



# Update on District Cooling and Thermal Storage

Resource Management Committee  
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Jim Collins, Director  
On-Site Energy Resources





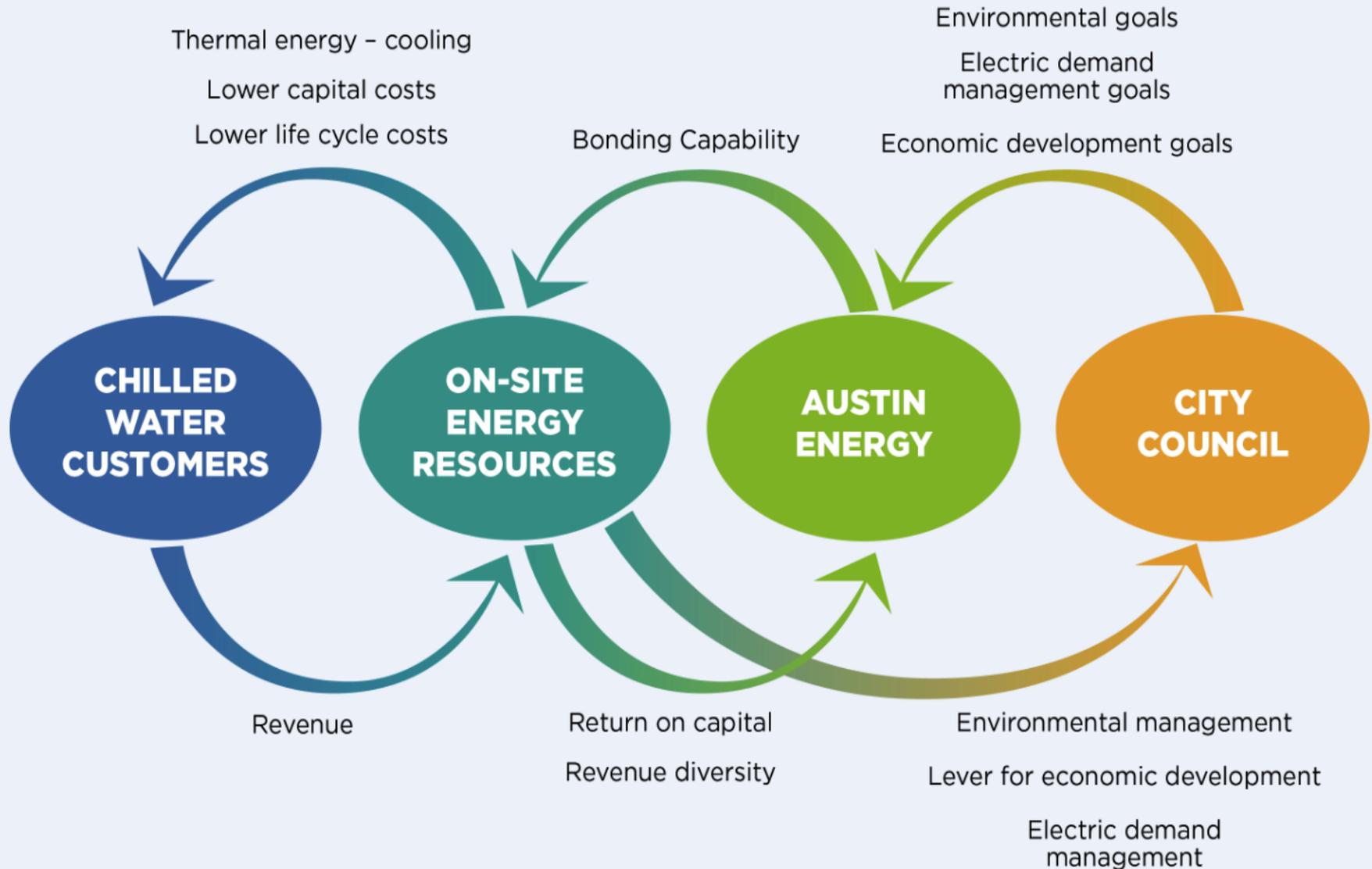
# District Cooling



- Underground network of pipes providing chilled water to meet cooling needs of multiple buildings
- Gathering load generates superior energy savings, reliability and quality
- Thermal storage element shifts electric demand to off-peak



