

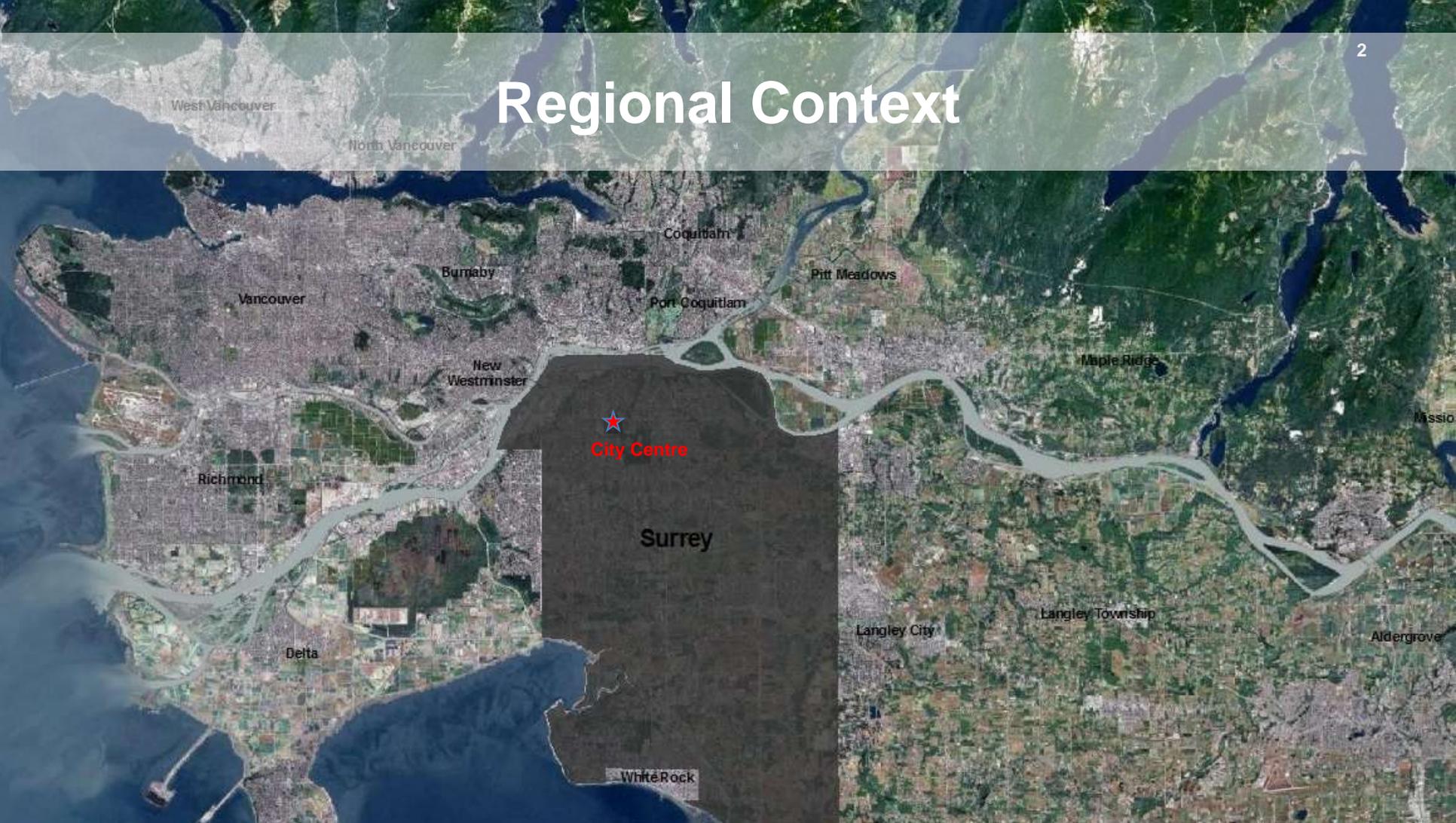
# Surrey's Low-Carbon District Energy Strategy

