12-2023

Design Guidelines for Homeless Shelter and Resource Center Site Plans

Samuel Johnson
Utah State University

DESIGN GUIDELINES FOR HOMELESS SHELTER AND RESOURCE CENTER SITE PLANS

by

Samuel Johnson

A report submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF LANDSCAPE ARCHITECTURE

Approved:

_____	_____
Keith Christensen, Ph.D. Major Professor	Carlos Licon, Ph.D. Committee Member
_____	_____
David Anderson, M.L.A. Committee Member	Wayne L. Niederhauser, M.S. Committee Member

UTAH STATE UNIVERSITY
Logan, Utah

2023

ABSTRACT

Design Guidelines for Homeless Shelter and Resource Center Site Plans

by

Samuel D. Johnson, Master of Landscape Architecture and Environmental Planning

Utah State University, 2023

Major Professor: Keith Christensen, Ph.D.
Department: Landscape Architecture and Environmental Planning

Homelessness is one of the most pressing humanitarian issues facing the country today. Lack of affordable housing, among many other complicating factors, have led to many cities scrambling to find both short-, middle-, and long-term solutions to the issue. The Covid-19 pandemic added a disruption in services, critical record-keeping, and data-gathering, which has further confounded experts looking for an effective path forward. As it stands, there is a significant gap in academic research addressing best practices for shelter site design, particularly as it relates to landscape. The role of landscape and greenspace within and around a shelter is not well studied.

As part of a stakeholder's request of the Utah State University's Department of Landscape Architecture and Environmental Planning, this thesis work has conducted a design research project to illuminate design guidelines for successful low barrier shelter site plans. Appropriate programming was defined through collaboration with the stakeholder, formal and informal interviews with experts, case studies from around North America, a literature review, and design development informed by academic studies of spatial psychology.

The design exploration yielded nine guidelines when designing a site plan for a low barrier shelter that are meant to nurture trust, community buy-in, self-worth, dignity, and meaningful employment among its residents. Although this project researched all the essential programming necessary for a shelter and resource center, the guidelines go beyond traditional programming requirements and add up to a kit-of-parts that can more effectively use space and landscape for favorable outcomes on a shelter site.

This project is an initial step; however, further research should continue to explore low-income housing case studies, spatial psychology, and homeless systems policy to continue to integrate landscape architecture into the effort to alleviate suffering brought on by homelessness.

(123 Pages)

PUBLIC ABSTRACT

Design Guidelines for Homeless Shelter and Resource Center Site Plans

Samuel D. Johnson

Homelessness is one of the most pressing humanitarian issues facing the country today. Lack of affordable housing, among many other complicating factors, have led to many cities scrambling to find both short-, middle-, and long-term solutions to the issue. The Covid-19 pandemic added a disruption in services, critical record-keeping, and data-gathering, which has further confounded experts looking for an effective path forward. As it stands, there is a significant gap in academic research addressing best practices for shelter site design, particularly as it relates to landscape. The role of landscape and greenspace within and around a shelter is not well studied.

As part of a stakeholder's request of the Utah State University's Department of Landscape Architecture and Environmental Planning, this thesis work has conducted a design research project to illuminate design guidelines for successful low barrier shelter site plans. Appropriate programming was defined through collaboration with the stakeholder, formal and informal interviews with experts, case studies from around North America, literature review, and design development informed by academic studies of spatial psychology.

The design exploration yielded nine guidelines when designing a site plan for a low barrier shelter that are meant to nurture trust, community buy-in, self-worth, dignity, and meaningful employment among its residents. Although this project researched all the essential programming necessary for a shelter and resource center, the guidelines go beyond traditional

programming requirements and add up to a kit-of-parts that can more effectively use space and landscape for favorable outcomes on a shelter site.

This project is an initial step; however, further research should continue to explore low-income housing case studies, spatial psychology, and homeless systems policy to continue to integrate landscape architecture into the effort to alleviate suffering brought on by homelessness.

ACKNOWLEDGEMENTS

I would like to thank my committee members, Keith Christensen, Carlos Licon, Dave Anderson, and Wayne Niederhauser for their support, input, and help throughout the process of my thesis. I would like to thank other LAEP faculty and staff members who provided me with resources and assisted with the documentation process.

I would like to thank my dad and friends for their help, encouragement, and input in my thesis. I could not have done this without you and your support.

Samuel D. Johnson

CONTENTS

ABSTRACT……iii

PUBLIC ABSTRACT……v

ACKNOWLEDGEMENTS……vii

CHAPTERS

1. JUSTIFICATION & PURPOSE STATEMENT……1

2. LITERATURE REVIEW……....4

Key Terms……..4
Literature Support for Design Considerations……..7
User-Centered Shelter Considerations……..8
Precedent Studies……...11
Social, Emotional, & Psychological Impacts of Spatial Configurations.……....13

3. METHODOLOGY……16

Inception of the Project……..16
Inventory, Analysis, & Site Selection……....17
Program Development.……..17
Concept Development……....18
Master Plan……....18
Key Informant Interviews & Client Collaboration……....19
Key Informants……....19

4. RESULTS……..20

5. FINDINGS……30

Design Considerations……....31
Conclusion……....37

REFERENCES……39

APPENDICES……44

Appendix A. Thesis Defense Slides……...…44

Appendix B. Design Recommendation Axons……119

CHAPTER 1

JUSTIFICATION AND PURPOSE STATEMENT

Homelessness is one of the most pressing humanitarian issues facing the country today. It accounts for immeasurable human suffering and largely plays out in the public realm. Landscape architects often design public space yet pay little mind to the fact that many users of their public designs will be people experiencing homelessness. This gap between designers of the public realm and the needs of many of its users is one that should be narrowed. Lack of affordable housing, among many other complicating factors, have led many cities to scramble for short, middle, and long-term solutions to address the issue. The Covid-19 pandemic added a disruption in services, critical record-keeping, and data-gathering, which has further confounded experts looking for an effective path forward. As it stands, there is a significant gap in academic research addressing best practices for shelter site design, particularly as it relates to landscape. Most existing studies and recommendations pertain to interior architectural configurations. There is also an abundance of literature supporting notions that time spent in high quality natural settings improves mental health (Bratman et al., 2019; Cox et al., 2017; Tillmann et al., 2018) and that connections to the natural world and settings with vegetation increase self-esteem and a sense of mastery of one's environment (Berens, 2016; Lewis, 1995; Ulrich et al., 1991). However, very little research exists which tests how safe access to high quality outdoor space and natural settings can impact the mental health and wellbeing of a population who is unhoused. The role of landscape and greenspace within and around a shelter is not well studied.

In Utah, the pandemic both exposed and exacerbated what some officials have called a "perfect storm" of adverse circumstances, making life even harder for Utahans experiencing homelessness. Many public buildings, like city libraries, were closed, so the public saw more

people on the streets during the day. Pitching tents is prohibited by the police, so many found themselves having to sleep out in the open, exposed to the elements. Also, public building and business closures have made it difficult for people experiencing homelessness to find restrooms. Complaints about human bio waste spiked during the pandemic.

In 2020, a report from the Kem C. Gardener Policy Institute described the state's homeless services system as "confusing," overly "complex," and "inefficient" (*Utah Homeless Services Governance Structure and Funding Model*, 2020). Governor Spencer Cox even described it as "a ship with 12 steering wheels." With increased public awareness, frustration, hostility, and concern about the state of homelessness in Utah, state lawmakers created a new Office of Homeless Services within the Department of Workforce Services in early 2021. Shortly after, former Utah Senate President, Wayne Niederhauser, was also appointed to serve as the first state homeless services coordinator in Utah within the new office. This effort was, in major part, meant to address the issue that "despite a major influx in funds towards emergency shelters and resource centers, the goal of making homelessness rare, brief, and nonrecurring is not being met" (*Utah Homeless Services Governance Structure and Funding Model*, 2020).

In the fall of 2022, the Utah Homelessness Services Coordinator reached out to Utah State University's Department of Landscape Architecture and Environmental Planning to assist in the development of a site plan for a shelter for people experiencing homelessness in the Salt Lake Valley. The design was intended to shelter up to 500 individuals in a combination of congregate housing, like dormitory-style bunk rooms; non-congregate shelters, like mini home clusters; and car/RV camping spots. The design was meant to be modular and easily replicable across a site and provide wraparound services to the users. Because a few middle- and high-barrier resource centers already exist in Salt Lake City, this project was also meant to serve as a

low-barrier shelter to capture an underserved demographic of the homeless community. It also needed to be low-cost. The Homelessness Services Coordinator requested a document with which he could raise funding for the design and construction of the project during an upcoming legislative session.

CHAPTER 2

LITERATURE REVIEW

Key Terms

Throughout this document, relevant terms are used to describe certain aspects of the criteria, programming, function, users, and experiences of the users of homeless shelters. Below is a list of these important terms and their definitions.

