

CSWD Drop-Off Center Signage: A Recommendation Report

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Abstract

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Signage is often an undervalued feature of everyday life that people encounter on a daily basis. The average person is inundated with traffic signs, billboards, signs for and on businesses, street signs, and more just driving to and from one location. Signage is so fundamental to daily life that it is often processed by a person’s subconscious and they are not even fully aware that their actions and feelings are being influenced. For Chittenden Solid Waste District (CSWD) signage serves many functions that greatly impact how the public engages with their drop-off center sites as well as the success of these site’s operations. In order to assess the effectiveness of the current signage in place at CSWD Drop-Off Centers interviews were conducted with operators, signage was surveyed, and customers were observed and questioned by the author of this paper. The results of this assessment were used to recommend three areas of focus that might help improve CSWD signage moving forward; consistency, use of color, and clarity of purpose. In addition, the assessment revealed signage specific to each drop-off center that is not working as well as it could be, so recommendations were made that may help the district operate more efficiently.

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Overview

In November of 2020, over a two-week period, I surveyed the signage at all seven CSWD Drop-Off Centers as a component of my internship under the direction of Michele Morris, Director of Outreach & Communications. The objective of this project was to talk with staff and customers to determine the effectiveness of the current DOC signage. At each site I interviewed the operators, photographed signage, and observed and spoke with customers. Aside from the Williston Drop-Off Center, this project was the first time I had visited CSWD's Drop-Off Center (DOC) sites. Never having been to the majority of DOC sites I had a fresh perspective for surveying the signage. My research revealed that certain aspects of the DOC signage are less effective than they could be and as a result I propose specific recommendations to CSWD that could help improve site efficiency.

Methods

Before visiting the DOC sites, I did some preliminary research on each site using the CSWD website. I learned each site's hours, what was accepted or banned, fees, and safety guidelines. I then took some time to learn about signage and what might make an effective sign. I studied choice architecture, architectural signage, signage designs specific to waste management, and the psychology behind signs. All of this research helped prepare me for my visits to the individual DOC sites.

At each DOC I allotted 2.5 hours to interview the operators, take photographs, and observe and speak to customers with the exception of the Burlington DOC where I spent 1.5 hours.¹ This amount of time was selected, because it seemed a sufficient amount of time to spend on site following the first site visit.

The following is a list of CSWD DOC sites with the date & time visited:

1. 11/02/2020, 12:00pm – 2:30pm, South Burlington Drop-Off Center
2. 11/04/2020, 1:00pm – 3:30pm., Milton Drop-Off Center
3. 11/07/2020, 1:00pm – 3:30pm, Hinesburg Drop-Off Center
4. 11/10/2020, 1:00pm – 3:30pm, Richmond Drop-Off Center
5. 11/12/2020, 10:00am – 11:30am, Burlington Drop-Off Center
6. 11/12/2020, 1:00pm – 3:30pm, Essex Drop-Off Center
7. 11/13/2020, 1:00pm – 3:30pm, Williston Drop-Off Center

The method most used in this research was the qualitative method of interviews. Several interviews were held with the DOC operators in the form of a conversation to establish a high level of confidence between myself and the respondent. This method aimed at learning the operators' feelings and views about the signage; thus, it did not require a strict procedure. Consequently, I used a semi-structured format for the interviews to guide the topic of conversation, but was not limited to the preselected interview questions. The interviews were either recorded using my phone or the answers were written down. The preselected interview questions and a list of the operators interviewed can be found in Appendix A and Appendix B.

¹ Less time was allotted to the Burlington DOC, because the site is only accepting food scraps.

Additionally, customers were observed as they used the DOC sites and I asked them questions at random. Speaking to customers about the signage on site proved to be difficult as people were in a hurry and mostly supplied short answers. I also recorded notes based on my observation of customers and how they engaged with the signs on site. Overall collecting information through this method did not provide solid results. A list of questions I asked customers and the number of customers spoken to can be found in Appendix C and Appendix D.

