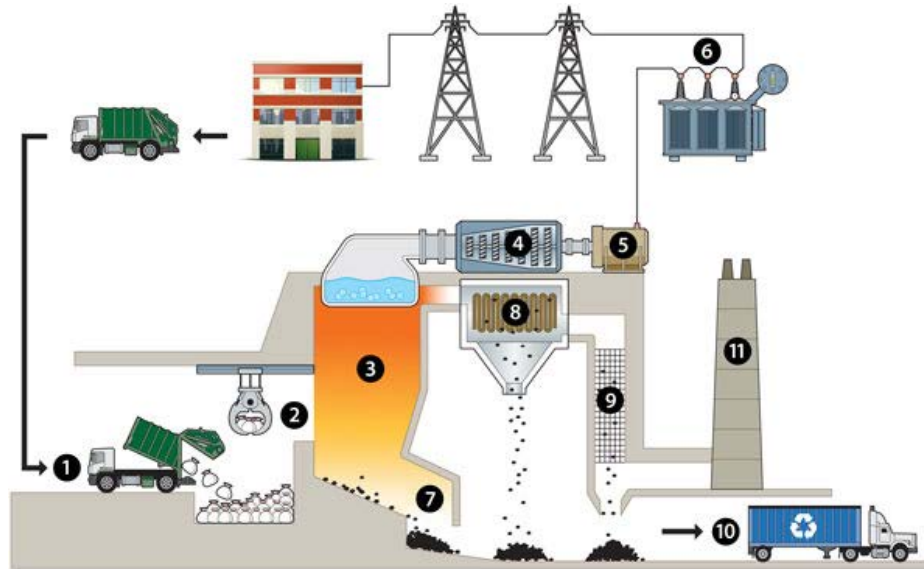


# Residents' views of waste-to-energy (WTE) facilities and waste diversion – Survey Findings #1



Jamie Baxter<sup>1</sup>, Yvonne Ho<sup>1</sup>

<sup>1</sup> Western University [rewarp.uwo.ca](http://rewarp.uwo.ca)

# Research Problems

- transboundary shipment increasingly problematic: international and inter-municipal
- attitudes to WTE facilities unclear
- unfulfilled diversion targets - tension b/w incineration and diversion?



**Transboundary issues:**  
Greenlane Landfill near London/St. Thomas closest to Chippewa and Oneida First Nations [Toronto Star](#)

