



Municipal Thermal Energy Network Accelerator



THANK YOU TO OUR FUNDER!

*The New York
Community Trust*
of Westchester

A COLLABORATION BETWEEN:

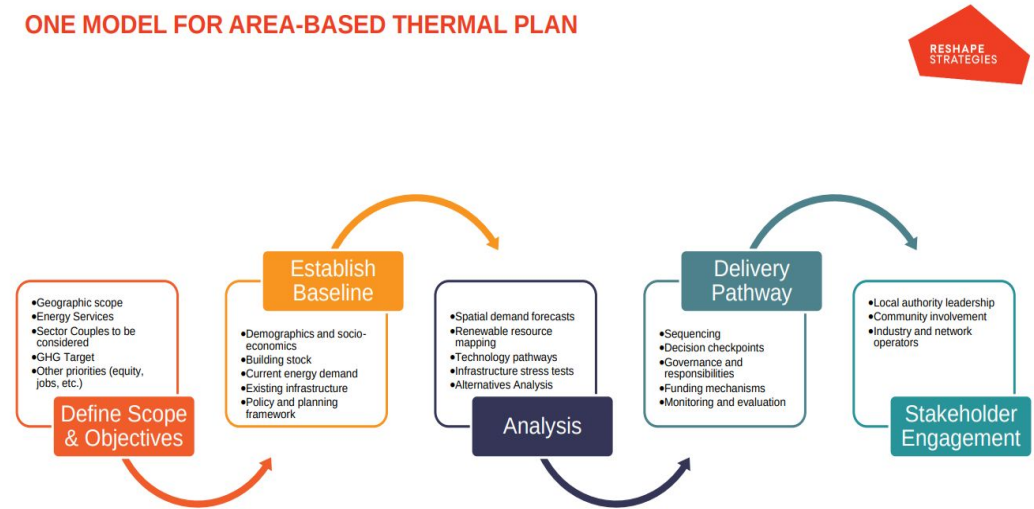


Project Planning – Session #6 Recap

Initial Project Planning Considerations

- **Site Identification:** Evaluate anchor buildings, thermal resources, geological conditions, customer loads, & concurrent infrastructure projects
- **Stakeholder Identification & Early Coalition Building:** Engage municipal staff, utilities, anchor institutions, and community groups early to set shared goals & build trust
- **Coordination with Thermal Solution Providers:** Align assumptions, technical options, & feasibility needs with engineers + developers to shape practical project scopes and timelines

ONE MODEL FOR AREA-BASED THERMAL PLAN



Session #7 Overview: Community Planning, Permitting & Land Use

Today's Focus: Community Planning + Local Permitting & Land Use Tools for Thermal Energy

- Community-level & comprehensive planning
 - Alignment with concurrent infrastructure and land use projects
- Local permitting, zoning, and land use considerations
- Utilization of local development tools and approvals
- Prep for December 1-on-1s and 2026 IGSHPA Code Sessions



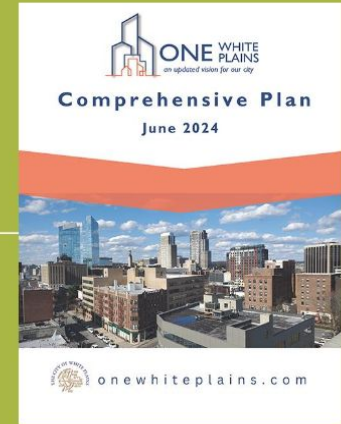
Source: National Grid - Syracuse UTEN Stage 2 Filing

Setting the Stage: Why Comprehensive Planning Matters for Thermal Energy

CITY OF WHITE PLAINS

One White Plains Comprehensive Plan

Incorporating Sustainability into Comprehensive Planning



Judith Mezey, Deputy Commissioner of Planning



Setting the Vision – Imagine WP

- Listening Tour
- Online Survey
- Public Meetings
- Spanish Language Outreach
- Youth Involvement

Listening Tour

Come join us for the One White Plains Listening Tour
As we're kicking off the update to our Comprehensive Plan, hear from you! What are your key priorities and concerns? days and times below to chat about the future of the City
www.OneWhitePlains.com

DATE	TIME	LOCAT
AUGUST 27 Friday	9 - 11 AM	Slater Center
SEPTEMBER 2 Thursday	10 AM - 12 PM	White Plains
SEPTEMBER 13 Monday	5 PM - 7 PM	City Hall - 25
SEPTEMBER 18 Saturday	9 - 10:30 AM	Gillie Park - 4
SEPTEMBER 22 Wednesday	8 AM - 3 PM	Farmers Market
SEPTEMBER 27 Monday	11 AM - 12:30 PM	Senior Center
SEPTEMBER 29 Wednesday	11 AM - 12:30 PM	White Plains
SEPTEMBER 30 Thursday	5:30 - 8:30 PM	White Plains

The City of White Plains is updating its Comprehensive Plan. Find out more and share your vision for the future of our city
WWW.ONEWHITEPLAINS.COM

One... words inspire your vision for the future of White Plains
Two...
Three...
Submit

YOUR Vision for White Plains!

Keep Growing
More housing options for middle class
Better Local
Electric Charge Stations
WP is less expensive than California
Transportation For Seniors
Farmer's Market on the weekends
New Senior Center
Add to bike network
SAFE
Last 4th's hands green
Alder's
Public Super

Community Involvement is Essential!

The OneWP Comprehensive Plan is the result of a robust public outreach process that included over 2,000 comments from the public through surveys, listening tours, workshops

playWP



active arts business growing development
neighborhood life fun dynamic downtown better living connected
prosperous sustainable modern water walkable destination
inclusivity neighborhoods safe affordable inclusive respect
homeless traffic diverse green beautiful unity shopping equitable
density suburban help friendly schools assist park food taxes exciting
accessibility commerce work jobs accessible cost inclusion family free kid space
cleanliness quality housing less parking clean community
walkability welcoming greenspace open diversity parks retail security
spaces engaging affordability health open safety growth equity families resources
beneficial sustainability culture education caring educational infrastructure
eco-friendly dog preserve activities innovative
environment industry

Vision Statement:

"A welcoming, safe, inclusive community with housing, employment, education, transportation, and recreational opportunities that fulfill the needs of our diverse population; a city where business, culture, and the arts thrive; where the **natural environment** is valued and where public spaces are accessible; where we acknowledge our history and address regional, social, and economic trends to plan for an equitable and **sustainable** future."

