

CITY OF KENT DUMPSTER LID PROGRAM

BEHAVIOR CHANGE CAMPAIGN EVALUATION & REPORT



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1.0 EXECUTIVE SUMMARY

The Dumpster Lid Campaign was initiated in 2021 and further evaluated in 2023, with an aim to reduce stormwater pollution at commercial businesses. The campaign was designed to promote closing dumpster lids after each use to reduce stormwater runoff from uncovered and leaking dumpsters. Harmful chemicals, bacteria, and organic matter can mix with rainwater that enters open dumpsters, which can then leak out and spill onto impervious surfaces that drain into the stormwater system and eventually into the Puget Sound.

The City of Kent is unique in that it has a very large commercial and industrial area throughout the Kent valley. Our inspection staff found that leaking dumpsters were a common issue with many of these facilities. This led us to work with other interested jurisdictions as a core member of the Regional Dumpster Lid Campaign that brought regional municipalities together with the goal to utilize a Community-Based Social Marketing approach, which included a focus on audience insights, intervention strategies, monitoring, and evaluation. A Dumpster Summit was held, and the members developed a social marketing plan to focus on the targeted behavior of closing the lids after each use, using commercial businesses as the target audience for the campaign.

Key improvements were noted in lid closure rates during the pilot study, demonstrating the campaign's possible effectiveness. Broadscale implementation of the campaign in 2023 showed that there were some improvements in the City of Kent, however some barriers were discovered that could have impeded the effectiveness of the campaign. City staff have identified strategies to address these barriers and make the program more effective.

Overall, while the implementation of the Dumpster Lid Campaign in 2023 presented challenges, the lessons learned provide valuable insights into the dynamics of community-wide behavior change initiatives. Adjustments to the strategy, including integration with existing programs and enhanced engagement, reflect Kent's commitment to achieving the long-term goal of reducing stormwater pollution through improved waste management practices.



2.0 BEHAVIOR CHANGE CAMPAIGN

2.1 Behavior Change Campaign Background

The campaign was developed in response to [studies](#) indicating that pollutants from commercial waste significantly contribute to water quality degradation. The City of Kent inspection staff found this to be an issue while performing Source Control inspections throughout Kent. By focusing on the behavior of keeping dumpster lids closed, this campaign aims to prevent rainwater from entering dumpsters, thus reducing the leaching of pollutants into the stormwater system. This approach was identified as a cost-effective and practical solution for mitigating stormwater pollution at its source.

Objectives of the Campaign:

- To increase awareness among businesses and commercial entities about the impact of uncovered dumpsters on stormwater quality.
- To promote the adoption of BMPs, specifically keeping dumpster lids closed, among the target audience.
- To achieve measurable improvements in the closure rates of dumpster lids across the city, thereby reducing the potential for stormwater contamination.

Strategic Planning Process:

The planning process for the Dumpster Lid Campaign involved multiple stages, beginning with a comprehensive assessment of the problem. This included reviewing existing data on stormwater pollution sources, engaging with stakeholders, and conducting site visits to understand the extent of the issue. Based on this assessment, the following strategic steps were taken:

- **Identification of Target Behaviors and BMPs:** The primary behavior targeted by the campaign was the closure of dumpster lids. This behavior was promoted as a BMP for preventing stormwater pollution.
- **Target Audience Analysis:** The campaign focused on commercial entities, including restaurants, retail stores, and industrial sites, because they were identified as the main contributors to the problem.
- **Barrier and Benefit Research:** A key part of the planning process was understanding the barriers to and benefits of the desired behavior change. This informed the development of tailored messaging and interventions.
- **Development of Campaign Materials and Strategies:** Based on the insights gained, a range of educational and outreach materials were developed, including signage, flyers, and digital content. Strategies for distribution and engagement were also established, ensuring materials were accessible and appealing to the target audience. The City of Kent Environmental Programs promotes an umbrella campaign called “Keep it Clean Kent” (KICK). Kent chose to adapt the regional campaign information and model to match the KICK campaign materials and provide consistent messaging across other programs.



- **Stakeholder Engagement and Partnerships:** Collaborations with waste management companies, business associations, and environmental organizations were crucial for amplifying the campaign's reach and impact. The City of Kent staff met with representatives from Kent's waste hauler, Republic Services, to discuss the campaign and get their input. They appreciated the campaign efforts because it will also benefit them by not having to service dumpsters that are full of liquids that make a mess of their vehicles and the dumpster area. They gave Kent permission to apply the campaign stickers to their dumpsters to remind businesses to shut the lid.

