



Community Engagement Plan: Ulbrich Heights Geothermal Pilot Project



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Executive Summary

This community engagement plan was produced for the Connecticut Department of Energy and Environmental Protection (CT DEEP)'s District Geothermal Heating + Cooling Deployment in an Environmental Justice Community initiative, funded by the US Department of Energy (DOE). Phase 1 of the project is focused on creating a program for the design and implementation of a networked geothermal heating and cooling system at Ulbrich Heights, a multifamily affordable housing campus in Wallingford, Connecticut. If implemented, this geothermal system will affordably serve the heating and cooling needs of at least 50 percent of units on the property, with the goal of serving all units, while improving indoor and outdoor air quality and enhancing tenant safety and comfort. As this is a competitive grant, program implementation and the implementation of this plan is contingent on the project's selection by DOE for Phase 2 funding.

This plan was developed by analyzing Phase 1 community engagement activities conducted by the project team and through research on best practices for equitable and inclusive program implementation. One main takeaway from resident engagement during Phase 1 is that most residents are excited about the potential for having central air conditioning and are generally receptive to the project. The project team collated the lessons learned from these activities and incorporated best practices to develop tailored strategies that support a community-centered approach to program implementation.

Given the potential for this project to significantly impact residents and housing authority staff at Ulbrich Heights, engaging with the community is crucial. This plan will bolster stakeholder support for the project by increasing awareness of geothermal technology and its benefits among residents and staff. Additionally, this plan will establish channels of communication between residents, housing authority staff, and the project team. To achieve these goals, the plan calls for increasing geothermal awareness through activities such as distributing instructional materials and offering educational opportunities to Ulbrich Heights residents and staff; collaborating with a nearby high school to develop a clean technology and geothermal curriculum; and creating a second case study about the implementation of the project. The plan proposes resident engagement activities including forming effective communication channels, holding stakeholder listening sessions, identifying opportunities for resident input on program implementation, and planning social events to provide a forum for community involvement in the project.

During Phase 1, the project team's engagement with the community was in the "inform" and "consult" stages of the Spectrum of Community Engagement. If the team wins a Phase 2 award, the project team will be committed to equitable program implementation and will seek to continuously raise awareness about geothermal technologies and engage Wallingford Housing Authority residents. During Phase 2, the project team will seek to foster community ownership of the project, and at a minimum, strive to meet stage three, "involve".



1. Introduction

1.1. DOE Community Geothermal Project

The U.S. Department of Energy (DOE) is providing financial support to 11 community coalitions seeking to develop reliable and scalable networked geothermal models as part of its Community Geothermal Heating and Cooling Design and Deployment Initiative. Connecticut DEEP leads one of these community coalitions in partnership with Northeast Energy Efficiency Partnerships (NEEP), the University of Connecticut (UConn), the Wallingford Housing Authority (WHA), the Wallingford Electric Division (WED), and engineering firm LN Consulting. The objective of the District Geothermal Heating + Cooling Deployment in an Environmental Justice Community project is to design and implement a networked geothermal heating and cooling system at Ulbrich Heights, a multifamily affordable housing development located in a community with a history of environmental justice concerns in Wallingford, Connecticut. The initiative is intended to develop replicable models for the equitable implementation of geothermal heating and cooling systems in multifamily affordable housing communities in Connecticut and beyond. Grant funding for projects within this DOE initiative is competitive, and the implementation of this geothermal heating and cooling program is dependent upon the project's selection by DOE for Phase 2 funding.

If implemented, the geothermal heating and cooling system being designed for Ulbrich Heights will provide clean, high-efficiency climate control for at least 50 percent, and ideally 100 percent, of the property's apartments while eliminating the current system of natural gas boilers and window-mounted air conditioning units. Installation of this geothermal system is projected to eliminate 155 tons of annual CO₂ emissions, improve indoor and outdoor air quality at the property, and enhance resident comfort and safety. After performing extensive site energy assessments and system design modeling, a test bore hole was completed at the project site in February 2024.

