

# 34 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 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:** 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).

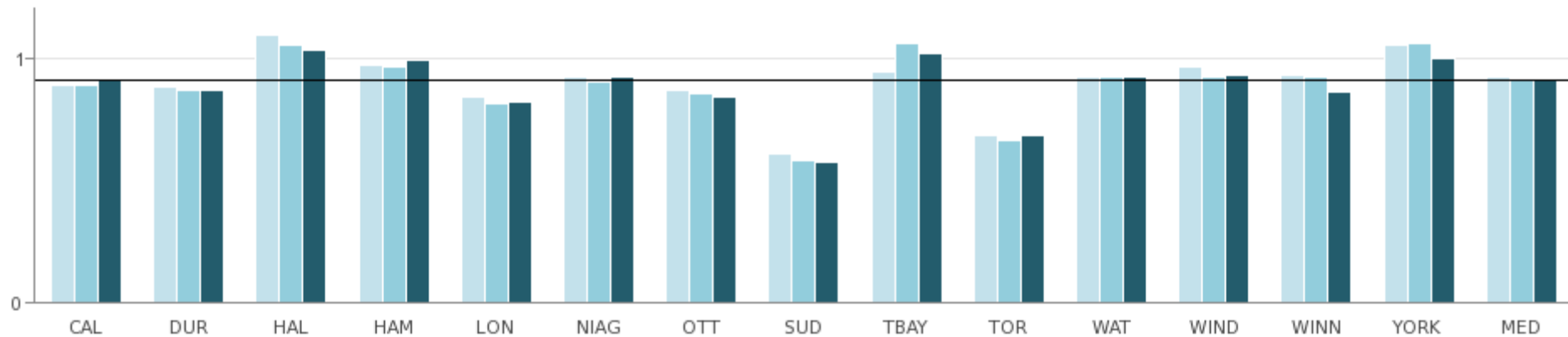
**Infrastructure:** Distance to transfer facilities; accessibility of local landfill sites with available capacity; number of active landfill sites; soil conditions on the landfill site(s) and surrounding sites; and the number of sites under perpetual care.

**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.

# Waste Management

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

Fig 34.1 Tonnes of all Material Collected per Household - Residential



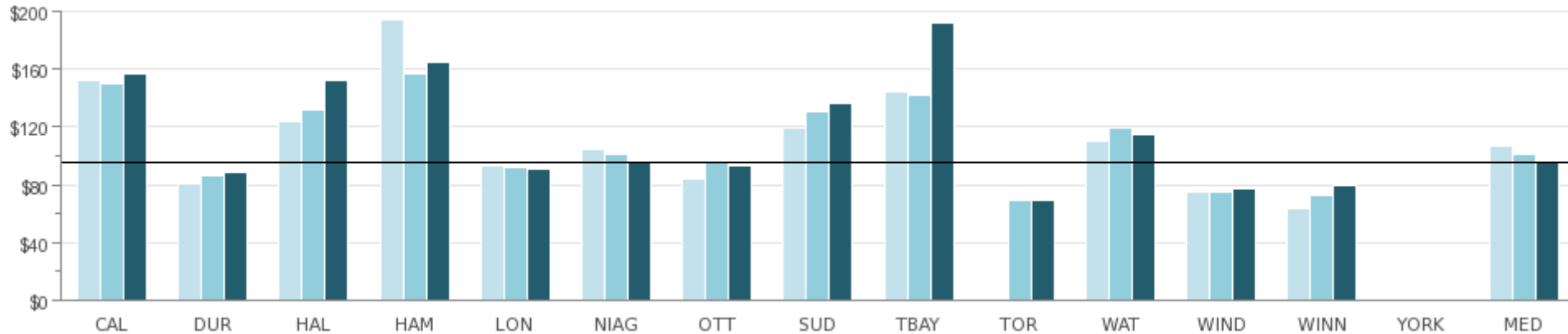
<b>2011</b>	<b>0.89</b>	<b>0.88</b>	<b>1.09</b>	<b>0.97</b>	<b>0.84</b>	<b>0.92</b>	<b>0.87</b>	<b>0.61</b>	<b>0.94</b>	<b>0.68</b>	<b>0.92</b>	<b>0.96</b>	<b>0.93</b>	<b>1.05</b>	<b>0.92</b>
<b>2012</b>	<b>0.89</b>	<b>0.87</b>	<b>1.05</b>	<b>0.96</b>	<b>0.81</b>	<b>0.90</b>	<b>0.85</b>	<b>0.58</b>	<b>1.06</b>	<b>0.66</b>	<b>0.92</b>	<b>0.92</b>	<b>0.92</b>	<b>1.06</b>	<b>0.91</b>
<b>2013</b>	<b>0.91</b>	<b>0.87</b>	<b>1.03</b>	<b>0.99</b>	<b>0.82</b>	<b>0.92</b>	<b>0.84</b>	<b>0.57</b>	<b>1.02</b>	<b>0.68</b>	<b>0.92</b>	<b>0.93</b>	<b>0.86</b>	<b>1.00</b>	<b>0.92</b>

