



Regional Dumpster Lid Social Marketing Campaign

2021 Pilot Summary

Why Dumpsters?

Most of the pollution reaching Puget Sound is carried there in stormwater runoff. Uncovered and leaking dumpsters can cause pollutants like chemicals, bacteria, and organic matter to end up in stormwater runoff. Rainwater mixed with trash can leak out and spill onto impervious surfaces that drain to the stormwater system when dumpsters are serviced.

The focus of the Dumpster Lid Campaign is to keep dumpster lids shut to protect surface water quality. The target audience is commercial businesses. This summary documents the social marketing process to plan, launch, and evaluate the 2021 Dumpster Lid Pilot phase.

The regional Dumpster Outreach Group (DOG) was formed in 2021 with the shared goals to:

- Meet National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit education and outreach requirements for Behavior Change,
- Create regionally consistent outreach materials for businesses and inspectors to address common dumpster issues found during Private Drainage and Source Control Inspections, and to
- Protect water quality by reducing sources of stormwater pollution from occurring around commercial dumpsters.

Key Campaign Outcomes

Conducting a pilot campaign is a recommended step in traditional Social Marketing (Implementation) and community-based social marketing (Step 4). Piloting the campaign provides an opportunity to evaluate the effectiveness of social marketing strategies and adapt them before implementing a campaign broadly. The following is a list of key outcomes from a 6-month pilot campaign:

- Dumpster lid closure significantly improved from campaign outreach. The percentage of lids closed rose from 49% during the baseline evaluation to 77% during the final evaluation.
- The final lid closure rate for businesses participating in the pilot rose 57% over baseline observations.
- Over 30 jurisdictions participating in the campaign realized substantial cost savings due to economy of scale and staff time savings through leveraging the experience and knowledge of regional E&O staff.
- Nearly 150 businesses throughout the region were provided educational materials and tools.
- Over 100 dumpster areas across the Puget Sound were evaluated before and after the pilot campaign implementation.

Campaign Development

Initial Research and Planning

Before implementing the Pilot, multiple research and social marketing steps were taken, including issue and audience research. Efforts leading up to launching the Pilot included (see appendices A-E for more details):

1. Conducting field surveys, drive-by dumpster lid observations, and quantitative data collection were conducted before planning efforts began to identify common issues around dumpster areas, determine the relevance to individual jurisdictions, and identify possible behaviors to target.
2. Hosting the Dumpster Summit. The Summit was a Social Marketing Workshop that brought regional municipalities together with the goal of creating social marketing plans to address common behavior issues around dumpster areas
3. Selecting the social marketing plan to influence businesses to *close their dumpster lids every time something was put in it* was selected as the behavior change campaign that would continue with regional support.

Regional Collaboration

The regional group working on the dumpster lid campaign became known as the Dumpster Outreach Group (DOG) and a planning team for DOG was also created. The DOG Planning Team consisted of 8 participating members who volunteered to help lead the Regional Dumpster Lid Pilot Campaign. DOG Planning Team members attended regular planning meetings and helped with scheduling, notes, review, and decision making.

The DOG Planning Team engaged C+C, a local marketing agency with environmental project and social marketing expertise, to assist with pilot phase planning and project management support for the Regional Dumpster Lid Social Marketing Campaign. Weekly project coordination meetings with C+C and the DOG Planning Team occurred from November 2021 through April of 2022. The following strategy was developed to achieve the best behavior change with the priority audience.

Outreach Toolkit Development

This includes an array of social marketing tools categorized into two tiers based on jurisdiction budget, business needs, perceived effectiveness, and practicality of implementation. C+C collected feedback from DOG to rank toolkit options and put forth a final toolkit with costs and implementation recommendations for the 2021 Pilot.

- Tier one toolkit items were recommended and provided to all participating jurisdictions. Tier one items include signs, posters, dumpster stickers, and brochures.
- Tier two items were used at the time and expense of individual jurisdictions. Jurisdictions were encouraged to try any of these items, if possible, but they were not required. (e.g., step stools, tool for lids, box cutters, and consulting.)

Toolkit items and costs in can be found in **Appendix E**. Sticker, sign, poster, flyer, pledge, and window cling designs can be found in **Appendix F**.

Social Marketing Tools

- **Signs, stickers, and posters** are behavior prompts.
- **Pledges** are commitments to do the behavior by the business.
- **Window clings** are a public display of the business's commitment.

Sign and Slogan Creative Concepting

Drafts for three design concepts of signs and slogans promoting the desired behavior were created with the help of C+C. DOG members and applicable jurisdictional staff conducted an initial design concept review. The designs were developed to include our shared Puget Sound Starts Here logo.

Creative Concept Testing

C+C's Market Intelligence Team conducted qualitative research with the business audience to determine which sign and slogan resonated best amongst commercial business dumpster users. The Market Intelligence team analyzed the users' responses to inform the final campaign sign and slogan. Final concepts were provided to include with the toolkit. (More details in **Appendix G**)



During the Dumpster Summit, extensive audience research was performed to find out what would motivate people who take out the trash to close the lids on dumpsters. The three taglines and images at the bottom of the art reflect the top 3 ideas our audience expressed would motivate them to close the lids:

1. Less Smell
2. Fewer Pests
3. No Rain Inside

Funding

Participating jurisdictions were asked to consider helping fund the campaign, although it was not a requirement to participate. Twenty-three jurisdictions provided funding for C+C to support the campaign. The level of funding was determined by each jurisdiction individually. Invoices were sent directly from the consultant to each jurisdiction. Funding was used for the consultant's support with:

- Overall Project Management and Consultation
- Sign and Slogan Creative Concepting
- Creative Concept Testing
- Campaign material Development
- Vendor Management, Production, and Mailing of Starter Packets for Implementation Team
- GROSS Grant Application Assistance
- Campaign Feedback and Recommendations

Training/Emails/Reminders

Training for participating jurisdictions included three meetings with evaluation, launch, toolkit, and evaluation review presentations. Regular emails and reminders were sent, including recommended timelines, lists of materials, sample letters and scripts, and outreach material.

Timeline

The Pilot phase timeline and approach were built on toolkit implementation, permit deadlines, and evaluation recommendations (see **Appendix H** for campaign timeline)

Campaign Implementation

Implementation Team

The Implementation Team included jurisdictions from the Dumpster Outreach Group who chose to implement the campaign in their jurisdiction regardless of whether they participated in the Dumpster Summit or Planning Team. Jurisdictions were invited to participate through STORM meetings and announcements, Stormwater Outreach Groups, NPDES Coordinator Meeting announcements, and word of mouth. There was no limit to the number of jurisdictions that could participate.

Implementation Team members were provided a starter packet of campaign materials, including stickers, signs, and posters. Some jurisdictions also received window clings to be paired with a pledge.

In exchange for their participation, Implementation Team members were asked to:

- Attend training meetings
- Conduct baseline field surveys to identify businesses in their jurisdiction with open lids as campaign candidates and confirm those lids are not broken, trapped, or missing.
- Communicate with their waste hauler and other local stakeholders as needed before putting stickers on dumpsters.
- Implement the campaign in their jurisdiction with at least two businesses.
- Conduct implementation within the campaign timeline
- Conduct field surveys to collect all evaluation data within the timeline.
- Enter evaluation data into a Survey Monkey survey and provide additional information and feedback as requested.

See **Appendix I** for a map of jurisdictional participation.

Implementation Strategy

At a minimum, each jurisdiction contacted their businesses and put stickers on their dumpsters. Most jurisdictions implemented additional toolkit items, including signs, posters, flyers, a pledge, and additional materials or assistance. All jurisdictions used the same evaluation form to record behavior and what tools they used.

Jurisdictions selected businesses participating in the Pilot phase based on varying factors. Additionally, the level of outreach done before site visits and toolkit use varied amongst jurisdictions. Implementation variables were recorded on each business site's evaluation form to analyze the effectiveness of the different approaches during the final campaign evaluation.

Staff involved in outreach and data collection efforts was mixed amongst jurisdictions. However, implementation was prescriptive in terms of the type of data collected, how it was collected and when it was collected. Staff were instructed to place stickers on dumpsters and signs where possible, not leaving it up to the business to install. Consistency was important to ensure the campaign evaluation was reliable.

Campaign Evaluation

Field observation of dumpsters to collect quantitative data on actual lid closing behavior was collected by each jurisdiction that participated using the same evaluation form and data entry survey. Jurisdictions entered their data into a Survey Monkey survey to aggregate the information. See **Appendix J** for a copy of the evaluation form and **Appendix K** for the pilot evaluation plan.

Evaluation data was collected at three distinct times:

1. Baseline – before any outreach to identify pilot businesses, collect starting reference
2. Start - immediately after implementation of social marketing strategy and tools
3. Final – 6 months after implementation of social marketing strategy and tools

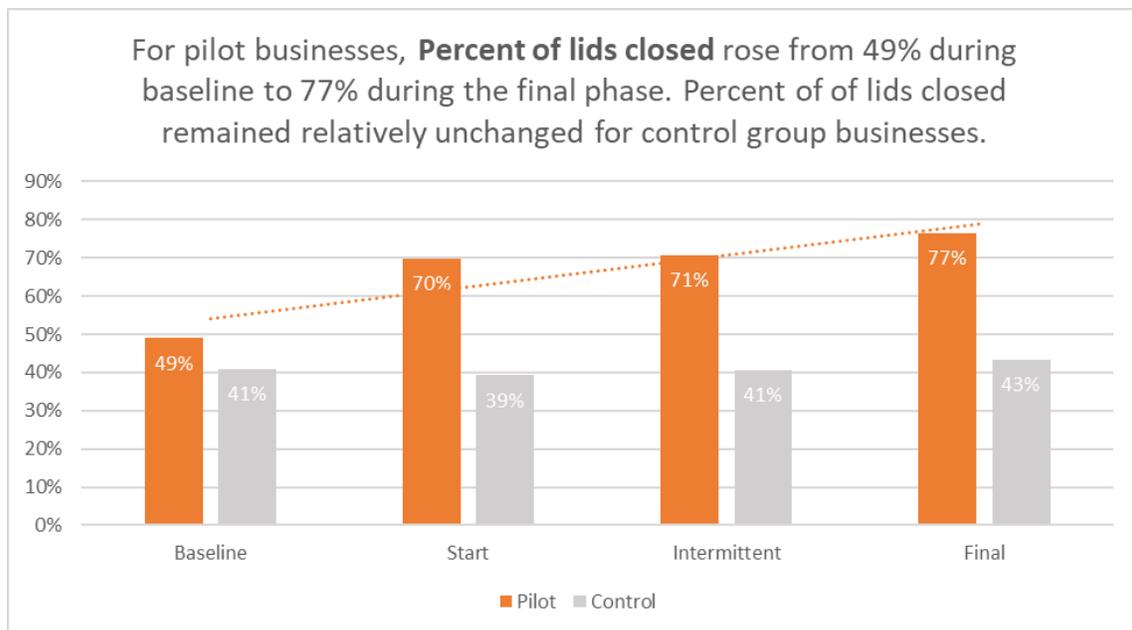
Intermittent data collection between the Start and Final Evaluations was optional. Intermittent checks were helpful to monitor for trapped lids, missing lids or signs, or other concerns that could be addressed before the final evaluation.

Control Businesses

Control businesses were similar to pilot businesses but received no intervention. Monitoring some control businesses allowed the campaign to compare results not just from baseline but from businesses who received no outreach or intervention. Only a few jurisdictions chose to monitor control businesses as they were not required for participation and added a significant amount of workload.

Evaluation Results

The Regional Dumpster Lid Campaign evaluation results show significant improvement in dumpster lid closure as a result of the campaign. **The percentage of lids closed rose from 49% during the baseline evaluation to 77% during the final evaluation. The final lid closure rate for businesses participating in the pilot rose 57% over baseline observations.**



For additional information and analysis of this data, see **Appendix L**

All jurisdictions used the same Evaluation Form and followed the same 3 Evaluation Phases. Final evaluation data represents only dumpster areas where a complete set of data was collected and entered. A complete set of evaluation data includes the recommended Baseline, Start, and Final data for any business. Some jurisdictions implemented the campaign but did not collect or submit complete sets of data. *Only complete sets are represented in the final analysis. Incomplete data sets may still be useful for comparison or trend analysis for individual jurisdictions but were too inconsistent to be included in the combined final data analysis.*

Conclusions

The Regional Dumpster Outreach Social Marketing Campaign Pilot is a success story on many levels.

- **Businesses** – Receive consistent education, materials to educate staff, and lasting prompts to reinforce desired behavior.
- **Jurisdictions** – Have a proven social marketing program to implement and build upon in their jurisdiction to meet permit requirements and build trust with and act as a resource for local businesses.
- **Local Communities** – Cleaner, healthier communities, and they feel a sense of pride
- **Region Wide Benefits** –New consistent social norm, greater impact with broadscale campaign
- **Water Quality** – Less rain in dumpsters prevents dumpster liquid from flowing into local waterbodies.

Top Recommendations

The future broadscale implementation, timing, and level of effort for this campaign are now up to the discretion of each jurisdiction. The top recommendations based on the pilot campaign evaluation include:

- Implementing the Sticker + Sign + In-Person Visits as the minimum strategies to begin broadscale implementation.
- Continued tracking during broadscale implementation to compare to the pilot campaign's success.
- Transcreation of materials to better meet business needs.
- Listening to businesses about their needs, additional recommendations for increasing lid closures, adapting the campaign, and learning from others to continue to expand and improve upon this campaign.

Additional Recommendation and Considerations

- Maintain this campaign as education, not enforcement. Use it to develop relationships with businesses. You are providing them with valuable information and assistance that can lead to better communications and outcomes in other programs in the future.
- Complete pre-outreach with letters/emails/phone calls and additional material such as flyers appears helpful for most businesses and staff.
- Survey original pilot businesses about what worked, didn't work, and other needs. If you piloted at a strip mall, talk to businesses there about why they think their behavior improved.
- Update and create new outreach material based on business feedback and additional observations over time. For example, this may include more information about haulers or an annual postcard prompt to put lids down on dumpsters.
- Consider updated art and messaging (more details below)

- Foster stakeholder relationships to strengthen the message with your internal solid waste outreach staff, solid waste hauler, property managers, business associations, and others who may share common interests.
- Continue to meet as a regional group to share ideas and resources. Topics may include
 - Integration into other programs such as Source Control
 - Municipal Codes & Hauler Contracts
 - Permit requirements, reporting, planning for the next permit
 - Expanding campaign into other dumpster area issues such as bulky waste and used cooking oil recycling

Campaign Strengths & Potential Enhancements

Nancy Lee, a local Social Marketing leader with over 30 years of experience, helped guide the Dumpster Outreach Group through the social marketing process from the beginning of the project by teaching and facilitating the Dumpster Summit in Fall 2020. Throughout 2021, Nancy continued to provide her leadership and expertise through our consulting agency, C+C, as the campaign pilot was formed, evaluated, and summarized. The following memo is Nancy’s feedback to the Dumpster Outreach group after reviewing pilot summary.

To: Laurie Devereaux, Stream Team Program Administrator, City of Bellevue, Utilities
From: Nancy Lee, Social Marketing Services, Inc. & C+C Strategic Advisor
Cc: Dumpster Outreach Group
Re: Comments on Regional Dumpster Lid Social Marketing Campaign
Date: 1.25.2022

This week I reviewed the *2021 Pilot Summary*, and *Dumpster Data Overview* documents. This memo comments on apparent strengths of this campaign that contributed to significant increases in dumpster lid closures in the pilot areas over a 6 month timeframe, as well as compared to a control group. In addition, implications of findings for future enhancements of the campaign are noted.

