



District Energy Agreements for the National Western Center Phases 1 & 2

The Department of Finance
and the National Western Center Authority

Finance and Governance Committee – June 23, 2020

Council requests

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Item 20-0603

Approves an Agreement between the City and the National Western Center Authority to provide contingent credit support to secure a district energy heating and cooling system for the National Western Center campus.

Item 20-0605

Approves a Construction Reimbursement Agreement with EAS Energy Partners to reimburse the City for \$3,761,000.00 of design and construction expenses for the district heating and cooling system for the National Western Center.

Item 20-0604

Establishes a new capital fund, the “District Energy” Fund, in the Grant and Other Money Projects Fund Series and supporting appropriation of \$3,761,000.00 for expenditures related to capital costs for elements of the district energy system.

Agenda

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1. NWC district energy overview

- Background and energy strategy
- District energy overview
- Partners and deal structure

2. Contingent Commitment Agreement

- Funding agreement terms
- Financial overview

3. Construction Reimbursement Agreement and Companion Ordinance

- Scope
- Agreement purpose

4. Council request

- Contingent Commitment Agreement Bill
- Construction Reimbursement Agreement Bill and Companion Ordinance



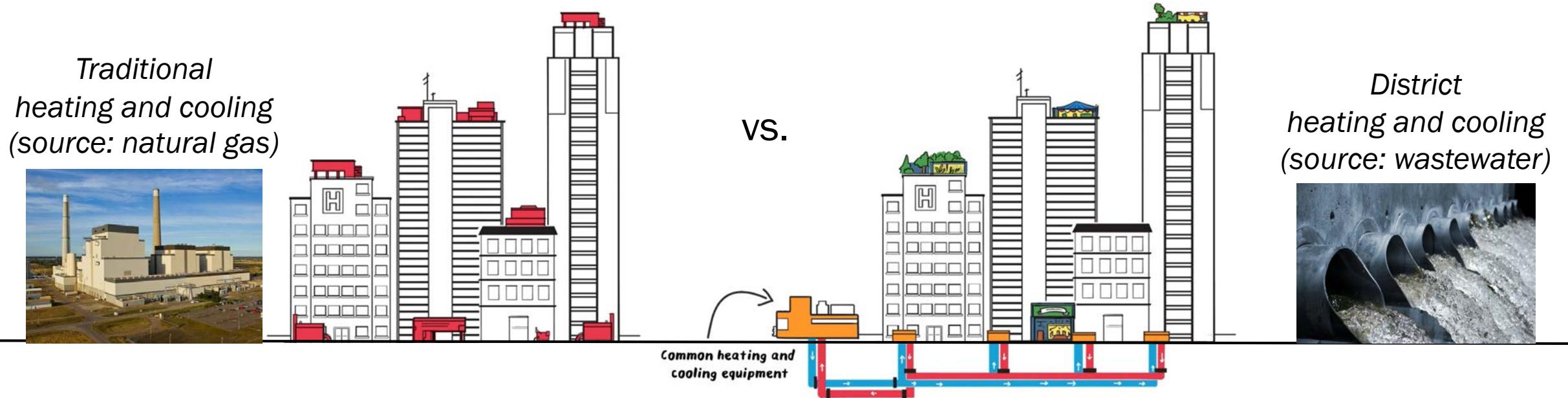
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District heating and cooling

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The National Western Center can source nearly 90 percent of its heating and cooling from an underground sewer pipeline — a recycled source of thermal energy in a closed-loop system.



