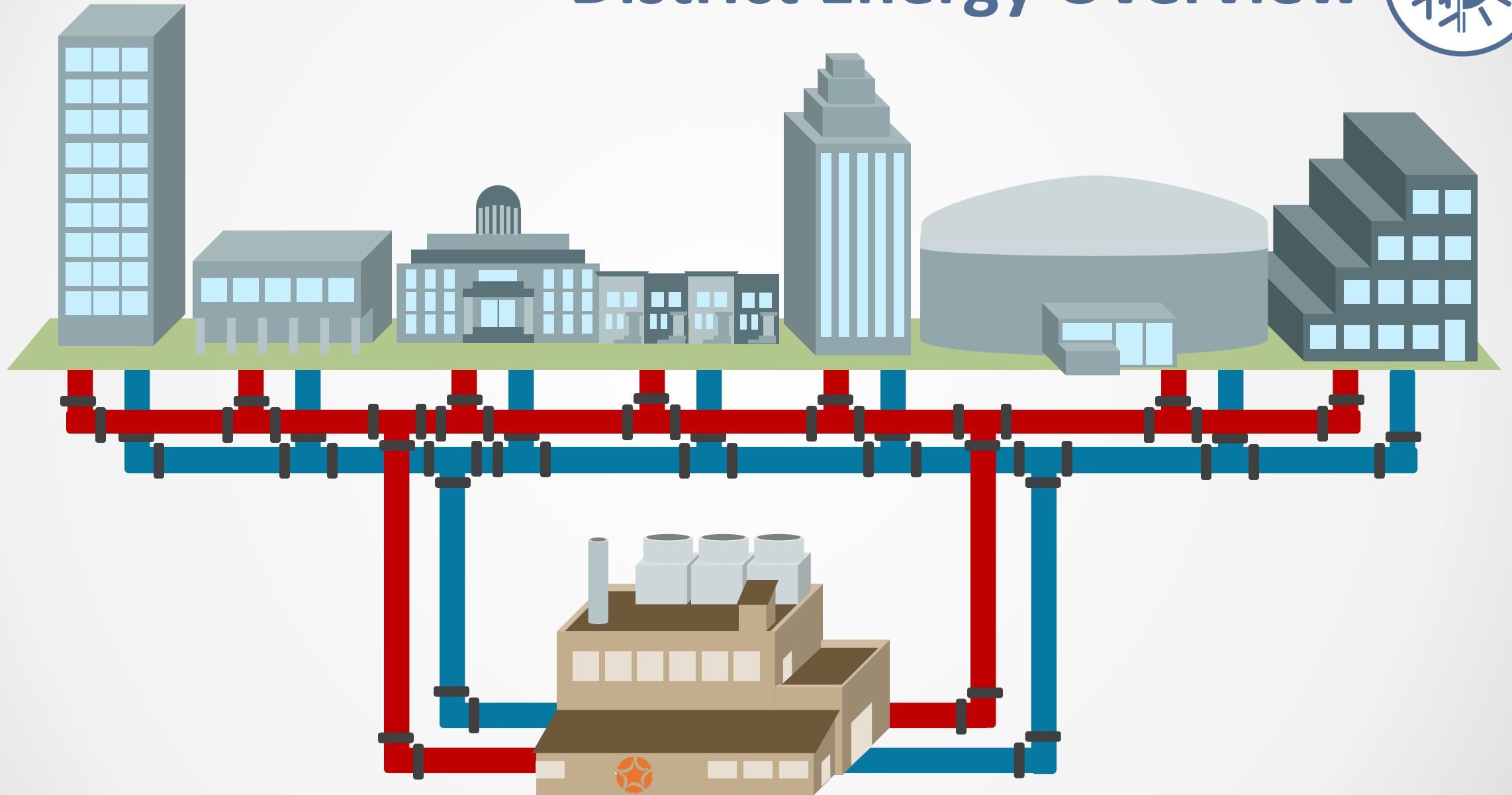


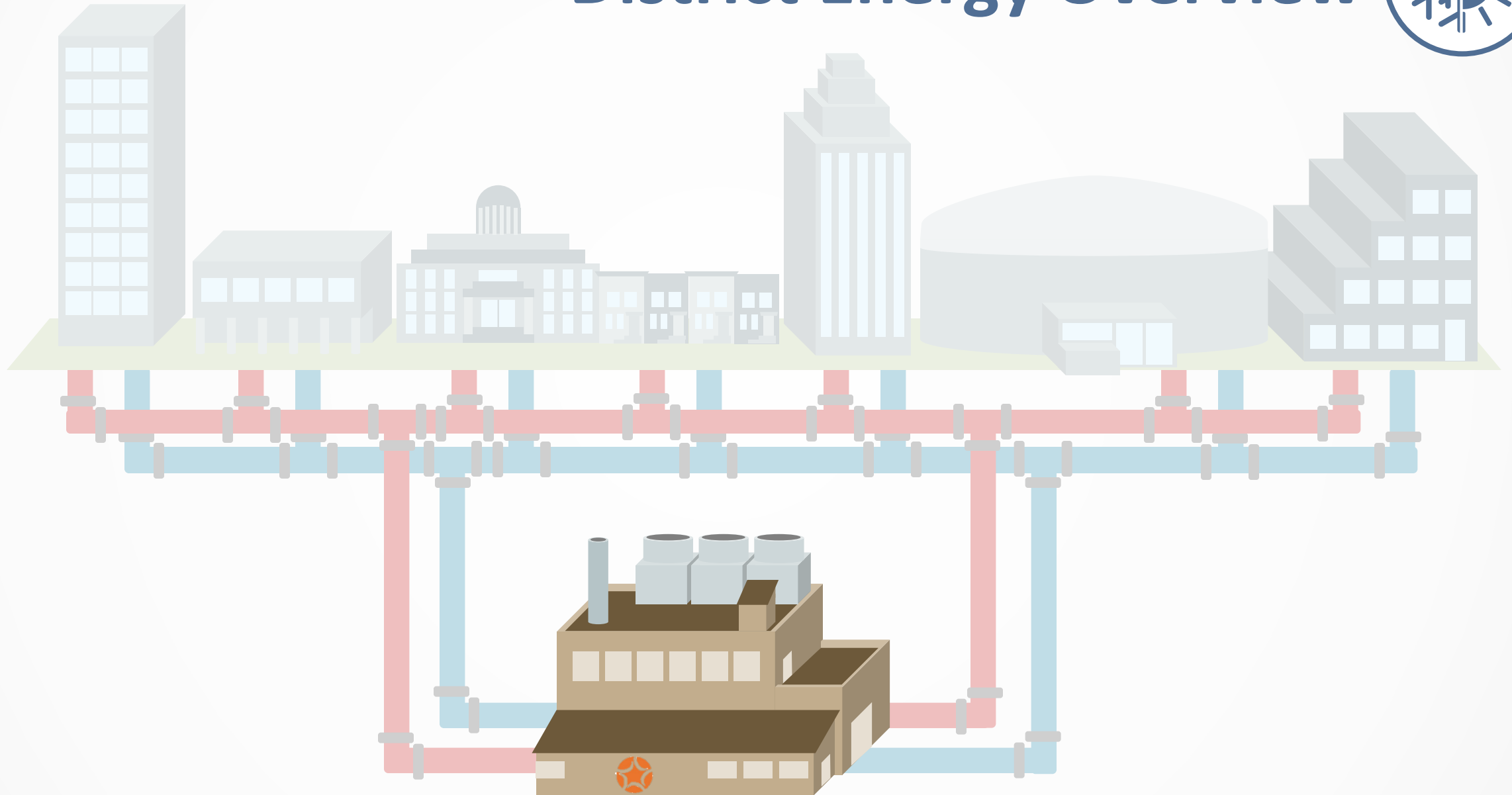


**Warm in the winter and cool
in the summer **since 1989****

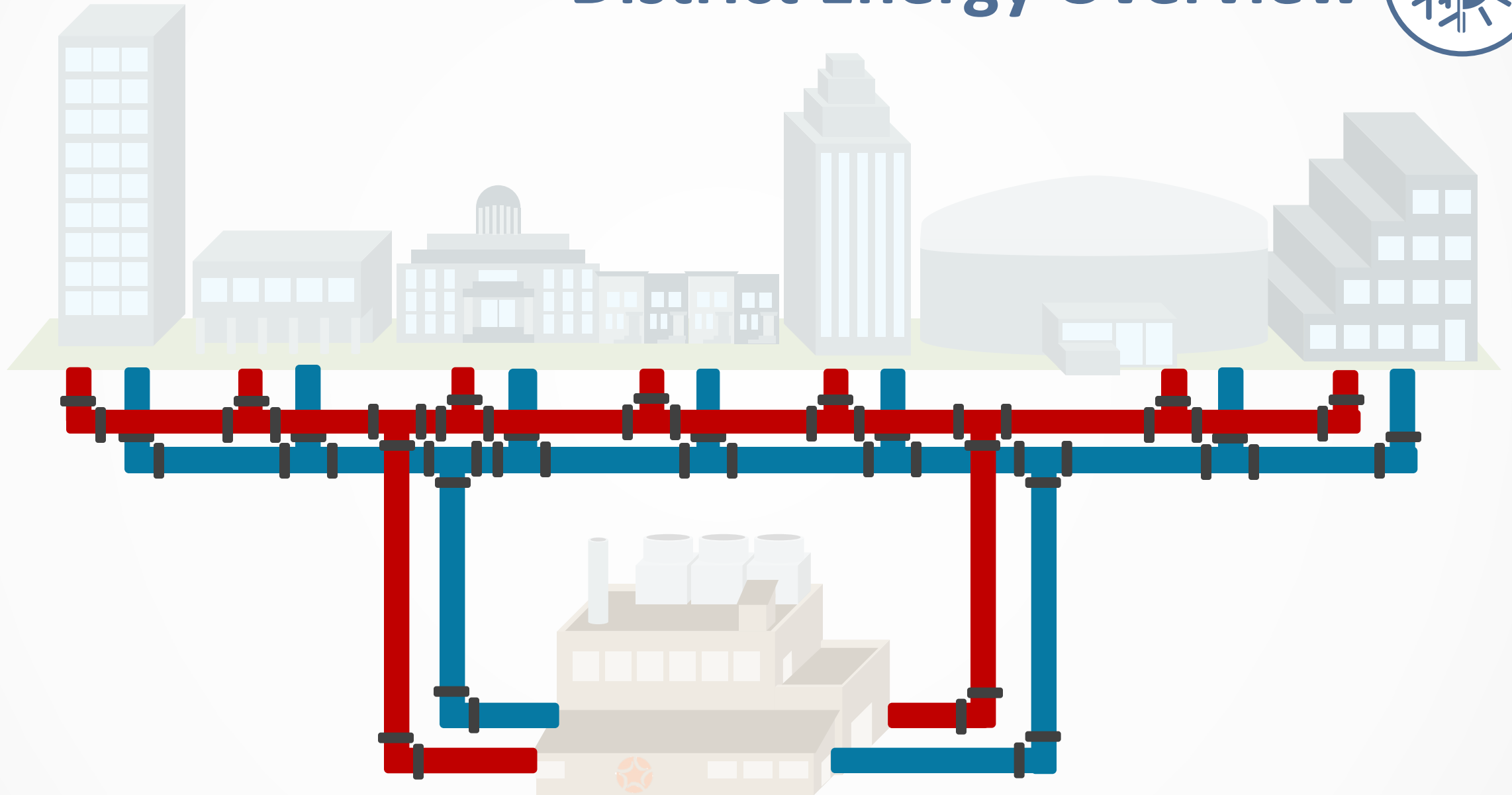
District Energy Overview



District Energy Overview



District Energy Overview

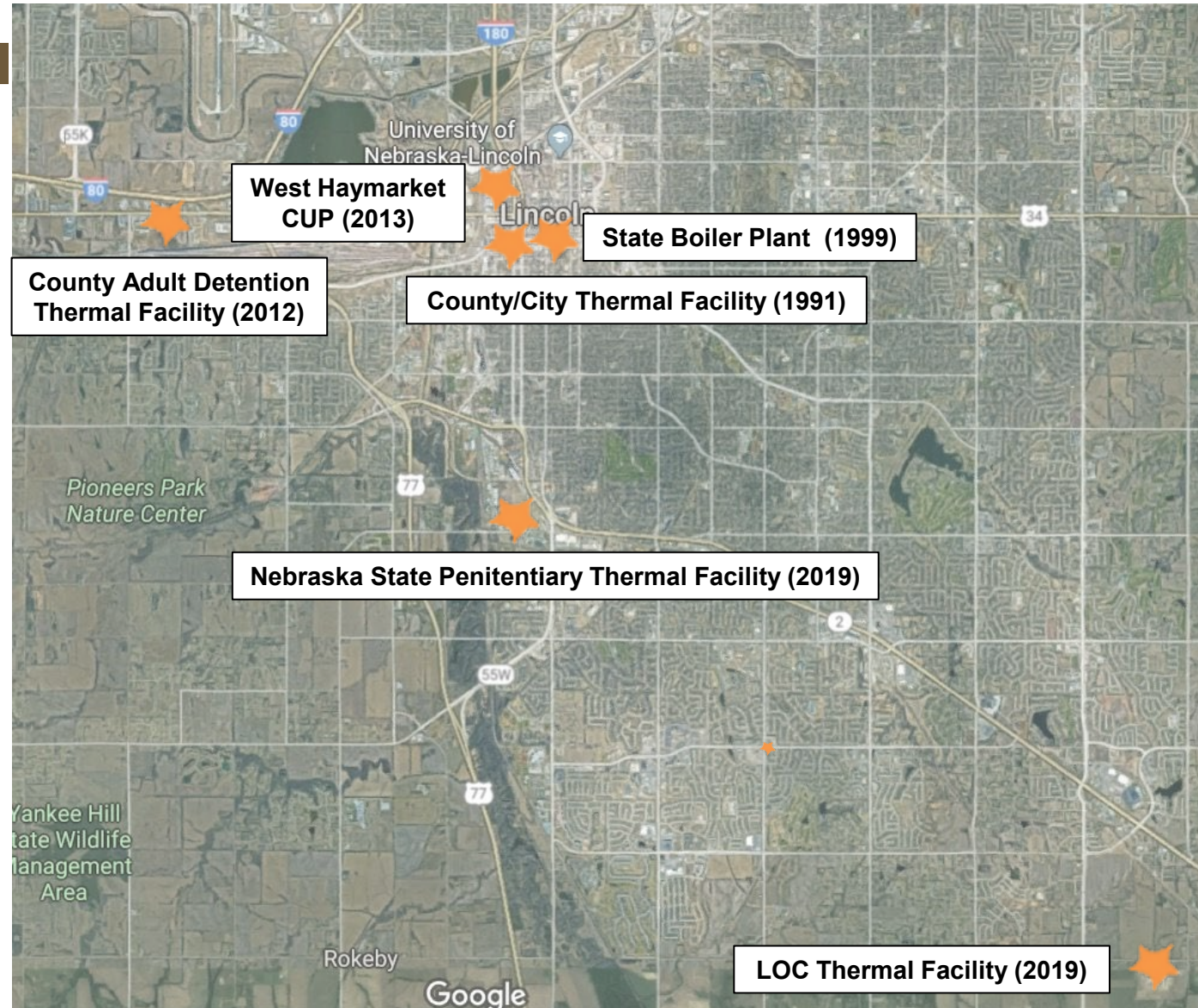




DEC Locations within Lincoln, NE

5

