



ULI TECHNICAL ASSISTANCE PANEL REPORT

DIGNITY FIRST HOMELESS TO HOUSED

BANGOR, ME

NOVEMBER 17–18, 2024



Boston/
New England

URBAN LAND INSTITUTE (ULI)

The Urban Land Institute is a 501(c)(3) nonprofit research and education organization supported by its members. Its mission is to shape the future of the built environment for transformative impact in communities worldwide. Founded in 1936, the Institute has grown to over 45,000 members, representing the entire spectrum of land use and real estate development disciplines working in private enterprise and public service. ULI membership includes developers, architects, planners, lawyers, bankers, economic development professionals, and other related fields.

The Boston/New England District Council of ULI serves the six New England states and has over 1,300 members. As a preeminent, multidisciplinary real estate forum, ULI Boston/New England facilitates the open exchange of ideas, information, and experience among local and regional leaders and policymakers dedicated to creating better places.

TECHNICAL ASSISTANCE PANELS (TAPs)

The ULI Boston/New England Real Estate Advisory Committee convenes TAPs at the request of public officials and local stakeholders of communities and nonprofit organizations facing complex land use challenges that benefit from the pro bono recommendations provided by the TAP members.

A TAP consists of a group of diverse professionals with expertise in the issues. The Panel spends one to two days visiting and analyzing existing conditions, identifying specific planning and development issues, and formulating realistic and actionable recommendations to move initiatives forward consistent with the applicant's goals and objectives.

An independent study by Rivera Consulting conducted in 2019 surveyed municipalities that received assistance from the TAP programs and reported a positive impact of the TAP process on communities. Eighty-two percent of participating municipalities said their behavior and approach to municipal planning and economic development strategies were affected; 67 percent said there were increased municipal investments related to the stated goals and recommendations of their TAP report; and 62% said at least one key developable asset addressed in their TAP report had been redeveloped, consistent with ULI Boston/New England recommendations. Learn more at: <https://boston.uli.org>



**Boston/
New England**

boston.uli.org

ULI TERWILLIGER CENTER FOR HOUSING

The mission of the Terwilliger Center for Housing is to ensure that everyone has a home that meets their needs at a price they can afford. Established in 2007 with a gift from longtime member and former ULI chairman J. Ronald Terwilliger, the Center's activities include technical assistance engagements, forums and convenings, research and publications, and an awards program. The goal is to catalyze the production and preservation of a full spectrum of housing options.

ULI HOMELESS TO HOUSED

Recognizing that ULI members are well positioned to help address the U.S. housing and homelessness crisis, the Homeless to Housed (H2H) initiative aims to catalyze the production and preservation of deeply affordable supportive housing. H2H identifies best practices and solutions through research, awareness-building activities, and local technical assistance in partnership with ULI's network of District Councils. The initiative began with the publication of the 2022 report Homeless to Housed: The ULI Perspective Based on Actual Case Studies. Driven by the foundational support of Carolyn and Preston Butcher, the initiative is supported by a growing number of ULI members and partners. uli.org/homelessness

© 2024 Urban Land Institute

This report is sponsored by:

Dignity First

with support from ULI's Homeless to Housed Initiative

Table of Contents

Executive Summary	4
ULI and the TAP Process	5
Purpose of the TAP and Background	7
Challenges	10
Community Engagement	11
Recommendations	13
Funding Resources	20
Next Steps	24

Executive Summary

ULI and the TAP Process

Provides an overview of ULI's District Council and its Technical Assistance Panels (TAPs) and includes a list of the panel members and stakeholders who took part in the information-gathering sessions.

Purpose of the TAP and Project Background

Gives a brief synopsis of the purpose of the TAP, including the questions posed by the sponsor to help identify solutions. It also provides facts and housing figures for the City of Bangor, an overview of the study area, and the process the panelists undertook to arrive at their conclusions.

Challenges

Outlines the potential problems that developing and maintaining housing in the study area may face, including rising material prices and labor costs, construction costs, and other soft costs; potential environmental issues with the site; and securing funding for ongoing operational costs.

Community Engagement

Provides a cost-benefit analysis of providing Permanent Supportive Housing (PSH) for Bangor's homeless population. These include an analysis of the social costs of homelessness, including the additional stress to the healthcare system that results from a lack of preventative care for the unhoused, including longer hospital stays. Also lists the benefits associated with PSH, such as a consolidation of wraparound services, and the positive impact on the unhoused as they re-integrate into the larger community.

Recommendations

Details the panel's recommendations, including the importance of frontloading infrastructure improvements for the site in the first phase; design considerations (including design prototypes); suggestions for increasing sustainability elements within the design process; and a strong suggestion to consider a modular construction process.

Funding Resources

Provides a list of potential funding sources that could aid in the development of housing, infrastructure, and ongoing support for Home Village.

ULI and the TAP Process

The Urban Land Institute is a 501(c)(3) nonprofit research and education organization supported by its members. Its mission is to shape the future of the built environment for transformative impact in communities worldwide. Founded in 1936, the Institute has grown to over 48,000 members worldwide, representing the entire spectrum of land use and real estate development disciplines working in private enterprise and public service. ULI membership includes developers, architects, planners, lawyers, bankers, and economic development professionals as well as other related disciplines.

The Boston/New England District Council of ULI serves the six New England states and has over 1,300 members. As a preeminent, multidisciplinary real estate forum, ULI Boston/New England facilitates the open exchange of ideas, information, and experience among local and regional leaders and policymakers dedicated to creating better places.

Technical Assistance Panels (TAPs)

The ULI Boston/New England Real Estate Advisory Committee convenes TAPs at the request of public officials and local stakeholders of communities and nonprofit organizations facing complex land use challenges that benefit from the pro bono recommendations provided by the TAP members.

A TAP consists of a group of diverse professionals with expertise in the issues presented in the sponsor's application. The Panel spends one to two days visiting and analyzing existing conditions, identifying specific planning and development issues, and formulating realistic and actionable

recommendations to move initiatives forward consistent with the applicant's goals and objectives.

Panel Members

ULI Boston/New England assembled a group of volunteer members with diverse skills and expertise to assist Dignity First with this TAP.