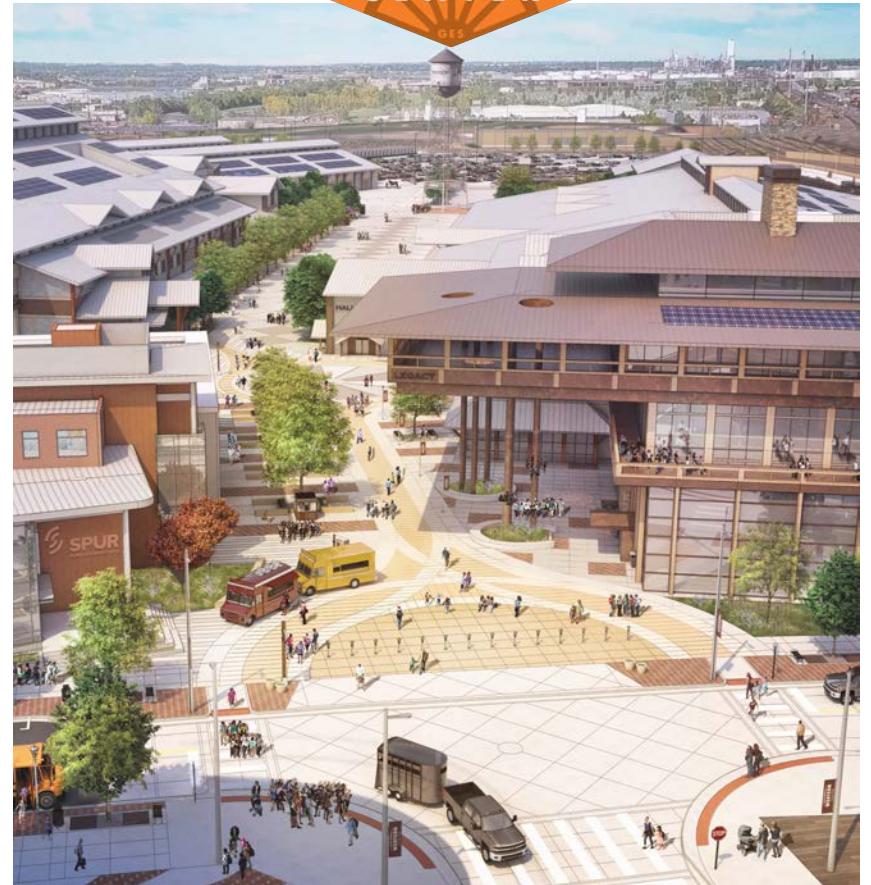
A responsible approach

With a district energy system, heating and cooling NWC buildings will be:

- Reliable and resilient
- Price-certain and cost-comparable to traditional systems
- Low-carbon
- Better for our communities



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Reliable & resilient



Recycled thermal energy contributes to campus and community resiliency. Campus buildings will have heating and cooling, even if natural gas is not available.

Using recycled thermal energy supports the campus's ability to be a place of refuge during extreme weather events or outages.