Six Plan Elements:



1 Introduction



2 connectWP



3 greenWP



4 liveWP



5 playWP



6 strengthen WP



7 workWP



8 Initiatives

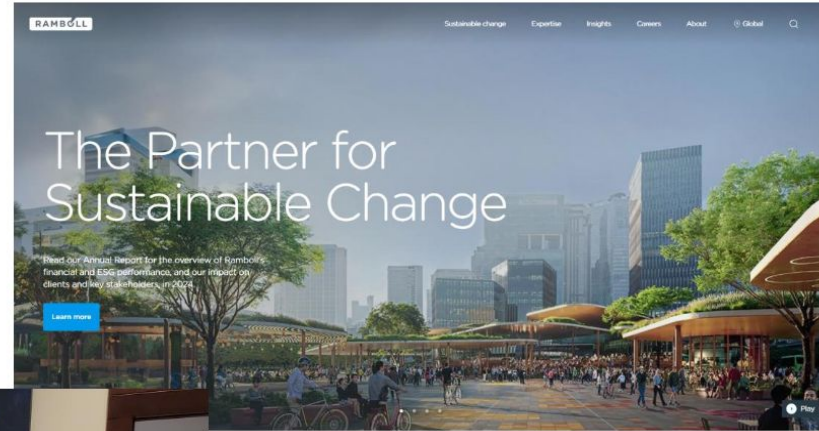


9 Public Participation

Testing the Vision and Elements



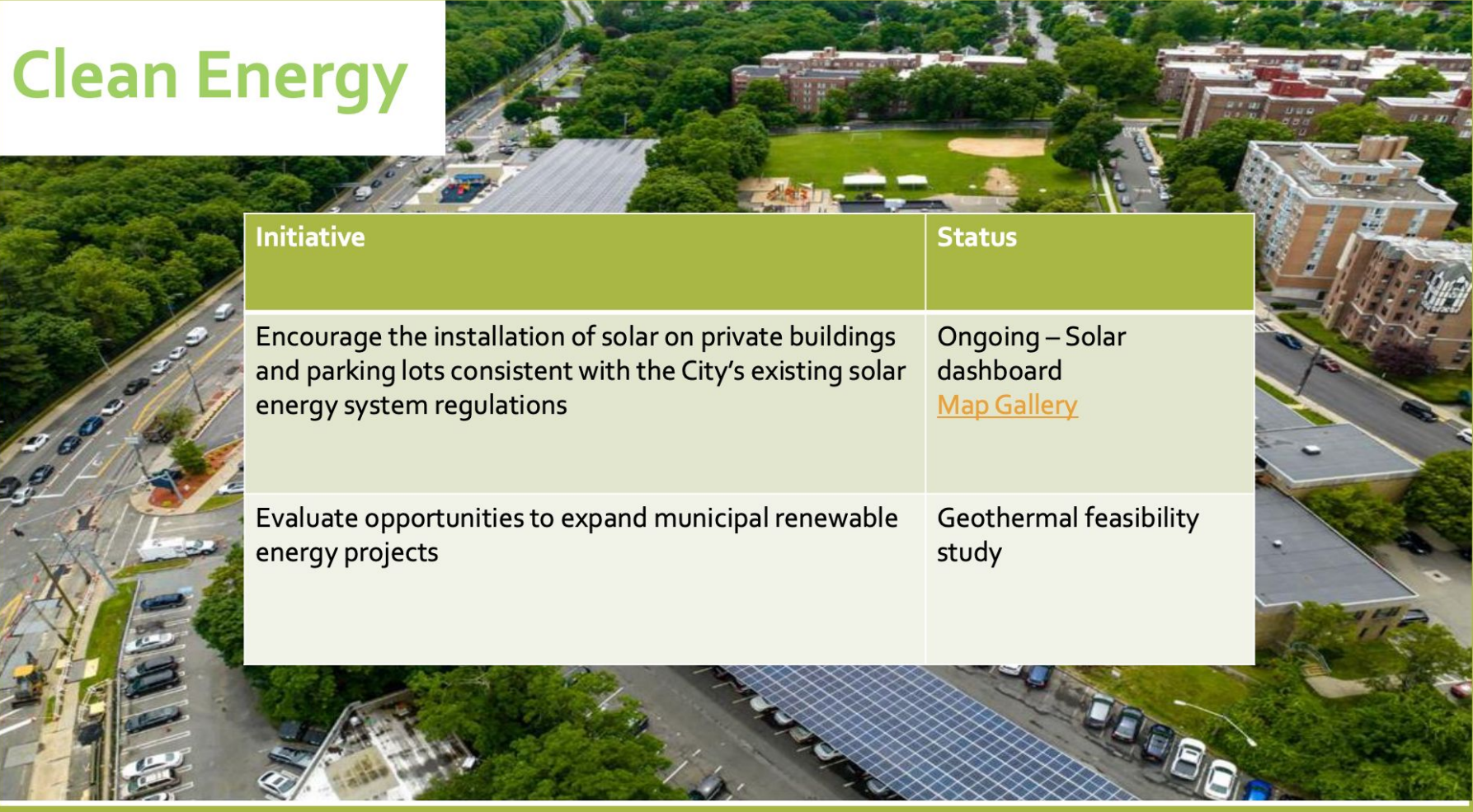
Steeped in Science, Led by Experts





- Five required elements for sustainability: Alternative modes of transportation, smart growth principles in land-use policies, conserve natural areas, promote a healthy and safe community, foster equity.
- Point-based elements: Foster green economic development; Decreased dependence on fossil fuels and support energy efficiency and renewable energy; Foster efficient use of natural resources; Minimize solid waste; Protect drinking water sources from pollution; Promote adaptation to climate change
- 18 points total
- Did not get points for: Promote the development of (or the conservation of) local food systems

Clean Energy

An aerial photograph of a city neighborhood. In the foreground, there's a large parking lot with many cars. To the left, a road with traffic is visible. In the center, there's a green baseball field surrounded by trees. To the right, there are several multi-story brick buildings. In the background, more trees and a road are visible. The overall scene is a mix of urban development and green space.