In addition to these activities, the project team has completed a workforce needs assessment for the state of Connecticut to identify relevant industry trends and gaps in workforce capacity. This assessment was then used to prepare a workforce development plan that proposes systemic solutions to encourage geothermal workforce expansion. A separate workforce plan specifically tailored to the Ulbrich Heights project and the local geothermal workforce is currently under development.

This community engagement plan details the team's strategies for geothermal education and resident outreach, best practices for such engagement, and recommended approaches to ongoing engagement with stakeholders at Ulbrich Heights and the wider Wallingford community. These strategies are the result of direct feedback from stakeholders, active community engagement, and research into the community's physical infrastructure and formal and informal social networks. If the project is selected for Phase 2 funding, the project team will validate the information and strategies presented in this plan to ensure alignment with program implementation activities and create an ongoing platform for stakeholder input.



1.2. Ulbrich Heights and Stakeholder Network

Ulbrich Heights is a 132-unit affordable housing campus constructed in the 1950s in Wallingford, Connecticut. The property is one of six currently managed by the [Wallingford Housing Authority](#). All apartments at the property are heated by natural gas-fired boilers and none have central air conditioning systems. Residents are responsible for installing their own window air conditioners and electric cooking ranges. The property's utilities are metered individually, and residents are responsible for electricity and gas expenses. Due to the age of the apartment units, the presence of fossil fuel-based equipment, and the relative inefficiency of window-mounted air conditioning systems, energy upgrades are an acute need at the property. Ulbrich Heights is located in a community with a history of environmental concerns and was formerly designated a [Connecticut environmental justice community](#). The property currently qualifies for Connecticut's [Moderate Rental Family Affordable Housing Program](#) for residents in the 80 percent Area Median Income (AMI) band.¹

1.2.1. Ulbrich Heights Residents

As of July 2024, there were 296 residents at Ulbrich Heights. Seventy-nine percent of residents are White, 20 percent are Black, and less than one percent are Asian or of unknown race. Roughly 68 percent are non-Hispanic, and 32 percent are Hispanic. Approximately 53 percent of the community's households have one or more children. As of July 2024, Ulbrich Heights was home to 21 disabled residents, 19 elderly residents, and 100 female-headed households. Through funding from the [State-Sponsored Housing Portfolio Capital Plan](#), the campus is currently undergoing a renovation to increase the number of apartments that meet the [Americans with Disabilities Act \(ADA\)](#) and [Fair Housing Act](#) standards for disabled residents. This renovation will also include adding new siding, insulation, doors, and windows to units. After these renovations are complete (anticipated end date of January 2025), 14 one-bedroom units will be fully accessible with mobility ramps for each front entrance, widened doorways, roll-in showers, and wheelchair-accessible kitchen countertops.

Most residents at Ulbrich Heights are English speakers. However, in a door-to-door survey of 16 Ulbrich Heights residents, three people reported at least one family member with limited English proficiency. Non-English languages reported by survey respondents were Turkish and Spanish. Wallingford Housing Authority does not currently translate written communications for residents at Ulbrich Heights into other languages. The U.S. Department of Housing and Urban Development (HUD) requires translations if at least five percent of a housing program's eligible participants or more than 1,000 community members have Limited English Proficiency.

1.2.2. Stakeholders

During Phase 1, the project team identified and spoke with a variety of stakeholders who provided valuable insight into topics such as energy efficiency, housing, and workforce in Wallingford and Connecticut more broadly. From the beginning of the project, CT DEEP and NEEP worked with a Project Advisory Committee

¹ "Income Limits and Gross Rents Look-up", Connecticut Housing Finance Authority, <https://www.chfa.org/rental-housing-for-owners-and-management-agents-tools-calculators-look-ups/>.



comprised of experts in geothermal, affordable housing, community engagement, and environmental justice from across the state to inform the project at a high level. The project team also made connections with Wallingford Housing Authority facilities staff, Ulbrich Heights residents, and local workforce groups. The team determined that it will be critical to disseminate information regarding geothermal technologies to increase awareness and proficiency among this stakeholder network, in addition to officials in the Town of Wallingford, regional Councils of Government (COGs), Connecticut legislators, and the local workforce. The project team hopes to continue to expand this stakeholder network in Phase 2, as detailed in Sections 2 and 3.

