

Aurora Energy, LLC

*David Fish
Environmental Manager*

Aurora Energy, LLC

- **Purchased from FMUS January 1998**
- **31 full-time employees**
- **Coal-fired cogeneration plant**
- **Electrical energy production**
- **Steam heat distribution system**
- **Hot water heat distribution systems**

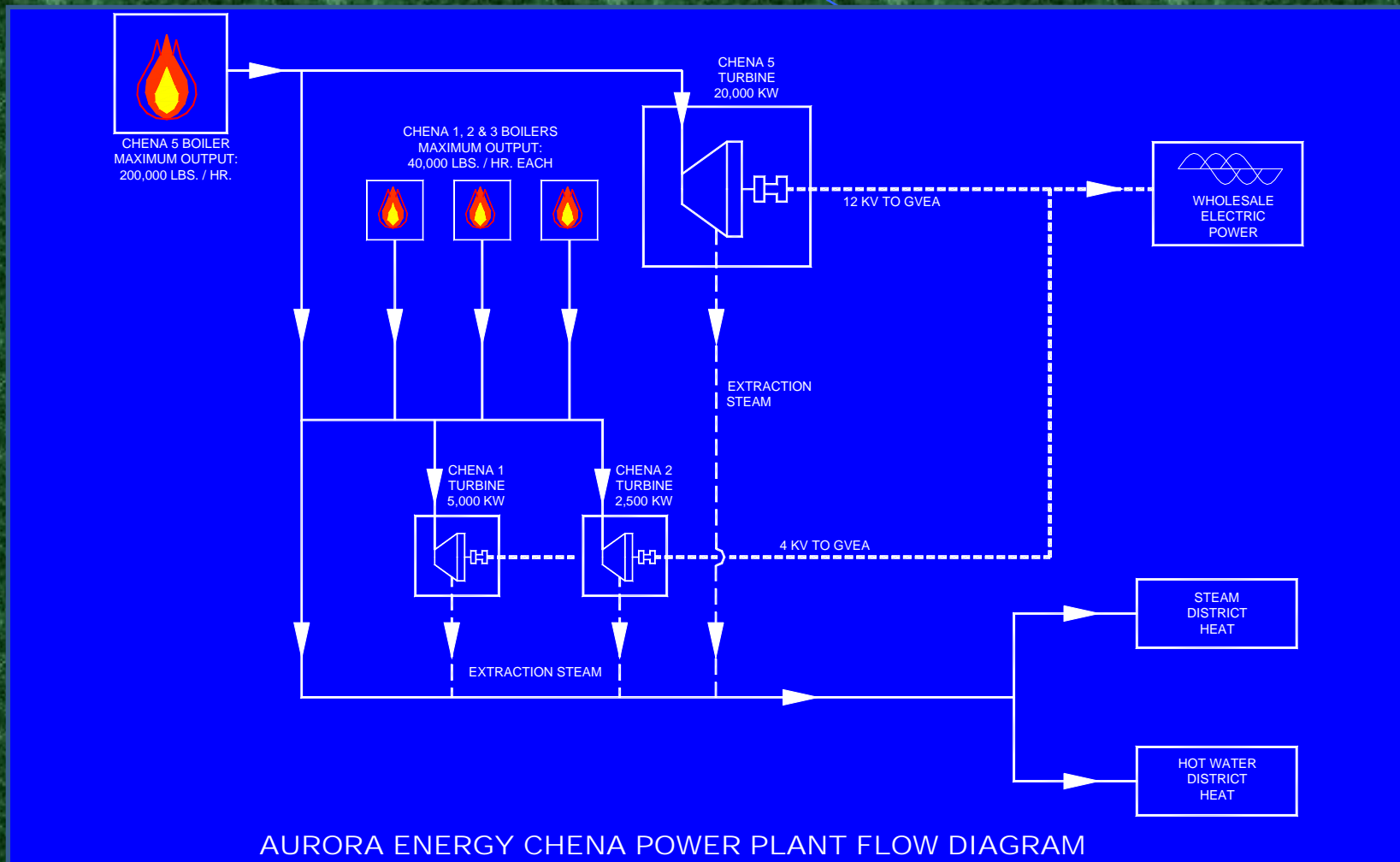
History – Aurora's Plant

- 1951-1953 units 1,2,3, steam heat system constructed and on line
- 1970 Chena 5 unit on line
- 1983 west side hot water heat system on line
- 1998 ownership transferred from City of Fairbanks to Aurora Energy, LLC
- 1999 east side hot water heat system on line
- 2006 north side hot water heat system on line
- Currently 213 district heat customers, and growing
- One electric customer, GVEA