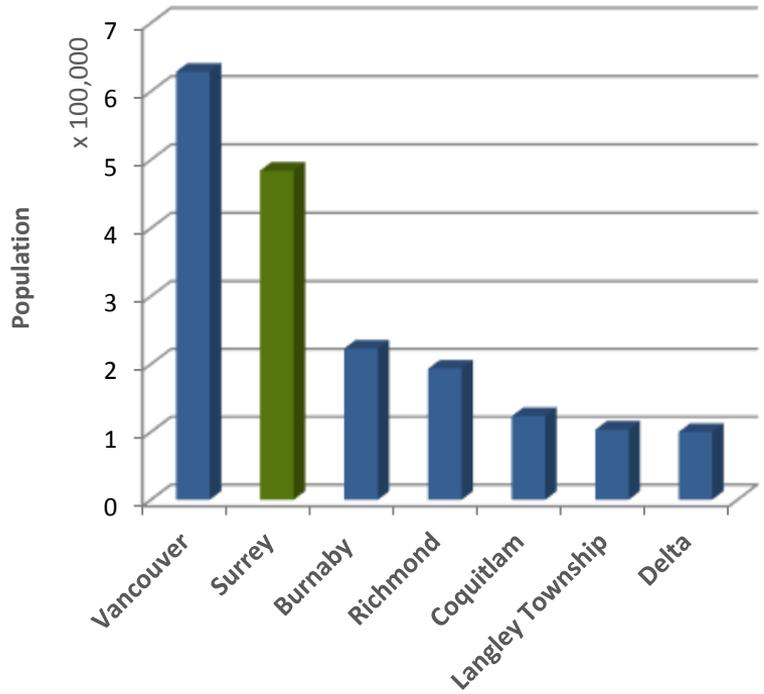
IDEA Annual Conference

June 13, 2018

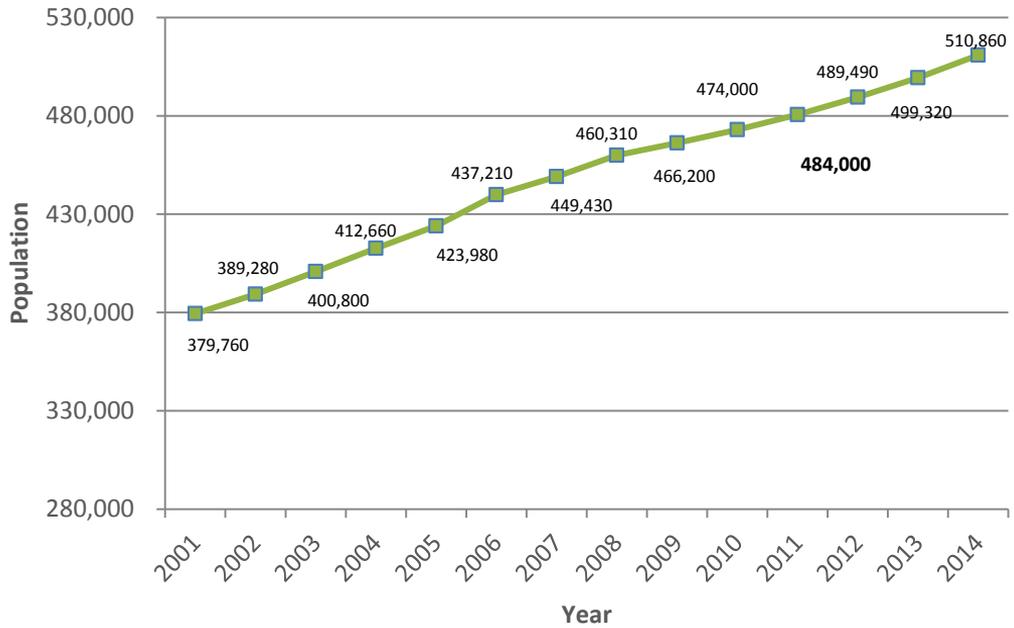


# Regional Context





Metro Vancouver Population



City of Surrey Population Growth

Surrey is the third fastest growing city in Canada.



