

Stormwater Education & Outreach:

*Addressing Challenges Through Behavior Change & Incentives, and
Permittee Guidance for Evaluating the Effectiveness*

STORMWATER WORK GROUP MEETING

SEPTEMBER 14, 2022



Agenda

- Introduce Project Team
- Task 2. Matching Stormwater Problems to Effect Behavior Change Tools
- Task 3. Assessing Effectiveness of E&O Tools Nationwide
- Task 4. Develop Website Decision-Support Tool
- Task 5. Behavior Change Evaluation Report Template
- Task 6. Evaluation Guidance Manual

Project Team



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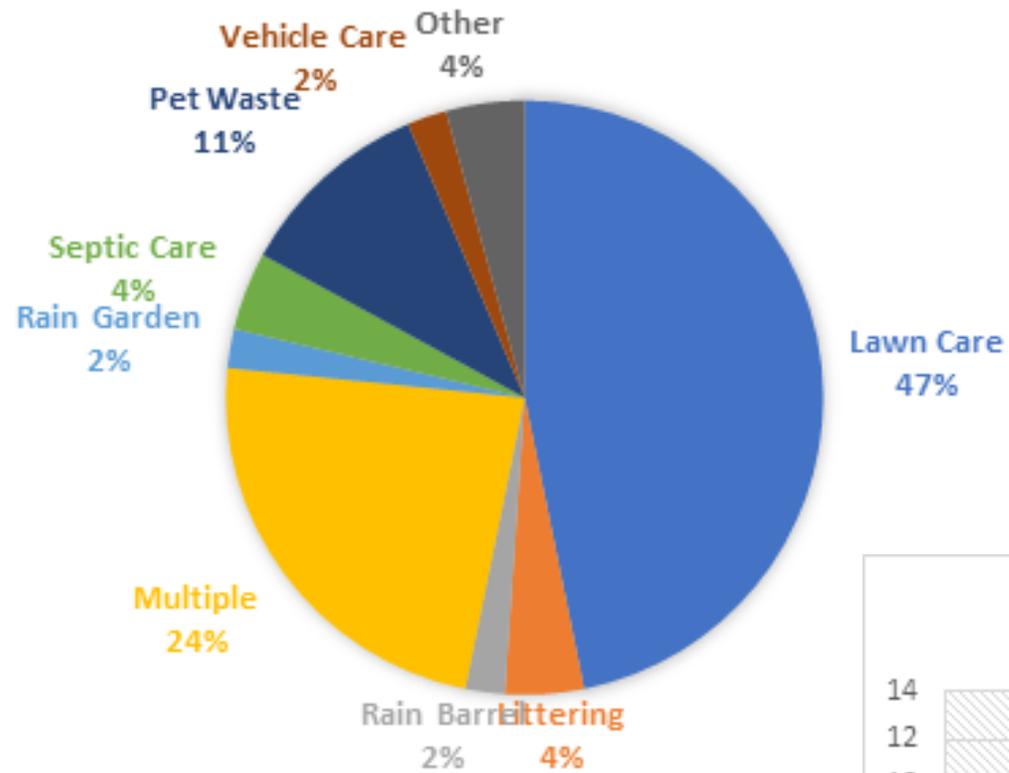
Task 2. Matching Stormwater Problems to Effect Behavior Change Tools

- 2.1 and 2.2 interviewed 11 key stakeholders, summary report 10/7/21
- 2.3 Nationwide survey of behavior change professionals in stormwater and water quality (final report 2/27/2022)
- 2.4 Annotated Bibliography of scientific studies linking stormwater pollutants and existing water quality (final submitted this month)

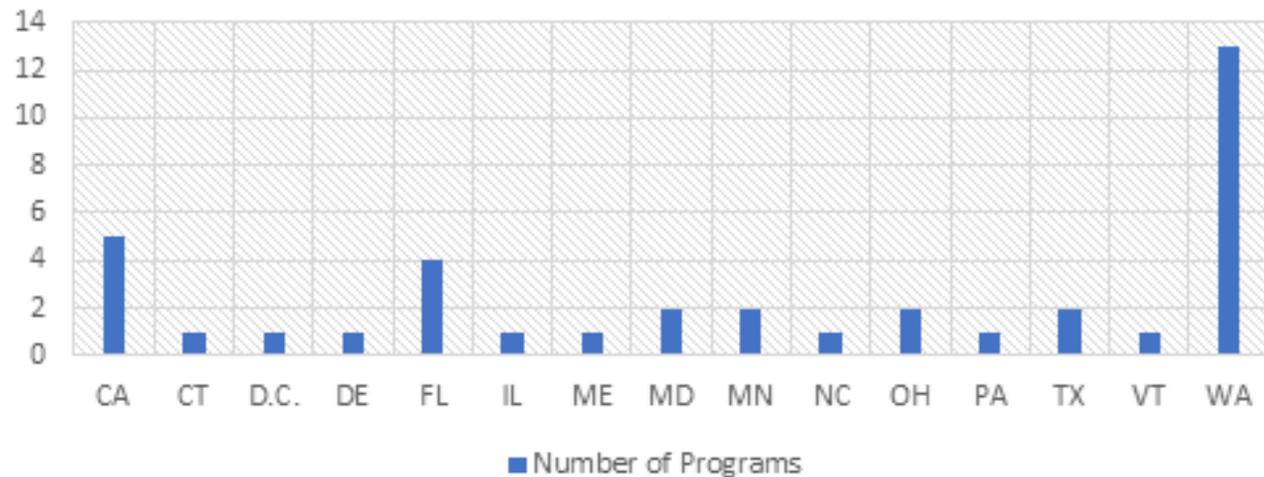
Task 3: Assess the effectiveness of BC tools nationwide