NEEP identified additional stakeholder groups for future outreach, including community groups like the Wallingford Family YMCA, the Spanish Community of Wallingford, and local schools. One opportunity for outreach that could be particularly impactful would be engaging with students at Lyman Hall, a high school adjacent to Ulbrich Heights. Other activities will target members of the communities that adjoin Ulbrich Heights, neighboring business owners, representatives from the Town of Wallingford, and other affordable housing stakeholders including the Connecticut Housing Finance Authority and the Connecticut Department of Housing. The team can also work to establish relationships with local architects, engineers, energy consultants, and general contractors who design buildings.

1.3. Plan Goals

This plan aims to provide lessons learned, best practices, and strategies that will enable the project team to engage with the community at Ulbrich Heights. The primary goals of the plan are:

- To build support for the project from residents, WHA facility managers and maintenance staff, as well as WHA board members and staff;
- To establish channels of communication and feedback mechanisms for Ulbrich Heights residents; and
- To expand awareness of geothermal technologies and workforce opportunities, with a focus on projects at affordable housing properties in Connecticut.

To achieve these goals, the plan envisions two sets of activities: education on geothermal technologies (covered in Section 2 of this report) and resident engagement (covered in Section 3). Both of these key elements of the plan should adhere to best practice principles of community engagement, as discussed next and throughout each of the following sections.

1.4. Best Practices

Community engagement strategies outlined in this plan are rooted in current research and best practices gleaned from previous community engagement activities. In particular, the project team consulted [*The Spectrum of Community Engagement to Ownership*](#) to determine goals and gauge progress on engagement (Figure 1).

Phase 1 engagement activities centered around the “inform” stage of the spectrum. The project team provided geothermal informational resources to increase resident understanding of the project. Phase 1 also included some “consult” steps, including door-to-door surveying and hosting interactive webinars.



In Phase 2, the NEEP team will seek to advance additional engagement activities to foster community ownership per the Spectrum of Community Engagement. At a minimum, the team will strive to meet stage three, which is to “involve” the community in the process. The strategies outlined in this plan will concentrate on offering additional opportunities for community consultation, involvement, and collaboration while also adhering to the project timeline and constraints.²

Figure 1. The Spectrum of Community Engagement to Ownership from Facilitating Power



2. Geothermal Technologies Education

The general public is not yet widely familiar with geothermal heating and cooling as an emerging technology, nor is much of the heating, ventilation, and air conditioning (HVAC) workforce. The project team’s research into the geothermal workforce revealed that even among those involved in or interested in the HVAC industry, there are gaps in knowledge about geothermal technology that could constrain workforce expansion. This trend was also evident when the project team conducted resident surveys at Ulbrich Heights: 96 percent of respondents reported they had no knowledge of the technology, and the remaining four percent reported limited knowledge. This lack of knowledge is an entry point for meaningful community engagement and presents an opportunity for outreach to stakeholders through geothermal knowledge-building and educational activities.

The project team aims to engage several key stakeholder groups to increase knowledge of geothermal technology in general and of the Ulbrich Heights project specifically. Educating stakeholders allows them to develop a basic understanding of geothermal heating and cooling and become familiar with the terminology used to discuss the technology. These knowledge- and capacity-building activities help foster community buy-in

² The Spectrum of Community Engagement to Ownership, Facilitating Power, <https://movementstrategy.org/wp-content/uploads/2021/08/The-Spectrum-of-Community-Engagement-to-Ownership.pdf>.



and engagement. These activities will be particularly important for Ulbrich Heights residents, given that they will be most directly affected by the installation. Section 2.1 will address resident education in detail.