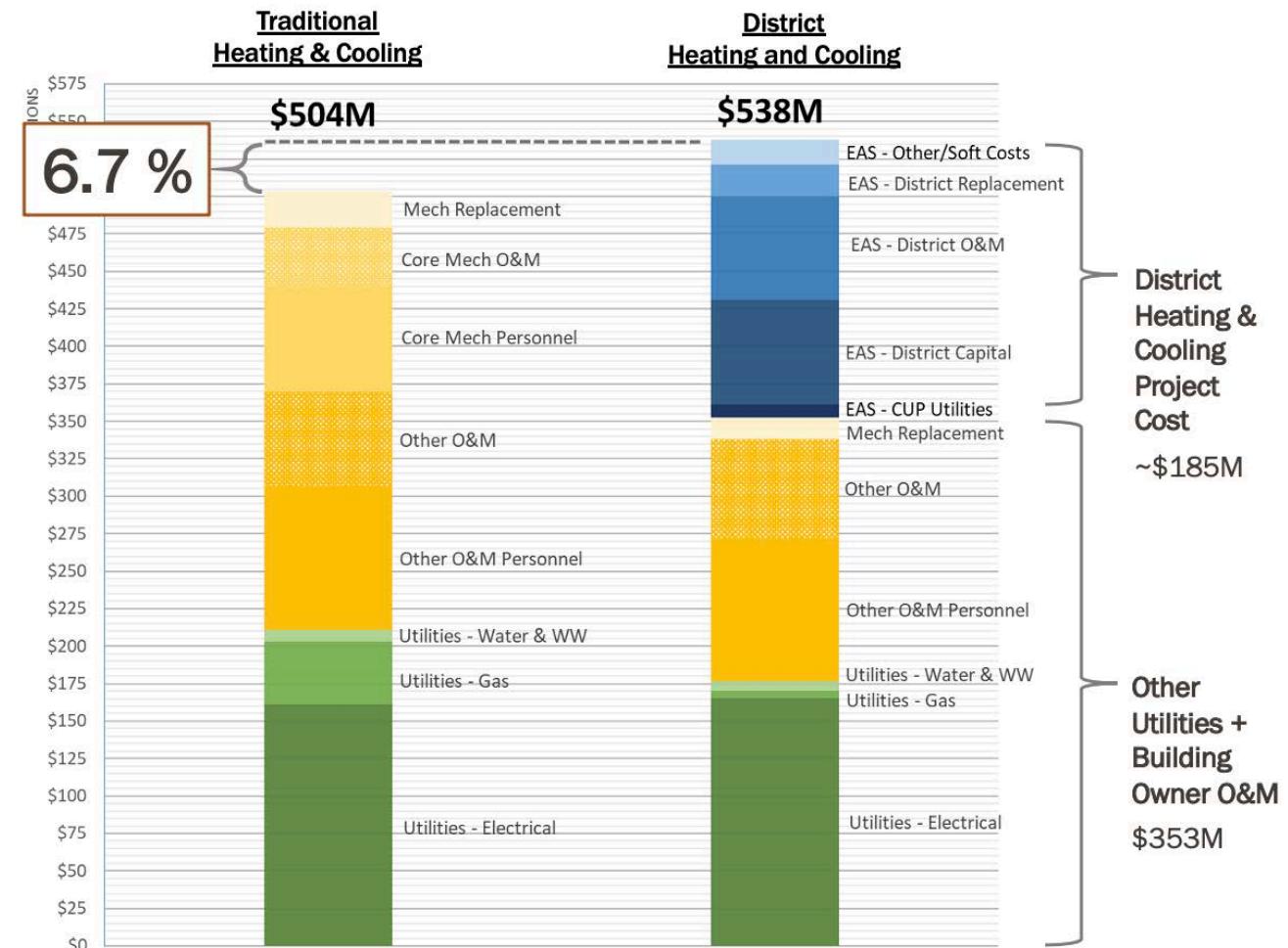
Price-certain & cost-comparable

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Every building has heating and cooling costs, no matter what system is used.

The cost is comparable to traditional systems over the long run (40 years).

Note: Cost estimates are subject to change as we finalize negotiations and financing rates.



Low-carbon solution

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We will meet nearly 90 percent of phases 1 & 2 campus heating and cooling demand by recycling thermal energy captured from an underground sewer pipeline.

Avoids 2,600 metric tons of CO₂ emissions each year.



Equivalent to **6.6 million** vehicle passenger miles driven in Denver annually.



Better for our communities

Environment

- Reduced emissions
- Cleaner air
- Healthier neighborhoods
- Odor-mitigating biofilter (Metro)

Equity

- MWBE participation goals
 - 13% design
 - 13% construction
- Prevailing wage
- Workforce development during construction

Education

- Educational tours
- Programming support
- Promotion of clean energy solutions

Each year for 40 years during operations, developer is contractually obligated to submit and implement a community engagement plan.

MWBE utilization plan

EAS has committed to 13% design and 13% construction goals for the campus energy project, as stated in its utilization plan.

