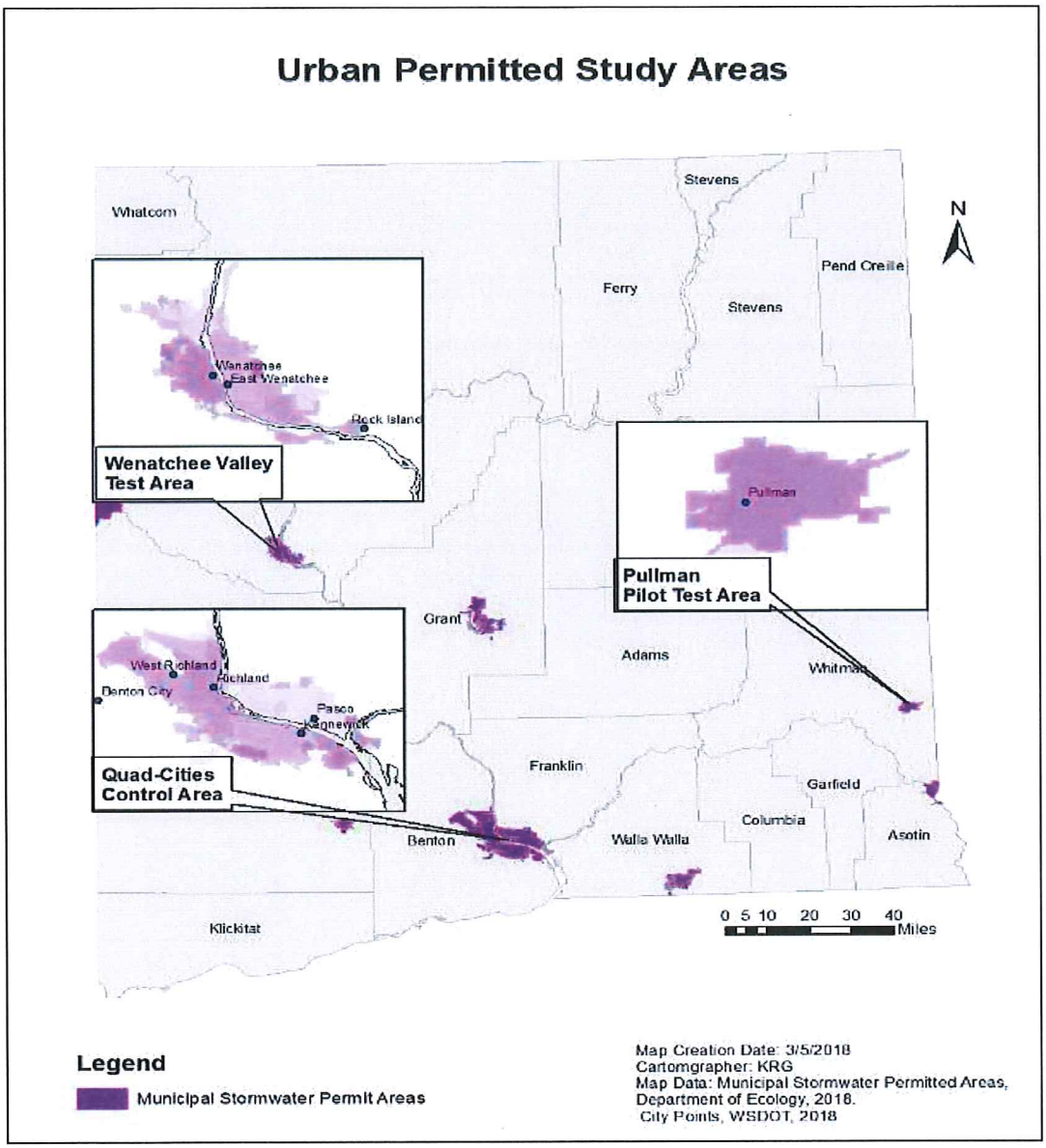
The main objectives of the study are as follows:

- Gauge carpet cleaning business's understanding of proper disposal options for wastewater in accordance with local regulations.
- Determine whether carpet cleaning businesses are carrying spill kits and disposing of wastewater properly.
- Compare the knowledge and practices of carpet cleaning contractors that participated in the Dump Smart program and those businesses that did not participate the program.
- Determine whether or not education and outreach programs other than Dump Smart have been implemented in control areas.
- Summarize the study results and provide recommendations for the next phase of the Dump Smart program (i.e. implementing the Dump Smart Program in more areas or modify this program to improve the effectiveness before implementing it in more communities).

2.3 Study Location and/or Target Population

Carpet cleaning businesses in eastern Washington communities will be the target population. Specifically, the study group will include the carpet cleaning businesses in the Wenatchee Valley. The Wenatchee Valley includes the Cities of Wenatchee and East Wenatchee and the urban permitted areas of Chelan and Douglas Counties. In addition, a control population of businesses in the City of Kennewick, City of Richland, and City of West Richland where the Dump Smart program was not implemented will be included in the study. Figure 2.2 shows the locations within Eastern Washington of pilot area, test area, and control area.

Figure 2.2 Study Areas Site Map



2.4 Data Needed to Meet Objectives

The data that will be collected during the study is summarized in Table 2.1.

Table 2.1 Data Needed to Meeting Objectives

Data Type	Collection Method	Purpose
Responses to mobile business survey	Phone survey	Information on carpet cleaning contractor's knowledge of BMPs
Responses to jurisdiction survey	Emailed survey	Information on mobile contractor illicit discharges and education and outreach programs in the study communities

2.5 Tasks Required to Conduct Study

The project is expected to include the following tasks.

