

# Putting Bioheat on the Map:

## A hands-on guide to integrated community energy mapping

**Goal:** Provide participants with a hands-on energy mapping experience to enable them to apply some basic techniques and appreciate its power for managing energy and greenhouse gas emissions as part of planning for distributed energy resources.

**Overview:** Participants will physically draw out and denote bioheat opportunities on the map provided. Use the colour/design code in the legend to denote waste heat, renewable heat and district energy opportunities.

### Part A. Renewable Heat Sources

Identify sources of **renewable heat**. This could be either recovering waste heat or combusting a renewable feedstock/fuel.

#### **Waste Heat**

- Paper Mill
- Brewery
- Rink
- Food processing plant (refrigeration)
- Sewage treatment plant
- Sewage pump stations
- Computer data processing centres
- Other



#### **Renewable Heat Sources**

- Pulp/Paper Mill (waste wood)
- Log Sort Yard (waste wood)
- Landfill
- Solar hot water
- Geoexchange
- Other



*Notes: It is likely that there are some sources with both heat and power potential*

### Part B. Renewable Heat: Spatial (Locational) Considerations

What are some **key** spatial/locational considerations influencing the appropriateness of using renewable heat? Very brief discussion. Acknowledge all these issues, but make sure the first three are addressed.

- Located **near heating demand** (e.g. large buildings, including commercial and multifamily, industry)
- Located **near hot water demand** (e.g. hotels, swimming pools, commercial laundries, car washes, industry)

Or

- **New heat demand could be located there** (e.g. new buildings, neighborhoods, swimming pool)
- Miscellaneous (not necessary to explore, but people could raise.)
  - Public concern regarding odour from solid waste
  - Public concern about biomass combustion from air pollution
  - Sufficient space for loading bays, space/pollution about trucks
  - Transporting biomass from far distances
  - Sensitive habitat
  - Noise (biomass trucks, equipment, heat exchangers)
  - Esthetics

### **Part C: District Energy**

What are some **key considerations** for locating and phasing growth to support a **district energy system**?

*Notes: -This is NOT a feasibility study. There are, however, several “typical” variables to consider in determining whether there may be a district energy opportunity.*

**key considerations:**

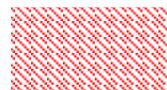
#### **1. Secure Energy Supply**

- **Candidate Heat Source/DE Plant:** Select one of the previous heat sources for the district energy system. (You may pick more than one. Appropriateness will be influenced by a convergence of the other considerations below.)



#### **2. Density**

- **Anchor:** Identify a potential anchor tenant, e.g. industry, hospital – operates 24/7, 365; requires backup plant or has own plant; *good consistent base load*)
- **Building Density:** Residential/commercial building density essentially heat density.
- **New Build:** The site will likely require some *new build*. This could be intensification, or appropriate green or brown field. After established, it may be possible to extend into existing areas



#### **3. A Balanced Load**

- **Some Mixed-Use:** Residential/commercial/institutional to allow energy use during day, mornings, evenings, weekends, weekdays



**Draw a circle around your potential district energy node.**

**(Build Out:** speed, phasing and integration of the build out is another important factor)