- EAS has committed to providing technical assistance and supportive services to MWBEs:
 - a) Guidance for reviewing contracts, pay applications and hiring methods
 - b) Joint checking, early payments, and early release of retainage
- EAS has identified trades and scopes of work for MWBEs on this project
- EAS will host subcontracting outreach events
 - a) Allowing the opportunity for the local community and potential partners to ask any questions
- EAS will review each bid and all proposals will be provided debriefing

EAS will not just check the box for best effort —“We will take the initiative to support our subcontractors.”

NWC district energy partners

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Metro Wastewater	EAS Energy Partners	NWC Authority	CSU	WSSA	City of Denver
<p>Contributed \$8.6M to relocate and bury the Delgany interceptor</p> <p>Providing thermal energy from Delgany Interceptor wastewater at no cost</p> <p>Board Approved IGA Jan 2019</p>	<p>Delivers low-carbon, highly efficient heating & cooling to NWC buildings for 40 years</p> <p>Designs, builds, finances, operates and maintains the district energy system</p> <p>Meets stringent performance standards</p> <p>Competitive Procurement Dec 2018</p>	<p>Owner of the district energy system</p> <p>Counterparty to EAS in the Campus Energy Agreement</p> <p>Pays monthly energy payments to EAS</p> <p>Enters into operating agreements with CSU and WSSA</p> <p>Board Approved Feb 2020</p>	<p>Enters into an operating agreement with Authority</p> <p>Pays energy payments to the Authority for CSU's share of the system capacity</p> <p>Board Approved Jan 2020</p>	<p>Enters into an operating agreement with Authority</p> <p>Pays energy payments to the Authority for WSSA's share of the system capacity</p> <p>Board Approved Feb 2020</p>	<p>Provides partial credit support to the Authority</p> <p>NWCO delivers a portion of the design/build work</p> <p>DDPHE is providing a \$1M grant from enterprise funds toward campus sustainability</p>

Campus energy deal structure

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- The NWC Authority seeks to enter into a Campus Energy Agreement for 40 years plus construction with EAS Energy Partners, LLC to provide recycled thermal energy for the campus. Authority Board approved the Campus Energy Agreement on Feb 20, 2020.
- To make payments to EAS, the Authority will charge campus users, including building owners and event operators, to use the campus energy system.
- Fees will be charged based on building capacity loads and sized to cover the energy payments.
- **Total project cost:** \$185.6 million over 40 years
 - Includes \$32 million in design/build costs.
 - Includes financing costs, replacement costs, EAS utilities, insurance, 40 years of operations and maintenance, and required handback standards.

Contingent Commitment Agreement

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Between the city and the Authority

- Because the Authority is a new entity, the city would provide credit support through the proposed Contingent Commitment Agreement enabling EAS to finance the project.
- If approved, the city would provide loans to the Authority to help cover annual energy payment shortfalls in the early years of campus operations and/or unplanned supplemental expenses.
- Any financial support the city provides would be appropriated through the annual or supplemental budget process.
- Grants the Authority the necessary Right of Entry for EAS to construct the project infrastructure.
- \$1 million grant from DDPHE enterprise funds.
- The city may terminate the Contingent Commitment Agreement under certain conditions such as the Authority reaching specified measures of financial maturity.