2.1. Educational Activities Employed in Phase 1

In July 2024, the project team produced [“Geothermal Heating and Cooling for CT Affordable Multifamily Housing,”](#) a webinar that provided insights into geothermal as a pathway to enhancing energy efficiency and reducing pollution at affordable multifamily properties. The webinar featured a panel discussion with speakers from the University of Connecticut, the project’s engineering firm, LN Consulting, CT DEEP, and the Meriden Housing Authority to share lessons learned from designing and implementing geothermal heating and cooling systems and best practices for equitable project implementation. Project partners LN Consulting and University of Connecticut presented findings from the property’s energy analysis and discussed the project design model used to design the proposed system for Ulbrich Heights. Representatives from another Connecticut housing authority, the Meriden Housing Authority, shared takeaways from past geothermal projects. One hundred and thirty-two individuals registered for the webinar, and approximately 75 registrants attended. Attendees watched and engaged throughout the panel and during the subsequent question-and-answer period. This format prompted a substantive discussion on geothermal system design. The webinar also allowed the project team to educate attendees and connect with individuals from a variety of stakeholder groups, including those working in Connecticut’s multifamily affordable housing sector.

The team has also conducted direct educational outreach to residents of Ulbrich Heights at two in-person events and shared printed materials that can be distributed at community outreach events at the property to explain how geothermal systems work. To increase accessibility and promote comprehension, these materials feature graphics and frequently asked questions (FAQs). This information was paired with details about the project, allowing residents to identify geothermal technology proposed for Ulbrich Heights. Additionally, team members directed residents and other stakeholders to educational content on the [project’s website](#) and CT DEEP’s [Geothermal Energy webpage](#).

2.2. Lessons Learned in Phase 1

The webinar held in July was one of the most highly impactful activities. It allowed the team to raise awareness of the project and make strategically important connections with new stakeholders. In Connecticut and across the Northeast, geothermal heating and cooling systems are gaining attention as an effective strategy for municipal stakeholders and regional affordable housing stakeholders to increase energy efficiency and reduce pollution at multifamily properties.

Moving forward, the project team will seek additional ways to include Wallingford and Ulbrich Heights community voices in discussions and presentations. While this webinar was targeted to a wider audience, the team recognizes that community input would enhance all project activities. Community voices are critical for equitable program implementation, as they provide insights into how the community will ultimately interact with the networked system and are useful for the program implementers, industry representatives, and affordable



housing professionals who will design the systems. The project team is focused on future opportunities to empower resident involvement in the project and allow those designing and implementing energy efficiency and electrification programs the opportunity to broaden their understanding of how program implementation is perceived by residents.

The project team will continue to provide educational resources at project events. While there are no processes in place to measure the rate at which residents and interested stakeholders are reading or accessing materials, consistent dissemination of educational materials is an essential strategy for building awareness of the project. Door-to-door surveying of residents revealed that very few tenants are familiar with geothermal technology. More effort will be needed to improve understanding as the project progresses into Phase 2.

2.3. Educational Activities for Phase 2

If this project is selected for Phase 2, the team will work to implement multiple strategies to increase knowledge of geothermal technologies and workforce opportunities within the community. These strategies include continuing to develop educational materials such as project flyers, informational handouts, and instructional resources on energy efficiency and geothermal, and providing these at events. The team will conduct further outreach to residents and housing authority staff. Direct outreach will be particularly critical as the project team begins to install heating and cooling equipment in apartments and as residents begin interacting with the technology. The team will look for opportunities to host an in-person event where residents can learn and ask questions about the operation of the in-unit equipment. Educational events should be held at least twice to accommodate residents' varying schedules, and the team will seek out community workforce partners to assist with hands-on learning. Resources and flyers on geothermal will continue to be available at tenant engagement activities and community events. Webinar sessions such as the [Neighborhood-Scale Decarbonization: Geothermal and Beyond](#), hosted by CT DEEP, could be held to provide additional opportunities for resident and community education on geothermal technologies more broadly.

There is a possibility that the geothermal system could be built to allow expansion to surrounding buildings and properties. If the final designs of the system include expansion options, the team will expand its educational outreach to stakeholders in the surrounding community. Anticipated activities include sharing educational resources with neighboring townhouses and the daycare and schools adjacent to Ulbrich Heights. Other anticipated educational outreach activities include hosting informational sessions for the public and connecting with STEM teachers at nearby schools to develop learning materials and conduct demonstration events for the students.

