



**Metro Vancouver**

# **Waste-to-Energy Facility**

**February 1, 2008**

# Metro Vancouver

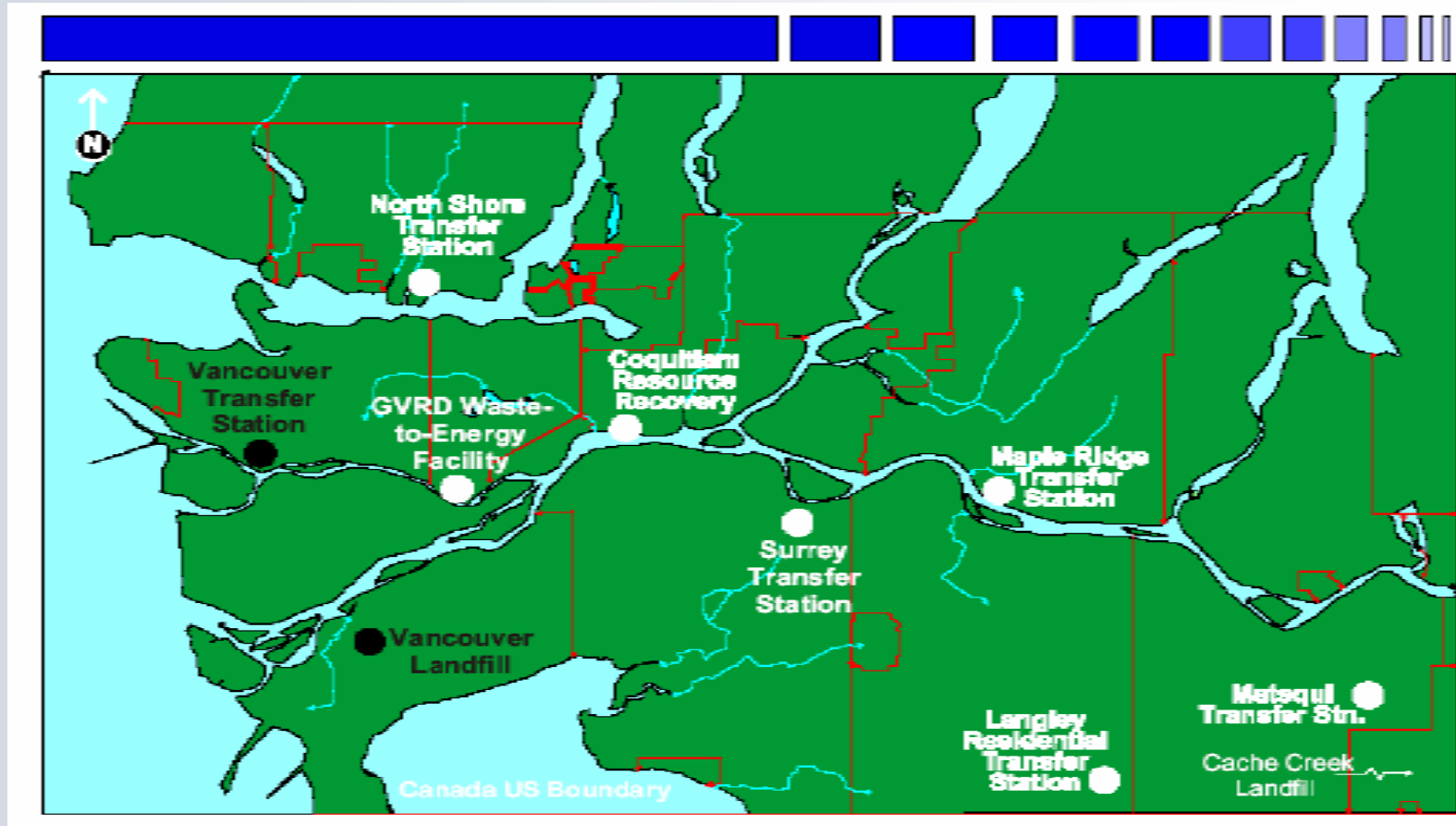
- Met with Councillor J. Marvin Hunt, Chair, Waste Management Committee; Councillor Dan Johnston, City of Burnaby and Ken Carrusca and Tovia Allas, senior staff from Metro Vancouver.