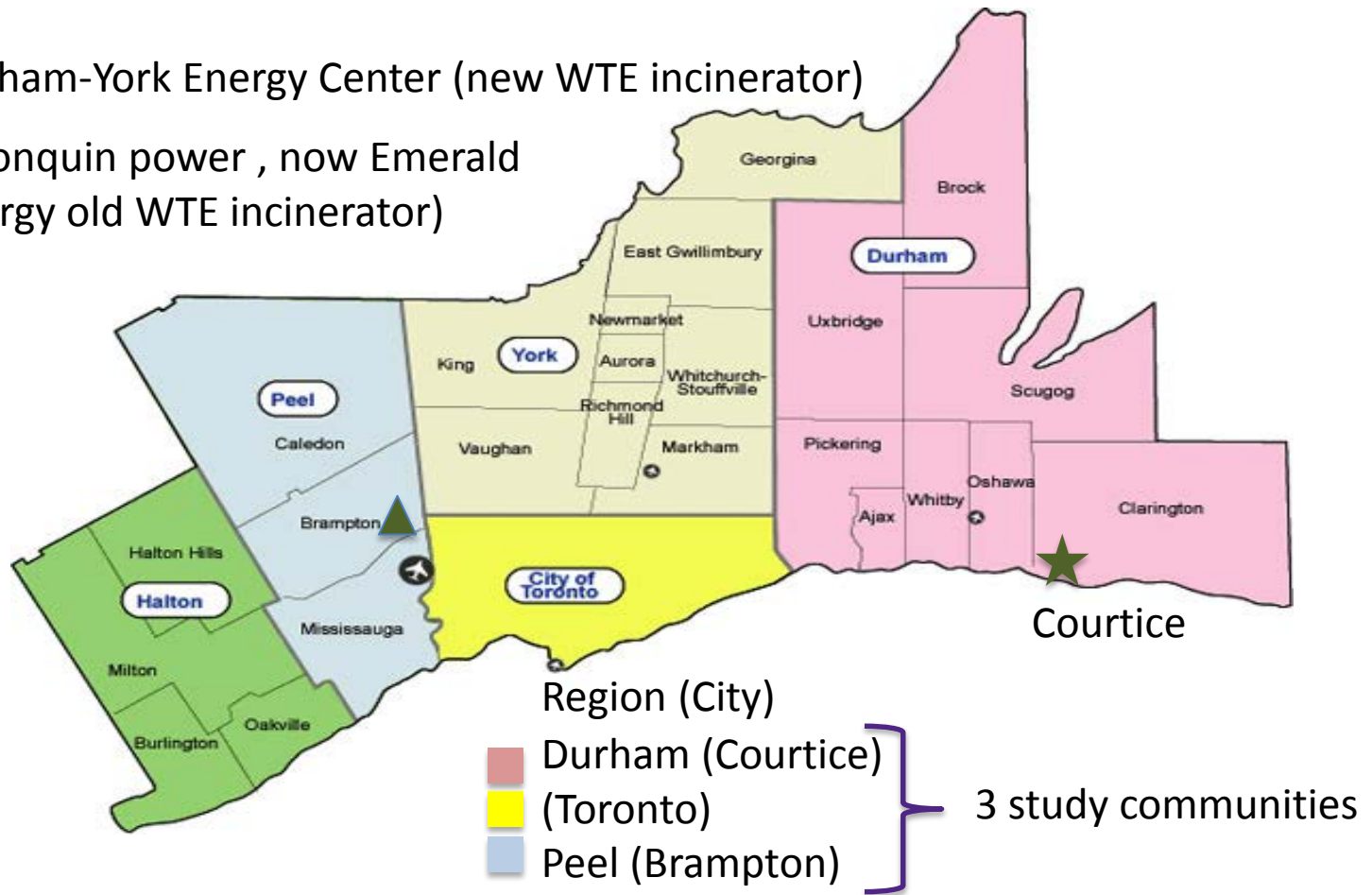
# Hypotheses

Survey Findings Presentations – Division of Hypotheses			
#	Hypothesis	Jamie + Yvonne H. (survey waves)	Jason (survey wave)
1	Preferred destination for discards is WTE	X (1,2,3)	
2	Divert less if sent to WTE	X (1,2)	X (3)
3	Support for WTE facilities predicted by community	X (1,2,3)	
4	Motivation to divert is environmental		X (3)
5	Expressed diversion is less near WTE		X (3)

# Study sites

★ Durham-York Energy Center (new WTE incinerator)

▲ Algonquin power , now Emerald Energy old WTE incinerator)

