Greenest City Update: Resource and Energy Recovery

Vancouver City Council

December 3rd, 2013

Metro Vancouver Integrated Solid Waste and Resource Recovery Plan (ISWRMP)

- By 2020, the region will be home to 2.8 million people, and is projected to generate 3 million tonnes of waste.
- 2011 Metro Vancouver Integrated Solid Waste and Resource Management Plan (ISWRMP):
  - Key aspects:
    - **Waste Reduction**: reduce per capita solid waste generation by 10%.
    - **Waste Diversion**: recycle or compost 80% of solid waste by 2020.
    - **Energy Recovery**: after achieving these reduction and diversion targets, recover energy from the remaining 700,000 tonnes per year of waste.

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ISWRMP & Greenest City Action Plan (GCAP)

2011 – Vancouver City Council:

- conditionally supported the ISWRMP:
  - **no endorsement of waste incineration capacity**
  - Support for consideration of other state of the art waste processing technologies (non incineration)

Vancouver's related GCAP goals:

- Create Zero Waste by Maximizing Reduction and Diversion
- Breathe the Cleanest Air of any Major City in the World
- Eliminate Dependence on Fossil Fuels
- Secure Vancouver's International Reputation as a Mecca of Green Enterprise

Metro Vancouver's ISWRMP Procurement Process

Goal: To establish new waste processing capacity; two independent but related market calls:

1. **RFQ for Technology Vendors** (closed February 14, 2013)
   - short-listed potential waste processing technology suppliers
   - while not required, some potential technology suppliers also proposed site options

2. **RFP for Site Options** (closed November 15, 2013)
   - potential sites where technology providers selected by Metro Vancouver could build facilities

Metro Vancouver's ISWRMP Procurement Process: RFQ for Technology Vendors

- Metro Vancouver has short-listed 9 waste processing technology providers:
  - **7 vendors propose incineration approach** (do not comply with Vancouver City Council policy)
  - **2 vendors propose gasification approach** (could potentially comply with Vancouver City Council policy)

Waste Processing Technologies: Incineration

Solid waste is **incinerated** to produce steam, which can be used to generate electricity and heat.

- Typically these facilities do not include a waste sorting process to remove recyclables, compostables and toxic materials
- The existing Burnaby incinerator is an example of this type of facility

Metro Vancouver Waste to Energy Facility (Burnaby)

Alternative Waste Processing Technologies: Gasification

Non-incineration process that converts residual solid waste into a gas (similar to natural gas), which can be used to generate electricity and heat.

- Utilizes robust waste sorting and diversion of recyclables, organics and toxic materials from the waste stream
- Because these facilities are burning a gas, not garbage, emissions are cleaner than incineration

Mutsu Gasification facility in Japan

City of Vancouver's Response to Metro Vancouver's RFP for Site Options

- November 15, 2013:
  - COV submitted a proposal to Metro Vancouver RFP for an option to lease on a City-owned site at 8601 Main Street
  - Industrial land, with barge, rail and truck access
  - Key City conditions in COV proposal include:
    1. Energy technology cannot include incineration
    2. Diversion of recyclables and organics must be maximized before use for energy
    3. Technology must meet the Energy Centre Guidelines which align with Greenest City Goals