Source: SWST205 (Service Level)

Note: 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.

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

Fig 34.2 OMBI Total Cost for Garbage Collection per Tonne - All Property Classes (includes amortization)



<b>2011</b>	<b>\$152</b>	<b>\$81</b>	<b>\$124</b>	<b>\$195</b>	<b>\$93</b>	<b>\$104</b>	<b>\$84</b>	<b>\$119</b>	<b>\$144</b>		<b>\$110</b>	<b>\$75</b>	<b>\$64</b>		<b>\$107</b>
<b>2012</b>	<b>\$150</b>	<b>\$86</b>	<b>\$132</b>	<b>\$157</b>	<b>\$92</b>	<b>\$101</b>	<b>\$95</b>	<b>\$131</b>	<b>\$142</b>	<b>\$69</b>	<b>\$119</b>	<b>\$75</b>	<b>\$73</b>		<b>\$101</b>
<b>2013</b>	<b>\$157</b>	<b>\$88</b>	<b>\$153</b>	<b>\$165</b>	<b>\$91</b>	<b>\$97</b>	<b>\$93</b>	<b>\$137</b>	<b>\$192</b>	<b>\$69</b>	<b>\$115</b>	<b>\$77</b>	<b>\$80</b>		<b>\$97</b>

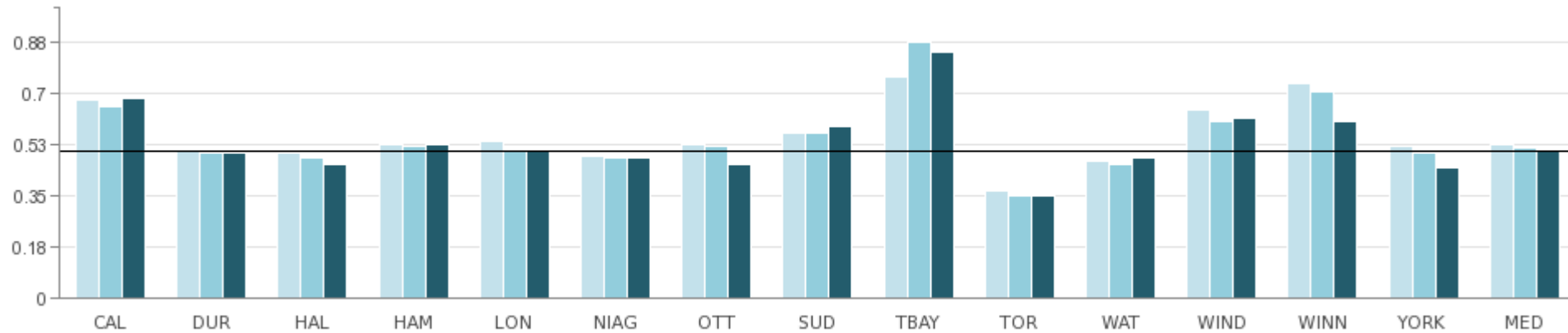
Source: SWST311T (Efficiency)

Note: All Property Classes includes residential and ICI (Institutions, Commercial and Industrial) locations.