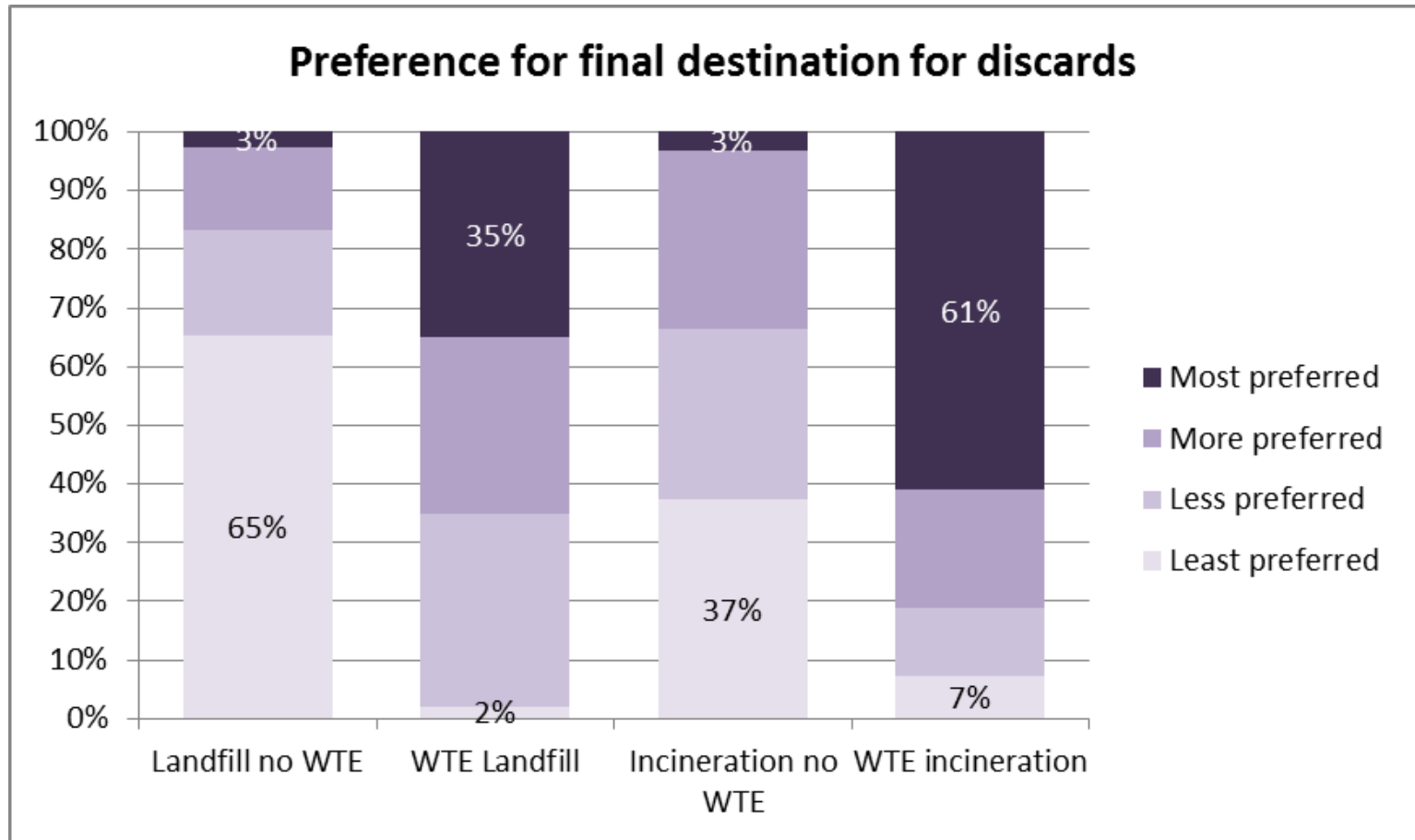


# Survey Methodology

Table 1: Sample for survey in 2 waves – N = 217

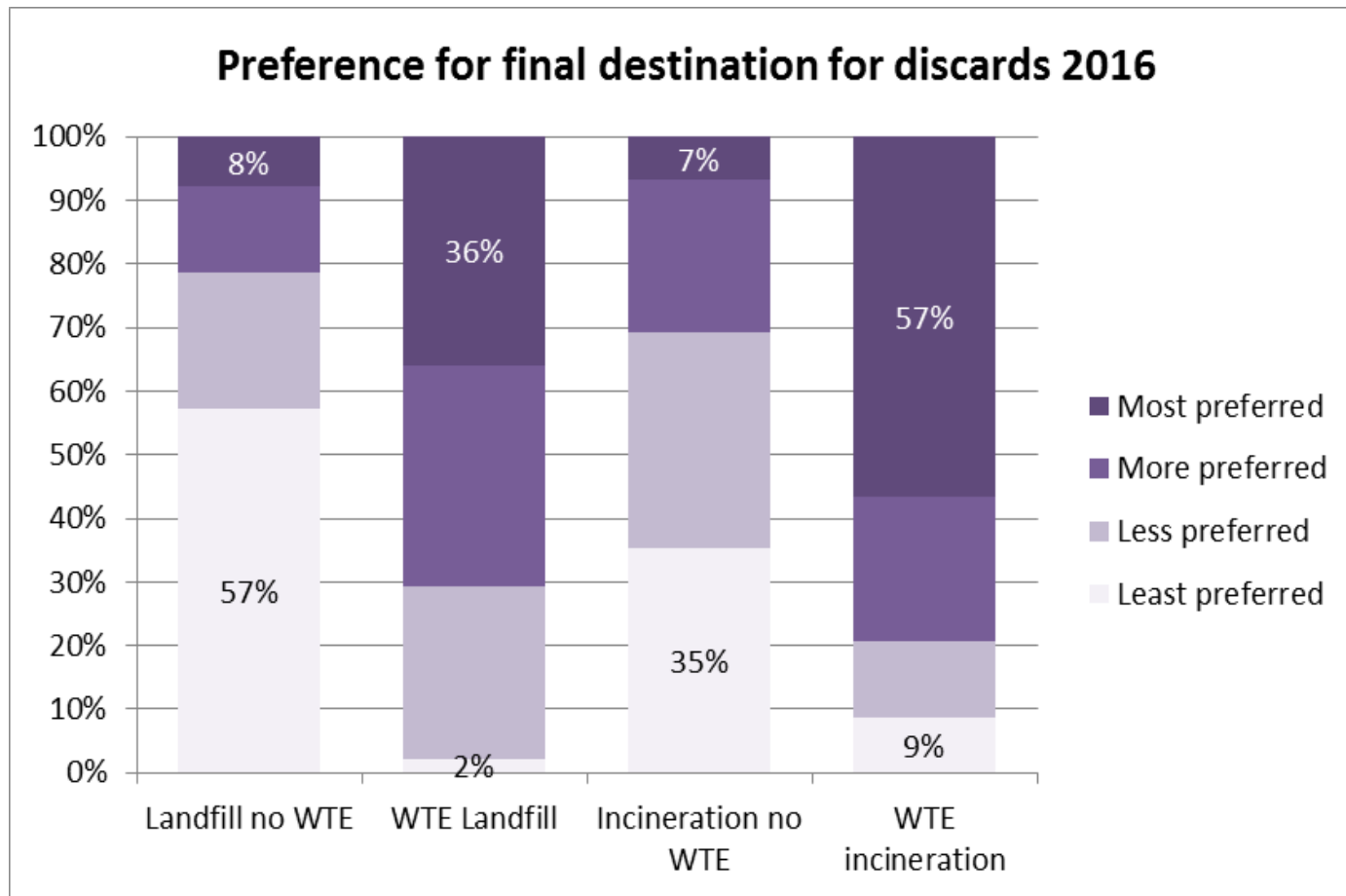
Community	Months 2014	WTE	<i>n</i>	♀	Resp. Rate
Wave 1 – Survey – random cluster mail out mail back (n=110)					
Durham, Peel, Toronto	Feb-Mar	mixed	110	57%	12%
Wave 2 – Survey – random cluster mail out mail back (n=107)					
Durham (Courtice)	May-Jun	yes	34	71%	12%
Peel (Brampton)	May-Jun	yes	28	62%	10%
Toronto	May-Jun	no	45	56%	16%

