



# 20 Waste Management Services

## 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 maximize 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 operations; 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 program, hours of operations, 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 operates a two-tier system and is responsible for disposal and diversion only; not collection of garbage.*

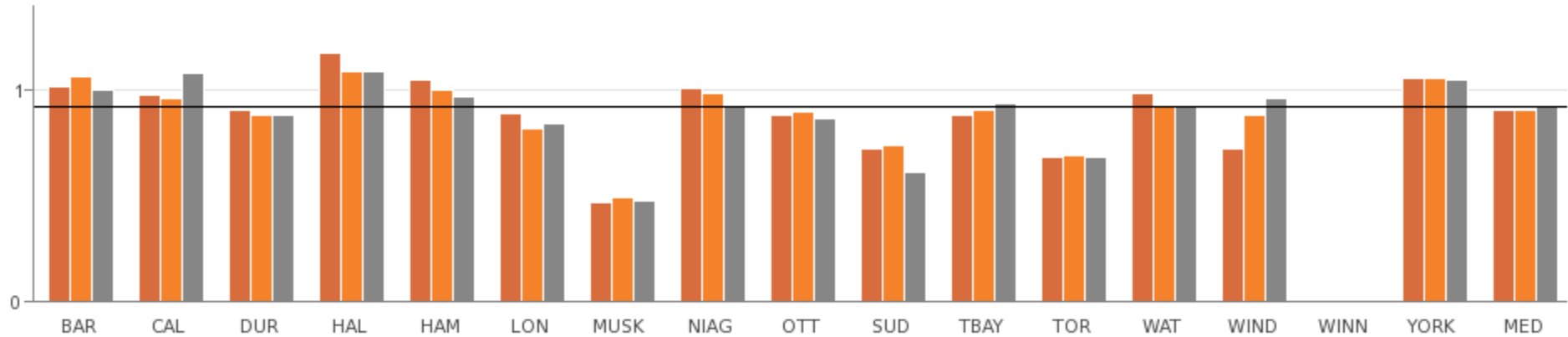
*All municipalities experienced a decrease in commodity revenues in 2009 which affected the operating costs of diversion.*

*Windsor experienced labour disruptions in 2009 which affected their results.*

## Waste Management Services

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

Fig 20.1 Tonnes of all Material Collected per Household - Residential



2009	1.02	0.98	0.91	1.18	1.05	0.89	0.47	1.01	0.88	0.72	0.88	0.68	0.99	0.72	N/A	1.06	0.91
2010	1.07	0.96	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	0.91
2011	1.00	1.08	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

Source: SWST205 (Service Level)

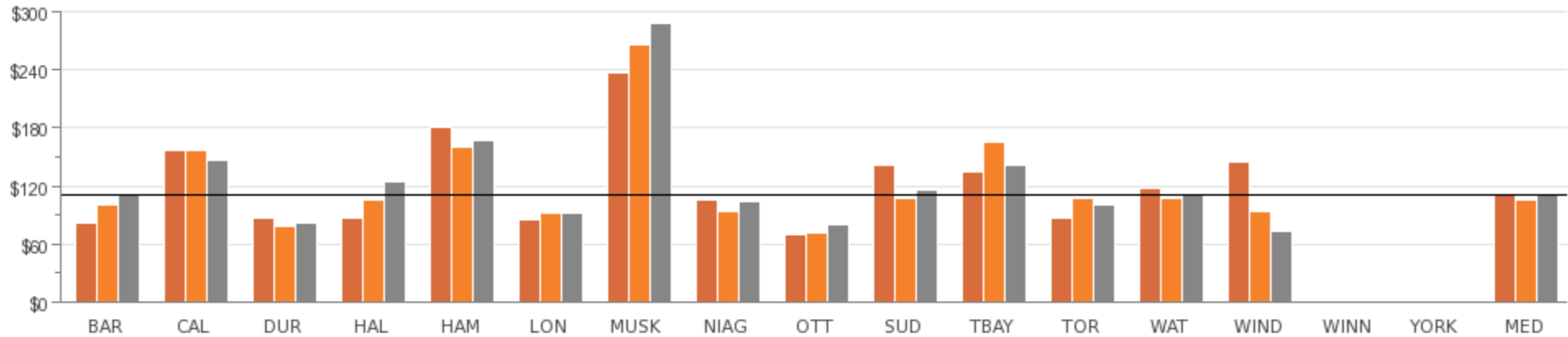
Note: The City of Windsor experienced a municipal work stoppage in 2009, which contributed to a reduction in total tonnes collected.

