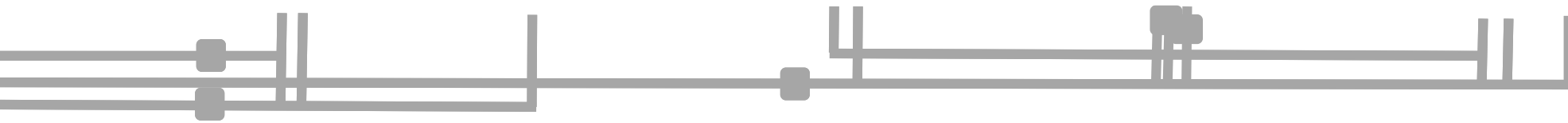


# District Energy St. Paul Operating Engineers Seminar 2023



# Agenda

- Welcome
- Buildings & Systems Controls
- Delta T Economics
- Customer Resources
- Q&A
- Raffle

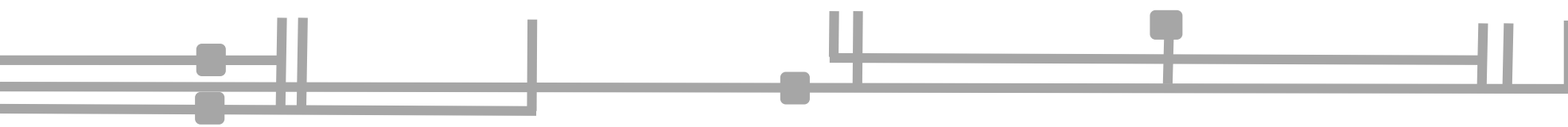
# Presenters



John Fick  
Senior Account Manager  
[John.Fick@districtenergy.com](mailto:John.Fick@districtenergy.com)

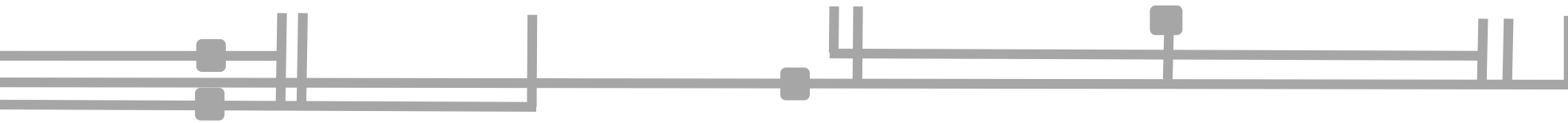


Steve Rambeck  
Director of Business Development  
[Steve.Rambeck@districtenergy.com](mailto:Steve.Rambeck@districtenergy.com)