Initiative	Status
Encourage the installation of solar on private buildings and parking lots consistent with the City's existing solar energy system regulations	Ongoing – Solar dashboard Map Gallery
Evaluate opportunities to expand municipal renewable energy projects	Geothermal feasibility study

Decarbonization

Initiative	Status
Produce a Climate Action Plan (CAP) that identifies future greenhouse gas emissions and decarbonization goals	Completed Climate Action Plan
Further enhance the energy efficiency of municipal buildings and incentivize private building owners to do the same	Heat pumps, LED lights, Geothermal (NYPA Offices)
Continue to invest in electric vehicle charging station infrastructure and require EV charging stations in all public and private parking lots and structures	EV Fast Chargers Map



Pause for Questions



2025 NYS Fire Safety & Building Code Update: *Status Of The AEBA*

2025 Uniform Code Update

N.Y. Exec. § 379

- Municipalities must adopt the updated Uniform Fire Prevention & Building Code (“Uniform Code”) by December 31, 2025
- Municipalities may:
 1. Petition the Code Council for stricter supplemental local standards
 2. Petition the Code Council to review existing local standards



AEBA Implementation: Current Status

- What is the All-Electric Buildings Act (AEBA)?
- State and Plaintiffs filed a stipulation (Nov. 12) to delay AEBA-related Uniform Code sections
- [Code Council](#) may vote on December 5 to postpone AEBA-related Code provisions
- If the stipulation is approved, AEBA enforcement is paused until litigation & appeals conclude
- Municipalities should pause AEBA-specific updates but continue all other 2025 Code adoption steps
- It is likely that the AEBA will proceed some time in the future unless removed from next year's budget



Case 1:23-cv-01267-GTS-PJE Document 74 Filed 11/12/25 Page 1 of 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF NEW YORK**

MULHERN GAS CO., INC., et al.,

Plaintiffs,

v.

WALTER T. MOSLEY, in his official
capacity as Secretary of State,

Defendant.

Case No. 1:23-cv-01267 (GTS/CFH)

Stipulation and [Proposed] Order Settling Motion for Injunction Pending Appeal

Plaintiffs Mulhern Gas Co., et al. and Defendant Walter T. Mosley, in his official capacity as Secretary of State, by and through their attorneys, stipulate and agree as follows:

WHEREAS, on October 12, 2023, Plaintiffs commenced the instant action in the U.S. District Court for the Northern District of New York alleging that New York Energy Law § 11-104(6)-(8) and New York Executive Law § 378(19) are expressly preempted by federal law;

WHEREAS, on August 21, 2025, the Court issued an Order granting judgment as a matter of law to Defendant Mosley;

WHEREAS, on August 22, 2025, Plaintiffs filed a Notice of Appeal from said judgment to the U.S. Court of Appeals for the Second Circuit ("Second Circuit");

WHEREAS, on September 10, 2025, Plaintiffs filed a Motion for an Injunction Pending Appeal in this case, which Defendant Mosley has opposed;

WHEREAS, on November 3, 2025, Plaintiffs filed a Notice of Intent to Seek an Injunction Pending Appeal in the Second Circuit; and

WHEREAS, solely for purposes of resolving the pending Motion for an Injunction Pending Appeal in this Court, to avoid further litigation on any request by Plaintiffs to obtain injunctive

Next Steps

ZERO ENERGY BUILDING



- PECC + SW will monitor the litigation, the Dec. 5 Code Council meeting, and 2026 budget negotiations
- During the delay, municipalities may consider local, technology-neutral electrification laws (e.g., [NYC LL 154](#)-style standards)
 - Can also explore their own all-electric ordinances, as the [City of Beacon](#) has

Pause for Questions



CHA Consulting

CHA Consulting, Inc.

Renewable Thermal Energy Solutions

Presented to: Sustainable Westchester





70⁺ Year-Old Firm



Creating Value

3 Sectors

Power & Manufacturing | Commercial & Institutional | Infrastructure

8 Markets

Energy Infrastructure | Manufacturing & Life Sciences | Data Centers | Government | Commercial | Education | Transportation | Water Resources



ENR Rankings

#63 Design Firms | #52 Pure Designers |
#37 Power | **#6 Co-Gen** | **#23 Transmission & Distribution**

FINDING A BETTER WAY.

CHA is an innovative, full-service engineering, design, consulting and program/construction management firm providing a wide range of technology-enhanced services to public, private and institutional clients.



2,100⁺
Employees



45⁺
Office Locations

10 Business Lines

Power Delivery & Integration | Advanced Energy & Manufacturing | Building Design | Fire Protection | Land Development | PMCM | Sports | Aviation | Transportation | Water

