

# 33 Waste Management



## What is the Service?

Waste Management includes a wide range of collection, disposal, diversion and processing activities for the majority of residential households, and a portion of these services may be provided to businesses. The goal of Waste Management is to reduce and/or divert the amount of waste ending up in landfill sites, and to lessen the detrimental impact on the environment.

*Specific objectives include:*

- Minimizing the impact on the environment and maximizing landfill capacity by providing a variety of waste diversion programs to the residential, and industrial, commercial and institutional sectors (ICI)
- Providing efficient and economical waste collection, waste diversion and disposal services that meet the needs of the community and regulatory bodies
- Increasing awareness of waste management issues and promote waste reduction through education

## Influencing Factors:

**Diversion Efforts:** The nature and extent of a municipality's diversion efforts, i.e. enforcement of various programs, impacts the type and amount of material included in waste collection.

**Education:** How municipalities promote, manage and enforce garbage collection, disposal, recycling and diversion programs and services.

**Geography:** Urban/rural population, seasonal population, socio-economic factors and the mix of single-family residences and multi-unit residential buildings that impact service provision.

**Government Structure:** Services can be provided by a single-tier or a two-tier system (combination of Regional and Municipal service).

**Infrastructure:** Distance to transfer facilities; accessibility of local landfill sites with available capacity; the number of active landfill sites; soil conditions on the landfill site(s) and surrounding sites, and; the number of sites under perpetual care.

**Organizational Form:** Different service levels and standards; difference in the age of infrastructure; frequency of pick-ups; hours of operation; average number of people per household; residential vs. commercial and industrial service.

**Service Provision:** Frequency of collection, bag limits, single stream waste collection vs. co-collection programs, hours of operation, the number and types of materials collected, and reliance on private contractors.

**Weather Conditions:** Impacts the weight of waste collected, disposed and diverted.

## Additional Information:

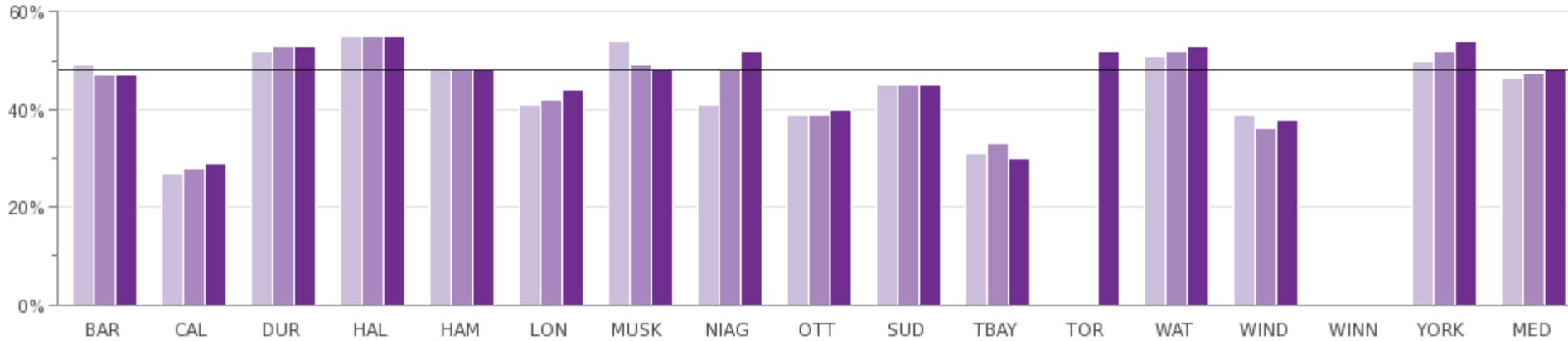
*Durham is responsible for the collection of solid waste in 6 out of 8 of its local municipalities.*

*York Region is not responsible for curbside collection, but the Region is responsible for processing all local municipal curbside streams. The lower-tiered municipalities tip their curbside materials at York depots, therefore York is able to report on tonnes collected, disposed and diverted, and disposal and diversion costs only.*