CUP = Central Utility Plant





DEC Thermal Plant Examples

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**Nebraska State Penitentiary Thermal Facility
(2019)**

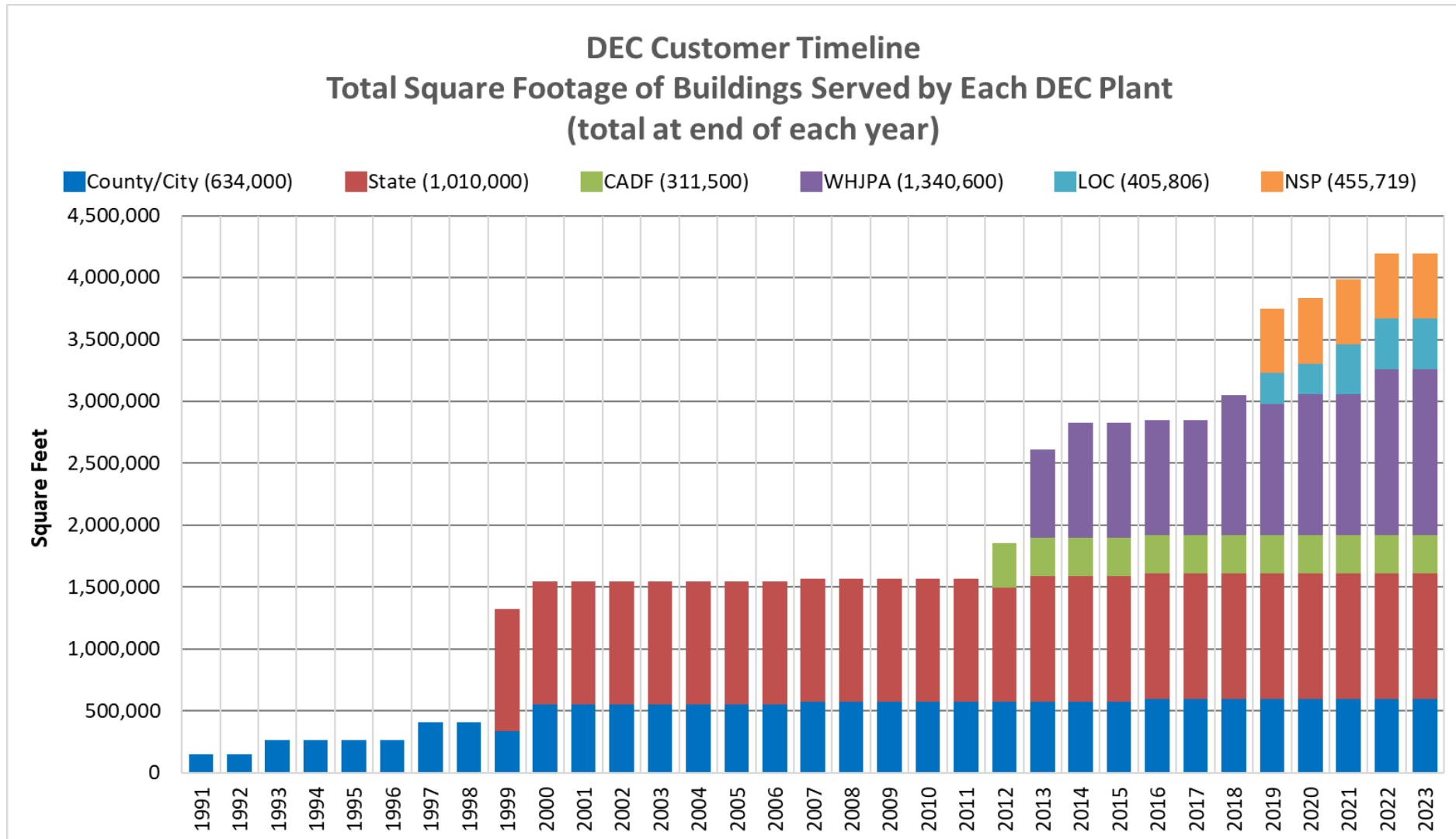


**County Adult Detention Thermal Facility
(2012)**



Square Footage Served Timeline

7





DEC Thermal Facilities

Customer Service Summary

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Plant	Cooling	Heating	Fuel Sources	Backup Power**
C/C	CW (Chillers/Ice)	HW	Natural Gas/Fuel Oil	Plant
SBP	No Service	Steam	Natural Gas/Fuel Oil	Plant
CADF	CW	HW	Geothermal*	Plant/Customer
WHM	CW (Chillers)	HW	Natural Gas/Electric	Plant
LOC	CW	HW	Geothermal*	Plant/Customer
NSP	CW (Chillers)	Steam	Natural Gas/Fuel Oil	Plant/Customer