Chairs

Laurence Spang, Partner, Arrowstreet
Melvin Vieira, RE Consultant, RE/MAX
Destiny – The Vieira Group

Panelists

Heath Cody, AIA, Associate, Gensler
Vamshi Gooje, Associate Principal, Thornton
Tomasetti
Francis Goyes Flor, Director, HR&A
Edd Hamzanlui, Founder, MassCan Capital
Gorata Bontle Kgafela, Teaching Fellow,
Harvard University Graduate School of Design
Scott Pollack, President, Opportunity
Communities
Matthew Pouliot, CEO, Pouliot Real Estate
Panelists have donated their time.

ULI Staff

Timothy Moore, Manager, ULI Boston
Catherine Rollins, Director, ULI Boston
TAP Writer: Mike Hoban, Principal, Hoban
Communications

Stakeholders

The TAP also benefited from the participation of multiple stakeholders, including representatives from the City of Bangor, local health and housing nonprofit organizations,



The TAP study area.

and the University of Maine (UMaine).

Nick Barboza, President, Dunbar & Brawn Construction

Jason Bird, Housing Development Director, Penquis

Lori Dwyer, President & CEO, Penobscot Community Health Care

Jennifer Gunderman, Director of Public Health & Community Services, City of Bangor

Jena Jones, Homelessness Response Manager, City of Bangor

Anne Krieg, Director of Development, City of Bangor

Tommy Lyons, Housing Inspector, Bangor Housing Authority

Steven McDermott, Loan and Community Partnership Officer, Genesis Community Loan Fund

Jonathan Sandau, Vice President, Design Wall Housing

Robin Sandau, President, Design Wall Housing

Mathew Ward, Principal, WBRC Inc.

Purpose of the TAP and Background

Dignity First, a Bangor, ME-based nonprofit organization, reached out to ULI Boston/New England to organize a TAP to provide an evaluation of and additional guidance for their proposed plan to develop and manage Homeful Village, a permanent supportive village for unhoused people. The proposed 60-unit village would be constructed on a city-owned site near the Bangor International Airport that is currently home to approximately 50-60 unhoused individuals living in an ad hoc encampment. Dignity First hopes to recreate the success of the Community First! Village in Austin, Texas, which constructed tiny homes to create a supportive community for women and men exiting chronic homelessness. In addition to the housing units, the proposed design would include an administrative building and community centers that can provide health and recovery services and case management, a gathering space, and a garden and greenhouse area.

Dignity First has been working diligently on the initial phases of the project – developing a concept plan; defining and building relationships with community partners; constructing a prototype tiny home with the assistance of the University of Maine Advanced Structures and Composites Center; identifying potential sources of funding; mapping management structures, etc. To secure substantial funding for the Homeful Village project, Dignity First needs to have a commitment from the City of Bangor for a ground lease. The City will only consider granting a land use or development agreement if Dignity First can prove the project's viability, secure sufficient financial backing, and establish strong partnerships with community organizations.

Dignity First is seeking guidance from the TAP on the following questions:

1. How can they design and build a sustainable village that minimizes environmental impact while considering energy use, renewable resources, building materials, water management, and affordability?
2. How can they leverage available incentives, grants, and financing options to offset initial investments and enhance the economic viability of the housing development?
3. Given their focus on financial viability and community acceptance in the pre-development stage, what specific financial development strategies and community engagement tactics can we implement to ensure the project's success and secure the resources needed to move forward?

City of Bangor Key Facts

Bangor is the third-largest city in Maine, with a population of 31,628 as of July 1, 2023, per the U.S. Census Bureau. The median household income for the city is \$58,096, with a poverty rate of nearly 15%. Approximately 47 percent of the housing units are owner-occupied.

According to Zillow, the average Bangor home value as of November 2024 is \$270,310, up 5.8% over the past year. In November 2020, the average Bangor home value was \$177,067, which means home values have increased by over 52% in four years. As of January 2025, the average rent in the City of

Bangor is \$779 for a studio, \$1,283/month for a one-bedroom, \$1,192 for a two-bedroom, and \$1373 for a three-bedroom, according to Apartments.com.

The City is approximately 89% White, 4.6% Mixed Race, 3.2% Hispanic/Latino, 2.8% Black, 1.9% Asian, and 1.2% American Indian. 96% of the population over the age of 25 has a high school diploma or higher level of education, and 36% hold a bachelor's degree or higher. Bangor is also home to over 2,200 veterans.

Scope of Bangor's Unhoused Population

The Bangor region has consistently reported an average of 200 unhoused individuals. Due in part to the lack of resources in rural communities, cities like Bangor, which are relatively rich in public transit, medical treatment, and social service resources, have seen a significant rise in the number of unhoused people over the past few years. Maine and Bangor specifically are facing a significant housing crisis that is substantially impacting precariously housed and unhoused people. Shelters are not valid options for many of these individuals for various reasons, but transitional and permanent housing for them is extremely limited.

According to the Maine Continuum of Care, the average length of shelter stays between 2022 and 2023 increased from 60 to 96 days due to a housing system that lacks sufficient ways to exit the shelters. These challenges result in a significant number of vulnerable people with complex needs remaining unsheltered and unhoused for longer periods of time. The barriers for this population to access housing include criminal records, eviction histories, substance use disorder, mental health issues, and unstable incomes. Often, there are additional challenges for these individuals stemming from trauma, chronic lack of safety and stability, and, in many cases, distrust for systems meant to help.

Study Area

The approximately seven-acre site, once the property of the Dow Air Force Base, is home to the city's largest homeless encampment, sometimes called Tent City or Camp Hope. The encampment has existed on the land for years and has grown in size since the COVID pandemic in 2020-21. In October, the City decided to permanently close the site due to a rise in illegal activity and violence in the area, out of safety concerns for individuals, according to the City manager. In early October, approximately 70 unhoused people were living on the site. With the encampment scheduled to close on February 28th, 2025, at least 15 people have been relocated into permanent housing, and others have secured housing vouchers.

The site is located off Cleveland Street and Texas Avenue, behind the Hope House Health and Living Center on Corporate Drive. There is a Community Connector bus line that stops outside the Hope House and runs every 30 minutes during daytime hours.

Across Cleveland Street is the former Pine Tree Inn, a bed and breakfast that the nonprofit Penquis Community Action Program is repurposing into 41 units of permanent affordable housing for people experiencing homelessness in the Greater Bangor area, now known as Theresa's Place. The project is expected to be completed by the end of February 2025.

The City is also about to start renovations of a former military building on the adjoining parcel across the street that will be retrofitted as the Bangor Central Kitchen, an incubator for restaurateurs and other food entrepreneurs. Also on Cleveland Street, a 4,300-square-foot water storage tank adjacent to the encampment is being constructed, with an anticipated completion by the middle of 2025.