- Detailed Study Design Proposal, submitted to Ecology 6/28/2017.
- Ecology Review Period, Detailed Study Design Approval Approved 11/8/2017.
- Quality Assurance Project Plan, 6-months maximum
- Ecology Review Period
- Select a consultant
- Data Collection Preparation, 6-months, maximum
    - Prepare a survey for businesses and validate through pilot testing
    - Prepare a survey for permitted jurisdictions and validate through pilot testing.
    - Make adjustments to survey for clarity and understanding if needed.
- Data Collection, 1-year
    - Conduct a phone survey of carpet cleaning businesses in the Wenatchee Valley where the Dump Smart program was implemented as well as in communities that did not implement the program.
    - Collect illicit discharge data and illicit discharge education and outreach program information from permittees where the phone survey will be conducted. This will help determine if results from the control group are impacted by other education and outreach efforts.
- Analysis and Reporting, 6-months, maximum

2.6 Potential Constraints

This section describes the conditions that may impact the project schedule, budget, or scope and the steps that will be taken to reduce the impact of these conditions. The potential constraints and mitigation approach are summarized in Table 2.2.

Table 2.2 Summary of Potential Study Constraints and Subsequent Mitigation Approach

Potential Constraint	Mitigation Approach
The business may not be willing to participate in the survey.	• A short "refusal survey" of 3 to 4 questions could be offered. • The consultant could offer to set up a time to call back that is more convenient. • The survey will be kept short out of respect for the business owner's time.
The person answering the phone for the business may not be able to answer the questions on the survey.	• The consultant could offer to set up a time to call back when the appropriate representative of the business would be available. • The survey could be recorded as missing data. • An online survey could be offered.
The phone survey call is rejected because it appears to be a sales call or fraud.	• Send a postcard or letter in advance of the survey letting the business know that a phone survey will be conducted within a given timeframe. • The introduction to the survey will include information explaining who is requesting the

	information and why the survey is being conducted.
The business may be fearful of enforcement action if they admit to not using the appropriate BMPs.	• The respondent will be assured that the company will remain anonymous. • The introduction to the survey will include information explaining that no enforcement action will be taken.
The business may have a language barrier causing comprehension of the survey to be challenging.	• The survey could be offered in another language.

3.0 Organization and Schedule

The purpose of this section is to describe who is responsible for completing the tasks, when the tasks will be completed, how much each task will cost, and how the study will be funded.

3.1 Key Project Team Members: Roles and Responsibilities

Table 3.1 Key Project Team Members, Roles, and Responsibilities

Participating Entity	Role	Responsibility
City of Wenatchee Chelan County Douglas County City of East Wenatchee	Financial Support	Provide financial contributions toward their cost of executing the study.
City of Wenatchee Chelan County Douglas County City of East Wenatchee City of Spokane Valley City of Pullman City of Kennewick	Reviewer	Review and provide comments on the study documents prior to the lead entity submitting the documents to Ecology. Documents include: • Quality Assurance Project Plan (QAPP) • Final Report Reviewers are invited to participate in the technical advisory group meetings.
City of Wenatchee -Lead Chelan County Douglas County City of East Wenatchee	Technical Advisory Group Lead/Member	The goal of a technical advisory group (TAG) is to provide insight, suggestions, and professional opinions over the course of the research study. The expectations of the TAG members may include: • Attend project status meetings (either by phone or in person) and participate in the meeting discussion • Review and provide comments on research materials (i.e. QAPP, data collected, data analyzed, study reports, etc.
City of Wenatchee	QAPP Author	The QAPP author is responsible for developing the contents of the QAPP as defined in the QAPP Template through Ecology approval of the QAPP.
Consultant	Data Collector	Data collectors are responsible for collecting some or all of the data during the data collection phase of the study. This includes following the standard operating procedures (SOPs) for data collection as defined in the QAPP.
City of Wenatchee	Auditor	The auditor is responsible for conducting audits to verify the study conforms to the plan and procedures defined in the Ecology approved QAPP. Refer to Section 11.
City of East Wenatchee	Data Verifier	The Data Verifier will review the analyzed data and verify the analysis is correct in the final draft report. Refer to Section 12.
City of Wenatchee	Final Report Author	The author of the final report is responsible analyzing the data and summarizing the findings of the study into the final report.

3.2 Project Schedule

The project is expected to take 18 to 24 months once the QAPP has been approved.

Table 3.2 Projected Study Timeline

Task Name	2017			2018				2019				2020	
	Q2: Apr-Jun	Q3: Jul - Sept	Q4: Oct-Dec	Q1: Jan-Mar	Q2: Apr-Jun	Q3: Jul - Sept	Q4: Oct-Dec	Q1: Jan-Mar	Q2: Apr-Jun	Q3: Jul - Sept	Q4: Oct-Dec	Q1: Jan-Mar	Q2: Apr-Jun
Proposal Development													
Ecology Proposal Review													
QAPP Development													
Ecology QAPP Review													
Data Collection Prep.													
Data Collection													
Analysis and Reporting													

3.3 Budget and Funding Sources

The study will be funded jointly by the City of Wenatchee, City of East Wenatchee, Chelan County, and Douglas County through an interlocal agreement (Appendix B). Data collection costs were estimated based on quotes from social marketing research companies. The other tasks were estimated based on past project costs. The estimated costs below do not include the in-kind services provided by the partners and participating jurisdictions for reviewing documents, participating in consultant selection, and providing data.

Table 3.3 Effectiveness Study Major Tasks & Budget

Task	Estimated Cost
Study Administration	$5,000
Data Collection Preparation	$2,500
Data Collection	$15,000
Analysis and Reporting	$2,500
Total Estimated Study Cost	**$25,000**

4.0 Quality Objectives

The goal of a QAPP is to ensure that the data collected during the study is scientifically and legally defensible. The QAPP documents how quality assurance (QA) and quality control (QC) will be applied to a research project to assure that the results obtained are of the type and quality needed and expected. This section emphasizes how the data quality indicators (DQIs) and respective measurement performance criteria (MPCs) will be applied to the project. DQIs are qualitative and quantitative measures that characterize the aspects of quality data. DQIs also guide the development of the experimental design as well as the process of creating and analyzing data with the intent of establishing the trustworthiness of the results.

Seven principle DQIs were identified for E&O programs and include: Validity, Reliability, Objectivity, Credibility, Transferability, Completeness, and Integrity. These DQIs provide the basis for the MPCs; the data performance or acceptance criteria that specifies how good the data must be to meet the project objectives. The DQIs and respective MPCs specific to this study can be found in Table 4.1.