Note: York Region operates a two-tier system and is not responsible for collection of garbage.

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

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

Fig 20.2 Operating Costs for Garbage Collection per Tonne - Residential



2009	\$81	\$156	\$86	\$87	\$180	\$85	\$237	\$105	\$70	\$142	\$134	\$87	\$117	\$145	N/A	N/A	\$111
2010	\$100	\$157	\$78	\$105	\$160	\$91	\$267	\$94	\$72	\$108	\$166	\$107	\$107	\$93	N/A	N/A	\$106
2011	\$112	\$146	\$81	\$124	\$167	\$92	\$288	\$104	\$80	\$115	\$141	\$100	\$110	\$73	N/A	N/A	\$111

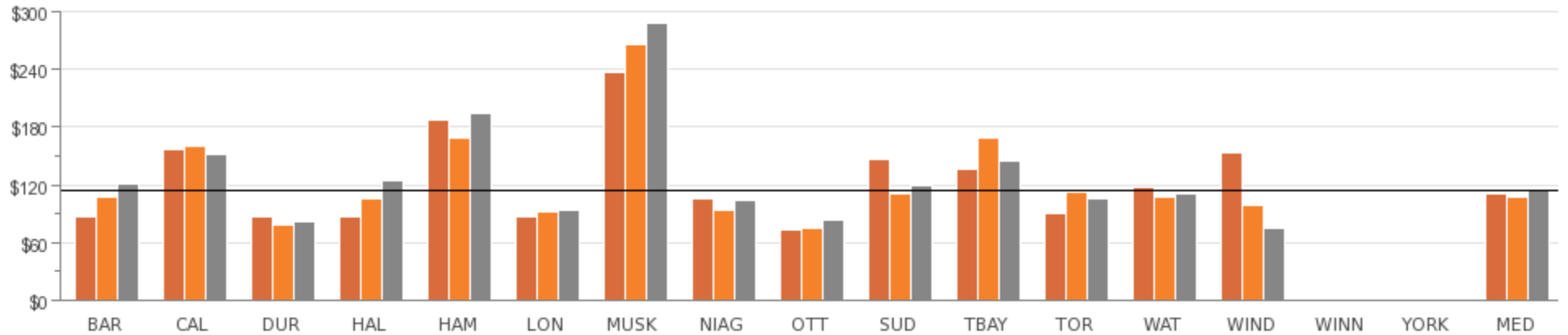
Source: SWST311M (Efficiency)

Note: York Region operates a two-tier system and is not responsible for collection of garbage.

Comment: Revenues fluctuate year to year based on the market price of recyclable materials. ure includes organics, blue box, leaf and yard, municipal hazardous or special waste and other recycle materials such as wood, metal and tires.

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

Fig 20.3 OMBI Total Cost for Garbage Collection per Tonne - Residential (includes amortization)



2009	\$86	\$157	\$86	\$87	\$187	\$86	\$237	\$105	\$73	\$146	\$137	\$90	\$117	\$154	N/A	N/A	\$111
2010	\$107	\$160	\$78	\$105	\$169	\$91	\$267	\$94	\$75	\$111	\$169	\$112	\$107	\$98	N/A	N/A	\$107
2011	\$121	\$152	\$81	\$124	\$195	\$93	\$288	\$104	\$84	\$119	\$144	\$105	\$110	\$75	N/A	N/A	\$115