North of the encampment is the University of Maine at Augusta (UMA) Bangor Campus. A chain link fence was recently installed along Texas Avenue to separate the encampment from the campus.

The TAP Process

The TAP was held over two days, on November 17 and 18, 2024. Prior to the TAP site visit, Dignity First provided the panelists with a comprehensive briefing book that includes background information and the proposed plans for the site redevelopment and participated in a Zoom conference with the sponsor and panelists the week before the TAP commenced.

On the first day of the TAP, the ULI Boston/New England District Council panelists were given a tour of the encampment site by Jamie Beck, founder, and Peg Olson, board member, of Dignity First. The group met across the street from the encampment at Theresa's Place, the 41-unit permanent supportive housing development for the unhoused that is nearing completion. Panelists also observed the empty former military building to the right of Theresa's Place, which will be converted into a community kitchen, and the water storage tower, now under construction further up the road.

Beck and Olson led the panelists on a tour through the encampment along an unpaved, informal road. Panelists observed a number of tents, older vintage campers, and rudimentary shelters along the road, which meandered through the encampment. The roadway was littered with debris, including used hypodermic needles despite the inclusion of Sharps needle disposal receptacles located throughout the site. During the tour, panelists came across a campsite where a tragic fire occurred the week before. Without running water and winter approaching, the panelists saw firsthand the difficult living situation the residents face.

Panelists also first became aware of the Hope House, a facility that adjoins the encampment and serves Bangor's unhoused population via a shelter, health center, and transitional housing.

Panelists were able to meet and speak with several residents, including a lengthy conversation with one of the longest residents of the encampment. He is actively collaborating with Dignity First and serves as a de facto spokesperson for the residents. He provided the panelists with insights into the day-to-day living of many of the residents and articulated the unique challenges that the population faces as they try to secure safe and affordable housing.

After concluding the tour, panelists conducted two separate, hour-long interview sessions with stakeholders (named in the "ULI and the TAP Process" section above). The first was held following the site tour at the restaurant at the Residence Inn Bangor (where panelists and staff stayed for the TAP). The second was held the next morning at Belfast Hall at UMA Bangor.

Following the stakeholder meetings, panelists conducted a charrette to integrate the briefing materials, observations from the tour and stakeholder interviews into alternate development strategies for the site, as well as providing suggestions to ensure the longer-term operational viability of the development. That evening, the panelists presented their recommendations to Dignity First, community partners, and City officials at Belfast Hall.

Challenges

The proposed development plan faces a number of challenges, detailed below:

The Construction and Development Phase:

- **Pre-Development Costs** – The initial site infrastructure costs are estimated to be \$2.5-\$3 million and need to be deployed upfront (approximately 70%-80%). Subsidies for pre-development costs are scarce, and Dignity First will likely need to fundraise and find soft funding sources to support these up-front costs. Dignity First is lobbying for a \$5M congressional funding allocation to cover these costs.
- **Development Costs** – Due to rising material prices and labor costs, construction costs and other soft costs may increase from the original projections for the project.
- **Short Construction Season** – Because of its geographic location, Bangor typically has an abbreviated construction season, which could hinder project timelines.
- **Potential Site Contamination** – The encampment is located on the former

Dow Air Force base (closed in 1968). Sponsors indicate that the site was tested in May of 2023 before construction began on the water storage tower, and it is not listed as a brownfield site. However, the City of Bangor will require updated testing. Federal funding also requires an environmental review that the City must complete. A Phase 1 Environmental Site Assessment during pre-development will show if there are any contaminants on the site.

Post Construction – Operations:

- **Property Operating Costs** – In addition to development costs, the project's sponsors need to budget for the operating costs of the planned community. These include management and administration personnel, utilities, repairs and maintenance, insurance, real estate taxes, and replacement reserves.
- **Community Operating Costs** – Project sponsors need to consider the proper mix of volunteer versus paid supportive services staff, as well as how to efficiently deploy professional onsite management and care for the community residents.



The individuals living on the site today face difficult challenges with their living environments.

Community Engagement

In addition to the capital costs of the redevelopment of the site, a case must be made for the social costs of not addressing the issue of homelessness in the community. The panel urged the sponsors to investigate ways to highlight what people are most concerned about (providing shelter for the unhoused population) to ensure community acceptance of the project.

While the panel encouraged the sponsor to search for additional data that is more specific to Maine, below are some facts and figures that can make the case for building Permanent Supportive Housing (PSH). These include improved social integration, reduced isolation, increased access to community resources, and a greater sense of belonging for individuals experiencing chronic homelessness.

Social Costs of Homelessness (funded by tax dollars)

- **CDC Data** – In 2019, people aged 1-64 living below 100% of the Federal Poverty

Level (10.1%, age adjusted) were the most likely to have a hospital stay in the past year. The average adjusted cost of an inpatient stay at community hospitals in 2019 was \$14,101 per day.

- **Journal of Maine Medical Center** – Individuals experiencing homelessness suffer a disproportionately high burden of disease, often delay seeking medical care, and have many unmet health care needs. Healthcare expenditures associated with treating those experiencing homelessness are 3.8 times higher than housed persons, and people experiencing homelessness are more likely to be high-utilizers of the emergency department (ED). In Maine, the number of people experiencing homelessness grew 37% from 2010 to 2019.

Social Benefits of PSH

- **Community Integration and Availability of Wrap-Around Services** – These include amenities that can be accessed



The Panel met with community leaders during their tour of the site and in interviews that followed.

at Theresa's Place (laundry facilities, etc.), the community kitchen, and the health center at Hope House.