# Waste Management

## What percent of residential waste is diverted away from landfills?

Fig 33.1 Percent of Solid Waste Diverted - Residential



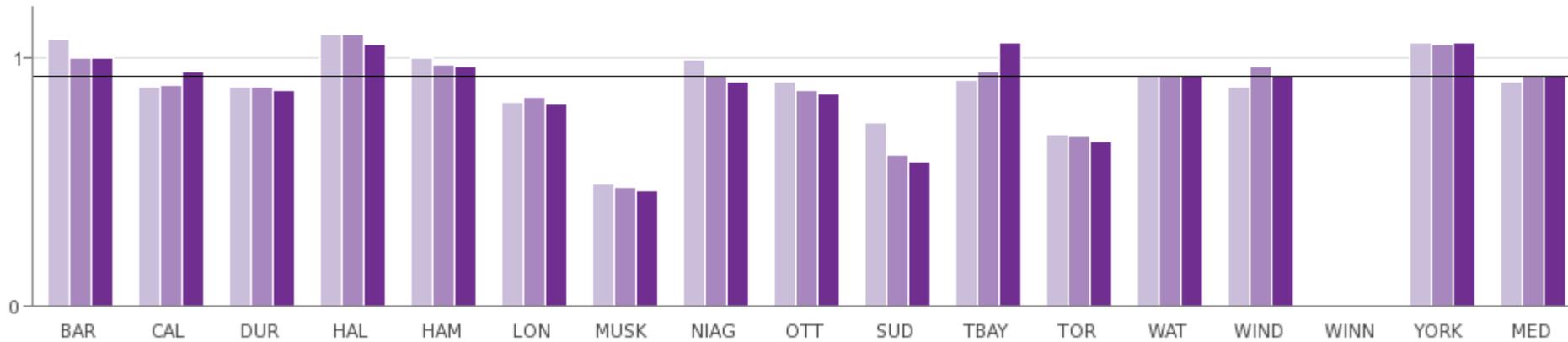
|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 2010 | 49% | 27% | 52% | 55% | 48% | 41% | 54% | 41% | 39% | 45% | 31% | N/A | 51% | 39% | N/A | 50% | 47% |
| 2011 | 47% | 28% | 53% | 55% | 48% | 42% | 49% | 48% | 39% | 45% | 33% | N/A | 52% | 36% | N/A | 52% | 48% |
| 2012 | 47% | 29% | 53% | 55% | 48% | 44% | 48% | 52% | 40% | 45% | 30% | 52% | 53% | 38% | N/A | 54% | 48% |

Source: SWST105M (Community Impact)

Comment: The measure demonstrates the percent of residential waste diverted away from landfills and incineration through programs such as organics, blue blox, leaf and yard, municipal hazardous or special waste and other recyclable materials, e.g. wood, metal, tires.

## How many tonnes of residential waste are collected per household?

Fig 33.2 Tonnes of all Material Collected per Household - Residential



|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| 2010 | 1.07 | 0.88 | 0.88 | 1.09 | 1.00 | 0.82 | 0.49 | 0.99 | 0.90 | 0.74 | 0.91 | 0.69 | 0.92 | 0.88 | N/A | 1.06 | 0.90 |
| 2011 | 1.00 | 0.89 | 0.88 | 1.09 | 0.97 | 0.84 | 0.48 | 0.92 | 0.87 | 0.61 | 0.94 | 0.68 | 0.92 | 0.96 | N/A | 1.05 | 0.92 |
| 2012 | 1.00 | 0.94 | 0.87 | 1.05 | 0.96 | 0.81 | 0.46 | 0.90 | 0.85 | 0.58 | 1.06 | 0.66 | 0.92 | 0.92 | N/A | 1.06 | 0.92 |

Source: SWST205 (Service Level)