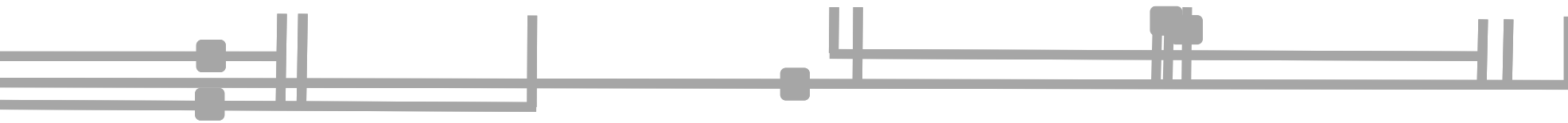


# Buildings & Systems Controls

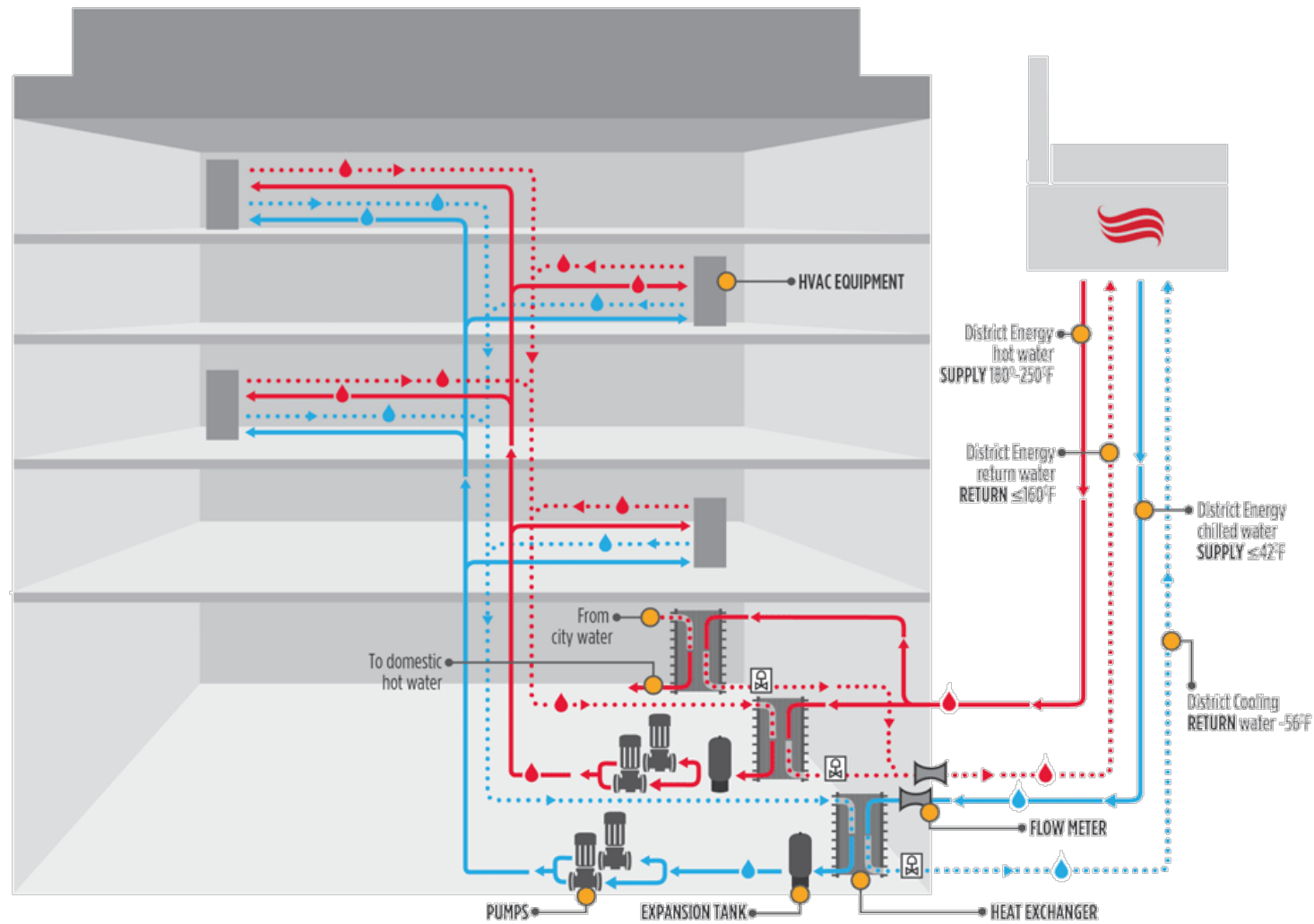
John Fick



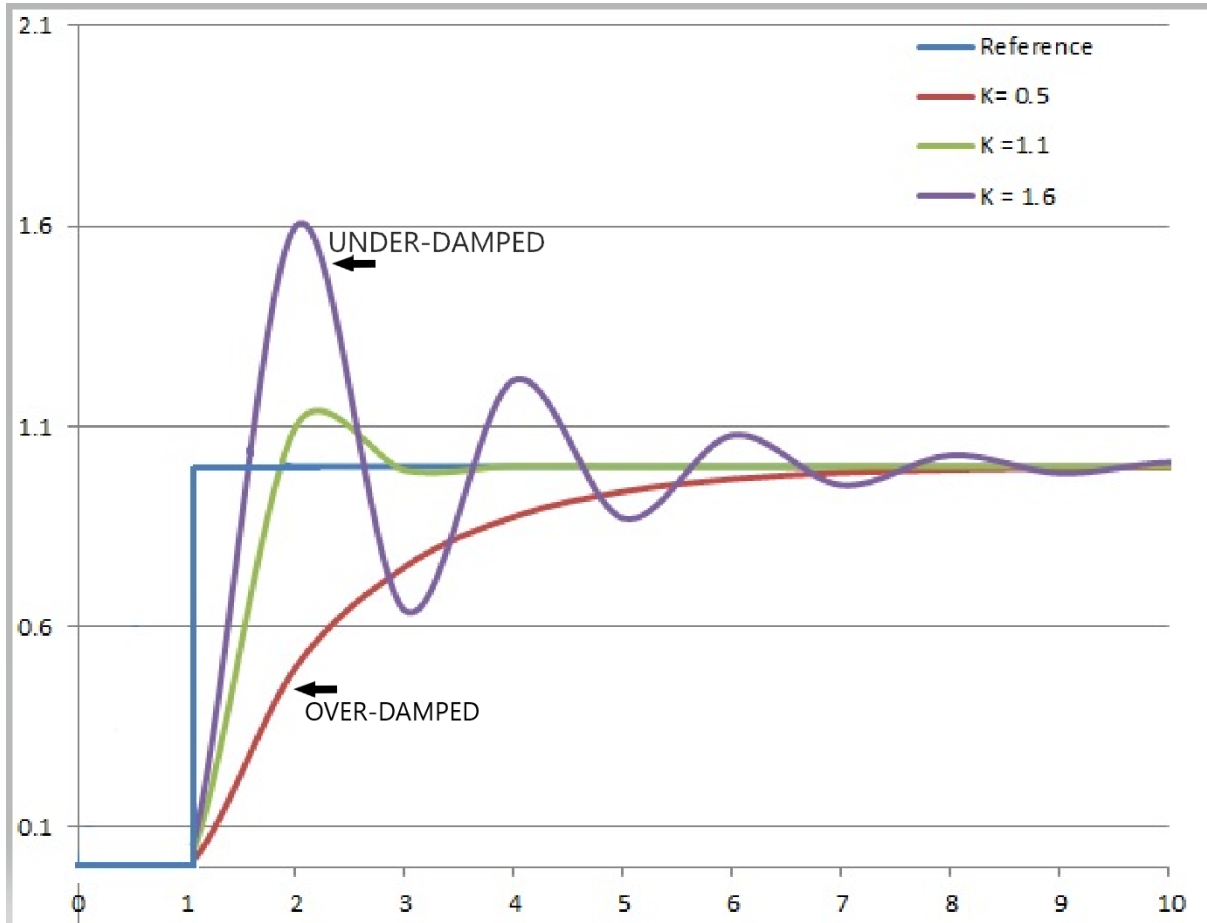
# Controls Contractors



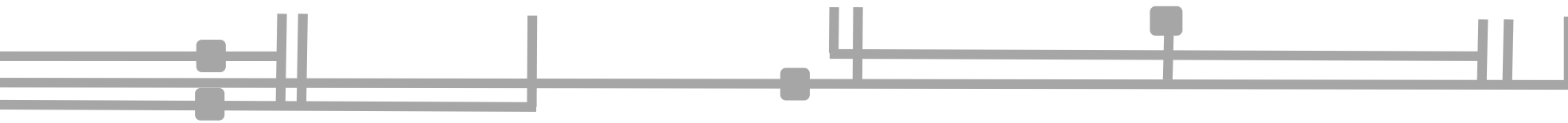
# Buildings & Systems Controls



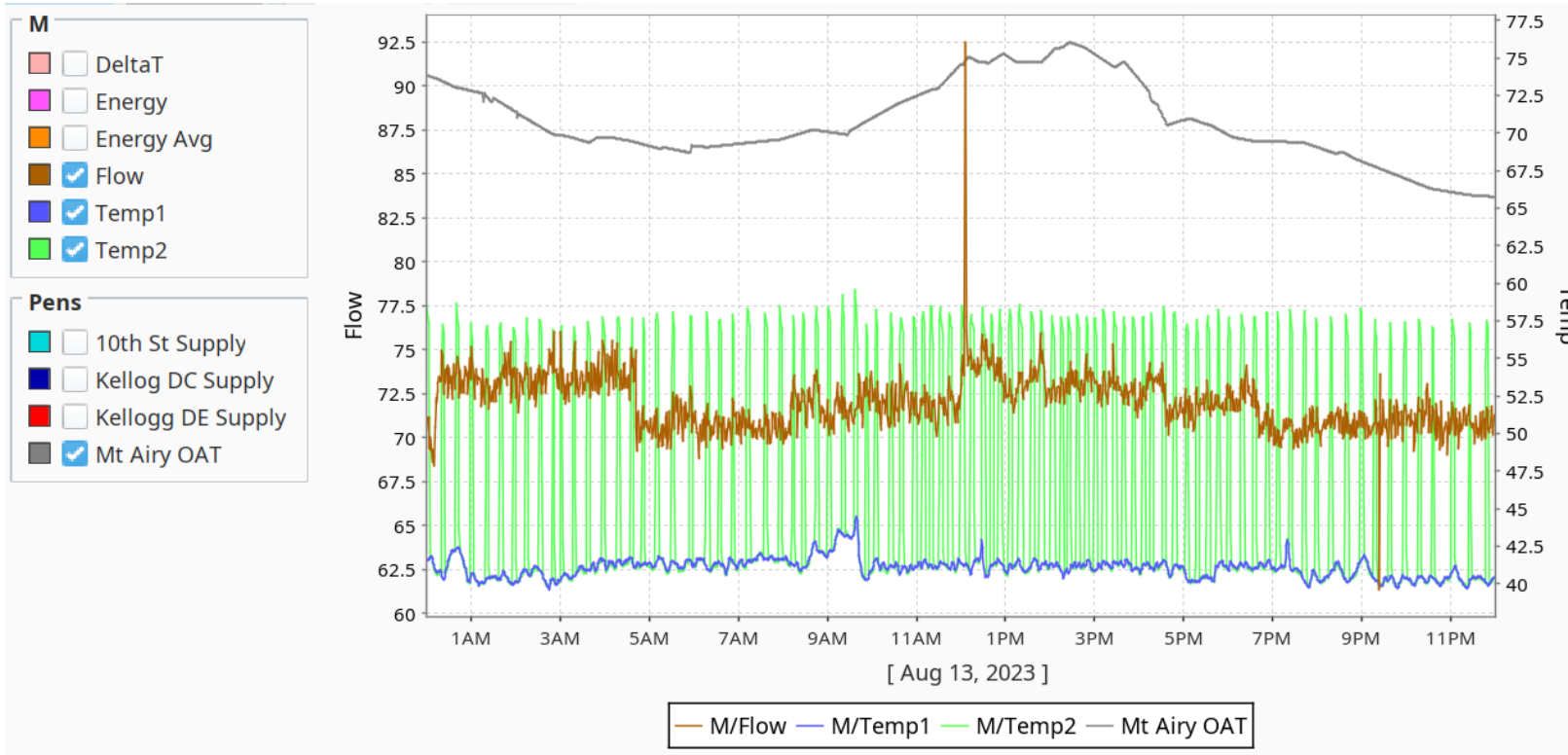
# Control Valves



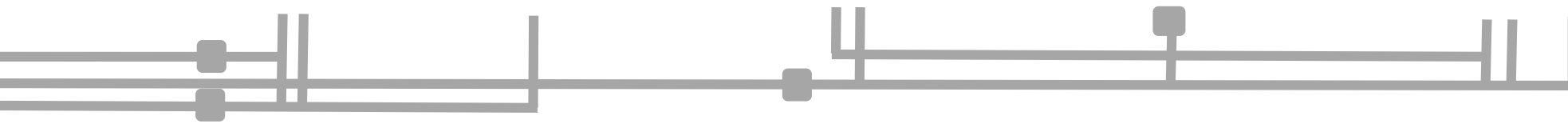
- Positioner speed
  - Too slow = overheat/cool
  - Too fast = hammer and wear
  - More equipment cycling
  - Instability in the comfort space
- Modulating positioner
  - Is the signal binary (i.e. on/off) or variable?