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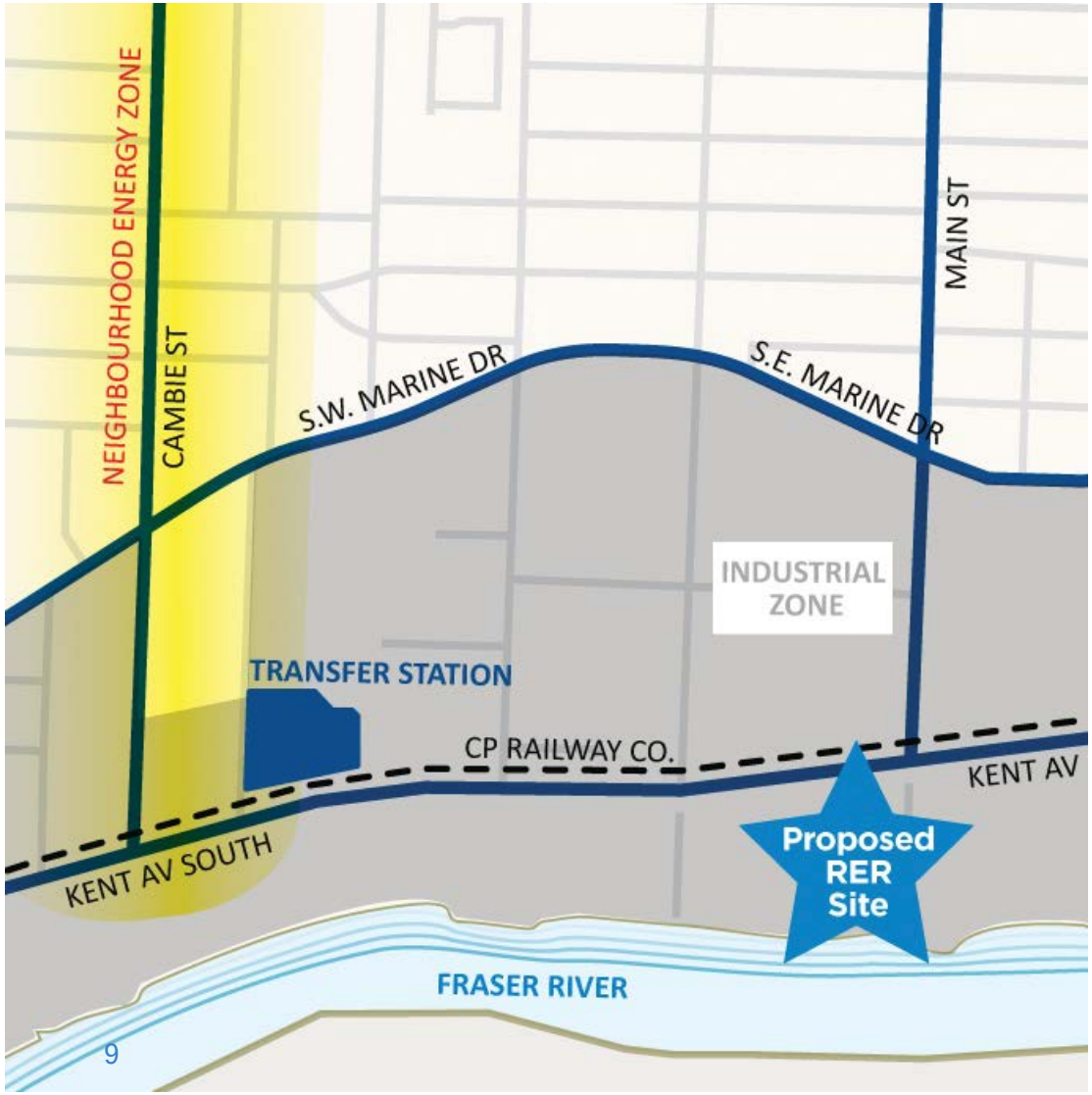
Potential COV Resource and Energy Recovery (RER) Centre: Location



- One kilometre from the Cambie Neighbourhood Energy zone (over 20,000 residential units will need heat)
- Close proximity to South Vancouver Transfer Station
- Heavy industrial area, with appropriate zoning for a Resource and Energy Recovery Centre

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Potential COV Resource and Energy Recovery Centre: Stringent Conditions Must Be Met

1. No incineration of waste – only advanced clean technologies;
2. Maximum diversion of recyclables, organics and toxic materials prior to waste processing;
3. Meet or exceed the most stringent local and international air quality guidelines, and no impacts to human health as confirmed by independent assessment;
4. Minimize greenhouse gas emissions and recover waste heat for neighbourhood energy supply;
5. Conform to the City's Neighbourhood Energy Centre Guidelines, adopted in October 2012 by Council after extensive community consultation; and
6. Ensure that proactive and comprehensive community engagement and consultation is part of the Metro Vancouver process.

Benefits to City of Vancouver Site Option

- Opportunity for Vancouver's waste to be processed in a **Resource and Energy Recovery Centre** that aligns with GCAP goals:
  - **Reduces air pollution** by using advanced technologies and reducing truck traffic to remote facilities;
  - **Maximizes diversion** of recyclables and organics;
  - **Recovers energy** to heat approximately 20,000 residences plus businesses in the Cambie Corridor – aligns with District Energy Strategy
  - **Creates green jobs** to develop and operate the facility.

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Private Vendor Site in Vancouver: Submitted to Metro Vancouver RFQ

- Plenary Group proposal to Metro Vancouver:
  - 9001 Heather Street, site owned by Translink;
  - Incineration technology - not supported by 2011 Council policy;
  - No prior notice to the City by Plenary Group prior to their submission to Metro Vancouver;
  - TransLink has since confirmed that the property will not be made available to the vendor.

Summary

- Metro Vancouver ISWRMP commits to developing new capacity and a range of technologies to process waste.
- Opportunity for site for non-incineration technology for COV:
  - Control and accountability over our own waste
  - Opportunity to achieve GCAP goals across many areas: waste, economy, clean energy, clean air
- COV conditions on site must be met – if not the City will withdraw its option to lease the site.

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