C/C = County/City Thermal Facility

SBP = State Boiler Plant

CADF = County Adult Detention Thermal Facility

WHM = West Haymarket Central Utility Plant

LOC = LES Operations Center Thermal Facility

NSP = Nebraska State Penitentiary Thermal Facility

HW = Hot Water

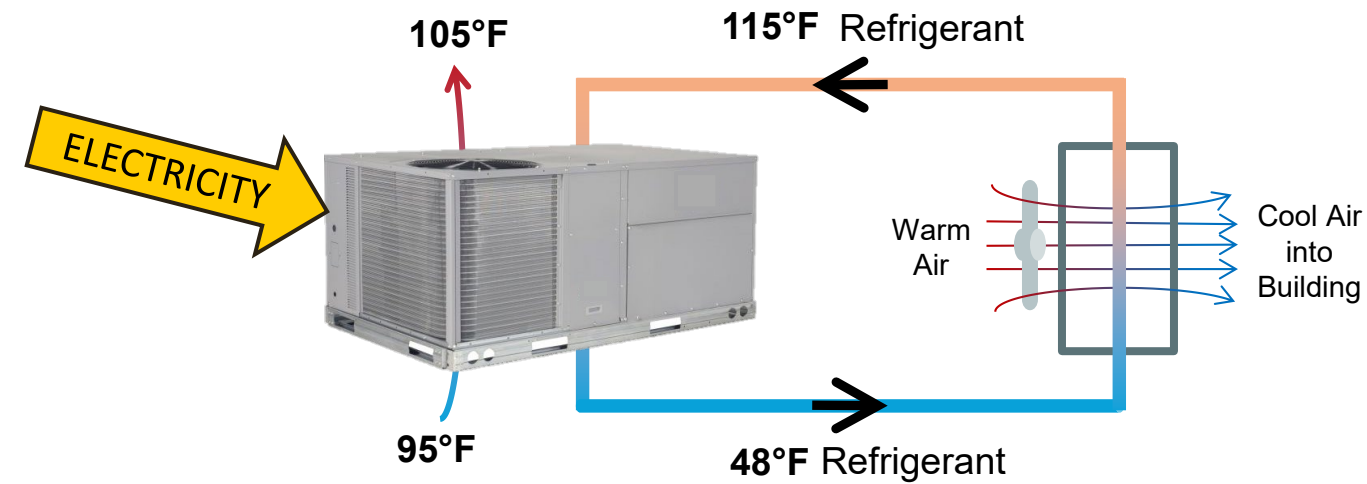
CW = Chilled Water

*Ground-coupled, electric heat pumps

**Emergency power only, not Life Safety

Typical Building Cooling Unitary or Packaged System

9

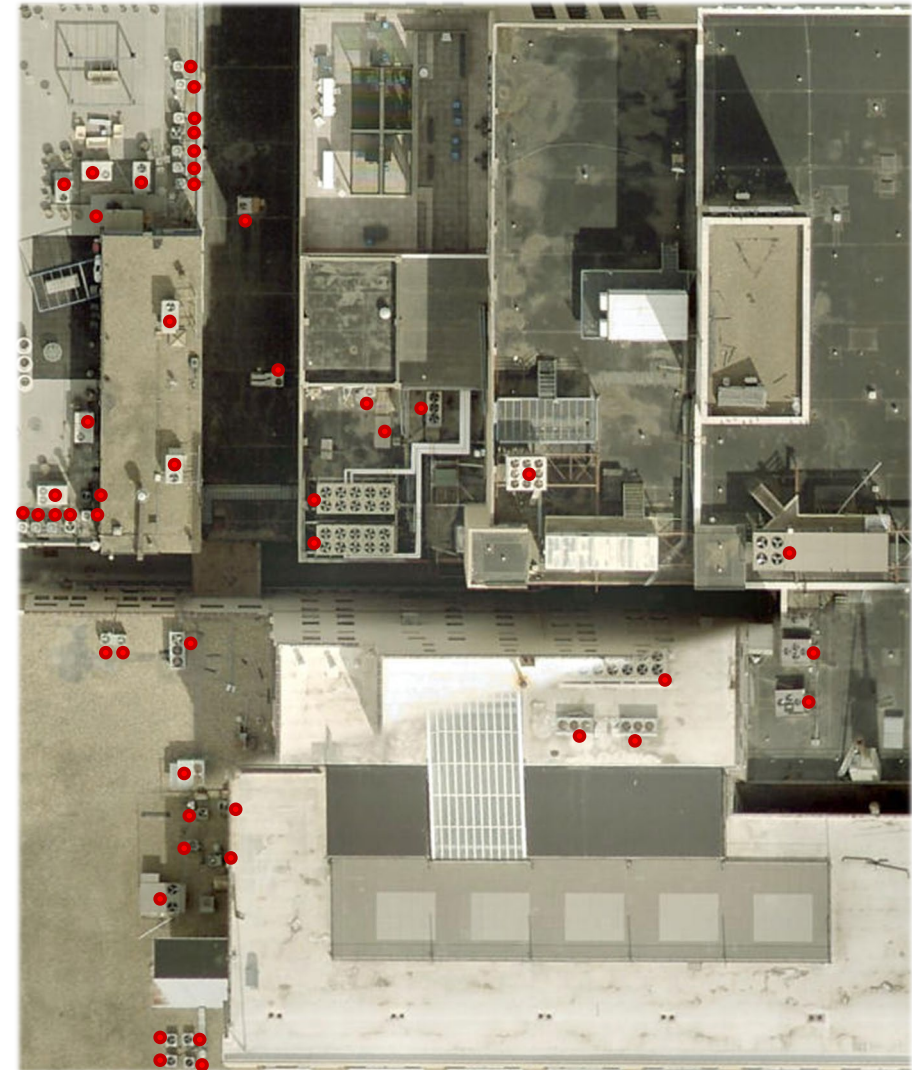
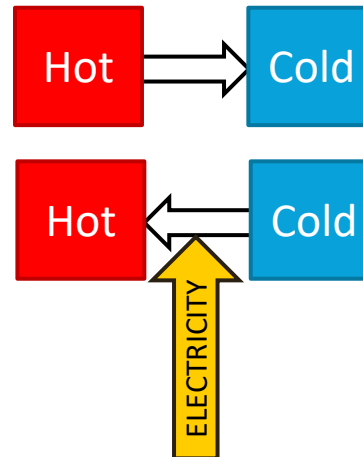


Benefits:

- Simple to install
- Low initial cost

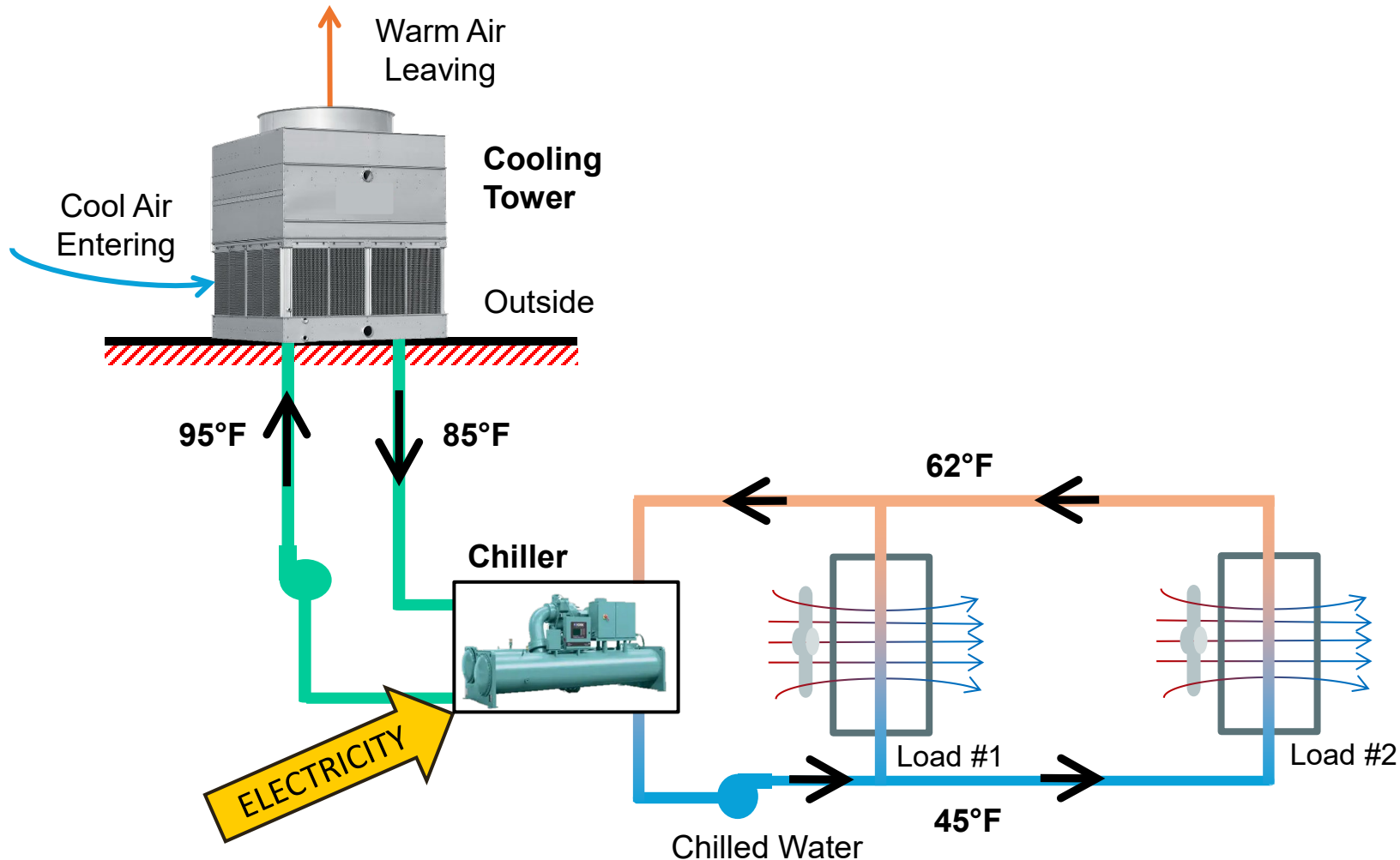
Drawbacks:

- Lots of equipment to maintain
- Low efficiency
- Difficult to control for comfort
- No redundancy



Typical Building Cooling Chiller System

10



Benefits:

- Water-cooled chillers use half as much energy as air-cooled*
- Centralizes maintenance
- Better comfort and humidity control
- Longer equipment life

Drawbacks:

- Water consumption
- Higher initial cost
- More complex operation

** from Department of Energy and ASHRAE efficiency standards*

Conventional District Energy Cooling System

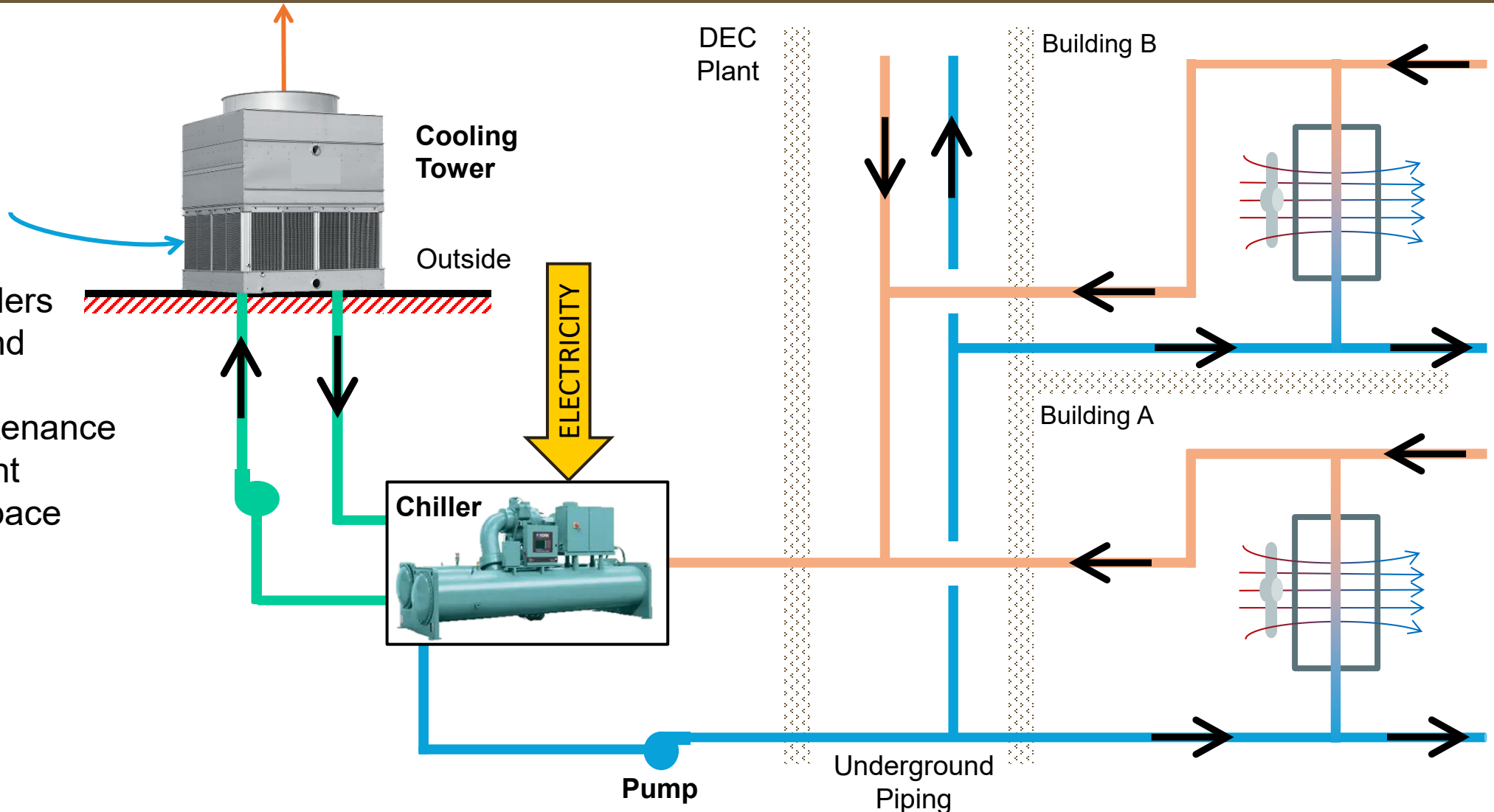
11

Benefits:

- Fewer, larger chillers
- Highly efficient and reliable
- Centralizes maintenance of large equipment
- Saves building space
- Reduces noise