Homeless & Homelessness

In the 2011 "HEARTH 'Homeless' Definition Final Rule" document, the U.S. Department of Housing and Urban Development (HUD) and Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) wrote a detailed definition of the four categories of *homeless*. In category one, *homeless* means an individual or family who lacks a fixed, regular, and adequate nighttime residence. In category two, *homeless* means an individual or family who will imminently lose their primary nighttime residence. In category three, *homeless* means unaccompanied youth under 25 years of age, or families with children and/or youth who have not had a lease, ownership interest, or other occupancy agreement in permanent housing for 60 days prior to homelessness application. Or they have experienced persistent instability as measured by two moves in the past 60 days and can be expected to continue in that status due to special needs or barriers. Category four states that *homeless* means any individual or family who is fleeing domestic violence, has no other residence, and lacks resources to obtain other permanent housing (*Criteria and Recordkeeping Requirements for Definition of Homelessness*, n.d.). Homelessness in the state of experiencing one or all of these categories. This project primarily addresses individuals experiencing category one homelessness.

Housing Instability

The experience of homelessness can be variable, and definitions can change based on the intention of the data-collection and record-keeping. Some people experiencing homelessness may sleep some nights in a friend's house or apartment, some may sleep in emergency shelters, and others may sleep outside or other places not meant for human habitation. Some people visiting shelters might not technically be considered homeless but be seen as experiencing housing instability (*Defining Homelessness in Data Collection*, 2023). *Housing instability* is often defined as being rent-burdened, that is, spending 50% or more of household income on housing, having frequent moves, experiencing overcrowding in or near housing, or doubling up with relatives or friends (Kushel et al., 2006).

Chronic Homelessness

According to HUD, to be considered chronically homeless, an individual must live in a place not meant for human habitation, a haven, or in an emergency shelter, and have been homeless for at least one year or four separate occasions in the previous three years. This definition also applies to an individual who has been living in an institutional care facility—including, but not limited to, jail, substance abuse, or mental health treatment facilities, and hospitals—for less than three months and was considered homeless upon entering that facility. A family can also have a chronic homeless status if the head of the household, whether it is an adult or a designated minor, meets all the criteria of the definition (*Definition of Chronic Homelessness*, n.d.). The client stated that most of the target demographic for the project experience "persistent homelessness" and have been in and out of shelters before, have previously been incarcerated, have been on parole or probation, have had a history of substance

abuse, live with disabilities, and/or have special needs. These were the client's descriptors and align closely with common definitions of chronic homelessness.

Homeless Shelter

A shelter is any facility whose primary purpose is to provide temporary and transitional shelter for individuals or families categorized as homeless or for specific populations of people experiencing homelessness (Definition of Chronic Homelessness, n.d.). The primary service is typically to provide sleeping accommodations on an emergency basis (Homeless Resource Centers and Homeless Shelter Information Sheet.Pdf, 2021); however, they also can provide safety and protection from exposure to weather and other hazards of living on the streets and reduce the environmental impact on the community.

Low-Barrier Shelter

One of the main objectives of this project is to provide relief, safety, shelter, food, opportunities for hygiene, support, and services to people in need with little barrier to entry. Many shelters screen out individuals experiencing homelessness for a wide variety of reasons, including, but not limited to, sobriety (on-site breathalyzers and screens), strict curfew adherence, mandatory program participation, criminal records (background checks), income requirements and verification, credit checks, and forced labor participation (Skinner & Rankin, 2016; *What It Means to Be a Low-Barrier Homeless Shelter - Springs Rescue Mission*, n.d.). Low-barrier shelters often have few barriers to entry other than a written or verbal agreement to abide by the shelter rules during the individual's stay.

Low-barrier shelters follow the "housing first" approach to stopping the cycle of homelessness, whereby the need for housing must be addressed before an individual can successfully engage in treatment for other challenges like sobriety or employment. "Low-barrier shelters can increase system efficiencies by creating pathways to permanent housing for chronic utilizers of emergency services" (*Snohomish County, WA Shelter Definitions*, n.d.).

Resource Center

In the state of Utah, a homeless resource center is defined as an establishment at which centralized services, such as sleeping, bathing, eating, laundry facilities, and housing case management, are provided as support on an emergency basis for individuals experiencing homelessness. Other services may include preparation and distribution of food; medical care and treatment; behavioral and mental health counseling; employment counseling; educational instruction; and vocational training (*Homeless Resource Centers and Homeless Shelter Information Sheet.Pdf*, 2021).

Residents

Throughout the project, "residents" are living in and using the shelter and resource center. They are persons who are experiencing homelessness and qualify to both sleep in the facilities and utilize the supportive services.

Literature Support for Design Considerations

There is a significant gap in academic research addressing best practices for a shelter site design, particularly as it relates to site planning and design. Much of the literature that was

reviewed for this project was only tangentially related to the design problems at hand. Although most design decisions were informed by academic studies, the findings often had to be transmuted from other areas of study, like architecture, into decisions about landscape architecture and site design. For example, one of the primary sources for the project was Michael J. Berens' "A Review of Research: Designing the Built Environment for Recovery from Homelessness," which focuses on summarizing "known insights about how to design the interiors of facilities for persons that have experienced… homelessness" (Berens, 2016). Many homeless shelters are confined to buildings with, maybe, a small outdoor plaza. The site for this project is an extensive 108 acres. The client also asked for several types of sleeping accommodations: congregate (indoor, dormitory-style), non-congregate (tent or mini home sites), and car parks (safe-spot and RV spots). This request necessitated the use of extensive site planning and design considerations, such as outdoor buffers between the spaces, unlike most existing shelters in Utah.

User-Centered Shelter Considerations

Although the client approached Utah State University's LAEP department with some specific criteria for the site plan, much of programming and functions of a standard shelter had to be researched from academic literature and technical documents.

Overall, shelters should promote positive outcomes and experiences for residents, staff, and visitors. They should be well-integrated and even contribute to the community they sit within (*City of Toronto Shelter Design and Technical Guidelines*, 2021). The services of a successful shelter must connect into the city's larger continuum of care to help residents improve

their quality of life and have enough support to address their personal challenges (P. Chavannes, personal communication, November 7, 2022) even if they leave that shelter.

Not all objectives of a shelter are for achievement of long-term goals and positive outcomes. Immediate harm reduction is also an essential function, which is defined as "a strategy directed towards individuals or groups that aims to reduce the harms associated with certain behaviors" ("Harm Reduction," 2008), both legal and illegal, and other deleterious circumstances. In mid-December 2022, five unsheltered people in Salt Lake City died during an extreme cold snap. Leading up to that tragedy, almost all shelters in Salt Lake County were at capacity (*Salt Lake City Expands Homeless Shelter Space with Emergency Order*, n.d.). Shelters that contain wraparound services must also have the ability to protect users in emergencies like exposure to extreme weather.

In many ways, shelters are set up to fail in promoting positive experiences because there is an inherent scarcity of resources, especially space. Heather Quass-Annsa, the Director of Philanthropy for Community Supported Shelters in the City of Eugene, says that however many people you have staying in a single area, cluster, or structure would be like living with that many roommates (H. Quass-Annsa, personal communication, January 13, 2023). For example, if tiny homes are grouped in clusters of 20, the experience for one individual within that cluster would be like living with 19 other roommates, although there is some increased separation from the non-congregate shelters.

Peter Chavannes, the Homeless Systems Policy Manager for the City of Eugene, says there is a "sweet spot" for how many tents should be grouped together for positive outcomes among the residents of a larger tent shelter site. Chavannes found that clusters of 10 to 12 tents, grouped together, and sharing some basic services like bathrooms and sinks, was just enough

people to create a healthy sense of community and trust among the residents within the group. In these non-congregate configurations, residents felt comfortable enough to leave their belongings unattended in their tent during the day to carry out normal activities of daily living. This includes, but is not limited to, personal hygiene, transportation, seeking case management, managing finances, meal preparation, seeking healthcare, and seeking employment (P. Chavannes, personal communication, November 7, 2022; Edemekong et al., 2022). This is a vital prerequisite for promoting self-sufficiency among the resident population (Turner, 2014). Limited space is a common constraint for shelters. While creating many smaller structures with full utilities is typically much more costly than constructing one large building to house a larger population of clients, these open floor, dormitory-style designs create social density and the subsequent individual experience of crowding and perceived crowding. More specifically, crowding occurs when an individual receives more social stimulation than she or he desires and can result in negative social outcomes (Berens, 2016; Schmidt & Keating, 1979).

One, two, and four-bed sleeping pixels, efficiently arranged within one larger structure, create the best balance of psychological well-being and space efficiency. Four-bed pixels are the most spatially efficient. Single-bed spaces are the most private. Three-bed pixels can encourage negative social dynamics among residents, where one person becomes ostracized by the other two residents, and are not recommended (*City of Toronto Shelter Design and Technical Guidelines*, 2021).

Some longer-term goals of a successful shelter include offering employment to its residents. Onsite employment opportunities proliferate positive outcomes because they can often improve the quality of the site, encourage buy-in from residents, create a sense of pride and ownership for the shelter, and therefore elevate the image of the site to the surrounding

community. “Although not a substitute for natural friendships, validating relationships between people living and working in services have potential to provide [marginalized populations] with a sense of attachment, emotional integration and stability, reinforcement of worth, and the development of confidence in entering other relationships” (Marquis & Jackson, 2000, p. 422).