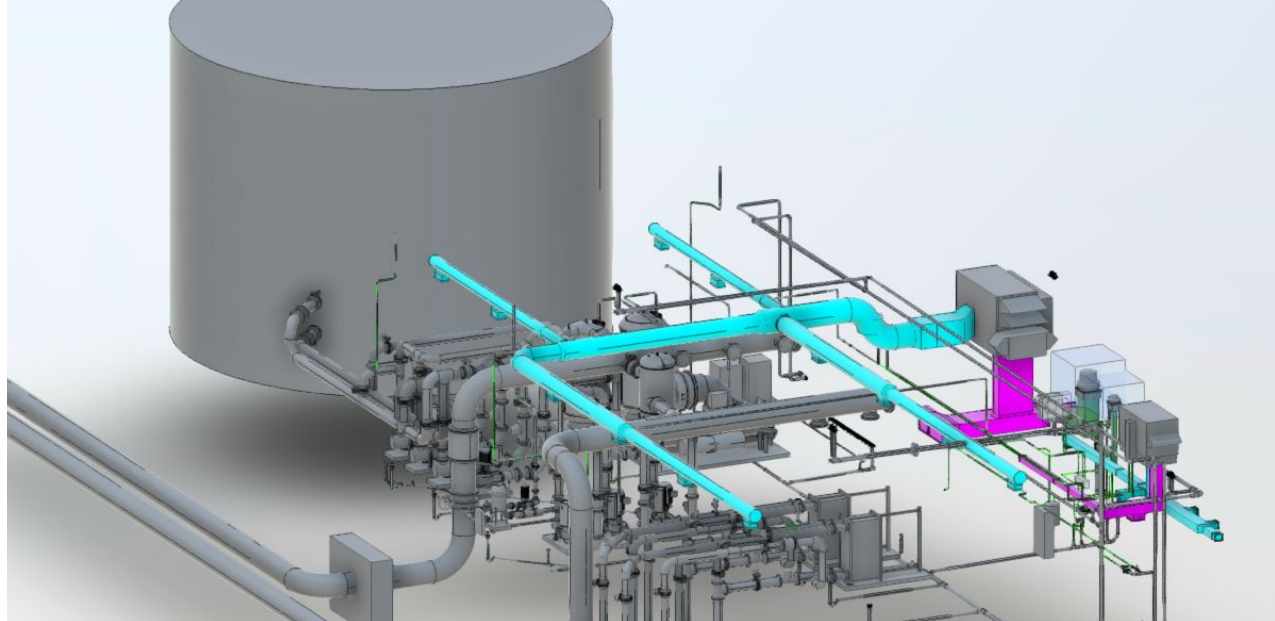


Client Focused



Renewable Thermal Energy Solutions

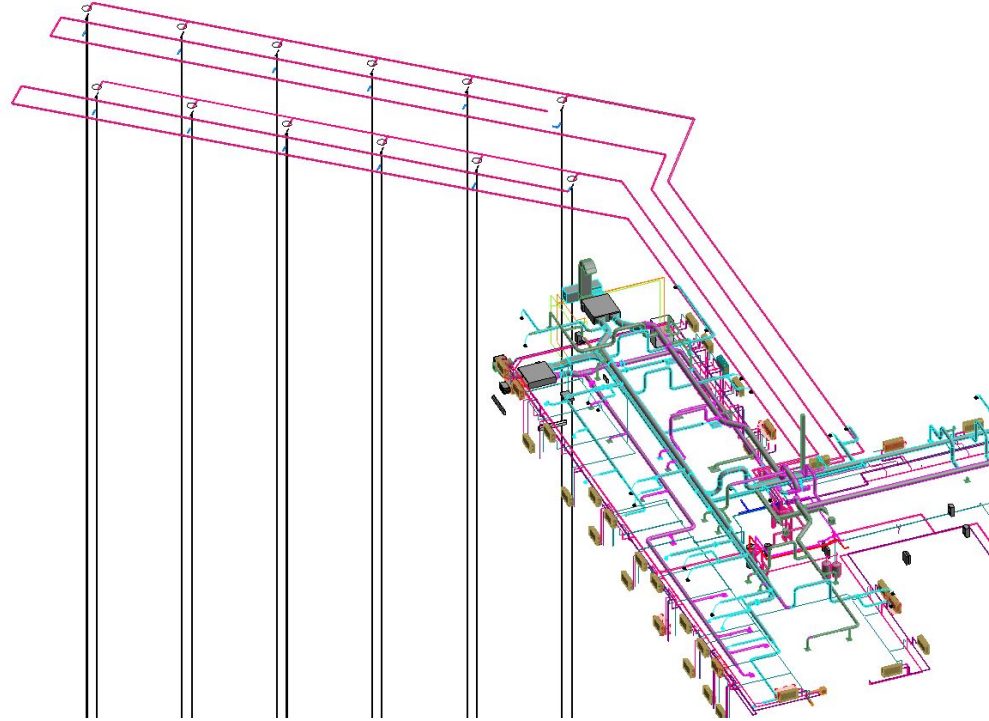
CHA's renewable thermal energy solutions (RTES) team delivers **innovative electrification, geothermal, and thermal energy network solutions** for campuses, utilities, and municipalities. We provide comprehensive design, engineering, and implementation services that enable sustainable, cost-effective heating and cooling at scale.



- Electrification
- Heat pump retrofits
- Geothermal design
- District/campus energy
- Thermal energy networks
- Thermal energy storage

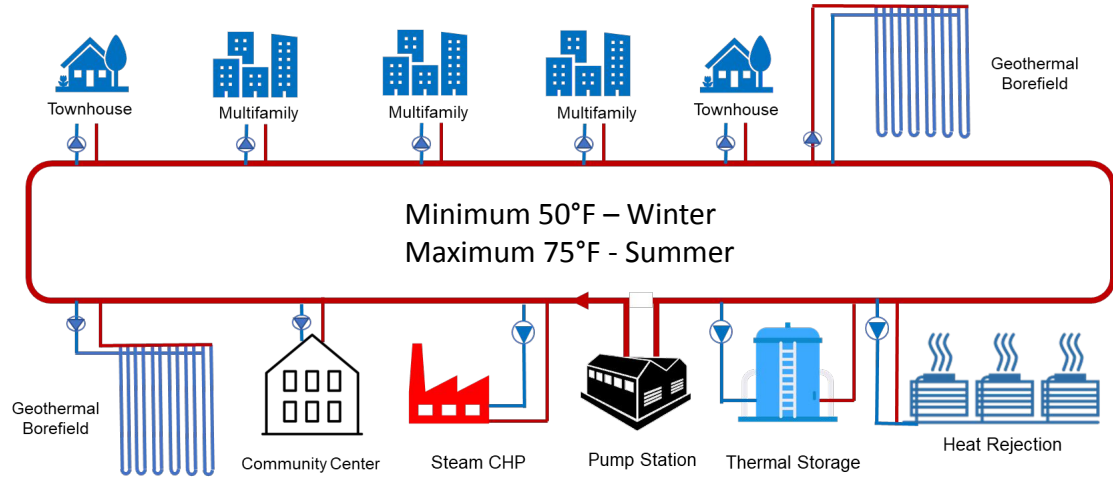
Geothermal Design

- Design of geothermal heating and cooling systems
 - Unitary water to air heat pumps
 - Heat pump chiller plants
 - Campus geothermal
 - Hybrid systems
- Holistic, whole building solutions - not just the borefield.
- Energy modeling for design, not just compliance
- Financial modeling, Life Cycle Costing
 - Tax credits and incentives