# Wild Control Settings

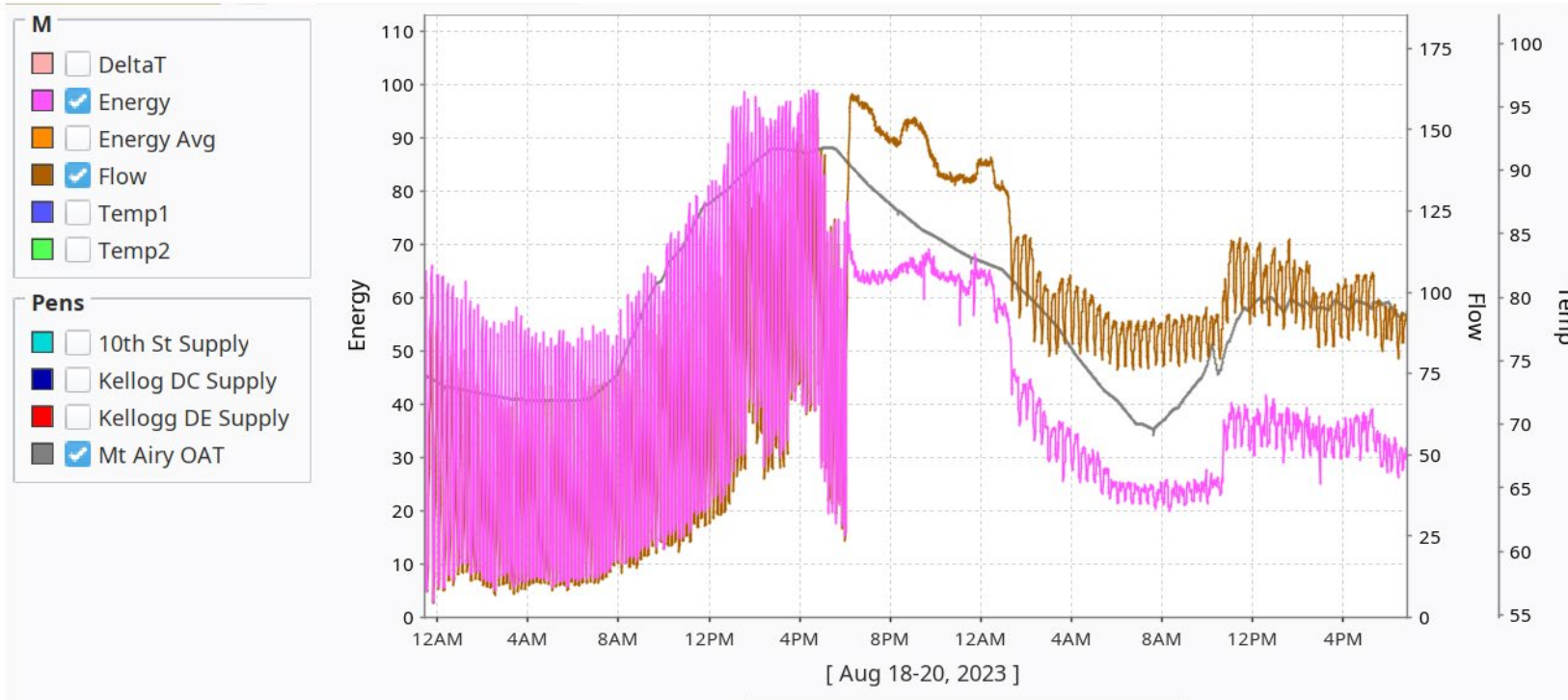


- Correct size
- Correct setpoint
- Reaction time
- Hung valve
- Correct sensor location

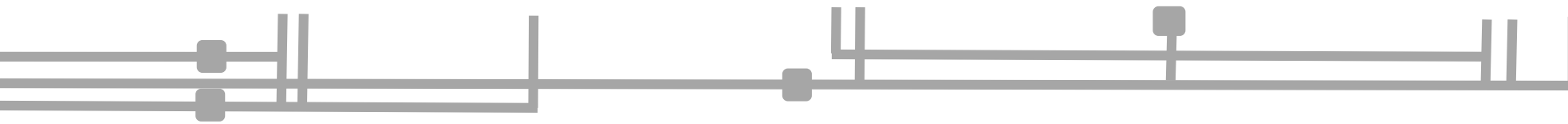




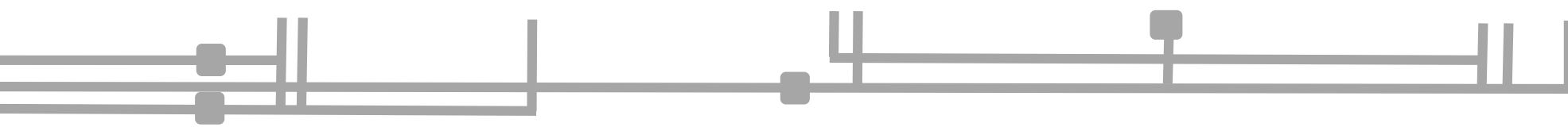
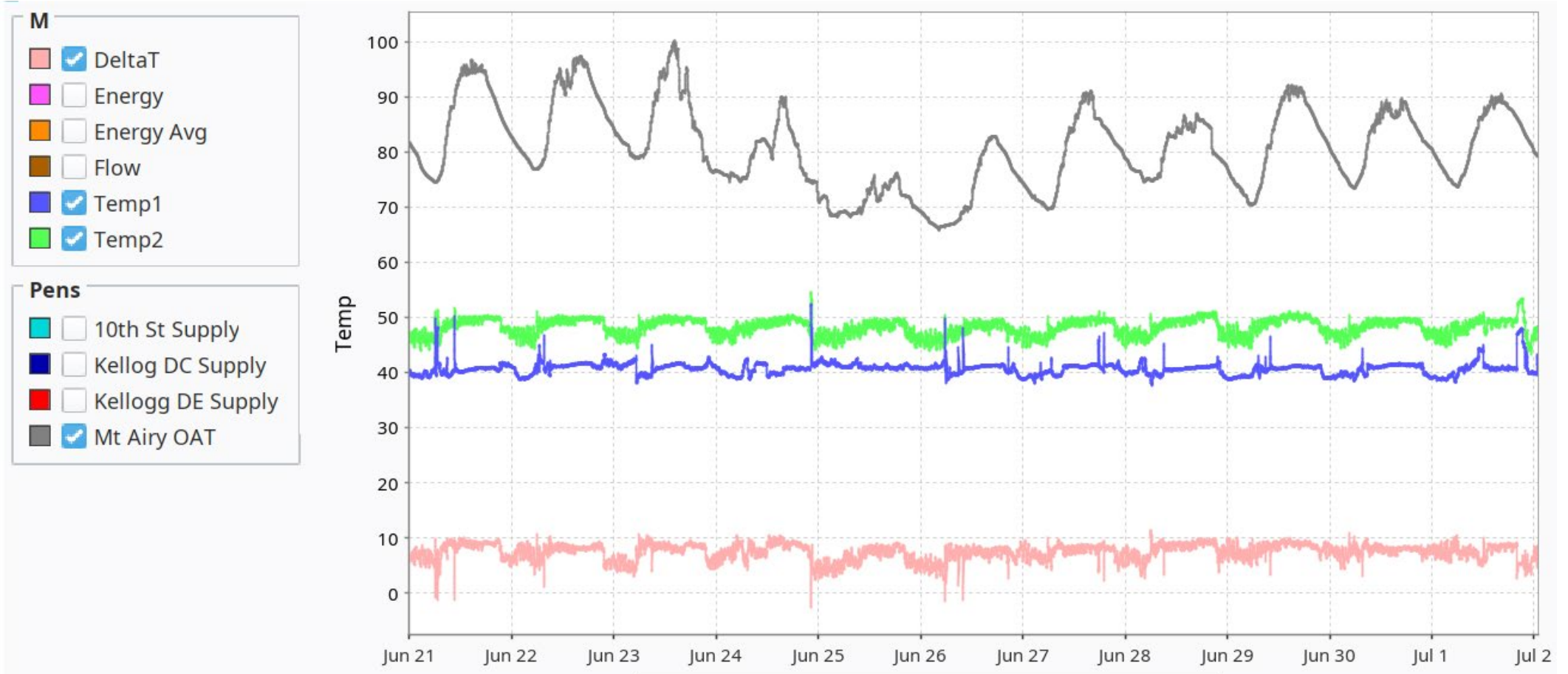
# Results of Tuning