Permit Sections Addressed:

The campaign directly contributes to the city's compliance with Permit section S5.C.,2.ii, Behavioral Change. To affect behavioral change, Permittees are required to select, at a minimum, one target audience and one BMP from the options listed in the Permit. Kent chose dumpster and trash compactor maintenance, specifically shutting the lid after each use as the BMP, with commercial business property managers/owners and their staff as the target audience. This campaign also contributes to other Permit requirements, including:

- **Public Education and Outreach:** The campaign's focus on educating commercial entities about the importance of dumpster lid closure aligns with permit requirements for public education on stormwater pollution prevention.
- **Public Involvement/Participation:** Engaging businesses and the wider community in the campaign fosters a sense of shared responsibility for stormwater management and meets permit requirements for public involvement.
- **Illicit Discharge Detection and Elimination (IDDE):** By reducing the entry of pollutants into the stormwater system through proper waste management practices and spill prevention BMPs, the campaign supports efforts to eliminate sources of illicit discharge.
- **Source Control Program for Existing Development:** We added the Dumpster Lid Campaign into our Source Control visits because it supports the intent of this program to prevent and reduce pollutants in runoff from areas that discharge to the MS4.

- **Stormwater Planning:** The Lower Mill Creek Basin was identified in our stormwater planning efforts as an area that would benefit from the development of policies and strategies as water quality tools to protect receiving waters. We plan to focus on this area for Dumpster Lid Campaign implementation.

The Dumpster Lid Campaign represents a focused and strategic effort to address a key source of stormwater pollution. Through careful planning, targeted outreach, and collaboration with stakeholders, the campaign aims to bring about meaningful improvements in stormwater quality, demonstrating Kent's commitment to environmental stewardship and regulatory compliance.

Monitoring and Evaluation Mechanisms:

- **Baseline and Follow-up Surveys:** Conducting surveys before and after the campaign implementation to gauge awareness, attitudes, and behaviors related to dumpster lid closure.
- **Site Visits and Inspections:** Regular monitoring of participating sites to assess behavior change, identify challenges, and provide on-the-spot guidance or adjustments to the strategy as needed.
- **Stakeholder Engagement:** Ongoing dialogue with business owners, environmental groups, and the community to collect feedback on the campaign's effectiveness and areas for improvement.

Adaptation and Evolution:

The campaign was designed to be adaptive, with mechanisms in place to refine strategies based on feedback and evolving needs. This included:

- **Adjusting Outreach Strategies:** Based on feedback, the campaign could shift focus to underrepresented segments or introduce new messaging to address emerging barriers.
 - Social Media campaign focused on educating the public on the significance and meaning of the window cling/sticker and pledge.
 - Incorporate the dumpster outreach program into the Source Control program.
 - Influence other businesses to agree to the pledge, to create a more noticeable brand and more knowledgeable stakeholders.

Overall, the Dumpster Lid Campaign's strategy and implementation were characterized by a thorough understanding of the target behavior and audience, a multifaceted approach to communication and engagement, and a commitment to monitoring and adaptability. By employing these strategies, the campaign aimed not only to change behaviors in the short term but also to foster a long-term culture of environmental responsibility among the city's businesses and commercial entities.

Shut the lid

Shut the lid
Cierra la tapa
Закрийте кришку
Đóng nắp
ढक्क षँद वते

LESS SMELL

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FEWER PESTS

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KentWA.gov

09/18/2015



3.0 EVALUATION

The City of Kent initially engaged with 12 commercial sites within the City of Kent for the Dumpster Campaign Evaluation, although 1 business closed during the Evaluation phase. These businesses were identified as key stakeholders in the implementation of proper waste management practices, particularly concerning the closure of dumpster lids.

The Dumpster Campaign Evaluation was completed to measure the change in the target audience's (business owners/employees) understanding and adoption of the target behavior (closing dumpster lids) and to identify barriers to adopting the target behavior in order to recommend improvements for future campaigns. The Dumpster Campaign Evaluation relied on multiple project phases where City staff gathered data at 224 site visits over more than a year-long period, starting data collection in July 2022, and concluding in December 2023.