Financial obligation summary

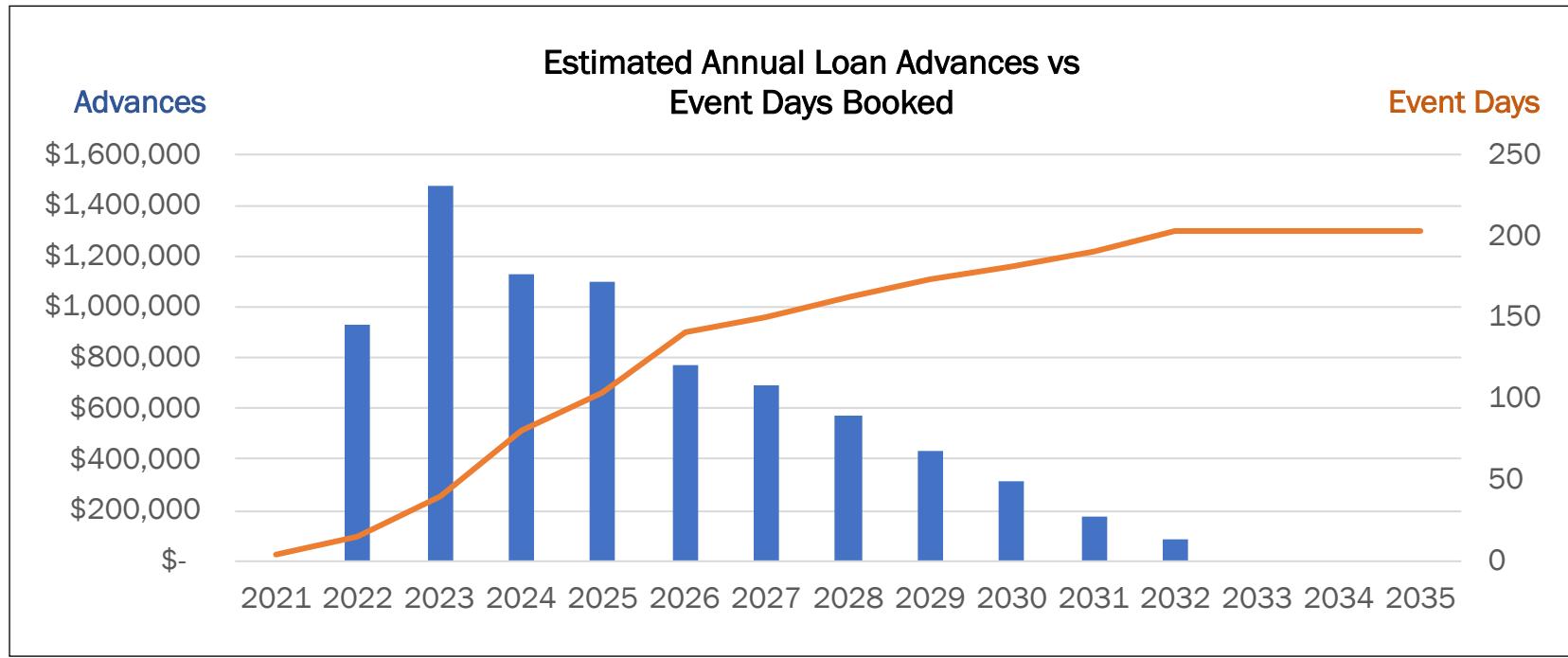
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Facility owner	Share of thermal energy	Average annual energy payment (Real \$)
City-owned NWC facilities	64.2%	\$2.98 million
WSSA-owned facilities	7.2%	\$0.33 million
CSU-owned facilities	28.6%	\$1.33 million
Authority's total avg annual obligation to EAS	100%	\$4.64 million

The proposed Contingent Commitment Agreement covers any shortfalls between what the Authority owes to EAS for City-owned and WSSA-owned facilities and what is collected from users.

Payment percentages are based on capacity loads for their buildings.

Annual loan advances



- Any financial support the city provides would be appropriated through the annual and supplemental budget processes.
- City loan advances will be paid back through excess Authority revenues.
- Interest: 5-year Treasury rate plus 1% with simple interest

Estimated loan advances
to Authority to cover scheduled
annual energy payments
2022 – 2032

2022	\$928,000
2023	\$1,473,000
2024	\$1,126,000
2025	\$1,103,000
2026	\$786,000
2027	\$705,000
2028	\$579,000
2029	\$437,000
2030	\$319,000
2031	\$180,000
2032	\$90,000
2033	\$0
Total est.	\$7,726,000
	\$6,018,000 (2020\$)

City exposure

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Worst-case scenario: How is the city's financial exposure mitigated?

