

# METRO VANCOUVER SOLID WASTE OPTIONS

# Current Disposal

- Cache Creek Landfill
  - Scheduled to close in 2012
  - EA approved by the Province
- Burnaby Incinerator
- Vancouver Landfill



# Increasing Diversion

- Provincial EPR Programs
- Mandatory Recycling
  - Include multi-family and commercial buildings
- Establish Eco-centers
- There are practical limits





# Recycling Rates Worldwide

1.	Canada	22%
2.	USA	34%
3.	Metro Vancouver	55%
4.	Belgium	59%
5.	The Netherlands	60%
6.	Germany	65%
7.	Austria	70%

(Eurostat, March 19, 2010)

Source: Metro Vancouver

# Disposal Options

- Landfill
- Mechanical Biological Treatment
- Incineration

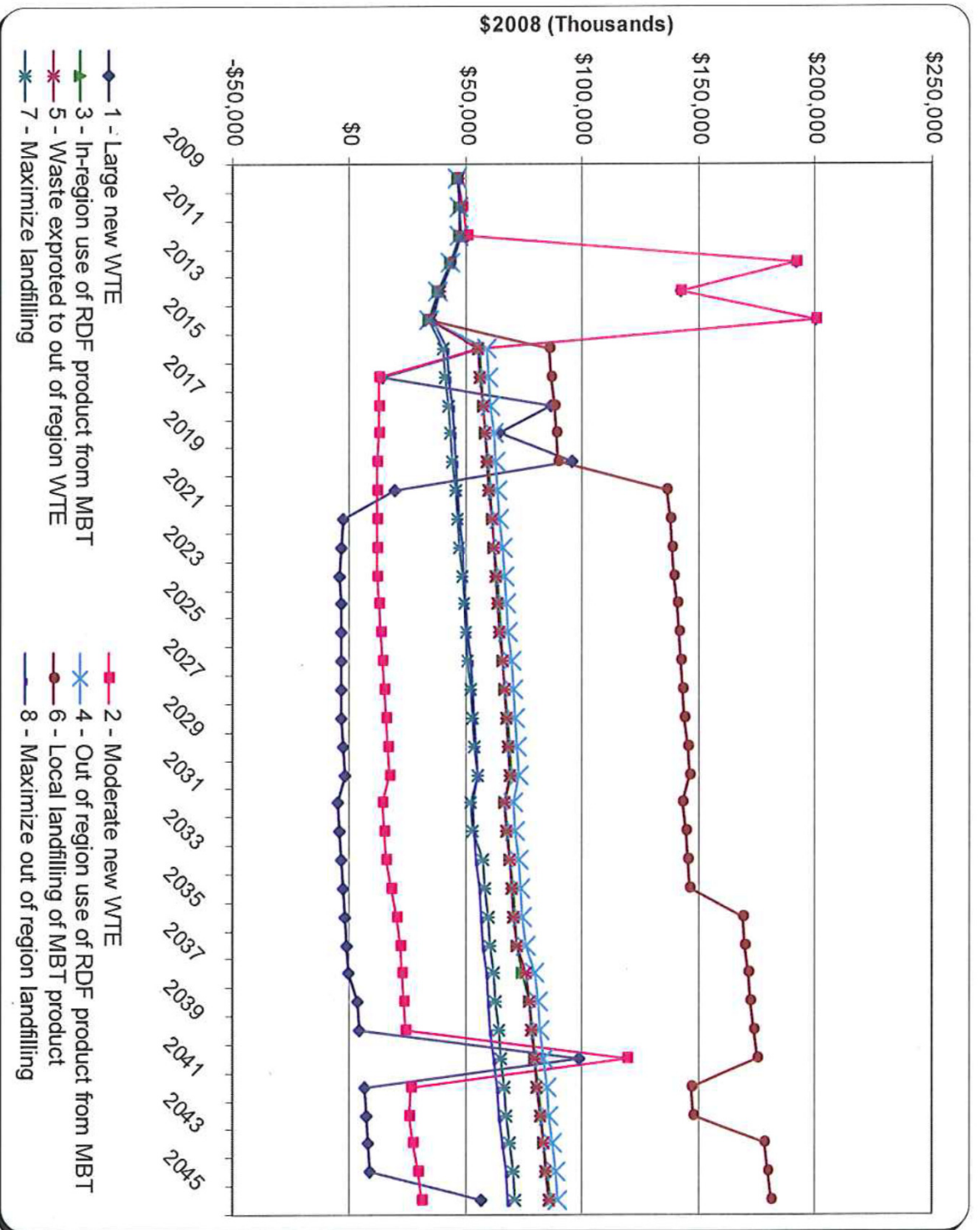


# Selected Option

- Incineration
  - Lowest net air emissions
  - Lowest net costs
  - Greatest energy generation