The Pre-Campaign Baseline phase began with the first two months focused on establishing baseline metrics by anonymously collecting observational data on initial dumpster lid closure rates followed by surveying the participants on-site about their current dumpster maintenance knowledge. Survey questions were crafted after pilot testing and revised for clarity and effectiveness.

The initial survey results were used as a jumping off point when speaking with business managers/owners and Campaign Implementation began with educating stakeholders on dumpster BMPs, providing outreach materials from the campaign toolkit, and providing other resources including dumpster replacement/repair information. After initial contact was made and education was provided, Campaign Implementation included a period of observational data collection using a checklist to monitor ongoing dumpster behaviors and lid closure rates. The quantitative data such as lid closure rates were averaged by combining all the data by date from each business for use in the Evaluation.

The Post-Campaign Evaluation used a follow up survey with the same questions as the initial survey, conducted at the six-month mark, to measure participant's changes in understanding based on how much of the initial education material was retained over time. Based on survey responses, participants were provided further education and resources, if necessary. Of the 11 participating businesses, 9 agreed to participate in the survey. Observational data was gathered at about monthly intervals through the rest of the Implementation period. This data was compared to Baseline data in order to evaluate the campaign's effectiveness.

4.0 RESULTS & DISCUSSION

The 2023 Dumpster Lid Campaign Evaluation revealed nuanced insights into the understanding and adoption of the target behavior, dumpster lid closure.

4.1 Understanding of Target Behavior

The survey results below show the changes in understanding from before campaign implementation to 6 months after the initial education was provided.

Question 1: Do you know where your storm drains discharge to?

Figure 4-1 shows that initially most participants did not know where their storm drains discharged to, but after being educated the majority of the participants knew where their storm drains discharged to.

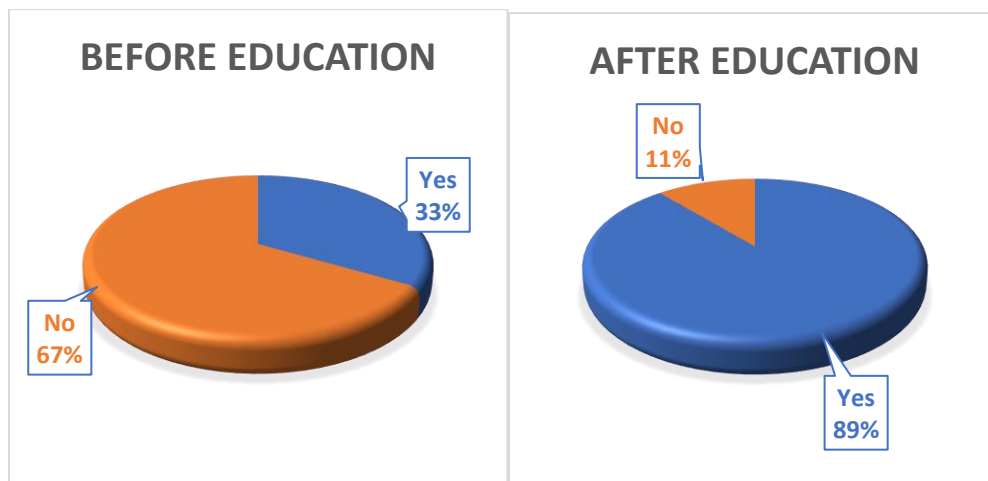


Figure 4-1 Question 1: Do you know where your storm drains discharge to?

Question 2: Do you know why it's important to keep your dumpster lid closed?

Figure 4-2 shows that over half of the participants initially did not know why it was important to keep their dumpster lid closed, but after being educated all of the participants understood the importance of keeping their dumpster lids closed.