Infrastructure

- **Coal Handling Facility**
- **Power Plant**
 - Four boilers, three turbines
- **Utilidor**
- **District Heat Distribution Systems**
 - Steam Heat System
 - Hot Water Systems

Power Plant Schematic Design



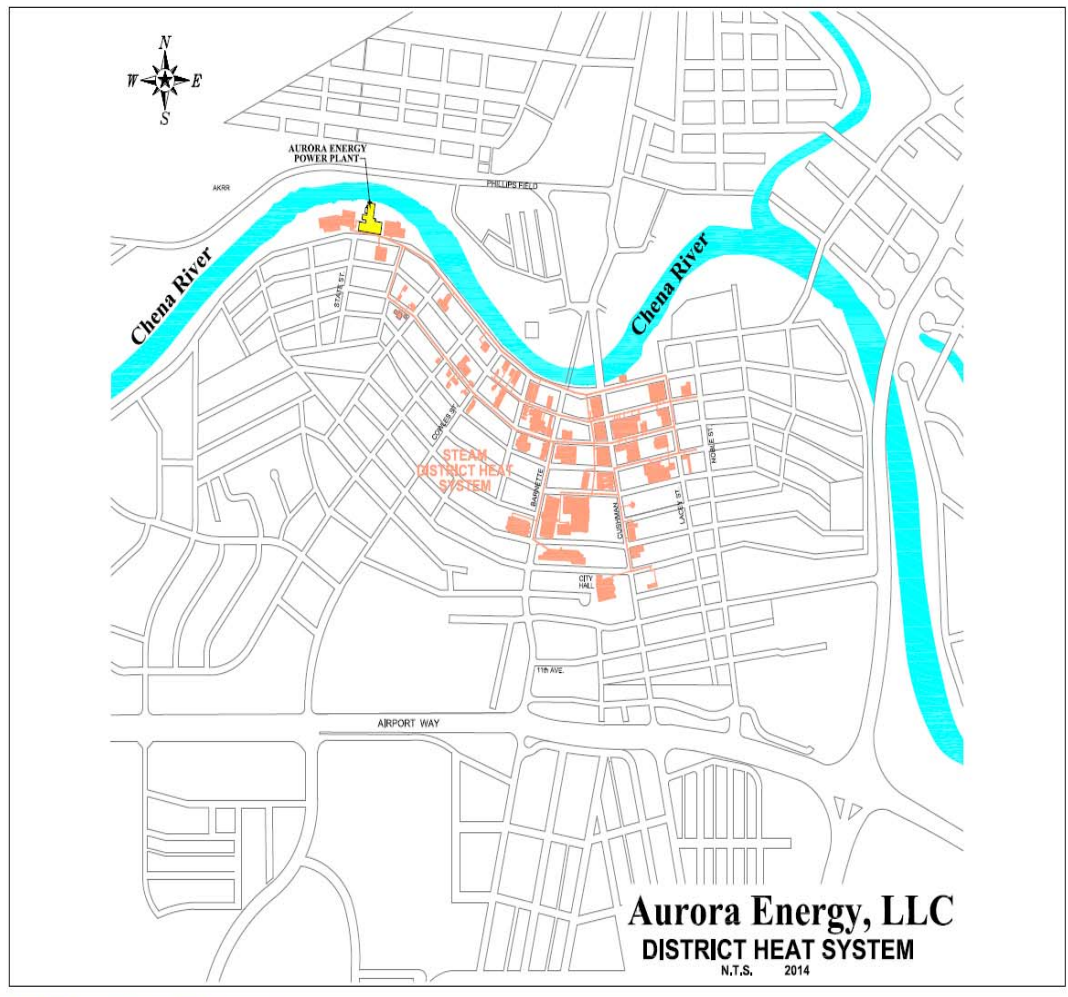
AURORA ENERGY CHENA POWER PLANT FLOW DIAGRAM