In the end, it is my opinion that this strategically oriented campaign should be considered a social marketing success story, having moved from a 49% lid closure at baseline to 77% in 6 months, a 54% increase.

**10 Components of The Regional Dumpster Lid Campaign
Strengths & Potential Enhancements**

Campaign Strengths		Potential Enhancements
1	The stated Purpose to reduce stormwater pollution to surface areas was motivating, and the clear and critical Focus on Dumpster Lids inspired subsequent selection of priority audiences and a desired behavior.	Future efforts could select the next most impactful area of Focus
2	A Situation Analysis led to a major strength that was leveraged and an opportunity that was captured to engage a Dumpster Outreach Group whose planning efforts contributed to coordinated and impactful results in the region.	Future efforts should continue to engage partners in planning and implementation & evaluation.
3	Commercial Businesses within the NPDES geographic area not closing lids were a strong Prioritized Audience based on potential impact, size, reachability, and readiness for action.	Multifamily Dwelling Units might be considered as a next priority audience.
4	The Behavior to shut dumpster lids after putting something in the dumpster was clearly simple, clear, and doable based on outcomes.	Once shutting lids becomes a norm, select the next prioritized behavior.
5	Research on Audience Barriers, Desired Benefits, and Motivators informed all tools in the toolbox, especially the desired benefits of “Less Smell, Fewer Pests, and No Rain Inside” that could be delivered in exchange for just “Keeping the Lid Shut.”	An “audience advisory committee” could be formed for future efforts to enhance audience research and co-creation of strategies.
6	The Positioning of the behavior as “simple and beneficial to the businesses and the environment” was aligned with audience insights.	Future efforts should follow this clear, concise and relevant statement.
7.1	The major Product offered was a “service,” that of consulting and inspector reports, and tangible goods included permanent signage and stickers that prompted businesses to shut the lid every time.	Consider tangible products to overcome barriers to lid closure that would be safe, affordable, and easy.
7.2	The major impactful Price incentives included a nonmonetary incentive, a public pledge, and a perceived monetary incentive to avoid fines and area cleaning costs.	Ensure public visibility for the pledges.
7.3	Place strategies made access to services convenient (e.g., providing on site consultations) and tangible goods visible (e.g., stickers on main doors).	If more tangible products are found to help with closures, efforts will need to ensure access to them is easy.
7.4	Creative concept testing inspired critical Promotional elements, especially finalized messages (<i>Keep it Shut!</i>), creative elements (e.g., images representing the major desired benefits of Less Smell, Fewer Pests and No Rain Inside.)	Consider audience research to get recommendations on any changes to communication channels.
8	Evaluation components were rigorous including collecting data at baseline, start and 6 months after implementation, as well as selecting and monitoring a control group of similar businesses.	Consider also asking businesses in follow up surveys whether they have recommendation for future efforts.
9	Voluntary contributions from participating jurisdictions enhanced the Budget .	Consider bulk purchasing of products such as stickers and magnets.
10	A 6-month pilot Implementation was extremely beneficial, not only in providing input for campaign rollout, but also for future efforts to secure funding, as well as engage current and future jurisdictions.	If future campaigns have significant changes in priority audience and/or 4P interventions, a pilot should be considered again.

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Acknowledgments

This document was prepared by the cities of Bellevue, Olympia, and Kirkland.



Appendix A

I. Regional Baseline Dumpster Data Summary

Dumpster audit data was available from six jurisdictions: Bellevue, Bothell, Federal Way, Kirkland, Redmond, and Sammamish. Data were collected between 2015 and 2019. Audits inspected 451 total dumpsters. Lid status information was collected from 373 dumpsters, container leaking/damaged information was collected from 391 dumpsters, and a dumpster site condition rating was given to 147 dumpsters in Bellevue and Sammamish using City of Bellevue’s 2017 audit methodology.

A summary of the data reveals that:

- Of the 373 dumpsters where lid status was noted, 128 lids (34%) were open or missing.
- Of the 391 dumpsters where container leaking/damaged information was collected, 47 containers (12%) were observed to be damaged or leaking.
- The average dumpster site condition given to the 147 dumpsters evaluated in Bellevue and Sammamish was 1.7 (scale of 1 to 3). Summary data are reported in Table 1.1 below.

Data were analyzed to explore pollution by business type, use by single or multiple businesses, presence of proper labels, lid status, and container status. Key findings include:

- No statistically significant differences emerged based on business type. However, automotive businesses were slightly more likely to have lids open, while retail businesses were slightly more likely to have containers free of damage/leaks.
- Dumpsters used by multiple businesses were significantly more likely to have containers with lids open and containers that were leaking/damaged.
- Businesses with oil containers were significantly more likely to have leaking/damaged containers and had significantly higher dumpster condition ratings than businesses without oil containers.
- Businesses with open lids were significantly more likely to have additional water quality concerns based on a 1-3 scale rating compared to businesses with closed lids.

Table 1.1 – Summary Dumpster Audit Data

Jurisdiction	Number of Businesses	Number With Lid Open	Percent of Lids Open	Number Inspected	Number of Leaking/Damaged	Percent of Leaking/Damaged
Bellevue	111	28	25%	111	14	13%
Bothell	102	35	34%	102	2	2%
Federal Way	N/A	N/A	N/A	78	20	26%
Kirkland	61	29	48%	61	3	5%
Redmond	60	24	40%	N/A	N/A	N/A
Sammamish	39	12	31%	39	8	21%
Total	373	128	34%	391	47	12%

II. Business Type

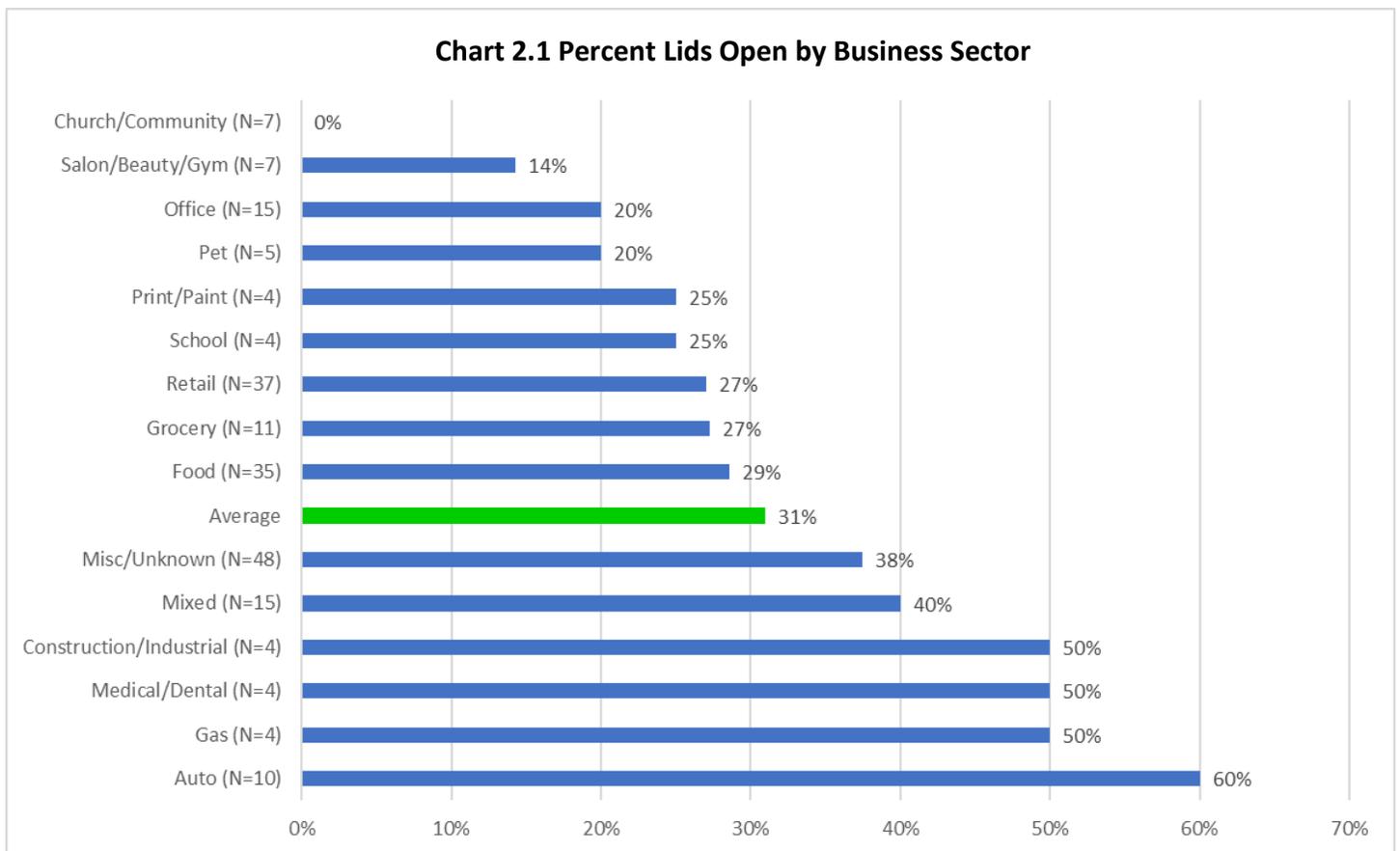
Information on business type and dumpster condition was collected from 210 businesses in Bellevue, Kirkland, and Sammamish. Data from the reporting jurisdictions were reclassified into common business sector categories for data analysis purposes.

While a high degree of variability was observed across businesses sectors, data analysis revealed no statistically significant* differences between business type with regard to lid status or dumpster condition. It is likely the business group sample sizes are too small to make definitive conclusions regarding pollution by business sector.

Automotive businesses approached statistical significance for being more likely to have an open lid ($p=0.06$). Retail businesses approached statistical significance for being more likely to have a dumpster/container free of damage ($p=0.08$).

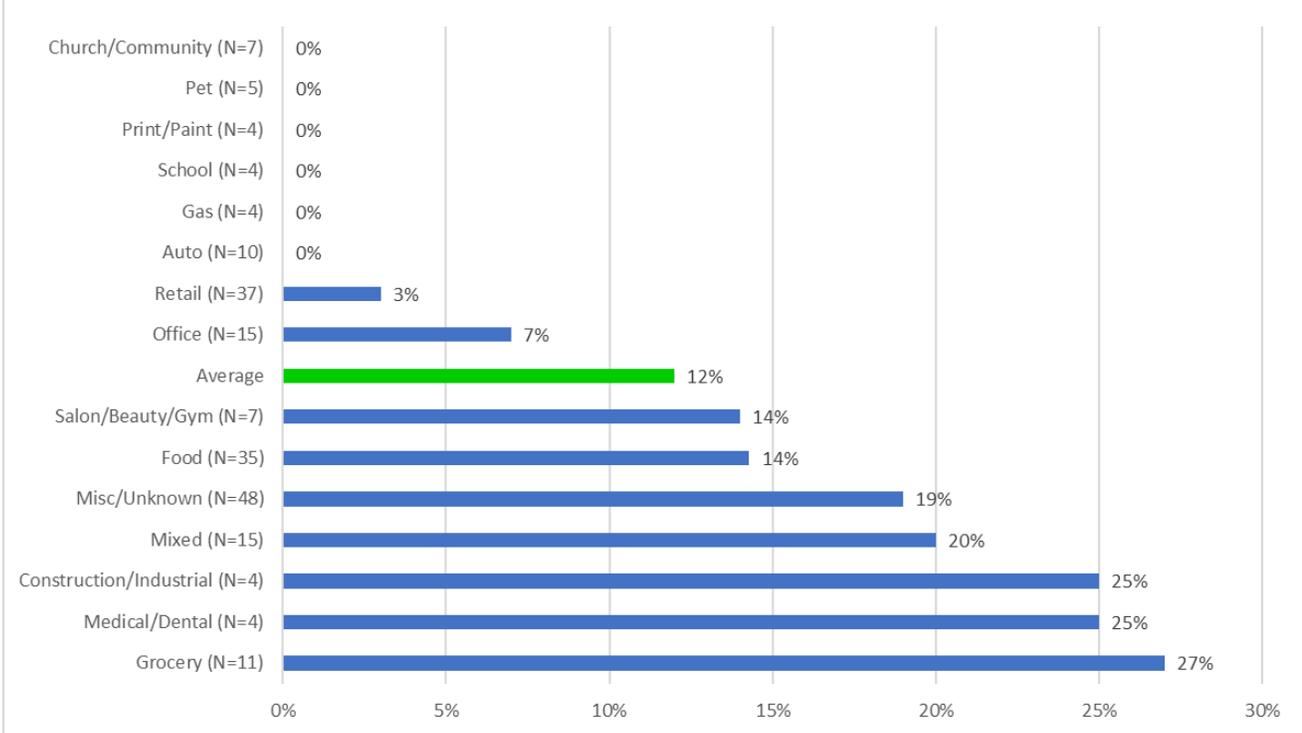
Percentage of lids open (Chart 2.1) ranged from 0% at Church/Community Centers ($n=7$) to 60% at Automotive businesses ($n=10$).

Percentage of containers leaking and/or damaged (Chart 2.2) ranged from 0% at Church/Community Centers ($n=7$), Pet/Veterinarian ($n=5$), Print/Paint ($n=4$), Schools ($n=4$), Gas Stations ($n=4$), and Automotive businesses ($n=10$) up to 27% at Grocery Stores ($n=11$).



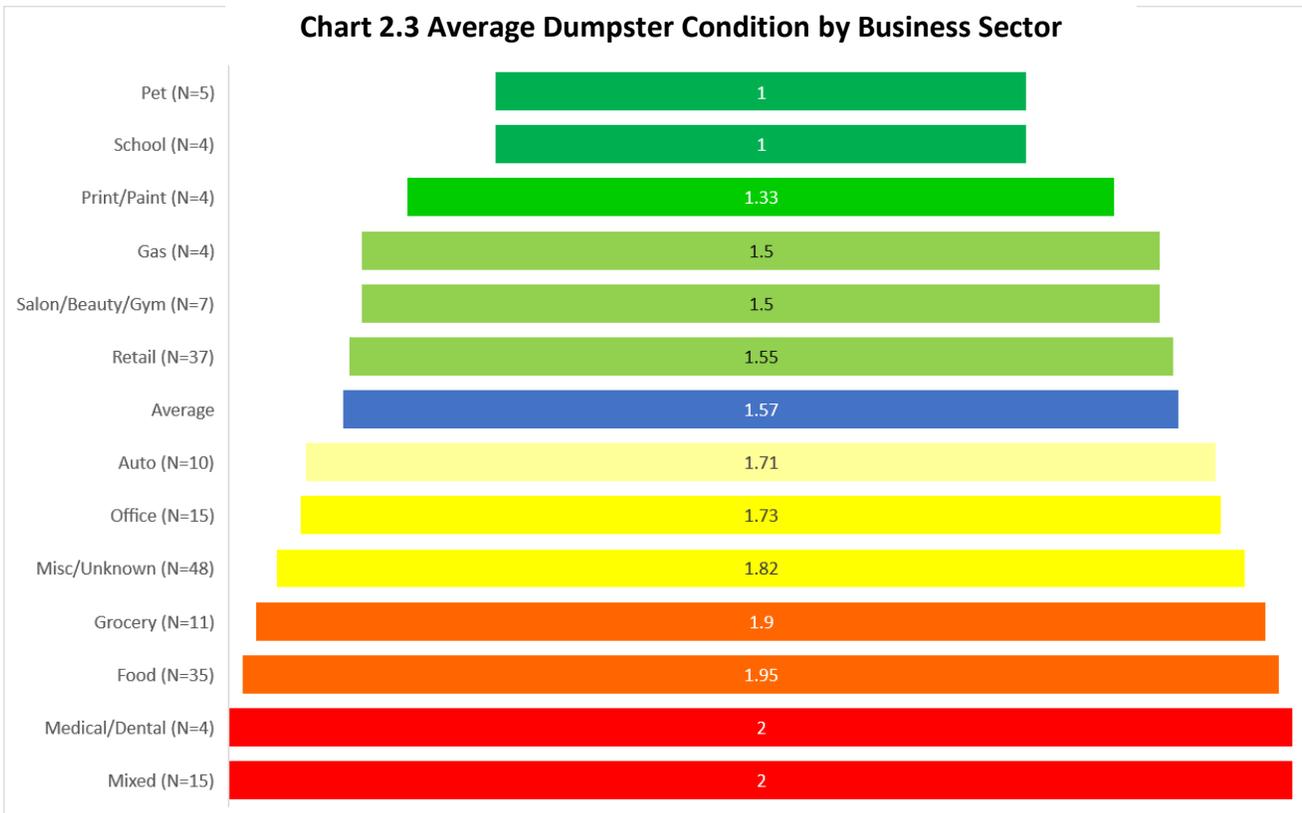
*Statistical significance is the probability that the observed result would have occurred due to sampling error alone. A p -value lower than 0.05 indicates statistical significance.