Thermal Energy Networks

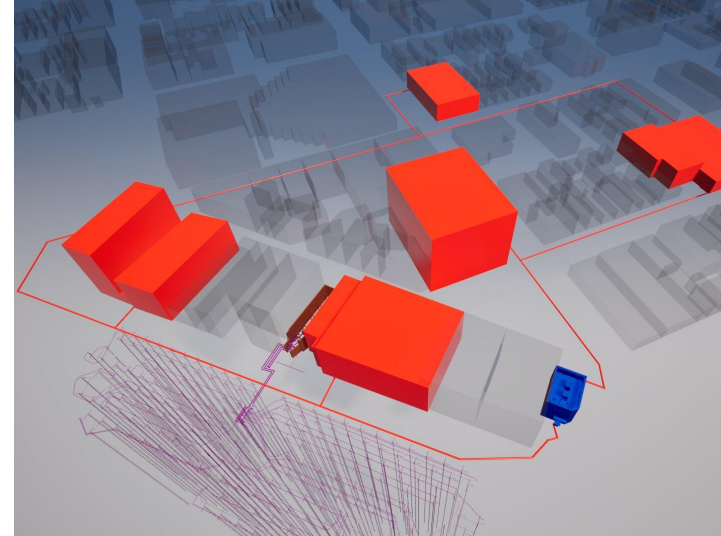
- **Multi building** thermal energy generation and distribution
- **Evolution of traditional** steam, hot water, and chilled water **district energy systems**.
- Key difference with these **ambient loop** type systems: They allow for greater energy sharing, but what is being sold to the customer is no longer the end use (hot or chilled water), but the ability to connect a heat pump.
- **Wider range** of energy sources
- Enables **electrification** at scale



Utility Thermal Energy Network Pilot Troy, New York

- 350,000 SF in 5 buildings served by a single pipe ambient loop distribution system.
- 196 boreholes and two 300kW air to water heat pumps
- 16" HDPE distribution loop
 - Loop could handle all 60 potential buildings on the loop if sufficient thermal resources were connected.
- Detailed engineering design
 - Geothermal borefield
 - Utility pump station
 - Customer heat pump retrofits
 - Utility distribution system
- Utility rate case assistance
- Life cycle cost analysis

Customer Retrofit Profiles
(3) Water Source Heat Pump
1) Rooftop Units
(1) Major HVAC Retrofit



Utility Thermal Energy Networks

Customer Selection

- **Look for large, steady loads**
Customers with predictable year-round heating/cooling or DHW demand help stabilize the system and improve utilization.
- **Prioritize customers with clear decarbonization drivers**
Buildings facing end-of-life equipment, or major renovations are more willing and ready to commit.
- **Evaluate site and technical fit**
Favor buildings with accessible mechanical rooms, feasible tie-in locations, and minimal internal conversion complexity. Existing water source heat pump buildings were targeted for this reason.
- **Seek mission-aligned owners**
Institutions, municipalities, campuses, developers, and REITs with stated sustainability targets often champion early adoption.
- **Confirm operational reliability**
Ideal anchors have on site operations or management teams, stable operations, and willingness to share data.
- **Leverage clusters and proximity**



Utility Thermal Energy Network Pilot Energy Center Location

- Front St Location, on the Hudson River, near the boreholes is in a flood plain.
- 1st location was built into the 2nd floor of a parking garage at the monument square site.
- That anchor project was cancelled, 2nd location was in the basement of the Troy Atrium in a section that was city owned.
- When the distribution project transitioned from municipal to utility, the co-mingling of the utility equipment in another building was problematic.
- Search for site led to a city owned plot on River St that is at an elevation out of the flood plain.
- Locations are limited to what is in immediate proximity to the loop which puts us at a disadvantage in real estate negotiations.



Utility Thermal Energy Network Troy, New York

- Final Energy Center Location
 - City owned lot, then leased to the utility.
 - Out of the flood plain. 1st location was built into the 2nd floor of a parking garage at the monument square site.
 - Located in a historic district, would need to fit into the character of the neighborhood.
 - Even in the downtown district zoning, a major utility location, use was allowed through special use permit.
 - Has gone through Historic Site review, and zoning approvals.



Utility Thermal Energy Networks

Operational Liability

Asset Ownership Evolution:

City Owned -> Local Development Agency Owned -> Utility Owned

- **Core Issue**
Thermal networks carry an *essential-service obligation*: heat must be always delivered.
The asset owner must be able to guarantee performance and bear financial liability.
An LDC with no assets can't meet that requirement.
- **How Other Sectors Handle This**
 - **Water & Sewer:** Must be owned by a municipality or public authority with bonding power. Shell entities are not allowed to hold core infrastructure.
 - **Municipal Electric Utilities:** Regulators reject structures where a thin nonprofit or LDC holds distribution assets—no credit, no guarantee.
 - **District Heating Authorities:** Cities create special authorities because LDCs lack balance sheets and can't backstop service failures.
 - **Solid Waste & Transit:** Essential-service assets can't be assigned to asset-light corporations; only entities with statutory financial capacity can own them.
- Essential infrastructure → requires an entity with
 - **Financial capacity** (assets, bonding, revenue authority)
 - **Legal capacity** (liability, indemnification, insurability)
 - **Regulatory accountability**