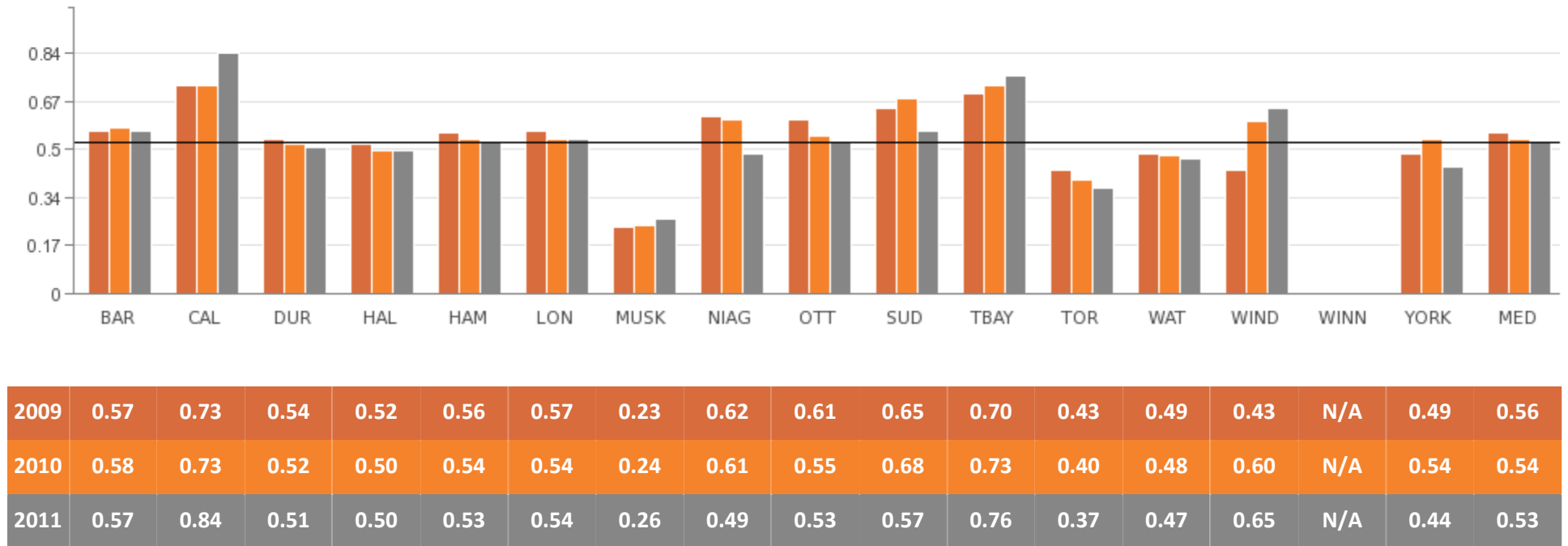
Source: SWST311T (Efficiency)

Note: York Region operates a two-tier system and is not responsible for collection of garbage.

Note: Calculation includes amortization.

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

Fig 20.4 Tonnes of Solid Waste Disposed per Household - Residential



Source: SWST220 (Service Level)

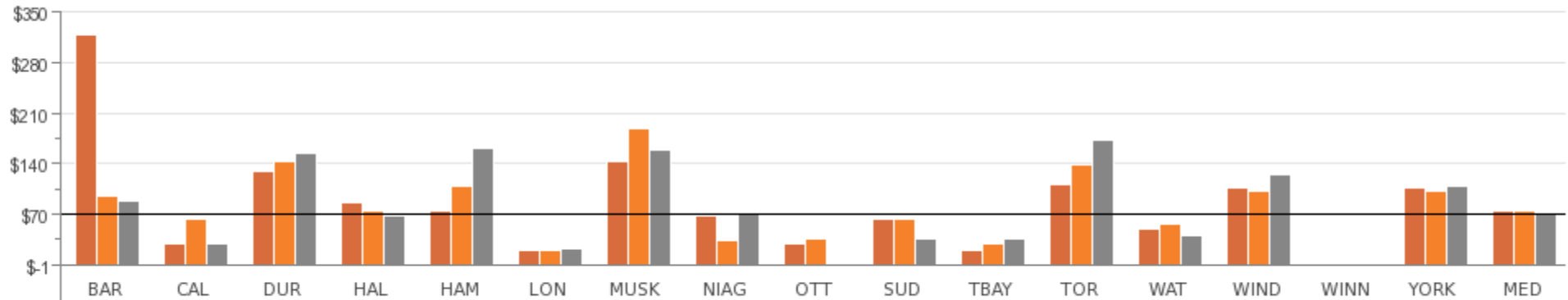
Note: The City of Windsor experienced a municipal work stoppage in 2009, which contributed to a reduction in total tonnes disposed.

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 operating cost to dispose of a tonne of garbage?

