

## Alternative Options to Reduce Illegal Activity at Recycling Depots

### Introduction

Using behaviour change strategies, monitoring programs, and limiting facility access to reduce illegal dumping, are alternative options in waste management for municipalities across Canada to reduce criminal behaviours and illegal dumping.

The City operates three single-stream recycling depots that are unstaffed and available to the public 24/7. The materials from these sites are collected four times weekly and taken to Cosmopolitan Industries for processing. The sites are cleaned of illegally dumped materials six times weekly by City staff. The goal of using surveillance cameras is to identify and prosecute those who commit illegal dumping, deterring the number of illegal dumping incidents at target locations, and promote and maintain the health, safety, and well-being of residents while using these sites.

### Research on Redesigning the Depots

Increasing recycling depot clean-ups, site monitoring, and on-site staff with restricted hours may be a feasible option for reducing criminal behaviour and illegal dumping at the City's recycling depots. The following report and case studies explain why this should be completed:

#### *Report on The Bystander Effect and Social Control Behavior*

In 2002, three field studies were conducted the influence that bystanders have on the likelihood of social controls, such as littering. The findings suggest that the presence of others would inhibit people's natural tendencies to commit negative behaviours. In situations where litter was present, the likelihood of these actions taking place by the participants increased significantly and vice versa.<sup>1</sup>

#### *Case Study on Using Normative Appeal to Control Litter in Public Areas*

In 1979, a case study was completed to elicit desirable behaviours in respect to litter control at a public swimming pool. Patrons of the pool received a prompt from the concession stand at the time of purchase containing three varying messages; extreme demand ("Don't Litter"), normative appeal ("Help Keep your Pool Clean"), and the last displayed messages unrelated to littering as a control. The frequency of littering of each group was recorded. The extreme messaging approach had the highest frequency of littering at 50% of the time, while the normative approach only had incorrect disposal 30% of the time.<sup>2</sup>

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<sup>1</sup> Information Brief: Chekroun and Brauer. 2002. The bystander effect and social control behavior: The effect of the presence of others on people's reactions to norm violations. *European Journal of Social Psychology*, 32(6).

<sup>2</sup> Information Brief: Reich and Robertson. 1979. Reactance and norm appeal in anti-littering messages. *Journal of Applied Social Psychology*, 9,1,91-101.

This research suggests that with proper normative signage, this could be applied to other disciplines, such as recycling. To date, our recycling depots have not yet used this method of signage or education tactic.

### *Case Study on Fencing Stops Illegal Dumping of Waste*

In 1990, a private organization, Orica purchased the Southlands Remediation and Development Site for operations. The site is bordered by private property, and historically used by the locals as a common area for illegally dumps goods and construction and demolition waste. Orica erected 2-metre-high hurricane permitter fencing alongside the public road. The fence, railway line, and private property combined provide a boundary that prevents public access to the site. Immediately after installation of the fence the dumping of waste ceased. Repairs are periodically required to the fence, as there is a lot of heavy vehicle traffic in the area but acts of vandalism are rare.<sup>3</sup>

## **Options Developed, Readiness and Projected Cost Implications**

### *Restricted Depot Access and Hours*

Most criminal behaviours at the recycling depots were reported by EPOs to occur in the late-evening to early-morning. A restricted access depot design has been shown in other municipalities to encourage appropriate use of depots and was highly recommended during research interviews conducted during this report's preparation. Recycling depots with restricted access have fully fenced perimeters, locked gate, restricted public hours, and signage. A case study from a private organization, Orica, tried to mitigate illegal dumping on their private property by installing a fence. This strategy accompanied with clear signage assisted in an immediate halt of illegal dumping behaviours. See Appendix 4.

The City's depots are fully fenced but would require gating to be installed to all accessways (two driveways per depot). The installation of a locked gates requires a staff member to open the facility to the public during the chosen operating hours. A one-time investment of gates and permanent signage is estimated to cost \$3,500 per gate and \$1,500 per freestanding sign for a total of \$8,500 per depot. The estimated cost of staffing to open and close the facility seven days per week (7 hours) is \$10,000 annually per depot. This excludes the cost of fence and gate maintenance.

### *Increased Bin Collections and Site Clean-ups*

Frequency in bin collections at the recycling depot may reduce the desire of residents to incorrectly discard recyclables outside of the bins and increase the overall cleanliness of the site. In a City survey, 16% of residents indicated that to improve their experience at the recycling depots they would benefit from increased frequency of collections, see Appendix 2. Collections are currently conducted four times per week.

The City uses a behaviour change strategy for its waste management enforcement programs called Community-based Social Marketing (CBSM). CBSM provides education

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<sup>3</sup> Information Brief: NSW Government. 2011. Illegal dumping prevention and clean up. Accessed at: <https://www.environment.nsw.gov.au/resources/illegaldumping/20110002illegaldumping.pdf>

and prompts to residents to aid in behaviour changes. This strategy could be implemented at our recycling depots to reduce illegal dumping. Studies using the CBSM “bystander-technique”, illustrated that well-maintained sites that contain little to no litter consistently, altered the perception of the site to the participants over time and reduced the likelihood of bystanders partake in littering; see Appendix 4.

Bin collections and site clean-ups currently cost \$246,000; \$82,000 per depot. If collections and site clean-ups were increased by one day per week, it is estimated to cost an additional \$21,000 per depot annually in staff and equipment costs. The level of service and equipment may vary. The same staff and rear-loader trucks are also required for special collections services as well as to collect illegally dumped materials from back lanes; therefore, alternative servicing options (e.g., including half-tons and additional staff) would be utilized. There is generally capacity to complete additional collections, with the possibility of exceeding capacity during the summer season.

### *On-Site Supervision*

Sites with the presence of a figure of authority and/or supervision, have the ability to deter inappropriate behaviours. On-site supervision is a common practice for transfer stations and eco-centres in other municipalities. Of the 28 communities surveyed, 25 sites have staffed restricted-hour transfer stations or eco-centres and seven sites have staffed restricted-hour public recycling depots. It should be noted that some communities have more than one type of waste management facility.

Staffing appears to be a solution to limit the inappropriate use and criminal behaviours at the recycling depots but may not eliminate illegally dumped materials outside of the hours of operation. Additionally, hiring a staff member that has some knowledge about the City’s waste management practices and programs is an asset that could provide the public with education at the source of collection. With this option, hours of operation and public access should be restricted. Comparable facilities in other municipalities operate six days per week for 10-hours (8:00am to 6:00pm) with two full-time employees.

For on-site supervision of the City’s public recycling depots replicating the City Landfill’s hours and days of operation, it is estimated to cost \$120,000 per depot annually for 1 person for seven days, twelve hours per day. Staff would be responsible for assisting in daily clean-ups and site maintenance. Two staff members are recommended.

A security firm could be hired to provide overnight surveillance outside of recycling depot hours (7:00pm to 7:00am). Floating coverage for a single external employee at a total of seven days per week (84 hours) on a 12-hour shift is estimated to cost \$118,000 annually, per depot.