Chart 2.2 Percent Leaking/Damaged by Business Sector



Average rated dumpster condition (Chart 2.3) ranged from 1.0 at Pet/Veterinarian (n=5) and Schools (n=4) to 2.0 at Medical/Dental (n=4) and Mixed Use (n=15).

Chart 2.3 Average Dumpster Condition by Business Sector

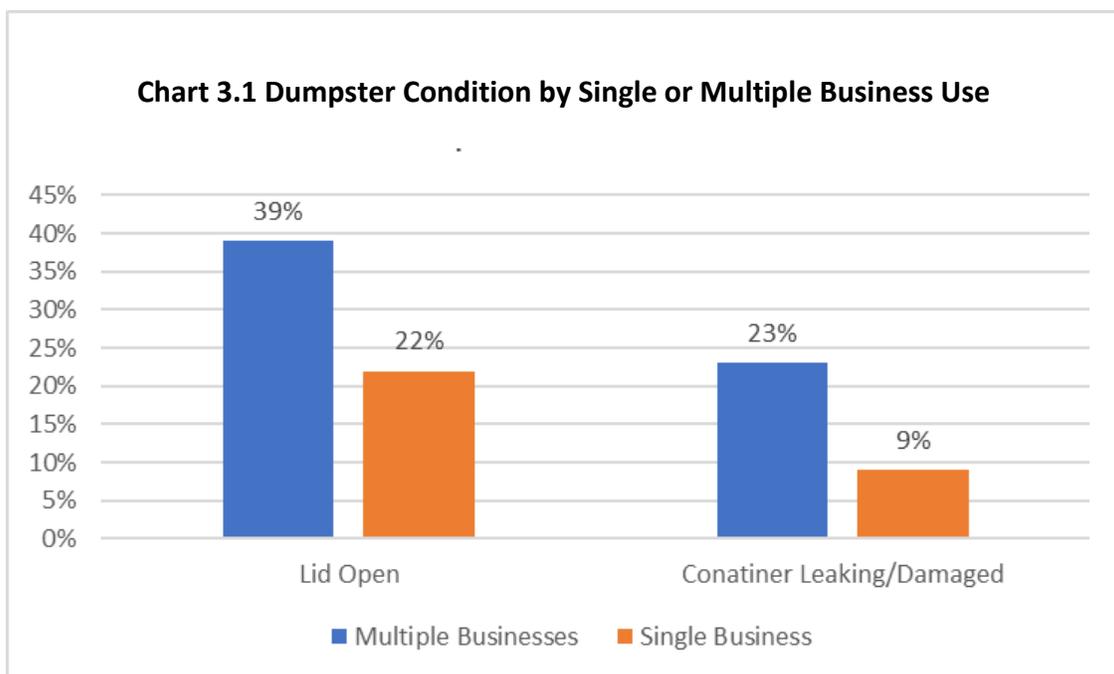


III. Use By Single or Multiple Businesses

Information on dumpster use by single or multiple businesses was collected from 154 businesses in Bellevue, Kirkland, and Sammamish to learn whether the amount of businesses using one waste account affects site condition. Sites with multiple businesses were significantly more likely to have lids open ($p=0.02$) and significantly more likely to have containers that were leaking/damaged ($p=0.02$) compared to sites with a single business.

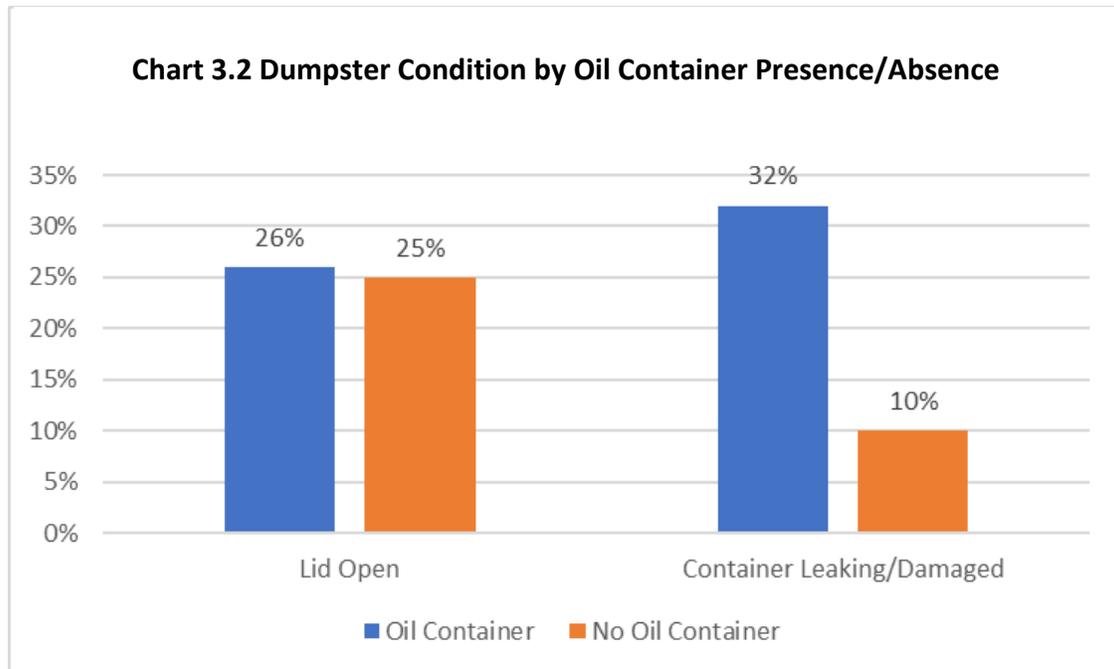
Notably, multiple-business sites had open lids in 39% of observations compared to 22% of single-business sites. Multiple-business sites had leaking/damaged containers in 23% of observations compared to 9% of single-business sites (Chart 3.1).

Average dumpster condition at multiple-business sites was 1.87 compared to an average condition of 1.60 at single-business sites.



IV. Container type

Information on whether a business had an oil container was collected at 148 businesses in Bellevue and Sammamish. Of those, 31 businesses had oil containers. Businesses with oil containers were almost equally likely as businesses without oil containers to have dumpster lids open. However, businesses with oil containers were significantly more likely ($p < .01$, $n=148$) to have containers that were leaking or damaged compared with businesses without oil containers (Chart 4.1). Businesses with oil containers had an average dumpster condition rating of 2.26 compared to an average of 1.56 at businesses without oil containers, representing a statistically significant difference ($p < .01$, $n=148$).



V. Presence of proper labels

Of the 146 businesses for which label information was collected, 144 had proper labels displayed on the container. No further analysis was conducted based on presence of labels due to lack of available data.

VI. Lid status

Lid status was evaluated for 373 businesses to determine whether lids were open or closed. Open lids were observed at 128 businesses (34%). Businesses with open lids also had significantly worse ($p < 0.01$, $n=138$) dumpster condition ratings than businesses with lids closed, indicating a higher degree of water quality concerns at containers with open lids.

VII. Container status

Container status was evaluated for 391 businesses to determine whether containers were leaking or damaged. Leaking/damaged containers were observed at 47 businesses (12%). The average dumpster condition at containers that were leak and damage free was 1.57 and the average condition at containers with leaks and/or damage was 2.48, representing a statistically significant difference.



Dumpster Summit 2020

A Collaborative Social Marketing Workshop

The Dumpster Outreach Group started in early 2020 as a Workgroup within STORM (Stormwater Outreach for Regional Municipalities) with the shared goals to:

- Comply with NPDES Permit Social Marketing requirement,
- Prevent stormwater pollution from occurring around commercial dumpsters,
- Address common issues around dumpsters found during Private Drainage and Local Source Control Inspections, and
- Begin creating umbrella campaign of outreach material for commercial customers to address common regional issues.

Dumpster Summit Details

The Dumpster Summit was a social marketing campaign planning workshop held over Zoom for 4 days. The Dumpster Summit included 30 participants from 25 different jurisdictions in Puget Sound. Attendees agreed to attend all four days, committed to doing audience research as identified in the summit, and most planned to use the campaign as their social marketing permit requirement.

Each day, partners were guided by local Social Marketing expert, Nancy Lee, through the 10 steps to creating a social marketing campaign. The group was divided into 5 teams for break-out sessions to create individual social marketing plans during the Dumpster Summit.

- Two groups focused on commercial audience closing dumpster lids.
- One group focused on multi-family audience closing dumpster lids.
- Two groups focused on commercial audience reporting leaking dumpsters.

The two teams working on encouraging commercial properties to close lids on dumpsters combined during the last half of the Dumpster Summit.

Results

Four Social Marketing Plans were developed. The plan to target the commercial audience to close the lids on dumpster was chosen by the majority to be the focus of a shared regional Social Marketing Campaign.

Dumpster Summit Numbers

- **4** days (**14** hours)
September 14, 8:30 – 12:00
September 15, 9:00 – 12:00
October 27, 8:30 – 12:30
October 29, 8:30 – 12:00
- **30** Partners
- **25** Jurisdictions
- Over **400** cumulative hours of learning and creating during the Dumpster Summit.
- Over 250 hours spent collecting surveys and meeting with teams outside of the Dumpster Summit.
- **68** commercial audience surveys
- **147** Multi-family audience surveys

Dumpster Summit Logistics

The City of Bellevue hired Nancy Lee to facilitate the Dumpster Summit. However, this was a collaborative effort with the active participation of partners during and outside of the workshop.

- The initial **Dumpster Summit Planning Team** included Laurie Devereaux (Bellevue), Tally Young (Redmond), Susan McCleary (Olympia), Laura Haren (Kent), Lisa Were (Sammamish), and Kim Jones (Newcastle). The planning team served in all the planning efforts including scheduling, logistics, and communications.
- **New Planning Team** members joined just before and during the event offering special assistance. Cameron Coronado (Lynwood) managed the event via Zoom. Aaron Hussmann (Kirkland) and Zachariah Van Ry (Bellevue) created survey monkey tools and managed data presentation for the commercial and multifamily audience research surveys.
- **Team Leads** were partners who helped lead each break-out group during the Dumpster Summit and coordinate other efforts as needed outside of the Dumpster Summit Workshop. Laurie Devereaux, Laura Haren, Susan McCleary, Lisa Were, and Tally Young served as Team Leads.

Participants were surveyed before the Dumpster Summit to create 5 break-out teams. Teams were formed based on:

- Topic of interest (Lids, Leaking, Bulky Waste, Recycled Cooking Oil, and Trash Compactors)
- Audience (Multi-Family, Commercial, Residential, Hauler, Property Managers)
- Other preferences (topic, willingness to lead break-out team, work with neighboring jurisdictions, experience with social marketing, experience working with commercial audience, experience with solid waste)

Each Partner was asked to conduct at least 2 Audience Research Surveys in their jurisdiction after the first half of the Dumpster Summit.

- The Commercial Audience Teams identified businesses with open dumpsters and conducted surveys mostly by phone.
- The Multi-Family team send the survey to residents via a Survey Monkey tool send out by property managers of properties identified as having observed open dumpster lids.

What worked

- Workshop, not a training. Participants were asked to participate 100%. Commit to
 - Attend all 4 sessions
 - Do intercept surveys & report
- Zoom – having point person to manage the calls and break-out groups
- Schedule – 4 half-days, not more than 4 hours in one day.
- Sharing tasks – partners to manage data, schedule meetings, and lead teams
- Break out teams
 - Carefully sorted
 - Each with leader
 - Each with mixed expertise
- Planning Team – advisory group before, during, and after event
- Survey Monkey – for planning as well as a data collection tool for audience research

Consider for future large collaborative efforts

- The size of group felt right for participation
- Consider a Memorandum Of Understanding for participating jurisdictions, especially depending on level of commitment
- The group missed the energy of being together and side conversations. While the Zoom platform worked remarkably well, having some in-person option for at least part of the project would be ideal.
- Consider Intercept Survey Practice – There were varying levels of comfort and confidence in performing surveys.

Dumpster Summit Partners were jurisdictions who are part of STORM (STormwater Outreach for Regional Municipalities). Participants were invited to participate at a regional meeting and by word of mouth. Participant number was originally set by the small room size but stayed small when we went virtual as we charted new territory with an online workshop.

Moving Forward

Many more jurisdictions plan to join in the effort for the chosen campaign. The remaining plans will be held onto for future development. The interest level in participating in the other plans was high but willingness to lead was low. They survey data collected is a valuable resource for outreach and education development.