Plant Output

- Electrical output – 32 Mw (30.3 Mw Net)
- Power Sales to GVEA
 - 189094 MWh in 2016
 - 29% of GVEA's total purchased power

District Heat Distribution System

- **Steam Heat System-downtown core area**
- **Hot Water Heat Systems**
 - West side to Lathrop High School, Shoppers Forum, Chief Andrew Isaac Health Center
 - East side Noble Street to Federal Building
 - North side ARR Industrial Area
- **15 miles of pipe – supply and return**
- **Piping is direct-bury except for 2nd Avenue utilidor**



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DISTRICT HEAT SYSTEM
N.T.S. 2014

DH Color Map west.pdf - Adobe Reader

File Edit View Window Help

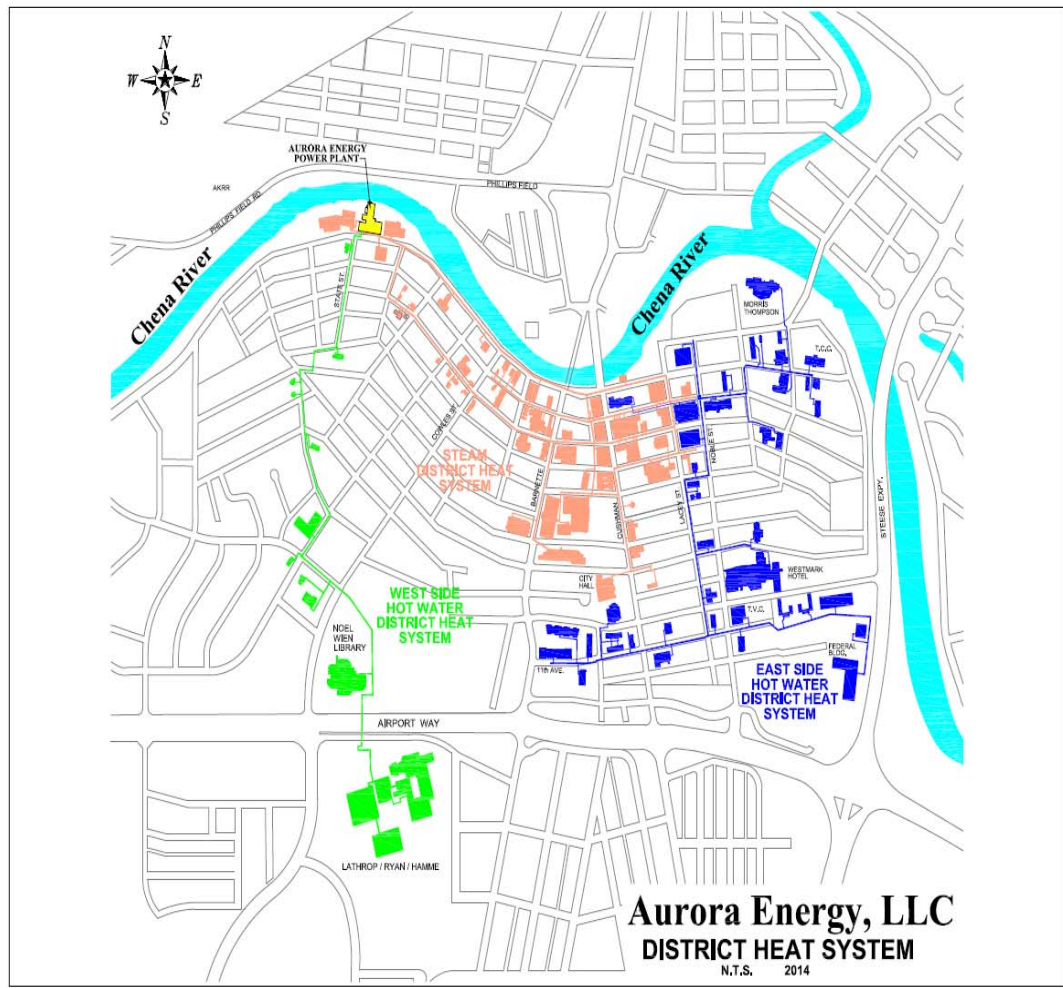