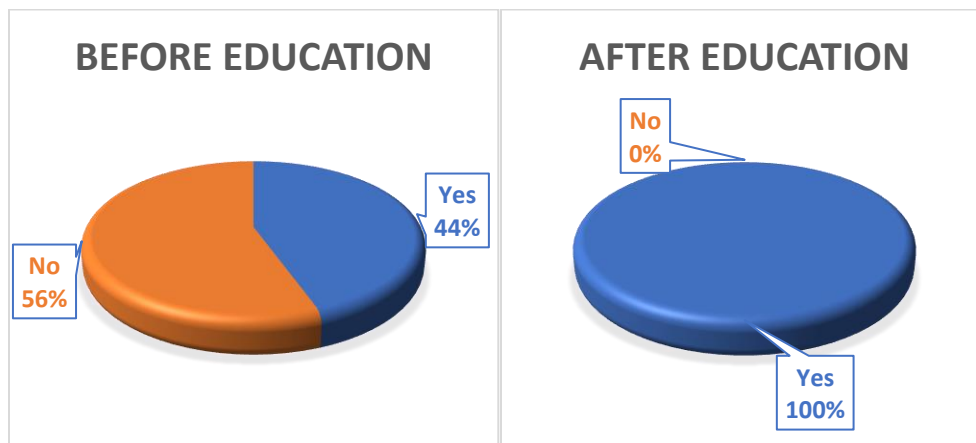


Figure 4-2 Question 2: Do you know why it's important to keep your dumpster lid closed?

Question 3: What operational best management practices (BMPs) could you perform or use to prevent pollution from entering your drain?

Figure 4-3 shows that before participants were educated, most knew about some of the BMPs that can prevent pollution from entering the drain such as:

- spill containment,
- tying up bags before throwing them in the dumpster,
- keeping the dumpster plug in place,
- using catch basin inserts, and
- shutting the lid.

After being educated more participants were aware of the importance of shutting the dumpster lid. They also mentioned additional BMPs to prevent pollution, such as:

- keeping the area around the dumpster clean,
- installing a locking gate around the dumpster,
- cleaning drains,
- adjusting their garbage pickup to the mornings, and
- talk to the homeless people to try to prevent them from getting into the dumpsters.

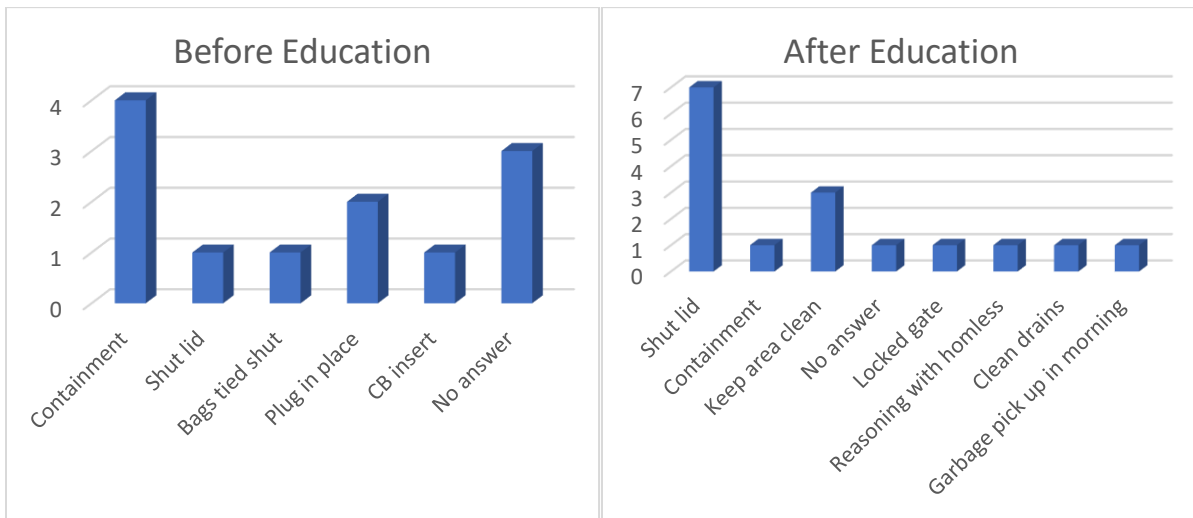


Figure 4-3 Question 3: What operational best management practices (BMPs) could you perform or use to prevent pollution from entering your drain?

Question 4: What are some barriers that prevent you from keeping your dumpster lids closed?

Figure 4-4 shows the barriers identified by participants in both the initial and post education surveys, including:

- Homeless going through the dumpsters
- Dumpsters too tall, hard to close lid
- Don't like to walk in the dirty area
- Garbage haulers put dumpster back with lid open or pinned open

Some participants did not identify barriers to implimentation.

