



# BLUE BIN DESIGN SPRINT

A collaboration between Civic Hall Toronto and Solid Waste Management Services

**January 10, 2018**

This document outlines the context, framework and approach for the November 9<sup>th</sup> Blue Bin Design Sprint, hosted in collaboration with Civic Hall Toronto and the City of Toronto's Solid Waste Management Services. It captures and analyzes key sentiments, comments and insights from the event, and names emerging opportunities for Solid Waste Management Services' programming.





## Introduction

On November 9<sup>th</sup>, 2018, the City of Toronto's Solid Waste Management Services (SWMS), in partnership with Civic Hall Toronto, hosted a Blue Bin Design Sprint to better understand sentiments and insights around Blue Bin recycling using a human-centered design approach. The day's agenda ran from 9:30am to 2:00pm and featured discussion, a live sorting activity, mapping of human sentiments and feelings around recycling, defining a specific design problem via a persona and ideating on this problem. Participants were divided into seven groups of approximately 6-8 people each with an assigned SWMS staff-person, trained by Civic Hall Toronto to facilitate group activities (see agenda in attached Appendix A).

The event attracted 64 participants from across the city. One of the goals of the event was to attract people who don't normally participate in SWMS consultations. A coordinated outreach effort with the Social Development, Finance and Administration Division was very successful in attracting newcomers and non-English speakers, seniors, and high school students to the event, in addition to Toronto residents more familiar with SWMS programs.

The event's purpose was to address contamination in the Blue Bin recycling program. Blue Bin recycling contamination is a costly, persistent problem. SWMS estimates that it costs approximately \$4 million annually to manage contamination and the city loses \$5.2 million from contaminated recyclables that cannot be sold. Despite SWMS' ongoing programming for communication and education about the problem, the rate of contamination has actually increased in the last few years to close to 29% of collected materials.

SWMS wanted to better understand how people approach recycling in order to more deeply comprehend the problem and address it. The design question that guided the event was: "*How might we reduce contamination in the Toronto Blue Bin recycling program?*" The main objectives were to:

- Better understand the pain points around recycling, from the resident's perspective
- Gather residents' ideas around how to address pain points
- Generate insights on improving the Blue Bin recycling program to reduce contamination by design

In this report, our focus is on examining the Toronto Blue Bin recycling system from the user's perspective. Our analysis is based on the comments of participants who came to the November 9<sup>th</sup> event and how, as human users, they navigate and experience the system on a day-to-day basis.

## Why a Human-Centered Design Approach?

Human-Centered Design is the practice of putting the needs and desires of human users front and centre in the design of products or services. IDEO, one of the world's leading Human-Centered Design firms, defines it as "a process that starts with the people you're *designing* for and ends



with new solutions that are tailor made to suit their needs.”<sup>1</sup> The core philosophy is that we as humans create systems and products for the benefit of humanity, and if they are designed without the needs of the end user in mind, there is a higher risk of the system or product not meeting expectations or doing what they’re intended to do.

The Toronto Blue Bin recycling program is a public service that is accessible to all residents of Toronto. With the program, the city diverts waste from the landfill and recovers a portion of its operating costs from selling recycled materials. As a service that interfaces directly with residents and is centered on human needs, the system lends itself well to the human-centered design process.

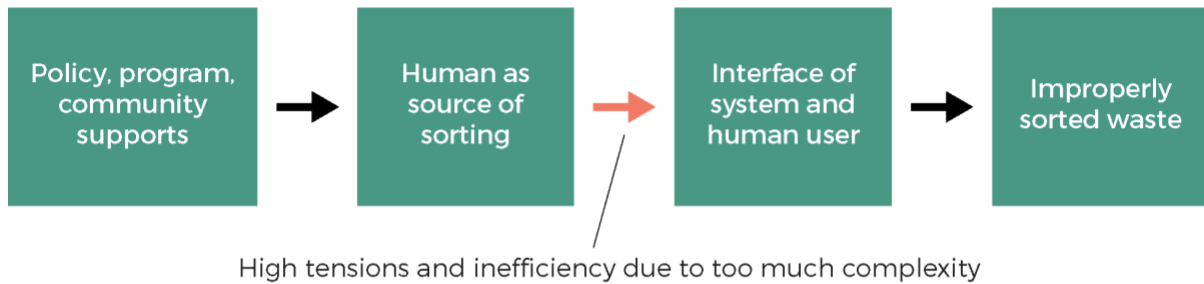
The effectiveness of how residents sort recyclables – that is, their willingness and ability to sort properly – has a direct impact on diversion and revenue. The act of sorting is a “manual efficiency” in that the outcome depends on how effective the resident is in sorting. This act requires continuous learning and practice to master. For many residents, training around this task is minimal, there are no immediate feedback channels to know if sorting is correct, and there are no obvious motivators (such as direct financial rewards) to encourage effective sorting.

It is thus imperative to build a resident interface (i.e. the system’s touchpoint with the resident) that requires the least amount of investment of their time and energy and is effective in supporting proper sorting. This interface is influenced not just through design of the product (e.g. the Blue Bins themselves or signs nearby), but also through policy, program and community supports (e.g. training in schools or public education materials). See Figure 1 below.