# Growth in City Centre

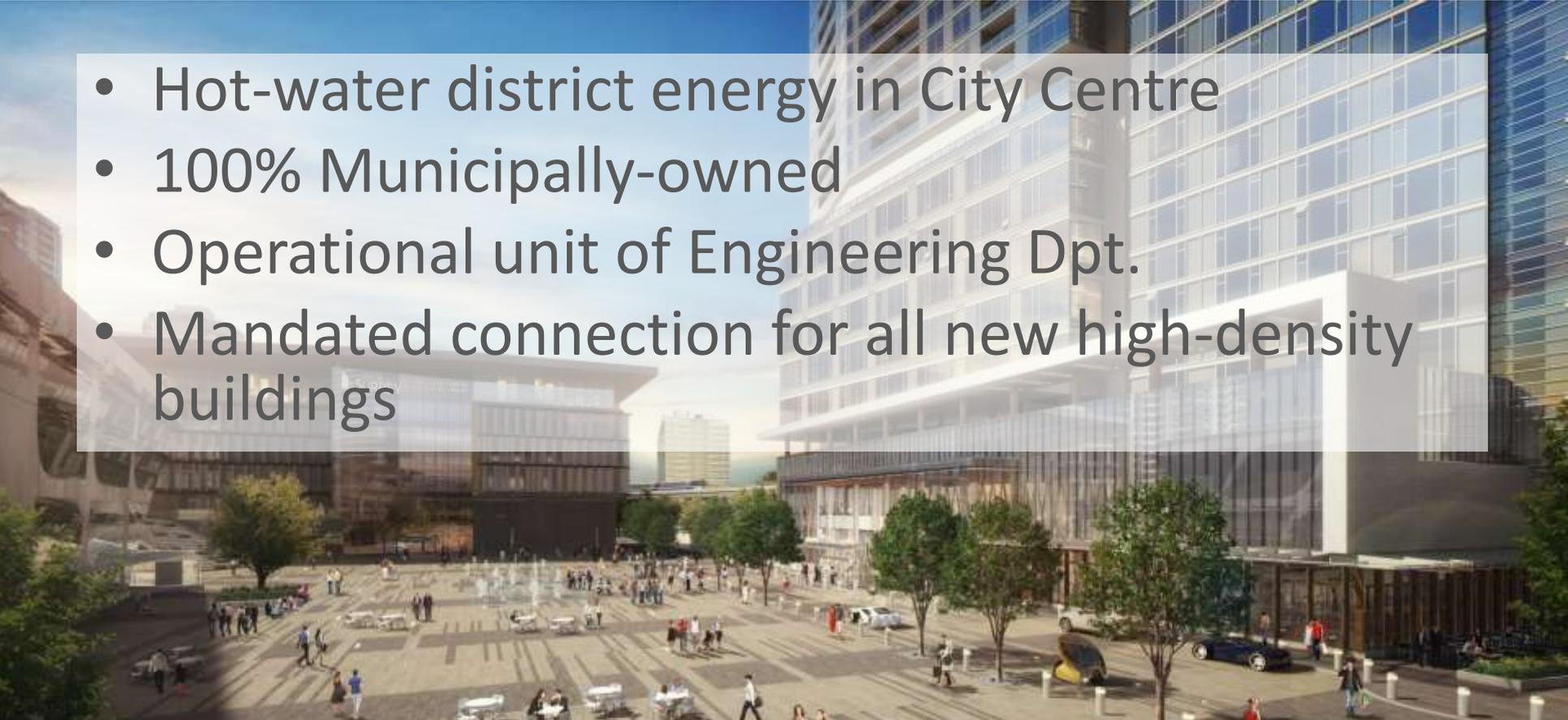


City Centre 2009



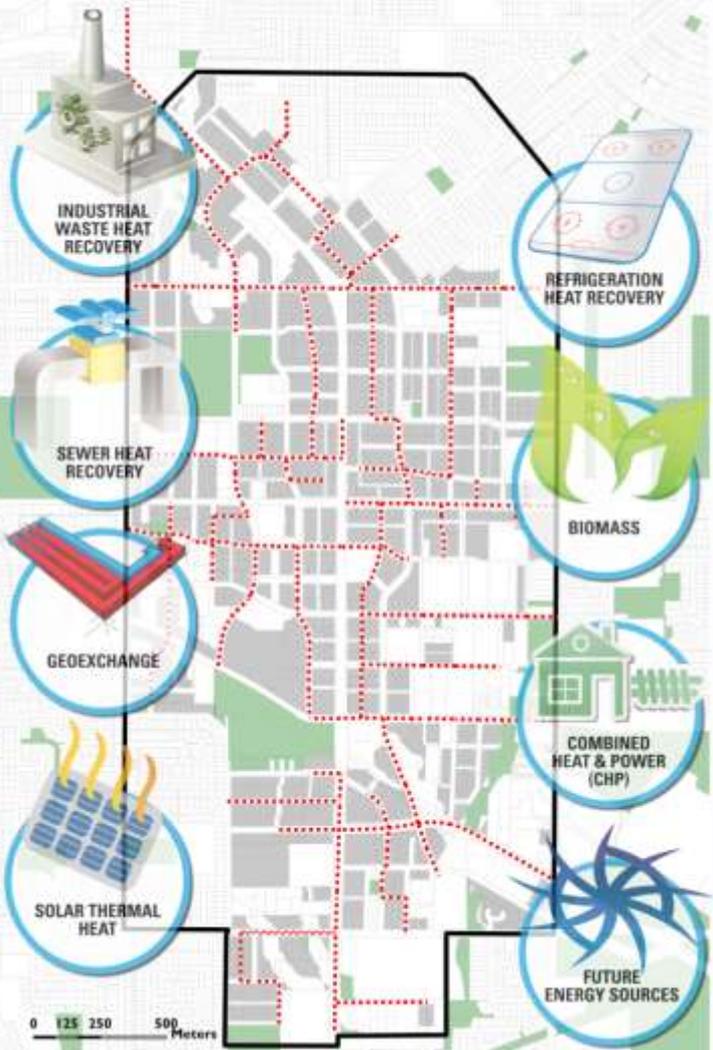
Proposed Future Development

- Hot-water district energy in City Centre
- 100% Municipally-owned
- Operational unit of Engineering Dpt.
- Mandated connection for all new high-density buildings



DE Stats	2018	2035
Residential Customers	1,500,000 ft <sup>2</sup>	11,500,000 ft <sup>2</sup>
Commercial Customers	1,200,000 ft <sup>2</sup>	6,000,000 ft <sup>2</sup>
Peak Demand	12 MW	67 MW
Energy Sales	20,000 MWh	133,000 MWh





1. Improve energy efficiency;
2. Reduce greenhouse gas emissions;
3. Increase resilience; and
4. Provide competitive and stable pricing.