Dumpster Summit Partners	
Laurie Devereaux	Bellevue
Zachariah Van Ry	Bellevue
Thania Barrios	Bellevue
Paige Morris	Burien
Megan Darrow	City of Monroe
Brian Wirt	City of Mukilteo
Ben Stryker	Des Moines
Laura Haren	Kent
Meara Heubach	Kent
Robert Bernhard	King County
Aaron Hussmann	Kirkland
Kim Pledger	Kitsap County
Emily Watts	Lacey
Cory Roche	Lake Forest Park
Diana Halar	Lakewood
Cameron Coronado	Lynnwood
Jessie Balbiani	Marysville
Kim Jones	Newcastle
Susan McCleary	Olympia
Tally Young	Redmond
Anne Dettelbach	Redmond
Kristina Lowthian	Renton
Lisa Were	Sammamish
Christie Lovelace	Shoreline
Bradley Wright	Snohomish
Sarah Norberg	Tacoma
Kelsey Crane	Thurston Co
Skyler Specht	Thurston Co
Meredith Greer	Tumwater
Leah Uhl	Woodinville

Appendix C - Social Marketing Plan Commercial Dumpster Lids

Team Members:

Laurie Devereaux/Bellevue, Kristina Lowthian/Renton, Bradley Wright/Snohomish County, Cameron Coronado/Lynwood, Leah Uhl/Woodinville, Aaron Hussmann/Kirkland, Susan McCleary/Olympia, Jessie Balbiani/Marysville, Emily Watts/Lacey, Meredith Greer/Tumwater, Kelsey Crane/Thurston County, Skyler Specht/Thurston County

Purpose	Reduce stormwater pollution to surface waters
Focus	Dumpster Lids
Priority Audience	Commercial businesses within the NPDES geographic area not closing lids
Behavior	Close dumpster lids every time something is put in the dumpster
	Audience Insights
Barriers	<ul style="list-style-type: none"> • Full so can't close • Regular Use • Can't reach • Others leave it open • Heavy • Didn't think about it/forget • Easier to leave open
Benefits	<ul style="list-style-type: none"> • Reduce pests • Reduce smell • Reduce illegal use • Cleaner look • Keep rain out
Motivators	<ul style="list-style-type: none"> • Reduce pests • It's against the law • Boss/management • Point out pollution • Reminder to close the lid • Items to make it easier (e.g., stool, hook, handle)
Competition	<ul style="list-style-type: none"> • Not closing the lid • Easier • Saves time
Influential Others	<ul style="list-style-type: none"> • Business Owners/Managers • Property Owners/Managers • City Inspectors • Neighbors
Positioning	We want businesses to see closing lids on dumpsters every time as a simple way to reduce illegal use, comply, and have pest and odor-free dumpster areas that are clean for them and the environment.

Intervention Strategies (4 Ps)	
Product	
Core	<ul style="list-style-type: none"> • Pest and odor free dumpster areas
Actual	<ul style="list-style-type: none"> • Permanent Signage and Stickers • Inspector Reports
Augmented	<ul style="list-style-type: none"> • Step Stools • Tool for Lids • Consulting • Box Cutter
Price	
Monetary Incentives	<ul style="list-style-type: none"> • Free stepstool • Free month for best behavior • Maybe free or discounted lid tool
Monetary Disincentives	<ul style="list-style-type: none"> • Code enforcement fines/fees • Have to dispose of illegal dumping, fines/fees • Staff having to clean up, or pay someone to do the cleaning, storm drain vacuored
Nonmonetary Incentives	<ul style="list-style-type: none"> • Pledges • Window stickers • Rewards (e.g., chocolate fish) • Recognition of the business
Nonmonetary Disincentives	<ul style="list-style-type: none"> • Reminder letter for those not following behavior • Photos of unclosed lids
Place	
Tangible Goods	<ul style="list-style-type: none"> • Dumpster locations • At start of campaign site visit • Indoor garbage station • Exit door leading to dumpster • NOTE: Sticker placement may vary depending on site
Services	<ul style="list-style-type: none"> • By appointment or drop-in during slow business hours on site
Promotion	
Messages	<ul style="list-style-type: none"> • Cleaner, less odors, fewer pests • Multiple languages • Worthwhile
Messengers	<ul style="list-style-type: none"> • City staff • Business/Property managers
Creative Elements	<ul style="list-style-type: none"> • “Drop, Cover & Stroll!” • “Close the Lid on Pollution, Pests, Odors”
Media Channels	<ul style="list-style-type: none"> • On dumpster, at site • Pavement around dumpster • Public recognition (e.g., social media) • Chamber of Commerce

Dumpster Campaign Strategy and Schedule

Campaign Background, Purpose and Focus

Puget Sound is in trouble. Toxic runoff causes aquatic habitat damage, putting many of our indigenous aquatic species at risk. Most of the pollution reaching Puget Sound comes from polluted stormwater runoff. The purpose of this plan is to protect water quality in Puget Sound and local waterways by reducing sources of pollution. The focus is on increasing adoption of dumpster area best management practices (BMPs) by businesses, to prevent water quality violations. This social marketing plan provides valuable information about the priority audience desired benefits, barriers and motivators and tools that will work to promote positive behaviors for the benefit of the Puget Sound Watershed.

Situational Analysis

Strengths:

- Multi-jurisdictional collaboration and support.
- Internal and regional funding availability.
- Internal and regional expertise. Previous work on this topic has been conducted in the US and in the Puget Sound region.
- Management support (NPDES Permit mandate.)
- Aligns with other NPDES permit mandate to implement a Source control Program for existing Development.
- Recent experience working on successful regional social marketing campaigns, such as Natural Lawn Care and Don't Drip and Drive.
- Strong pathways for communication with haulers and share common goals.

Weaknesses:

- Jurisdictions experiencing budget shortfalls due to COVID 19, resulting in budget cuts across all departments.
- Businesses are under financial pressure due to the COVID 19 Stay at home orders and social distancing restrictions.
- Image of City being a regulator/enforcer not willing to work with public.

Opportunities:

- Water quality is a top priority for the community.
- Lessons learned from previous programs.
- Visibility and resources from a regional program to increase awareness and concern about the issue and influence social norms.

Threats:

- Not a priority for businesses trying to recover and normalize during and after COVID 19.
- Business community may not be aware of problems.
- High staff turnover in certain business sectors.
- May be hard to collect data on behavior change.
- Multiple languages to consider in certain sectors.
- Changes may require financial resources/incentives.

Research and Review of Prior Similar Efforts

Prior to the Dumpster Summit, research was conducted to assess the impact of dumpster issues on local water quality. This research includes:

- Qualitative information/observations from local government experts and consultants conducting business and local source control inspections, including members of the Business Inspection Group (BIG)
- Qualitative information/observations from private stormwater facilities inspectors conducting site visits at commercial businesses (associated with permit required inspections)
- Qualitative information from waste resources/solid waste experts
- Literature review of previous dumpster research and outreach efforts conducted:
 - The City of Bothell - Dumpster Maintenance Assessment Final Report Prepared Dec. 21, 2016
 - City of Bellevue - Bel-Red/Northup Commercial Waste Audit – 2017
 - City of Federal Way - Trash Compactors and Dumpsters: Eliminating a Major Source of Stormwater Pollution
- Dumpster audit data collected and aggregated from six jurisdictions. Audits inspected 451 total dumpsters. Lid status information was collected from 373 dumpsters, container leaking/damaged information was collected from 391 dumpsters, and a dumpster site condition rating was given to 147 dumpsters in Bellevue and Sammamish (2015 – 2019). To view the Baseline Dumpster Data Summary, see Appendix A

Other qualitative information:

- Business Inspectors interviewed emphasized that a multi-tier approach that combines a helpful educational intent with a layer of enforcement was the most effective way to create behavior change within the business community.
- Understanding how to establish trust is fundamental. Approaching businesses with educational tools and resource assistance is important. Experience shows that explaining why something matters, and the potential consequences, is far more effective than simply telling a business, they must do something. Also, “selling” source control as a good business practice can increase the businesses’ desire to learn more. Once a business agrees to participate in the program, specialists need to provide value to the business to establish credibility (T. Benson 2016, personal communication, Jul. 28.)
- Having a more extensive educational campaign with a region or sector-wide reach would help to increase the business inspection program’s effectiveness (A. Alfred, A. Peterson, and T. Zuehl, 2016, personal communication, Jul. 28.)
- Challenges cited by both Snohomish and Bothell include identifying which businesses to visit and locating problems. Often, businesses do not realize there may be a problem and might not seek assistance without the specialist pinpointing a problem.

Campaign Strategy Development

From September 2020 through October 2020, 20+ Stormwater Outreach for Regional Municipalities (STORM) member jurisdictions participated in a “Dumpster Summit.” The Summit was funded by the City of Bellevue and facilitated by social marketing expert Nancy Lee. Participating jurisdictions were supported by project lead Laurie Deveraux and a core planning team. Summit participants brought together expertise in stormwater outreach, social marketing, waste resources, and business inspections. During the Summit, participants actively developed five different social marketing strategy teams addressing dumpster area best management practices (BMPs). In between the second and third Summit, participants collected barriers, benefits, and motivator surveys at businesses and multi-family properties. At the conclusions of the Summit, participants agreed to focus on one strategy to implement: closing dumpster lids every time for commercial businesses. Through this effort, participants employed the Social Marketing 10 Step Strategic Planning Model. Step details are outlined below in the Social Marketing Strategy and Schedule Summary section of this document.

The Summit's primary goal was to collaboratively develop a Social Marketing behavior change campaign to be implemented regionally by jurisdictional partners across Western Washington. The ultimate outcome of this collaboration is to reduce stormwater pollution to surface waters through social marketing methods that motivate commercial businesses within the NPDES geographic area to keep dumpster lids closed. To view the Dumpster Summit 2020 summary, see Appendix B.

Toolkit Development

With many different populations and needs across the NPDES geographic area, the Dumpster Summit Team and the consultant brainstormed a basic toolkit and options for jurisdictions to employ based on budget and commercial business needs. The toolkit was developed and finalized during November 2020 and December 2020. Summary of the toolkit development and testing strategy:

- Review draft toolkit and provide recommended costs/rankings
- Survey Dumpster Summit Team on recommended toolkit items
- Analyze toolkit survey results
- Finalize basic toolkit and toolkit options based on Dumpster Summit Team survey
- Create toolkit collateral materials
- Finalize toolkit collateral materials
- Manage group ordering and distribution of toolkit items

Once the toolkit material concepts are created, the consultant’s Market Intelligence Team will conduct qualitative research through online focus groups to determine which sign and slogan resonates best amongst commercial business dumpster users. The Market Intelligence Team will analyze the users’ responses to inform the final sign and slogan. Once the toolkit is finalized, the consultant will work with the Dumpster Outreach Group (DOG) to plan the 2021 pilot, including timeline development and recommendations for evaluation and implementation. To see toolkit items and tiers, see **Appendix C**.

Regional Implementation

This campaign is designed to be broadly applicable across the region. Participating jurisdictions will be required to implement the basic toolkit package. There are optional toolkit items for jurisdictions wishing to use them as add-ons to the basic toolkit. Basic toolkit items will be tested for effectiveness through traditional social marketing methods through a pilot campaign implementation and evaluation. Partner jurisdictions will be required to participate in a campaign launch meeting to ensure consistent pilot phase implementation and evaluation.

Benefits of collaboration and regional implementation include:

- Dumpster lid issues will be elevated regionally across the business community simultaneously
- Social norming and social diffusion of dumpster BMPs will increase behavior adoption regionally
- Products of the campaign will be shared with jurisdictions implementing business inspection and local source control programs to increase BMP adoption
- Lessons learned during the pilot, and full implementation phases will be shared through intermittent check-in meetings and campaign evaluation.

During and after the campaign, jurisdictions that participate in the campaign will be asked to track their activities and provide input on the pilot campaign to inform the project evaluation and a long-term implementation plan.

Local Relevancy of the Dumpster Lid Issue

Explain why this is an issue in your jurisdiction. Describe the relevancy of implementing this campaign in your jurisdiction (improvements in water quality based on observations of pollution generating activity. Collect baseline data in your jurisdiction before campaign implementation (see Appendix A regarding # of dumpsters observed and # of open lids at certain business types). This will ensure a compliant post-evaluation of the campaign in each local jurisdiction. The post-evaluation process needs to make sense based on preliminary/starting information. Potential sources of data could include:

- a. Windshield surveys (condition assessment and identify target businesses)
- b. Private Drainage Inspector knowledge (albeit anecdotal)
- c. Local Source Control Inspector knowledge
- d. Review of complaints to the city (e.g., from a neighbor) or IDDE reports
- e. Interview waste management company servicing businesses

Dumpster Campaign Participation

Describe what has been done by your jurisdiction to date. Provide background information about how your jurisdiction has engaged with DOG and development of the dumpster campaign. Examples may include:

- Participation in Dumpster Summit
- Participation in the Toolkit Survey
- Emails/meetings
- Baseline data collected
- Funding contributions – #'s not needed but should document contribution to planning if one was made

Campaign Implementation

Describe how the campaign will be implemented for your local jurisdiction. Provide information on how and when you will implement the pilot phase within your jurisdiction (how many businesses, toolkit items implemented, duration, and evaluation elements).

Pilot Phase Evaluation

The evaluation will summarize the pilot campaign results and lessons learned that could improve broad-scale implementation. The evaluation results will be aggregated based on information provided by participating jurisdictions.

Dumpster Behavior Change Campaign



Implementation Timeline Summary



	Complete by	Task
✓	6/2020	Collect data on dumpster area conditions and water quality issues (Step 1 Community Based Social Marketing)
✓	11/2020	Dumpster Summit Implementation, audience barriers, benefits, and motivators research, audience profile research (Steps 1-3 Community Based social marketing)
☐	1/15/2021	Finalize "Strategy and Schedule" documentation (Step 3 Community Based Social Marketing)
☐	1/15/2021	Begin toolkit items development ahead of pilot implementation
☐	4/1/2021	Begin implementing developed strategy (Pilot Campaign Phase, Step 4 Community Based Social Marketing)
☐	1/2022	Evaluate Pilot Campaign and make strategy adjustments to improve outcomes (Step 4 Community Based Social Marketing)
☐	2/2022	Implement campaign strategy broadly (Step 5 Community Based Social Marketing)
☐	2/2024	Compile and document campaign effectiveness data (Step 5 Community Based Social Marketing)
☐	3/31/2024	Finalize report documenting the changes in understanding and adoption of targeted behaviors resulting from the implementation of the strategy. Include planned or recommended changes to the campaign in order to be more effective. Describe the strategies and process to achieve the results.
☐	4/1/2024-Ongoing	Use results of the evaluation to continue to direct effective methods and implementation of the ongoing behavior change program.