After visiting all of the DOC sites I compiled my observations, notes, photos, and interviews to review. I used this collection of research to draft a recommendation report which was then shared with Michele Morris. Following revision, my recommendation report was finalized and shared with members of CSWD. I then created a presentation summarizing the recommendations in this paper and presented my ideas to members of CSWD.

Areas of Focus

Consistency

Consistency in signage is key to increasing the probability of successful waste diversion. Color, language, and style should be kept the same across drop-off centers, because it increases familiarity to the user and reduces confusion (Jones, 2019).

Currently there is variation in the signage across all seven drop-off centers. There is everything from completely different styles of signage to small discrepancies in wording. Most notably is the large difference between the older model of signs and the newest model of signs. The older model signs can be characterized by bands of red, white, and blue with wordy descriptions on metal and the newer model signs can be characterized by one choice of color, larger text, and the use of coroplast as the signage material. At every site both the older and newer model signs are being utilized and it has added to the inconsistency in signage across drop-off centers.

In addition to the large key differences between the signage at drop-off centers, there are also more detail-oriented discrepancies. Specifically, the newer model signs are stylistically similar across sites but the content on the signs differs slightly in language, use of symbols, and colors. For example, the newer model sign is being used for trash across drop-off centers but the sign at one site uses a symbol of a trash can with a red backslash symbol through it and another site uses a sign with no symbols and only words to convey what is banned. A choice should be made on which sign to keep and use at every drop-off center to eliminate this problem.

Furthermore, it is recommended that the signage at all drop-off centers be converted to the newer model, but that only one version be chosen and used at every site. A standard style guide based on the model should also be created for the purpose of updating outdated information and creating supplemental or temporary signage. Maintaining this consistency will also be important in keeping the changes effective.

Use of Color

Color has been shown to be an effective tool for communicating intended use (Montazeri, Gonzalez, Yoon, and Papalambros, 2012). This is evident by how the color blue is associated with recycling and is used as an indicator to distinguish recycling bins from trash bins. Color can

also be used as a guide to direct people. It's easier for someone to be guided to an area if there is an associated color because the brain processes color faster than words.

All of the drop-off centers currently use color association to distinguish trash, recycling and food scraps. The same colors are used for each waste stream (black for trash, blue for recycling, and green for food scraps) which minimizes confusion. Only the Hinesburg DOC uses an additional color to also distinguish special waste. Special waste encompasses many things such as batteries, propane tanks, light bulbs and more. The use of the color orange to link this broad range of miscellaneous waste streams under one umbrella term should be applied at all of the drop-off centers since it has been effective at Hinesburg.

The use of color is not only helpful to the customer, but also to the drop-off center operators. One operator noted that he finds the use of color coding so helpful that he wished every waste stream could have a dedicated color! It seems that often the operators time is taken up trying to give directions to a certain area of the site while there is a line of cars backing up at the payment booth. Unfortunately, the polite method is not to tell a customer to just look for the right sign. However, a color as a descriptor makes giving directions much more concise and allows the operator to move on more quickly to the next customer.

One waste stream that especially needs an associated color is electronics. At the Essex DOC the operators are able to direct customers to a gray cart, but at Williston, South Burlington, and Milton describing where to place electronics was an apparent problem. Since Essex is already using color association to describe where electronics go, it is recommended that the color gray be used to indicate this waste stream at all drop-off centers.

Clarity of Purpose

Language, colors, and symbols are all useful tools for communicating a sign's intent and purpose. Determining how to create signage that both conveys its intended message and holds the attention of an audience is all about balancing these elements. A sign over a container with the trash can symbol should be enough for a user to associate that the container is for trash due to familiarity. However, for more nuanced waste streams such as special waste more is required to clearly convey to the user the intent of each receptacle under this umbrella term.

Again, it's important to note that the brain processes pictures and colors faster than it processes words, so using colors to indicate frequently used areas and pictures for areas that may be confusing are important for conveying clarity of purpose. For example, the pictures of different lightbulbs in the special waste area make what could be a complicated experience much simpler for customers.