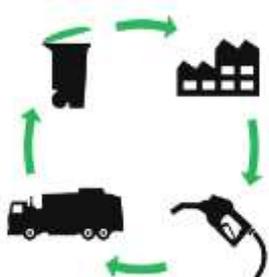
Phase 1

Temporary Energy Centres



Phase 2

Permanent Energy Centre

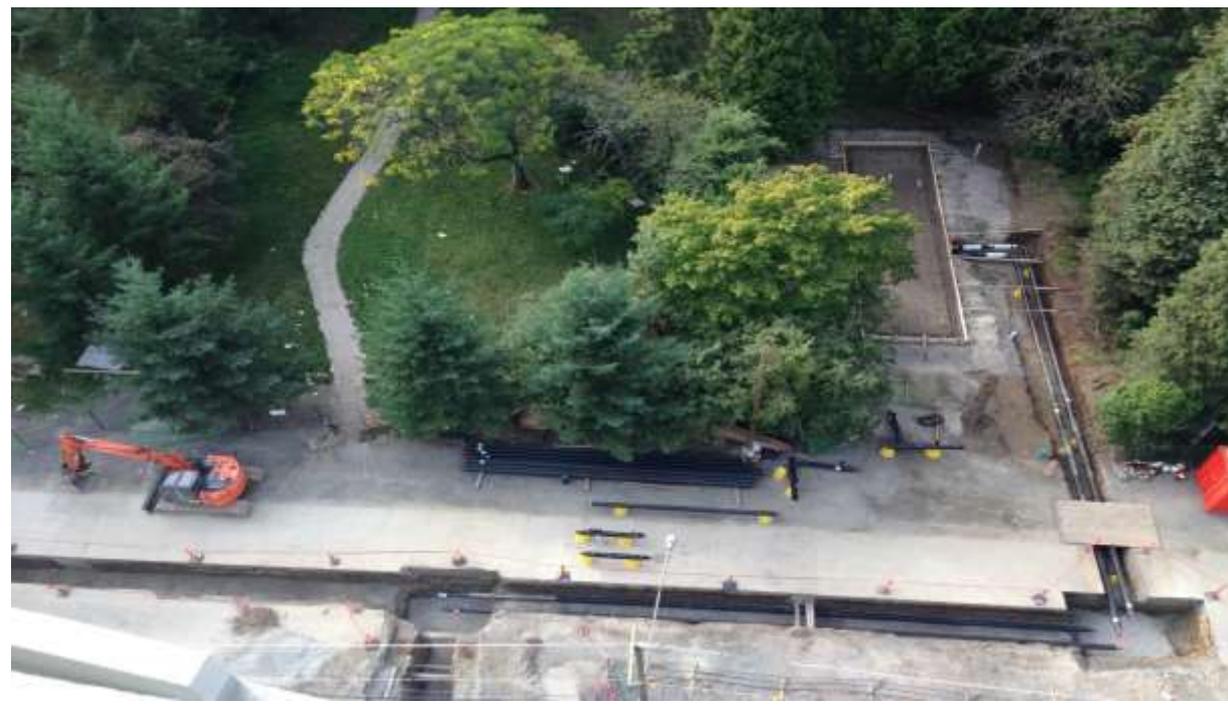


Phase 3

Low-Carbon Energy

# Phase 1: Temporary Energy Centres

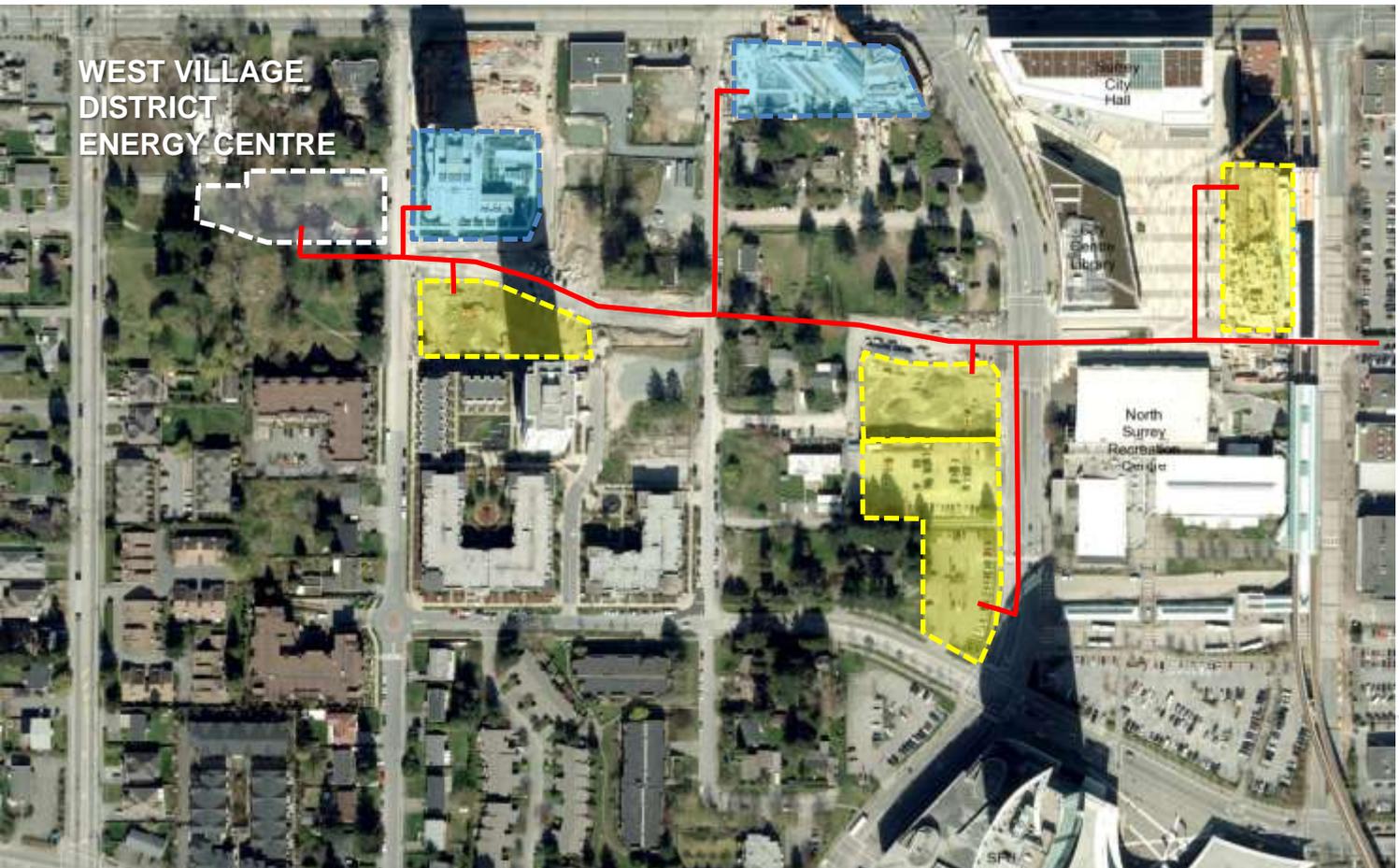




# Phase 2: West Village Park & District Energy Centre



