



Town of Avon Heat Recovery Project

Town of Avon Heat Recovery Project

Project Background

- **In 2006, Urban Renewal plans seek to attract private investment and vitality to Town Core**
- **Main Street Mall proposed with art incorporated into streetscape**
- **Town was searching for sustainable snowmelt system for mall**
- **Heat Recovery was envisioned to meet this goal**
- **Establishes Avon as a leader in sustainability and smart growth**

Town of Avon Heat Recovery Project

Project Funding

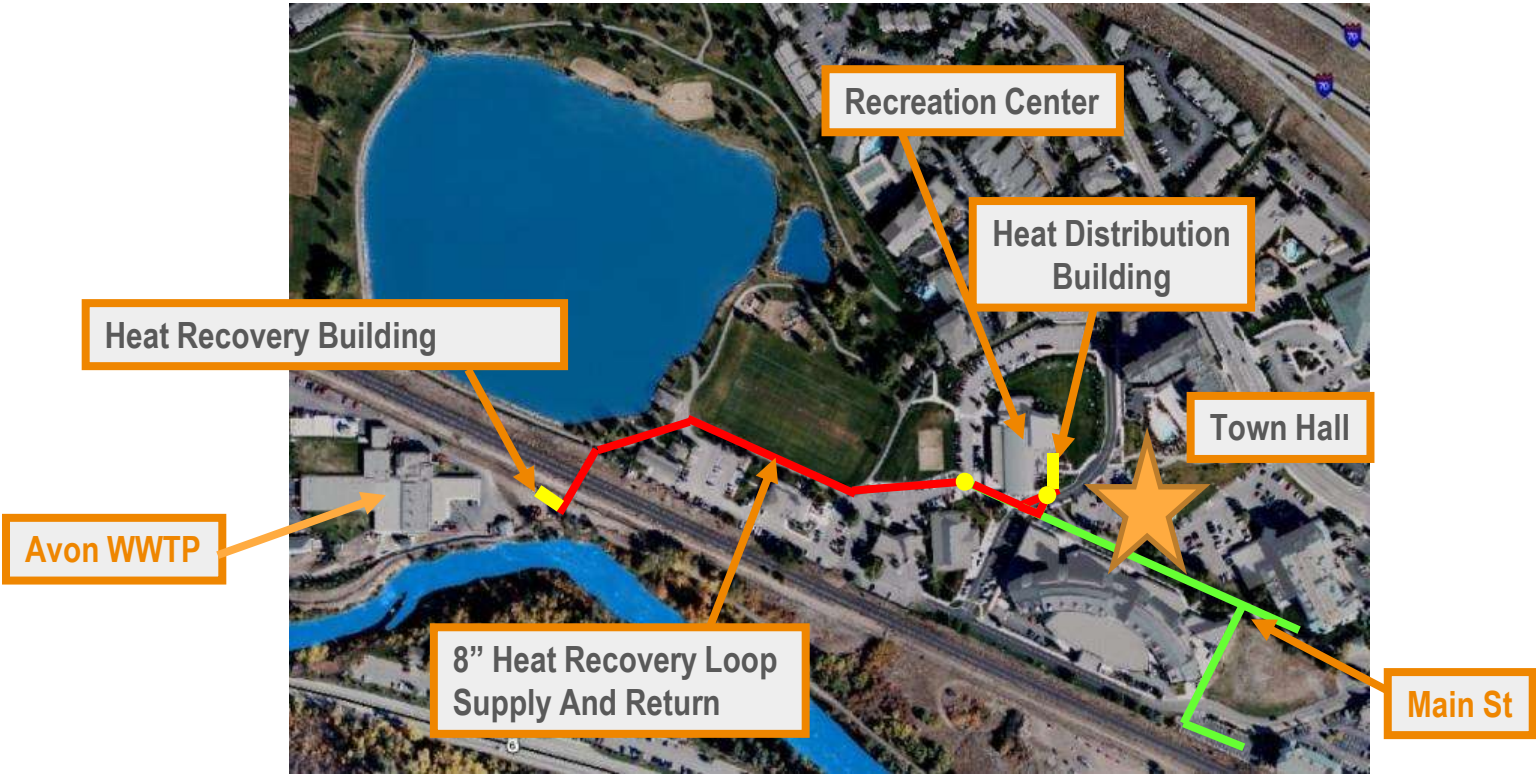
- **\$2.6M from Avon Capital Budget**
- **\$1.5M from New Energy Community Grant from DOLA**
- **\$422,400 and 11,000 SF of land from Eagle River Water and Sanitation District**
- **\$50,000 in kind services from CDM**

Town of Avon Heat Recovery Project

Project Background

- **The Main Street Project stalled because of great recession**
- **The Heat Recovery project continued and heats 4 Recreation Center pools**
- **Puts waste heat to beneficial use**
- **Pools switched from natural gas to heat recovery**
- **Heat recovery is run with renewable electricity from Holy Cross**
- **Heats 3 small buildings**