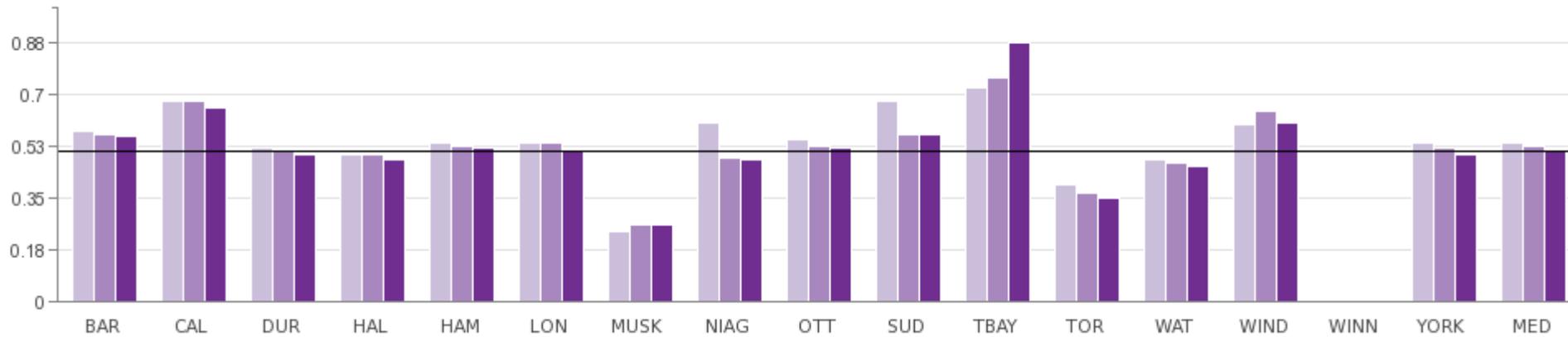
Note: York Region operates a two-tier system and is not responsible for curbside collection; however York is responsible for all processing. Total tonnes collected is tracked and reported above; however total costs (see SWST311T) are unavailable.

Note: The City of Thunder Bay experienced a major flooding event in 2012, thereby resulting in a significant increase in overall garbage tonnage collected.

Comment: The measure includes organics, blue box, leaf and yard, municipal hazardous or special waste, other recycle materials such as wood, metal and tires, as well as construction and demolition materials.

## How many tonnes of residential waste are disposed per household?

Fig 33.3 Tonnes of Solid Waste Disposed per Household - Residential



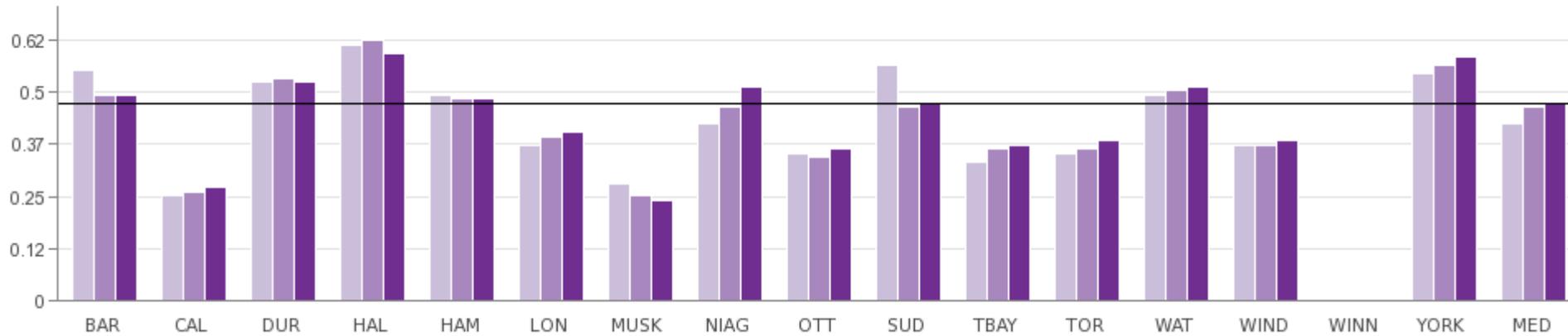
|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| 2010 | 0.58 | 0.68 | 0.52 | 0.50 | 0.54 | 0.54 | 0.24 | 0.61 | 0.55 | 0.68 | 0.73 | 0.40 | 0.48 | 0.60 | N/A | 0.54 | 0.54 |
| 2011 | 0.57 | 0.68 | 0.51 | 0.50 | 0.53 | 0.54 | 0.26 | 0.49 | 0.53 | 0.57 | 0.76 | 0.37 | 0.47 | 0.65 | N/A | 0.52 | 0.53 |
| 2012 | 0.56 | 0.66 | 0.50 | 0.48 | 0.52 | 0.51 | 0.26 | 0.48 | 0.52 | 0.57 | 0.88 | 0.35 | 0.46 | 0.61 | N/A | 0.50 | 0.51 |