# Phase 2: Permanent Energy Centre



# Phase 3: Integrating Low-Carbon Energy

## GHX/RNG



## Biomass

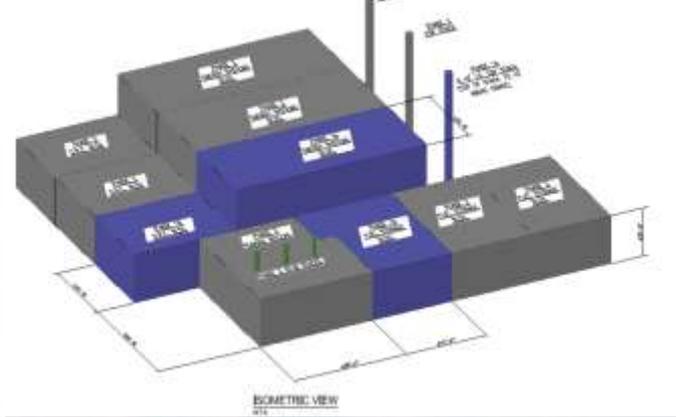


## Sewer Heat



# Phase 3 - Biomass

	Phase 1	Phase 2
Output Capacity	9.8 MW	19.6 MW
Low-Carbon Energy	48,950 MWh	97,900 MWh
Biomass Input	13,000 BDT/yr	26,000 BDT/yr