# Metro Vancouver

- Metro Vancouver is an upper tier government, responsible for waste disposal (not collection)
- Metro Vancouver was intending to expand Cache Creek Landfill (380km)
- Landfill MSW 840,000 +/-yr
- First Nations issues
- Now looking for 3 new EFW sites in Metro Vancouver

# The Metro Vancouver Waste-to-Energy Facility (WTEF) is part of an integrated Waste Management System



# Centrally located in the Metro Vancouver area





# Metro Vancouver

- 280,000 tonnes/year
- 93% availability
- \$65/tonne tipping fee (2007)



# Metro Vancouver

- Commercial operation started in 1988
- State-of-the-art combustion and air pollution control used



# Metro Vancouver

- Over 50% of the facility is dedicated to air pollution control
- Processed over 4.6 million tonnes of municipal solid waste since start-up on a 5 acre site





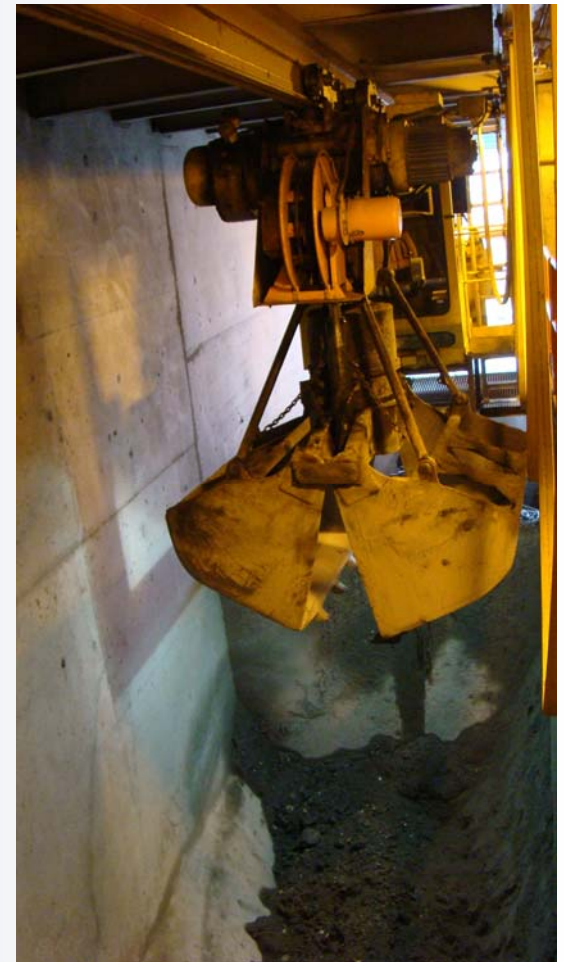
# Eco-Efficient Location

- Originally sited in 1985 to utilize steam through sales to a recycle paper mill
- More interest in district heating on a go forward basis
- About 35% of steam produced is sold
- 115 MWh electricity produced
- 6¢ per kWh