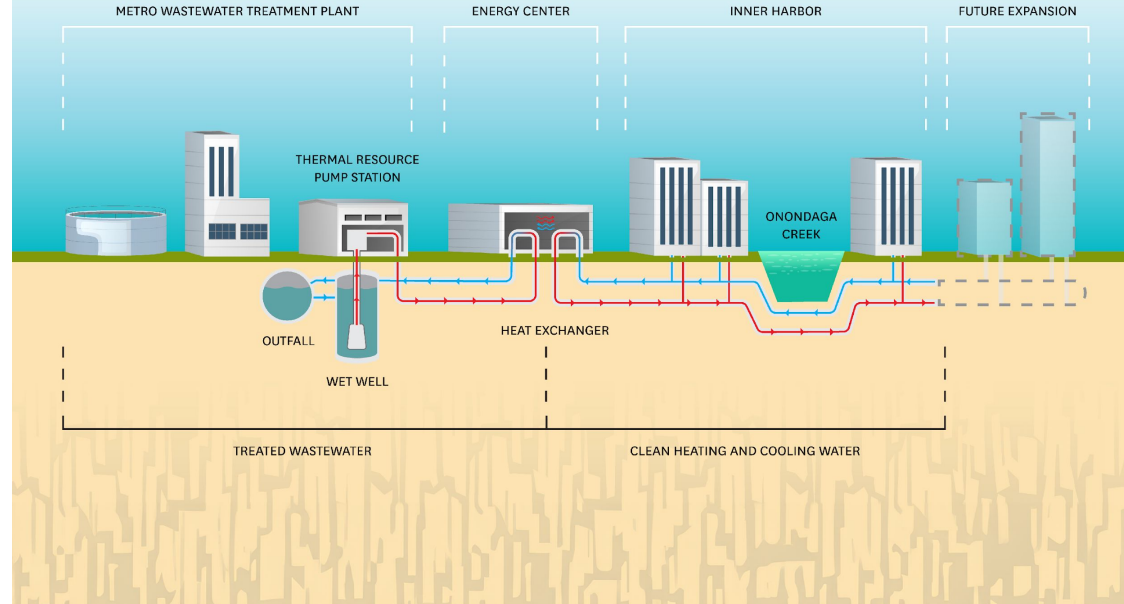
Utility Thermal Energy Networks

Thermal Assets

- Borefield Leasing required a parkland abandonment passed by the state legislature to enable a lease for use as a borefield.
- Legislation required the rights to be leased at a fair market value.
- Fair Market Value Is Hard to Establish for Geothermal Borefields
 - No real secondary market or comparable sales
 - Strongly site-specific performance and geology
 - Long asset life with unclear depreciation treatment
 - Value depends on connected loads and heat pumps, not the borefield alone
 - No standardized appraisal method (cost, income, market all fall short)
 - Regulatory ambiguity around ownership, rate recovery, and ITC treatment
 - Borefields embedded in larger thermal networks, hard to isolate value
 - Highly variable drilling and installation costs by site and contractor

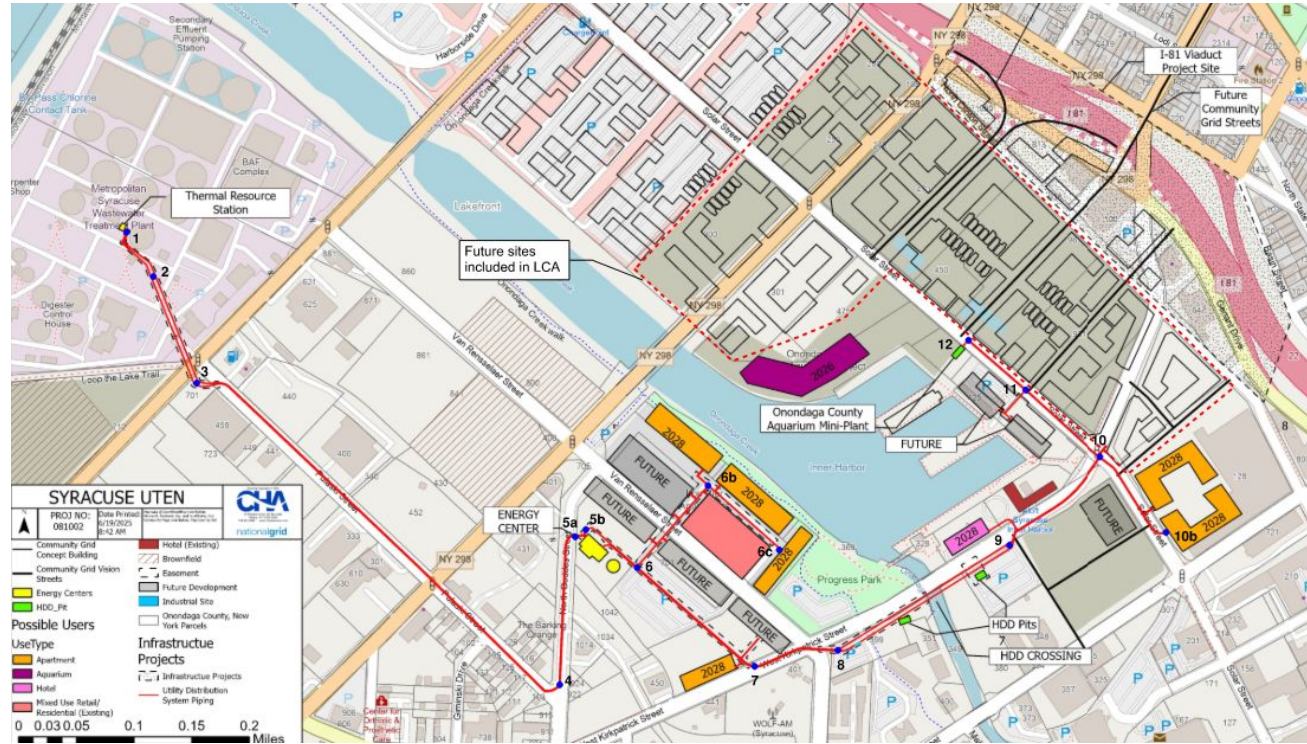
Utility Thermal Energy Network Syracuse, New York

- **Largest wastewater recovery project** in US when built
- Providing design for **thermal resource extraction system** at wastewater treatment plant
- Assisted with **calculation and analysis** to support rate case filings, customer outreach and communication, pump station design, distribution system design, survey, and customer retrofit design
- HVAC, electrical, plumbing, fire protection, utility distribution wastewater, energy modeling



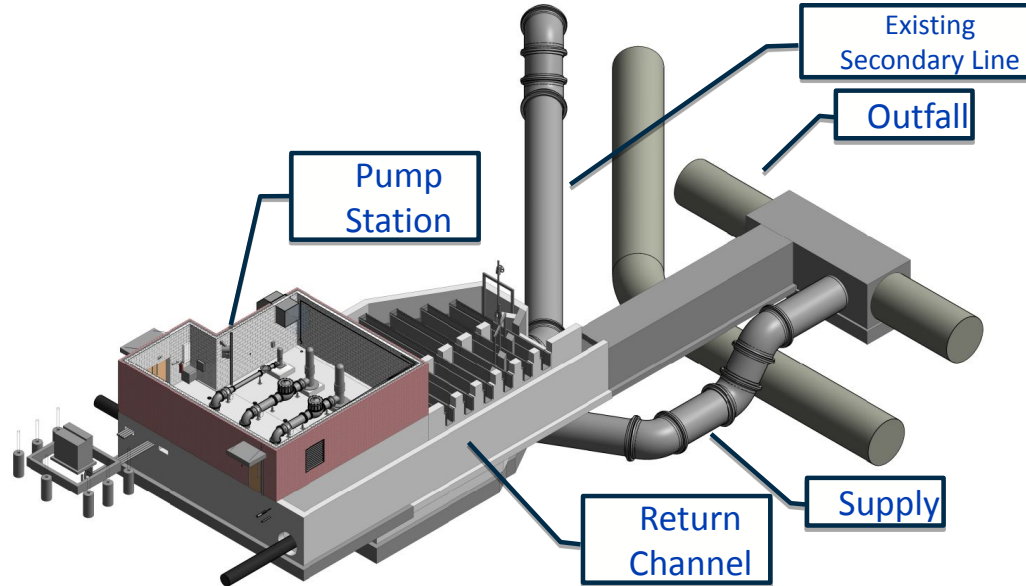
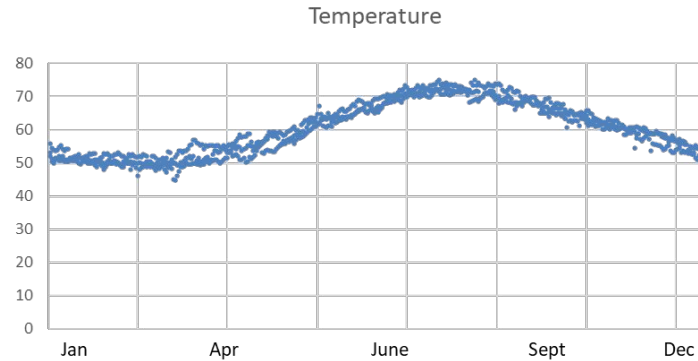
Utility Thermal Energy Network Syracuse, New York