- First, the Authority would seek new potential property owners / system users.
- If unsuccessful, the Authority would seek to end the contract early, with City Council approval.
- Maximum of \$4.5 million in scheduled payments in a single year (2051). In the highly unlikely and preventable event that no events are booked on campus over 40 years, and the contracted user (WSSA) pays nothing for its energy over 40 years, the maximum scheduled city payments total about \$132.4 million (\$51.2 million in today's dollars).*
- Supplemental payments may be required for certain change and compensation events and will go through a supplemental budget process.*

Best-case scenario: CCA retires early as the Authority becomes credit-worthy.

* Any loan payments from the city for this purpose are subject to appropriation.

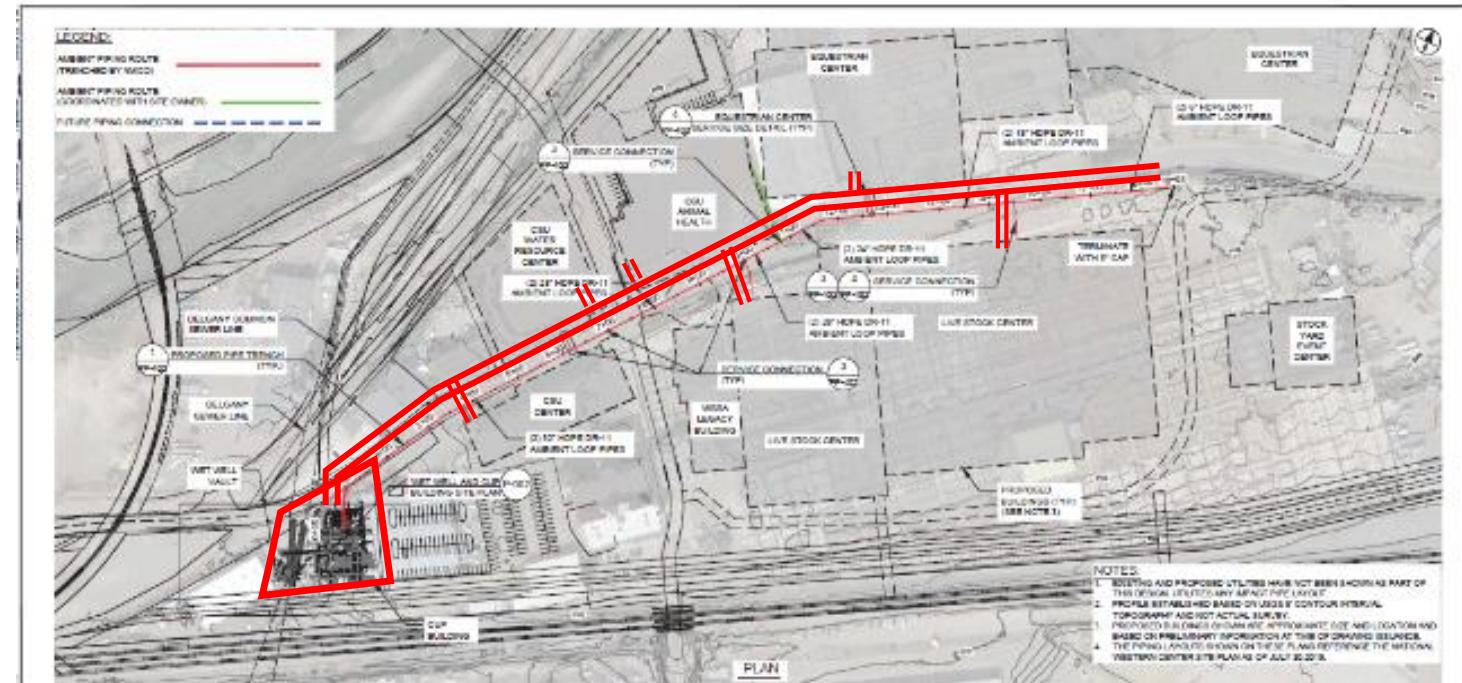
Project implementation

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Construction Reimbursement Agreement