Source: SWST220 (Service Level)

Comment: Given the life expectancy of several landfills across the province and the fact there are many diversion programs and services in place, there remains a high volume of waste still going to landfills.

## How many tonnes of residential waste are diverted per household?

Fig 33.4 Tonnes Solid Waste Diverted per Household - Residential



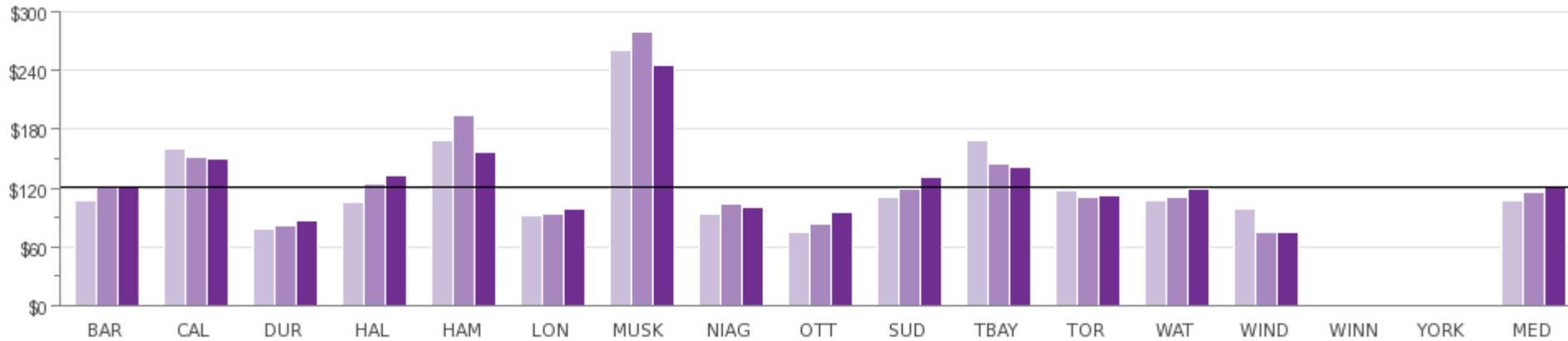
|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |     |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| 2010 | 0.55 | 0.25 | 0.52 | 0.61 | 0.49 | 0.37 | 0.28 | 0.42 | 0.35 | 0.56 | 0.33 | 0.35 | 0.49 | 0.37 | N/A | 0.54 | 0.42 |
| 2011 | 0.49 | 0.26 | 0.53 | 0.62 | 0.48 | 0.39 | 0.25 | 0.46 | 0.34 | 0.46 | 0.36 | 0.36 | 0.50 | 0.37 | N/A | 0.56 | 0.46 |
| 2012 | 0.49 | 0.27 | 0.52 | 0.59 | 0.48 | 0.40 | 0.24 | 0.51 | 0.36 | 0.47 | 0.37 | 0.38 | 0.51 | 0.38 | N/A | 0.58 | 0.47 |

Source: SWST235 (Service Level)

Comment: Given the life expectancy of several landfills across the province and the fact there are many diversion programs and services in place, there is still a high volume of waste going to landfills.