- From SOW: "Our report will evaluate the pros and cons and research quality (e.g. evaluation of methods and data) of each existing E&O evaluation study as High, Medium, or Low"
- Search academic sources (Google Scholar, EBSCO, etc), Tools of Change, EPA Toolbox, STORM, cbsm.org, Chesapeake Bay BC site.
- Narrowed to 47 (7 academic, 40 reports). From 16 states.

TARGETED BEHAVIOR CHANGE



State with Behavior Change Studies



Task 3 (cont'd)

- Based on quality of implementation and evaluation. +1 pt if:
- Well-defined **target audience**
- Well-defined **target behavior**
- Validated data collection **instruments** (i.e. pretest survey)
- Evaluation includes a **comparison group**
- Evaluation includes **pre-intervention data**
- Evaluation uses **observational data** (rather than self-reports)
- Evaluation measures **long-term** change (>1 year)
- Evaluation discusses possible **selection bias** in uptake among target audience
- Evaluation includes **water quality measurements**
- **Total max score = 9.** "Fair" score < 4; "Good" as 4-6, "Exemplary" 7-9

Evaluation measures

- All studies included well-defined target audience and behavior
- 22 of 47 (47%) had validated instruments
- **5 of 47 (11%) had a control group or counterfactual**
- 29 of 47 (62%) collected pre-intervention data
- 12 of 47 (25%) used observational data
- 21 of 47 (45%) measured behavior change after 1 year or longer
- 24 of 47 (50%) addressed selection in uptake
- 7 of 47 (15%) included water quality measurement
- "Fair" (12 studies), "Good" (30 studies), "Exemplary" (5 studies)

Task 4. Develop Website Decision-Support Tool

<https://www.waterbehaviorchange.org/>

Tools & Resources for Behavior Change Campaigns

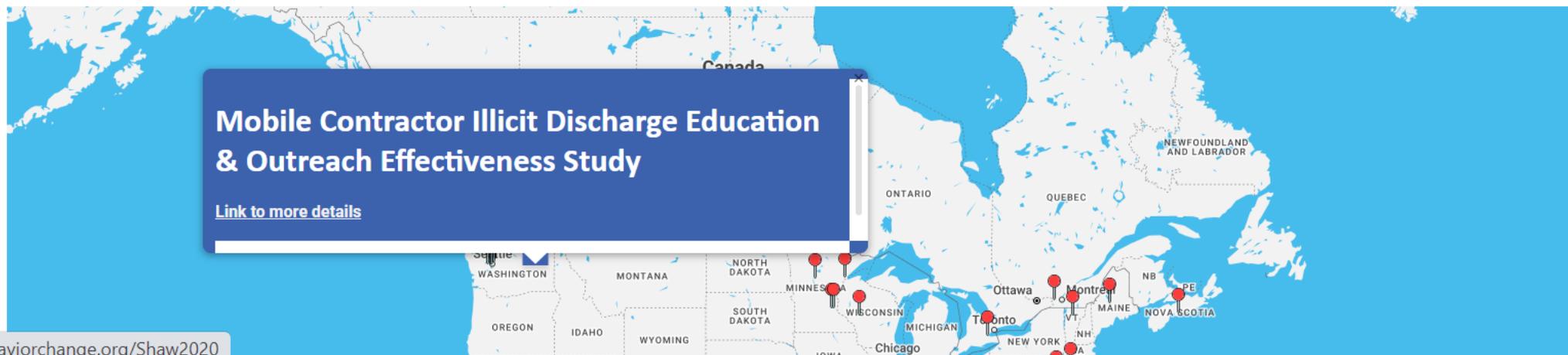
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Public Behavior Change Campaigns strive to increase awareness of stormwater impacts and encourage changes to actions that contribute to water quality and quantity problems within a watershed. Ecology recognizes the potential benefits of these campaigns on our state's water bodies and includes behavior change campaigns as a required component of Stormwater Management Campaigns (SWMP). More recent NPDES permits require permittees to develop targeted campaigns using Social Marketing methods, evaluate the effectiveness of these campaigns, and apply results to improve their campaigns.