Figure 64. Annual Real Cash Flows under Baseline Conditions (2008 dollars)



Source: Metro Vancouver

# ISSUES

- Cost Estimates
- Emissions Limits
- Emissions Impacts



# Cost

- Durham DBO Contract
  - 140,000 T/yr
  - \$250 million capital cost
  - \$14.6 million annual operating cost
  - \$8 million revenue from electricity

# Cost

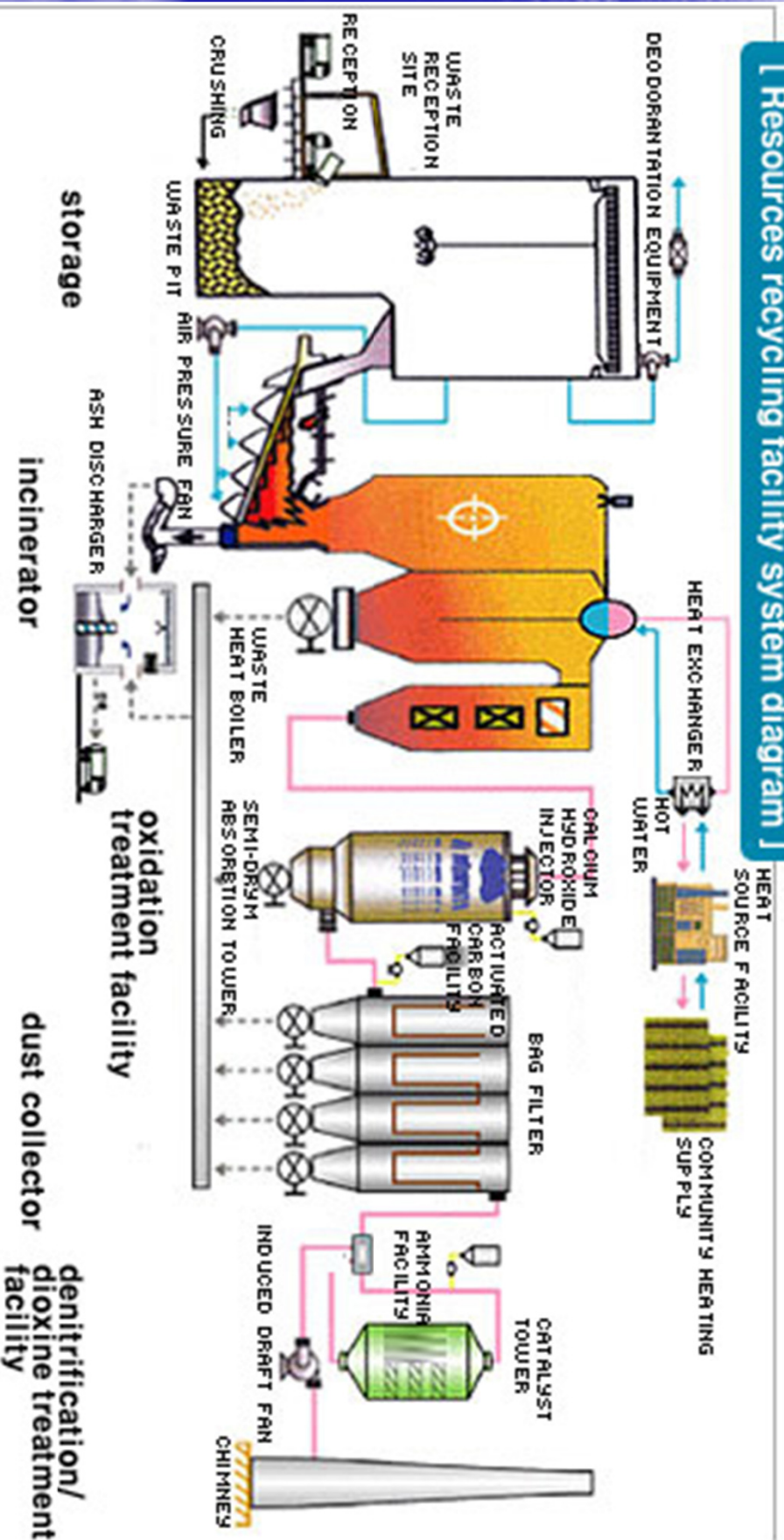
	Durham	Metro Van
Size (T/yr)	140,000	250,000
Capital Cost	\$250 million	\$235 million
Operating Cost	\$14.6 million	\$9.4 million
Capital (\$/T)	1788	940
Operating (\$/T)	105	40