Additionally, the team is working on a case study that will detail how the project partners built strategic coalitions to drive the project, how they approached the design process, and how they assessed the geothermal workforce. This case study will be published as a resource for other municipalities that are considering a geothermal system, so that these stakeholders can benefit from lessons learned at Ulbrich Heights and adopt relevant best practices. The team will host a webinar detailing the case study in greater depth and invite other interested municipalities to attend to further disseminate lessons learned. The project team will be available for questions and time will be dedicated at the end to allow collaborative discussion between municipalities.



In Phase 2, the team will develop a second case study to gather lessons learned from the implementation of the geothermal system. This case study will inform development of replicable and scalable model designs – a critical goal of this project – and provide a clear path forward for housing providers interested in implementing similar programs.

2.4. Phase Two Educational Resources

The project team will ensure that the following materials on geothermal technologies are developed and available for distribution to relevant stakeholders as part of its outreach and education strategy:

- Informational geothermal technology handouts like “one-pagers” and FAQs that explain the benefits of community geothermal;
- Instructional flyers that show how to operate in-unit equipment controls and whom to contact for questions and assistance; and
- Handouts that discuss strategies for saving money through proper operation and maintenance of in-unit equipment.

These educational materials must use easy-to-understand language and illustrations. Materials should be translated for the benefit of non-English speaking residents. The project team will continuously update the project website as new resources are released. Any recordings from webinars that the team hosts will also be uploaded to the site.

Additionally, the team will work with WHA to post all instructional or educational materials in highly visible locations around the Ulbrich Heights campus. These could include posting permanent infographic signs on the Ulbrich Heights property, either during or after installation, that explain the system and provide contact information for the project team for residents who would like to learn more.

3. Resident Engagement

To ensure that project implementation would be as equitable as possible, the team must ensure that residents are not only educated and informed, but also comfortable and able to share their input and feedback with the project team. To enable this, the team must facilitate events, provide opportunities for residents to build relationships with the project team and share their ideas and concerns, and actively solicit input. This section discusses approaches the team took in Phase 1 and recommendations for engaging with residents during Phase 2.

3.1. Community Engagement Activities Employed in Phase 1

When funding for the project was initially announced in fall 2023, the project team created a public-facing [project webpage](#) with information such as the anticipated project timeline, opportunities to get involved, relevant published resources, and an overview of geothermal heating and cooling technologies.



During Phase 1, NEEP, CT DEEP, and WHA worked together to create and disseminate easily accessible educational materials, conduct door-to-door surveys of residents, and host in-person events at Ulbrich Heights. Prior to drilling the test borehole in February 2024, NEEP created flyers to inform residents about the project and the upcoming activity. WHA provided these materials to residents in an electronic format sent out via email and via flyers placed in resident's mailboxes. The project team also created a system to route messages from the project email address to multiple key staff members across the project partner organizations. The flyers included the project email address and a phone number so that those with questions could follow up.

While the test borehole was being drilled in February, the presence of the large drilling rig made the project highly visible. Partners from NEEP, CT DEEP, UConn, WHA, and the Wallingford Electric Division (WED) took advantage of this visibility by gathering in person, providing donuts and coffee, and interacting directly with residents. The event was scheduled after gathering input from Wallingford Housing Authority staff and was scheduled to maximize exposure during a time of high foot traffic. During the summer, the team held a second in-person event at Ulbrich Heights. This event was a cookout and was primarily focused on creating an inviting atmosphere and building relationships between the project team and community members. The secondary focus of this event was educating residents about the project.

In July, NEEP staff conducted a door-to-door survey to directly engage with residents and collect more personalized feedback and input. NEEP staff knocked on 56 doors and surveyed 16 residents over the course of about two-and-a-half hours. The survey covered multiple topic areas, gauging residents' satisfaction with their current heating and cooling systems, the affordability of their energy costs, their familiarity with geothermal heating and cooling systems, and how they get information about events and activities at Ulbrich Heights. The next section discusses findings from these surveys.