# Findings – H1 Prefer WTE (Waves 1 and 2) ?



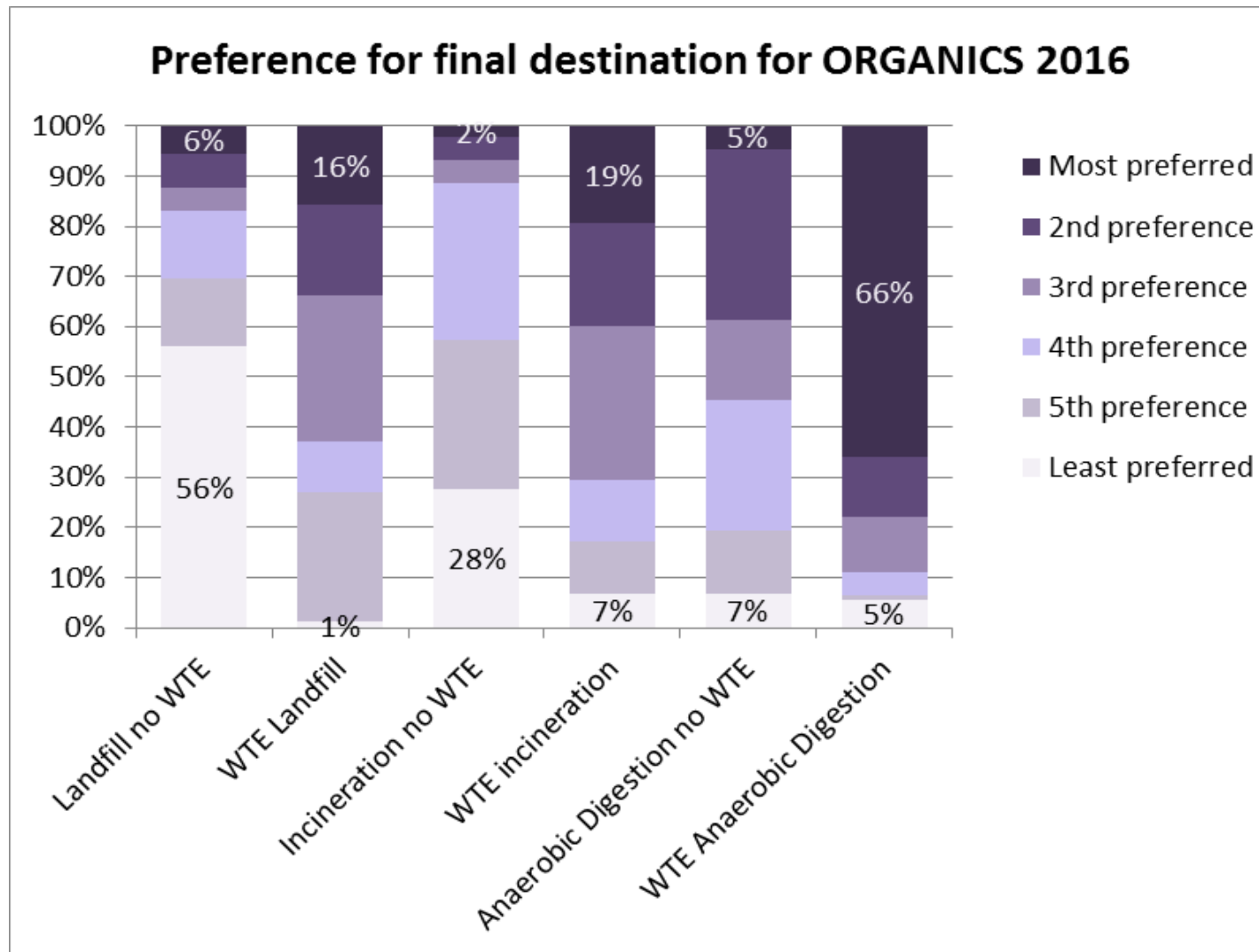
*“Rank in order your preferences for the following disposal methods as the final destination for waste in your municipality:”*