Fig 20.5 Operating Costs for Solid Waste Disposal per Tonne - All Streams

s



2009	\$318	\$28	\$129	\$87	\$75	\$19	\$142	\$67	\$29	\$63	\$21	\$111	\$50	\$106	N/A	\$106	\$75
2010	\$96	\$63	\$142	\$75	\$108	\$19	\$188	\$33	\$35	\$64	\$29	\$139	\$56	\$103	N/A	\$102	\$75
2011	\$88	\$30	\$154	\$68	\$161	\$23	\$159	\$69	-\$1	\$36	\$35	\$173	\$41	\$124	N/A	\$110	\$69

Source: SWST325M (Efficiency)

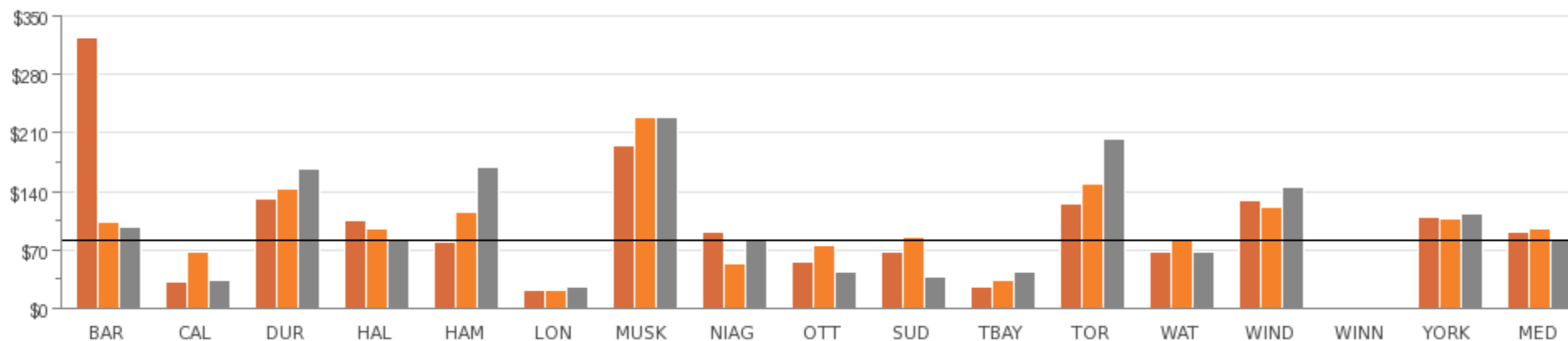
Note: In 2009, Barrie had a large post-closure cost which increased their operating cost.

Comment: Results can be impacted significantly due to the recording of post-closure landfill liability costs. 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 these results.



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

Fig 20.6 OMBI Total Cost for Solid Waste Disposal per Tonne - All Property Classes (includes amortization)



2009	\$325	\$32	\$132	\$105	\$79	\$21	\$194	\$91	\$56	\$67	\$25	\$125	\$67	\$130	N/A	\$109	\$91
2010	\$104	\$67	\$144	\$96	\$115	\$21	\$228	\$53	\$76	\$85	\$33	\$149	\$81	\$121	N/A	\$107	\$96
2011	\$97	\$34	\$166	\$82	\$168	\$25	\$229	\$82	\$43	\$37	\$44	\$202	\$68	\$145	N/A	\$114	\$82

Source: SWST325T (Efficiency)

Note: In 2009, Barrie had a large post-closure cost which increased their operating cost.

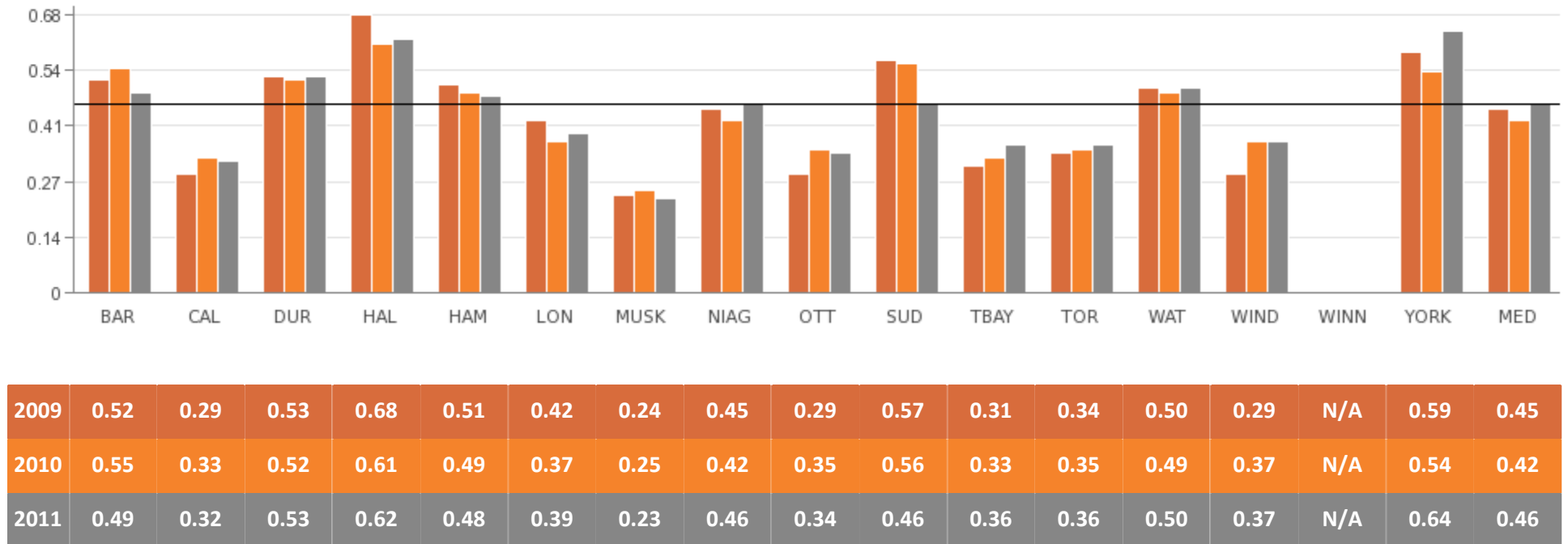
Note: Calculation includes amortization.