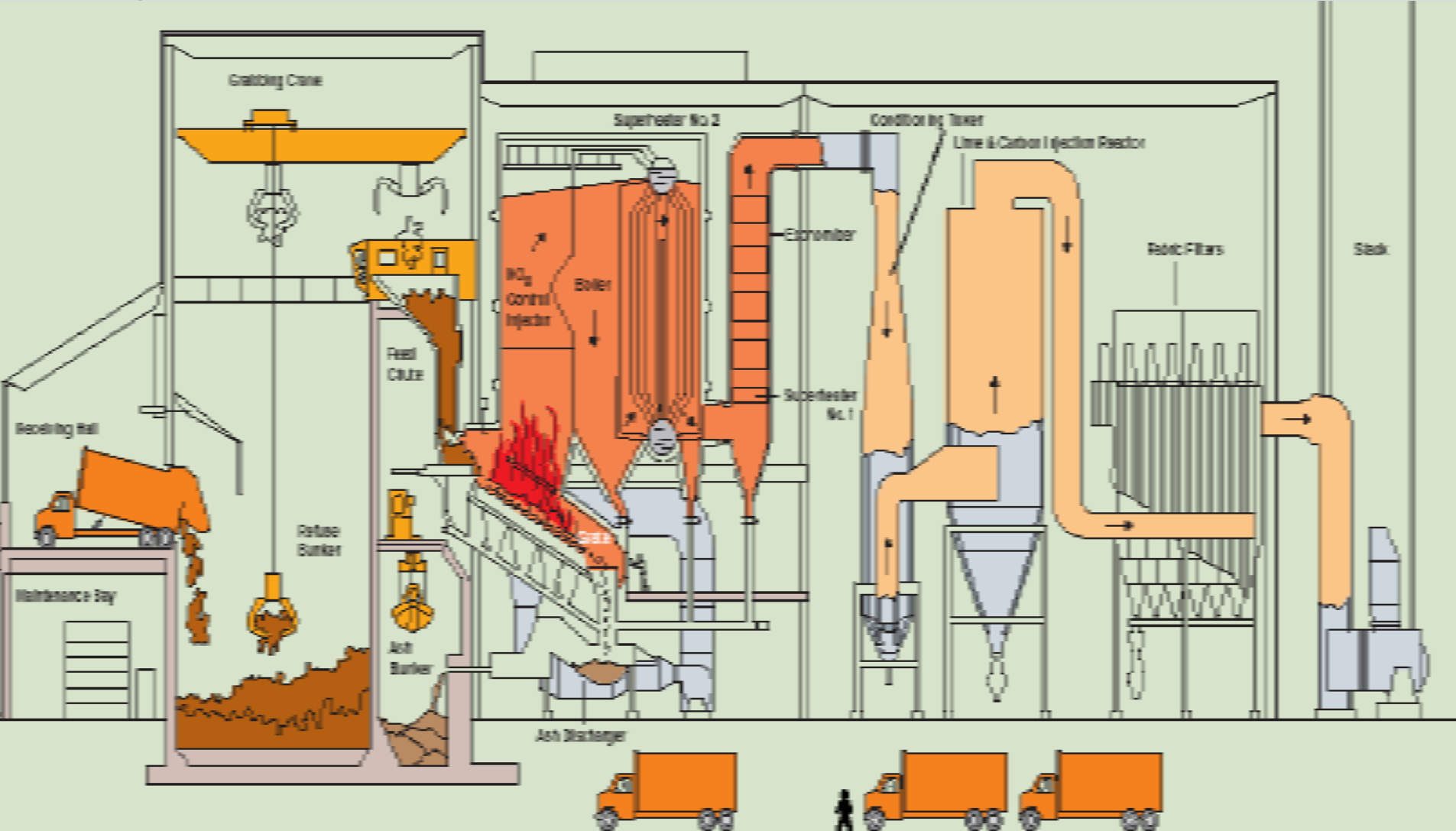


# Eco-Efficient Location

- Central location - minimizes haul length
- Future potential for further eco-efficiency



# Schematic of the Facility



# Focus on continuous improvement

## Operational Examples

ISO 14001 certification – 1999 and ongoing

Control system upgrade – 1999

Waste Composition Studies – 1998/2001/2004/2007

Boiler Modifications – 2003

Turbogenerator Installation – 2003

Heat Recovery Upgrades - 2006



## Environmental Examples

Carbon Injection System – 1993/2005

Ammonia Injection System – 1996

Flyash Stabilization System – 1999

Zero Liquid Discharge – 2001

Admin Building Upgrade - 2007



# Air Emissions



- Continuous air emissions monitoring
- Within all regulated limits
- Small percentage of lower mainland emissions (highest is NO<sub>x</sub> at 1%)
- One of the cleanest facilities of its kind

# Greenhouse Gases (GHG)



- All municipal solid waste disposal methods have GHG emissions, including composting
- 5th largest point source of GHG emissions in Fraser Valley airshed
- Offsets from energy recovery are greater than emissions

# Solid and Liquid Residues

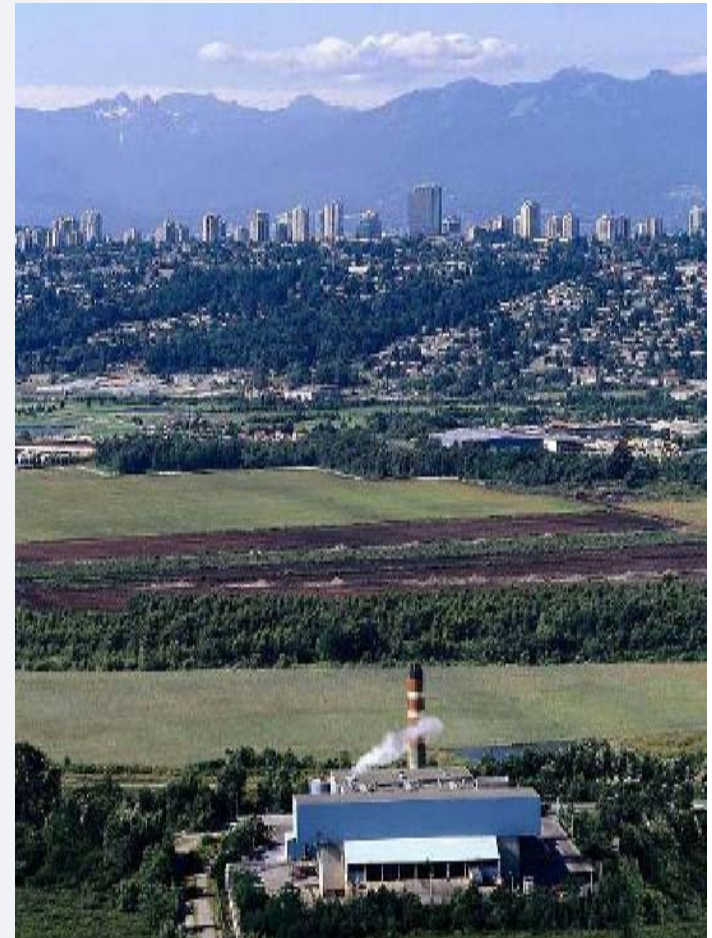


- Zero liquid discharge (0%)
- Bottom Ash reused (18% of MSW disposed)
- Metal recovered (3% of MSW disposed)
- Fly ash disposed (4% of MSW disposed)



# Benefits of WTE

- Can be located in a dense urban centre
- Local disposal solution
- Source of renewable energy (steam and electricity)
- Displace use of fossil fuels





# European Design – Lille, France





# Questions?