On the other hand, signage can't always be as simple as a few pictures. Conveying what is banned from certain waste streams such as trash and recycling must be spelled out to reduce contamination and avoid safety hazards. For clarity of purpose it is more effective to create signage displaying what is banned than what is allowed, that way what is important is conveyed while avoiding wordiness. Signage that is too wordy is likely to lose the attention of it's audience. A combination of words and pictures may be the most effective way to convey what is banned, since pictures will draw attention to the sign more so than words alone.

Drop-Off Center Specific Suggestions

Recommendations applicable to all Drop-Off Centers

- The sandwich board signage leading up to the payment booth, especially when it is displaying updates, should use large font and color so it is eye-catching for customers driving in.
 - The sandwich board displays just need to say the bare minimum (“No Tires”, “No Clothing”, etc.) and there may need to be multiple at some sites.
 - There have been many changes to what’s accepted, but I don’t suggest making a sign for every change. Each drop-off center has specific items that are most common.
- Basic signage for the hours, exits, and safety precautions could use updating.
 - Due to the days/hours of the sites changing some operators suggested the use of changeable insert signs or magnets to make it look nicer.
 - Some sites show just the days they are open on their sign while others show days open and days closed. The signage that is clearer shows only the days the site is open.
 - The exit signs at many of the sites are faded and small. Larger signs would improve the flow of traffic.
 - The exit sign at the Richmond DOC should be much larger as there are issues with people trying to leave through the entrance.
 - Various signs for safety have significantly faded which could lead to an accident. A survey should be done to make sure safety regulations are still being met.

Burlington Drop-Off Center

- At the entrance to the drop-off center from Pine St. there should be a sign indicating that this site is for food scraps only. During my visit customers were still unaware of this change and a sign at the entrance could be beneficial.
- The operators described a giant banner that was meant to be hung on the fence outside the site saying “food scraps only”, but it had yet to go up by my visit. I think this banner would greatly help both the issue of customers being uninformed of the change and new visitors driving into the site since it shares a parking lot with Habitat for Humanity.²
- The gate at the entrance should have the CSWD Burlington Drop Off Center signage on the left and the closed sign on the right, so when the gates are open there’s not a closed sign facing oncoming cars.

Hinesburg Drop-Off Center

² It should be noted that it was later learned that the Burlington Director of Public Works refused to approve the banner which is why it had not been installed.

- This site does not accept scrap metal, but many customers were unaware and still asking about it. A sandwich board sign at the entrance by the payment booth and one set up near the trash compactor or somewhere on the site would help reduce confusion.
- The “How To Use This Facility” sign on the entrance gate is too wordy to read while driving into the site. This sign could be improved and say “Welcome to Hinesburg Drop-Off Center” and use a couple symbols for safety and state “Declare All Items”, “Cash/Checks/Credit” and make more room to highlight “No Trailers or Dumping Mechanisms” since the operators stated trailers are a common problem.
- A sign for ‘bulky items/construction debris’ is needed for the dumpster next to the compactor.
- A sign instructing people to flatten boxes would be beneficial to add somewhere near the recycling compactor.
- The sandwich board set up before the payment booth that says “Also Accepting...” is less effective than a sign that highlights only what’s not accepted. This sign does list what is not accepted but the font is really small in order to fit all of the information on one sign.

Richmond Drop-Off Center

- One of the larger issues is that the special waste area is out of sight of the payment booth. There was speculation that it may be moved to a different area, but for now it would be helpful to have a sign on the roof of the structure facing incoming cars. The sign could be large, orange, and L-shaped so one side would face the payment booth and the other side would face the parking lot. The whole container could be painted an orange color too.
- A sign for bulky trash is needed for the large container next to the trash compactor. It would be best to have one sign on the fencing facing the compactor and another sign on the pole so it can still be seen with cars parked.
- There could be a sign for the oil area on the outside of the shed facing toward the payment booth.
- Driving into the drop-off center from route 117 the CSWD Richmond DOC sign only faces one direction, so people trying to find it coming the other direction might miss it.