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<sup>1</sup> See <http://www.designkit.org/human-centered-design>

## CURRENT SYSTEM



## FUTURE SYSTEM

DESIGNED TO SUPPORT THE RESIDENT USER EXPERIENCE

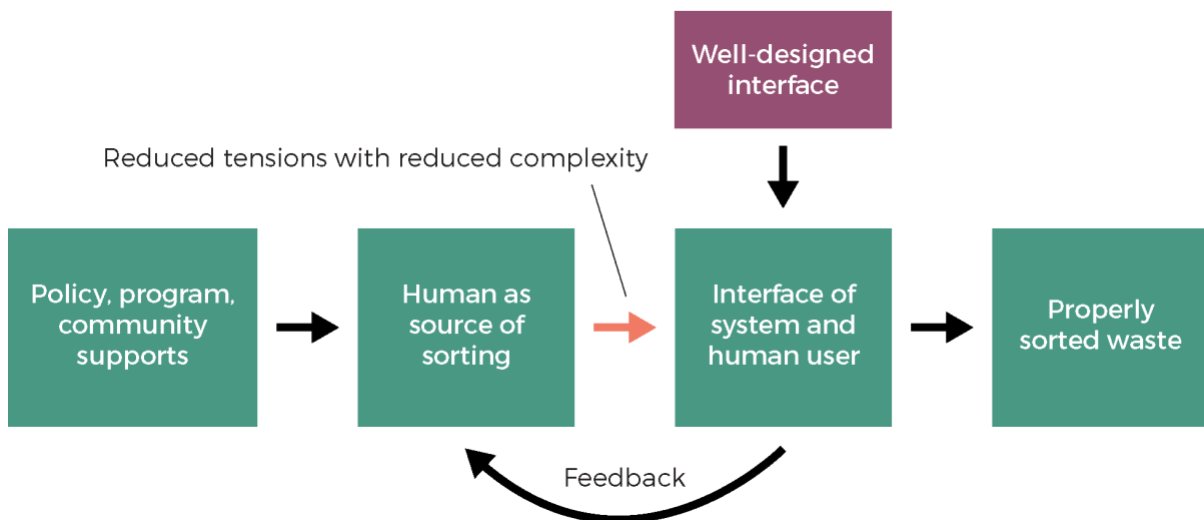


Figure 1

Of course, the resident user is not the only part of the system that sorts recycling and contributes to contamination. Product producers and product vendors who source materials and packaging also contribute to the challenge by developing or selling products made of layers of materials, some of which are more easily recyclable than others. Additionally, there are sorting systems in place post-waste collection that help correct improper human sorting, but these can add their own complexities, such as the inability for machines to distinguish black plastic.

For the purpose of the Blue Bin Design Sprint, **SWMS and Civic Hall Toronto's focus was the resident interface efficiency problem.** While we acknowledge that there is a greater *producer responsibility opportunity*, it was outside the scope of our approach for the event, in part because SWMS is investigating it through other means.



## Our Approach

Given our design question, “*How might we reduce contamination in the Toronto Blue Bin recycling program?*” we developed the following hypothesis for the event: “We believe that we can improve the efficiency of the resident interface if we design it to better support human needs and desires.”

Our first task in designing the event was to better understand the challenge and specifically how people use the Blue Bin recycling program. With the assistance of ThinkFresh Group, a design strategy firm in Toronto, the Civic Hall Toronto team conducted desktop research – including reviewing the City’s Long Term Waste Management Strategy, analyzing SWMS data on Blue Bin recycling use, and examining inspiring waste management case studies from around the world.

We hosted a focus group session at a Civic Tech Toronto Meetup and talked with six volunteers about their recycling habits, their feelings on recycling and some of their “pain points” in using the Blue Bin. These early insights helped to inform the design of the session activities and the creation of a set of four personas (attached in Appendix B) that we used during the event.

The event was designed to guide participants through a simplified design process, using template worksheets with prompts to aid their discussion and capture key thoughts. Specifically, the agenda flowed as follows:

- The day started with a live sorting activity that generated lots of feelings and observations around the act of recycling.
- The feelings were observed, recorded and used to understand pain points around a recycling journey. Discovery of these pain points was assisted by the four personas, which added to discussions by introducing feelings and issues that the participants may not have experienced themselves or surfaced in the sorting activity.
- SWMS presented on the details of the contamination problem and participants were then asked to discuss the issues and focus on one pain point for further activities.
- The participant groups then documented what an ideal future with solutions related to this pain point might look like, and presented these ideas back to the room.

## Sentiments and Insights

Sticky notes and completed worksheets generated from the session were transcribed and sorted into themes according to: sentiments (or feelings), pain points (points of tension or ongoing problems) and insights (ideas or trends of ideas) that facilitators gleaned from group discussions. There were many similarities in the sentiments and pain points between the groups, so we have grouped them below.