- 1.7 miles of utility distribution loop.
- Up to 36" HDPE, sized for future expansion.
- 24" HDD under creek.
- Energy Center was moved twice here as well.
- Pilot is serving 1.6M sf of new construction



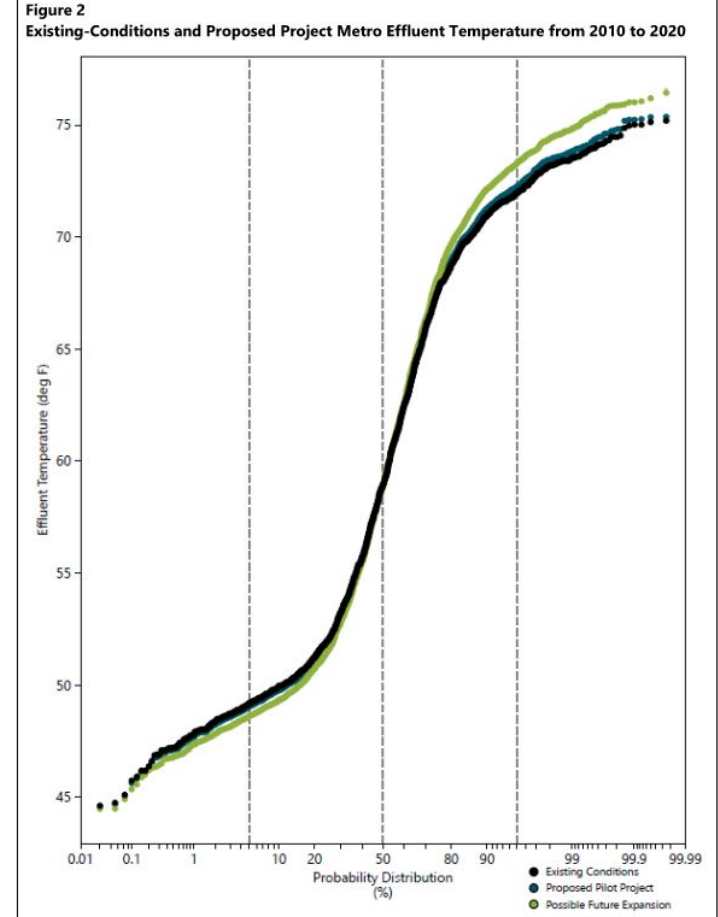
Utility Thermal Energy Network Pilot Syracuse, New York

- Wastewater, especially treated effluent, provides a large stable source of thermal energy. Generally, between 50-75°F.
- The scale is also what makes it valuable. Phase 1 is 7 MGD, expandable to 25.
- Phase 1 heating capacity is 7.3 MW, capable of supporting 10.5 MW of connected heat pumps.
- **Has a complete different system dynamic than geothermal systems.**



Utility Thermal Energy Network Syracuse, New York

- Permitting and Regulatory Items unique to waste water.
 - Modification to the existing State Pollutant Discharge Elimination System (SPDES permit is generally needed.
 - In this case thermal was not regulated so that must be addressed in the permit update.
 - Pilot temperature change is less than 1°F, within the existing daily variation. Full expansion would potential expand this to +2.8°/-1.5°F
 - There are cases where temperature is already addressed which simplifies the application
 - Regulations are more concerned with the heat rejection temperature and not the heat removal temperature in the winter.
- Similar issues with valuation of the thermal resource.