3.2. Lessons Learned in Phase 1

Through interviews with housing authority staff and discussions with community members during the resident survey, the project team found no existing formal community network and limited informal networks at Ulbrich Heights. One resident reported that there had formerly been a tenant council at the property, but it had been inactive for some time. The team did not encounter any sustainability-focused groups in the wider Wallingford area that would be natural proponents of the project. During door-to-door surveys, tenants reported low awareness of the project despite project flyers having been distributed to each unit and drilling having taken place on the property. Approximately half of the residents surveyed reported a general lack of communication with housing authority staff in terms of being notified of recent weatherization activities and projects such as siding replacement on the exterior of the apartments. Most survey respondents reported that maintenance staff are generally responsive to repair work orders and very responsive to emergency work orders. Through conducting surveys and engaging in informal discussions with residents, it became apparent that effective communication with residents will take persistence and a willingness on the part of the project team and housing authority staff to meet residents where they are through direct engagement activities, such as door-to-door campaigns and distributing information through multiple channels (flyers, phone calls, emails, etc.).

Roughly 30 residents attended the cookout event at Ulbrich Heights in August (see Figures 2 and 3). Representatives from CT DEEP, NEEP, WHA, and WED spoke with residents about what geothermal heating and cooling is, how it works, and what it would entail if WHA were able to move forward implementing the design.

Figure 2. Flyer Advertising the Community Cookout



Many residents expressed excitement about the concept of having central cooling, and people were generally receptive to geothermal. When asked about their utility costs, residents said they were not a huge concern given the low electricity costs of WED. To keep utility bills low, most tenants said that they run their window AC units only when necessary and keep the thermostat set relatively low in the winter. Some expressed concern about construction already happening at the site for other projects, and how disruptive it had been, but most people agreed that disruption was to be expected when properties need updating. Construction of the geothermal system installation was not a major concern, though residents confirmed the need for clear communication around project schedules and updates and suggested that efficient communication could help alleviate potential confusion and disruptions. To set clear expectations, the project team reiterated to tenants that the implementation of the geothermal project was dependent on competitive funding and therefore construction was not guaranteed.

Figure 3. Set Up of the Community Cookout and CT DEEP Staff Interacting with Ulbrich Heights Residents





As the project moves forward, the lack of existing formal or informal community networks at Wallingford Heights may impede relationship-building with tenants. Ulbrich Heights does not have any common buildings or indoor space, which presents a barrier to hosting events (particularly during colder weather) and distributing information. The lack of easily identifiable community networks at Ulbrich Heights highlights a need to identify community leaders and trusted community voices, which is a necessary first step of successful community engagement. Frequent and consistent communication and seeking creative and inclusive strategies for engaging with the community will be critical as the project begins to directly impact residents during Phase 2 implementation activities.

One approach to identifying community leaders and trusted community voices could be conducting further outreach to relevant community-based organizations (CBOs). CBOs are generally more embedded in communities and can facilitate deeper learning opportunities, make connections between the project team and community members, and help the project team and housing authority staff build trust with residents. Trust is central to reaching the “collaborate” and “defer to” stages of the Spectrum of Community Engagement. To attempt to connect with local CBOs during Phase 1, the project team conducted an outreach campaign targeting faith-based organizations in the area, the high school next door to Ulbrich Heights, and various other community groups, but these efforts had limited success. Identifying relevant and embedded CBOs and building relationships with such organizations would be conducive to more effective community engagement. The project team could consider offering compensation to CBOs for participating in stakeholder outreach, which has proven to be an effective approach to ensuring equity in engagement activities and would demonstrate the project team’s commitment to effective and inclusive community engagement.³