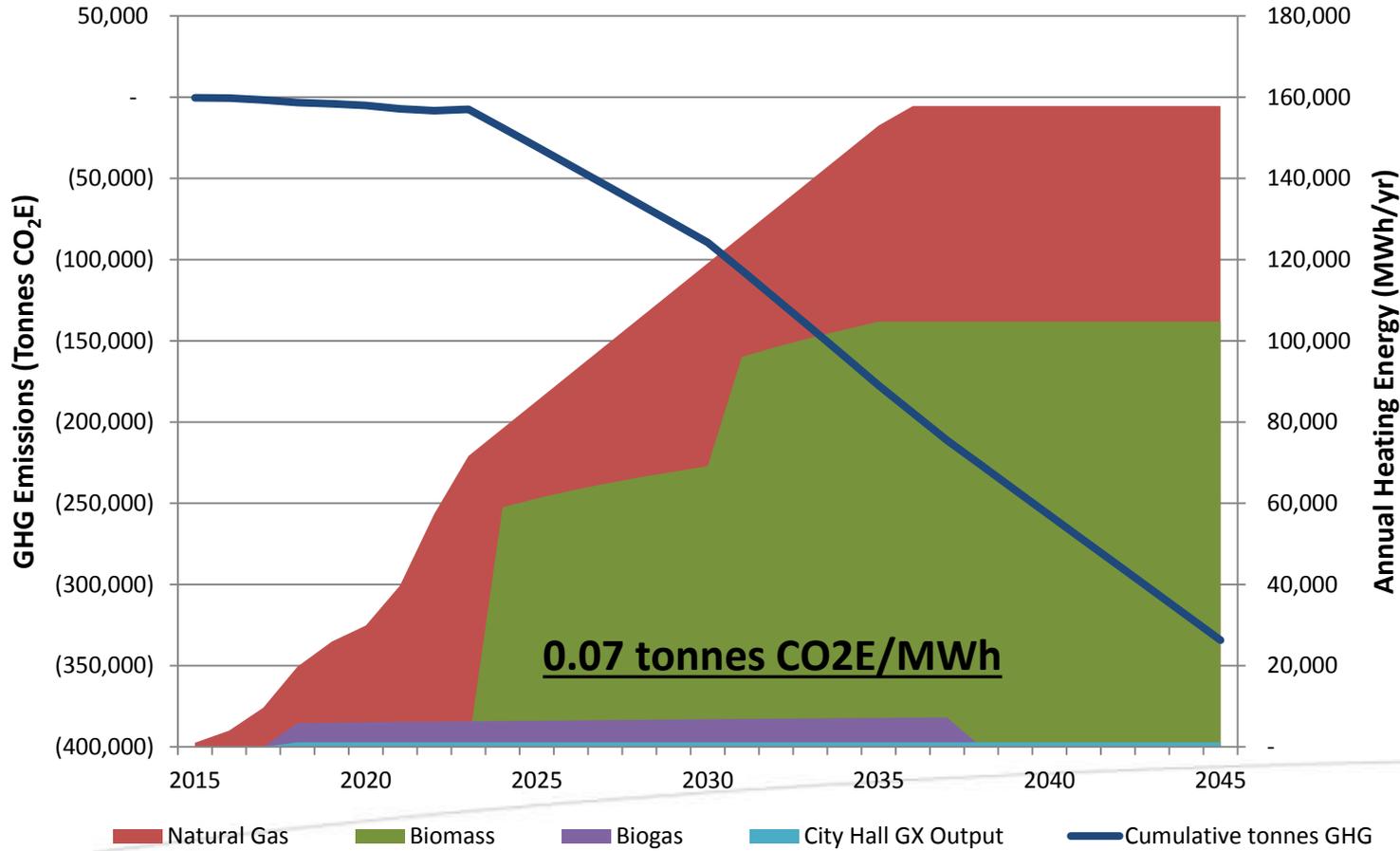


# Phase 3 – Waste Heat Recovery

	Phase 1	Phase 2
Output Capacity	9 MW	15 MW
Low-Carbon Energy	46,199 MWh	76,789 MWh
Sewage Diverted	250 l/s	416 l/s

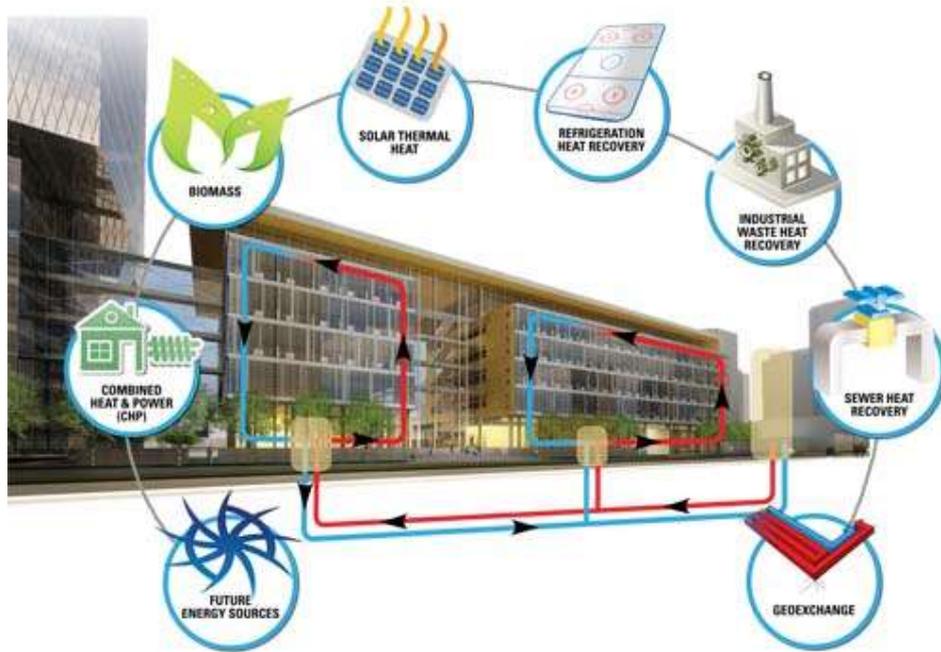


# Low-Carbon Outcomes



# Ownership Model

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- *Surrey City Energy*
- Municipal Ownership:
  - Low cost of capital
  - Departmental synergies
  - Access to grants
  - Experienced utility operator
- Does not preclude future partnership opportunities

# Rate Review Panel

Provide objective, expert advice to the City to ensure that the rates and rate structure are consistent with the following principles:

1. Cost recovery
2. Rate competitiveness
3. Return on investment
4. Shortfall recovery
5. Low-carbon/renewable energy
6. Fairness

# Key Takeaways

- Surrey is using DE as a platform for the use of locally available low-carbon heating sources
- This strategy will result in significant GHG reductions while improving energy resilience and stabilizing long-term energy costs in Surrey
- Diversity and flexibility of heating sources are key to success

Thank You.



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