## Sentiments About Recycling

### Positive

- Desire to not be wasteful – we are currently too wasteful
- Want to do better
- Want to learn to do better
- Wish I knew more
  - Need more education
- Recycling should feel good
- Trying my best
- “Can’t better technology help?”
- Learned a lot from this workshop

### Negative

- Frustration
- Disappointment
- Confusion
- Responsibility
- Anxiety
- Feeling of failure
- Disenchantment
- Disengagement
- Needs to be simplified
- Lack of understanding
- Unsure
- Burdensome
- Apathy

## Pain Points in the Recycling Journey

- Lack of incentives or reasons to care
- Rules change frequently
- Packaging changes frequently
- Not a lot of time
- Documentation is confusing
- Feels burdensome
- Communications on recycling properly is poor
- Never sure 100% where it goes

## Emerging Human Insights

### Feelings Around Recycling

- People are passionate about this issue
- Strong desire to do better
- People feel good when they get it right
- People want to learn more about this
  - Including the why and more background info
  - Educate themselves to do better
- System is way too complex
  - People are confused
  - Causes lots of anxiety
  - Causes disappointment
  - Disenchantment
  - Anger and frustration
- Complexity caused by many moving parts in the system
  - Desires of producers



- Non-standard rules between municipalities
- Differing technology
- Mixed messaging
- Variety of available packaging/products
- Complexity of the packaging/products (i.e. multiple materials)
- Changing market demands for recyclables
- Previous advertising campaigns were somewhat effective

### How People Deal with the Current Situation

- People try their best based on what they have
- People feel that it might be too much burden on any one individual
- Cost of contamination is a motivating factor for some people to act
- Recycling can be a social affair – group problem-solving of what goes where; people asking to learn more; people willing to help
- Desires
  - Desire for incentives/penalties
  - Desire to produce less garbage
    - Especially single-use items
  - Desire to share the value of responsibility – people who are deeply passionate about this feel that others are not responsible enough (Note that this is a personal judgement – but can impact the design of a solution)
  - Learn and leverage potential solutions from around the world
  - Desire for more and easier options to reuse – e.g. second-hand shops/exchanges
  - Schools are not teaching recycling as well as they could be – desire for better education in schools.
  - Producers need to be more responsible about what they put out and coordinated with the local recycling systems
  - “We can do this. It can’t be that difficult.”
  - The system needs to provide more feedback
  - How can youth help make this better?

### Sorting Insights

- People tend to look at the labels on plastic – although there’s some confusion on what it means
  - This takes time – people have to think about this
  - “Could it be more intuitive?”
- People feel the contents of the material to try to determine where it should go
  - Using logical reasoning to figure it out
- We tend to correct and/or criticize others for not recycling properly



## Group Ideas

As mentioned above, each of the groups also generated ideas for proposed Blue Bin recycling program changes, based on a challenge statement and a set of needs that their group discussed. Many of the groups chose *Alex* as the persona that influenced their ideas (see the attached Appendix B).

The following is a summary of each group's ideas.

### Diversity Ambassadors

- **Team Challenge:** Better micro policies and decisions to overcome shortcomings
- **Motivating Feelings:**
  - Frustration
  - Disappointment
  - Confusion
- **Desired Future:** Everyone recycles perfectly – landfill minimized or eliminated
- **Future Headline:** Toronto awarded for last trip to landfill
- **Opportunities to get there:**
  - Rely on incentives/disincentives – fines
  - Have media involvement
  - Government policies – packaging and standards – consistency across jurisdictions
  - Localized actions – high school/elementary school students – break communities into sub-groups

### Envi-Club

- **Team Challenge:** Standard policy through educating the public
- **Motivating Feelings:**
  - Confusion on sorting
  - Desire to do better
  - Learning/improving
- **Desired Future:**
  - Product packaging doesn't exist
  - Everyone is educated
  - Enforcement is regulated
- **Opportunities to get there:**
  - Policy change
  - Business support
  - Education and implementation from early ages
  - Onus on individuals





## Age is Just a Number

- **Team Challenge:** Communicating the why of what is and isn't recyclable so that people recycle right
- **Motivating Feelings:**
  - Frustration of not knowing why or having the full picture
  - Feeling of uncertainty
  - Feeling of failure
  - Desire for confidence and empowerment – feel they are part of a bigger picture/movement; feeling of contribution and that they did the right thing
- **Desired Future:**
  - Simplified, standardized packaging – collaboration with manufacturers and government
  - Collaboration with citizens by sharing full (messy) real situation of recycling
- **Opportunities to Get There:**
  - Waste wizard app “why” button
  - Documentary on why of recycling explaining all the intricacies (i.e. what's recyclable, or not, why what has a market and what does not)

## Eco Community Leaders

- **Team Challenge:** How do we make it easier to donate and buy/get second-hand items?
- **Motivating Feelings:**
  - I want to produce less garbage
  - Sad about how much is in the garbage
  - Want to do the right thing and set a good example
  - I want to donate where possible and try to reduce waste
- **Future Headline:** 100% accountable, zero waste
  - Nothing going to landfill
  - Things are reused or diverted away from landfill
  - Full producer responsibility
  - Easy to donate and buy second-hand
  - A more connected, responsible, accessible and accountable world
- **Opportunities to Get There:**
  - Expansion/support for community programs like second-hand Sunday
  - City partnership with Thrift Stores, so that furniture picked up at the curb gets reused
  - Incentives/support to allow those with second-hand stores to be economically viable – pick-up or mobile depots

## Rainbow Innovators

- **Team Challenge:** Increase producer accountability for communicating recyclability
- **Motivating Feelings:**
  - Producer should contribute to solving problem



- Confusion
- Guilt about needing to put stuff in garbage
- Concern
- Care
- Challenged
- Resignation about what needs to go in garbage
- Knowledge/awareness
- Hesitation regarding what goes where
- Desired Futures:
  - Producers are responsible
  - Standardized packaging
  - Making reusable products that are not single-use
  - Multi-use packaging
  - Harmonized system province-wide
  - *A/lex* (persona) is less confused
  - Cities enforcing fines for contamination
- **Future Headline:** Producers fully responsible for recycling communication