# Findings – H1 Prefer WTE (Wave 3)?



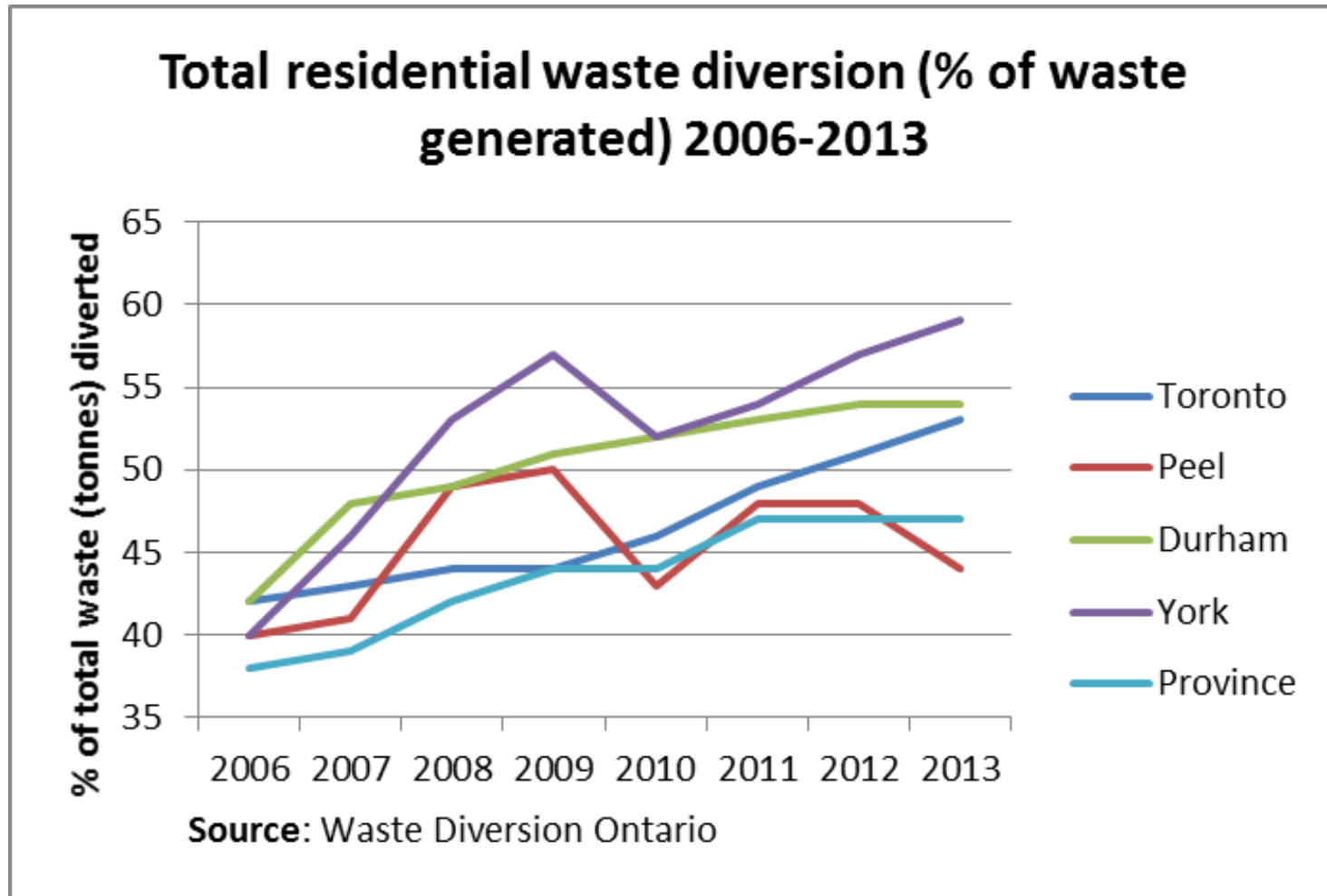
*“Rank in order your preferences for the following disposal methods as the final destination for waste in your municipality:”*