Precedent Studies

Another major source of information for the project’s programming and spatial requirements came from studying existing, brick-and-mortar shelters in the Wasatch Front of Utah: the Geraldine E. King Women’s Resource Center and The Road Home– Gail Miller Resource Center. Floor plans were acquired which listed programming within the building. Dozens of different specific functions and spaces within the shelters were condensed into nine separate use-categories. The area of each use-category was calculated, averaged with the other shelter, and then averaged into a per-resident value. These values were used to get a rough estimate of the spatial requirements for the project site.

1. Administrative space necessitates 39 ft^2 per resident and include flex office space, conference rooms, staff restrooms, quiet rooms, IT rooms, break rooms, storage, volunteer staging areas, and security space.

2. Client services requires 30 ft^2 per resident and contains a court room and a waiting room, a case management room, private meeting rooms, restrooms, an open client services room, a barber, a medical clinic exam room, an associated waiting room, associated storage, and an associated restroom.

3. Community and day use requires 69ft^2 per resident, 59% of which should be indoor and 41% of which should be outdoor. This use-category incorporates program space, community rooms, open commons, a computer lab, restrooms, and a courtyard.

4. Donations require 15ft^2 per resident and include donation drop-off and receiving, storage, and a shop.

5. Food services requires 30ft^2 per resident and includes a kitchen, associated storage, restrooms, a volunteer staging room, an open dining room and flex space, a table storage room, and a shop.

6. Intake requires 24ft^2 per resident and contains a vestibule, an intake room and waiting area, an intake office, an ID room, a security room, a police room, bike storage, and resident storage.

7. Sleeping areas—which only include congregate, dormitory-style sleeping areas—require 45ft^2 per resident and factor in additional services like crisis rooms and kennel rooms for pets to sleep nearby, in addition to the open bunk areas and single-bed rooms.

8. Personal hygiene areas necessitate at least 15ft^2 per resident for restrooms with showers and laundry rooms.

9. Support areas require 30ft^2 per resident and include custodial rooms, storage, mechanical rooms, electrical rooms, and janitorial rooms.

In addition to measuring the areas of each use-category, a “gross indoor area” metric of 315ft^2 per resident was calculated to capture previously omitted indoor spaces like stairwells, hallways, and elevator shafts. These use-categories were informative in getting a general sense of the requirements of a successful shelter and creating accurate footprints for indoor spaces; however, they were not binding. These numbers were presented to the client, who is familiar with the resource centers in Salt Lake City, for feedback, adjustments, and opportunities to improve upon the precedents. The specific features and goals of the site also necessitated adjustments to some of the precedent values. In some case, these harvested values were used as minimum requirements for the project site.

An additional criterion from the client and from the City of Toronto Shelter Design and Technical Guidelines is that a shelter's long term success hinges upon its ability to change configuration for future forms of support and housing. Imbedded flexibility to accommodate changing needs will ensure a shelter's long-term efficacy (*City of Toronto Shelter Design and Technical Guidelines*, 2021; W. Niederhauser, personal communication, October 27, 2022).

Social, Emotional, & Psychological Impacts of Spatial Configurations

User-centered design requires that decisions must be made with the end-user in mind. Shelters are not easy places to live or stay. Residents are put in close quarters often with complete strangers that they are expected to cooperate and coexist with as they address complex and difficult personal challenges of their own.

The overwhelming majority of people undergoing homelessness and, therefore, residents of a shelter, have experienced at least one traumatic event in their lifetime or suffer from a lifetime of trauma (Buhrich et al., 2000). The experience of being homeless, in itself, is traumatic (Goodman et al., 1991), and the conditions of a shelter can produce trauma symptoms too. Even so, high instances of incarceration, experience in foster care, substance abuse, familial displacement, and violence are common in people experiencing homelessness (Berens, 2016). These all can also lead to traumatic experiences. "Individual trauma results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening and that has lasting adverse effects on the individual's functioning and mental, physical, social, emotional, or spiritual well-being" (*SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*, 2014). Trauma-informed design

should avoid adverse stimuli like crowding and forced social interaction (*City of Toronto Shelter Design and Technical Guidelines*, 2021) which can lead to unwanted outcomes.

Shelters for people experiencing homelessness tend to have high levels of social density. Crowding and proximity experts define social density as the number of individuals in a given space (Berens, 2016). These concentrations of people who are strangers to one another can lead to crowding: a negative "emotional and psychological reaction" (Berens, 2016) from the perception that there are too many people present in a given space (Lepore, 2012). Crowded spaces can force people to have higher levels of social stimulation than they desire (Schmidt & Keating, 1979) and/or feel that they have a lack of privacy or must compete for available resources. Individuals will then either try to leave the space or change it (Karlin, 1980). Both reactions can trigger trauma responses and/or lead to negative outcomes in a shelter like high turnover and social conflict to name two.

Alternatively, a good shelter can create a sense of community among residents that leads to a greater sense of purpose and perceived autonomy when dealing with life-challenges (Berens, 2016; Christensen, 2009; *City of Toronto Shelter Design and Technical Guidelines*, 2021; *SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*, 2014; Goodman et al., 1991). In congregate shelters, increased partitioning and lower lighting alleviate the sense of crowding (Anantha Krishna, 1991; Berens, 2016). Creating connections to the natural world, like views and easy access, aids in stress reduction and can positively shift an individual's psychological state and encourage physical activity (Ulrich et al., 1991). Connections to the natural world, like views or settings that include vegetation, can similarly reduce stress and enhance self-esteem and a sense of spatial autonomy (Berens, 2016; Lewis, 1995; Ulrich et al., 1991).

Outdoor spaces on a shelter site have the potential for many psychological benefits. First, this physical separation of spaces and, more specifically, the resulting transitional open space can help alleviate the experience of crowding (Anantha Krishna, 1991). Second, this transitional green space provides the opportunity for multiple routes to the same location and landscape variation. This variation of choice gives the individual personal control and perceived autonomy in the physical environment. This control "has great symbolic and psychological significance, as well as practical benefit" (Berens, 2016). Third, separation of uses helps a shelter avoid feeling institutional and provides the opportunity to feel like a neighborhood, campus, or home. This is an essential characteristic of a successful shelter (*City of Toronto Shelter Design and Technical Guidelines*, 2021).

Thoughtful design of outdoor spaces can also foster healthy social and community-building outcomes. *"*These spaces are important to foster social interaction, because they provide a 'gentle transition between public and private space'" (Abu-Gaueh, 1999; Williams, 2005). Semi-private space can act as a barrier that provides some "privacy and territorial control" but "with options for active contact into adjacent public space" (Skjaeveland & Garling, 1997) that might, presumably, have new and unknown residents from the shelter. This is an essential programming element to create a healthy social atmosphere and sense of community on a shelter site.

CHAPTER 3

METHODOLOGY

Inception of the Project

In the fall of 2022, the Utah Homelessness Services Coordinator reached out to Utah State University's Department of Landscape Architecture and Environmental Planning to assist in the development of a site plan for a low barrier shelter for people experiencing homelessness in the Salt Lake Valley. Hereafter, the Director of Homelessness, is referred to as "the client," in part, because this project was undertaken confidentially in preparation for the state legislative session where funding would be sought for the project. The client wanted to carefully manage release of the information to avoid legislative and community resistance from misinformation that would stifle the success of the project. The final deliverable for this client was a document meant to help raise legislative awareness, justification, and funding for the shelter's design and construction.

The approach for this project followed the fundamental design process: inventory and analysis, program development, concept development and iteration, and schematic master plan design development. Key informant interviews, including meetings and design critiques with the client were conducted from the beginning through the end of the entire design process. For the purposes of this project, there was no intention to pursue construction documentation or implementation, as the client needed this document for legislative approval and funding and not final construction.

Inventory, Analysis, & Site Selection

Initially, the client had two sites that they were considering for the project. Inventory and analysis of existing conditions was conducted to establish an introductory understanding of the potential sites. This analysis mainly focused on creating an inventory of surrounding and nearby community assets that people experiencing homelessness could access to improve their personal situation. This inventory included creating GIS maps highlighting grocery and food stores, healthcare facilities, childcare facilities, emergency medical services, roads, pedestrian-friendly intersections, UTA commuter rail routes and stops, UTA Light Rail routes and stops, UTA bus routes and stops, lakes, streams, and wetlands, among other conditions.

After a thorough inventory and mapping of each site was conducted, meetings between the department and client took place to decide the better of the two sites. A list of opportunities for each site was presented to the client. A list of constraints and their potential solutions were also presented to the client to begin to define the potential costs of selecting one site over the other. These considerations included physical, biological, cultural, and civic implications of each site in addition to the political optics of shelter construction in each area.

Program Development

Through a series of collaborative discussions with the client, a few key criteria and programming elements were clarified; however, most of the essential, traditional elements of a successful shelter had to be researched in academic literature and precedent studies. The precedent studies included a comprehensive study of two homeless resource centers located within the Wasatch Front of Utah: the Geraldine E. King Women's Resource Center and The Road Home– Gail Miller Resource Center. These resource centers were identified by the client as

being good proxies for the needs of the proposed resource center. Floorplans of each resource center were divided into nine generalizable categories of use: administrative space, client services, community and day use, donations, food, intake, sleeping areas, personal hygiene, and support. The square footage of each use-category was calculated in each resource center and then averaged. Furthermore, each use-category average was then averaged out to how many square feet of each use is needed per resident. This number became useful in the early design process when estimating the size of different programming elements within the site.