- Flow swings
- Average energy consumption
- Temperature swings
- Pump demand

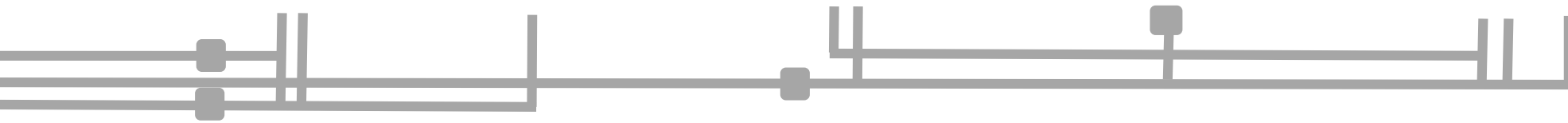


# Poor Delta T

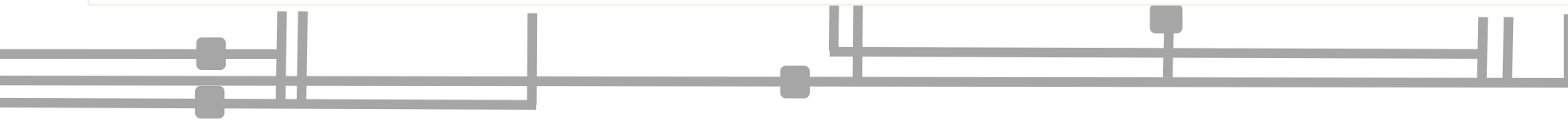
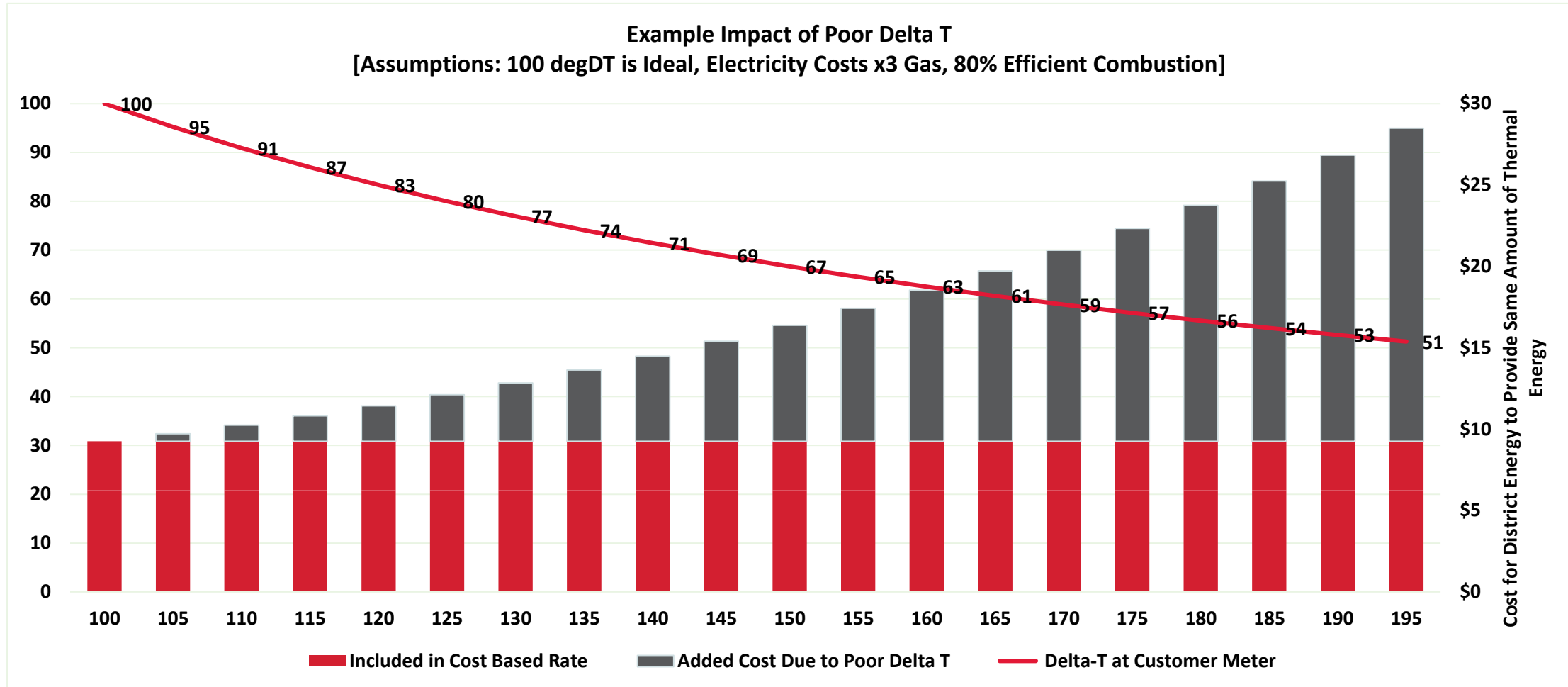


# Delta T Economics

Steve Rambeck



# Impact of Poor Delta T



# Return Temp Requirements

- Hot Water – Heating Season

- Temp  $\leq 160$  °F
- November – March

8.2 If during any year the maximum temperature of Hot Water returned from Customer's Building Heating System to Customer's Point of Delivery exceeds 160° Fahrenheit during the months of November through March, Customer's Demand for such year may be increased by District Energy by an amount appropriate to reflect the increased rate of Hot Water delivery to Customer at such time, and Customer's Demand Charge shall be increased accordingly. District Energy shall not deliver Hot Water to Customer at a temperature exceeding 260° Fahrenheit.