# Findings – H1 Prefer WTE (organics) (Wave 3)?



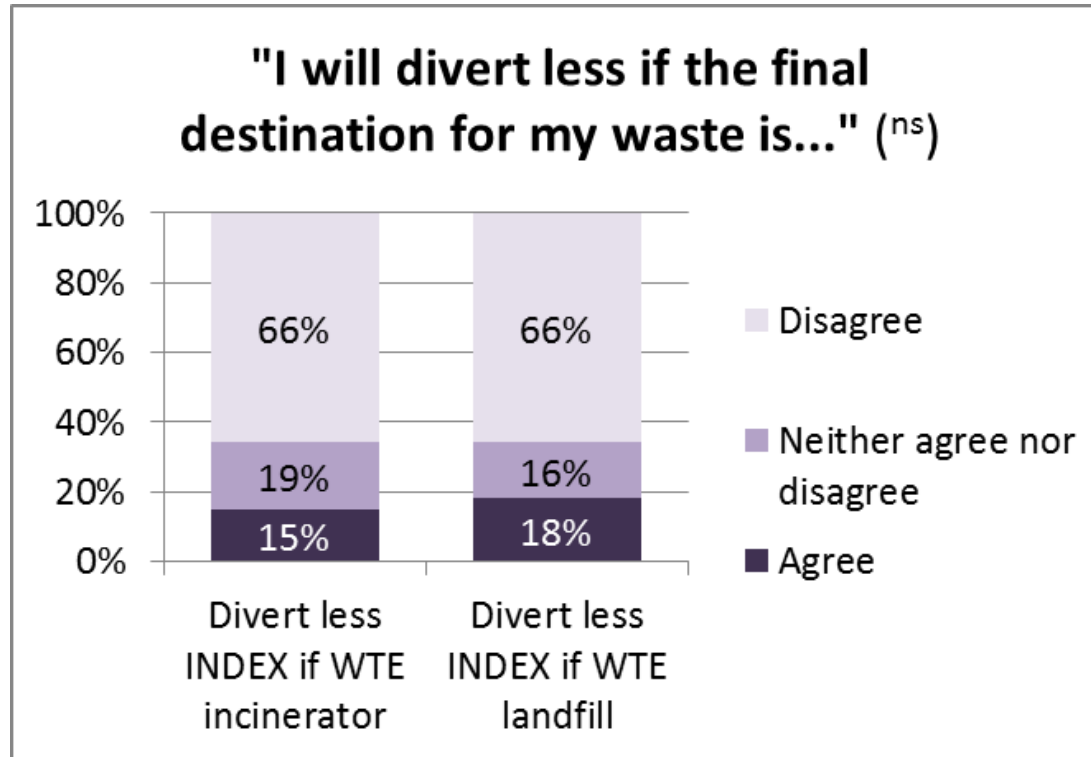


# Findings – H2 Divert less?



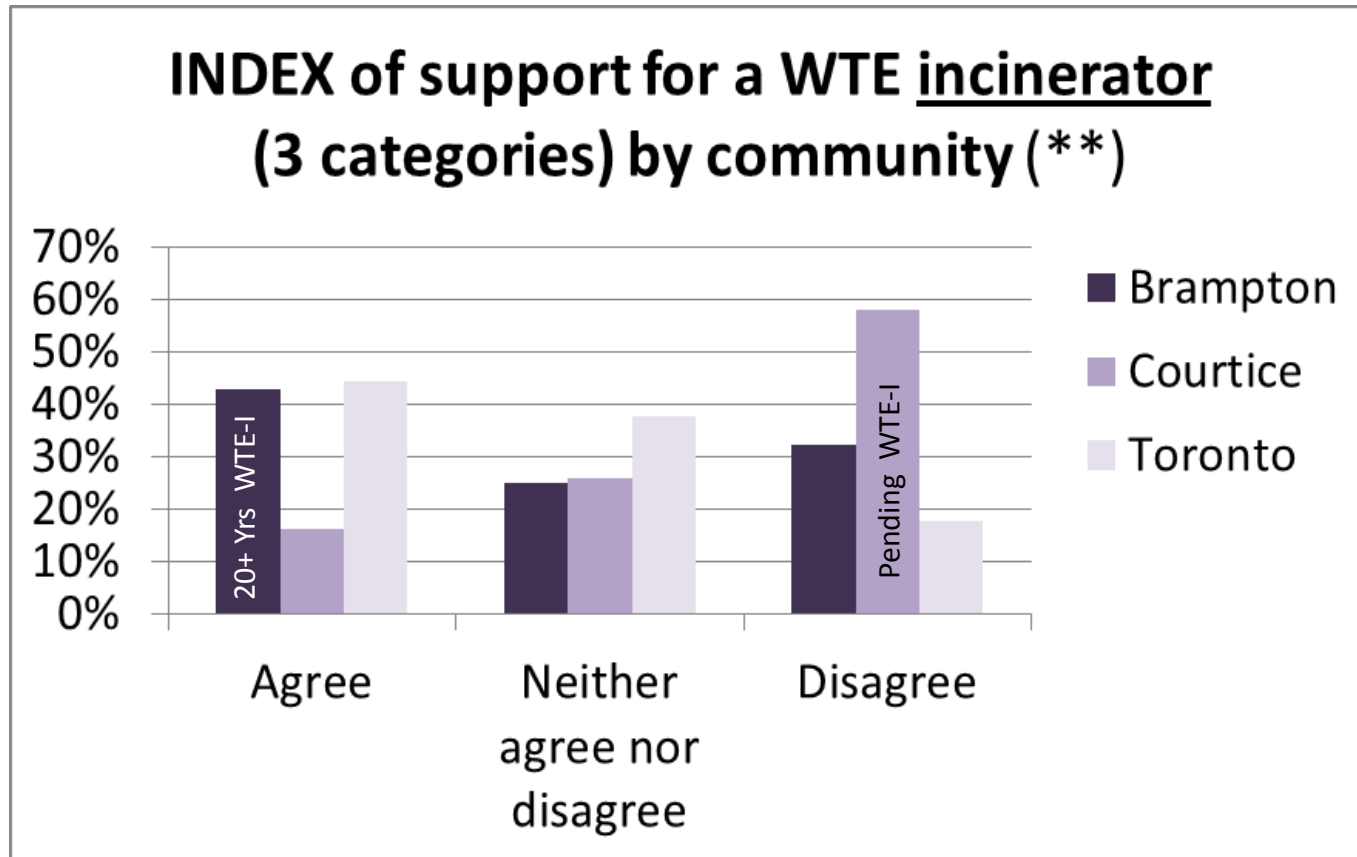
# Findings – H2 Divert less (4-item) Index?