## What is the total cost to collect a tonne of waste?

Fig 33.5 OMBI Total Cost for Garbage Collection per Tonne - All Property Classes (includes amortization)



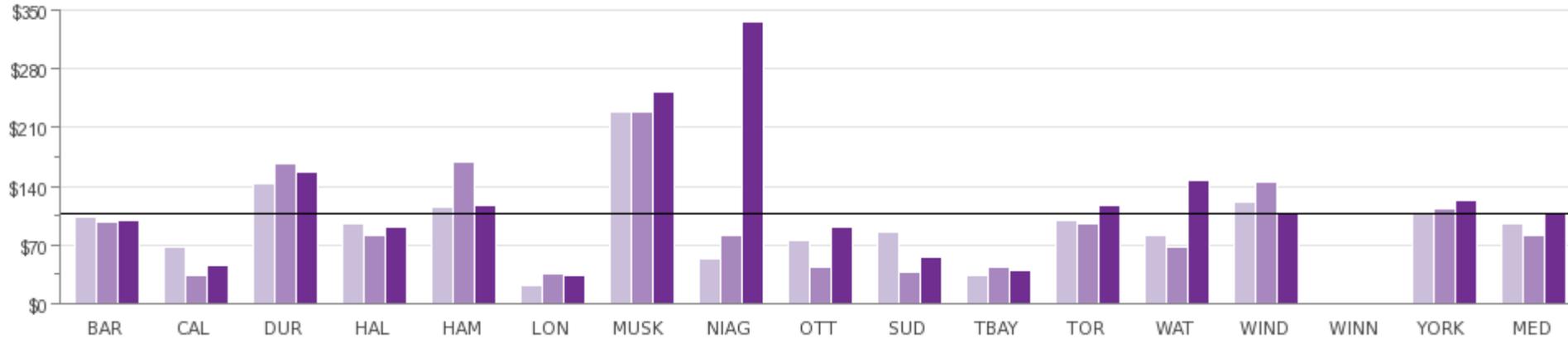
|      |       |       |      |       |       |      |       |       |      |       |       |       |       |      |     |     |       |
|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|------|-----|-----|-------|
| 2010 | \$107 | \$160 | \$78 | \$105 | \$169 | \$91 | \$261 | \$94  | \$75 | \$111 | \$169 | \$118 | \$107 | \$98 | N/A | N/A | \$107 |
| 2011 | \$121 | \$152 | \$81 | \$124 | \$195 | \$93 | \$280 | \$104 | \$84 | \$119 | \$144 | \$111 | \$110 | \$75 | N/A | N/A | \$115 |
| 2012 | \$123 | \$150 | \$86 | \$132 | \$157 | \$99 | \$246 | \$101 | \$95 | \$131 | \$142 | \$113 | \$119 | \$75 | N/A | N/A | \$121 |

Source: SWST311T (Efficiency)

Note: All Property Classes includes residential, institutions, commercial and industrial locations. York Region operates a two-tier system and is not responsible the collection of garbage. Although they track total tonnes collected, they are unable to report on total costs.

## What is the total cost to dispose of a tonne of garbage?

Fig 33.6 OMBI Total Cost for Solid Waste Disposal per Tonne - All Property Classes (includes amortization)



|      |       |      |       |      |       |      |       |       |      |      |      |       |       |       |     |       |       |
|------|-------|------|-------|------|-------|------|-------|-------|------|------|------|-------|-------|-------|-----|-------|-------|
| 2010 | \$104 | \$67 | \$144 | \$96 | \$115 | \$21 | \$228 | \$53  | \$76 | \$85 | \$33 | \$100 | \$81  | \$121 | N/A | \$107 | \$96  |
| 2011 | \$97  | \$34 | \$166 | \$82 | \$168 | \$35 | \$229 | \$82  | \$43 | \$37 | \$44 | \$95  | \$68  | \$145 | N/A | \$114 | \$82  |
| 2012 | \$99  | \$46 | \$157 | \$91 | \$118 | \$33 | \$253 | \$337 | \$91 | \$55 | \$40 | \$118 | \$147 | \$107 | N/A | \$124 | \$107 |