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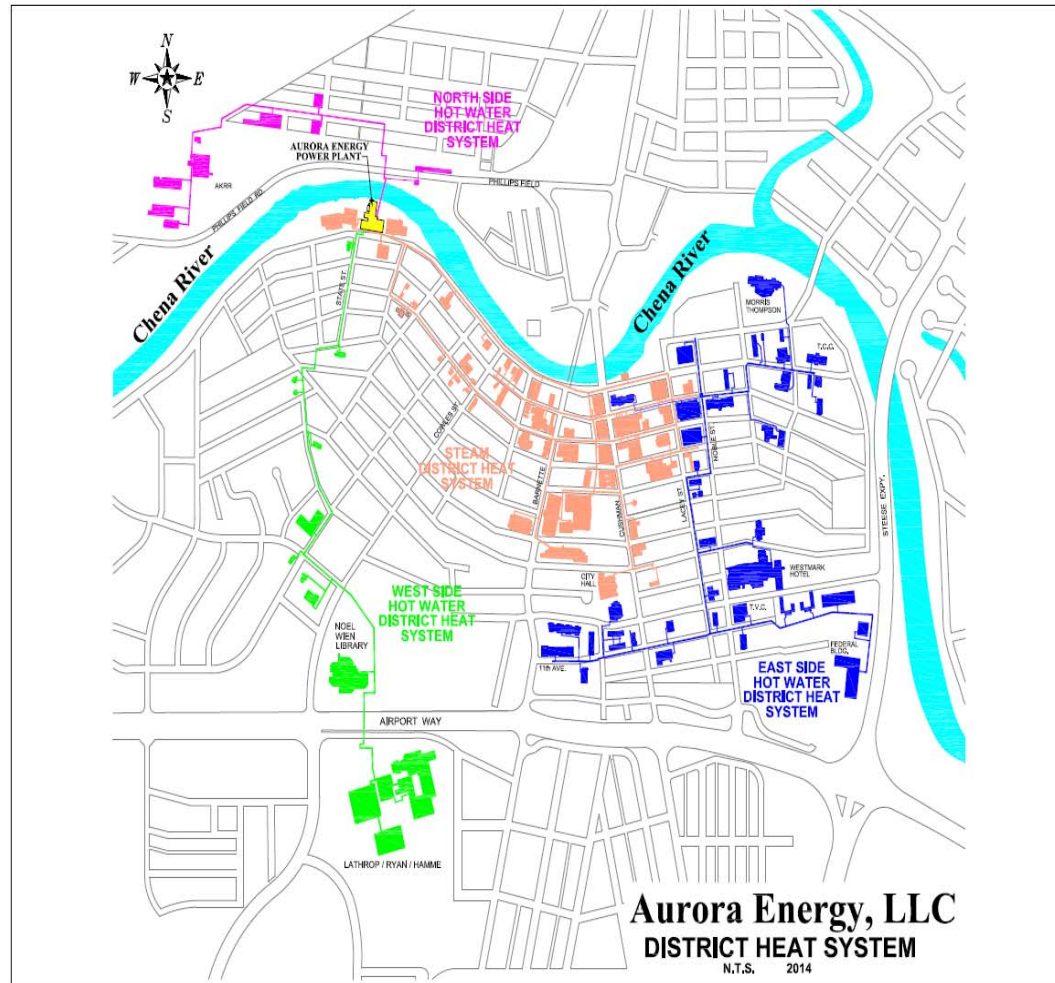
Tools Sign Comment

The map displays the Chena River in cyan, winding through a city grid. A yellow icon marks the Aurora Energy Power Plant on the riverbank. A green line traces a path from the power plant through the city streets to a green cluster of buildings labeled 'West Side Hot Water District Heat System'. A red cluster of buildings is labeled 'Steam District Heat System'. A compass rose is in the top left. Street names include Akorr, Phillips Field, Sparley St., Lowell St., Broadway, Lacey St., Torrey St., City Hall, and 1st Ave. A location 'Lathrop / Ryan / Hamme' is marked at the bottom. A title block at the bottom right reads 'Aurora Energy, LLC DISTRICT HEAT SYSTEM N.T.S. 2014'.