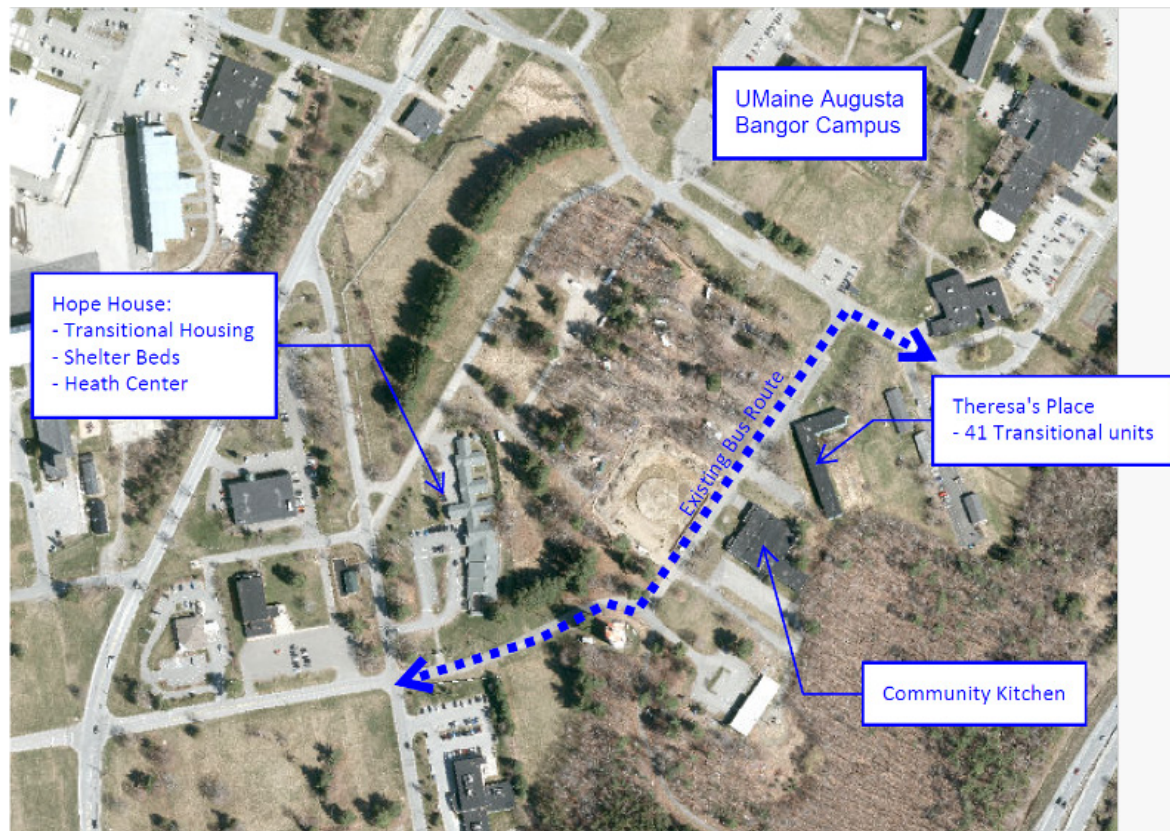
- **Health Education** – The Portland, Maine-based Preble Street Learning Collaborative (PSLC) [published a case study](#) in 2020 that concluded that having healthcare professionals actively engage and educate the unhoused population on best health practices results in decreased ED visits.
- **Sustainability** – Sustainability targets can be achieved by following the 3R Strategy: Reduce, Reuse, and Recycle. These may include providing onsite waste management such as recycling, composting, gray water treatment and reuse, and backyard gardening for personal consumption.
- **Access to Transportation** – Public transportation options enable residents to be a part of the larger Bangor community by providing access to different activity and service nodes. Flexibility and the ability to choose enhances an individual's sense of agency and can restore their confidence to take charge of their life.
- **Personalization** – As described by some of the stakeholders, particularly the current residents of the encampment, personalizing spaces empowers community members to share and

celebrate their diverse identities. It also allows them to have a personal and meaningful impact on their agency to create their own homes. Personalization can also be achieved by creating flexible spaces for resident customization and a rich community life. Such spaces could be co-curated with the community members for various rotating functions and activities.



This community notice, tapped to a tree, encourages people to sign a petition to stop sweeps of the encampments.

Recommendations



The study site is shown here in the context of the broader neighborhood.

Planning for the redevelopment of the proposed Homeful Village site should work within the context of the surrounding community. During the site tour, panelists became aware of the array of ancillary services directly abutting or in close proximity to the encampment, including the Hope House, which provides transitional housing, shelter beds, and a health center to support the local unhoused community; Theresa's Place, the soon-to-be-completed former inn that will provide 41 units of housing for the unhoused; the University of Maine at Augusta Bangor campus; and the planned community kitchen. Panelists also became aware of the Community Connector bus line that has a stop

outside the Hope House and runs past the encampment every 30 minutes during daytime hours.

The panel suggests integrating these surrounding assets into the planning process to create a neighborhood of interconnected support services. The panel also had the following suggestions:

1. Would it be possible to move the bus stop to the top of the hill at the site (see slide) to create a community gathering space that includes Theresa's Place, the community kitchen, and the bus stop to create a sense of place? This would make the bus more accessible and help

integrate the residents with the broader Bangor community.

2. Could the number of parking spaces in the original plan proposed by Dignity First be reduced (if the zoning allows for it) to serve higher and better purposes? Since relatively few residents have vehicles, parking could be better located around the perimeter of the site.
3. Could a "Main Street" be constructed in the new development that would connect to the Hope House on one side and the campus on the other? This could help residents to take advantage of those services and feel like they are part of a larger community.
4. Can this new neighborhood reinforce connections with the existing neighborhood support services? Helping the residents take full advantage of the nearby social services support, such as the Hope House or better access to the bus service, could help residents with more community engagement.

