



Triple E's: Zero Waste 2040 Ambassador Program

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Introduction

This case study is focused on answering our thesis question: What would a Zero Waste 2040 Ambassador Program look like for the City of Vancouver? It is crucial that the City of Vancouver achieves this goal due to the current problems the city is facing, such as diminishing landfill space and strict climate goals. Confusion with how to properly sort waste by consumers is a contributing factor, as well as lack of education, lack of outreach opportunities, and the need for clarification and improvement with waste literacy. Our proposed program, *Triple E's: Zero Waste Ambassador Program*, aims to address these issues through our three pillars of *Education*, *Engagement*, and *Expansion*. Furthermore, we will track the progress of this program in order to justify efforts, evaluate its efficiency, and provide positive publicity opportunities. Municipal solid waste (MSW) comprised 33.72% of total material delivered to the Vancouver Landfill in 2017, therefore our program will target the primary source of MSW: multi-family residential housing units (City of Vancouver, 2018).

Mission

The *mission* of this zero waste ambassador program is to assist Vancouver in reaching the Zero Waste 2040 goals through educating residents of multi-family residential units and ambassadors, engaging residents in zero waste practices, and expanding the program through continual growth of community outreach participants.

Vision

The *vision* of this program is to positively benefit communities within the city of Vancouver through leading more sustainable lifestyles that further the city's goal of Zero Waste by 2040.

Framework

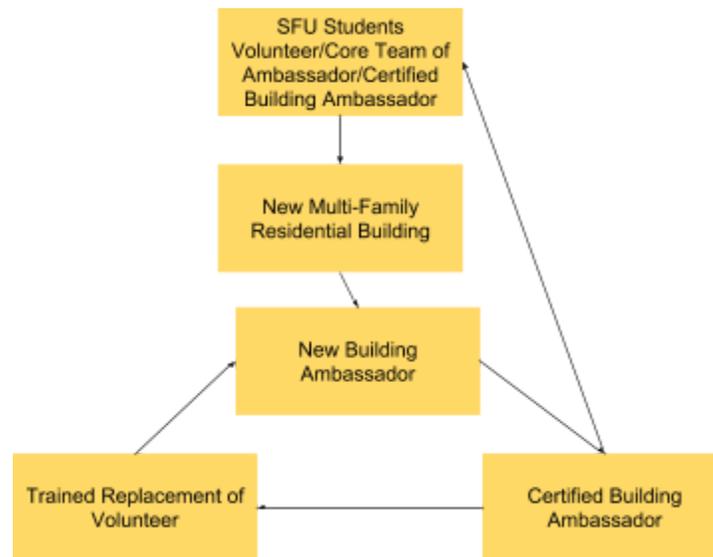


Figure 1: Framework Diagram

Triple E's: Zero Waste Ambassador Program will begin with a small group (4-6) of Simon Fraser University students, open to those with an Environmental or Resource and Environmental Management background. This group will be referred to as the Core Ambassador Group from here on. Students wishing to participate in the Core group will attend a meeting with Triple E's creators for further information and registration. Students selected for the Core Ambassador Group will then attend a series of workshops, hosted by the creators of Triple E's, to develop an understanding of the program's goals and the relevant skills required to become a self-sufficient operating team. Members of this Core Ambassador Group will not be paid, it is strictly voluntary contribution until further notice. Incentives for students' participation include valuable work and management experience, recognition from the City of Vancouver, and potential certification from either the City of Vancouver and/or Simon Fraser University. Students will be required to commit to the Core group for one academic year, with the ability to extend.