## Frustrated Gardeners

- **Team Challenge:** How can we solve the most expensive contamination?
- Motivating Feelings:
  - Confusion
  - Distressed
  - Frustration
  - Anxious
  - Overwhelmed
- Desired Future:
  - More reusable and less takeout packaging (bring your own)
  - All takeout packaging is compostable
  - All products are compostable wet or dry
  - People are less confused/anxious
  - GTA will have universal recycling policy
  - There will be the political will, education, coordination among municipalities to back it up
  - It's all simplified
  - Industry compliance/standardize materials for packaging
- **Future Headlines:** Recycling Compliance up, contamination down, City publishes 2023 Recycling Report card

## Citizens of the Earth

- **Team Challenge:** Address apathy/anxiety through an engagement process targeted towards youth

- Motivating Feelings:
  - Apathy/disengagement
  - Moping
  - “Eye rolling”/ “Don’t care”
- Desired Future:
  - Technology sorting – QR codes/RFID enabled packaging will help us get there
  - We have robots that Alex (persona) made to sort all the recycling
  - All plastics are now banned around the world
  - One chute that separates everything – including organics
  - The world is watching Toronto
- **Future Headline:** Toronto Announces that all schools are now Zero waste!





## Analysis of Insights

In analyzing these sentiments and the recycling system overall, it is our view that people want to sort properly, and there is an opportunity to design the system to better support this desire and capitalize on this energy.

Based on the ideas above, we see the following insights as key factors in designing a more effective system:

1. People are passionate about this issue.
2. There is a strong desire to do better.
3. People feel good when they get it right (and especially because they feel guilty throwing things out).
4. There is a strong feeling of responsibility to do the “right” thing and a strong feeling of not wanting to be wasteful.
5. People want to learn more about the issues and want to help each other in learning.
6. People are consistently confused, anxious and frustrated with the current system.

It is clear from the above five points that there is a high level of energy and desire towards getting recycling right. These sentiments were shared in both the focus group and across all of the discussion groups at the event. No one expressed opposition to the idea of recycling. This is a strong, promising starting point for understanding how to improve the system.

In analyzing these sentiments and the recycling system overall, it is our view that people want to sort properly, and there is an opportunity to design the system to better support this desire and capitalize on this energy. The biggest barrier to this from a systems-wide perspective is the complexity of sorting for a human user. People feel that it is too complex for any single individual to understand – from conflicting messages from government and producers, to differences between municipalities in the Greater Toronto Area, to the diversity of products and packaging that are available on the market.

Participants in the sprint noted that it is never 100% clear which products are recyclable by simply looking at labels or feeling the materials.

From an individual resident perspective, this complexity takes too much time and energy to understand and master – sometimes requiring additional research and especially for unusual items or those made of materials that we are not familiar with. Extra effort is also sometimes required, like having to go to a special waste depot to dispose of certain products. The value of this exertion of time and energy often feels disproportionate to the task at hand – that is, we want to dispose of an unwanted item quickly and easily because it is, frankly, unwanted.

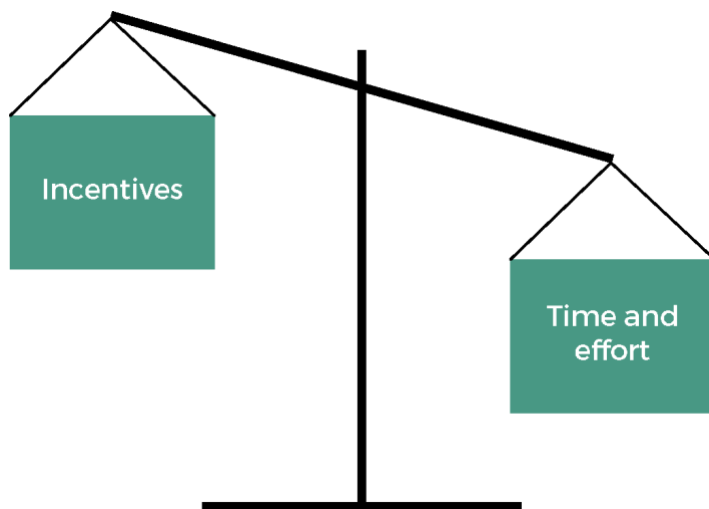
Furthermore, after they expend this effort, the individual resident receives no feedback on whether they got it right, further diminishing the value proposition at hand.

In other words, as one participant put it bluntly, “the effort required doesn’t feel like it’s worth it.”

For those of us who care about recycling, we often experience a tension between wanting to do the right thing and the effort required to do so. This tension often translates into feelings of anxiety, frustration and anger at a system that neither acknowledges this tension nor provides enough support to lower the effort required.

We propose that one way to think about solutions to this system is to conceptualize the resident interface of recycling around the value proposition for the resident user. On one side of this proposition is the time and effort required. On the other is the incentives on offer that could make the time and effort “worth it.” We can visualize this like a scale that’s off-balance:

### RECYCLING VALUE PROPOSITION



Note that this observation is a systems-level conceptual framing from the user’s viewpoint; we acknowledge that the City has made efforts to reduce the time and effort required to perform the sorting task, however, based on what we have learned from the Design Sprint, it’s clear that it is still quite burdensome. Given this insight, we would conceptualize the key design challenge questions as:

- How might we improve the sorting value proposition by continuing to reduce the time and effort required?
- How might we improve the sorting value proposition by introducing incentives to make the necessary effort seem “worth it”?