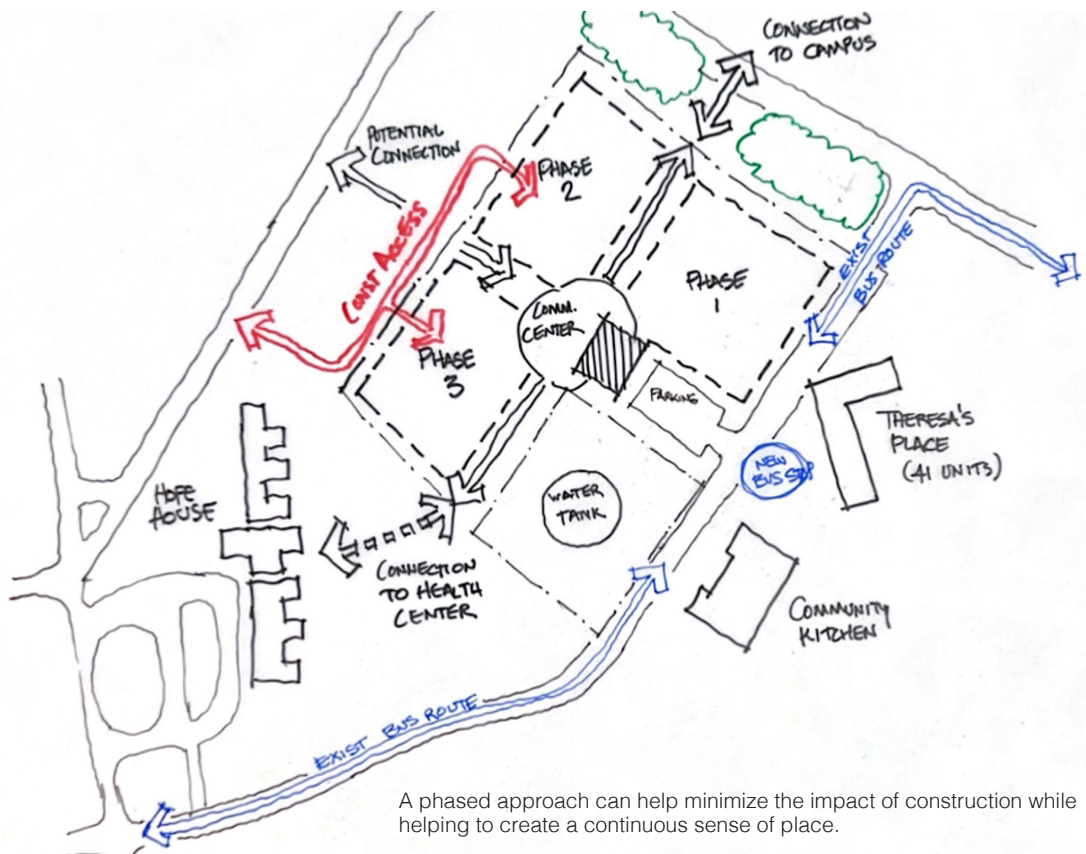
A Phased Approach

To foster community building from the project's outset while meeting Dignity First's financial plans, the panel recommends a phased approach that creates a sense of place with the project's initial phase while minimizing the impact of the construction of later phases.

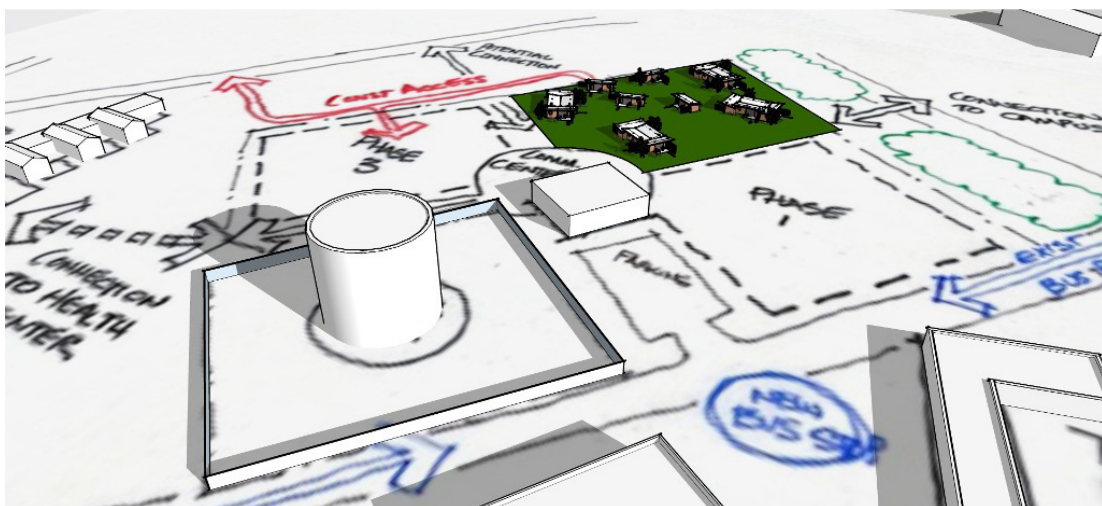
We suggest that Phase I include constructing the community center across the street from Theresa's Place and the community kitchen. This creates a new entrance to the village. Phase II and III would be phased to allow the village to build out to full occupancy without community members feeling like they're walking through an undeveloped or active construction area.

Infrastructure

It is likely that the site infrastructure (grading, utilities, roadways, etc.) will need to be constructed during Phase I. The cost of building the infrastructure, while a higher initial cost, is more cost-efficient than



A phased approach can help minimize the impact of construction while helping to create a continuous sense of place.



While the panel recommends phasing the construction of buildings, infrastructure improvements, including pad sites, should be completed at the outset.

building infrastructure for all three phases incrementally.

To leverage the initial infrastructure investment, the panel recommended building the pad sites for the entire project. The community residents could then place their RVs or tents on the pad sites, which would provide residents with basic utilities until the Phase II and III permanent homes could be built.

The goal is to create a sense of place, establish a front entranceway, and develop the rear portions in a manner that avoids the perception of an active construction site.