Concept Development

A mini charrette was held with thesis committee members to develop initial concepts. Site analysis maps, stakeholder criteria, precedent studies, and spatial requirements for programming were all printed and present in the room for reference during the concepting phase.

One key criterion given by the client was that the site has a modular design so that it could be replicated across the expansive site if needs grew. Because of this, concept iteration put considerable weight on modularity and also happened in conjunction with a phasing plan.

Multiple drafts of concepts were subjected to critique by the committee members and the client. Revisions were implemented until a consensus concept was finalized.

Master Plan

Once the first draft of a master plan was developed, a meeting with the thesis committee and the key stakeholder was scheduled. A short presentation of the schematic design was given and feedback from all attendees was recorded. This happened in two rounds to create the final, approved schematic. A near-term phasing plan was created, and a contingency phasing plan was

created as a proof-of-concept if long-term shelter growth become necessary. A vehicular circulation study was also created as an accompaniment to the master plan.

Key Informant Interviews & Client Collaboration

Throughout the entire design process, expert interviews and design critiques were carried out. Collaboration with the client was a consistent throughout each phase of the design process from case studies, program development, and design critiques.

Once the general form of the site plan began to emerge, formal and informal interviews with experts were conducted to inform some more specific organizing principles and design decisions within the shelter's layout. The professional recommendations that were recorded were mostly regarded as a matter of fact. In some cases, site plans for sanctioned tent camping and car/RV camping were shared for reference.

The project's client and key stakeholder also conducted his own case studies and site-visits at shelters in Austin, San Antonio, and cities in Utah. Information and insights about these visits were discussed in informal interviews with the client and integrated into the designs.

Key Informants

- Wayne Niederhauser – Director of Homelessness in Utah
- Peter Chavannes – Homeless Systems Policy Manager for the City of Eugene, Oregon
- Heather Quass-Annsa – Director of Philanthropy at Community Supported Shelters in Eugene, Oregon, and Certified Fund-Raising Executive
- Erik de Buhr – Former Director of Operations at Community Supported Shelters in Eugene, Oregon

CHAPTER 4

RESULTS

College of Agriculture & Applied Sciences
UtahStateUniversity

Landscape Architecture and Environmental Planning

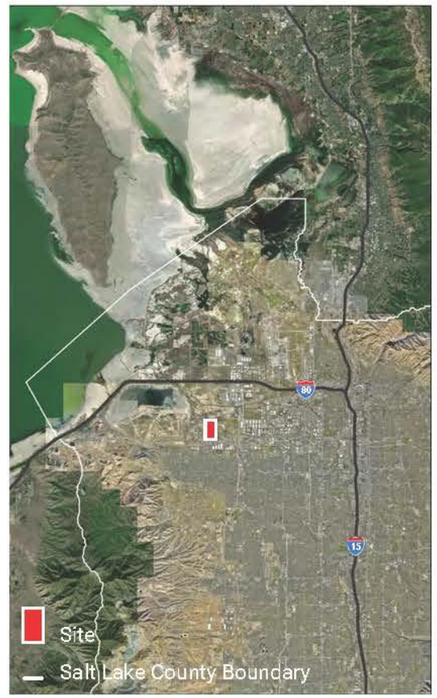
UTAH SAFE SHELTER AND RESOURCE CENTER

DECEMBER 2, 2022

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning

ILLUSTRATIVE SITE PLAN

0 100 200 300 400 500 Feet



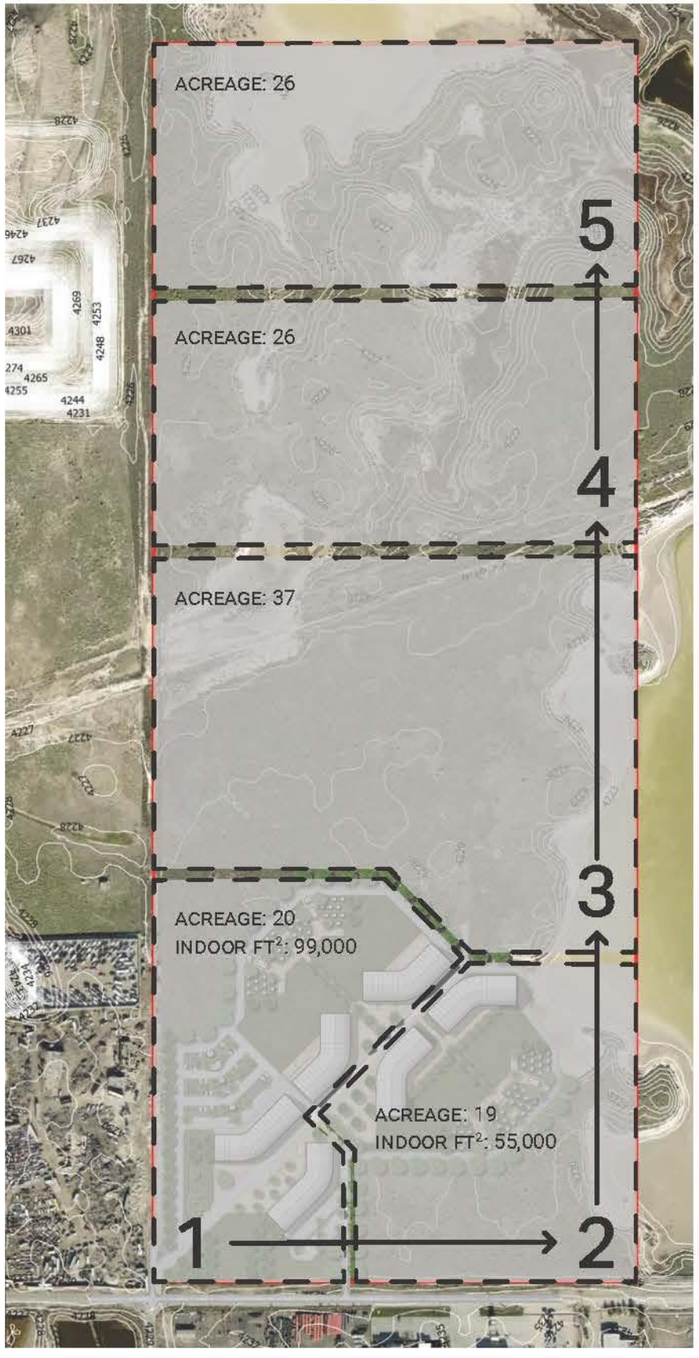
CONTEXT MAP

N

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning

ANNOTATED SITE PLAN

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning



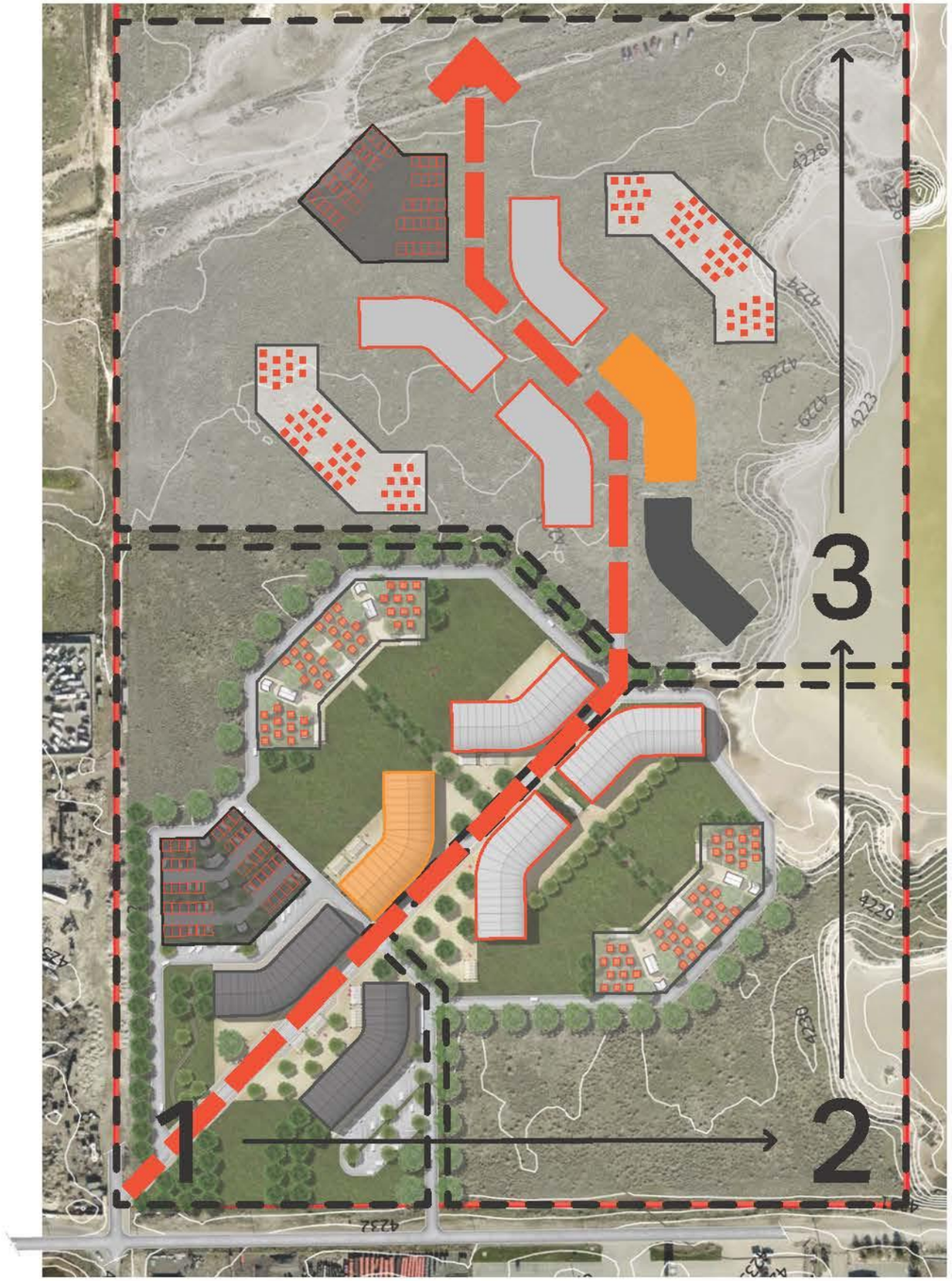
INDOOR SLEEPING (150-200) W/ INDOOR COMMUNITY SPACE