Comment: York Region operates a two-tier system and although it is not responsible for curbside collection, the Region is responsible for all processing. Therefore, York is able to report the total tonnes collected (see Fig 34.1 – SWST205); however York does not report the Total Cost.

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

Fig 34.4 Tonnes of Solid Waste Disposed per Household - Residential



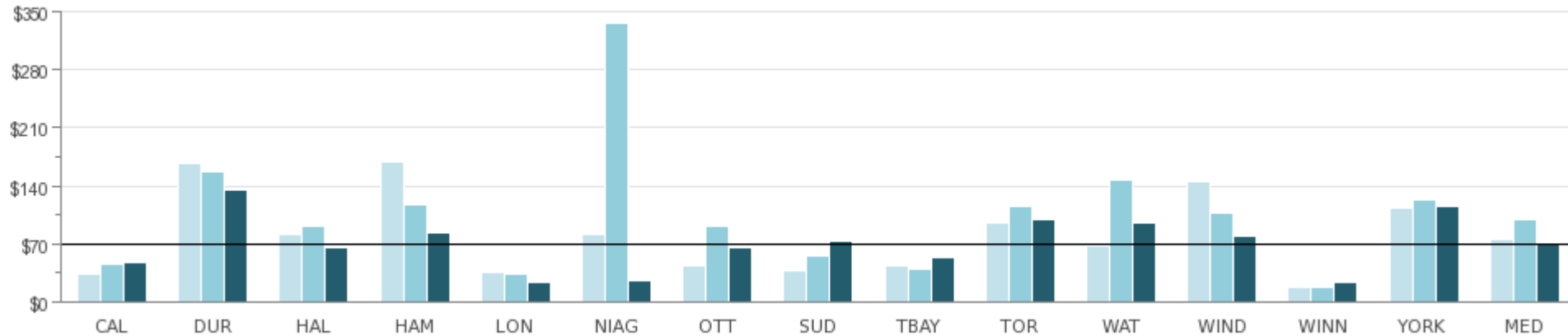
<b>2011</b>	<b>0.68</b>	<b>0.51</b>	<b>0.50</b>	<b>0.53</b>	<b>0.54</b>	<b>0.49</b>	<b>0.53</b>	<b>0.57</b>	<b>0.76</b>	<b>0.37</b>	<b>0.47</b>	<b>0.65</b>	<b>0.74</b>	<b>0.52</b>	<b>0.53</b>
<b>2012</b>	<b>0.66</b>	<b>0.50</b>	<b>0.48</b>	<b>0.52</b>	<b>0.51</b>	<b>0.48</b>	<b>0.52</b>	<b>0.57</b>	<b>0.88</b>	<b>0.35</b>	<b>0.46</b>	<b>0.61</b>	<b>0.71</b>	<b>0.50</b>	<b>0.52</b>
<b>2013</b>	<b>0.69</b>	<b>0.50</b>	<b>0.46</b>	<b>0.53</b>	<b>0.51</b>	<b>0.48</b>	<b>0.46</b>	<b>0.59</b>	<b>0.85</b>	<b>0.35</b>	<b>0.48</b>	<b>0.62</b>	<b>0.61</b>	<b>0.45</b>	<b>0.51</b>

Source: SWST220 (Service Level)

Note: 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.

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

Fig 34.4 OMBI Total Cost for Solid Waste Disposal per Tonne - All Property Classes (includes amortization)



2011	\$34	\$166	\$82	\$168	\$35	\$82	\$43	\$37	\$44	\$95	\$68	\$145	\$18	\$114	\$75
2012	\$46	\$157	\$91	\$118	\$33	\$337	\$91	\$55	\$40	\$116	\$147	\$107	\$18	\$124	\$99
2013	\$47	\$135	\$66	\$83	\$24	\$25	\$65	\$73	\$54	\$100	\$95	\$80	\$24	\$115	\$70