- Chilled Water – Cooling Season

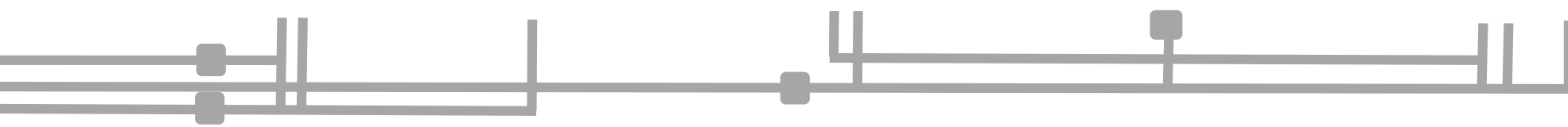
- Delta T  $\geq 14$  °F
- June 1 – Sept 30
- Flow Efficiency Credits and Charges

8.4 Customer's Allowable Chilled Water Flow in any Billing Period shall be equal to or less than 103 gallons per ton-hour multiplied by the ton-hours of Thermal Energy used in that period. Beginning on June 1 of the year after the year in which the First Service Date occurs, for any month between June and September inclusive in which Customer's actual Chilled Water flow exceeds 110 gallons per ton-hour of Thermal Energy used, Customer shall pay an excess flow charge. For any month between June and September inclusive in which Customer's Chilled Water flow is less than 75 gallons per ton-hour of Thermal Energy used, Customer shall receive a reduced flow credit. Until September 30, 1994, the rate of such charge or credit shall be \$0.40 per thousand gallons above or below the Allowable Chilled Water Flow. Thereafter, the flow charge/credit rate shall be as filed with and approved by the City of Saint Paul.

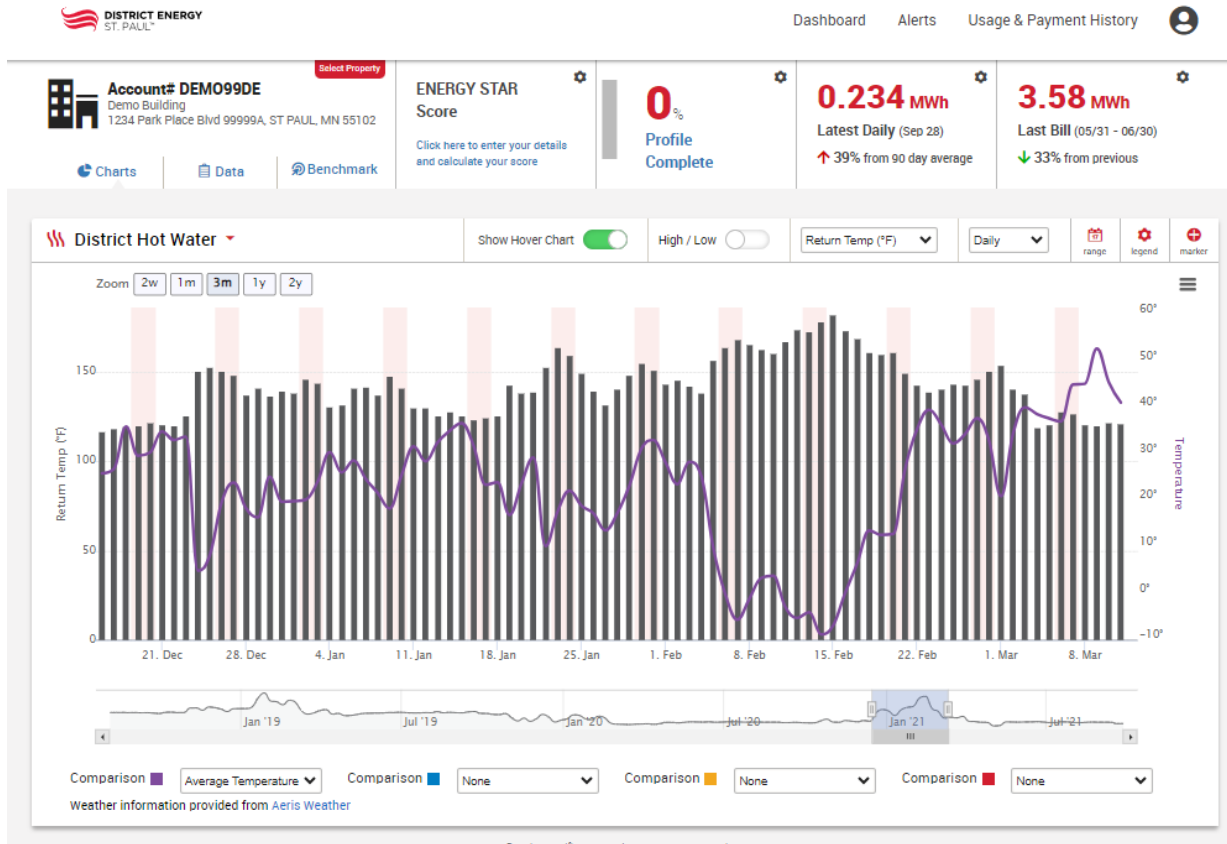
# Delta T Monitoring

July 2023

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7	7	7	8	7	6	7	8	8	7	8	8	7	8	8	7	7	6	5	5	6	6	6	7	6	4	5	5	5	6	6	
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# Delta T Monitoring