## Emerging Opportunities

Building from the design challenges identified in the last section, and in analyzing the ideas generated from the event, we’ve identified the following opportunities. We’ve classified them by short, medium and long-term opportunities, based on estimated amount of effort and time required as well as SWMS’ current purview over the issue.

**We acknowledge that some of the opportunities named below are outside the realm of influence or control of SWMS and the City of Toronto, and that SWMS’ actions in these areas are heavily influenced by external factors. As well, in the case of some opportunities listed below, SWMS is already working on or providing supports related to the named ideas (that we did not discuss during the November 9<sup>th</sup> event),<sup>2</sup> so where applicable and possible, we are suggesting an increase in that work.**

Each one of these opportunities represents a further human-centered design challenge where the goal is to continue to improve the value proposition that was discussed above. As with all design challenges, one is never 100% finished, since human desires and needs change over time; even after a solution is implemented, periodic reviews of the factors and the solutions on offer are necessary.

We would thus encourage the adoption of a human-centered design mindset in all aspects of waste reduction programming, which might include the regular use of design tools like personas and journey mapping, as well as additional training for staff.

<b>Opportunity</b>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
<i>Continue Efforts to Provide More Education</i>	Providing more education on how to recycle properly – including more education in schools – was cited frequently during the event. This could be done via providing more public awareness campaigns, running workshops and partnering more with local schools. Other specific ideas here include:	Reduces the required learning curve around sorting and getting it right.	Short Term

<sup>2</sup> A full list of programs and services can be found here: [www.toronto.ca/recycle](http://www.toronto.ca/recycle)



<i>Opportunity</i>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
	<ul style="list-style-type: none"> <li>● Campaigns targeting specific audiences, and in the languages that these audiences/ communities use</li> <li>● Community-based social marketing (i.e. utilizing community-level social networks and trusted local voices as a means to disseminate information)</li> </ul>		
<i>Share more “whys” behind recycling</i>	<p>This was a key motivating factor for some participants. Understanding what goes on behind the scenes, the consequences, why certain items are not recyclable and the costs of improper recycling helps them in seeing from a systemic point of view and could be a motivator.</p>	<p>Increases the value of “doing the right thing” as it is clearer now what the benefits for society are, and users have a better understanding of consequences (i.e. the societal value proposition).</p>	Short Term
<i>Continue supporting community-based actions</i>	<p>The key principle here is to capture the energy and passion communities have regarding recycling. The City already has a Waste Reduction Community Grant which is a big step forward in supporting</p>	<p>Allows communities to play a role in supporting users and build a stronger community around sorting and waste reduction.</p> <p>Can help to reduce time and effort as these community-</p>	Short to Medium Term



<i>Opportunity</i>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
	<p>community-led initiatives, but there are other ways the City can further provide support.</p> <p>Below are some ideas that serve to boost community-based actions and build on this latent energy:</p> <ul style="list-style-type: none"> <li>● Hosting hackathons to allow grantees to better incubate their ideas</li> <li>● Providing incubation space and mentorship for emerging ideas that might be scalable across the city</li> <li>● Sharing successes and providing training for communities</li> </ul>	<p>sourced solutions are likely derived from pain points that users have experienced.</p> <p>These ideas may also have additional economic benefits should they become self-sustaining businesses.</p>	
<i>Support second-hand vendors/markets</i>	<p>Many participants expressed a desire for more and better opportunities for reuse. Suggestions included the City hosting more second-hand markets, promoting second-hand vendors/markets better and making it easier and convenient</p>	<p>Connects with human value of reusing and not being wasteful.</p> <p>Making reuse more accessible would reduce the time and effort required to research and find a second-hand vendor/donation point.</p>	Short to Medium Term





<b>Opportunity</b>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
<i>Identify stronger enforcement opportunities</i>	to donate or sell second-hand items.		
	Participants also hoped that the City would more strongly enforce existing recycling rules to encourage people to recycle better. (Note that this also indirectly supports the lack of feedback issue.)	Imposes a penalty (i.e. a disincentive) into the system and addresses the feedback issue.	Short to Medium Term
<i>Standardize Blue Bin Signage, where possible</i>	The signage on waste bins varies a great deal across Toronto. Develop standard signage for use everywhere to avoid confusion with helpful tips on how to determine recyclability if it is not listed on the sign.	Reduces the amount of time and effort in determining if something is recyclable.	Short to Medium Term
<i>Leverage the social aspect opportunities in programming</i>	It is worth noting that many participants had fun during the recycling activity – and some of it was the ability to learn from others, connect with others to ask them how they would do it and group problem-solving on where something goes. This could be translated into a value proposition around social connection as a benefit of learning	Supports the feedback issue, enhances the value proposition around learning through the value of social connection.	Short to Medium Term