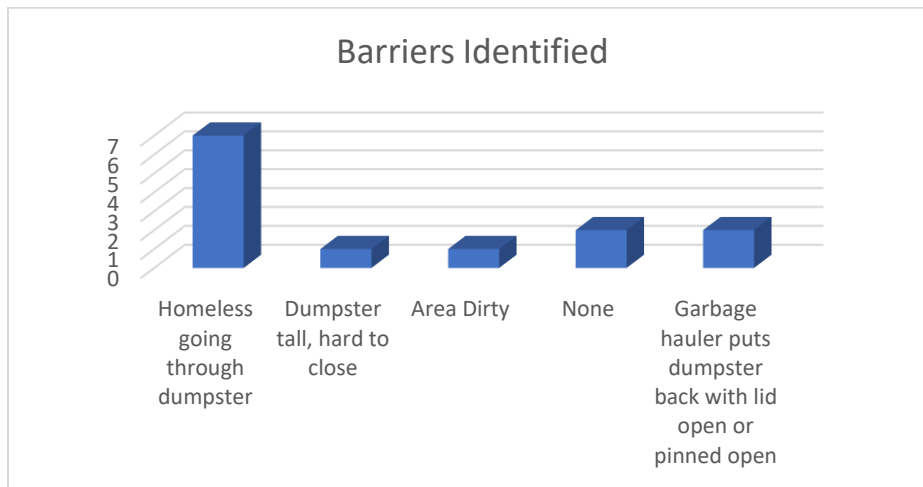


Figure 4-4 Question 4: What are some barriers that prevent you from keeping your dumpster lids closed?

Question 5: What are some tools that would help you keep your dumpster lids closed? (Ex. Stop stool, window stickers, lid opening tool, leak proof garbage bags, etc.?)

Figure 4-5 shows the tools identified by participants in both the initial and post surveys, including:

- Locks, chains
- Locking fence around dumpster
- Lid tool to help open and close
- Extra garbage pickups so dumpster doesn't get too full to close lid
- Step stool to reach lid for easy closure
- Signage for reminding staff to close the lid
- Enforcement by City
- Staff Training on lid closure
- Keep dumpster area clean

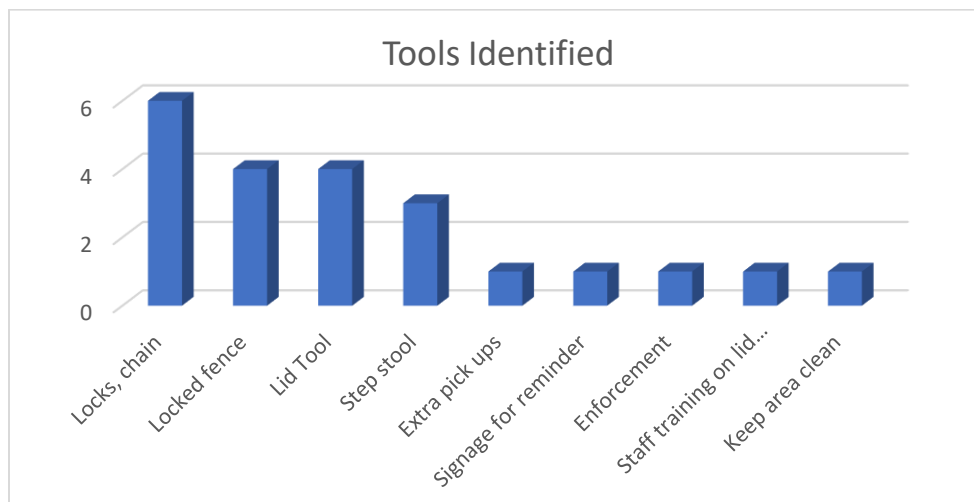


Figure 4-5 What are some tools that would help you keep your dumpster lids closed? (Ex. Stop stool, window stickers, lid opening tool, leak proof garbage bags, etc.?)

4.2 Adoption of Target Behavior

Figure 4-6 compares the average combined garbage and recycling lid closure rates from Baseline to the Implementation for all participating businesses. This demonstrates notable differences, with the Baseline combined average closure rate of 43% and a considerable improvement to 50% after Implementation. This indicates an overall increase in dumpster maintenance after Campaign Implementation.