### Add Threshold Notifications

**For**

All | Demo Building Energy Star | Account #DEMO99DC | **Account #DEMO99DE**

**Notify Me When My**

**District Hot Water Usage**

**On**

All Meters | Meter #77777 (Heating Service) | **Meter #88888 (Heating Service)**

**is Over** | is Under

160 | **Averages** 0.000 °F/Day

MWh | **°F**

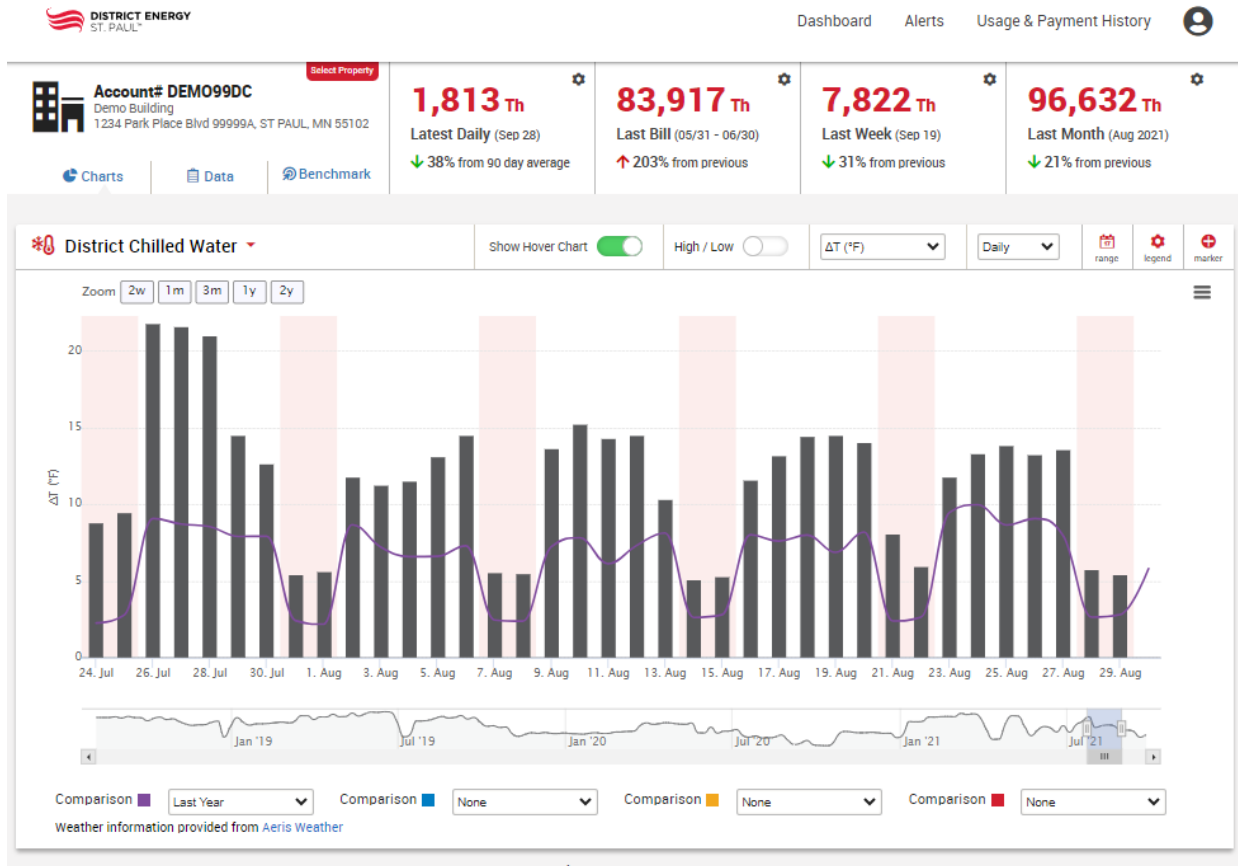
in 15-minutes | in 30-minutes | in an Hour | **in a Day** | in a Week | in a Month