Social Marketing Strategy and Schedule Summary:

Purpose	Reduce stormwater pollution to surface waters
Focus	Dumpster Lids
Priority Audience	Commercial businesses within the NPDES geographic area not closing lids
Behavior	Close dumpster lids every time something is put in the dumpster
Audience Insights	
Barriers	<ul style="list-style-type: none"> • Full so can't close • Can't reach • Heavy • Didn't think about it
Benefits	<ul style="list-style-type: none"> • Reduce pests • Reduce smell • Reduce illegal use • Cleaner look • Keep rain out
Motivators	<ul style="list-style-type: none"> • Reduce pests • It's against the law • Point out pollution • Reminder to close the lid • Items to make it easier (e.g., stool, hook, handle)
Competition	<ul style="list-style-type: none"> • Not closing the lid <ul style="list-style-type: none"> ○ Easier ○ Saves time
Influential Others	<ul style="list-style-type: none"> • Property Owners/Managers • City Inspectors • Neighbors
Positioning	We want businesses to see closing lids on dumpsters every time as a simple way to reduce illegal use, be compliant with regulations and have pest and odor-free dumpster areas that are clean for them and the environment.
Intervention Strategies (4Ps)	
Product	
Core	<ul style="list-style-type: none"> • Pest and odor-free dumpster areas
Actual	<ul style="list-style-type: none"> • Permanent Signage and Stickers • Inspector Reports
Augmented	<ul style="list-style-type: none"> • Step Stools • Tool for Lids • Consulting • Box Cutter
Price	
Monetary Incentives	<ul style="list-style-type: none"> • Free stepstool • Free month for best behavior • Maybe free or discounted lid tool
Monetary Disincentives	<ul style="list-style-type: none"> • Code enforcement • Cost to dispose of illegal dumping • Staff having to clean up or pay someone to do the cleaning, storm drain vacuored
Nonmonetary Incentives	<ul style="list-style-type: none"> • Pledges • Window stickers • Rewards (e.g., chocolate fish)

Nonmonetary Disincentives	<ul style="list-style-type: none"> • Reminder letter for those not following behavior • Photos of unclosed lids
Place	
Tangible Goods	<ul style="list-style-type: none"> • Dumpster locations • At the start of the campaign site visit • Station
Services	<ul style="list-style-type: none"> • By appointment on site
Promotion	
Messages	<ul style="list-style-type: none"> • Cleaner, less odors, fewer pests • Worthwhile • Multiple languages
Messengers	<ul style="list-style-type: none"> • City staff • Property managers
Creative Elements	<ul style="list-style-type: none"> • “Drop, Cover & Stroll!” • “Close the Lid on Pollution, Pests, Odors”
Media Channels	<ul style="list-style-type: none"> • On dumpster, at site • Pavement around dumpster • Public recognition (e.g., social media) • Chamber of Commerce • Door/area leading to dumpster site
Monitoring and Evaluation	
Inputs Measured	<ul style="list-style-type: none"> • Staff time • Money spent for tool kit materials • Partner contributions • Consultant expenses
Outputs Measured	<ul style="list-style-type: none"> • Number of site visits/businesses • Materials disseminated • Materials posted/put in place • Implementation of program elements. (on track? on budget?)
Outcomes Measured	<ul style="list-style-type: none"> • Behavior adoption • Change in knowledge and beliefs, campaign awareness • Support and satisfaction with outreach • New partnerships and contributions gained
Impacts Measured	<ul style="list-style-type: none"> • Cleaner dumpster areas, reduced odors, and vermin • Cleaner appearance in downtown and commercial areas, impacting economic development health
Techniques and Methodologies	<ul style="list-style-type: none"> • Minimum of three groups to conduct pilot comparing different toolkit tiers. • Implementer to assign participant groups. • Observation, audience surveys, and interviews (quantitative.) • Calculate ROI.
Evaluation Timing	<ul style="list-style-type: none"> • Pre, mid-term, and post outreach (observations of dumpster lids/areas.)
Evaluation Costs	<ul style="list-style-type: none"> • Expected cost efficiencies by joining with partner jurisdictions to share costs for consultant work and material production • Use the 10% rule of thumb for any consultant evaluation work • Observations will be conducted by staff

Budgeting & Funding	
Product-Related Costs	<ul style="list-style-type: none"> • Indirect costs for staff time to conduct technical assistance site visits, waste audits • Direct costs for “tools” signage and stickers
Price Related Costs	<ul style="list-style-type: none"> • Recognition items like the window stickers (clings) “we keep it clean” or other incentives like free months service for best behavior
Place Related Costs	<ul style="list-style-type: none"> • Costs related to the distribution of resources, such as a webpage
Promotion Related Costs	<ul style="list-style-type: none"> • Costs for incentivizing trusted messengers or influencers
Evaluation Related Costs	<ul style="list-style-type: none"> • Costs for analyzing pilot data • Fees for making program recommendations (consultant)
Potential Funding Sources	<ul style="list-style-type: none"> • The coalition of local jurisdictions and other stormwater partners. • Partners in Waste Reduction & Recycling • State grant dollars available through salmon recovery funds • Consider appropriate corporate partners/sponsors like REI, local breweries that rely on clean water for their production process, or local shellfish/seafood producers (like Penn Cove or Taylor Shellfish)

Implementation Plan		
What	Who	When
Baseline Dumpster Data Collected and summarized	Jurisdictions	2018-2020
Project coordination and oversight	Core Planning Team/Consultant	Feb. 2020 – Mar. 2024
Dumpster Summit Implementation, a summary of audience research and social marketing plan	Laurie Deveraux, Nancy Lee, Core Planning Team, Participating Jurisdictions	Sept-Nov. 2020
Toolkit development & costs	Consultant	December 2020
Develop a campaign strategy and schedule document	Core Planning Team/Consultant	Early January 2021
Finalize list of participating partners	Core Planning Team	February 2021
Finalize basic partner toolkit	Core Planning Team/Consultant	Mar. 1 2021
Creative campaign concept	Consultant	January 2021
Message testing	Consultant	February 2021
Develop Pilot Phase, selection of pilot sites, implementation, and evaluation plan	Core Planning Team/Consultant	February 2021
Finalize partner toolkit, signage stickers, handouts, pledges, and clings	Core planning Team/Consultant	Mar. 1 2021
Toolkit material ordering and production	Consultant	March 2021
Finalize Pilot implementation and evaluation metrics	Core Planning Team/Consultant	March 2021
Implementation meeting with partners	Core Planning Team/Consultant	Mar. 15, 2021
Launch Campaign Pilot Phase	Jurisdictions	Apr. 1, 2021
Tracking/follow-up with partners	Core Planning Team	April - September
Ongoing site evaluation and monitoring	Jurisdictions	April-September
Collect and aggregate Pilot Evaluations from jurisdictions	Consultant	
Begin drafting Pilot evaluation summary report	Core Planning Team	October 2021
Finalize evaluation of Pilot Phase, ROI on toolkit options	Jurisdictions/Core planning Team/Consultant	December 2021
Adapt/modify campaign based on pilot evaluation	Partners, Core Planning Team	January 2022
Broad-scale implementation	Jurisdictions	Feb. 2022 – Dec 2023
Ongoing site monitoring and evaluation	Jurisdictions	Feb. 2022 – Dec 2023
Develop evaluation report outline	Core Planning Team	November 2023
Final evaluation and reporting	Jurisdictions/Core Planning Team	Jan.-Mar. 2024

Dumpster Lid Toolkit Items and Cost

January 2021

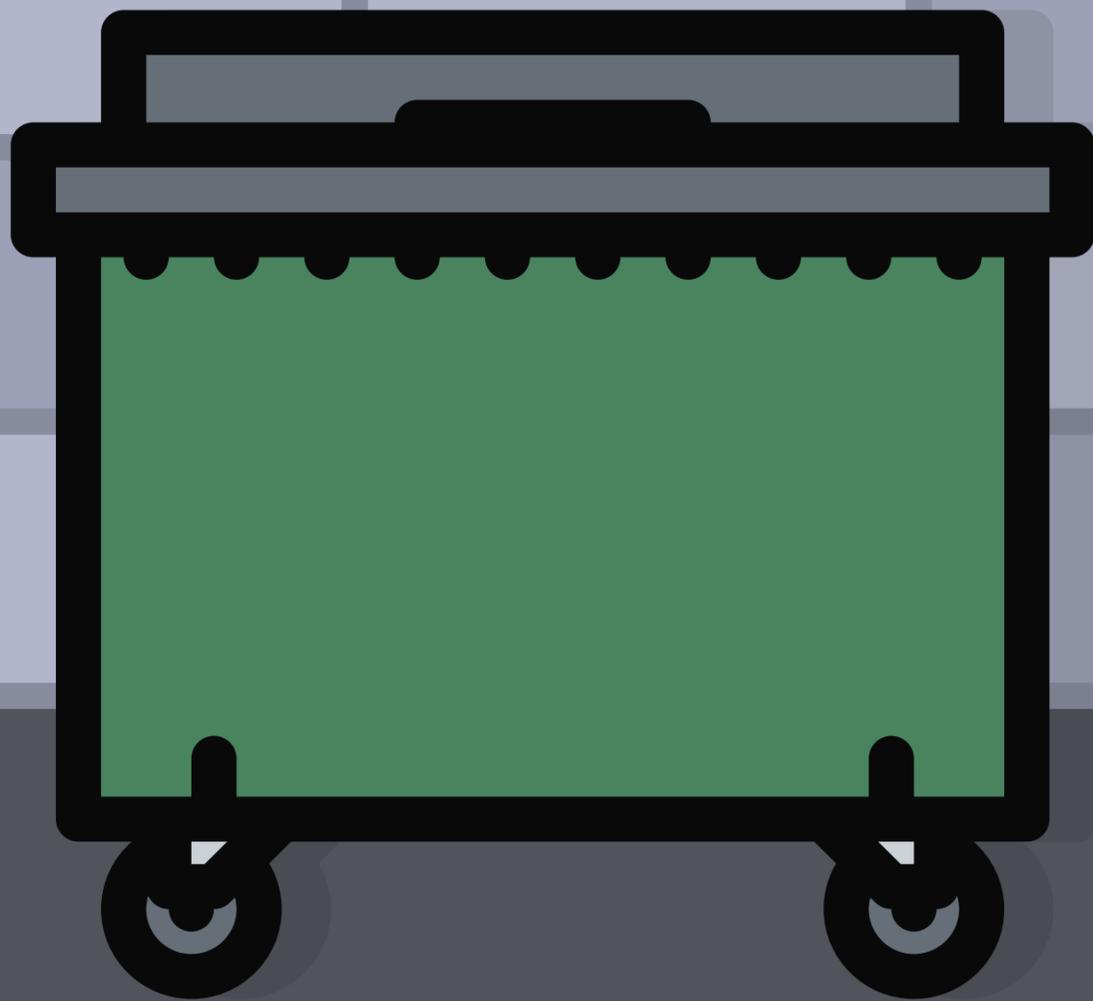
TIER 1: Everyone Completes	
Communication Elements	Estimated Cost to Jurisdiction
Pledges from Property Owners	NA
Informational Instructions/Guidelines/Requirements	NA
Talking Points for Speaking with Those Taking Out Garbage	NA
Talking Points for Speaking with Haulers	NA
Signs/Stickers on Dumpsters	\$4.45
Signs in Dumpster Area	\$7.95
Signs on Door to Dumpster Area Committing to the Pledge	\$7.95
Signs on Doors Leading to Dumpster Area Prompting Behavior	\$7.95
Tangible Product Elements	
Stepping Stool	\$8.99
TIER 2: Optional items in addition to Tier 1	
Communication Elements	Estimated Cost to Jurisdiction
Signage on Ground Around Dumpsters	\$21.55
Storm Drain Marking	\$4.55
Window Cling	\$1.85
Ropes/Straps to Dumpsters	\$1.80
Hydraulic attachments to Dumpsters	NA
Education & Service Elements	
In Person Training/Consulting for All Using the Dumpsters	NA
Select & Train a Dumpster “Champion” <ul style="list-style-type: none"> • Specific to one business with multiple employees or • A property manager for a shared dumpster with several businesses <p>This person would be in charge of the waste and would be the one to dump all of the waste at the business, so they are the most responsible for proper disposal and care of dumpster materials/area. They ensure the area is cleaned daily, make sure it’s ready on collection day, and check on it after collection. The Dumpster Champion would identify the people not doing the proper behavior.</p>	NA
Waste Audit: Auditing to help comm. biz reduce waste and avoid overflowing dumpsters	NA
Providing Talking Points for Instructing Employees	NA

Notes:

*Costs for items are based on a 150 per-unit calculation and do not include shipping or taxes.

*Final size and costs of materials may be slightly adjusted during the creative development and market intelligence process.

KEEP THE LID SHUT



Less Smell



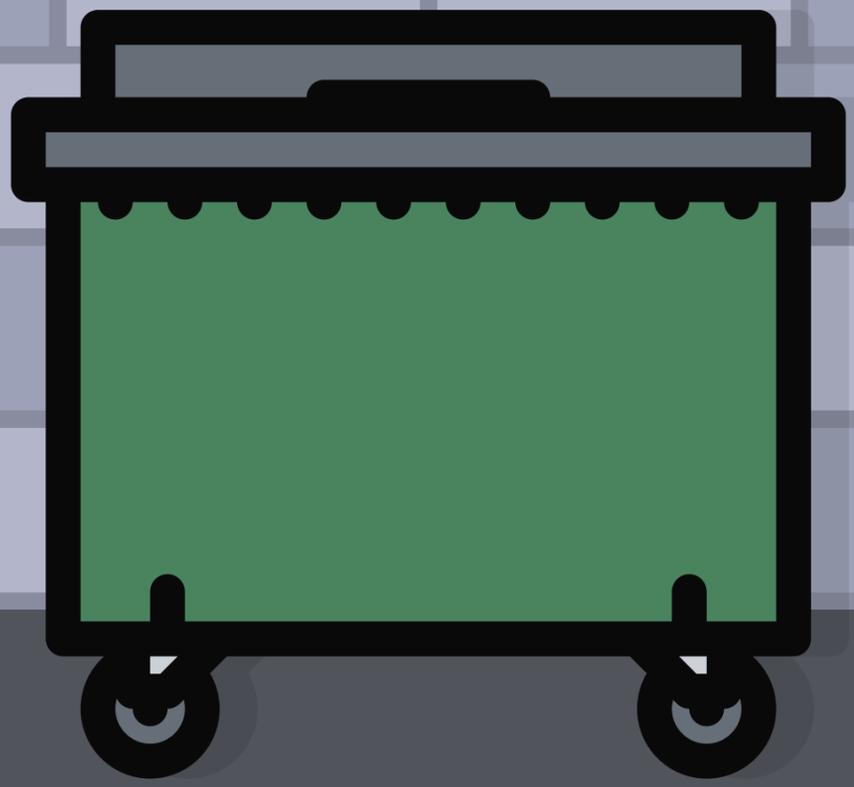
Fewer Pests



No Rain Inside



SHUT IT!



Less Smell



Fewer Pests



No Rain Inside



SHUT IT!



Less Smell



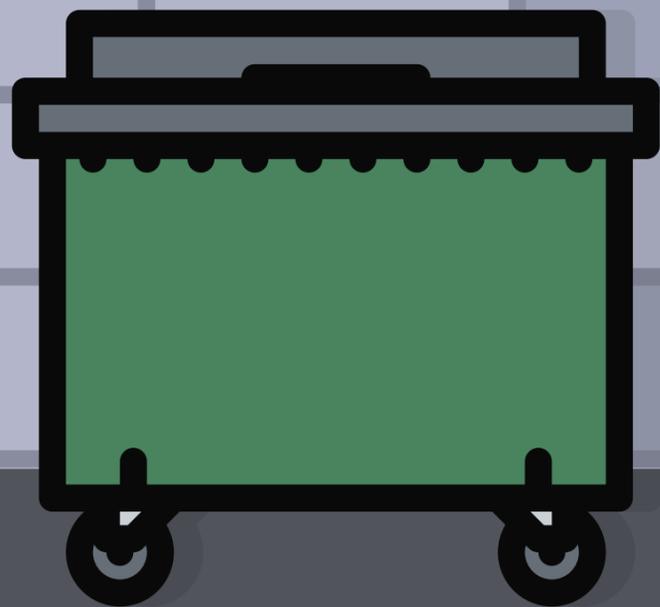
Fewer Pests



No Rain Inside



KEEP THE LID SHUT



Less Smell



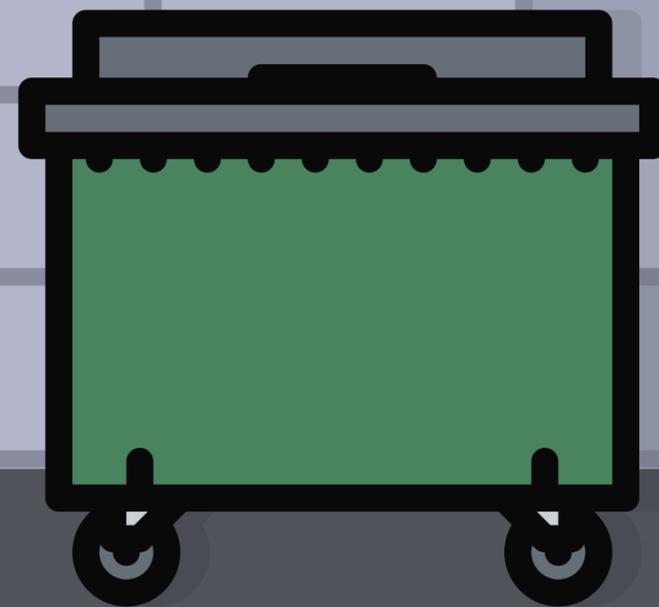
Fewer Pests



No Rain Inside



KEEP THE LID SHUT



Less Smell



Fewer Pests



No Rain Inside



SHUT IT!