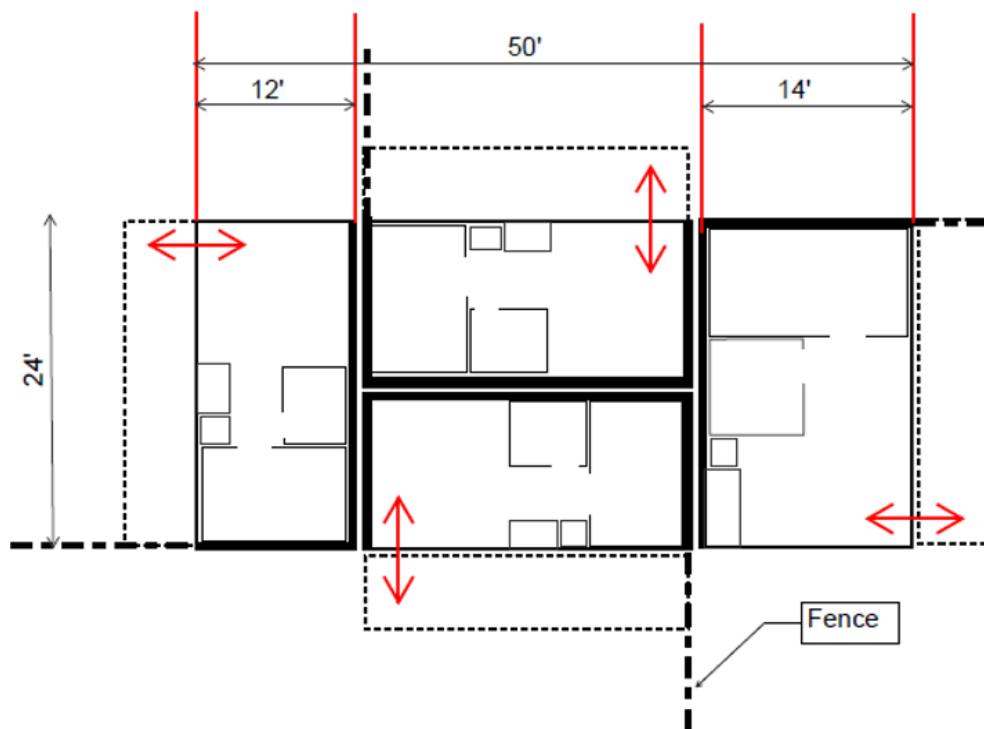
Design Considerations

When designing housing for an unhoused population, there needs to be an awareness that the range of social interactions among them can and will change over time and be highly variable. For instance, the proposed design of the community room, featuring eight-seat tables, is well-suited for a general population but does not work well for this resident demographic. For new residents, having to sit with others that you don't know may not feel comfortable and could discourage their use of the facility. One of the key mental health issues in design is making sure that residents have agency and choice, which they often feel they do not have in their day-to-day lives.

Constructing essentially identical buildings may not be optimum for this project. With this population, sameness in design sometimes leads to difficulties with wayfinding in a population that is often impaired. The Mobile Loaves & Fishes Community First! Village in Austin, Texas (which served as a model for this project) has a diversity of housing types and living arrangements in its community, designed to create neighborhoods that are easy to recognize via their differences.

There are also principles in trauma-informed design that should be considered during the design process; for instance, making sure the residents have the ability to protect their space and the option to not share space. Trauma-informed design seeks to create a safe, predictable, and controllable environment by incorporating elements like clear sightlines, natural light, personal space, access to nature, minimal clutter, and provide choices that promote a sense of autonomy and agency for residents, all with the understanding that trauma affects people differently.

While this does not imply that all residents need their own house, it does mean that every resident needs their own front door, and the design should avoid shared corridors and hallways. Unfortunately, a model that puts every individual in their own building can be cost-prohibitive, especially in a cold



Four-unit Building

- Each unit has its own front door
 - on its own side
 - with its own yard

High STC walls/sound separation between units

Can still be built modular More sustainable/efficient

- 50% less exterior wall
- Less expensive foundation
- Single water/sewage/electric vs 4 separate lines

Lower operational (heating) and maintenance costs

Pads can be used for other purposes until houses build

HUD/FHA/Voucher compliant

- One FHA compliant /Type B accessible per building
- For older population
- For residents with accessibility issues

environment like Maine.

Sustainability in Design

Sustainability is gauged by the ratio of floor area to exterior wall, where most heat is lost. This means that tiny homes are highly inefficient, which creates an issue for the ongoing ownership and maintenance because the individual residents would be responsible for paying electric bills. Experience tells us that ongoing operational costs for this specific population can be more challenging than initial construction costs.

While the panel does not recommend excluding tiny homes from the development, the upfront (individual site pads and utilities) and ongoing costs of operating tiny homes may be cost-prohibitive, and it is recommended that a variety of housing options be considered.

The diagram above illustrates a design that would incorporate trauma-informed design principles while creating a more efficient multi-unit building. This design would give each resident their own front door while simultaneously reducing the amount of exterior wall space by 50%, which means there will be 50% less exterior wall for energy

loss. Building back-to-back walls will create the highest STC radiation because there will be two layers of drywall on either side, which comes with the benefit of limiting structural damage to the walls by residents.

The design also allows for flexibility. For example, housing that qualifies for Section 8 funding must comply with FHA guidelines, meaning that 5% of the units must be ADA-compliant to support residents with mobility issues. This design would allow three units to be standardized while the fourth could be adapted for ADA compliance. The design provides much more optionality because a larger family could potentially occupy two units by simply installing a door between the two units.

The construction cost for the units could also be reduced because the 13R sprinkler systems for a four-unit building are considered residential and could be installed by a plumber instead of a (more expensive) fire protection company. The inclusion of sprinkler systems would also reduce the overall insurance costs for the development.

This type of design lends itself to more efficient and sustainable modular construction and offers the adaptability to accommodate



The “pinwheel” arrangement of the units enhances privacy while making efficient use of buildable space. The design can also provide energy efficiency opportunities as well as opportunities to incorporate individuality in the units.



the evolving needs of the user population. A single pad for four units increases the efficiency of the construction process while optimizing energy use.

Design Examples

This proposed design concept emphasizes individual privacy and autonomy, offering each resident a personal front door and outdoor space. This “pinwheel” arrangement allows for acoustic separation between units, enhancing privacy and reducing noise levels. Additionally, architectural elements like fencing and landscaping can further delineate individual spaces, and residents can customize their outdoor spaces with features like planters and gardens. Each unit comes with one front-facing window, further enhancing privacy. This approach ensures that each resident's personal indoor and

outdoor space is protected, providing a sense of security and ownership. Providing more natural light into the spaces while maintaining privacy can be achieved by installing transom windows above the entry door or clerestory windows above eye level in the bedrooms.

This design can also foster energy savings. Ground source or air source heat pumps should be utilized to help reduce the cost of utilities and maintenance. These units can be kept out of sight by being installed on the roofs of the units to maintain the landscape around the homes. A centralized water collection system can enhance energy efficiency and sustainability, especially when integrated with solar panel installations. Water collected locally at each unit can also be used to help the occupant maintain their personal gardens or planters.

Incorporating single-unit tiny homes into the development is viable, but to optimize the overall cost of the project, there should be a combination of single-unit and clustered units, as shown above. Implementing single- and clustered-units provides Dignity First with a selection of requested tiny homes while reducing cost. These two different approaches to the unit layouts also provide options to meet the residents' unique housing needs.

Cost Considerations

The panel recognizes that the redevelopment of the encampment into Homeful Village needs to ensure safe housing that will meet the needs of this specific population but also needs to be financially feasible. Potential funding sources are typically more receptive to projects that are efficient and cost effective.

The panel makes the following recommendations:

Begin the Due Diligence Process as Soon as Possible –

At this time, Dignity First has a right of first refusal on the property, but they should work towards a lease agreement. In addition, while the property may not be a brownfield site, a Phase 1 Environmental Site Assessment should be commissioned to rule out potential Recognized Environmental Condition (REC) and Historical Recognized Environmental Condition (HREC) challenges.