Utility Thermal Energy Network Syracuse, New York

Thermal Storage

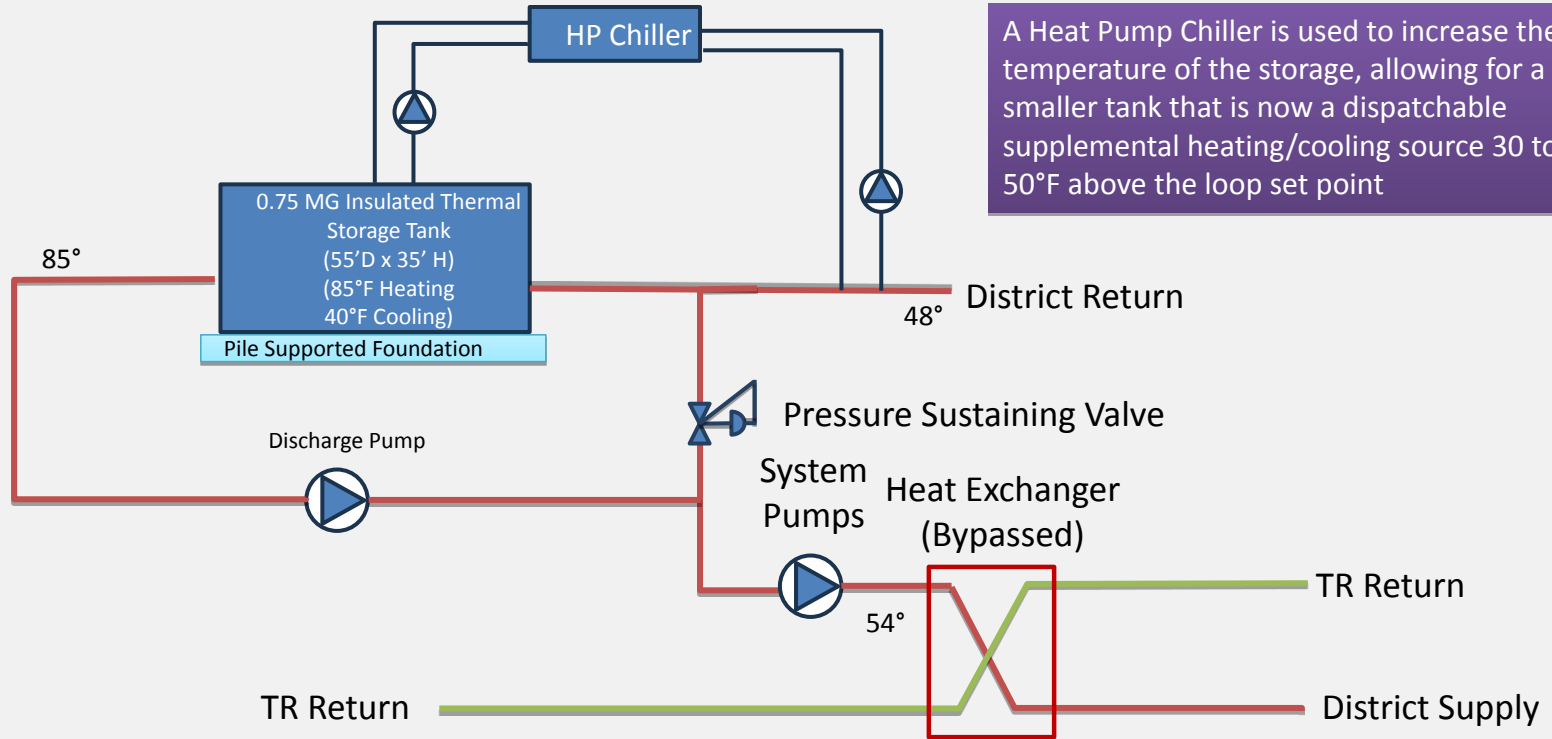
- 24 hours of backup storage
- In case of failure at WWTP and shut off of main intake valve.
- Scenarios
 - Extreme wet weather event that causes WEP to bypass untreated flow down Outfall 001 in violation of their SPDES permit.
 - Extended loss of power event.
 - Equipment malfunction that closes valve.
- **Gas usage not allowed per PSC**

Backup Options

- Air Source Heat Pumps
 - (10) Air Source Heat Pump Units to provide 15,000 MBH of backup capacity. Increases electric service by 1500 kW.
 - \$5M capital cost.
- Electric Boilers + Cooling Towers
 - 4.4 MW of electric boiler capacity, COP =1. 4.4 MW increase in electric service.
 - 1700T Cooling Tower installation.
 - \$2.5M Capital Cost. Highest operation cost.
- Natural Gas Boilers + Cooling Tower
 - **Gas usage not allowed per PSC.**
- Storage Tank
 - \$4M capital cost + IRA tax credit opportunity.



Thermal Tank Storage (Dispatchable)



Thank you.

For more information, please contact:



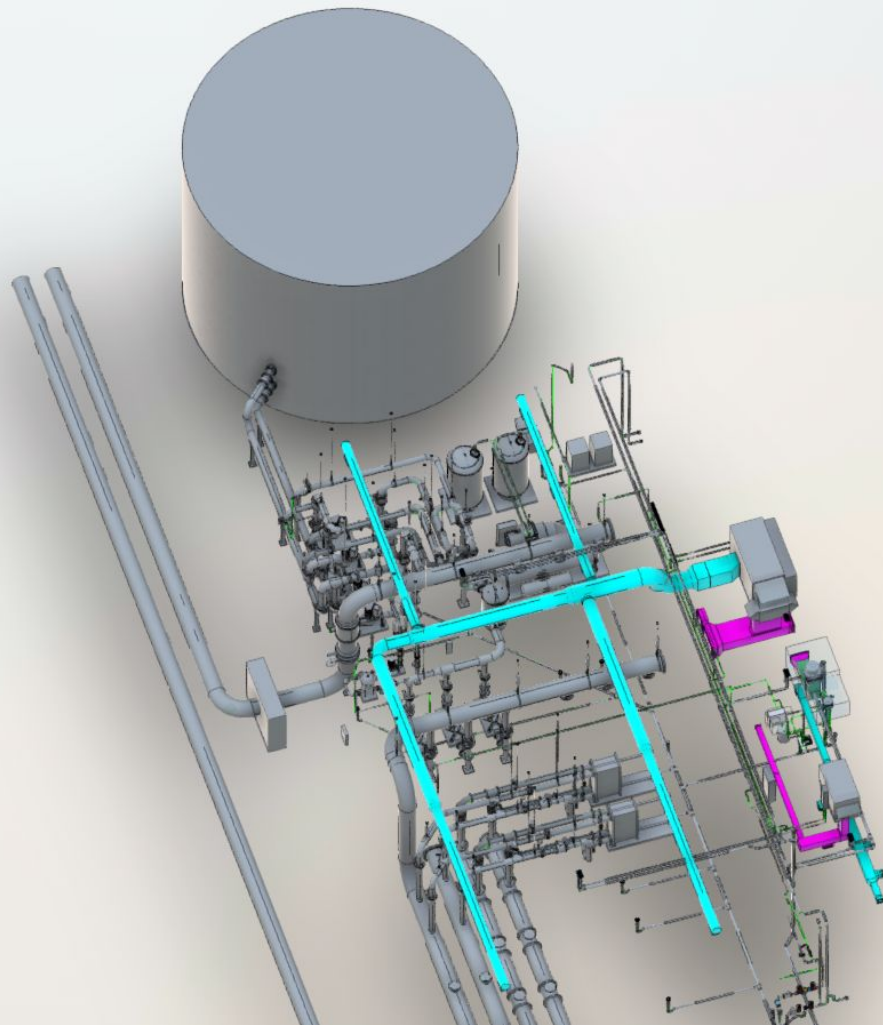
Brendan Hall, PE, BEMP

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bhall@chasolutions.com



Note: Licensures are state/country specific



Pause for Questions



Next Up:

December check-ins and IGSHPA Sessions



Prepare for December 1-on-1s

- Projects that could be considered for TENs (new development, etc)
- Energy-related codes & standards in your municipality
- Recommendation packets:
 - Additional topics and resources
 - Barriers & opportunities

What's coming in 2026:

Two sessions hosted by IGSHPA: *C448 Standard (January)* & *Trainings for Munis (February)*

Thank you!