**At**

Email Address

Close Save Changes

# Delta T Monitoring



### Add Threshold Notifications

For

All Demo Building Energy Star **Account #DEMO99DC** Account #DEMO99DE

Notify Me When My

**District Chilled Water Usage**

is Over **is Under**

14 Averages 0.000 °F/Day

Th °F

in 15-minutes in 30-minutes in an Hour **in a Day** in a Week in a Month

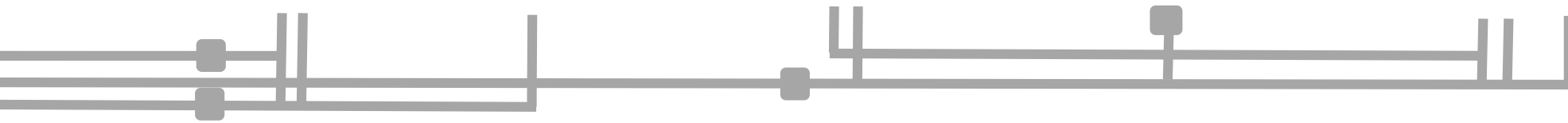
At

Email Address +

Close Save Changes



# Customer Resources

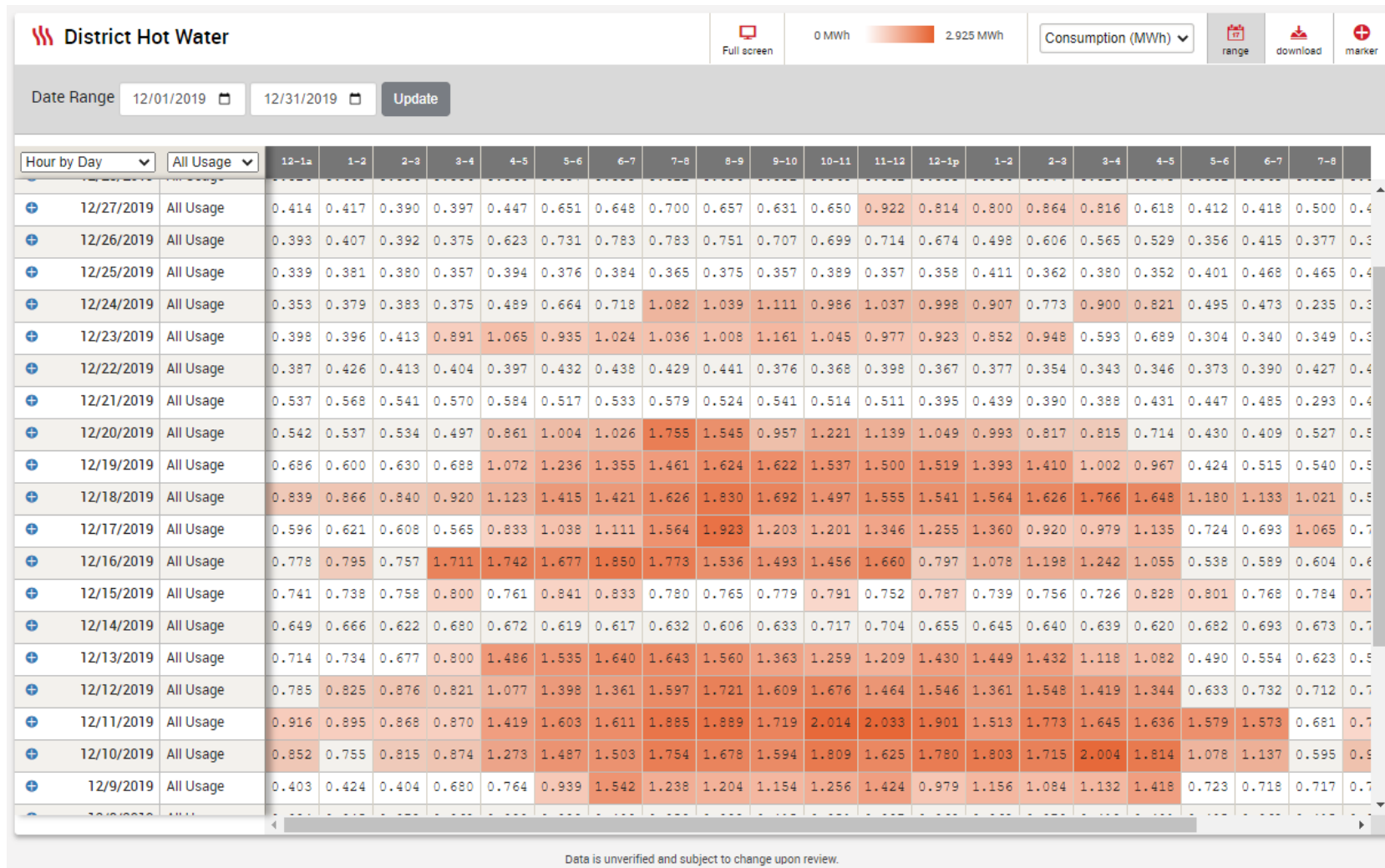


# Customer Portal



- Simple dashboard and navigation
- Multiple comparisons available
- Quickly identify opportunities

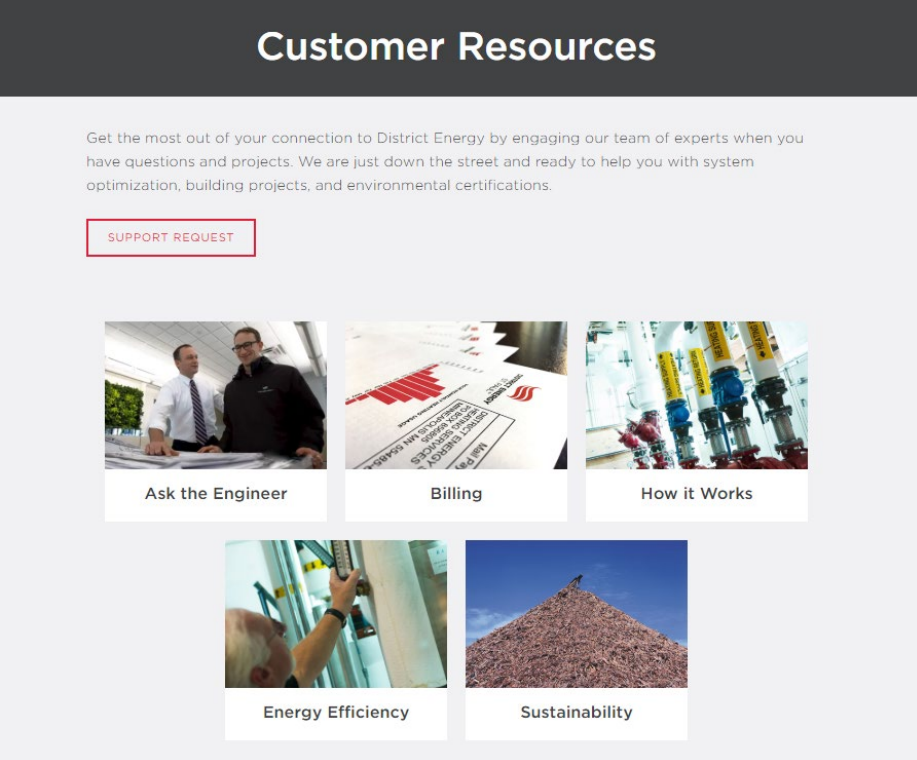
# Customer Portal



- Data readily available
- Set markers and track projects
- Set up custom alerts
- Link to EnergyStar
- Grant temporary access

# Customer Resources at DistrictEnergy.com

- Ask the Engineer
- Past operating engineers presentations
- Maintenance checklist
- Request service or submit a question
- Energy Efficiency Program
- Customer Portal



**Customer Resources**

Get the most out of your connection to District Energy by engaging our team of experts when you have questions and projects. We are just down the street and ready to help you with system optimization, building projects, and environmental certifications.

[SUPPORT REQUEST](#)

**Ask the Engineer**

**Billing**

**How it Works**

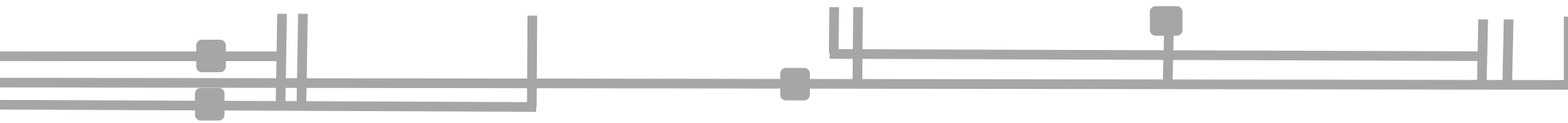
**Energy Efficiency**

**Sustainability**

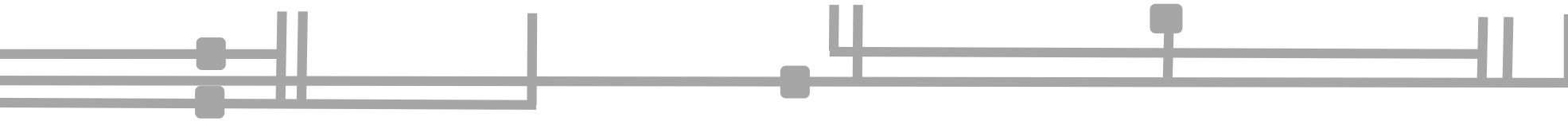
# Questions

651.297.8955

[info@districtenergy.com](mailto:info@districtenergy.com)



Thank you!



# Raffle