Once the Core Ambassador Group has completed training, they will connect with one selected multi-family residential building to start the pilot project. It is recommended that this pilot project is undertaken at a multi-family residential building that ranks highly on the "friendly buildings" scale, as determined by the "Hey Neighbour!" program (City of Vancouver, 2017). This recommendation is likely to improve the results of the pilot project as the buildings that ranked "highly-friendly" demonstrated high sociability and are experienced with the City of Vancouver's social programs. Initial connection with this multi-family residential building will be in the form of an educational, discussion-based seminar open to all interested residents and strata members. This seminar will be casual, friendly, and consist of light snacks provided by *Triple E's: Zero Waste Ambassador Program*. Any attendees that are interested in becoming a Building Ambassador will have the opportunity to meet with the Core Ambassador Group

following this seminar and have seven days following to submit their application. Selected Building Ambassadors will then be trained by the Core Ambassador Group over a course of two intensive days. Building Ambassadors will be required to commit for a period of six months, volunteering a minimum of two hours per week.

Three E's

Education

Our Building Ambassadors will provide education to multi-family residential buildings through fun, interactive presentations. Education opportunities for the ambassadors to implement include posters and public advertising to assist in educating the building residents about recycling. An aspect of education for the building residents will be the separation and recycling methods, with Building Ambassadors providing information on why, where, and how to recycle. Citizens who are better informed have a greater disposition to participate in recyclables separation than those who are less informed (Xiao et al. 2017). Education was highlighted to bridge the gap between “having the right attitude and actualizing that in behavior” (Neo, 2010) (Massawe et al., 2014).

Before these educational practices are put into place, it is important to be able to gauge the level of knowledge that residents in the building have pertaining to recycling. This can be done with a Household survey that will be designed to measure the self-reported recycling behavior of multi-family residential unit households and their perceived barriers to participating in their building's recycling programs (Lakhan, 2016). These surveys will be necessary in understanding issues that are preventing residents from recycling. Surveys will be distributed twice per year to measure the recycling knowledge levels of residents and will help to identify any aspects of recycling that should be included in future educational material.

Engagement

Following an educational briefing, our Zero Waste Ambassador program will engage selected residential buildings through nominating a “Building Ambassador”, who will be a familiar face to provide assistance for residents. Building Ambassadors will learn how to engage in a dialogue with residents to enhance participation in furthering Vancouver's zero waste efforts. This program will highlight engagement of residents through trivia games, social media postings, and door to door visits from zero waste ambassadors.

Ambassadors are a crucial component of the zero waste program, therefore maximizing engagement of ambassadors is important to the overall success of the program. Creating an open dialogue and communication between new ambassadors and executive leaders will allow for broadening the scope of the program, leading to innovative ways to engage the community (Brudney, 2014). In order to retain ambassador engagement, it is important to recognize achievements that show the value of the ambassador's role within the program. Not only will ambassadors then have the incentive to be even more successful, but this will also set an example for other ambassadors. An ambassador appreciation day will be held at the end of every month in

which the Building Ambassador's achievements will be showcased to their fellow ambassadors (Eisner, 2009).

Once our ambassadors have become fully engaged within the zero waste program, engaging residents will be a main role that our ambassadors will take on. In order to make zero waste an accessible and applicable topic to all residents, regardless of their age, education level and background, our program will create interactive activities such as trivia nights that will test their current knowledge of zero waste in an engaging way, encouraging community building, thus furthering a collaborative effort toward zero waste by 2040. A bi-weekly tabling event that is led by our ambassadors will occur in communal resident areas or lobbies. This table will provide resources for zero waste such as pamphlets, waste sorting games, and as a way to create a face-to-face dialogue between ambassadors and residents. Ambassadors will be an important resource for residents, therefore their extensive knowledge and comprehension of zero waste will be crucial.

Expansion

This program will need to expand exponentially for Vancouver to reach its Zero Waste 2040 goal. With the help of our Core Ambassador Group, this program will target a new multi-family residential building every month. Ideally, our Building Ambassadors will remain active indefinitely through an iterative cycle (*figure 1*). This will allow us to mark each visited building as “en-route to zero waste”, eventually reaching every multi-family residential building in Vancouver. Building Ambassadors will have the option to complete certification, either through the City or SFU (to be determined), allowing them to train their replacements as well as join the Core Ambassador Group if they wish. This will lead to the program's continual growth and increased community outreach.