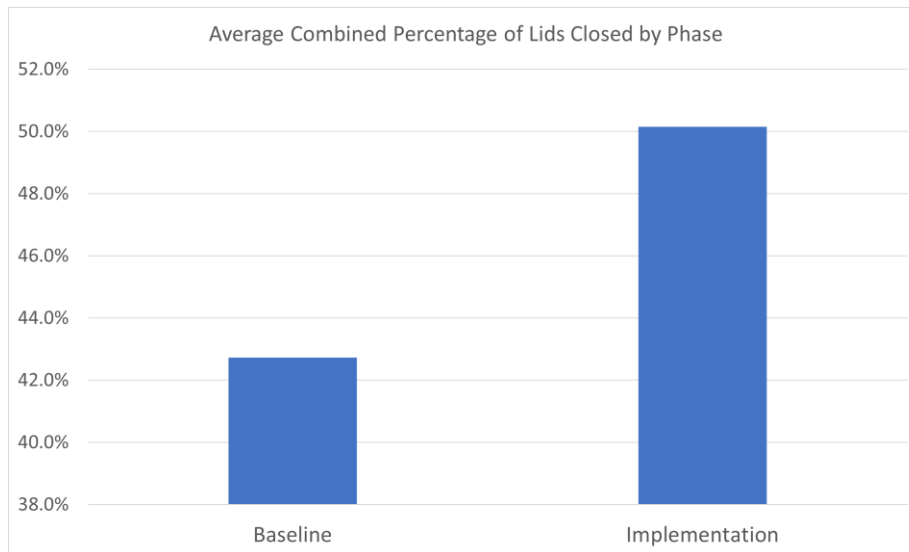


Figure 4-6 Average Combined Percentage of Lids Closed from All Businesses by Phase.

Figure 4-7 highlights the variability in average lid closure rates across all participating businesses throughout the campaign. Average lid closure rates saw a significant uptick after participants received education and toolkit items including the pledge and window cling, with the average garbage lid closure rate increasing from 30% during the last day of the Baseline phase to 48% immediately after Campaign Implementation. The average recycling lid closure rate had an even larger increase during that same timeframe, going from 48% to 70%.

The average garbage lid closure rate peaked at 61%, shortly following implementation, before slightly dipping, recovering, and dipping again towards the end of data collection. The lowest average garbage closure rate of 17% appeared just before the end of data collection on November 30th, 2023. The average recycling lid closure rate peaked at 81% following the second round of education during the Implementation phase. The lowest average recycling lid closure rate of 34% occurred just before the second round of education.

Analysis of the trends related to different campaign phases provides valuable insights into the impact of the Campaign's education events on effecting the behavior change of lid closures. The notable dips in lid closure rates after several months of no contact, compared to the spikes in lid closure rates after educational visits highlights the importance of somewhat frequent reminders can be the key to increasing lid closure rates long term.