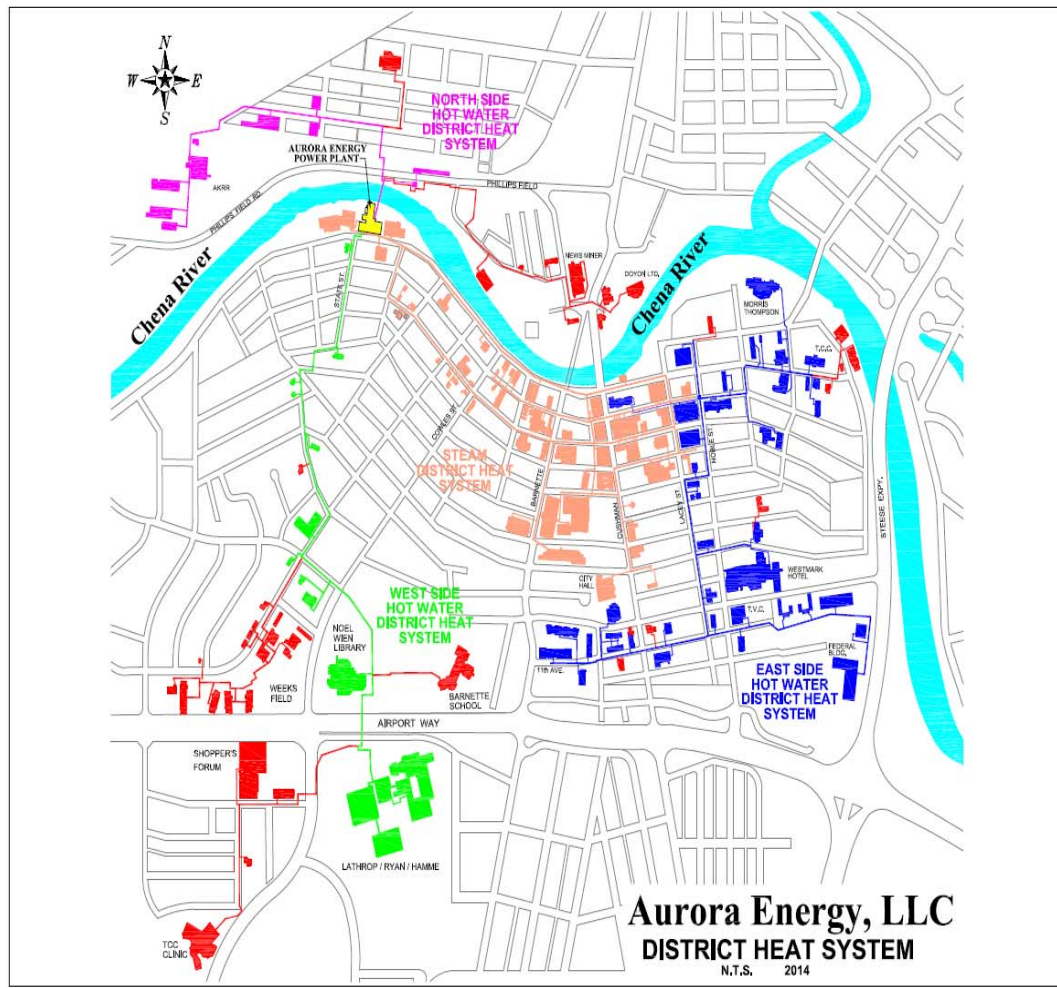
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DISTRICT HEAT SYSTEM
N.T.S. 2014







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DISTRICT HEAT SYSTEM
N.T.S. 2014



District Heat Capacity

- District Heating in 2017– 262,189 MMBtu
 - 2,392,233 gallons of heating oil
 - 18,107 cords of spruce
- Remaining Capacity
 - ~100,000 MMBtu/hr (ideal conditions)
 - largest single user ~10 MMBtu/hr (peak)
 - about 10 large users

Coal

- **Relatively easy to handle**
- **Most economical fuel**
- **Supports competitive pricing for heat**
- **Lowest cost supplier to GVEA**
- **Growing regulatory challenges,**
 - *Still the best deal*

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