MINI HOME PODS (44 STRUCTURES) W/ OUTDOOR COMMUNITY SPACE

SAFE-SPOT CAR CAMPING (50 SPOTS) W/ OUTDOOR COMMUNITY SPACE

ADMINISTRATION, INTAKE, SUPPORT SERVICES, FLEX SPACE

DINING SERVICES, FLEX SLEEPING SPACE



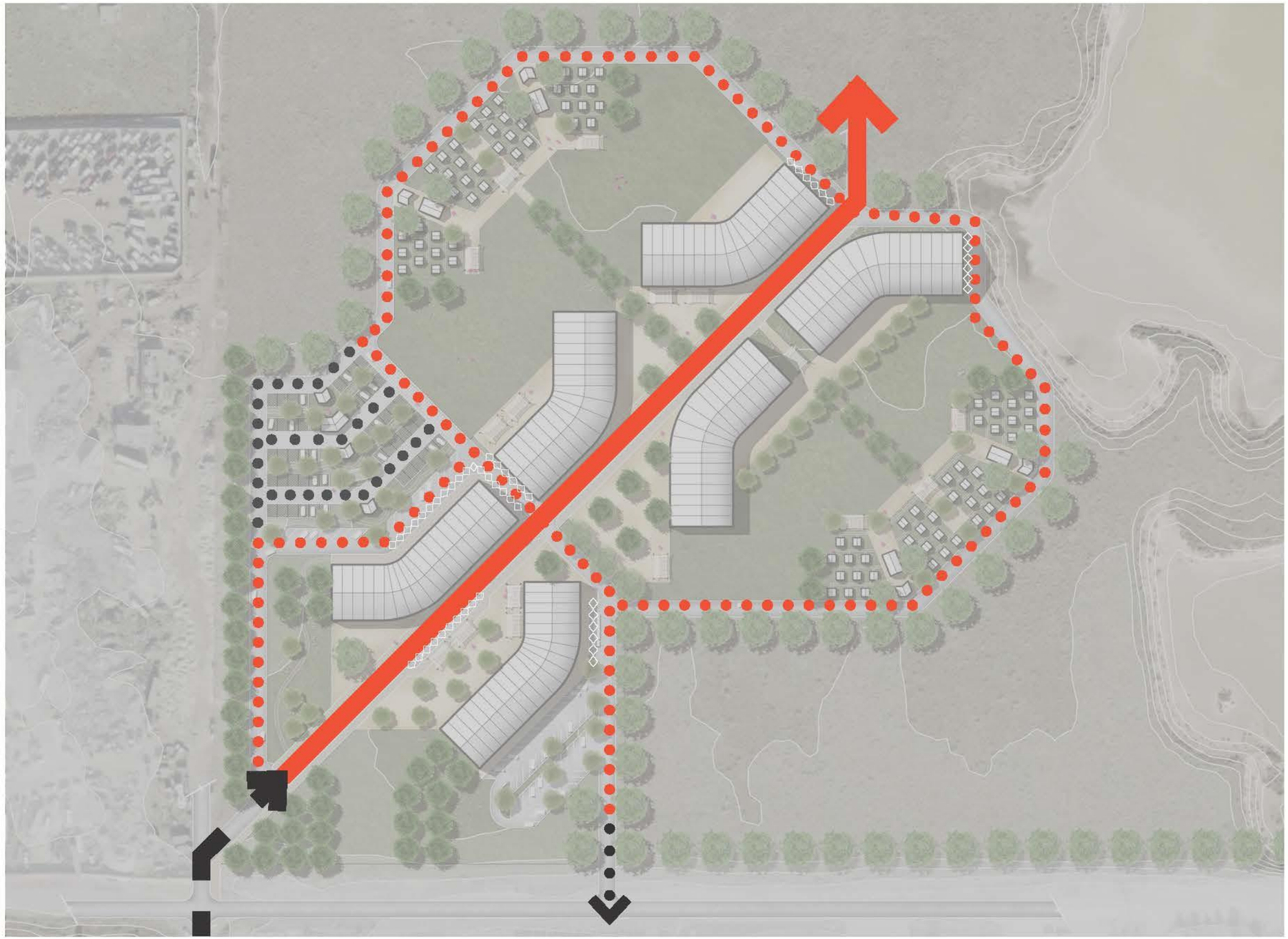
PHASING PLAN

0 250 500 Feet

0 100 200 300 400 500 Feet

N

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning



Safe-Spot Car Camping Access

Delivery & shuttle loading & drop-off

Secondary road

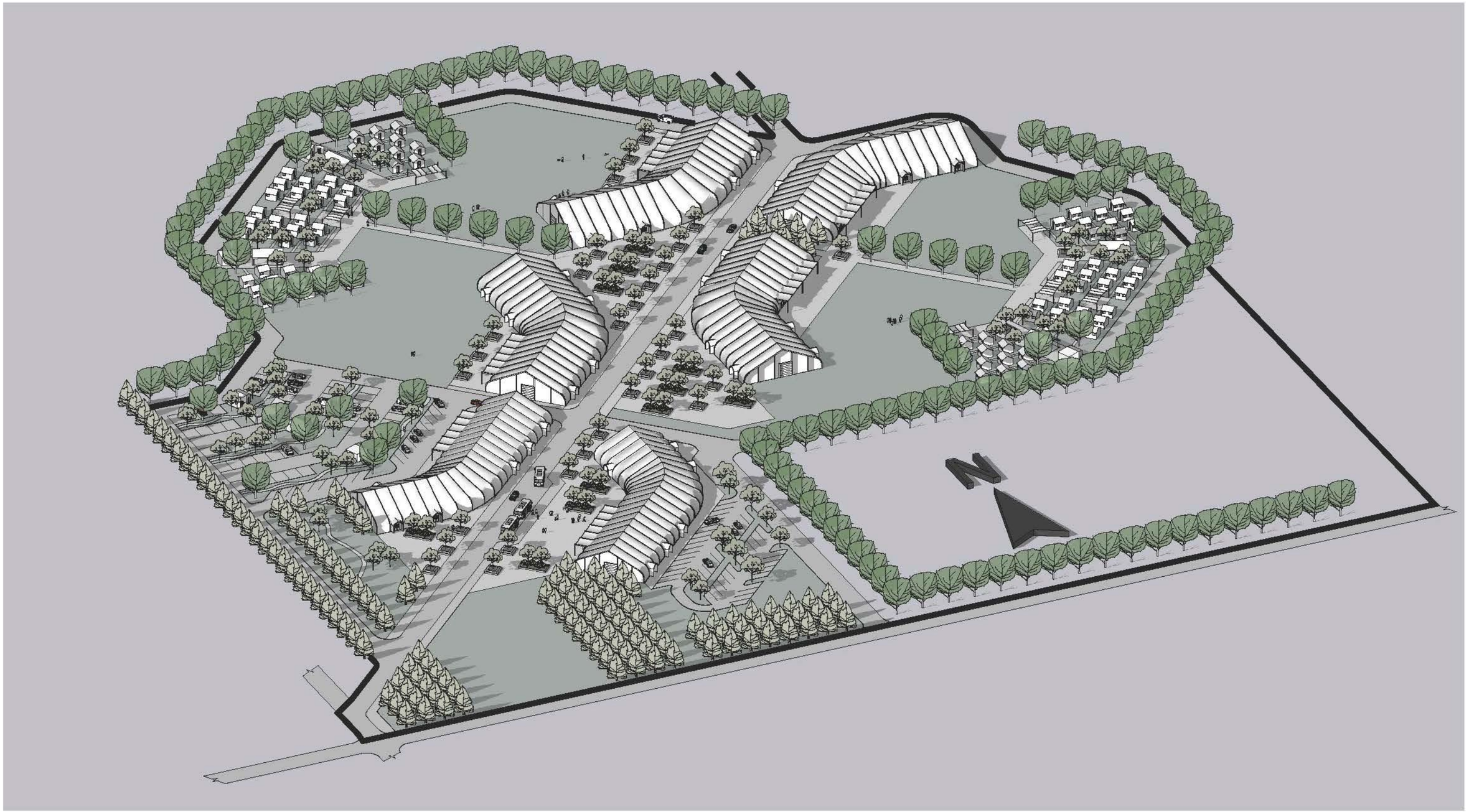
Arterial road

Shuttle & Delivery Exit

Primary Entrance & Exit

VEHICULAR CIRCULATION

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning



SITE PERSPECTIVE

80' - 90' WIDE SPRUNG STRUCTURE

22,000 FT² PER STRUCTURE

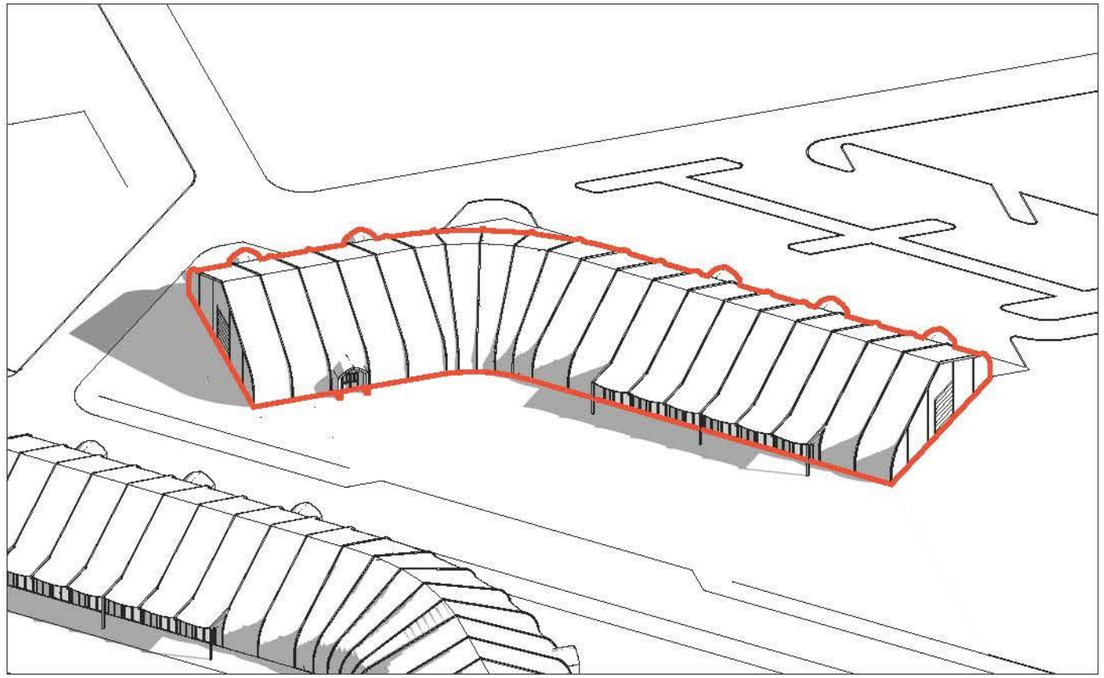
STRUCTURE 1

SUPPORT SERVICES

REQUIRES APPROX.
40 FT²/RESIDENT

- Court waiting room
- Court room
- Case management rooms
- Private meeting rooms
- Barber
- Restrooms
- Open client services room
- Medical clinic waiting room
- Clinic exam room
- Clinic storage room

- Clinic restrooms
- Phase 1 flex space
- Support/Utility space



STRUCTURE 2

ADMINISTRATION, INTAKE & SERVICES

REQUIRES APPROX.
40 FT²/RESIDENT

- Flex office space
- Admin. conference rooms
- Staff restrooms
- Break rooms
- IT room
- Storage rooms
- Volunteer rooms
- Open workstation room
- Security rooms
- Bike storage

- Client storage
- Vestibule
- Intake room/waiting area
- Intake office
- ID room
- SLC police room
- Donation drop/receiving
- Shop
- Phase 1 flex space
- Support/Utility space

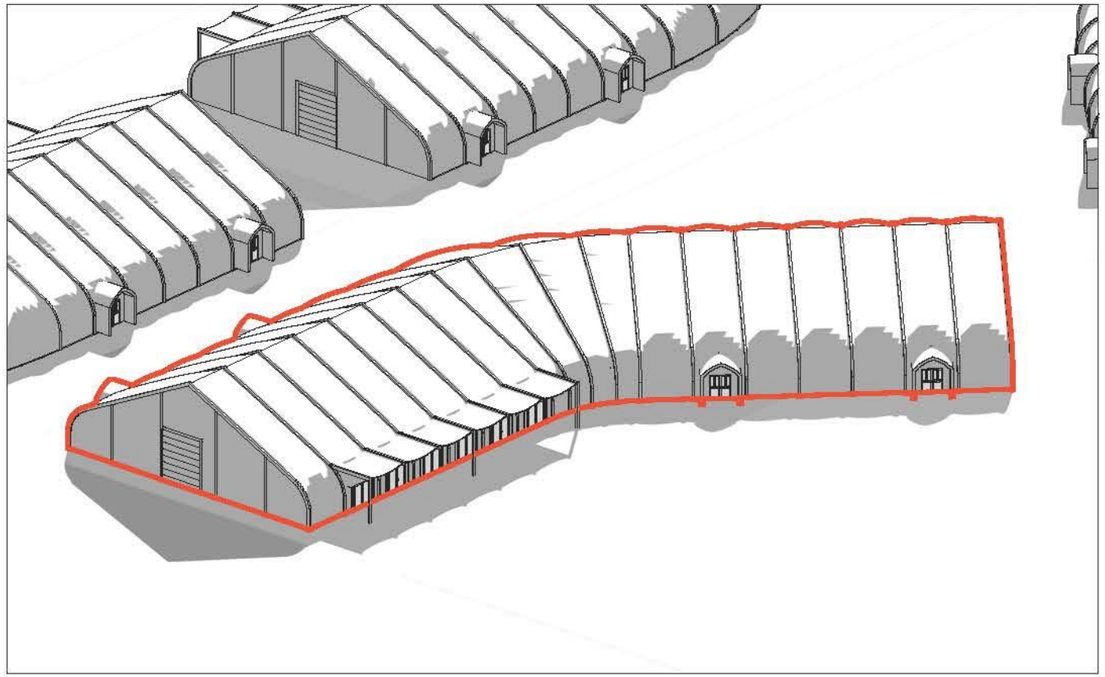
STRUCTURE 3

DINING SERVICES

REQUIRES APPROX.
55 FT²/RESIDENT

- Kitchen
- Kitchen storage
- Kitchen & Dining restrooms
- Volunteer room
- Open dining room
- Table storage room
- Shop
- Flex indoor sleeping space
- Community Space

- Support/Utility space



STRUCTURE 4

INDOOR SLEEPING, PERSONAL HYGIENE, COMMUNITY AREAS

REQUIRES APPROX.
95 FT²/RESIDENT

- Open bunk & single bed rooms
- Crisis rooms
- Kennel rooms
- Restrooms with showers
- Laundry rooms
- 200 single-bed, maximum capacity
- Program space rooms
- Community room

- Open commons
- Computer Lab
- Restrooms
- Outdoor community gathering space
- Support/Utility space

STRUCTURE DIMENSIONS & FACILITY USES

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning

1 Pavilion or space for other service structures be shared by adjoining pods. These could also personal hygiene facilities, laundry, warming tents, lockers, etc.