Town of Avon Heat Recovery Project



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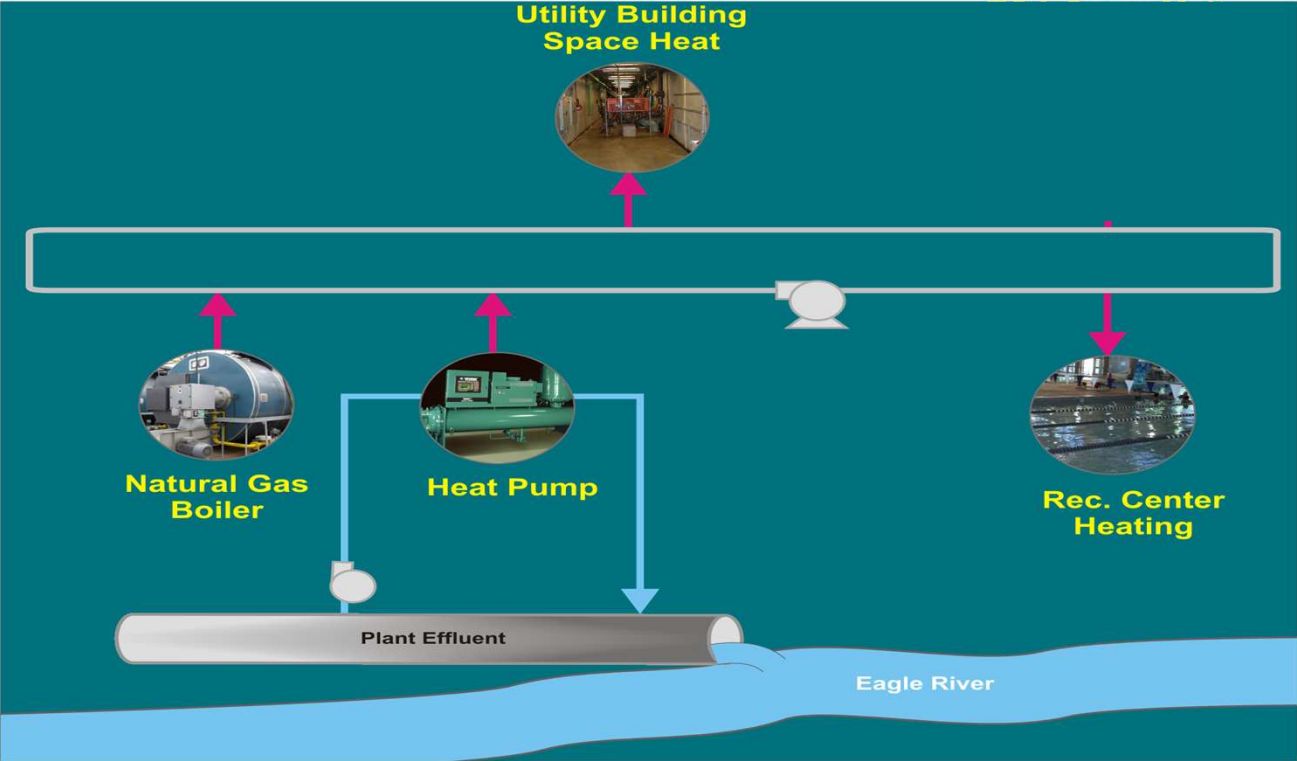
Project Description

- **Heat Source:** 800 gpm wastewater effluent pumped to a heat pump
- **Effluent cooled 6deg and returned to river (61 deg to 55 deg)**
- **Heat pump has 3.7 mBTU capacity**
- **Transfers heat to closed water loop, 800gpm, 135 deg (originally 115 deg)**
- **Water Loop - 3,500 FT long, 8" insulated steel pipe**



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Heat Recovery
initial installation



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Project Description

- Heat exchanger in the distribution building for each pool loop
- The heat is transferred from the closed loop to the pool water
- Circulation pumps run the water back to the pools
- Original natural gas boilers are back up to the heat recovery system

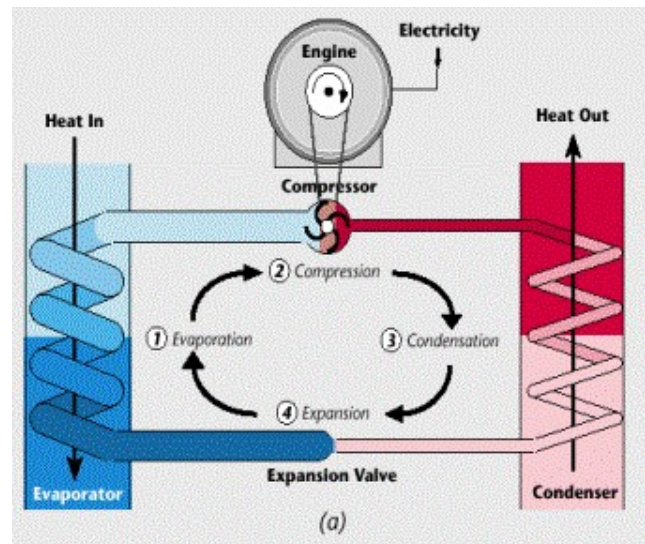


Effluent Based Heat Pump System

Requires 1,800,000 kWh/ Recreation Center

Effluent

- Recovers 140,000 therms/yr heat from effluent
- Reduces effluent temperature by 2.2 deg C (4 deg F) during peak demand



Heat Loop

- Provides 214,000 therms/yr heat
- Maintains heat loop system at 45 deg C (115deg F)

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Project Operation

- **System started operating in January 2011**
- **Fairly low maintenance, primarily pumps**
- **The project operates at 35% capacity**
- **\$96,000 per year to operate**
- **Provides constant heat to Rec Center pools**
- **Dropped Rec Center Gas Consumption in half**
- **In 2018, Town Hall partially heated with heat recovery**

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Project Operation

- **Project was originally developed based on 2008 gas prices and would have saved \$1,500 to \$2,000/month**
- **Decrease in gas prices results in opposite, cost more to operate**
- **Avon purchases 100% renewable energy**
- **Primary benefit is carbon neutral**

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Future of Project

- **Ability to expand 65% with existing equipment**
- **Tie in future projects like public restrooms, Rec Center Expansion**
- **Town no longer snow melting public spaces because of cost and energy use**



Thank You