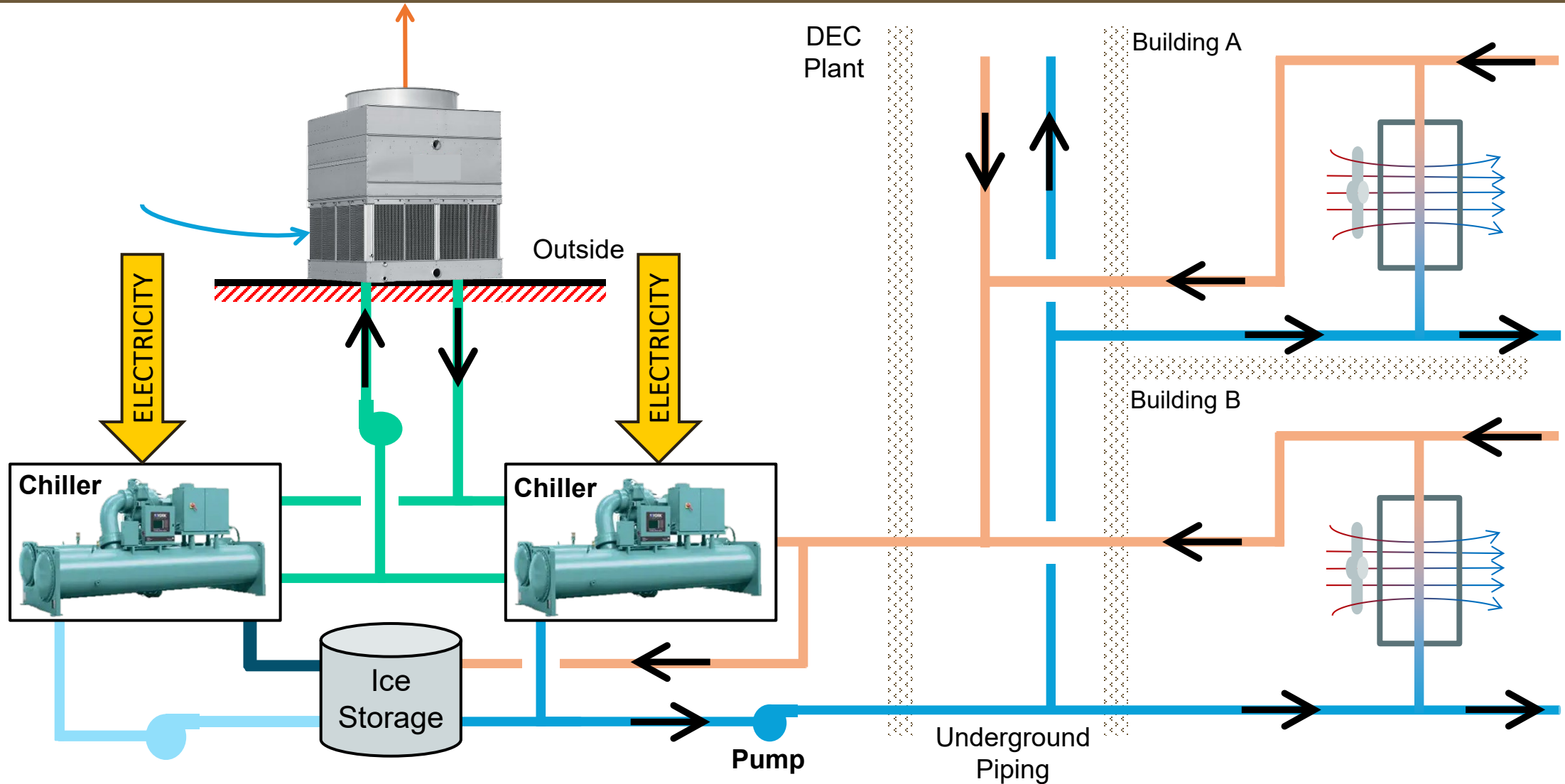
Drawbacks:

- High first cost
- Complexity



City/County Cooling System

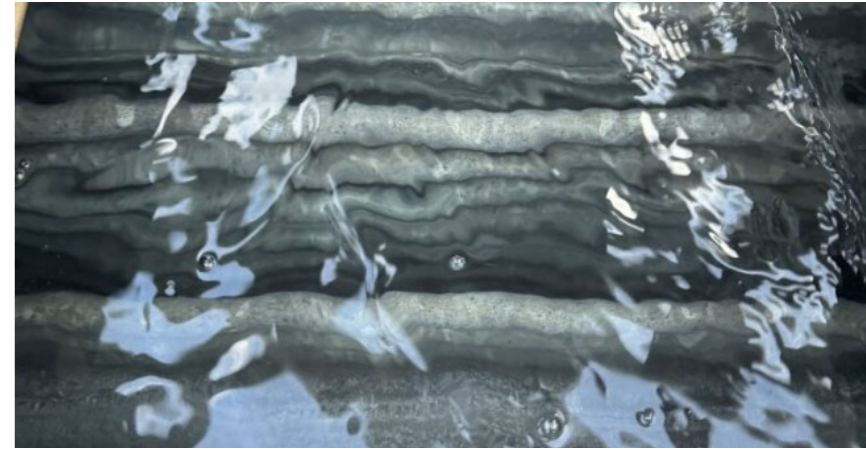
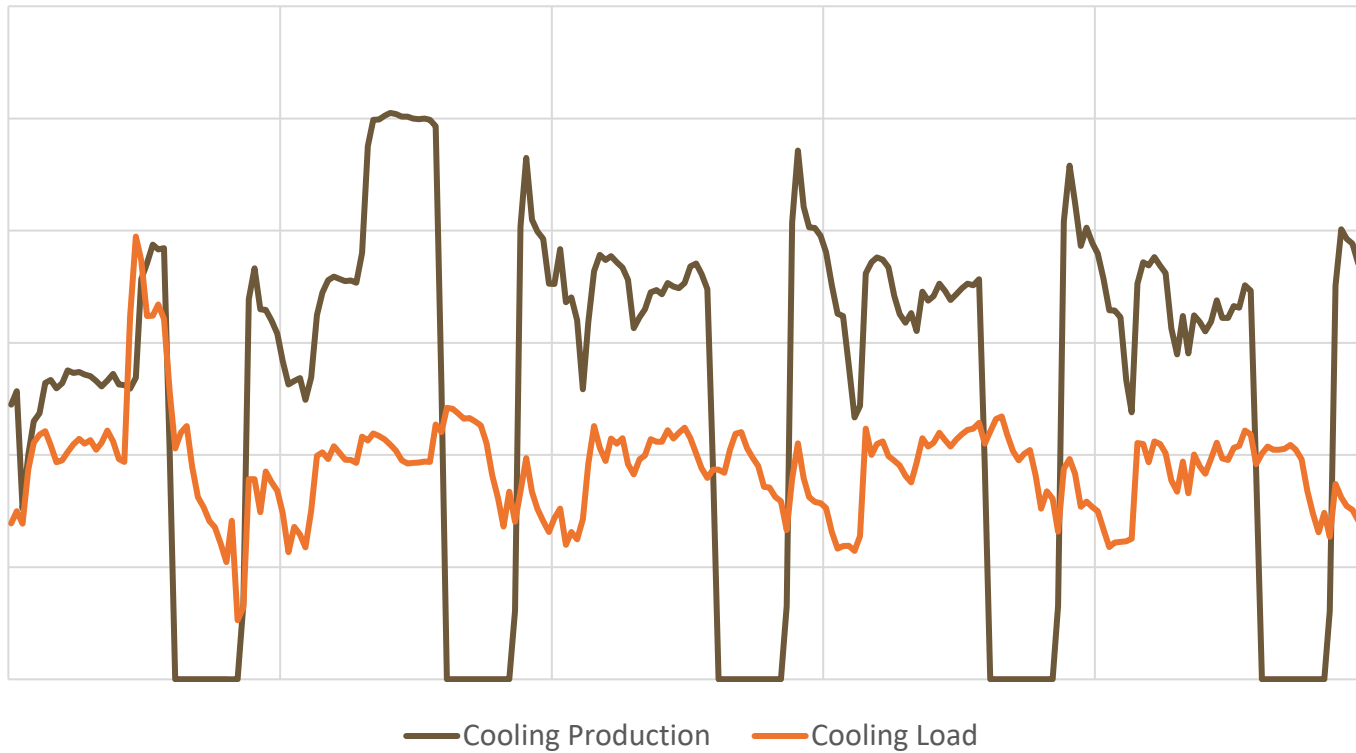
12