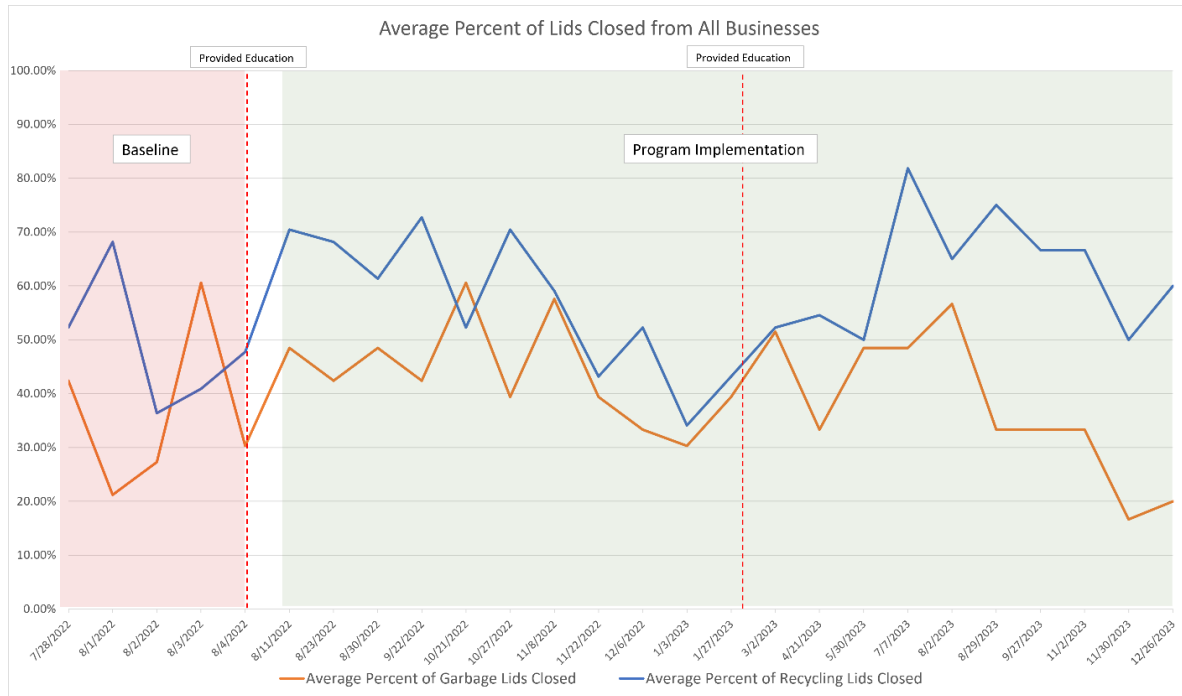


Figure 4-7 Average Percent of Lids Closed from All Businesses, organized by date and includes dates we surveyed and provided education to the businesses. (See Appendix for larger view.)

Figure 4-8 shows increased average dumpster closure rates from Baseline to Implementation across various weather patterns. After participants received education, garbage closure rates increased from 37% during Baseline to 38% during dry weather and 45% for wet weather and recycling closure rates increased from 49% during Baseline to 56% during dry weather and 65% during wet weather.

The increased closure rates during wet weather for both garbage and recycling suggests that participants were more conscious about closing the lid during wet weather. This may be because they retained the educational message about how open lids allow rainwater to enter the dumpster and chose to implement the target behavior of closing the lid to prevent pollution from leaking out of the dumpster and into the stormwater system.

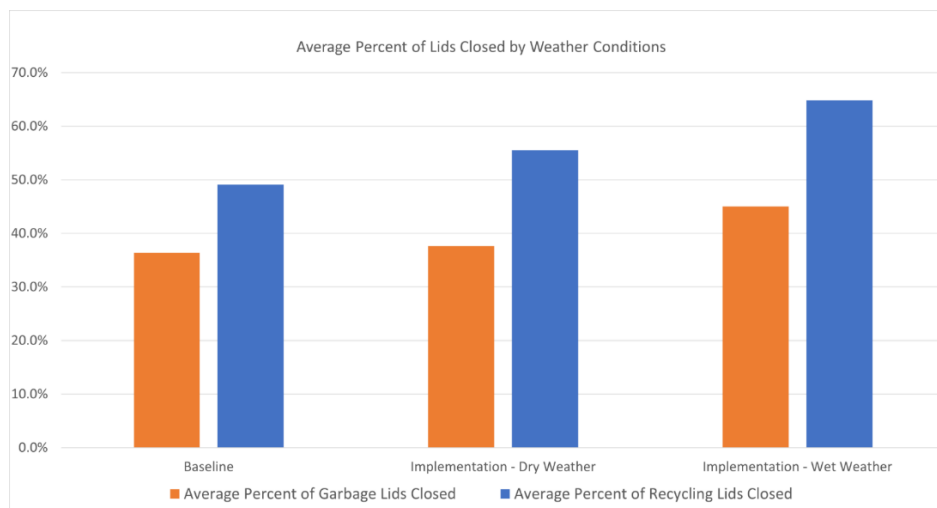


Figure 4-8 Average Percentage of Lids Closed Organized by Weather Conditions

4.3 Discussion

Survey results showed that participants gained an understanding of the importance of the target behavior of shutting the lid to keep pollutants out of our waterways. However, there is a gap between understanding and implementing the target behavior. Possible reasons for this include barriers outside of their control, including the homeless opening lids and going through trash or garbage haulers leaving the lids pinned open. Other possible barriers include a lack of thorough staff education and dumpsters being too full to close the lid. Survey feedback showed that participants retained some of the big picture concepts from the education efforts beyond just the importance of keeping the lid closed, including keeping the dumpster area clean, cleaning storm drains, and making the connection between implementing BMPs and improving water quality.

5.0 FUTURE ACTION RECOMMENDATIONS

Overall, the broadscale implementation of the Dumpster Lid Campaign starting in 2022 showed some promising results and improvements among businesses, mainly with their understanding of why it is important to shut the dumpster lids. Although there was great improvement with the understanding of shutting the dumpster lid, there is a disconnect with following through with the action and adopting the BMP.