Milton Drop-Off Center

- A sign for the drop-off center at the top of Landfill Rd. off the main road would be helpful for first time customers.
- The leaf and yard trimmings bunkers are out of sight from the payment booth, so a sign at the payment booth with an arrow to the left indicating where this area is would be helpful to customers and the operators
- The trash and recycling compactors both have sliding doors that could be a space utilized for signage.
- There’s a blank board on the fence to the right of the recycling compactor that could be used for signage.

- The electronics are in a container that's kind of hidden and in a difficult location to describe from the payment booth. A sandwich board for this area would be best, because I was told it may be moved so this could be a temporary solution.
- There are no signs on the outside of the special waste container, so signage on the outside would make it easier to find for customers.

South Burlington Drop-Off Center

- There is confusion with the electronics area and there is a temporary sign in place, but a large gray permanent sign would help distinguish this area.
- The operators at this site would benefit from extra signs that they could take out and use as needed. They currently have a number of makeshift cardboard signs to help their operations that could be used as a basis for what they need created.
- Fencing is needed between the recycling compactor and the extra container to keep customers from filling only one side of the extra container. Once there is fencing a sign with an L-shaped arrow pointing around the corner to the "overflow recycling" would be helpful.
- General signs for scrap metal, special waste, recycling, trash etc. at the top of the poles of the lean-to structure would help customers see where they need to go from the payment booth.
- A sign hanging above the oil area would make it more noticeable since it's tucked toward the back of the structure.
- The leaf pile could use a large sign that's raised, so cars aren't blocking it.
- This site has two areas for food scraps and the area to the left of the "hot dog stand" needs a signs.
- The cubby holes for the lightbulbs are really low making the lowest sign difficult to read. It would be beneficial to change this area to be more accessible.

Essex Drop-Off Center

- The sign for bulky items/construction debris is currently covered, but this site is accepting those things so the sign should be uncovered. There is a sign that says trash on the railing in front of this area that should also be changed to say bulky trash.
- There is a makeshift sign made out of cardboard hanging over the recycling directing people not to throw in large cardboard that has been effective. This sign should be kept, but replaced to match the style of signage across the sites.
- This site uses a gray cart for electronics, but a large gray electronics sign above it would help distinguish this area.
- When the gray cart for electronics is full the operators start a pile against the fencing to the left of the recycling compactor that blocks a 'recycling only' sign hanging there. To resolve this conflict, a sign closer to the top of the fencing with an L-shaped arrow that says 'overflow recycling' would better indicate the container around the corner.
- A sign hanging above the oil area would help make it more noticeable since it is tucked in the back.

- The operators at this site set up four different food scrap areas, but there's nothing indicating food scraps except the green cans and a wheel barrow of wood chips. Since these areas aren't stationary it would be beneficial to have the signs that hang off the green cans, so there's something directing people.
- The scrap metal container is to the far end of the site (to the left of the 'hotdog stand') and sometimes people lazily or out of ignorance throw their scrap metal into the bulky trash container. A sign indicating that there is a place for scrap metal may help this problem.
- The lean-to structure, like South Burlington's DOC, could have signs at the top of the poles at the front of the building generalizing where scrap metal, special waste, recycling, and trash are located.

Williston Drop-Off Center

- Driving into this drop-off center the customer must take a left up a slight hill to the payment booth. There is a small beat-up sign with an arrow indicating this turn that could be replaced and be larger. Orange cones directing the flow of traffic would also add clarity to this site.
- The special waste area needs a sign on the outside of the container indicating 'special waste' and the container could use a paint job (orange for color association).
- There is a sign for bulky trash but when cars are parked the sign is blocked, so raising a sign on a pole would help this issue.
- The electronics building needs the most improvement. Painting the building gray would aid color association and help the operators giving instructions to customers at the payment booth. The word 'electronics' painted at the top of the wall facing the payment booth would also help customers looking for the building after paying. There should also be a sign indicating the building's use above the door at the front. The sandwich board positioned outside the building directing customers to check in at the booth currently uses small font on a white background making it hard to read while driving. This should be updated or made into a permanent sign on the building so it stands out for customers driving by.