Increase Design Efficiency To Lower Development And Operational Costs

- Build site infrastructure upfront to allow for liveable pad sites that provide access to utilities and allow for a shorter dislocation time for residents.
- Prioritize fourplexes or quads to lower costs and increase energy savings,
- Limit community spaces or put multiple uses in one building. Leverage access to neighborhood support services (the community kitchen, Hope House health center, etc.) to minimize redundancy, and reduce development and operational costs.



Tiny homes are a viable solution but the overall cost efficiency of the project is improved if there are clustered units in addition to tiny homes.

Leverage Local, State, And Federal Sources To Fund Development

- Continue seeking partnerships for competitive sources of funding.
- Identify local funders to limit reliance on federal subsidies.

Analysis of Development Costs

Site Acquisition – The cost of acquiring the land is assumed to be minimal, given that the City owns the property and will grant a ground lease to Dignity First for a nominal amount. Closing and legal fees need to be considered, but those costs are expected to be minimal given the project's scope.

Construction Costs (Based on a 60-unit, three-phase model) – Construction costs will constitute the bulk of the project expenses. These include infrastructure such as water, sewer, gas, roads, civil engineering, site grading, site lighting, internet service, and possible remediation. Although these costs are difficult to forecast, a conservative estimate would be approximately \$2 million to \$3 million.

The cost of constructing the housing units and community center is also difficult to determine until decisions regarding the construction process are finalized. The costs can vary widely between conventional stick-built construction or an off-site modular approach. The total number of units may be offset by the 3D Printing Prototype (nine units) donated by

the University of Maine BioHome3D program.

Permitting – These costs (typically in the \$3000 per unit range) can be negotiated with the City of Bangor, which has a stake in solving the issue of homelessness.

Soft Costs (Architectural, engineering fees) – These costs would be significantly reduced with an off-site (modular) approach as a sizable percentage of these functions are included in the manufacturing cost.

Additional Study Fees – Other studies, such as traffic and environmental impact studies, may be needed before the project launches, so a small fund for contingencies is recommended.

The panel recommends building 70% to 80% of the infrastructure upfront during Phase I, with certain elements (paving and parking) left to later phases on an “as needed” basis.

It should be noted that a popular adage in the construction industry is “The smaller the unit, the higher the cost per square foot.” This is because the kitchen and bathroom are the most expensive elements of the units to build, and every unit must have both, regardless of unit size. Given the project scope, the panel recommends targeting a construction

budget of \$350 per square foot for the units or \$225,000 to \$250,000 per unit, with a total project cost of approximately \$14 million to \$15 million in today’s dollars.

This estimate is based on a revised plan for the project, which includes 60 units and a single community center building. This construction model assumes that units will be single occupancy and that the four-unit clusters could reduce construction and operating costs by 10% to 15%.

The Panel Strongly Recommends Using An Offsite/Modular Construction Model To Reduce Costs.

Offsite/modular construction could reduce the overall cost of building the units, reducing the cost per unit to less than \$300, particularly if the project adapts the cluster unit model. The modular units are designed to meet HUD standards and the Maine Uniform Building and Energy Code (MUBEC), reduce soft costs, and are constructed with a focus on energy efficiency and minimal environmental impact. This method also supports the Maine economy as the potential manufacturers (KBS Builders, Hancock Lumber) are located in Maine. This process lends itself well to both single-unit and cluster construction.

Additionally, this approach offers numerous sustainability benefits compared to traditional building methods. By utilizing a controlled factory environment, material waste is significantly reduced through precise cutting, reuse, and recycling. This enables the sourcing of sustainable materials, contributing to a lower overall carbon footprint. Modular construction minimizes site disturbance by requiring less preparation and reducing dust, noise, and transportation emissions through fewer on-site deliveries. The tightly controlled assembly results in durable, energy-efficient buildings with improved air sealing and indoor environmental quality, promoting healthier spaces. Modular components can also be deconstructed and reused while supporting future expansions or modifications without the need for new construction.



Modular construction, a process in which significant portions of a building are constructed offsite in a controlled environment and then assembled on site, can reduce building costs and construction timelines.

Funding Sources

In addition to the congressionally directed funds for which Dignity First has already applied, there is a vast array of financing options available through federal, state, and local agencies, as well as private enterprises and nonprofits.

National

There are a number of federal and non-profit programs that provide loans and grants to qualified projects, including:

- **Community Development Financial Institutions Fund (CDFI Fund)** – Offers awards of up to \$2 million in financial assistance (FA) and up to \$125,000 in technical assistance (TA) to certified CDFIs.
- **Enterprise Community Partners (construction and permanent loan)** – This non-profit offers a range of financing options for affordable homes and community development.
- **Local Initiatives Support Coalition (LISC) (construction and permanent loan)** – Offers a wide range of loans, from pre-development to permanent financing.
- **Inflation Reduction Act Credits (GGRF)** – Will finance green power and lower costs through tax credits of 30% of total development costs.

Regional

- **Federal Home Loan Bank of Boston (FHLB)**
- **Affordable Housing Program – (Provides up to \$65K/unit)**
- **State Funds**
- **Continuum of Care funding**
- **Housing First program**

- **Supportive Housing Program**
- **Brownfield Redevelopment**
- **Additional state grants**

Local

- **Bangor Savings Bank**
- **Community Reinvestment Act (construction and permanent loan)**
- **Bangor Savings Bank Foundation (grant funding)**
- **Stephen and Tabitha King Foundation (grant funding)**
- **Construction volunteers**
- **Encampment residents**
- **Habitat for Humanity**

Operational Recommendations

- **Learn From the Best** – Connect with organizations with similar initiatives (NeighborWorks, LISC) for a staffing plan.
- **Minimize Operational Costs By Maintaining A Lean Staff** – Consult with local agencies doing similar work to learn best practices. Consider hiring a manager or operations person early in the process. Prioritize fundraising and on-the-ground staff (management and community services).
- **Contract Property Management Services** – Rather than increasing staff, consider entering into an MOU with Theresa's House to see where there can be shared duties for the properties to minimize payroll.
- **Share the neighborhood's resources** – Rely on MOUs for supportive service provisions and other community engagement initiatives.



3,750 KWH/Unit
225,000 KWH- Homes only
195 KW-All Phases (Minus Service bldgs)
14,625 SF-PV Area (Minus Service Bldgs)

Programs to support energy efficiency can help developers offset key costs while also helping to reduce future utility expenses for building owners and tenants.