Ice Thermal Energy Storage

13

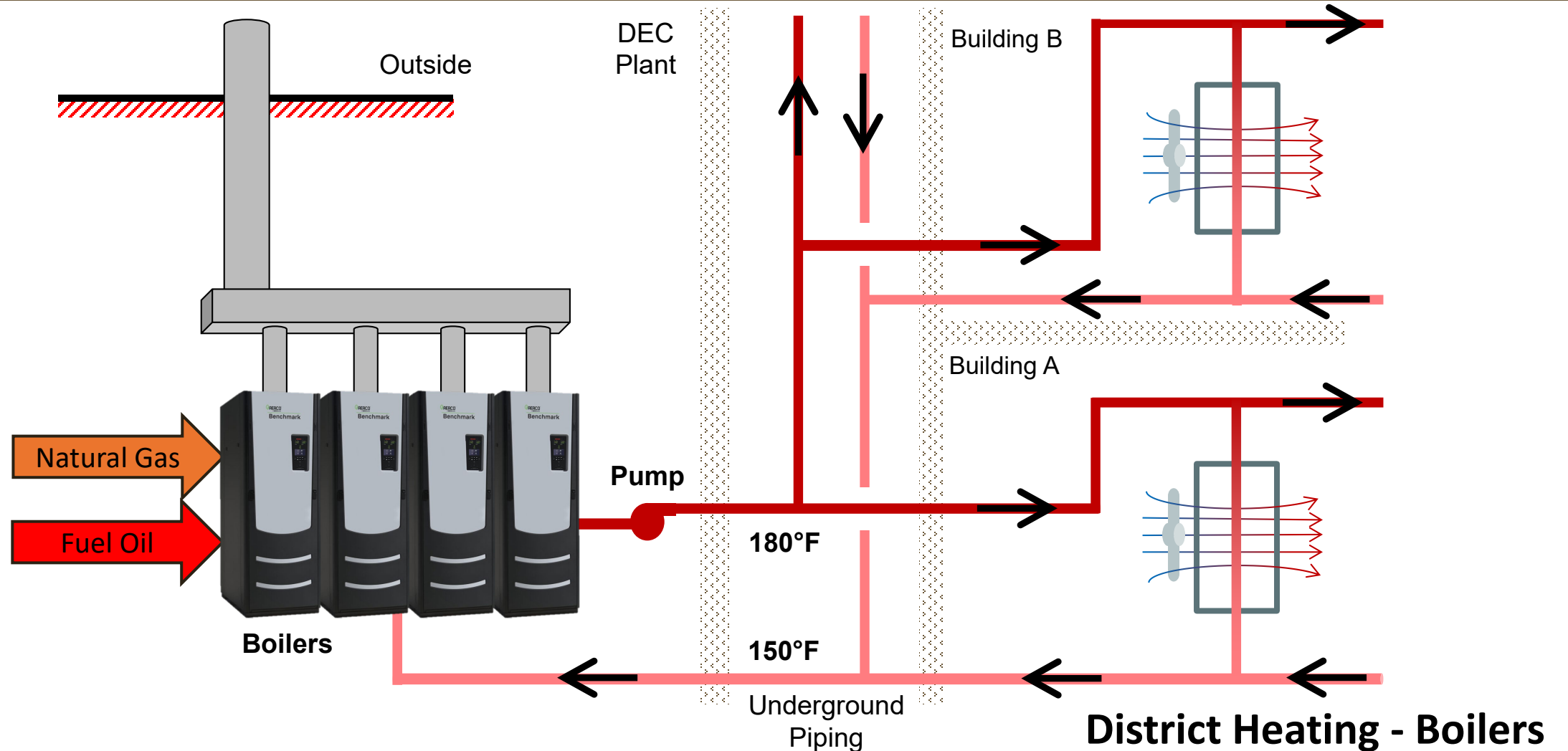
City-County Ice Storage



Technology and Benefits



14

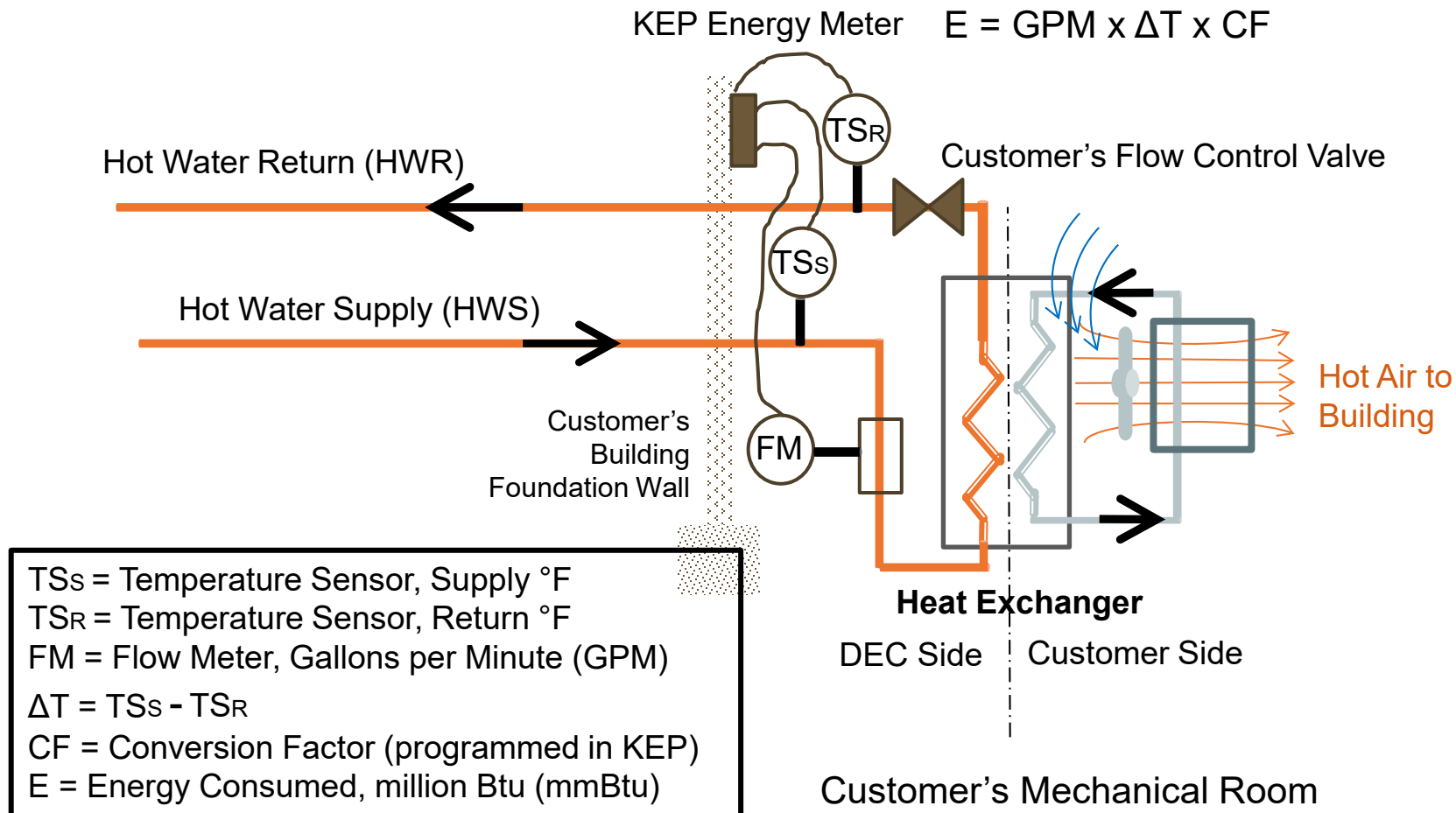




Typical Metering Configuration

(applies for either chilled or hot water)