Scope:

- Design and construct pad site for central utility plant
- Construct ambient pipe
- \$3.761 million fixed price
- Based on estimates from horizontal integrated construction (HIC) contractor
- Reduces coordination risk and cost



EAS ENERGY PARTNERS
PRIMER
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Campus Energy
CUP, VAULT, AND
AMBIENT LOOP DESIGN



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www.aecom.com

Project implementation

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Establish a capital fund

Council Item 20-0604:

- This companion ordinance requests the creation of a new District Energy capital fund (fund number 38431) in the 38000 Grant and Other Money Projects fund series and appropriation of \$3,761,000.00 to support the receipt of funds for the reimbursement of costs related to the Construction Reimbursement Agreement between the City and EAS.
- The City will receive payment towards capital costs for elements of the district energy system.
- The eligible expenditures in the District Energy capital fund include capital improvements, such as planning, design, or construction activities for the district energy system.
- It will be appropriated, non-lapsing and will allow capital expenses based on cash received to the fund. The expending authority will be executive director of the Department of Transportation and Infrastructure (Mayor's Office of the National Western Center).

How far we've come

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True to our roots

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True to the National Western Center's master plan, the sewer-heat recovery system will be:

- Reliable and resilient
- Price-certain and cost-effective
- Low-carbon and sustainable
- Healthier for our communities
- A source of career and educational benefits
- Inclusive of the founding partners
- Aligned with the NWC mission and vision



Council requests

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Questions?

Appendices

Community engagement plan

EAS has committed to increasing the awareness, outreach, training, and employment opportunities of people in economically disadvantaged areas and populations and addressing shortages in qualified construction workers.

- EAS has committed to local community collaboration and engagement over the next 40 years which will be documented in an annually updated Community Engagement Plan.
- EAS is required to report on its progress towards its community goals. The plan will include but is not limited to:
 - a) Educational outreach (e.g. tours, research and development, K-12 educational programs)
 - b) Engagement in clean energy summits and/or local community organized campus, and
 - c) Support of local programming in terms of (time or monetary) support toward the Community Investment Fund and/or other local organizations.
- During the O&M period, if EAS does not meet and exceed these minimum standards they will receive financial performance deductions.

Early termination of CCA

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The City may terminate the Contingent Commitment Agreement with the Authority under certain conditions such as the Authority achieving:

- Ratings test- A-/A3/A- ratings for 3 consecutive years, and either;
- Cash flow test – 1.50 times operational cash flow coverage for 3 consecutive years, or
- Net worth test – net worth of \$20 million and sufficient amount to cover actual and contingent liabilities.

National Western Center energy strategy

The NWC plans to develop a low-carbon and resilient campus through four key strategies:

1. Energy Efficient Buildings

Prioritizing energy efficiency to achieve LEED Gold or above.

2. District Thermal System

Utilizing wastewater thermal energy to heat and cool buildings efficiently.



Council action relates to the district thermal system.

3. Renewable Energy

100% renewable electric using a combination of on- and off-site sources

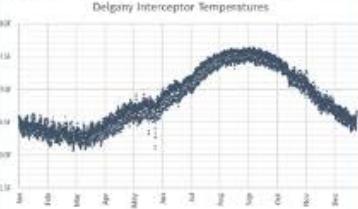
4. Community Resiliency

Ensuring critical facilities have power, heating and cooling, even during extreme events.

NWC Phases 1&2 district energy overview

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A district energy system heats and cools buildings from a dedicated central utility plant.

SOURCE	SCREEN	EXCHANGE	DISTRIBUTE	CONDITION
  Delgany Sewer Line 61-76°F	 Waste screening keeps out solids	 Specialized heat exchanger transfers thermal energy to "ambient loop"	 Ambient Loop 49-83°F 2-pipe From 32" → 6"	 Building heat recovery chillers use ambient loop to more efficiently produce hot and chilled water