Table 4.1 Mobile Contractor E&O Effectiveness Study Data Quality Indicators and Measurement Performance Criteria

Data Quality Indicator	Approach to Address Data Quality Indicator	Measurement Performance Criteria
Validity - Closeness between the measured value and the true value. An instrument is considered valid when it measures what it is purported to measure.	□ The business survey will be written in language that is accessible to the target audience. □ Both surveys will be pilot-tested to validate that the surveys are providing the intended information.	□ The business survey will be written at a 6th grade writing level and verified by the Flesch-Kincaid grade level test in Microsoft Word. □ The results of the surveys will be reviewed by the auditor to verify that the results are consistent with the goals of the study. More information about the auditor can be found in Section 11.
Reliability - The degree to which an instrument produces stable and consistent results on repeated measurements. The level of precision or reliability, also called sampling error, is the range in which the true value of the population is estimated to be.	□ Standard Operating Procedures (SOPs) will be defined and consistently followed for collecting the surveys. □ Survey forms will be developed to collect the survey responses.	□ The auditor will verify that the business survey has been implemented by reviewing certification data that the SOP was followed for each survey. Data will be considered acceptable if the surveyors followed the SOP. □ The auditor will verify that the jurisdiction survey has been implemented in accordance with the SOP using the survey response forms. Data will be considered acceptable if the surveyor followed the SOP.
Objectivity - Attempt to diminish or eliminate the investigators bias. An objective investigator is neutral and open to all sides of the argument without imposing their own bias, motivation, interest, or perspectives.	□ The surveys will be administered by a consultant.	□ All of the survey data must be collected by the consultant to be considered useable data.
Completeness - The amount of valid data needed to be obtained from the measurement system. Data is considered complete when: the sample size is representative of the target population.	□ All of the carpet cleaning businesses and permitted communities in the test area and the control area will be included in the surveys.	□ The auditor will verify through an internet search that all of the businesses in the study area have been included by auditing the survey list prior to implementation of the survey. □ The auditor will verify through the list of permitted communities in the Eastern Washington Phase II Municipal Stormwater Permit that the communities surveyed in the test and control areas are covered under the permit.

Data Quality Indicator	Approach to Address Data Quality Indicator	Measurement Performance Criteria
Credibility – Credibility is often referred to as social desirability bias. This describes a type of response bias where survey respondents answer questions in a manner they believe will be viewed favorably by others. It can take the form of over-reporting "good behavior" or under-reporting "bad" or undesirable behavior.	□ Identification codes developed by the consultant will be used for the business survey data to protect the businesses who might respond to the survey that they are not implementing BMPs.	□ Business name and contact information was removed prior to the City of Wenatchee receiving the data from the consultant.
Transferability – The extent to which sample data can be transferred from a sample to a population. Datasets are considered transferable if the instruments, data sources, data collection procedures, sample selection procedures, and reporting are equivalent.	□ The test area will include communities that have implemented the Dump Smart Education and Outreach program and a control area of permitted communities who did not. □ SOPs will be consistently followed during data collection.	□ Compare responses from target population to control population using hypothesis testing at a predefined confidence interval and statistical power. □ The auditor will verify that the business survey has been implemented by reviewing certification data that the SOP was followed for each survey. Data will be considered acceptable if the surveyors followed the SOP. □ The auditor will verify that the jurisdiction survey has been implemented in accordance with the SOP using the survey response forms. Data will be considered acceptable if the surveyor followed the SOP.
Integrity - Integrity is concerned with minimizing errors through the process of collecting, recording, and analyzing data.	□ SOPs will be consistently followed during data collection. □ Data recording and reporting procedures will be consistently followed during the study including using standard forms for data collection and reviewing the data to ensure it has been properly recorded and logged into database. □ The SOP for the business survey will include assurances for maintaining respondent confidentiality.	□ The auditor will verify that the business survey has been implemented by reviewing certification data that the SOP was followed for each survey. Data will be considered acceptable if the surveyors followed the SOP. □ The auditor will verify that the jurisdiction survey has been implemented in accordance with the SOP using the survey response forms. Data will be considered acceptable if the surveyor followed the SOP. □ The data will be considered usable if it was coded prior to the City of Wenatchee receiving the data from the consultant and all of the business survey data was collected by the consultant.

5.0 Experimental Design

5.1 Study Design

The Dump Smart education and outreach program focused on educating mobile contractors on ways to properly dispose of wastewater. To evaluate the effectiveness of the program, a phone survey will be conducted with carpet cleaning businesses in the Wenatchee Valley. Additionally, the phone survey will be carried out in at least one other community in eastern Washington where the Dump Smart program was not implemented. Preliminary surveys have been developed (Appendix C) and will be validated by a qualified consultant. The consultant for the project will also conduct the surveys following their established procedures and then provide a statistical analysis of the data.

To improve credibility of the results and remain exempt from the requirement of having an institutional review board, the business survey will be anonymous. The consultant will also be asked to offer a refusal survey if the business is initially unwilling to participate. According to Doug Mckenzie-Mohr (2011), the refusal survey, which is a shorter version of the full survey, offers an opportunity to collect data for 3 to 4 key questions and has been found to be an effective method for convincing people to participate in a phone survey. Since carpet cleaners are mobile and rely on phone calls to arrange appointments, it is anticipated that a phone survey will be the most successful method for collecting survey data.

Data on the local stormwater management program will be collected by the consultant via email from the participating jurisdictions where the business survey is conducted. The data will include information on education and outreach for carpet cleaning businesses and the number of confirmed illicit discharges from carpet cleaning contractors. This information will be used to compare the responses from the business surveys in the test area and the control area to determine whether other education and outreach programs may be impacting the results of the survey.

5.2 Process for Selecting the Test-Site and Target Population

The urban permitted areas of Wenatchee, East Wenatchee, Chelan County and Douglas County, WA will be the test area where the Dump Smart education and outreach program was implemented in 2010. In addition, the City of Kennewick and City of West Richland will be the control area based on the following criteria:

- The community is permitted under the Eastern WA Phase II Municipal Stormwater Permit.
- The Dump Smart education and outreach program has not been implemented in the community, and it is at least 60 miles from the nearest community where Dump Smart was implemented. The intent is to make sure businesses in the control area were not regularly working in the test area. It is anticipated that carpet cleaning businesses are not traveling more than 60 miles one way for work. The typical travel time will be verified in the business survey.
- At least thirty carpet cleaning businesses are in the control community. There are approximately thirty carpet cleaning business in the test area, so the control group should have an equivalent number of carpet cleaning business or more.
- The control site may include one or more adjacent jurisdictions.