2 Mini homes are organized into smaller 10-11 pods to promote community building and trust

3 Hardscapes will provide a "front porch" for the mini home pods where residents can participate in community building and activities in a semi-private space.

4 Shade sail

5 Restrooms

MINI HOME PODS

College of Agriculture & Applied Sciences
UtahStateUniversity
Landscape Architecture and Environmental Planning

1 18' x 21' parking spaces

2 Pavilion or space for other service structures. These could also personal hygiene facilities, laundry, warming tents, lockers, etc.

3 Central greenspace for future programming

4 Programmable green space for community participation

5 Greenway path to larger greenspace

6 Restrooms

SAFE-SPOT CAR CAMPING

CHAPTER 5

FINDINGS

Design Considerations

This project applied user-centered design principles to the site planning, design, and programming of a low-barrier homeless resource center in Utah. User-centered design is one of the core design principles of the City of Toronto's *Shelter Design and Technical Guidelines*. Designing with the end-user in mind should lead to spaces that are "home-like and not institutional," which also helps users "build confidence, independence, and agency though the perception and navigation of space" (*Shelter Design Guidelines*, 2017). Additional guidance was identified through generalized academic studies about how spatial configurations can affect social, emotional, and psychological outcomes in an effort to expand user-centered design into the landscape and site design of homeless shelter outdoor spaces.

The pacing of this project was compressed due to client requirements. As a result, a good faith effort was made to identify the most relevant, effectual, and operative literature during the process, with little success in identifying a substantive body of literature on how site conditions of a shelter affect people experiencing homelessness. Still, there is likely a larger body of extant and related literature. More specifically, literature on low-income housing and congregate care facilities that could be applied to the context of low-barrier homeless sheltering. However, this extended body of literature was not explored comprehensively. A broader, systematic, and comprehensive review of the literature that relates site planning and design to social, psychological, and emotional well-being and its resultant effect on the community is an excellent opportunity to improve our shared understanding of these issues.