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District Energy Corporation

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- ❑ District Energy Corporation (DEC) is a nonprofit joint entity and City of Lincoln and Lancaster County inter-local agency organized pursuant to
 - ❑ The Nebraska Interlocal Cooperation Act
- ❑ DEC Energy is a political subdivision created and existing under the laws of the State of Nebraska

- ☐ **DEC Energy was formed in 1989 by the City of Lincoln and Lancaster County for purposes of:**
 - ☐ **Constructing**
 - ☐ **Financing**
 - ☐ **Furnishing**
 - ☐ **Operating thermal energy facilities and related services for providing heating and cooling to the Lincoln community**
- ☐ **Initiated because of a County project to build a then new detention facility at 605 South 10th Street**

- ❑ **DEC Energy is governed by a 5-member Board of Directors**
 - ❑ **2 County Representatives**
 - ❑ **2 City Representatives (1 Council, 1 Mayor appointed)**
 - ❑ **1 LES Representative**
- ❑ **Directors serve two-year terms and are eligible for reappointment**



Board of Directors

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Sean Flowerday
DEC Chair
County Commissioner



Carl Eskridge
DEC Vice Chair
LES Board



Kim Morrow
DEC Secretary
City Representative



Bennie Shobe
Director
City Council



Matt Schulte
Director
County Commissioner



Management Agreement

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- ☐ Pursuant to a Management Agreement between LES and the Corporation, LES manages DEC's systems and affairs:
 - ☐ LES is responsible for the overall operation, maintenance and administration resulting in the equivalent labor of 11 full time positions
 - ☐ Initial term of 20 years; currently 5 year rolling term
 - ☐ LES is not responsible for any liabilities of the Corporation, including its indebtedness, and the Corporation has agreed to indemnify LES

Management Agreement

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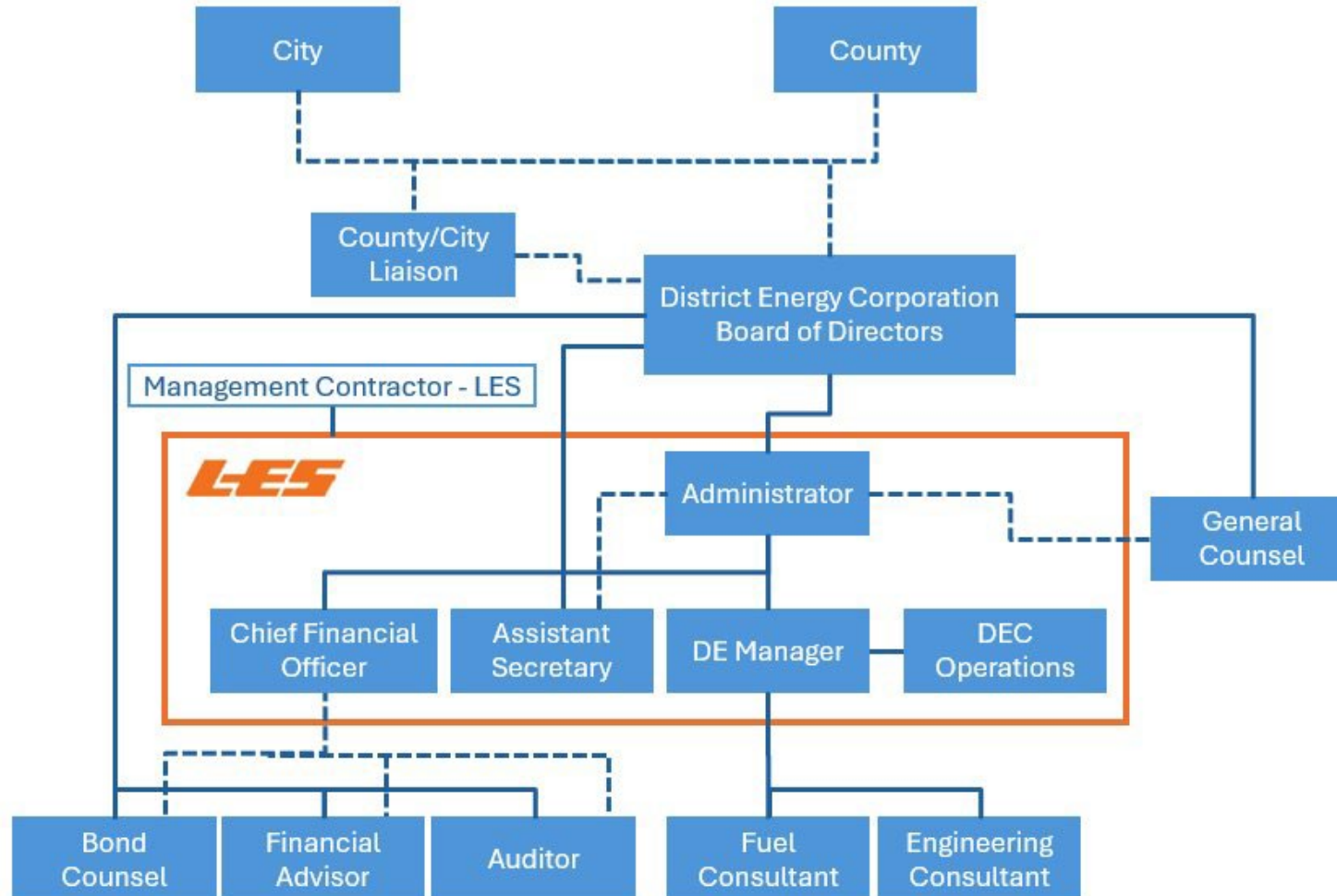
- ❑ Why does LES manage DEC?
 - ❑ LES was instrumental in its creation
 - ❑ Focus on reliability, efficiency, sustainability, robustness, value justified on life cycle cost analysis; profits are not a motive for either LES/DEC Energy
 - ❑ LES had experience operating a Combined Heat and Power project in downtown Lincoln



Management Agreement

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Organization Chart
District Energy Corporation





LES Management Staff

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Jason Fortik
DEC Administrator
Vice President, Power
Supply

jfortik@les.com



Aaron Evans
Manager, District
Energy

aevans@les.com



Dianne Dobrusky
DEC Assistant Secretary
Coordinator, District
Energy

ddobrusky@les.com



Wade Leibbrandt
DEC CFO
Director, Finance

wleibbrandt@les.com



DEC Rates are set using Cost of Service Principles

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Energy Services Agreement General Rate Principles

- ❑ All rates delivered at cost of service
- ❑ Through its General Bond Resolution, DEC is obligated to set rates sufficient to collect funds to meet
 - ❑ All Debt
 - ❑ Capital Expenditures
 - ❑ Operations & Maintenance
 - ❑ Commodity Expenses
- ❑ Budget presented to Board for approval each October