<i>Opportunity</i>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
	<p>how to recycle. Running fun, community-based training workshops, or having “Recycling Experts” in your neighbourhood/community group that you could meet and connect with about recycling issues could be a way to leverage this.</p>		
<i>Implement direct incentives, where possible</i>	<p>This can include monetary and non-monetary incentives, built in collaboration with external partners and producers. Monetary may be a deposit return scheme (e.g. it’s worth noting that the Beer Store bottle deposit return system achieves an astonishing 96% return rate<sup>3</sup>), or schemes to convert recyclables to credits or coupons. Non-monetary incentives may include recognition (Person X is a “Recycling Superstar” having diverted Y% of their household waste!) and awards or contests for</p>	Enhances the value of the effort required.	Medium to Long Term

<sup>3</sup> See <http://www.thebeerstore.ca/tbs-environmental-report.html>



<b>Opportunity</b>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
	“Best Recycler in Toronto.”		
<i>Communicate how current technology is used and identify opportunities for new technologies, based on industry trends</i>	Giving residents an insider understanding of how technology is currently used might be a motivator for those that want more information on the current system. Meanwhile, investigating emerging opportunities in the industry and piloting new technologies – like AI, more advanced sorters, or a more advanced Waste App that can identify items – might eliminate challenges around human sorting altogether.	Reduces the effort required for individual residents.	Long Term
<i>Support standardized product and packaging labels, where possible</i>	Where possible, encourage producers to better label the content of products or packaging (perhaps similar to ingredient labels on food) and what is recyclable or not. Make this language and these symbols standard.	Reduces the effort required for individual residents.	Long Term
<i>Support standardized recycling rules province or nationwide, where possible</i>	Where possible, ensure that all municipalities across Ontario are recycling the same things and	Reduces the effort required for individual residents.	Long Term



<i>Opportunity</i>	<b>Description</b>	<b>How This Could Help</b>	<b>Classification</b>
	have standardized rules.		



## Concluding Remarks and Next Steps

We see the November 9<sup>th</sup> Blue Bin Design Sprint event as the first in a series of steps to better understand how humans approach recycling in the City of Toronto, and what can be done about it. These sentiments and insights only scratch the surface around the challenges people face, and we've only just begun identifying emerging opportunities based on these insights.

The response from participants and local media<sup>4</sup> was very positive and we feel that continuing to engage residents in this way would help to not only address the problem, but might also serve as a prototype for resident engagement and collaboration. SWMS could model this type of engagement for the rest of the City, which could address a longstanding perception that residents' ideas are not being listened to by the City.

### EVENT SURVEY RESULTS

A feedback survey was emailed to all 64 people that registered for the event, and 26 participants (or 40% total) completed the survey. Below are a few quotations from the feedback survey:

*"As a designer, I appreciated the reminder to first and foremost have empathy for those who have trouble complying with blue bin rules. If we cast blame or label end users as lazy, the conversations and possible solutions stop immediately. It was an interesting exercise to apply design thinking to an environmental issue."*

*"I personally really enjoyed learning from the like-minded people that were seated with me. Each person brought their own experiences or contributions."*

*"It opened my eyes to some misunderstandings that I had with respect to my blue box practices and importantly the reasons for the restrictions."*

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<sup>4</sup> See [http://www.thestar.com/news/city\\_hall/2018/11/11/sorting-out-the-trash-from-the-recycling.html](http://www.thestar.com/news/city_hall/2018/11/11/sorting-out-the-trash-from-the-recycling.html)



Feedback on the event was generally positive; respondents expressed that they enjoyed interacting with other participants and hearing from a diversity of voices. On the other hand, respondents noted that the purpose and instructions for activities were sometimes challenging or confusing, and that the agenda was sometimes rushed.

For example:

- 62% felt that the event length was good
- 58% felt the workshop activities were appropriately challenging
- 72% received the support they needed from facilitators

For a future event, respondents would like to see a summary of the outcomes of the event and what input the City found to be the most helpful, in addition to information on actions participants themselves could take (e.g., joining the 3Rs Ambassador Program).

### NEXT STEPS

We hope that SWMS will continue to address this challenge with a human-centered design approach and take action on some of the opportunities identified here. Moreover, we think that SWMS could connect with event participants in order to go deeper on ideas, potentially involving them as advisors or even project designers in implementation.

Civic Hall Toronto would like to thank SWMS for providing this exciting opportunity to engage in a civic design problem that is so close to residents' hearts, and we'd like to give special thanks to Annette Synowiec and her team who helped organize and facilitate the event.





## Appendix A – Detailed Agenda of Design Sprint Activities

### SWMS Design Sprint Agenda

*Design Question: How Might We reduce contamination in the Toronto Blue Bin recycling program?*

Key objectives for the day:

- Understand human insights around the Blue Bin recycling program and recycling in general
- Orient participants around the current state of the Blue Bin program
- Develop some potential challenge questions for SWMS to work with around the design question
- Inform Torontonians further about SWMS' goals

Proposed program run time: 9:30am-2:00pm

Agenda Item	Description	Time
1. Welcome, land acknowledgement, orientation and framing of the day, ground rules	Facilitator & SWMS staff will: <ul style="list-style-type: none"> <li>● Welcome everybody (SWMS)</li> <li>● Perform the land acknowledgement (Facilitator)</li> <li>● Orient participants to the event and its key framing and; (SWMS + Facilitator)</li> <li>● Outline the ground rules for the day (Facilitator)</li> </ul>	9:30-9:40am
2. Group Introductions	Everybody introduces themselves to the table: <ul style="list-style-type: none"> <li>● Your name</li> <li>● What brings you to the event today?</li> <li>● Do you consider yourself to be a good recycler?</li> </ul>	9:40-9:48am
3. Group Identity Map	In this activity, we will explore the personal values and ideas that each of us brings to this conversation. This will allow participants to get to know each other and build trust in the group.  The Facilitator will ask everybody to write down on sticky notes all of the different identities they would associate with themselves (i.e. Mother, Daughter, Environmentalist, Transit-enthusiast etc.).	9:48-10:03am