The purpose of this database is to provide jurisdictions with tools to identify and select which stormwater problems and behaviors to focus on, including guidance on how to conduct and report effectiveness evaluations to inform and improve future efforts in a positive feedback loop of doing and learning.

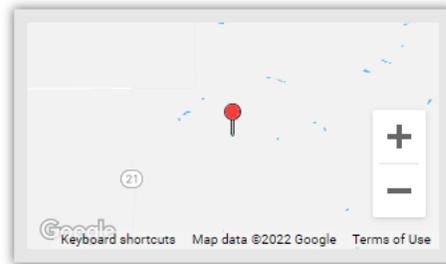
BEHAVIOR CHANGE CAMPAIGNS



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- ABSTRACT/ISSUE
- TARGETED AUDIENCE, BEHAVIOR, AND POLLUTANT
- RESEARCH SCORE
- CAMPAIGN IMPLEMENTATION
- EVALUATION METHODS
- EVALUATION RESULTS
- INCENTIVES
- SOCIAL/RACIAL JUSTICE

Mobile Contractor Illicit Discharge Education & Outreach Effectiveness Study

Authors: Shaw, Jessica

Published: 2020

Location: Eastern Washington
- Wenatchee areas,
Washington

Abstract

Mobile contractors face many challenges in collecting, transporting, and disposing of wastewater compared to other types of businesses. This study reports the Dump Smart Program that took place in Eastern Washington cities in 2010. The City of Wenatchee as the lead agency, partnered with other cities and counties in Eastern Washington targeted mobile contractors in six eastern Washington communities. The goal of this study was to assess the effectiveness of the Dump Smart education and outreach program in eastern Washington for carpet cleaning contractors. The effectiveness of the program was

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Campaigns

Identification and Induction of Human, Social, and Cultural Capitals through an Experimental Approach to Stormwater Management
[Click for more details](#)

Using a reverse auction to promote household level stormwater control
[Click for more details](#)

Lessons Learned: The North Carolina Backyard Rain Garden Program
[Click for more details](#)

Blue Water Baltimore Rainwater Harvesting Behavior Change Implementation
[Click for more details](#)

Soak It Up Rain Garden and Native Vegetation Landscaping Rebate Program Evaluation
[Click for more details](#)

Restoring the Redwood River
[Click for more details](#)

Keyword Search

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TARGET POLLUTANT:

- LID/Infiltration
- Metals
- Nutrients
- Oils
- Pathogens (Fecal Coliforms, Bacteria, E. Coli)
- Sediment
- Toxic Chemicals (Pesticide, Household Cleaner, etc.)
- Trash

TARGET AUDIENCE:

- Businesses



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CAMPAIGN SELECTION TOOL

It's time to select an Behavior Change campaign that is right for you! The tool below allows you to compare Behavior Change campaigns based on your jurisdiction's needs.

Begin by entering information below and work through each of the sections for your campaign(s). At the end, you will have the option to download your responses as an Excel spreadsheet for future reference. Please note that your information is not saved on this site, so you must complete the steps and download your report before closing your browser window or else your responses will be lost.

HEL

- [Types of](#)
- [Target P](#)
- [Ask a Q](#)

[CAMPAIGN PURPOSE & PROBLEM](#) [TARGET BEHAVIOR](#) [TARGET AUDIENCE](#) [WATER QUALITY](#) [SITUATIONAL ANALYSIS](#) [COMMUNITY IMPACT](#) [RESOU](#)

Campaign #1	Campaign #2	Campaign #3
Enter campaign title:		
<input type="text"/>	<input type="text"/>	<input type="text"/>
Enter problem addressed:		
<input type="text"/>	<input type="text"/>	<input type="text"/>

Task 5 Behavior Change Evaluation Report Template

- Develop Report Template to assist Permittees in meeting E&O MS4 Permit 3/31/24 deadline to Evaluate & Report on:
 - Changes in understanding & adoption of targeted behaviors
 - Changes to campaign to be more effective
- Report Template Goal - Streamline Report Writing
 - Suggested organization for writing
 - What the permit requires in the report
 - The basic information Ecology would like in the report
 - Suggestions for content typically part of the evaluation process
 - Checklist companion: step-by-step process for evaluation
 - References to Evaluation Guidance Manual

Task 6 Evaluation Guidance Manual

- Goal – Develop guidance for selecting and applying common evaluation analysis methods.
 - Overview of Social Marketing and Community Based Social Marketing
 - Overview of and Guidance for Selecting:
 - sample size
 - instruments to measure behavior change
 - statistical analysis methods
 - Examples that demonstrate application of analysis methods
 - Formatted for “just in time training” or classroom style training

Wrap Up & Next Steps

- **This week** - Annotated Bibliography of scientific studies linking stormwater pollutants and existing water quality
- 9/30/22 - Draft Report Template & Evaluation Guidance Manual to TAC for Pilot Testing & Review
- 11/30/22 - Final Report Template & Evaluation Guidance Manual
- 12/1/22 - Draft Report to TAC for Review
- 12/31/22 - Final Report