- **Connect with the University of Maine –** While the original Entrepreneur Hub/ Art House concept could be financially challenging to implement, similar services could potentially be offered through a partnership with the University.
- **Identify Additional Revenue Sources –** Similar to the Community First! Village in Austin, consider creative ways to generate revenue through microenterprises, such as greenhouses/ gardens, a recycling center, etc.
- **Adopt a Phased Approach –** Allowing tents and RVs to use the completed pads while creating permanent housing will help establish a sense of community and provide additional revenue.

Operational Funding Sources

National

- **Inflation Reduction Act credits (GGRF)** – Subsidies to support energy efficiency, up to 30% of cost reduction

- **NeighborWorks America**

State

- **Continuum of Care funding** may be available through existing NOFAs and relationships with local hospitals
- **Project-based vouchers**
- **Mobile vouchers**
- **Housing First program**
- **Supportive Housing Program**

Local

- **Bangor Rental Assistance Program**
- **Payment in Lieu of Taxes (PILOT)/real estate tax waiver**

Funding for Operational Costs

Key Features: Energy Efficiency and Sustainability

The Inflation Reduction Act (IRA) covers operations for qualified green and efficient utilities. These benefits come with a number of qualifying criteria, such as compliance with prevailing wage benefits, apprenticeship programs, etc. Dignity First should also pursue any available waivers for local and state taxes.

It should be noted that housing models like this are the most difficult to fund, but through diligent fundraising, mindful compromise, and cost-cutting, it is possible to bring this project to fruition.

Operational Costs

One of the goals when designing the development is to minimize ongoing utility costs, specifically energy costs. The first goal is to make the building as energy-efficient as possible to use less energy. While the existing energy codes in Maine are already stringent, there are opportunities to exceed those requirements to make the structures more efficient.

A simple and efficient heating system can use electric baseboards for heat in winter and natural ventilation during the warmer months. Here are the elements of the energy-efficient buildings:

Well-Insulated Envelope Exceeding MUBEC Standards for Heating Needs

– The goal is to prioritize passive strategies to reduce energy demand, not only by minimizing heat loss during winter but also by ensuring long-term energy savings and enhancing indoor comfort.

Cooling Through Natural Ventilation

– The site's cool climate and mild summer temperatures are well-suited for natural ventilation. Providing operable windows allows effective natural cooling without relying on mechanical systems. This approach eliminates the need for additional equipment, reduces energy consumption, lowers operational costs, and promotes a healthier indoor environment by improving air circulation.

Electric Baseboards for Heating – Electric baseboards are a cost-effective solution with minimal maintenance requirements. This approach aligns with the principles of passive design, where energy demand is reduced so significantly that investing in a more complex and higher-efficiency system does not provide a viable financial payback. Additionally, electric baseboards have the lowest capital and maintenance costs compared to alternative systems.

Ventilation Units – Exhaust-only systems are recommended for ventilation due to the scale of the housing units. A more dedicated ventilation system is impractical in this context.

Integrating these load-reduction strategies and simple systems will result in lower operational and maintenance costs.

For budgeting purposes, below is an estimated projection of operational energy costs based on the assumption that the units are constructed following the above recommendations for the building envelope and HVAC system. Note these estimates do not account for electricity use that is offset by the production of a solar energy system. Should the project decide to install a solar system, the operational costs will drop considerably depending on the size of the solar system.

- Residential electricity rate: \$.30/KWH
– Bangor Hydro Power. Assumed a

conservative rate to allow for variability in the rates.

- \$3.75/SF-yr for single units- \$1125/yr-unit for a 300 SF house.
- \$2.35/SF-yr for cluster units- \$705/yr-unit for a 300 SF house.
- Savings of \$421/yr-unit is estimated for cluster units due to reduced energy demand.
- Additional \$1.05/SF for water/sewer.

These recommendations prioritize passive strategies to significantly reduce energy demand, followed by the use of simple HVAC systems such as electric baseboards for heating and natural ventilation for cooling. These strategies strike a balance between operational costs, capital expenses, maintenance considerations, and overall sustainability.

The use of roof mounted solar panels may face several challenges, including orientation, shading from trees, and the need for discrete arrays on multiple units. These issues make installing solar panels directly on the units less practical. However, an alternative worth exploring is installing a solar system on adjacent properties, such as the roofs of Theresa's Place and the community kitchen. The large roof area and unobstructed access to sunlight make this approach more viable than small-scale individual systems.

Solar power generated on off-site properties owned by the same organization can offset the electricity consumption of the housing units. If possible, Dignity First can seek out publicly owned land that could be used for solar power generation to offset the development's housing needs.

In addition, Dignity First could pursue a Power Purchase Agreement (PPA) in lieu of funding the solar system directly. Under a PPA, a third party owns and operates the solar system, while the building owner agrees to purchase electricity from the PPA provider, typically at a reduced rate. These agreements often include an option to purchase the system at a depreciated price once the lease expires, should the owner choose to acquire the system.



Dignity First's housing goals can be supported by a wide variety of programs and funding vehicles, helping ensure Bangor's vulnerable citizens have access to safer living conditions.

Federal incentives for solar installations are also available through the Inflation Reduction Act. However, these incentives apply only if the owner decides to own and operate the system directly. Overall, a solar system will reduce dependency on more polluting sources.

Additional Considerations

- **Provide Housing at or Below 30% of AMI** – In order to provide attainable housing for this population, the cost of housing to the residents ought to be at or below 30% of the AMI. In this instance, the residents are not expected to have reliable income streams, so assisting them in pursuing income-generating activities will be necessary.
- **Community Integration** – It is recommended that programs be intentionally pursued to advance the residents' integration into the neighboring community and the broader Bangor community. Community integration builds social ties needed for socio-economic rehabilitation and development.

Next Steps

The panel recommends the following next steps:

- **Issue RFP for Modular Construction –** There are two local modular manufacturers (KBS Builders and Hancock Lumber) that could compete for the best pricing and delivery times. This would allow Dignity First to better understand the potential project costs and seeks cost effective strategies to reduce construction costs.
- **Talk to NeighborWorks & LISC –** Seek out those with extensive experience and a common mission to help avoid missteps. The organizations may also be helpful in providing assistance with accessing funding, as well as guidance on the long-term operation of this type of housing.
- **Site Due Diligence –** Although the site has been determined not to be a brownfield site, there may be contaminants that would prevent the construction of housing.
- **Focus on Operational Costs –** Once the housing is built, there are significant challenges to maintaining the real estate as well as assisting the population that will occupy the housing.



**Boston/
New England**

boston.uli.org