5.3 Type of Data being Collected

The type of data required to meet the study objectives is described in Table 5.1. All of the data will be collected by phone or email by the consultant.

Table 5.1 Types of Data Being Collected

Data Type	Purpose
Survey Responses from Target and Control Population	Multiple choice and open ended survey responses will be used to assess the participants understanding of the Dump Smart program objective: proper management of wastewater and impact of illicit discharge on water bodies: effectiveness will be measured based on significant differences in the control and target population responses.
Survey Responses from Jurisdictions in the Study Area	Gather information about other E&O programs in the jurisdiction and understand the magnitude of the problem and compare the number of confirmed discharges with the education and outreach provided by the community and the results of the survey.

To insure that the data is complete and representative of the target population, all of the mobile carpet cleaning contractors in the target and control areas will be included in the survey. In addition, all of the permitted communities in the target and control areas will be included in the jurisdiction survey. The list of contractors and permitted communities will be verified by the auditor for completeness.

5.4 Other E&O Programs

In eastern Washington, two education and outreach programs have been developed and implemented that included mobile businesses as a target audience: the Only Rain Down the Drain program (Asotin County, 2011) and the Dump Smart program (Snohomish County, 2011). One of the questions in the jurisdiction survey will address what E&O programs have been implemented in the community that address mobile carpet cleaning contractors and when was the program started. The information regarding other E&O programs will be used in comparing the data between the target population and the data from the control population.

6.0 Instrument Design and Development

This section describes the instruments that will be used during the study along with the process used to develop and validate the instruments. The instruments for this study will be surveys: one for the carpet cleaning businesses and one for the permitted jurisdictions in the study areas. Preliminary drafts of the surveys have been developed based on the objectives of the study and can be found in Appendix C. Preliminary drafts of the surveys are included in lieu of finalized drafts because the questions listed may be revised based on the responses from the pilot test. A pilot test of the survey is necessary to ensure that the survey receives the type of information desired. The pilot testing also helps to ensure that the wording and order of the questions is effective, that the length is appropriate, and any questions found to be confusing or difficult to answer can be revised before the distribution of the final survey. Results yielded from the pilot test will not be included with the final survey results and will be conducted in an area unrelated to the final distribution of the surveys. Input on the surveys will also be solicited from the consultant. The business survey will be a researcher-completed and the jurisdiction survey will be a subject-completed survey.

6.1 Instrument Design

The preliminary surveys were developed based on the goals of the Dump Smart program. Information collected from the mobile contractor focus groups that occurred during the development of the Dump Smart program was also reviewed. The surveys are intended to assess the effectiveness of the Dump Smart program by comparing survey responses from mobile contractors where the program has been implemented and in a control area where the program was not implemented. The business survey will focus on the implementation of BMPs promoted by the Dump Smart program. The jurisdiction survey will seek information on education and outreach programs and the number of confirmed illicit discharges in the jurisdictions in the study area. Literacy experts indicate that the average American reads at a 6th to 7th grade level, but educational materials should be written at a 5th grade reading level (Roy, et al., 2015). The business survey will be written at a 6th grade level as determined by the Flesch-Kincaid grade level test tool in Microsoft Word.

The surveys will be validated through pilot testing. For reliability, survey forms will be used to collect data and standard operating procedures have been developed for delivery of the survey (Appendix C). Since the City of Wenatchee and participating jurisdictions regulate the businesses that will be participating in the survey, the consultant will conduct all of the business surveys. Survey responses will be coded by the consultant with a unique identification number and population code to protect the identity of the business improve the credibility of the survey data.

6.2 Procedures for Collecting Data

This section defines the procedures for collecting the survey data. Defining these procedures and following them consistently will minimize errors and support the integrity of the collected data. Standard operating procedures are the procedures that define specifically how to conduct an activity. SOPs should provide sufficient detail such that the activity is repeatable and can be reproduced by an individual (i.e. third party) unfamiliar with the project.

The following SOPs can be found in Appendix D:

- Business Survey SOP

- Refusal Survey SOP
- Jurisdiction Survey SOP

The SOPs include instructions provided to participants before the survey, how the interviews will be conducted, how to address any questions from the participant and detailed instructions for the data collector to ensure that the data is collected in accordance with the approved procedure.

6.3 Instrument Validation

Validation is the process to verify the instrument measures what it was intended to measure and produces stable results. The surveys will be validated through pilot-testing outside of the study area in Pullman, WA. The consultant will conduct the pilot-testing for both surveys. The results of the pilot testing will be reviewed by the TAG and the auditor to verify that the pilot-testing results are consistent with the goals of the study.

7.0 Quality Control

The purpose of this section is to describe the QC procedures that will be employed during the study to minimizing errors and support the integrity of the data through the process of collecting, recording, and analyzing data.

7.1 Study QC Procedures

For all the data that will be created during this study, the following quality control procedures will be implemented:

- Develop and consistently follow SOPs during data collection (Refer to Appendix D).
- Develop and consistently follow data recording and reporting procedures (Refer to Section 10.0 Data Management Plan Procedures).
- Develop and consistently use standard forms for data collection.
- Conduct Audits using third party (Refer to Section 11.0 Audits).

7.2 Corrective Action

The auditor will notify the lead entity by email as soon as practical if audit findings indicate that corrective action is needed. The lead entity is responsible for developing and implementing a written corrective action plan within 10 days of being notified by the auditor. Corrective actions will be documented throughout the study using the Corrective Actions Form (Appendix E) and all completed forms will be included in the final report.

8.0 Data Management Plan Procedures

This section defines the data management plan, specifically how the data collected and other important project documents will be managed, stored, and archived during the study. The purpose of the data management plans is to reduce the potential for errors during the data collection and analysis phases of the project; it also ensures that should an unanticipated change in Key Team Members takes place, the project can be more easily continued by a new team member.