3.3. Resident Engagement for Phase 2

During Phase 2, the project team plans to build trust by focusing on clear and consistent communication with residents about project timelines, expectations, and opportunities for input. Ensuring that community members are aware of and prepared for upcoming events is key to demonstrating respect and inclusiveness to community members. Strategies could include offering communication via multiple channels and ensuring communication methods align with residents’ preferences. During the Phase 1 door-to-door survey, residents indicated that phone calls, texts, emails, or physical mail are preferred means of communication. Other communication strategies could include sending multiple notices about upcoming construction and publicizing the CT DEEP Ulbrich Heights project webpage with information relevant to residents’ concerns, such as the project’s progress and upcoming work that will have a direct impact on them. An additional way to facilitate resident awareness could be communicating regularly with maintenance staff about timeline and expectations and making sure they are comfortable communicating that to tenants. The team could also gauge tenant interest in establishing a committee or advisory group directly focusing on resident engagement in this project. The team might act

³ Fostering Partnership for Community Engagement, The Urban Institute. https://www.urban.org/sites/default/files/publication/104935/fostering-partnerships-for-community-engagement_0.pdf



as facilitators for regular meetings if such a committee were to find traction. To give residents opportunities to be heard and provide their input, the project team plans to host in-person and virtual community listening sessions during Phase 2. These would provide a venue for residents to share concerns, ask questions, and provide feedback on the most effective engagement approaches. Having a third-party organization, such as NEEP, facilitate these listening sessions could make people more comfortable sharing feedback. An online feedback form that automatically directs communication to the project email address could also be provided for people who cannot attend meetings or prefer to give feedback in writing.

The project team would seek to earn resident buy-in on decisions related to project timelines, potential disruptions, in-unit work, location of boreholes in relation to individual housing units, and preferred communication channels for project notices. During construction, tenants may face disruption with in-apartment heat pump installation (potentially over the course of up to two weeks) as well as drilling and excavation noise (timing dependent on construction schedule). Depending on the distribution of work among subcontractors and the coordination between them, heat pump installation could be much faster than two weeks. LN Consulting has created a feasibility design during Phase 1. During Phase 2, the final construction-ready design can include more opportunities for resident feedback.

As the project transitions to construction, the project team will consider hosting various events to gather stakeholders and residents. This could include a “groundbreaking/shovel event” to kick off construction as well as a ribbon cutting event when the geothermal system is complete. At events held before and during the early stages of construction, materials such as pamphlets will be provided to educate residents on what to expect during construction.

During Phase 2, the team will also plan to create and deliver educational resources relating to workforce opportunities in the geothermal industry. Such resources will include both digital materials available on the website and printed flyers. The team may also hold an informational session on the landscape of the geothermal workforce and invite all Ulbrich Heights residents.

3.4. Phase Two Engagement Resources and Activities

To ensure that residents are prepared for changes brought by the project, the team will need to develop outreach materials covering topics such as bill impacts/new charges, what to expect during the construction period, and the projected timeline. These materials should include:

- Information on how to be involved in the decision-making process;
- A FAQ handout, also to be posted on the project website;
- An explanation of any shared charges relating to operation and maintenance of the central geothermal system;
- Information on how heating and cooling costs will be reflected on electricity bills from WED and how heating costs will no longer affect gas bills from Yankee Gas;
- Overall impacts on heating and cooling costs;



- What to expect during construction (disruptions, need to vacate unit and accommodations made for that time, times with high noise levels, etc.);
- Expected timeline of project (distinct phases of construction, when residents can expect workers for in-unit installation, etc.); and
- Contact information for project partners, with an invitation to get in touch.

As part of outreach related to the geothermal workforce, the team will develop materials including:

- Information on types of geothermal occupations;
- A list of training and educational institutions that offer geothermal courses;
- Information on certifications required for various occupations in the geothermal industry; and
- Contact information for project partners willing to talk about their roles in geothermal projects.

4. Targets

To ensure that project implementation during Phase 2 is equitable and provides thorough opportunity for community input and partnership, NEEP proposes the following metrics of success:

- Three community partnerships established in Wallingford;
- Six community engagement events held at Ulbrich Heights;
- A total of 50 residents attending community engagement events held virtually or in-person at Ulbrich Heights;
- Tracking social demographics of participants attending community engagement events held, not limited to race and gender; and
- A 50 percent increase in understanding and awareness over time of the project and geothermal technology.