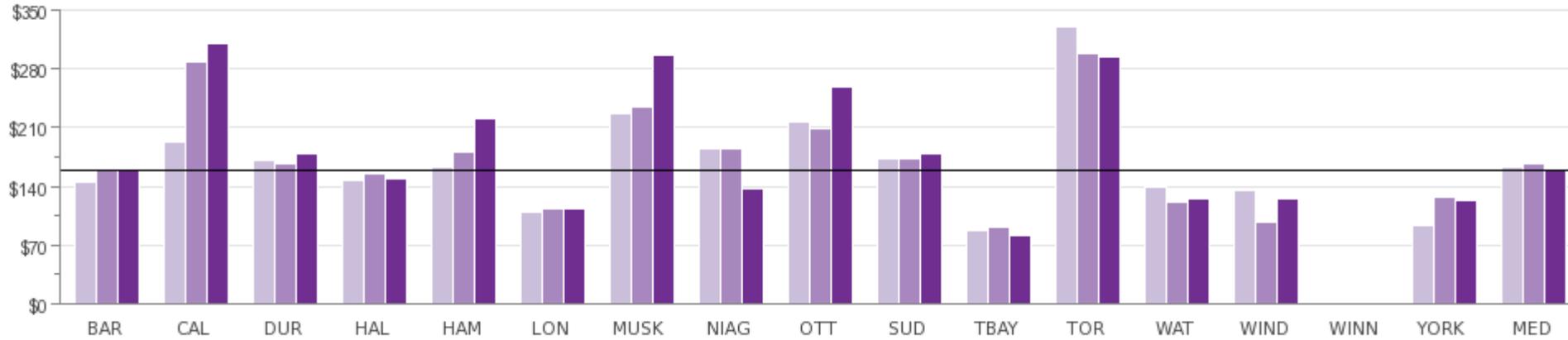
Source: SWST325T (Efficiency)

Note: All Property Classes includes residential, institutional, commercial and industrial locations.

Comment: Results can be impacted due to the recording of post-closure landfill liability costs and this significantly impacted the 2012 results for Niagara and Waterloo Regions. In addition, declining landfill capacities typically result in increased landfill rates. Other impacts such as additional costs of transporting waste outside a community, aging infrastructure, capital costs, costs associated with the incineration of garbage, service agreements, increase in leachate treatment and fluctuating fuel costs also impact the results.

## What is the total cost to divert a tonne of garbage?

Fig 33.7 OMBI Total Cost for Solid Waste Diversion per Tonne - All Property Classes (includes amortization)



|      |       |       |       |       |       |       |       |       |       |       |      |       |       |       |     |       |       |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-----|-------|-------|
| 2010 | \$145 | \$192 | \$171 | \$147 | \$163 | \$109 | \$226 | \$184 | \$217 | \$172 | \$88 | \$331 | \$140 | \$135 | N/A | \$93  | \$163 |
| 2011 | \$159 | \$289 | \$166 | \$154 | \$181 | \$113 | \$235 | \$184 | \$208 | \$172 | \$92 | \$299 | \$121 | \$98  | N/A | \$127 | \$166 |
| 2012 | \$158 | \$310 | \$178 | \$150 | \$220 | \$113 | \$297 | \$137 | \$258 | \$178 | \$82 | \$295 | \$126 | \$125 | N/A | \$123 | \$158 |

Source: SWST330T (Efficiency)

Note: All Property Classes includes residential, institutional, commercial and industrial locations.