# District Cooling Value Chain





# 2017 Snapshot

- District Cooling Program has connected 70 customers
- Over 19 million square feet of facilities (i.e., 165 City Halls)
- Summer 2017 → 17.2MW demand shift toward Resource Plan goal of 30 MW of thermal storage by 2027





# Look Ahead – Capacity Additions

## Downtown

- Paul Robbins Plant
- Crescent Tract
- Red River

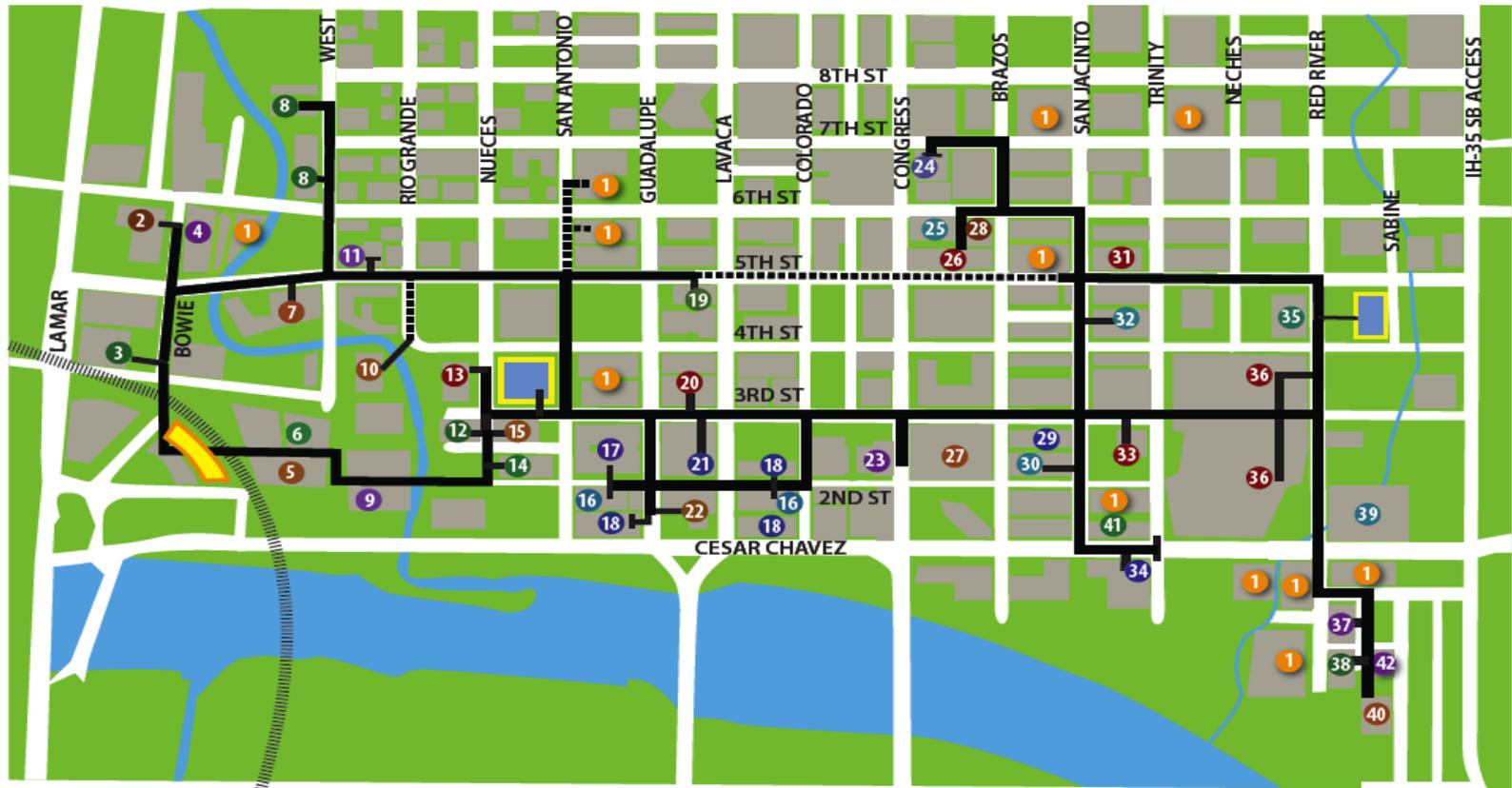


## Mueller

- Dell Children’s Medical Center of Central Texas expansion
- Next wave of commercial/retail facilities



# Downtown District Cooling Customers



- |                      |                       |                             |                         |                           |                            |
|----------------------|-----------------------|-----------------------------|-------------------------|---------------------------|----------------------------|
| 1 Future             | 6 Seaholm Residences  | 11 5th & West               | 18 AMLI Retail          | 25 515 Congress           | 33 Restaurants             |
| 2 Whole Foods        | 7 Monarch             | 12 208 Nueces               | 19 Plaza Loft           | 26 501 Congress           | 34 Four Seasons Residences |
| 3 Spring             | 8 Cirrus Logc         | 13 Austin 360               | 20 Hobby Building       | 27 JW Marriott Hotel      | 35 Hilton Hotel            |
| 4 Shoal Creek Walk   | 9 New Central Library | 14 500 W. 2nd               | 21 W Hotel & Residences | 28 The Littlefield Retail | 36 Convention Center       |
| 5 Athena Health      | 10 The Independent    | 15 Ballet Austin            | 22 City Hall            | 29 Hyatt Place Hotel      | 37 Van Zandt Hotel         |
| CHILLER PLANTS       | EXISTING PIPE         | 16 Silicon Labs             | 23 Austonian            | 30 Hampton Hotel          | 38 The Shore               |
| FUTURE CHILLER PLANT | FUTURE PIPE           | 17 AMLI Apartments & Retail | 24 ALoft/Element Hotel  | 31 WestIn Hotel           | 39 Fairmont Hotel          |
