

# Breaking Down Barriers to Participation in Waste Diversion

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## Systemic Barriers

## Results/Recommendations

### Introduction

Participation in municipal waste diversion programs is part of the daily life of urban residents in Canada. Nevertheless, a significant portion of the general population is unable to participate. Those who do participate are traditionally middle class, and live in owner occupied single family homes (Berger, 1997). In general, less is known about the involvement of marginalized populations in recycling programs (Berger, 1997; Howenstine, 1993; Margai, 1997), especially lower income residents who live in social housing. This project aims to identify the barriers to participation for residents of social housing in Ottawa, Ontario.

### Methods

This project employed a mixed methods approach with experiential and academic research. A general understanding of social housing in Ottawa was acquired through working as an environmental community outreach student with Ottawa Community Housing. A literature review was also performed to compare promising practises in cities such as :

- Seattle, Washington
- New York City, New York
- Chicago, Illinois
- West Oxfordshire County, UK.
- Baltimore, Maryland

### Case of Ottawa, Ontario

Ottawa, Ontario is a medium size city in central Canada. Ottawa has a number of social housing providers that primarily house residents in townhome and high rise buildings (figure 2). The municipal government provides recycling, garbage, and compost services for residential housing of all types. Social housing communities are less conducive to waste diversion initiatives when compared with single family homes

Systemic barriers are prevalent in social housing communities due to the socioeconomic factors that are commonly found in social housing communities (Berger, 1997). Systemic barriers to participation include factors such as:

- This is not inclusive although they are
- Income levels
  - Education
  - Language
  - Family Structure
  - Cultural Norms towards Recycling
  - Lack of Familiarity with Programs

### Physical Barriers

Physical Barriers to participation include physical obstructions which are most common in social housing communities. These barriers occur due to both the significant age and design of these buildings. These barriers include:

- Far Distance to sorting areas
- Lack of wheelchair ramps
- Lack of sorting space
- Sorting equipment located outside
- Housing Type
- Obstructions

To address physical barriers in social housing communities a number of possible recommendations were developed after researching practising promises. The following recommendations are tangible ways to address barriers in social housing communities.

#### City of Ottawa:

- Increase education staffing
- Develop new educational materials to include new languages
- Increase frequency collection for more townhome communities
- Develop new recycling related by-laws for apartment buildings
- Develop accessibility by-laws for recycling facilities
- Employ community outreach staff that are fluent in additional languages
- Increase the frequency of collection

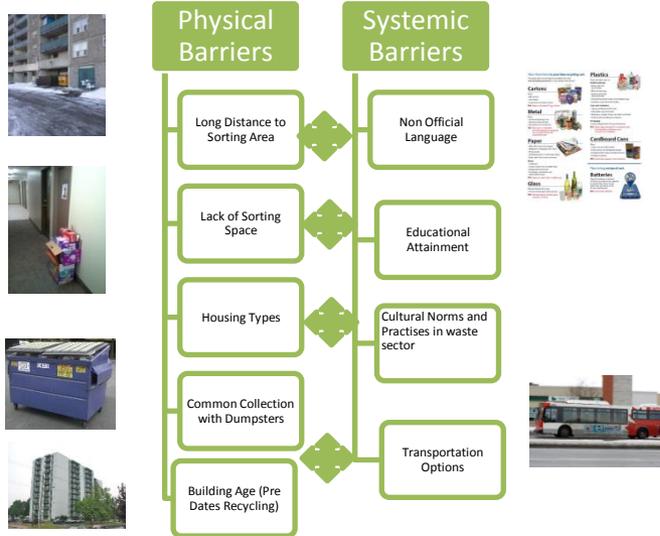
#### Property Management/Building Owners:

- Improve containers and sorting areas to increase accessibility
- Provide pickup of recyclables door to door in high rise buildings
- Improve safety of recycling areas
- Relocate sorting areas indoors

### Matrices to Assess Physical Barriers in Social Housing Communities

The following matrices are this project's contribution which combine experiential and academic findings. These matrices are to be completed by developers, city staff and housing provider employees as checklists when conducting a site tour of the chosen community. Barriers are arranged in severity with the most serious barriers at the bottom of the tables.

### Conceptual Model: the Intersection of Physical and Systemic Barriers



Community Waste Plan		Building Type: Townhome Apartments	
Accessibility	Safety	Equipment	Creative solution
<ul style="list-style-type: none"> <li>o High Lift over Height of Containers</li> <li>o Lack of ramps</li> <li>o Lack of maneuverability (1.5m) width</li> </ul>	<ul style="list-style-type: none"> <li>o Inadequate Lighting</li> <li>o Lack of cameras</li> <li>o Lack of visibility</li> <li>o Distance (far)</li> </ul>	<ul style="list-style-type: none"> <li>o Is the sorting area clean?</li> <li>o Lack of Indoor Sorting Space</li> <li>o Common collection</li> <li>o Not Adequate Number of Bins</li> <li>o Conventional Bins (Dumpsters)</li> </ul>	<ul style="list-style-type: none"> <li>o Improve Lighting</li> <li>o Move Sorting Area Indoors</li> <li>o Improve Lighting and Safety</li> <li>o Change bin types</li> </ul>

Community Waste Plan		Building Type: High Rise	
Accessibility	Safety	Equipment	Creative solution
<ul style="list-style-type: none"> <li>o Lack of Automatic Doors</li> <li>o Elevators not Available</li> <li>o One Level</li> <li>o Height of Containers</li> <li>o Width of Doorways</li> <li>o Lack of Maneuverability (1.5m)</li> </ul>	<ul style="list-style-type: none"> <li>o Obstructions</li> <li>o Lighting</li> <li>o Visibility</li> <li>o Cameras</li> <li>o Locked Door</li> <li>o Weather Obstructions</li> </ul>	<ul style="list-style-type: none"> <li>o Garbage Chute</li> <li>o Adequate Number of Bins</li> <li>o Indoor Space</li> <li>o Cleanliness</li> <li>o Conventional Bins</li> <li>o Accessible Bins</li> </ul>	<ul style="list-style-type: none"> <li>o Improve Lighting</li> <li>o Move Sorting Area Indoors</li> <li>o Improve Lighting and Safety</li> </ul>

Figures 4 & 5: Matrices to assess the effectiveness of waste disposal facilities in high-rise and townhome apartments.

Housing Type	Apartment (5 or more stories)	Single Family Home	Duplex, Row House
Number of Households	72 150	226 185	199 180
Percentage (%)	14	45	40
Total Population	883 391 (2011)		

Figure 1: Housing Type by households in Ottawa, ON (Statistics Canada, 2011)



Figure 2: Common housing types in Ottawa and their corresponding waste management facilities.

To demonstrate that physical and systemic barriers do not work in isolation this figure was developed. For example, a person residing in a non-accessible building that does not speak English would be less likely to participate in recycling programs.

Figure 3: Conceptual model demonstrating the intersection of systemic and physical barriers.

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