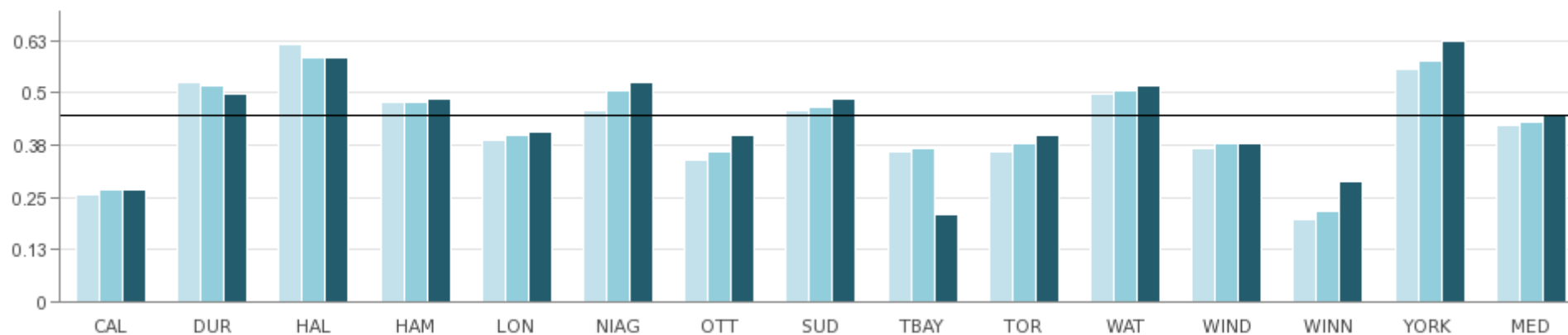
Source: SWST325T (Efficiency)

Note: All Property Classes includes residential and ICI (Institutions, Commercial and Industrial) locations. 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, the cost associated with the incineration of garbage, service agreements, increase in leachate treatment and fluctuating fuel costs also impact the results.

Comment: In 2012, Niagara's result was impacted significantly due to the recording of post-closure landfill liability costs; and this was also a factor in Waterloo's increased cost in 2012.