Next steps also include providing this document to, and soliciting feedback from, the key informants who contributed to the research portion of the project. These comments will provide critical insights into, and expert validation of, these guidelines as well as indicating future direction for similar research.

The following design considerations were identified during the course of this research, planning, and design project and are presented as follows. Additional support for many of these considerations is found in the available literature and presented in "Chapter 2 Literature Review." The remaining considerations arose from the design research process of exploring the planning and design of the low-barrier homeless resource center.

The Right Size for Non-Congregate Shelter Clusters

When organizing non-congregate shelters, like mini homes or tents on a site, designers should group them in clusters for no more than 10–12 people. Quass-Annsa suggests that better social outcomes and community building are, in part, a result of smaller clusters of non-congregate shelters. These non-congregate shelters include tents, mini homes, or car camping safe-spots.

Clusters of 10–12 non-congregate shelters is the "sweet spot" for positive outcomes among the residents of a larger shelter site with shared basic services like bathrooms and sinks. This number is large enough to create a diverse and balanced social ecosystem but small enough that residents felt comfortable to leave their belongings unattended in their sleeping quarters during the day to carry out normal activities of daily living.

The Right Size for Congregate Shelter Sleeping Clusters

A congregate shelter's capacity can, of course, exceed 12 people, but physical separation from other sleeping quarters is necessary for better social outcomes, as is clustering residents in smaller subgroups of 10–12 individuals. When physical separation of spaces, like sleeping quarters, is not possible, partitioning is the next best option.

Enclosed sleeping rooms are, perhaps, the best example of an opportunity to create the sense of privacy, personal autonomy, and safety with simple partitions. The Utah Safe Shelter and Resources Center will likely utilize Sprung Structures which could house up to 200 people per structure. To house that many residents, partitioning the open floor plan into smaller sleeping "pixels" will give residents more privacy while still utilizing the indoor space efficiently. These one, two, or four-bed pixels can be arranged in compact and efficient rows and columns within the congregate Sprung Structures.

The Right Configuration for Congregate Shelter Indoor Sleeping

Providing choice and perceived control to residents while avoiding open sleeping floor plans will create the best atmosphere for community-building and de-escalation in congregate shelters. Creating a multitude of opportunities for choice and environmental control—even if trivial, like the ability to pull a curtain or provide controls for personal lighting—can also have an outsized impact of perceived wellness and positive emotional, social, and psychological outcomes. Views and quick access to natural areas with vegetation provide relief from negative ruminations, improve self-esteem, and increase a sense of spatial autonomy.

The Creation of a Campus Environment

One important method for creating a sense of agency over one's experience is to utilize open space to separate uses on the site whenever possible (H. Quass-Annsa, personal communication, January 13, 2023). The benefits are threefold (elaborated in more detail in the "Literature Review" chapter): reduced sense of crowding, increased sense of spatial autonomy, and increased sense of community.

Encouraging Appropriate Social Contact and Interaction

It is critical to design spaces that encourage social contact but also allow individuals to pace and regulate their social interactions. To encourage community engagement, a shelter design should provide semi-private outdoor spaces near private units and shared walkways. This creates a comfortable level of privacy and a buffer from fully private and fully public spaces (Williams, 2005).

Supporting Physical Health and Mental Wellbeing

Create spaces and programming on the site that promote physical activity, like gardening, team sports, and cycling (Dawes et al., 2022; Grabbe et al., 2013). Even dog runs provide residents the opportunity to connect and interact with their pets. Simple experiences like walking a dog, observing greenspace, or gardening can interrupt "negative ruminations, offering stress relief and elements of social inclusion and self-actualization," (Grabbe et al., 2013).

Opportunities for Meaningful Employment

One of the issues with low barrier shelters is the lack of shared values and community spirit among residents. Because of this, low barrier shelters can cost significantly more, sometimes over three times more, to run and maintain. Low barrier shelters often score lower on indicators of success like occupancy rate, length of stay, crime rates within reasonable proximity of the site, etc. (P. Chavannes, personal communication, November 7, 2022). This can happen because low barrier shelters offer very little for residents to get involved with.

It is essential that a shelter site have elements, designed or otherwise, that provide shared goals and thus, encourage community building (P. Chavannes, personal communication, November 7, 2022; Ridgway et al., 1994).

Create Positive Value Perceptions

If the surrounding community's perception of a shelter is based on the value the site brings to the area, it creates opportunities for socially equitable association where people experiencing homelessness can gain equal membership to the surrounding culture and community (Christensen, 2009). Bringing value to a community defined by its place, rather than its people, is an effective way to avoid typical negative perceptions of a marginalized group of people. In part, social and cultural integration mean increasing identification with groups not defined by homelessness (Ware et al., 2007). Social reintegration into society is a critical long-term goal of homelessness care and shelters. "Subjective well-being is linked to social integration, not physical integration" (Cummins & Lau, 2003).

Flexibility to Meet Evolving Needs

Shelters should integrate flexibility into both their use and their ability to change configuration for future forms of support and housing. Demographics of homelessness and causes of homelessness change throughout time. The site should not feel temporary or institutional; however, shelters should have imbedded flexibility to accommodate changing needs (*City of Toronto Shelter Design and Technical Guidelines*, 2021).

Conclusion

These guidelines provide a relevant contribution from landscape architecture and related outdoor space design to the topic of shelter and resource center design. Historically, this is a topic that has only been addressed in architectural practices. During the research and interview phase of this project, it became clear that many landscape architects are clamoring to help with these issues but often do not have any recourse to contribute. Designing space to help unhoused people face their personal challenges is a niche that this work has begun to articulate. Hopefully this niche can continue to be explored and described in both academic and professional spheres.

The site was selected by the client and has several shortcomings that need to be addressed with means beyond site design, particularly related to access to services. In the United States, an acceptable walking distance is usually considered an eighth of a mile or less (Yang & Diez-Roux, 2012).

Currently, there are no transit stops within a reasonable distance of the site. Context mapping and analysis indicated that the nearest stop was over two miles away. Other context studies revealed that there are no grocery and food stores or healthcare facilities and emergency medical services within two miles of the site either. Furthermore, many of the surrounding roads have no sidewalks or crosswalks to support pedestrian travel off the site. Even if residents of the shelter and resources center wanted to walk to these services, there is almost no pedestrian infrastructure in the area.

Discussions with the client concluded that a private shuttle service would likely have to be contracted specifically to transport residents to and from the site. Additionally, creating onsite, wrap-around services would be another requirement of a successful shelter and resource center in this location.

These constraints are not addressed in the proposed master plan as they either require design solutions outside of the site—like pedestrian infrastructure— or financed services like a shuttle service. Although, shuttle drop-offs are designed into the master plan.

A common public perception is that the very existence of people experiencing homelessness stands in opposition to the goals of the public realm. Landscape architects play a key role is the visioning and design of the public realm, yet they pay little mind to the fact that many users, and perhaps the most consistent users, of their designs are people experiencing homelessness. Furthermore, most design efforts to address homelessness relate to hostile architecture or exclusionary design which is intended to discourage certain people from using a space. This gap between the design-goals of public space and the needs of many of its users needs to be narrowed.

One of the main challenges is that many landscape architects are trained and motivated to design spaces that are visually appealing, functional, and safe, but they lack a deep understanding of the needs and experiences of people who are experiencing homelessness. Although design alone will not solve the issues related to homelessness, site designs should be appealing, functional, and safe for all people.

REFERENCES

Abu-Gaueh, T. (1999). Privacy as the Basis of Architectural Planning in the Islamic Cultures of Saudi Arabia. *Architecture and Comportment/Architecture and Behavior, Vol. 11*(No. 3). https://www.archnet.org/publications/3763

Anantha Krishna, K. S. (1991). Effect of Architectural and Spatial Variables on the Perception of Crowding. *Architectural Science Review*, *34*(3), 95–108. https://doi.org/10.1080/00038628.1991.9697300

Berens, M. J. (2016). A review of research: Designing the built environment for recovery from homelessness. *Design Resources for Homelessness*.

Buhrich, N., Hodder, T., & Teesson, M. (2000). Lifetime Prevalence of Trauma among Homeless People in Sydney. *Australian & New Zealand Journal of Psychiatry*, *34*(6), 963–966. https://doi.org/10.1080/000486700270

Chavannes, P. (2022, November 7). Interview with Peter Chavannes, the Homeless Systems Policy Manager for the CIty of Eugene [Zoom].

Christensen, K. (2009). Socially Equitable Community Planning: Including Individuals with Disabilities in the Democratic Association of Place. *Review of Disability Studies: An International Journal*, *5*(3). https://www.rdsjournal.org

City of Toronto Shelter Design and Technical Guidelines. (2021). 286.