	<p>Also, what are your reasons for identifying as being a good recycler or not?</p> <p>Silently, everybody in the group will place their identity sticky notes in the middle of the table and sort them based on themes that emerge from everybody's identities.</p> <p>Then we ask everybody to discuss what they have discovered.</p>	
4. Our Trashy Feelings	<p>This is an ethnography activity where we observe how we all react to recycling and waste.</p> <p>Each table will be divided up into 2 sub-groups. Each group will have the three waste bins at their table: Blue, Green and Grey.</p> <p>For this activity one sub-group observes and makes notes while the other grabs different pieces of trash from a bag (one per person) and puts it into one of the bins. The trash items will be those that tend to confuse people – i.e. half full jars of organic materials, dirty plastic take out containers, paper coffee cups etc.</p> <p>There is no wrong answer to this – it's about reactions and feelings when performing this activity. The note taking group will be given a worksheet with prompts about what to observe.</p> <p>After the first sub-group finishes, we switch so everybody gets a chance to perform both roles.</p> <p>After the activity has finished, we will provide the right answers to the group and table facilitators will ask participants to share their gut reactions.</p>	10:03-10:18am
5. Trash Talk	<p>We pair 1 member from each sub-group in the last activity with 1 from the other sub-group.</p> <p>Now we ask them to take turns to interview each other to discuss their thoughts and feelings. After the first person tells how they felt, the other person tells them what they observed.</p> <p>We will provide worksheets with prompts about what to ask. We will ask them to jot down the key</p>	10:18-10:40am





	<p>values and behaviours that they have discovered. We then ask everybody to come back to their tables to share what they have learned and create a map based on themes of the key values and behaviours of the group.</p>	
6. Trash Mapping	<p>Each group reports back on their values and behaviours map to the room. (2 mins per group)</p> <p>We will document all of the values and behaviours at the front of the room to create a room-wide map.</p>	10:40-11:00am
7. Persona Intros	<p>Each group will be given 4 personas and asked to choose 1 that makes sense based on their values and behaviour map. The Table Facilitator will introduce the personas to the table.</p> <p>For the chosen persona, we will ask each group to “customize it” by adding 3 additional values and behaviours from their group’s values and behaviour map to the persona.</p>	11:00-11:15am
8. Empathy Map	<p>Each group will be asked to complete an empathy map for their persona to better understand the persona.</p>	11:15-11:30am
9. The Big Picture	<p>SWMS staff will introduce some background info about the Blue Bin recycling program:</p> <ul style="list-style-type: none"> <li>- How it works (there may be a video)</li> <li>- What are some of the challenges</li> <li>- What does this look like as a global system?</li> <li>- Consequences of not addressing the problem of contamination</li> <li>- What are some SWMS initiatives to address this?</li> <li>- Emerging opportunities in the recycling field specific to contamination (case studies, exciting innovations that are happening)</li> </ul> <p>We will ask participants to take notes – noting key thoughts or ideas that they have.</p>	11:30-11:45am
Light Lunch		11:45am-12:10pm



<p>10. Issue Discovery</p>	<p>Ask each participant to share some of their thoughts from the presentation and what they have heard/experienced so far today:</p> <ul style="list-style-type: none"> <li>● Share your feelings by making feeling statements around issues that struck you. Use “I wish...” “I feel...” and “Wouldn’t it be great if...”</li> <li>● Jot these down on sticky notes and place them in the centre of the table. Are there some emerging clusters of issues that the group is really passionate about? Name each of the issue clusters that are emerging</li> <li>● How might some of these issues connect with the behaviours and values map created earlier?</li> <li>● Ask the groups to narrow down their list of issues to one key issue that the group wants to focus on</li> </ul>	<p>12:10-12:30pm</p>
<p>11. Problem Discovery</p>	<p>We will now create a problem statement based on the issue selected by the group and some of the behaviours and values discussed earlier</p> <ul style="list-style-type: none"> <li>● Looking at the issue and the behaviours/values map, think about some challenges that might emerge. We will provide a challenges worksheet to prompt the group on what to look for.</li> </ul> <p>For example: one of the issues might be a desire to “share items better” while a value might be “don’t waste things that are still usable” – this could evolve into a challenge around “how might we share items that still have life left in them?”</p> <ul style="list-style-type: none"> <li>● Individually write down these challenges, then share them as a group</li> <li>● Is there a particular challenge that really resonates with the group? Try to narrow it down to 3.</li> </ul>	<p>12:30-12:45pm</p>