5.1 Enhanced Shut the Lid Pledge Program

Based on these results, Kent plans to focus on promoting the Shut the Lid Pledge to encourage businesses to follow through with the adoption of the program and commitment to closing the lid. Program enhancements include using social media to inform the general public on the significance of the pledge and how it will protect water quality through pollution prevention. By promoting the pledge, the public may recognize the window cling and choose to support businesses that take the pledge and commit to protecting the environment. This will encourage businesses to not only take the pledge, but to follow through with implementing the behavior because they can be held accountable by potential customers who see that their dumpster lid is open.

One of the reasons lids may still be left open after education could be due to the person getting educated by the City is not passing on the information to the rest of the staff. By having all staff sign the pledge it will ensure that staff members know what is expected of them so that they follow through with their pledge of keeping the lid shut.



5.2 Partnership with Waste Hauler

Another program improvement is meeting with Kent’s waste hauler, Republic Services, to discuss some of the barriers they may be able to assist with resolving. Topics for future meetings include ensuring that dumpsters are being dropped off with the lids closed and plugs in place and working together to advise businesses about dumpster sizing and pickup frequencies to meet the needs of the business.

Due to the high number of survey responses related to homeless people opening lids and going through trash, we would like to discuss possible solutions with Republic, including dumpster locks or fences with locks, and strategize how business owners could implement these preventative measures while still allowing access for garbage pickup.

By employing these strategies, the campaign aims to foster a long-term culture of environmental responsibility among the public and commercial entities. These adjustments to our strategy reflect our commitment to refining our approach and achieving the long-term goal of reducing stormwater pollution through improved waste management practices.



6.0 APPENDIX

6.1 MS4 Annual Report Phase II Western Question # 25

Attach the report developed in accordance with S5.C.2.a.ii(e), which evaluated the changes in understanding and adoption of targeted behaviors resulting from the implementation of the strategy and any planned or recommended changes to the program in order to be more effective.

Western Washington Municipal Phase II Permit Language

S5.C.2.ii.(e) No later than March 31, 2024, evaluate and report on:

1. The changes in understanding and adoption of targeted behaviors resulting from the implementation of the (social marketing behavioral change) strategy: and
2. Any planned or recommended changes to the campaign in order to be more effective; describe the strategies and process to achieve the results.

Changes in understanding and adoption of targeted behaviors resulting from the implementation of the social marketing behavioral change strategy.

Overall, the broadscale implementation of the Dumpster Lid Campaign starting in 2022 showed some promising results and improvements among businesses, mainly with their understanding of why it is important to shut the dumpster lids. Survey results showed that participants gained an understanding of the importance of the target behavior of shutting the lid to keep pollutants out of our waterways. However, there is a gap between understanding and implementing the target behavior. Possible reasons for this include barriers outside of their control, including the homeless opening lids and going through trash or garbage haulers leaving the lids pinned open. Other possible barriers include a lack of thorough staff education and dumpsters being too full to close the lid. Survey feedback showed that participants retained some of the big picture concepts from the education efforts beyond just the importance of

keeping the lid closed, including keeping the dumpster area clean, cleaning storm drains, and making the connection between implementing BMPs and improving water quality.

The increased closure rates during wet weather for both garbage and recycling suggests that participants were more conscious about closing the lid during wet weather. This may be because they retained the educational message about how open lids allow rainwater to enter the dumpster and chose to implement the target behavior of closing the lid to prevent pollution from leaking out of the dumpster and into the stormwater system.

See Section 4.0 Results and Discussion, for detailed information.

Planned strategies and processes recommended to improve the campaign in order to be more effective.

Enhanced Shut the Lid Pledge Program

Based on these results, Kent plans to focus on promoting the Shut the Lid Pledge to encourage businesses to follow through with the adoption of the program and commitment to closing the lid. Program enhancements include using social media to inform the general public on the significance of the pledge and how it will protect water quality through pollution prevention.

Partnership with Waste Hauler

Another program improvement is meeting with Kent's waste hauler, Republic Services, to discuss some of the barriers they may be able to assist with resolving. Topics for future meetings include ensuring that dumpsters are being dropped off with the lids closed and plugs in place and working together to advise businesses about dumpster sizing and pickup frequencies to meet the needs of the business.

See Section 5.0 Future Action Recommendations, for detailed information

6.2 Figure 4-7 Average Percent of Lids Closed from All Businesses

Average Percent of Lids Closed from All Businesses, organized by date and includes dates we surveyed and provided education to the businesses.