Building on work done by the “Hey Neighbour!” program, we intend to utilize highly sociable and engaged residential communities for this program's success. According to Tavakoli, “soft infrastructure” is a crucial element of these friendly buildings, which Triple E's ambassador program satisfies (Tavakoli, 2017).

Measurement

Methods

As important as the program itself, measurement is the key to success (John T., 2012). It is not only important to evaluate the efficiency of the program but also to be able to track the progress and to provide the City with positive publicity opportunities. Therefore, three different measurements will be used to measure the impact of the program.

The first measurement is the number of participants, or more specifically the number of volunteers. The number of volunteers will be measured every three months. Every six months the volunteers will distribute a survey to the residents participating with questions regarding how satisfied they are with the program and if they think the program helps to reduce their waste. Furthermore, it would also ask the age range, which will give a clarification of the demographics of the volunteer. Included below is a sample survey for this measurement.

Month of #X

Are you willing to participate more/ continue the program? (Yes/No)			
Number	Name	Occupation	Job Role
1	Sam	Student	Volunteer
2	Fayola	Office Worker	Core Team
3	Ben	Unemployed	Council Member

Figure 2. Sample survey for measuring the number of participants.

The second indicator in this program is waste reduction. To measure this, each residential building involved in the program will be given a scale located by their common garbage bin where the residents will have to weigh their garbage and write down the number anonymously on a list. By doing this the Building Ambassador can calculate the average garbage weight from the building every month, which will be used to measure the waste reduction.

The third and final indicator is also related to waste reduction but is measured in a different way. Every six months the program will target a different focus item. It can, for example, be straws, cans or plastic packages. The survey that the ambassadors distribute every six months will be used to measure the reduction of the focus item during this period, and the gap analysis will be used for residents to visualize required effort to reach their end goal.

Gap Analysis

By using gap analysis, it will show the trend of each residential building. From the trend of the building’s production of waste, we can see the gap between their current state and end goals through several surveys. This data will be used to focus on the reduction of weight of their solid waste to landfill, and reduction in the total amount of the focus item being chosen (ie. straw, single-use chopstick, styrofoam, etc.). If the multi-family residential buildings participating in the program are served by a private waste company, we will be able to track the weekly pickup costs and identify any trends in decreasing weight.

Cost Estimation

The table below, *figure 3*, provides an estimation of Triple E’s monthly program costs. This table is made under the assumptions that: stationaries are supplied every two months; the booth is located in open space; price average is taken from Staples Canada (Staples, 2018); key chain

price taken from online wholesale (Aliexpress, 2018); refreshments supplied for 5-7 volunteers; and certifications being printed internally.

Number	Month	Description	Amount (CAD)	Amount (CAD)	Notes
1	January	Booth Equipment (For a day)	350		Booth Stand
2		Gift/souvenir	150		Key Chain
3		Campaign instruction/guidebook	50		
4		Survey Form	100		
5		Weight Tools	50		
6		Supplies	60		Pencil, Pen, and Paper. Can be used for future.
7		Refreshment for Volunteers	100		
Total			860		Before Tax

Figure 3. Sample Monthly Program Expenses

Conclusion

In conclusion, this proposed framework for *Triple E's: Zero Waste 2040 Ambassador Program* offers the City of Vancouver with a feasible option to assist in reaching Zero Waste 2040 goals. Increasing community outreach and growing awareness around responsible waste management, especially in multi-family residential buildings, will be crucial for a reduction in solid wastes to landfill. Our holistic approach of Education, Engagement, and Expansion, as well as the scaleable nature of our ambassador recruitment cycle, contributes to sociable and engaged residential communities. Whether this program is implemented or not, we are confident that this framework can contribute to future sustainable community development.

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