Comment: Results can be impacted significantly due to the recording of post-closure landfill liability costs. 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 these results.



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

Fig 20.7 Tonnes Solid Waste Diverted per Household - Residential



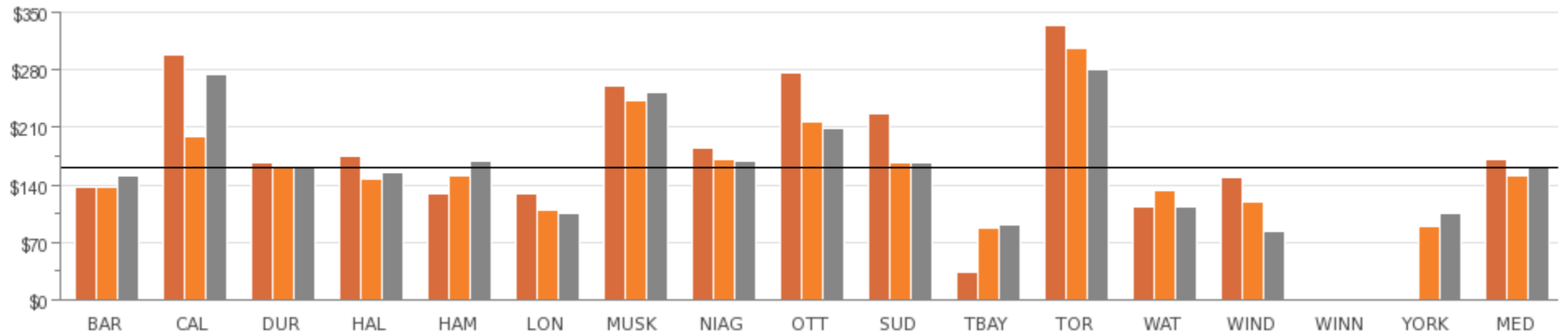
Source: SWST235 (Service Level)

Note: The City of Windsor experienced municipal work stoppages in 2009, which contributed to a reduction in total tonnes diverted.

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 operating cost to divert a tonne of garbage?