small %s have profound impact?



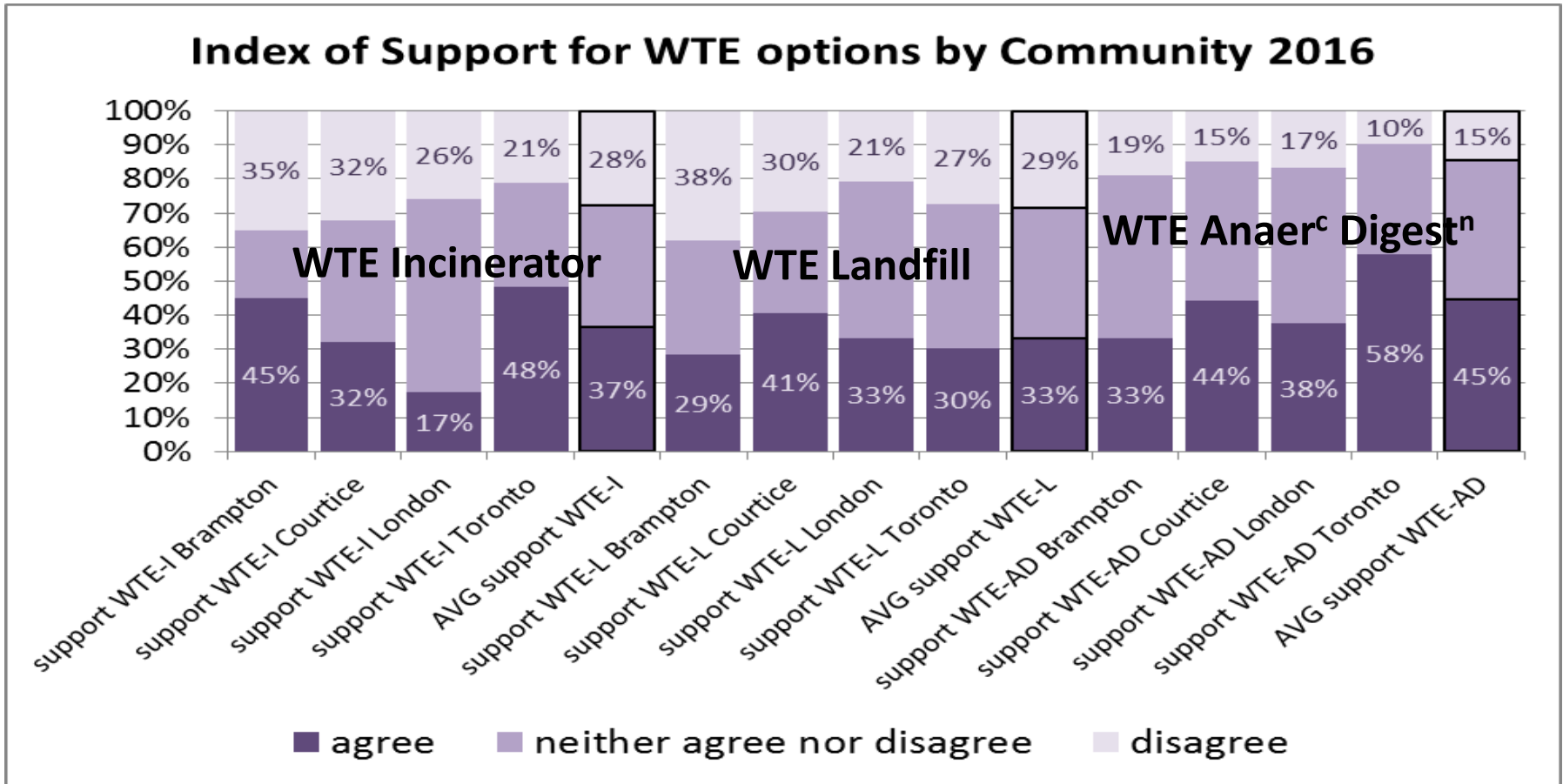
*e.g., "If I know my waste that ends up in landfills will be used to produce energy (e.g., electricity) I would put fewer **paper** products that are recyclable in the recycling bin (e.g., blue bin)"*