|                      |                       |                             |                         | 32 Marriott Hotel         | 40 70 Rainey               |
|                      |                       |                             |                         |                           | 41 Marriott Hotel          |
|                      |                       |                             |                         |                           | 42 80 Rainey               |

Rev. 3/20/18



# Look Ahead – Satellite Plants

## Austin Community College







# Look Ahead – Satellite Plants

## South Central Waterfront District



### Austin Energy – District Cooling



Willing to investigate innovative strategies to expel heat (i.e. using Lady Bird Lake or ground source)

Possible location for underground District Cooling facility

Possible location of closed-loop chilled water lines

Alternate location for air based heat-exchanger

Consider future expansion, and/or alternative location for District Cooling facility

- 1. What is District Cooling:** District Cooling provides customers their HVAC requirements through a network of underground pipes. It serves multiple buildings within a particular service area. A District Cooling plant distributes chilled water (approximately 42 to 44 degrees) to the customer's building through a set of heat exchangers located in the customer's mechanical room.
- 2. Benefit to developer:** District Cooling provides substantially reduced initial capital investment and lowers operational and energy expenses. In addition to stabilizing long-term costs, the developer does not need to provide a space for a mechanical room and other on-site HVAC dependent spaces
- 3. Benefit to city and community:** District Cooling allows Austin Energy to manage peak demand and provide an added value to customers. All costs of the program are recovered through chilled water customer's fees and charges.



Stephanie Bower | Architectural Illustration



# Thank you!



Jim Collins, P.E.  
Director, On-Site Energy Resources  
[jim.collins@austinenergy.com](mailto:jim.collins@austinenergy.com)  
Phone: (512) 322-6426