WE PLEDGE TO CLOSE
DUMPSTER LIDS

Sign Here!

Less Smell



Fewer Pests



No Rain Inside



We believe a successful business is dependent upon a healthy community and clean water. We are actively working to show our responsibility to protect our local waterways and Puget Sound by pledging to keep our dumpster lids shut!



SHUT IT!



Puget Sound
Starts Here

Less
Smell



Fewer
Pests



No Rain
Inside



SHUT IT!



Puget Sound
Starts Here

Less
Smell



Fewer
Pests



No Rain
Inside



**CLOSE THE LIDS ON ALL DUMPSTERS
EVERY TIME THEY ARE USED FOR LESS SMELL,
FEWER PESTS, AND NO RAIN INSIDE**



Open dumpsters cause problems for local waterways. When lids are left open, rainwater gets in. Then dumpster juice can leak from dumpsters or pour out when it is emptied into the garbage truck. Sometimes, it even leaks from the garbage truck. When this happens, pollution from the dumpster juice gets washed into the nearest storm drain and then flows into nearby bodies of water.

Thank you for helping prevent pollution.

**CLOSE THE LIDS ON ALL DUMPSTERS
EVERY TIME THEY ARE USED FOR LESS SMELL,
FEWER PESTS, AND NO RAIN INSIDE**



Open dumpsters cause problems for local waterways. When lids are left open, rainwater gets in. Then dumpster juice can leak from dumpsters or pour out when it is emptied into the garbage truck. Sometimes, it even leaks from the garbage truck. When this happens, pollution from the dumpster juice gets washed into the nearest storm drain and then flows into nearby bodies of water.

Thank you for helping prevent pollution.



WHO & WHAT – BACKGROUND (N=20)

A1: I'm the business owner

15.0% (3)

A2: I'm the business manager

25.0% (5)

A3: I'm an employee

60.0% (12)

SHUT IT!

For less smell, less rats, less rain inside.

A CLOSED DUMPSTER IS GOOD FOR BUSINESS

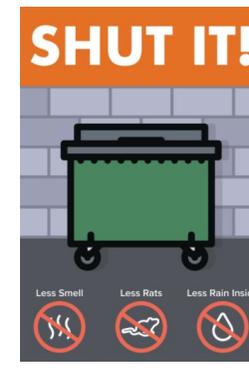
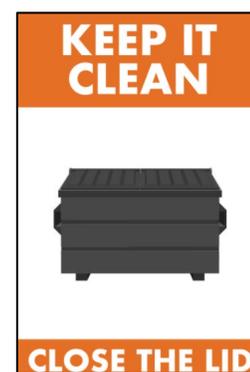
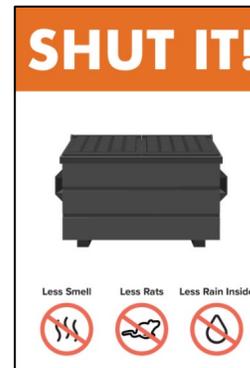
And the environment.

CLOSE THE LID

FOR A BETTER (SMELLING) WORLD.

KEEP IT CLEAN

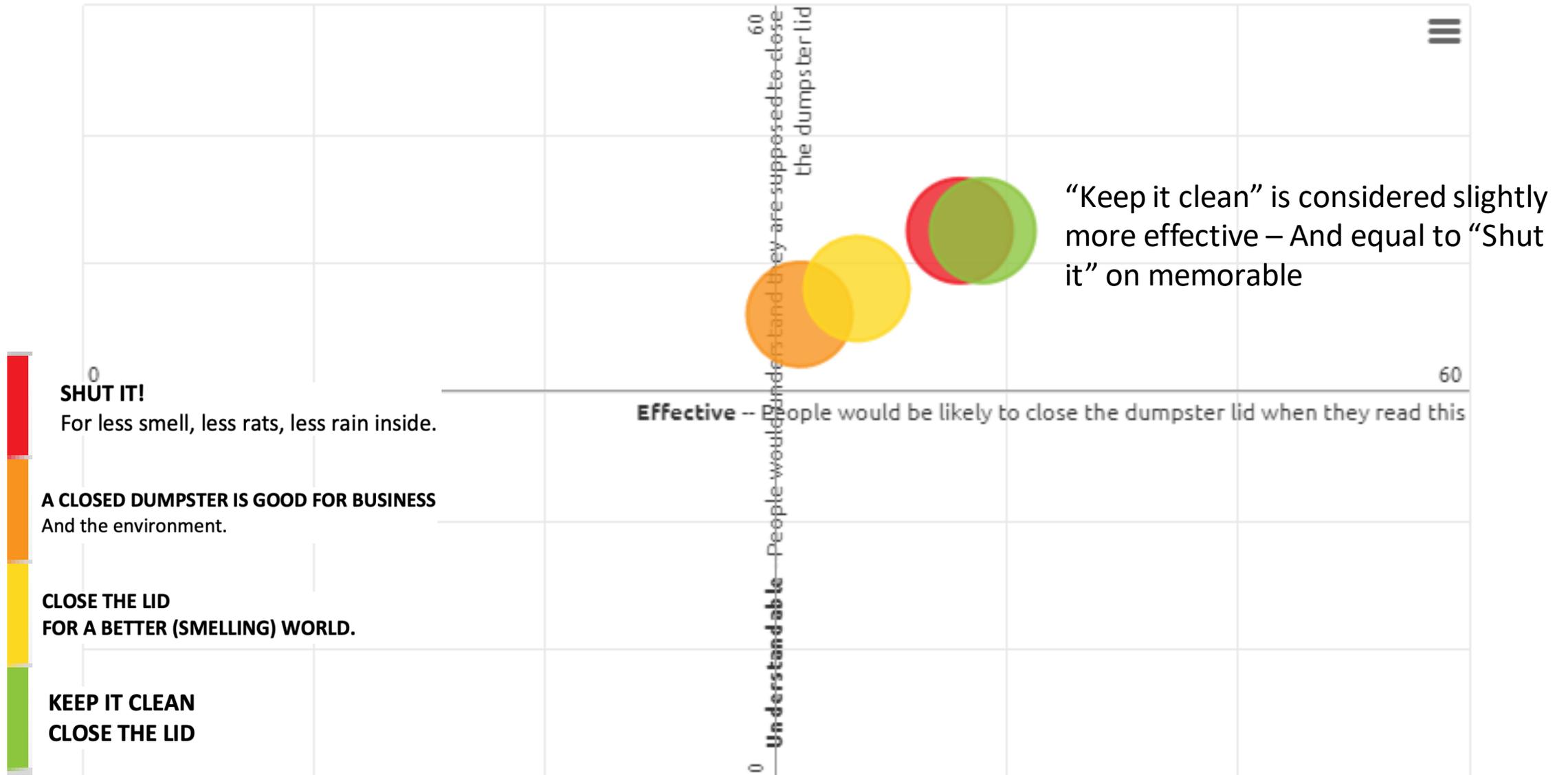
CLOSE THE LID



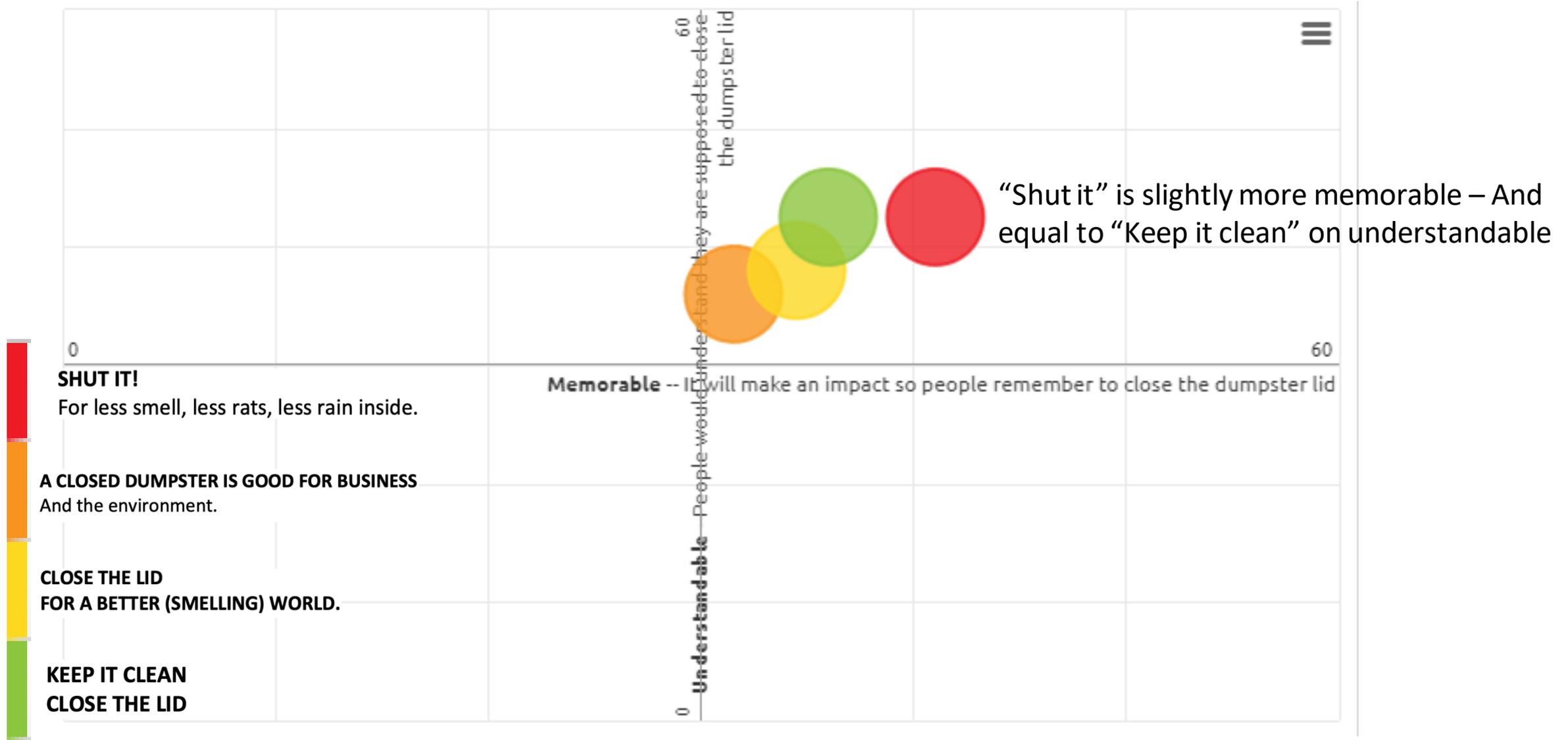
EFFECTIVE & MEMORABLE



EFFECTIVE & UNDERSTANDABLE



MEMORABLE & UNDERSTANDABLE



EFFECTIVENESS RANKING ALSO SHOWS “KEEP IT CLEAN” SLIGHTLY MORE EFFECTIVE THAN “SHUT IT”

Q5 : Please reorder the headlines from most effective overall to least effective overall.

Score

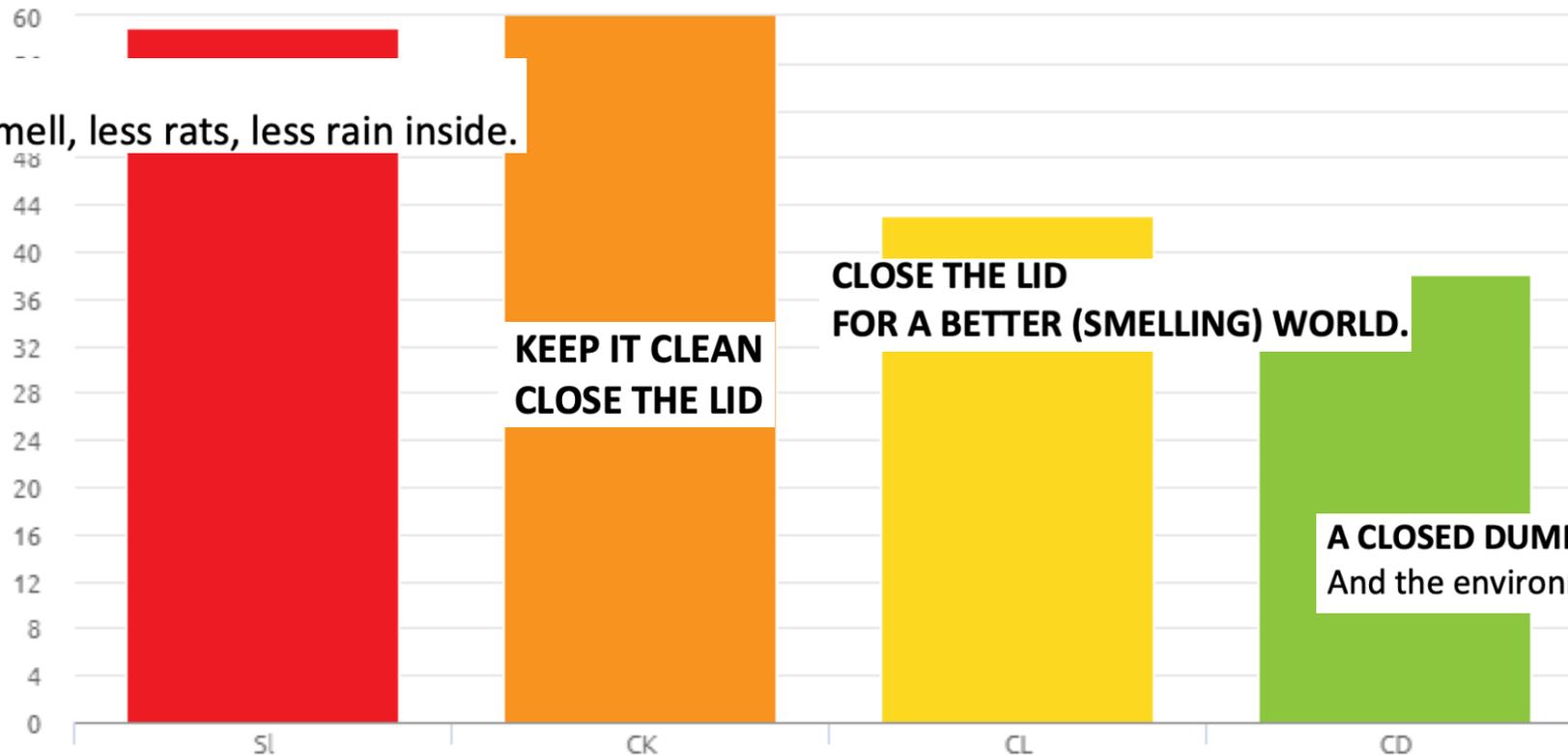
Expand subquestions

● A1: SL ● A2: CK ● A3: CL ● A4: CD



SHUT IT!

For less smell, less rats, less rain inside.