	<ul style="list-style-type: none"> <li>● From these 3, create 3 “How Might We...” design questions</li> <li>● Now narrow it down to one challenge the group wants to work on</li> </ul>	
12. The Less Trashy Future	<p>For the chosen persona and the chosen problem statement, let’s look into the future and see what the ideal future looks like</p> <ul style="list-style-type: none"> <li>● Fill out a headline in the future (2022) when this problem has been solved: what would the story contain? What are the challenges that might have been solved? What does the world look like now?</li> <li>● Each group will be provided with a template to fill out</li> </ul>	12:45-1:00pm
13. Opportunities	<p>Based on this imagined future, what are some opportunities that might exist today that could help get us there?</p> <ul style="list-style-type: none"> <li>● Fill out the resources worksheet to document some resources we know about that could help</li> <li>● How could these be leveraged to help solve the challenge?</li> </ul>	1:00-1:15pm
14. The Big Report	<p>Fill out the “Our Big Report” worksheet and answer all of the key questions based on the work of the group today</p>	1:15-1:25pm
15. The Big Report Back	<p>Each group will be given 3 mins to report back on the contents of their “Our Big Report” summary</p>	1:25-1:55pm
16. Wrap Up/Closing	<p>SWMS staff to wrap up, thank participants and discuss possible next steps</p>	1:55-2:00pm



## Appendix B – Recycling Personas

### Alex

- Age: 29
- Occupation: Software UX Designer
- Lives in Mississauga, works in Liberty Village

Alex is environmentally conscious. Growing up in the GTA, Alex was always exposed to recycling and environmental education. Alex even volunteered for the campus Green Team in university.

Despite this, Alex is still often confused about recycling. The rules seem to change all the time and things that might be recyclable in Mississauga don't seem to be in Toronto. And the rules seem to be different depending on the building Alex is in, leading to a bit of anxiety every time Alex wants to throw stuff out because Alex still wants to do the right thing.

As a professional with a long commute and family obligations, Alex has no time to dig deeper and looking things up on a Waste App or Wizard just seems like a lot of extra work. As a UX Designer, Alex thinks all the time about why we cannot design a better system.

Quote: "Maybe if we had standard logos and standard rules this would be a lot easier. The whole process often feels like a leap of faith that you got it right. Humans aren't built to handle this much complexity."

### Ho Yin

- Age: 37
- Occupation: Teacher
- Lives in North York, works in Ajax

Ho Yin immigrated to Canada as a teenager. Ho Yin grew up in Vancouver and came to Toronto after Teacher's College. Having taught recycling as part of civics, Ho Yin is familiar with the system in Durham Region, Toronto and Vancouver and often lectures colleagues, friends and family about how to recycle right.

Ho Yin gets frustrated when people can't recycle properly. At food courts, the staff kitchen, or even street-side bins, Ho Yin sees waste being randomly stuffed into the wrong places and wishes Torontonians could be more responsible. Sometimes, Ho Yin re-sorts the most egregious cases. In Vancouver, there was definitely a bigger culture around being waste responsible.

Ho Yin understands that people might be confused – but it's been part of the education system for so many years already – and there are endless labels, quirky ads with socks and bananas and public education – what else can we do?

Quote: "I think we need to create more incentives or disincentives. Nothing like rewards or punishments. Always works for my students!"



## Sami

- Age: 45
- Occupation: Trained and worked as a chef, but currently unemployed
- Lives in Downtown Toronto

Sami is a recent refugee. Having been in Canada 5 months, Sami is fascinated by Toronto's recycling system. Back home, there was no such formal system for recycling. Waste Pickers would walk around collecting recyclables from piles of rubbish and turn them into depots for money.

As a chef, Sami has seen a lot of waste. Sami knows that being responsible needs to be made easy – otherwise people won't do it. Sami is thankful that Toronto's waste and recycling system is convenient – just put everything into the right bin and take it to the curb.

When Sami first arrived, Sami assumed that everything that was paper, glass or plastic-based could be recycled – until being corrected later by a friend. Sami still finds it strange that black plastic cannot be placed in recycling and rinsing things out seems like a unnecessary extra step. Back home, Sami was aware that all of these things could be taken to the depots as is.

Quote: "There must be technology that can solve these issues. This is a developed country – how have we not have figured this out yet?"

## Harpreet

- Age: 71
- Occupation: Retired
- Lives and volunteers in Scarborough

Harpreet has lived in Scarborough for 35 years. Harpreet is retired and now volunteers at a local community agency. Harpreet has always tried to use the Blue Bin and been a supporter of recycling, but, not being tech savvy, found it difficult to find information, especially for all of the new packaging that is always coming out.

Recently, Harpreet discovered that many of the malls and cafes that Harpreet frequents actually does not recycle - despite having separate bins. Harpreet feels betrayed and isn't so sure about the recycling system anymore.

As a result, most waste goes into the garbage, because that's just easiest. Harpreet's children give Harpreet a hard time about this, which elicits feelings of shame, but then Harpreet thinks about how the recycling bins are almost always full in the apartment building where Harpreet lives – which makes it such a hassle. Additionally, because Harpreet sorts slowly, it was always anxiety inducing when sorting at bins in busy malls where Harpreet felt in the way of others.

Quote: "At least with the garbage, I know where it's going. If you want me to participate again, reform the system first – it's currently broken."



## Appendix C – Focus Group Questions

- What's your name and would you consider yourself a good recycler? Why or why not?
- When I mention recycling, what are some sentiments that come to mind? Write down as many of them as you can on stickies and we'll discuss in 5 mins.
- What are some challenges you have around recycling? Write down as many issues as you can on stickies and we'll discuss in 5 mins.
- Here are some pictures of things that people throw out. Do you know which bin it goes in? How do you judge what goes where?
- What would be 1 thing you would improve about recycling?