8.1 Data Identification

The data collected during this study will fall into two main categories: responses to the business survey and responses to the jurisdiction survey. Within each of these categories, there will be data from the pilot test and data from the survey. The business survey will be coded by the consultant to maintain respondent confidentiality to reduce the chance of respondent bias due to fear of enforcement action. The coding will at a minimum include a unique identification number and identify whether the respondent was part of the target population or the control population. Confidentiality will be preserved by the consultant. The jurisdictions will not be provided with the list of responding businesses and their corresponding identification code.

The survey responses for the jurisdiction survey will be identified by the name of the community and include the name of the respondent representing the jurisdiction.

8.2 Data Recording & Reporting Requirements

Standard forms for the surveys will be used to record data. The preliminary forms can be found in the Appendices C and F. The use of standard forms and SOPs for data collection will help reduce errors in data collecting and recording. The forms will be completed by the consultant.

Microsoft Excel will be used for data collection and compiling the study data. The data will be stored on the City of Wenatchee shared work drive in a project folder labeled "Mobile Contractor Study_Dump Smart." All files saved to the drive are backed up daily by the City of Wenatchee's Information Technology Department. The consultant will be responsible for collecting and storing the business survey data until it is electronically transferred via email to the lead agency. The lead agency will store the data for a minimum of five years.

8.3 Procedures for Missing Data

The consultant will identify through coding any missing data from the survey responses. The coding will be developed once the surveys have been finalized. A note will be added to the data to explain why the data is missing. If the data is found to be missing by the auditor, the auditor will notify the City of Wenatchee as set forth in Section 9.2. If it is not possible to collect the missing data in accordance with the QAPP, the data missing will be documented as such in the database and included in the final report.

8.4 Acceptance Criteria for Data

This section defines the acceptance criteria that will be used to determine if a dataset can be

compared to another and can be combined or contrasted for the decisions to be made during this study. Data that is collected in accordance with the standard operating procedures using the survey forms will be considered acceptable. Refer to Section 4.0, Table 4.1 for the complete list of DQIs and MPCs for this study.

8.5 Procedure for Revisions to the QAPP

If significant changes are made to the QAPP after the QAPP is approved and prior to the completion of the study, the QAPP will be revised and submitted to Ecology for review and approval. After the *revised* QAPP is approved, the document will be submitted (by the lead entity) to all of the persons on the Distribution List in this document.

9.0 Audits

The purpose of an audit is to verify conformance to the QAPP and ensure the usability of the data. Audits will be conducted throughout the study, so that corrective actions can be implemented in a timely manner. The auditor will use audit checklist in Appendix F to ensure that all of the tasks are completed as they have been described in the SOPs. The audits will be conducted at the City of Wenatchee Public Services Center, 1350 McKittrick Street, Wenatchee, WA by City of Wenatchee.

Table 9.1 Audit Frequency, Timing and Tasks

Audit Number	Timing	Audit Tasks
1	Following the pilot test of the survey.	-Results of the pilot test are consistent with the goals of the study. - The business survey is written at a 6th grade level or lower. -The SOP for the surveys was followed. -The survey data was collected by the consultant. -The business survey data was coded before receipt. -Verify the list of businesses and communities is complete and consistent with the target population criteria.
2	During the survey data collection.	-The SOP for the surveys is being followed. -The survey data is being collected by the consultant. -The business survey data is coded before receipt.
3	During the review of the final report.	-The SOP for the surveys was followed for both the test area and control area. -All of survey data was collected by the consultant. -The business survey data was coded before receipt. - The responses from target population were compared to the control population using hypothesis testing at a predefined confidence interval and statistical power.

10.0 Data Verification and Usability Assessment

The goal of this study is to evaluate the effectiveness of the Dump Smart program for carpet cleaning businesses and to determine whether businesses in communities who implemented the program are using best management practices more frequently than businesses in communities that did not participate in the program. This section explains the process that the study will employ to verify the instruments, evaluate the quality of the data, and evaluate the overall usability of the data for meeting the study objectives.

10.1 Data Verification

The data verifier for this study will be the City of East Wenatchee, WA. The data verifier will complete the following tasks:

Table 10.1 Data Verifier Tasks

Tasks	Study Phase
Verify that the audits addressed the MPCs	Draft final report
Review the data records for completeness	Draft final report
Review the data analyzed for errors	Draft final report

To document this process, the data verifier will use the Data Verifier Form in Appendix F.

10.2 Data Usability Assessment

As noted in the Table 12.1, the data verifier will review the data to determine if the MPCs have been met. If the MPCs were met, then the data is of sufficient quality to meet study objectives and will be considered useable. If the MPCs were not met, the data will be considered unusable and will not be included in the dataset for analysis. The usability of the data will be documented in the final report.

11.0 Data Analysis Methods

To evaluate the effectiveness of the Dump Smart program, the survey responses will be analyzed to compare the knowledge and practices of carpet cleaning contractors that received the program and those businesses that did not. Specific data analysis methods will be selected based on the final surveys and documented in the final report. Final data analysis methods will be determined upon the completion of the pilot survey. The pilot survey provides critical information regarding the readability, the order of the questions, and the length of time necessary to complete the survey. The pilot survey is also required to ensure that the questions asked provide necessary information. Questions in the pilot study that respondents find confusing or difficult to answer can be rewritten before the final survey is conducted (McKenzie-Mohr, 2011). The data analysis will be completed by the consultant.

11.1 Hypothesis Testing

Hypothesis testing will be used to assess whether there is a statistically significant difference between responses from jurisdictions and businesses in the control area and test area. Hypothesis testing will be determined whether or not to accept a null hypothesis that there is no relationship between businesses and communities that received the educational materials from the Dump Smart program and those that did not. The level of significance is typically set prior to data collection at 5% for behavioral sciences (Craparo, 2007). The analysis will be completed by the consultant.