**CLOSE THE LID
FOR A BETTER (SMELLING) WORLD.**

**A CLOSED DUMPSTER IS GOOD FOR BUSINESS
And the environment.**



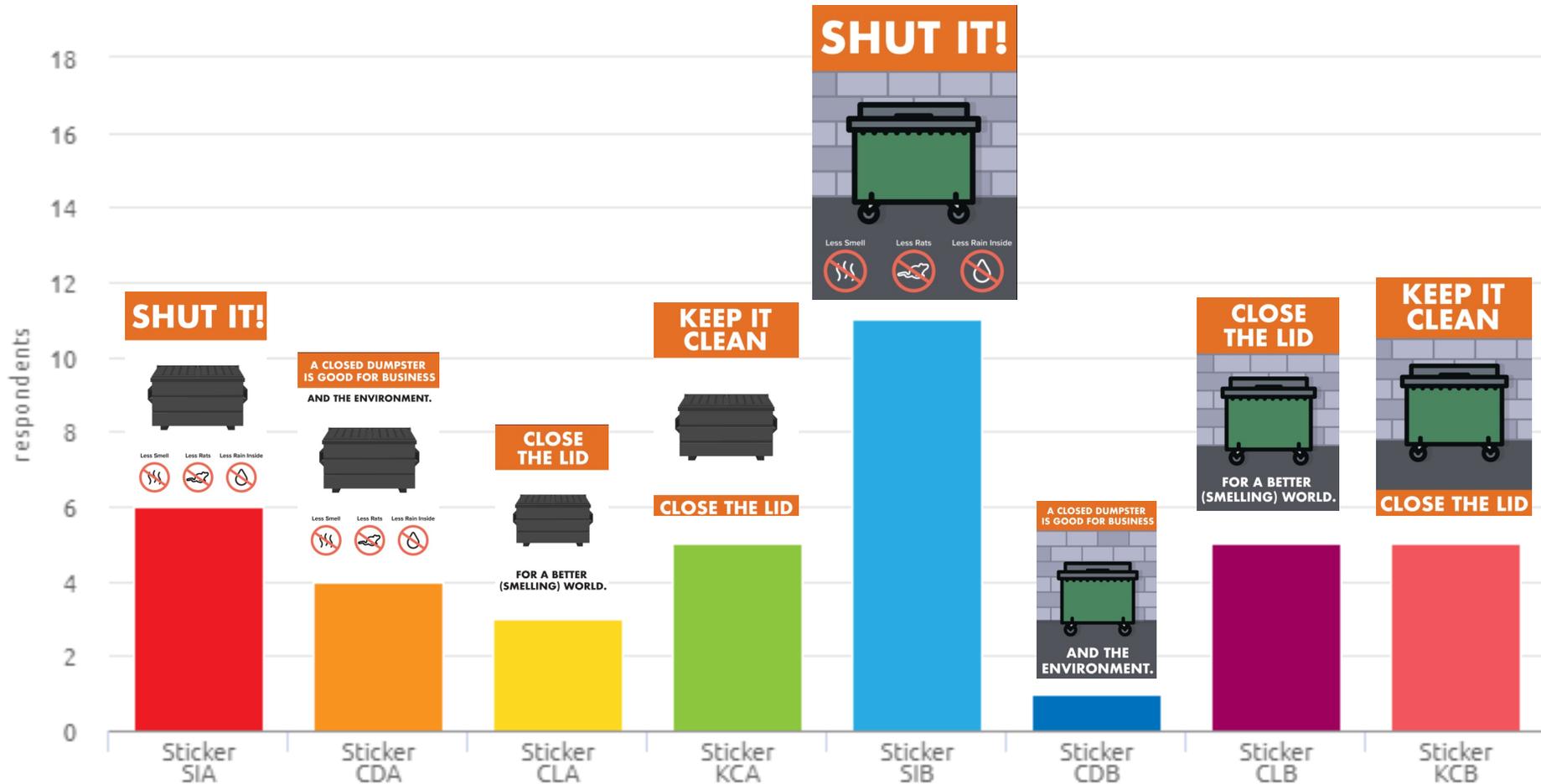
Q11: Please select the two stickers that you think would be the most effective at getting people to close the lid of the dumpster. **Click on the image to the left to enlarge the image.**

A1: Sticker SIA
A5: Sticker SIB

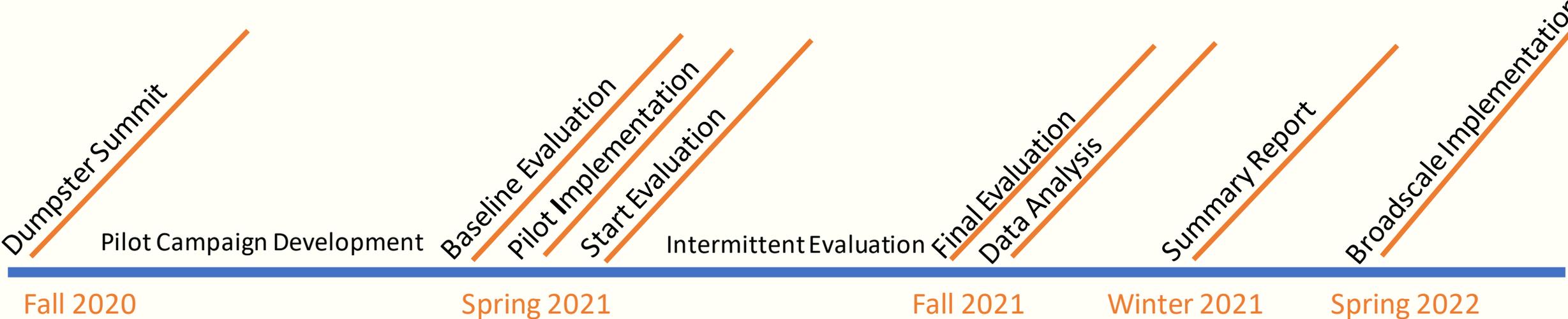
A2: Sticker CDA
A6: Sticker CDB

A3: Sticker CLA
A7: Sticker CLB

A4: Sticker KCA
A8: Sticker KCB



Timeline



Appendix K - Dumpster Lid Evaluation Plan

Evaluation Phase	Frequency	Notes
Baseline	1 week, every day, 2X per day (AM & PM)	<ul style="list-style-type: none"> • Must happen before any contact is made with businesses regarding project. • Pay attention to working hours. • Include weekends if business is open on weekends.
Start	2 weeks, every day, 2X per day (AM & PM)	<ul style="list-style-type: none"> • Start after pilot is implemented.
Intermittent	As needed	This phase is not required. I will still plan monthly checks to make sure that that the dumpsters still have stickers, are in working order, and no other issues need to be addressed.
Final	2 weeks, every day, 2X per day (AM & PM)	<ul style="list-style-type: none"> • Currently planning this for the last 2 weeks in September.
Qualitative	1 interview per business	<ul style="list-style-type: none"> • Occurs after final evaluation. • Questionnaire will be provided to collect feedback from pilot businesses.

Important Notes

- If you cannot do 2 times per day, alternate between morning one day and late afternoon the next day. Look at business hours to capture what really happens during the workday.
- Businesses should not know that we are collecting and tracking dumpster data because it may influence their behavior.
- If you choose a strip mall (which are important as they commonly have open dumpsters), you must reach out to all the businesses who share the property dumpsters for your pilot.

Appendix L - Dumpster Lid Data Overview

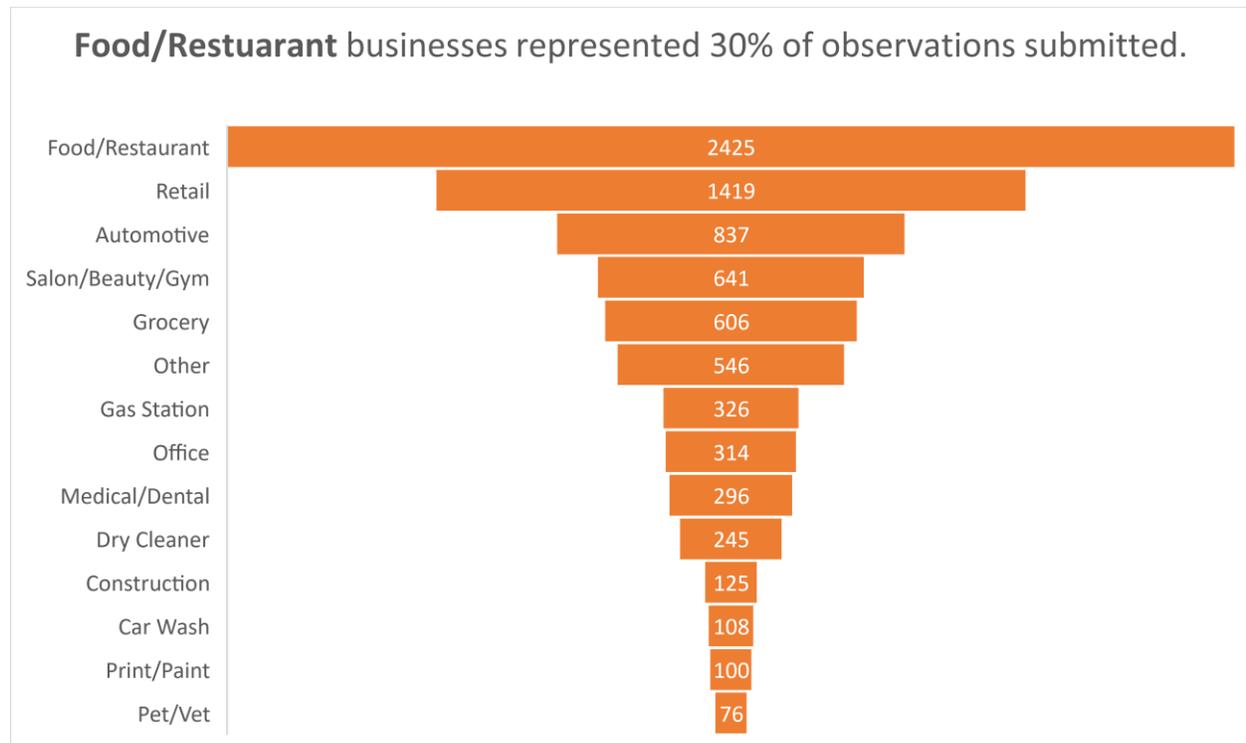
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Data Overview

Between March and October 2021, 30 Puget Sound municipalities evaluated over 100 commercial dumpster areas at businesses and collected in total 5,724 dumpster observations, making for an average of 191 observations per jurisdiction.

- **Dumpster Type:**
 - In total, 12,565 individual dumpsters were observed. 31% of these observations were submitted for dumpsters which were shared by multiple businesses, while 69% were for dumpsters used by a single business.
 - 55% of dumpsters observed were garbage, followed by 43% recycling and 1% organic waste.
- **Observation Phase:**
 - 37% of observations were submitted for the Baseline phase, 26% for the Start phase, 11% for the Intermittent phase, and 25% for the final phase.



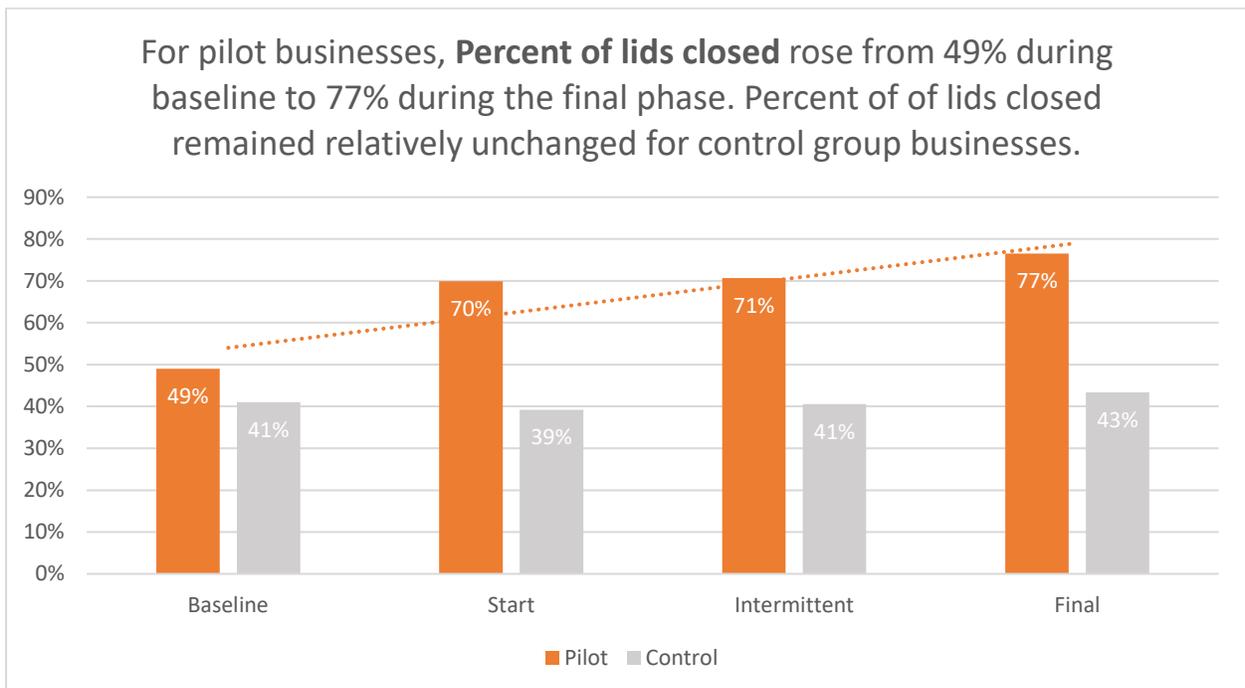
Numbers on the chart represent numbers of observations of a dumpster area. A dumpster area typically includes multiple dumspters, at least one for garbage and one for recycling.

Lids by Phase

Analysis was conducted to determine whether the percentage of lids closed changed over the duration of the campaign.