# Findings – H3 Support by place Wave 2?



<sup>1</sup> INDEX support WTE-I = 4 items: favour **hosting** municipal facility + **vote** in favour + would live in **vicinity** + WTE is **key element** for handling local waste

# Findings – H3 Support by place Wave 3?



<sup>1</sup> INDEX support WTE-I = 4 items: favour **hosting** municipal facility + **vote** in favour + would live in **vicinity** + WTE is **key element** for handling local waste

# Findings – H3 Support and place?

Linear Regression Model of Support (INDEX) for WTE Incineration (n=107)		
(only variables significant in bi-variate analysis)	0.64 <sup>**1</sup>	B <sup>2</sup>
Constant		13.00 <sup>**3</sup>
Courtice (as dummy)		-0.17 <sup>*</sup>
Incinerators pose health risks to residents		-0.29 <sup>*</sup>
Pollutants from incinerators do irreversible environmental damage		-0.23 <sup>(ns)</sup>
Incinerators release unpleasant odours		-0.02 <sup>(ns)</sup>
Incinerators take away from recycling/composting jobs		-0.02 <sup>(ns)</sup>
Incinerators decrease property values		-0.03 <sup>(ns)</sup>
Confident that authorities monitor emissions well		0.13 <sup>(ns)</sup>
Tradeoff - WTE benefit offsets negative impacts		0.08 <sup>(ns)</sup>
Incinerators contribute significantly to local job market		0.18 <sup>*</sup>
Environmental problems will be resolved through technology		-0.03 <sup>(ns)</sup>
Gender (as dummy women=1)		-0.14 <sup>*</sup>

<sup>1</sup> Adjusted R<sup>2</sup>, <sup>2</sup> Standardized regression coefficient, <sup>3</sup> \*\* = p<0.01 \* = p<0.05 ns = not significant

# Findings – H3 Support and place?

Linear Regression Model of Support (INDEX) for WTE Incineration (n=217)		
(only variables significant in bi-variate analysis)	0.64 <sup>**1</sup>	B <sup>2</sup>
Constant		12.77 <sup>**3</sup>
Incinerators pose health risks to residents		-0.29 <sup>**</sup>
Pollutants from incinerators do irreversible environmental damage		-0.22 <sup>**</sup>
Incinerators release unpleasant odours		0.02 <sup>(ns)</sup>
Incinerators take away from recycling/composting jobs		-0.04 <sup>(ns)</sup>
Incinerators decrease property values		-0.14 <sup>*</sup>
Confident that authorities monitor emissions well		0.21 <sup>**</sup>
Tradeoff - WTE benefit offsets negative impacts		0.07 <sup>(ns)</sup>
Incinerators contribute significantly to local job market		0.14 <sup>**</sup>
We do not need to worry about environmental problems because they will be resolved through technology		0.03 <sup>(ns)</sup>
Gender (as dummy women=1)		-0.13 <sup>**</sup>

<sup>1</sup> Adjusted R<sup>2</sup>, <sup>2</sup> Standardized regression coefficient, <sup>3</sup> \*\* = p<0.01 \* = p<0.05 ns = not significant

# Summary/Conclusions

Hypothesis		Support
<b>H1:</b>	WTE incineration preferred over WTE landfill, and non-WTE options	Yes (x2)
<b>H2:</b>	Residents less inclined to divert if sent to a WTE facility	Yes
<b>H3:</b>	Support for WTE facilities predicted by community (re: existing waste facilities)	Somewhat



Toronto's Greenbin facility currently flares biogas

# Implications

- Relatively strong mandate for WTE –in GTA but lingering concerns
- Challenge: sustain/increase diversion in WTE regime
- Place matters so cautious re: one-size-fits-all policies?



Landfill gas collection system at Walker Environmental in Niagara is used for WTE