11.2 Quantitative & Qualitative Data Analysis Methods

The consultant will select the appropriate data analysis methods based on the final survey questions. Data analysis methods cannot be selected prior to the determination of the final survey questions because data obtained in the pilot test of the survey will not be counted with the data from the final survey. At the discretion of the consultant, data may be analyzed by obtaining descriptive statistics, frequencies, comparing means, or multivariate statistics. Coding will be developed for narrative responses at this time as well. The analytical method chosen for the data analysis will be reviewed by the TAG. A report on the data analysis and justification of the methods used will be provided by the consultant including verification that: the analysis method is appropriate for the dataset, there is a sufficient number of samples for the method to be accurate, the statistical level of confidence will likely be achieved in the results and the type of statistical software or package being used to analyze the data.

11.3 Data Presentation Methods

Data will be presented in the final reports in tables and bar graphs to illustrate the results of the study.

12.0 Reporting

The purpose of this section is to describe the final reporting and dissemination of the study findings.

12.1 Reporting

Table 12.1 summarizes the reports required by the Eastern Washington Phase II Municipal Stormwater Permit for this study and the party responsible for preparing the reports.

Table 12.1 Effectiveness Study Reporting

Report	Responsible Party	Purpose
Annual Reports (S8.B8)	City of Wenatchee	Describe the interim results and status of the study.
Final Report (S8.B10)	City of Wenatchee	Report the final results of the study and the recommendations for future actions based on the findings. The surveys, results, statistical analysis used, and rejected and un-useable data will be documented in this report.

12.2 Dissemination of Project Documents

The project findings will be compiled into a final report and will be posted to the Wenatchee Valley Stormwater Technical Advisory Committee webpage hosted by the City of Wenatchee: www.wenatcheewa.gov/WVSTAC. The final report will be distributed to the parties listed in Table 3.1 in digital formats and hard copy upon request. The report will also be available upon request from the City of Wenatchee in electronic or hard copy format.

13.0 References

Bishop, J. (2003, Augst). The Science of Carpet Cleaning. *Clean Care Seminars, Inc. and Institute of Inspectionm Cleaning, and Restoration Certification*, 1-14.

Craparo, R. (2007). Significance Level. *Encycopedia of Measurement and Statistics*, 889-891.

Larsom, M. A., & Massetti-Miller, K. L. (1984). Measuring change after a public education campaign. *Public Relations Review*, 23-32.

Mckenzie-Mohr, D. (2011). *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing.* Gabriola Island, BC: New Society Publishers.

McKenzie-Mohr, D., & Smith, W. (1999). *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing.* Gabriola Island, BC: New Society Publishers.

Roy, S., Phetxumphou, K., Dietrich, A. M., Estabrooks, P. A., You, W., & Davy, B. M. (2015). An evaluation of the readability of drinking water quality reports: a national assessment. *Journal of Water and Health*, 645-653.

Appendix A Dump Smart Carpet Cleaning BMP Fact Sheet

dumpsmart.org

Tips on Properly Handling Waste Water when Carpet Cleaning

- Ask if the customer is on a sewer or septic before dumping any waste water. If on a septic system, collect the water and take it to a proper sewage disposal site. Carpet cleaning waste water may overwhelm and damage a septic system.
- If the customer is on a public sewer, dispose of waste water into a toilet, utility sink, etc. (or take to an approved sewer disposal location). Never dump waste water on the street, or down storm drains, ditches or other drainage pathways.
- Always filter your waste water when draining to any sewer system to remove debris and carpet fibers that can clog sewage treatment systems.

NOTE: You may be able to dump at an approved RV dump station. Contact these sites directly to determine availability and costs. RV dump stations can be located at www.sanidumps.com.

Tips on Preventing or Handling a Waste Water Spill when Carpet Cleaning

- Use less toxic, "greener" products whenever possible.
- Keep cleaning equipment (tanks, hoses, fittings) in good shape to prevent leaks.
- Make sure equipment and products are securely stored in your vehicle to reduce the risk of a spill.
- Store small containers of liquid products in larger containers to protect against spills.
- Promptly clean up any waste water that spills or leaks. If waste water reaches a storm drain system, contact your local city or county.
- Keep a spill kit on hand to deal with unexpected spills. Train your employees to use the spill kit materials and keep records of the training your employees receive.

Have questions about the proper disposal of waste water?
Contact the city or county where your job is located.

Appendix B Interlocal Agreement For Effectiveness Study Funding

Skip Moore, Auditor, Chelan County, WA.
AFN # **2472261**
Recorded 12:52 PM 01/26/2018
INAGMT Page: 1 of 7 $80.00 CITY OF WENATCHEE

Return Document to:
Tammy Stanger, City Clerk
City of Wenatchee
P.O. Box 519
Wenatchee, WA 98807-0519

The information contained in this boxed section is for recording purposes only in accordance with RCW 36.18 and RCW 65.04, and is not to be relied upon for any other purposes, and shall not affect the intent of or any warranty contained in the document itself.
Document Title: Interlocal Cooperative Agreement Reference Number of Documents Released: N/A Reference Numbers of Related Documents: N/A Grantor: Douglas County, Chelan County, City of Wenatchee, and City of East Wenatchee Grantee: Douglas County, Chelan County, City of Wenatchee, and City of East Wenatchee Legal Description (Abbreviated): N/A Parcel Number(s): N/A

INTERLOCAL AGREEMENT FOR DEVELOPMENT AND IMPLEMENTATION OF AN EFFECTIVENESS STUDY RELATED TO REGIONAL STORMWATER MANAGEMENT AND PERMIT COMPLIANCE

This agreement ("Agreement") is made and entered among Douglas County, Chelan County, the City of Wenatchee ("Wenatchee") and the City of East Wenatchee ("East Wenatchee"), collectively the "Parties".