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

Fig 34.5 Tonnes Solid Waste Diverted per Household - Residential

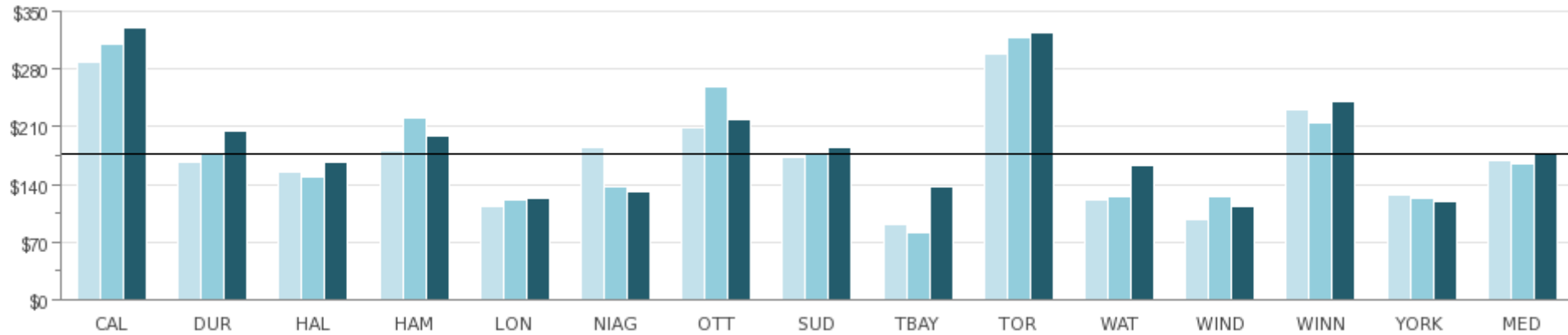


<b>2011</b>	<b>0.26</b>	<b>0.53</b>	<b>0.62</b>	<b>0.48</b>	<b>0.39</b>	<b>0.46</b>	<b>0.34</b>	<b>0.46</b>	<b>0.36</b>	<b>0.36</b>	<b>0.50</b>	<b>0.37</b>	<b>0.20</b>	<b>0.56</b>	<b>0.43</b>
<b>2012</b>	<b>0.27</b>	<b>0.52</b>	<b>0.59</b>	<b>0.48</b>	<b>0.40</b>	<b>0.51</b>	<b>0.36</b>	<b>0.47</b>	<b>0.37</b>	<b>0.38</b>	<b>0.51</b>	<b>0.38</b>	<b>0.22</b>	<b>0.58</b>	<b>0.44</b>
<b>2013</b>	<b>0.27</b>	<b>0.50</b>	<b>0.59</b>	<b>0.49</b>	<b>0.41</b>	<b>0.53</b>	<b>0.40</b>	<b>0.49</b>	<b>0.21</b>	<b>0.40</b>	<b>0.52</b>	<b>0.38</b>	<b>0.29</b>	<b>0.63</b>	<b>0.45</b>

Source: SWST235 (Service Level)

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

Fig 34.6 OMBI Total Cost for Solid Waste Diversion per Tonne - All Property Classes (includes amortization)



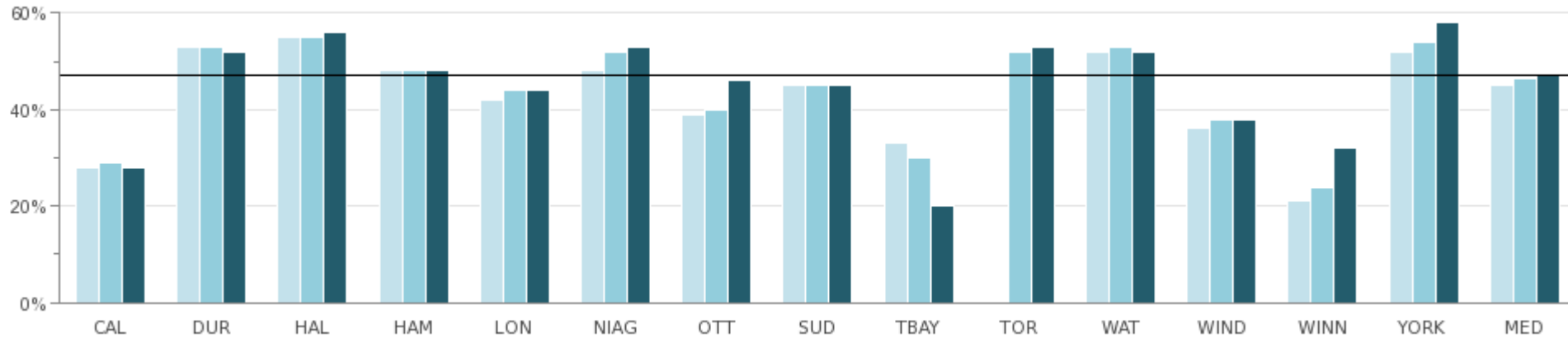
2011	\$289	\$166	\$154	\$181	\$113	\$184	\$208	\$172	\$92	\$299	\$121	\$98	\$231	\$127	\$169
2012	\$310	\$178	\$150	\$220	\$122	\$137	\$258	\$178	\$82	\$318	\$126	\$125	\$214	\$123	\$164
2013	\$330	\$205	\$167	\$199	\$124	\$131	\$218	\$185	\$138	\$325	\$162	\$113	\$240	\$119	\$176

Source: SWST330T (Efficiency)

Note: All Property Classes includes residential and ICI (Institutions, Commercial and Industrial) locations.

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

Fig 34.7 Percent of Solid Waste Diverted - Residential



<b>2011</b>	28%	53%	55%	48%	42%	48%	39%	45%	33%		52%	36%	21%	52%	45%
<b>2012</b>	29%	53%	55%	48%	44%	52%	40%	45%	30%	52%	53%	38%	24%	54%	47%
<b>2013</b>	28%	52%	56%	48%	44%	53%	46%	45%	20%	53%	52%	38%	32%	58%	47%

Source: SWST105M (Community Impact)

Note: The 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, tires.