Fig 20.8 Operating Costs for Solid Waste Diversion per Tonne - Residential



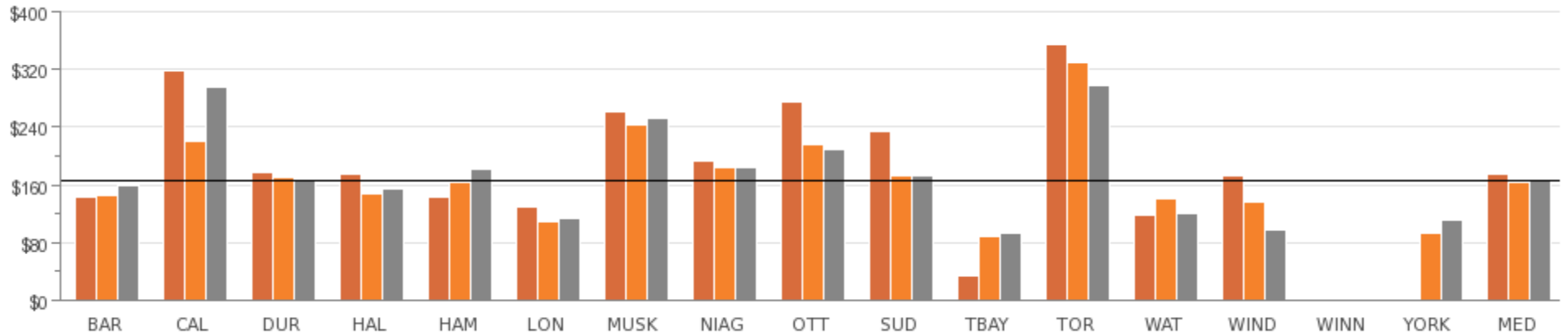
2009	\$137	\$299	\$167	\$174	\$130	\$129	\$261	\$184	\$276	\$227	\$33	\$334	\$114	\$149	N/A	N/A	\$171
2010	\$138	\$199	\$162	\$147	\$151	\$109	\$243	\$171	\$216	\$166	\$88	\$307	\$134	\$119	N/A	\$89	\$151
2011	\$151	\$275	\$160	\$154	\$169	\$106	\$253	\$168	\$208	\$166	\$92	\$281	\$114	\$83	N/A	\$105	\$160

Source: SWST330M (Efficiency)

Comment: Revenues fluctuate year- to-year based on the market price of recyclable materials.

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

Fig 20.9 OMBI Total Cost for Solid Waste Diversion per Tonne - Residential (includes amortization)



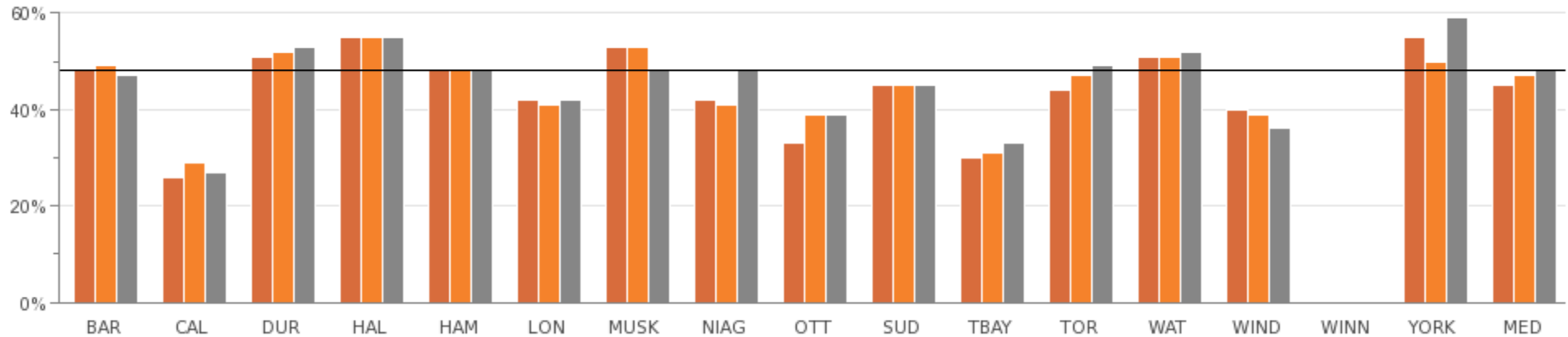
2009	\$143	\$319	\$176	\$174	\$142	\$129	\$261	\$193	\$276	\$234	\$33	\$354	\$117	\$172	N/A	N/A	\$175
2010	\$145	\$220	\$171	\$147	\$163	\$109	\$243	\$184	\$217	\$172	\$88	\$331	\$140	\$135	N/A	\$93	\$163
2011	\$159	\$296	\$166	\$154	\$181	\$113	\$253	\$184	\$208	\$172	\$92	\$299	\$121	\$98	N/A	\$111	\$166

Source: SWST330T (Efficiency)

Note: Calculation includes amortization.

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

Fig 20.10 Percent of Solid Waste Diverted - Residential



2009	48%	26%	51%	55%	48%	42%	53%	42%	33%	45%	30%	44%	51%	40%	N/A	55%	45%
2010	49%	29%	52%	55%	48%	41%	53%	41%	39%	45%	31%	47%	51%	39%	N/A	50%	47%
2011	47%	27%	53%	55%	48%	42%	48%	48%	39%	45%	33%	49%	52%	36%	N/A	59%	48%

Source: SWST105M (Community Impact)

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