A community partnership could be defined as a sustained relationship with a community-based organization or community leader, where both parties feel valued and believe that the engagement is mutually beneficial, maintained for the duration of the project. Community engagement events could be in-person, virtual, or hybrid and should include opportunities for asynchronous participation to make them more accessible. Potential community engagement events include discussions with residents on design options, groundbreaking, ribbon cutting, and commissioning events, community listening sessions, public educational webinars, information sessions on workforce opportunities, and events with neighboring schools.

Initial surveys found that less than 10 percent of residents were aware of the project after initial Phase 1 outreach efforts. To track trends in awareness and understanding of the project and the technology, follow-up surveys should be conducted after some community engagement events.



5. Timeline

To fulfill the goals of the project and meet the metrics for community engagement, the proposed engagement activities are organized into major milestones. Educating and communicating with community members, stakeholders, and residents will proceed as outlined in Table 1.

Table 1. Community Engagement Milestones

Milestone	Approximate Timeframe (from Phase 2 start date)	Description
Educational Resources	2 to 3 months and ongoing	Educational resources on the installation, operation, and maintenance of the heat pumps, as well as information on entering the geothermal workforce will be provided to tenants, through multiple communication channels.
Resident Engagement Resources	3 months and ongoing	An FAQ handout will be created and distributed. It will include how to get involved in the project and information about potential bill impacts, common charges, and expectations for construction. This information will also be on the CT DEEP webpage for the project.
Resident Engagement and Education Event (first event)	6 months	The first in-person event will be preceded by a broad outreach campaign to provide opportunities for the entire community to share their input on the process so far, express any concerns, and learn about the operation and maintenance of the equipment.
Resident Engagement and Education Event (second event)	8 to 10 months	The second in-person event will be designed to reach younger community members in grades K-12, to strengthen career awareness for the geothermal industry, and to provide another opportunity for residents to speak with the project team and share their input or concerns
Resident Equipment Demos (third and fourth events)	14 months	Two outreach events at Ulbrich Heights will allow the residents to interact with the equipment and learn how to operate the heat pumps and controls. Residents will be able to ask questions and learn more about the project timeline. Two separate times will be offered to accommodate varying schedules.
Outreach to Wider Community and State Audience (fifth and sixth events)	24 months	When the geothermal system has been in place for some time, the facility will hold public events demonstrating the technology and use these events as opportunities to conduct outreach to towns across the state, reaching out through networks such as the CT Energy Network mailing list. This may include two community engagement events, either in-person or virtual. The team plans to reach out statewide to disseminate the results of the case study and to publicize key events.
Second Case Study and Accompanying Webinar	28 months	Pending installation of the geothermal system, the team will develop a second case study and distribute broadly among relevant stakeholders, including via a webinar.



6. Conclusion

Using the lessons learned from geothermal education and tenant outreach during Phase 1, the project team will plan strategic engagement activities for the duration of Phase 2 that focus on increased involvement of and collaboration with stakeholders. To effectively decarbonize at a community scale, it is crucial that people feel heard, valued, and involved in the process, and that all kinds of expertise and knowledge are valued. Following the Spectrum of Community Engagement, the team will begin by equipping residents and other local stakeholders with the information they need to be informed, and then solicit their input for shaping the education and engagement process to ensure it works for everyone involved. Activities to increase awareness and understanding of geothermal technologies will include developing instructional materials for using in-apartment controls and a corresponding hands-on training event, outreach to the local high school, and writing a second case study on implementation of the geothermal system. Activities to advance beyond the “inform” stage will include improving communication channels, holding listening sessions, and developing mechanisms for resident input on the geothermal system construction.

If Phase 2 funding is awarded to the Ulbrich Heights project, the project team will be committed to equitable program implementation and will seek to continuously raise awareness about geothermal technologies and engage WHA residents. The team will solicit resident feedback and adjust strategies as necessary to meet the needs of the community, assure the community understands and supports geothermal development, and enhance the community’s ability to effectively engage in an energy economy that is rapidly decarbonizing.