WHEREAS, Chapter 39.34 RCW provides for the formation of interlocal agreements that enable local governments to effectively cooperate with each other to the benefit of local communities;

WHEREAS, the Federal Clean Water Act, 33 U.S.C. § 1251 et seq. and the Phase II Stormwater Final Rule promulgated by the U.S. Environmental Protection Agency ("EPA") require the operators of certain small municipal separate stormwater sewer systems to obtain National Pollutant Discharge Elimination System ("NPDES") permit coverage;

WHERAS, in Washington State, the EPA has delegated authority for the Federal Clean Water Act, including development and administration of the Phase II municipal stormwater management program, to the Washington State Department of Ecology ("Ecology");

WHEREAS, Douglas County, Chelan County, Wenatchee and East Wenatchee are covered under the Eastern Washington Phase II Municipal Stormwater Permit;

WHEREAS, on August 1, 2012, Ecology issued the current Eastern Washington Phase II Municipal Stormwater Permit ("Permit"), Effective Date: August 1, 2014; Permit Expiration Date: July 31, 2019;

WHEREAS, Douglas County, Chelan County, Wenatchee and East Wenatchee entered into a MEMORANDUM OF UNDERSTANDING FOR STORM WATER MANAGEMENT PLANNING in January 2004,

under which Douglas County, Chelan County, Wenatchee and East Wenatchee have developed and implemented a regional stormwater management program to comply with the Permit;

WHEREAS, Section S8.B of the Permit requires each city and county to collaborate with other permittees to select, propose, develop, and conduct Ecology-approved studies to assess, on a regional or sub-regional basis, effectiveness of permit-required stormwater management program activities and best management practices;

WHEREAS, Section S5.B.1.a of the Permit requires all permittees to implement a public education and outreach program designed to achieve improvements in the target audience's understanding of the problem and what the Parties can do to solve it. One of the minimum requirements is that permittees shall provide information for businesses about preventing illicit discharges, including what constitutes illicit discharges, the impacts of illicit discharges, and promoting proper management and disposal of wastes;

WHEREAS, the Parties developed, voted and submitted a final ranked list of stormwater management program effectiveness studies to comply with Section S8.B.2 and Section S8.B.3 of the Permit by June 30, 2016;

WHEREAS, the proposed study titled "Mobile Contractor Illicit Discharge Education" (the "Study") was ranked fourth out of the fourteen proposed studies submitted to Ecology; and

WHEREAS, the Parties wish to continue their cooperative approach for compliance with state and federal standards for stormwater management.

NOW, THEREFORE, the Parties hereby agree as follows:

1. The Recitals above are incorporated and made part of this Agreement.
2. Wenatchee shall be the lead agency for the purposes of the Study
3. The Parties will work together to accomplish the study.
    a. The Parties will cooperatively select a consultant to conduct a survey of mobile contractors and provide a report of the survey results.
    b. The consultant will contract with Wenatchee for the accomplishment of study activities when approved by the Parties.
    c. The Parties will review and submit a final report to Ecology at the end of the study.
4. The Study shall be funded in equal shares by each of the Parties and each Party's contribution shall not exceed $6,250.
5. This Agreement does not create any separate legal or administrative entity, and the parties will not acquire nor dispose of real or personal property for use in this undertaking.

6. This Agreement is effective upon signature by all Parties and filling with the Chelan County Auditor. This Agreement shall remain in effect through the end of the Permit cycle unless terminated earlier pursuant to its terms.

7. Any Party may withdraw from the Agreement upon thirty (30) days' written notice to the other Parties.

8. This Agreement shall terminate upon the withdrawal of at least three (3) of the Parties, or by written agreement of all Parties.

9. The Parties' authorized representatives and contact persons for administration of this Agreement, communication, and service of all notice, except service of process are:

   Chelan County: Jason Detamore
   316 Washington Street, Suite 402
   Wenatchee, WA 98801
   (509) 667-6415

   Douglas County: Jennifer Lange, P.E.
   140 19th Street NW, Suite A
   East Wenatchee, WA 98802
   (509) 884-7173

   City of East Wenatchee: Tom Wachholder
   271 9th Street NE
   East Wenatchee, WA 98802
   (509) 884-1829

   City of Wenatchee: Jessica Shaw
   1350 McKittrick Street, Suite A
   Wenatchee, WA 98801
   (509) 888-3200

10. Each party shall maintain books, records, documents and other materials relevant to its performance under this Agreement. Each Party shall retain all such books, records, documents and other materials for the longest applicable retention period under federal and state law. The records shall be kept available for and subject to inspection, review and audit by either party or its designee, any agency funding a portion of the project or authorized auditing or oversight entity, and the Washington State Auditor's Office.

SIGNATURE PAGE 1 of 4

Adopted: January 09, 2018

CITY OF EAST WENATCHEE

Steven C. Lacy, Mayor
Tim Dering, Mayor Pro Tem
January 09, 2018
Date

ATTEST:

Maria E. Heman
City Clerk

January 09, 2018
Date

APPROVED AS TO FORM:

City Attorney

1/9/18
Date

SIGNATURE PAGE 2 of 4

Adopted: 12/19/17

DOUGLAS COUNTY
BOARD OF COUNTY COMMISSIONERS

Chair

Vice Chair

District Member

12/19/17
Date

COMMISSIONERS COURT * * * SEAL * * * DOUGLAS COUNTY, WASHINGTON

ATTEST:

Clerk of the Board

12/19/17
Date

APPROVED AS TO FORM:

Prosecuting Attorney

12/13/17
Date

SIGNATURE PAGE 3 of 4

Adopted: 1/25/2018

CITY OF WENATCHEE

Frank Kuntz, Mayor

1/25/18

Date

ATTEST:

Tammy Stanger, City Clerk

1/25/2018

Date

APPROVED AS TO FORM:

City Attorney

1/25/18

Date

SIGNATURE PAGE 4 of 4

Adopted: 12-19-17

CHELAN COUNTY
BOARD OF COUNTY COMMISSIONERS

Keith W. Goehner, Chairman

Doug England, Commissioner

Kevin Overbay, Commissioner

12/19/17
Date

CHELAN COUNTY Commissioners SEAL STATE OF WASHINGTON

ATTEST:

Carlye Baity, Clerk of the Board

12-19-17
Date

APPROVED AS TO FORM:

Deputy Prosecuting Attorney

12-13-2017
Date

Appendix C Preliminary Business and Jurisdiction Survey Forms

Preliminary Business Survey

	Business ID		Survey Date		
1	What type of business is this?	Franchise	Owner/Operator		
2	How many people work for your business (Locally)?	1-5	5-10	10-15	20+
3	What is the farthest you typically travel for a job?	0-10 Miles	10-30 Miles	30-50 Miles	50+ Miles
4	How do you dispose of wastewater from carpet cleaning?				
5	Do you use the same wastewater disposal method for every job site?	YES	NO		
6	If no, what other wastewater disposal methods do you use?				
7	Do you have a spill kit in your work vehicle?	YES	NO		
8	How long has your business been in the area?	<1 Years	1-5 Years	5-10 Years	>10 Years
7	What is the best method to send information to you?	Mail	E-mail	Newsletter	Other
8	Have your heard of the Dump Smart program	YES	NO		

For Surveyor Use Only	
Additional Comments:	
I certify that this survey has been completed in accordance with the Standard Operating Procedure provided by the Jurisdiction.	
Printed Name	Signature

Preliminary Refusal Survey

	Business ID		Survey Date		
1	How do you dispose of wastewater from carpet cleaning?				
2	Do you use the same wastewater disposal method for every job site?	YES	NO		
3	If no, what other wastewater disposal methods do you use?				
4	Do you have a spill kit in your work vehicle?	YES	NO		
5	How long has your business operated in the area?	<1 Years	1-5 Years	5-10 Years	>10 Years

For Surveyor Use Only	
Additional Comments:	
I certify that this survey has been completed in accordance with the Standard Operating Procedure provided by the Jurisdiction.	
Printed Name	Signature

Preliminary Jurisdiction Survey

	Jurisdiction		Survey Date	
	Survey Respondent		Title	
1	What education and outreach programs has your jurisdiction implemented for illicit discharge prevention?			
2	What education and outreach has your jurisdiction implemented for Mobile Business illicit discharge prevention?			
3	Have any education and outreach efforts targeted carpet cleaning businesses specifically?			
4	Are illicit discharge records from your jurisdiction available from **2007-2017**?		YES	NO
	If yes, please provide the number of **confirmed** illicit discharges from carpet cleaners with the **year and the compliance action taken in response**		The lists of confirmed illicit discharges from carpet cleaners can be provided in a separate document if needed.	
	If no, please provide the number of **confirmed** illicit discharges from carpet cleaners from **2011-2017 with the year and the compliance action take in response**.			

Appendix D Standard Operating Procedures (SOP)

Carpet Cleaning Business Survey SOP

Step 1: Lead agency assembles list of carpet cleaning businesses in study area through internet search and provide list to third party consultant.

Step 2: Consultant will provide survey administration training with proper usage of survey form. The auditor will sit in on the training in person or through video conferencing.

Step 3: Consultant administers survey by calling carpet cleaning businesses with telephone numbers provided by internet search.

Step 4: Survey will be administered by the consultant by reading the questions as written on the survey form provided by the City of Wenatchee.

Step 4: Survey respondents will be identified on survey form using identification number and population code assigned by the consultant to protect anonymity prior to receipt by the City of Wenatchee to protect the identity of respondent and prevent bias from survey.

Step 5: When the survey is completed the consultant will sign and date the survey form certifying that the procedures and script have been followed as explained by the survey form.

Carpet Cleaning Business Refusal Survey SOP

Step 1: Consultant will follow all survey administration procedures outline in "Carpet Cleaning Business Survey SOP"

Step 2: Consultant receives a refusal to participate in survey from a carpet cleaning business.

Step 3: Consultant offers a "Refusal Survey" which consists of 5 questions, deemed most critical for data collection. Consultant will administer Refusal Survey using the same procedures as "Carpet Cleaning Business Survey SOP"

Step 4: Consultant will list any refusal to complete the Carpet Cleaning Business Survey or the Refusal Survey as Missing Data.

Jurisdiction Survey SOP

Step 1: Lead Agency assembles a list of jurisdictions in the test and control areas and appropriate contact information.

Step 2: The consultant will send survey form document via e-mail to participating jurisdictions and the auditor.

Step 3: Participating jurisdictions will return survey via e-mail to the consultant.

Step 4: Data collector will compile survey forms into a Microsoft Excel file.

Appendix E Corrective Action From

Corrective Action Form

Date:_____

Prepared By:_____ Agency:_____

Jurisdiction Survey:_____ Audit:_____

Business Survey:_____ Data Verification:_____

Business Code:_____ Other:_____

Number	Reported Issue	Prescribed Corrective Action

Received within 2 days of issue?: Yes _____ NO _____

Date Received: _____ Time:_____

Received By: Mail_____ E-mail_____ Office_____ Other_____

Received by (Signature): _____ Date:_____

Reviewed by (Signature):_____ Date:_____

Appendix F Auditing & Data Verification Checklists

Audit Number 1				
Completed following pilot test of survey				
Date		**Auditor**		
Audit Task	**Yes**	**No**	**N/A**	**Comments**
List of communities and businesses is complete and consistent target population criteria				
Business survey is written at 6th grade level or lower.				
Survey data was collected by the consultant				
Business survey data was blind coded prior to receipt				
SOP for business survey was followed				
SOP for jurisdiction survey was followed				
Auditor Signature				

Audit Number 2				
Completed during the survey data collection				
Date		**Auditor**		
Audit Task	**Yes**	**No**	**N/A**	**Comments**
The survey data is being collected by the consultant				
Business survey data was blind coded prior to receipt				
SOP for business survey was followed				
SOP for jurisdiction survey was followed				
Auditor Signature				

Audit Number 3				
Completed during the review of the final report				
Date		**Auditor**		
Audit Task	**Yes**	**No**	**N/A**	**Comments**
The SOPs for the survey was followed for the jurisdictions				
The SOPs for the survey was followed for the businesses				
The SOPs for the survey was followed for the control area				
All of the business data was collected by the consultant				
The survey data from the businesses was blind coded before receipt				
The responses from the target population were compared to the control population using a predefined confidence integral and statistical power				
Auditor Signature				

Data Verification Form				
To be completed after the final audit during the completion of the final report				
Date		Data Verifier		
Verification Task	Yes	No	N/A	Comments
Data audits performed at the designated times				
Verify audits addressed MPCs				
DQIs have been addressed				
Data records are complete, consistent, and correct				
Data records have been analyzed for errors and omissions				
Data Verifier Signature				