# KPMG

- Capital costs for the WTE options appear to be low. AECOM’s calculations are based on a capital cost of **\$940 per tonne** of processing capacity.
- The June 27, 2009 presentation by the Canadian Energy-from-Waste Coalition to the Metro Vancouver Council-of-Councils estimates **\$1,330 to \$2,000 /T**
- Our research of the costs and comparability of other WTE facilities is not complete, but these references suggest the AECOM capital cost estimates **may be low by as much as 50% to over 100%.**

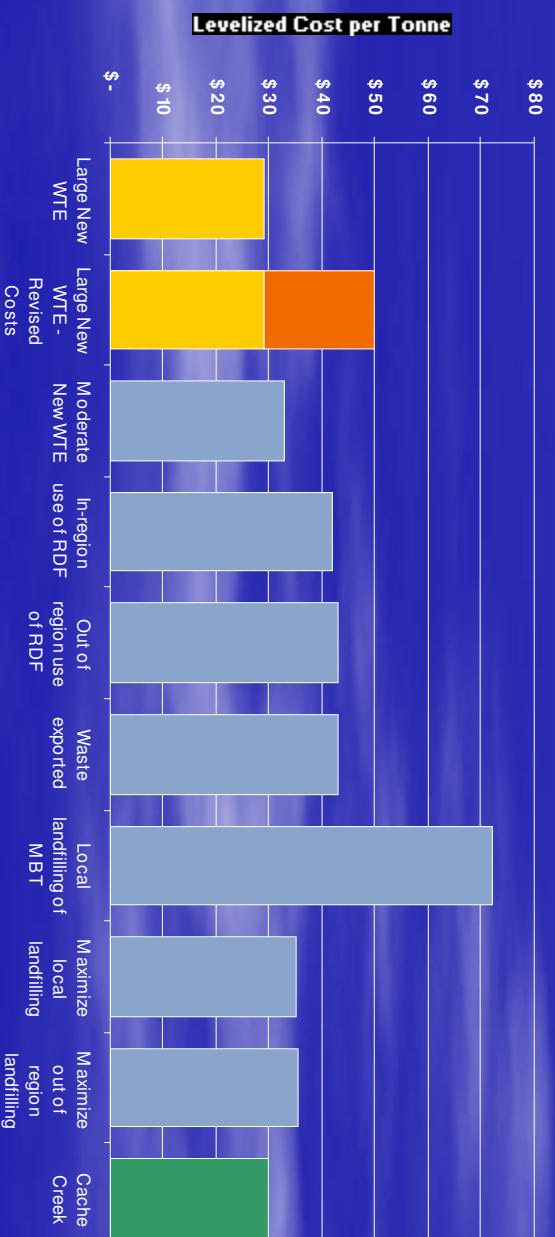


# [ Resources recycling facility system diagram ]



# KPMG

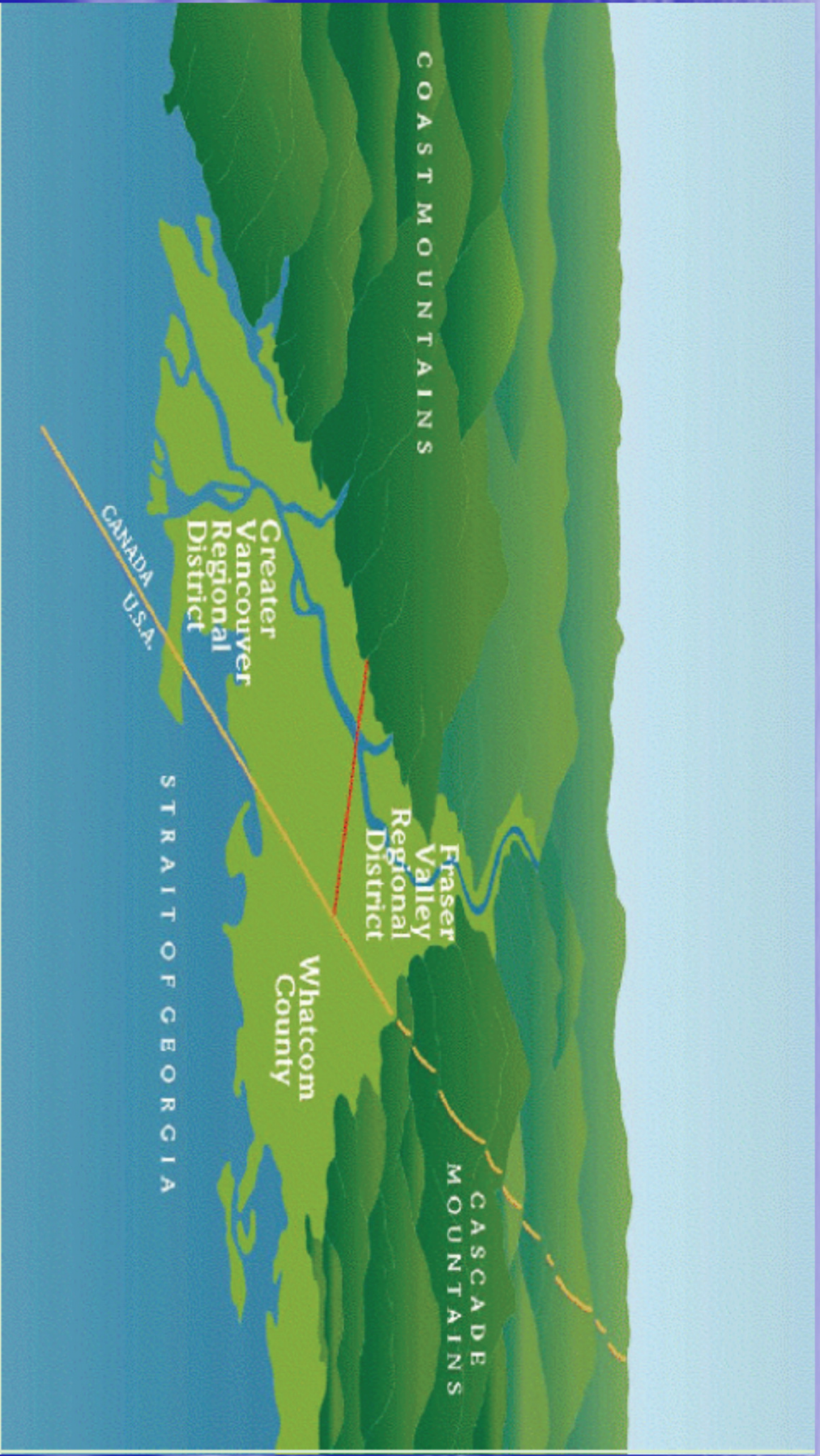
- As suggested on the previous pages, capital and operating cost estimates in the AECOM report may be significantly low. If both the capital and operating costs for a new large WTE facility are 50% higher, the ranking of alternatives changes significantly.



# Air Emissions Limits

Pollutant	EU	Ontario	BC
Total Particulate Matter	9	9	20
Sulfur Dioxide (SO <sub>2</sub> )	46	35	200
Hydrogen Chloride (HCL)	9	9	55
Hydrogen Fluoride		0.92	3
Nitrogen Oxides (NO <sub>x</sub> )	183	180	350
Carbon Monoxide (CO)	46	45	55
Mercury	46	15	200
Cadmium		7	100
Lead		50	50
Dioxins	0.092	0.06	0.5





# Air Emissions

- Paris Appeal
- Dr. McKendry – UBC Atmospheric Science Program
- Dr. Steyn – UBC Meteorology



# Douw Steyn

- From an air quality perspective alone, we should not incinerate, but should do all we can to reduce emissions of pollutants and their precursors in the LFV since it is already intolerably polluted.



# SUMMARY

- Costs may be significantly underestimated
- Air emission standards not defined
- Considerable debate about air pollution impacts

# Metro Vancouver Presentation

June 16, 2010

7 – 10 p.m.

Best Western Rainbow Country Inn

# Websites

- [www.metrovancouver.org](http://www.metrovancouver.org)
- [www.pembina.org](http://www.pembina.org)
- [www.artac.info](http://www.artac.info)



# QUESTIONS