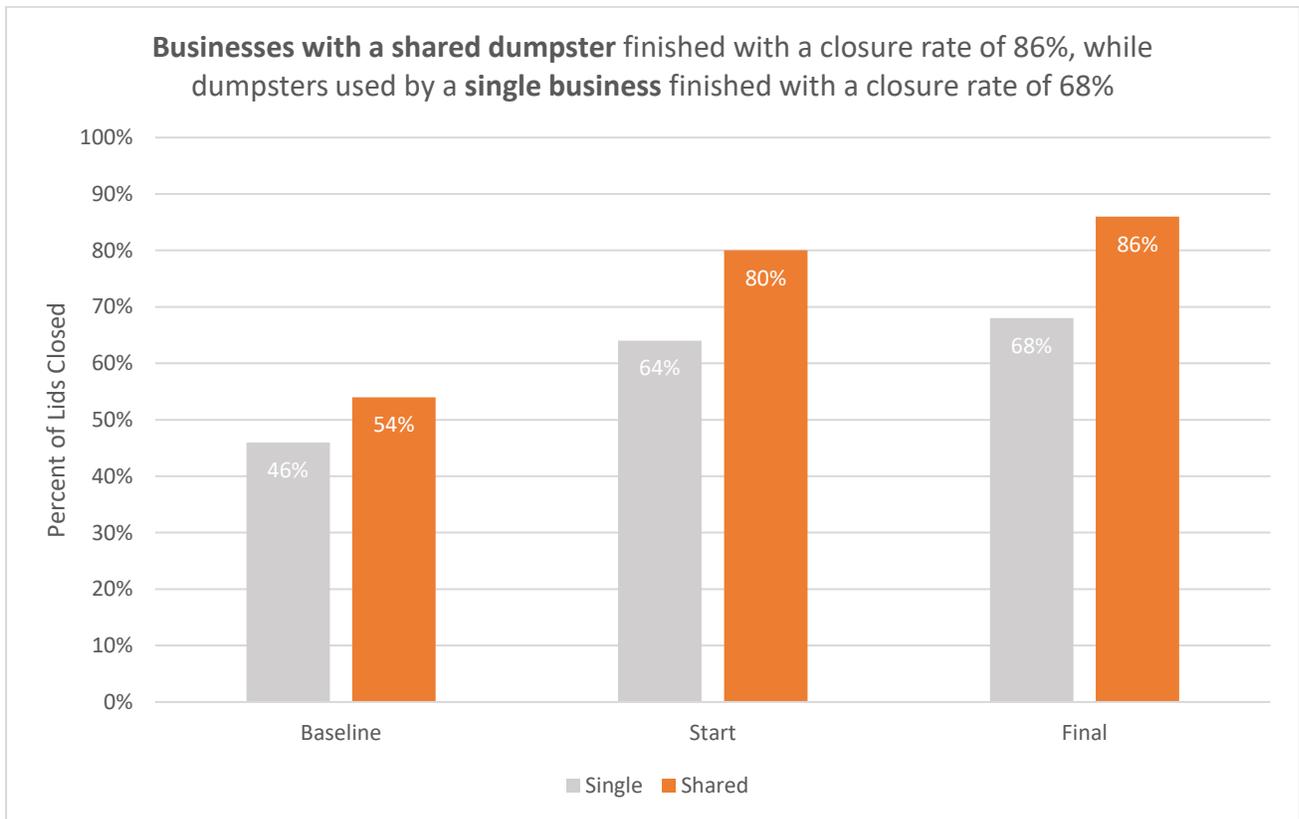
Observations for dumpster lids that were pinned open were excluded from the analysis. Data was also excluded from businesses that were not observed during all phases of the campaign. A total of 4,963 observations representing 10,681 dumpsters were included in the final analysis.

The final lid closure rate for businesses participating in the pilot rose 57% over baseline observations. In comparison, the lid closure rate for control group businesses who received no education or outreach rose 5.4% over baseline observations.



Lids by Dumpster Ownership

Dumpsters shared by multiple businesses showed greater improvement than dumpsters owned by a single business.



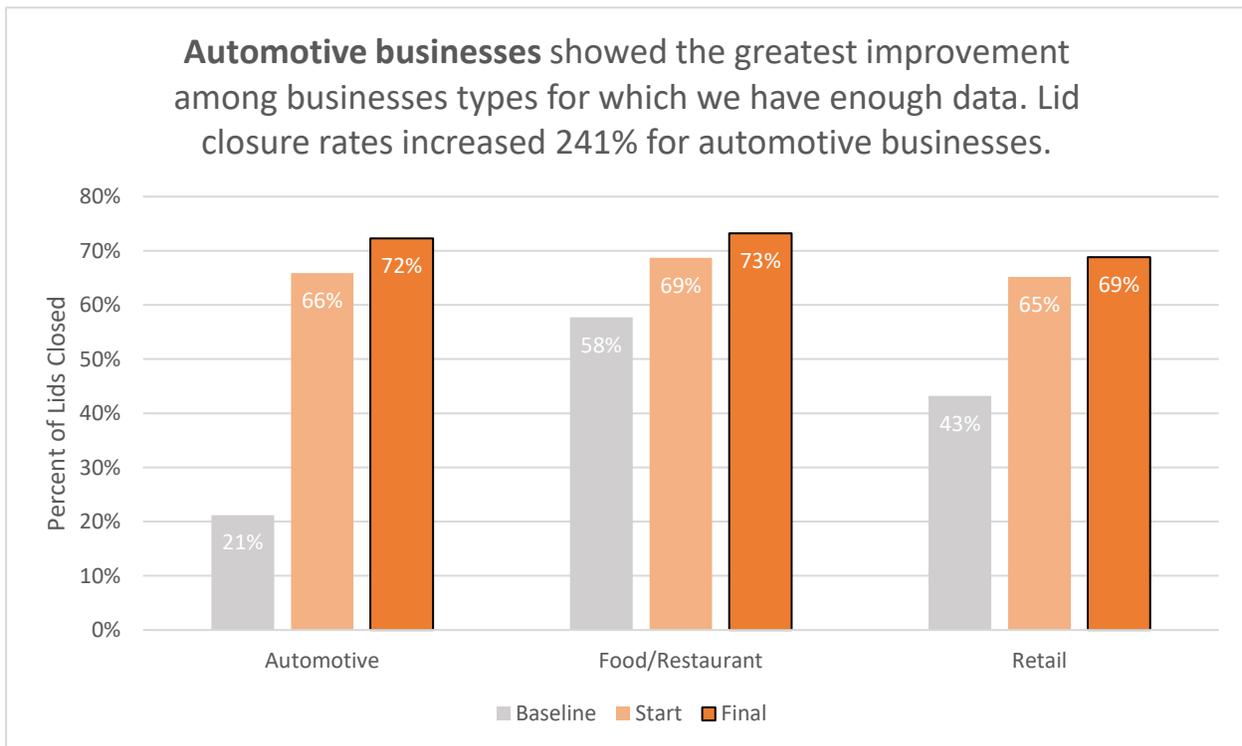
Single Vs. Shared

- About half of the dumpster areas were shared among multiple businesses, while the other half were used by single stand-alone businesses.
- While behavior improved across both, the rate of lid closure was higher among shared businesses than single businesses. Lid closure on shared dumpster sites continued to improve gradually over the 6-month pilot period but went slightly down at the single, unshared sites.

More research should be done to better understand why the behavior was better when dumpsters were shared, but hypotheses include:

- More people taking out the trash increases chances someone will do the right thing
- Peer pressure from knowing that everyone in that area has been asked to put the lids down
- Shared dumpsters are sometimes located in more highly visible areas increasing the feeling of being “watched” and not wanting to do the wrong thing.

Lids by Business Type

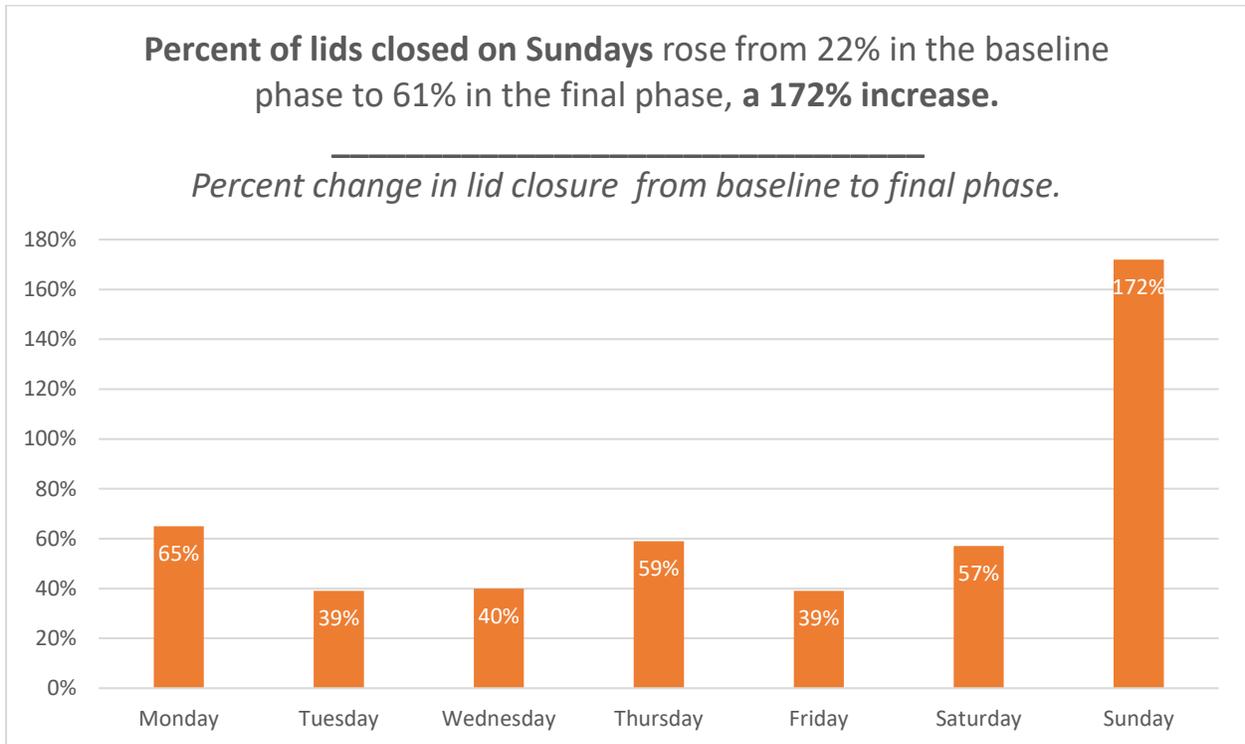


While business type was collected under 14 different categories, evaluation by business type was not possible for most business types for the following reasons:

- When the sample size is small, success may reflect more about the management and staff at an individual business rather than representing the business category. Each business was evaluated between 14-43 times, so although the number of individual observations was high, those numbers only represent a small number of that type of business.
- About half of the dumpster areas were shared. When more than one type of business uses a common dumpster, it is impossible to determine the behavior of any of the individual businesses.
- The sample size of single, stand-alone businesses in some categories was too small to draw any conclusions. For example, most dry cleaners and salons were part of strip malls so data from dumpster areas that represented only dry cleaners or salons was very limited.
- Some businesses were difficult to categorize. For example, only two pet/vet locations were evaluated, but one was in a strip mall, and both were pet stores that could be interpreted as much as a retail store as a pet/vet business.

Lids by Day of Week

Lid closure rates were substantially lower on Saturdays and Sundays during the baseline phase. However, lid closure rates on Sundays improved dramatically over the course of the campaign with a 172% increase compared to baseline levels.



The chart below shows overall lid closure rates by day of the week and observation phase.

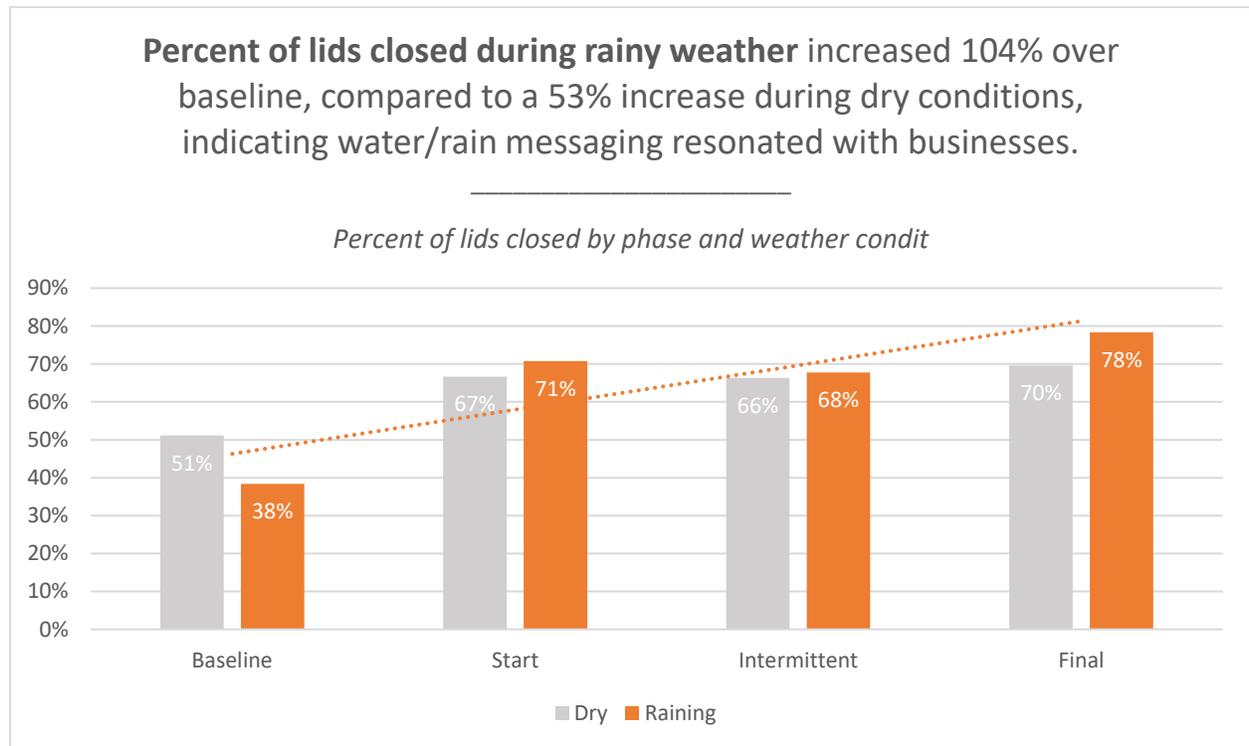
Day of Week							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Baseline	44%	50%	55%	49%	57%	40%	23%
Start	70%	67%	68%	69%	68%	59%	59%
Final	72%	69%	77%	78%	80%	62%	61%
% Change	63%	38%	39%	58%	39%	55%	167%

More investigation is needed to understand the dramatic increase in closure rate on Sundays as unclear but factors may include:

- Many businesses are closed on Sundays.
- Sunday is the only day of the week that haulers do not service dumpsters.

Lids by Weather Condition

During baseline observations, only 38% of lids were observed closed on rainy days compared to a 51% closure rate on dry days. Final lid closure rates were 78% on rainy days and 70% on dry days, representing a 104% increase for rainy days. These results indicate that the components of our messaging focused on keeping the rain out of dumpsters resonated with participants.



Lids by Tier 1 Items

Stickers, signs, and an in-person visit comes out on top when evaluating the effectiveness of Tier 1 items.

While data can be evaluated based on toolkit tier items, and different combinations of these items, it is difficult to draw conclusions on individual items alone for many reasons including:

- Each jurisdiction used a different combination of materials and tools at every location.
- Some tools may not have been useful but not possible to use, such as the poster when the business had no back door to the business because they were in a strip mall with only a front entry/exit.
- Because of convenience or covid, many items were left behind with a manager or staff, but it is unknown if they were useful. For example, we do not know if posters were put up or brochures were shared.
- Letters and emails may not always make it to staff who need to see them.
- In-person meetings may have been with a manager or staff member who did not share the information with others.

The baseline closure rate was only 49%. While there was improvement across the board, we do not have conclusions about the usefulness of individual tools alone because they were all used in combination with other tools. We can see that there appear to be some winning combinations of Tier 1 items.

Tier 1 Items	Combined		Single		Shared	
	Start	Final	Start	Final	Start	Final
Letter/Email In Advance	63%	66%	63%	59%	63%	76%
In Person Meeting	70%	75%	64%	60%	83%	88%
Sticker on Dumpster	70%	75%	65%	63%	79%	87%
Sign in Dumpster Area	73%	76%	64%	61%	86%	87%
In Person + Sticker + Sign	75%	77%	65%	55%	87%	91%

Tier 2 items were implemented on such a small scale that conclusions cannot be made.