Other Observations And Suggestions (Unrelated to Signage)

Observations

- While observing customers at the Richmond DOC I noticed three people trip on the broken pavement at the corner between the recycling compactor and the trash compactor. This is especially concerning due to the age demographic of this site.³
- Another safety concern is with the parking at certain sites. The parking lots at the Milton, Richmond, and Hinesburg DOCs have nothing to prevent cars from backing up too far and potentially hitting someone. More than once I thought I might be bumped while

³ It should be noted that it was later learned (per the CSWD Director of Compliance) that the concrete has been painted a few times to highlight the height difference and will be part of the work done at this DOC in spring 2021.

observing customers. It might be beneficial to consider adding some parking barriers to prevent potential accidents.⁴

- I was able to notice that the height of the opening to the trash and recycling compactors made it difficult for some customers to use which is a concern in regards to equal accessibility.

Suggestions

- I think printed paper handouts given to customers at the payment booth would be a catchall strategy for spreading updates or awareness about contamination. The handout could address concerns such as plastic bags contaminating compost or black plastic contaminating the recycling. The handout could also announce updates or give directions to sign up for the newsletter or text alerts.
- The Essex DOC would benefit from a third operator, because it is so busy. At the time I visited the line was non-stop and each customer had especially large loads of materials to drop-off. The operator working supported my observation by informing me that it was always that busy and sometimes more-so. Currently, one operator is stationed in the payment booth and the other is maintaining operations running the compactors, helping with oil, or compacting the bulky trash container with the excavator etc. so there is no one to assist the customers with questions. A third operator would help operations and be a valuable resource for customers.

Acknowledgements

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⁴ It should be noted that it was later learned (per the CSWD Director of Compliance) that bollards are in the budget and were part of the 2019 PACIF grant, but there was no time to install them before cold weather and they will likely be installed spring 2021.

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Appendix A

Pre-Selected Interview Questions for DOC Operators

What difficulties do you face regularly that are a direct result of customers ignoring signage?

What questions do customers most often ask or require more direction about?

Do you often witness confusion and people taking time to read the signs on the site?

What impacts would you say the signs have made on the flow of traffic on the site?

Have you received any positive feedback about the site layout or signs from customers?

Have you received any negative feedback?

From your time working here do you have any suggestions, ideas, or complaints about the signage on site?

Have you observed any improvements to recurring issues since the 'new' signs have been in place?

Are the current signs overwhelming (too many) or are they underwhelming (too few)?

Appendix B

List of DOC Operators Interviewed

South Burlington Drop-Off Center: Ali Nasab, Judson Browning

Milton Drop-Off Center: Jared Blake, Bob Toscano

Hinesburg Drop-Off Center: Charlotte Barrowman, Travis Lakin

Richmond Drop-Off Center: Charlotte Barrowman, Christine Sprout

Burlington Drop-Off Center: Jared Blake, Bob Toscano

Essex Drop-Off Center: Dave Kolok, Todd Dutil

Williston Drop-Off Center: Dave Kolok, Todd Dutil, Nick Bennett

Appendix C

List of Questions for Customers

Did you notice the following signs when you visited this DOC?

- Hours of Operation
- Current Fees
- Where to put certain materials – trash, recycling, electronics, scrap metal. Etc?

Did you use a sign to help you find where you needed to go?

Was anything confusing to you about the signs here?

Can you think of ways the signs on the site could be improved?

Appendix D
Number of Customers Questioned Per Site

Table D1

Drop-Off Center	Number of Customers Questioned
South Burlington Drop-Off Center	0
Milton Drop-Off Center	3
Hinesburg Drop-Off Center	3
Richmond Drop-Off Center	4
Burlington Drop-Off Center	4
Essex Drop-Off Center	3
Williston Drop-Off Center	2