Criteria and Recordkeeping Requirements for Definition of Homelessness. (n.d.). Retrieved March 17, 2023, from https://www.hudexchange.info/resource/1974/criteria-and-recordkeeping-requirements-for-definition-of-homeless

Cummins, R. A., & Lau, A. L. D. (2003). Community Integration or Community Exposure? A Review and Discussion in Relation to People with an Intellectual Disability. *Journal of Applied Research in Intellectual Disabilities*, *16*(2), 145–157. https://doi.org/10.1046/j.1468-3148.2003.00157.x

Dawes, J., Rogans-Watson, R., & Broderick, J. (2022). Physical activity interventions to improve the health and wellbeing of people experiencing homelessness: A mixed-methods systematic review. *The Lancet*, 400, S36. https://doi.org/10.1016/S0140-6736(22)02246-2

Defining Homelessness in Data Collection. (2023, February 28). https://www.cdc.gov/ddid/homelessness/definition.html

Definition of Chronic Homelessness. (n.d.). Retrieved March 17, 2023, from https://www.hudexchange.info/homelessness-assistance/coc-esg-virtual-binders/coc-esg-homeless-eligibility/definition-of-chronic-homelessness

Edemekong, P. F., Bomgaars, D. L., Sukumaran, S., & Schoo, C. (2022). Activities of Daily Living. In StatPearls. StatPearls Publishing. http://www.ncbi.nlm.nih.gov/books/NBK470404/

Goodman, L. A., Saxe, L., & Harvey, M. (1991). Homelessness as psychological trauma: Broadening perspectives. *American Psychologist*, *46*, 1219–1225. https://doi.org/10.1037/0003-066X.46.11.1219

Grabbe, L., Ball, J., & Goldstein, A. (2013). Gardening for the Mental Well-Being of Homeless Women. Journal of Holistic Nursing, *31*(4), 258–266. https://doi.org/10.1177/0898010113488244

Harm reduction: An approach to reducing risky health behaviours in adolescents. (2008). *Paediatrics & Child Health*, *13*(1), 53–56.

Homeless Resource Centers and Homeless Shelter Information Sheet.pdf. (2021). https://www.slc.gov/planning/wp-content/uploads/sites/13/2021/11/Homeless-Resource-Center-and-Homeless-Shelter-Information-Sheet.pdf

Kushel, M. B., Gupta, R., Gee, L., & Haas, J. S. (2006). Housing instability and food insecurity as barriers to health care among low-income americans. *Journal of General Internal Medicine, 21*(1), 71–77. https://doi.org/10.1111/j.1525-1497.2005.00278.x

Lewis, C. A. (1995). HUMAN HEALTH AND WELL-BEING: THE PSYCHOLOGICAL, PHYSIOLOGICAL, AND SOCIOLOGICAL EFFECTS OF PLANTS ON PEOPLE. *Acta Horticulturae, 39*1, 31–40. https://doi.org/10.17660/ActaHortic.1995.391.2

Marquis, R., & Jackson, R. (2000). Quality of Life and Quality of Service Relationships: Experiences of people with disabilities. Disability & Society, 15(3), 411–425. https://doi.org/10.1080/713661967

Niederhauser, W. (2022, October 27). Preliminary/introductory meeting with Wayne Neiderhauser, President of the Homelessness Task Force for Salt Lake County [Zoom].

Quass-Annsa, H. (2023, January 13). Informal interview with Heather Quass-Annsa, the Director of Philanthropy for Community Supported Shelters, base in Eugene, OR. [Phonecall].

Ridgway, P., Simpson, A., Wittman, F. D., & Wheeler, G. (1994). Home making and community building: Notes on empowerment and place. *The Journal of Mental Health Administration, 21*(4), 407–418. https://doi.org/10.1007/BF02521359

Salt Lake City expands homeless shelter space with emergency order. (n.d.). Retrieved March 19, 2023, from https://www.sltrib.com/news/2022/12/20/slc-enacts-emergency-order/

SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach. (2014).

Schmidt, D. E., & Keating, J. P. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin, 86*, 680–700. https://doi.org/10.1037/0033-2909.86.4.680

Shelter Design Guidelines. (2017). 39.

Skinner, S., & Rankin, S. (2016). Shut Out: How Barriers Often Prevent Meaningful Access to Emergency Shelter. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2776421

Skjaeveland, O., & Garling, T. (1997). EFFECTS OF INTERACTIONAL SPACE ON NEIGHBOURING. *Journal of Environmental Psychology, 17*(3), 181–198. https://doi.org/10.1006/jevp.1997.0054

Snohomish County, WA Shelter Definitions. (n.d.). Retrieved March 17, 2023, from https://www.snohomishcountywa.gov/DocumentCenter

Turner, A. (2014). Beyond Housing First: Essential Elements of a System-Planning Approach to Ending Homelessness (SSRN Scholarly Paper No. 3078877). https://papers.ssrn.com/abstract=3078877

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology, 11*(3), 201–230. https://doi.org/10.1016/S0272-4944(05)80184-7

Utah Homeless Services Governance Structure and Funding Model. (2020).

Ware, N. C., Hopper, K., Tugenberg, T., Dickey, B., & Fisher, D. (2007). Connectedness and Citizenship: Redefining Social Integration. *Psychiatric Services, 58*(4), 469–474. https://doi.org/10.1176/ps.2007.58.4.469

What it means to be a low-barrier homeless shelter—Springs Rescue Mission. (n.d.). Retrieved March 17, 2023, from https://www.springsrescuemission.org/what-it-means-to-be-a-low-barrier-homeless-shelter/

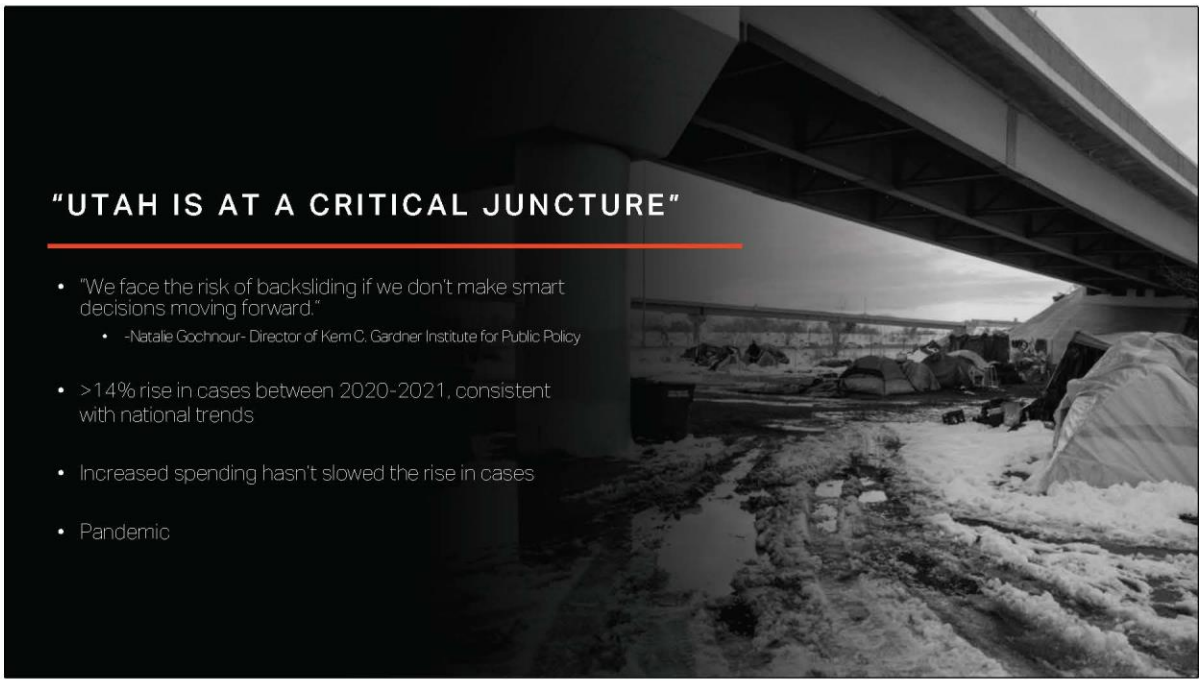
Williams, J. (2005). Designing Neighbourhoods for Social Interaction: The Case of Cohousing. *Journal of Urban Design, 10*(2), 195–227. https://doi.org/10.1080/13574800500086998

APPENDICES

Appendix A

THESIS DEFENSE SLIDES

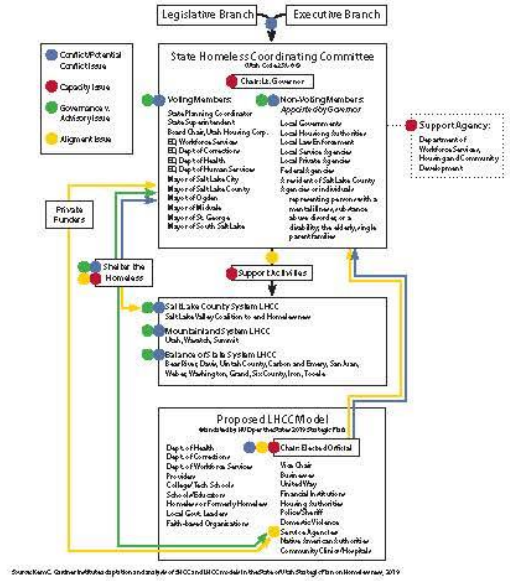
- Welcome to my design-research thesis defense. My thesis title in Design Guidelines for Homeless Shelter and Resources Center Site Plans.
- I think it's useful to describe what design research is at the outset. Design research a broad term for the process that designers use to better understand the underlying and sometimes hidden desires, needs, and challenges of end users.
- You'll see some black and white photographs throughout the presentation, which are film photos I took around the actual site.



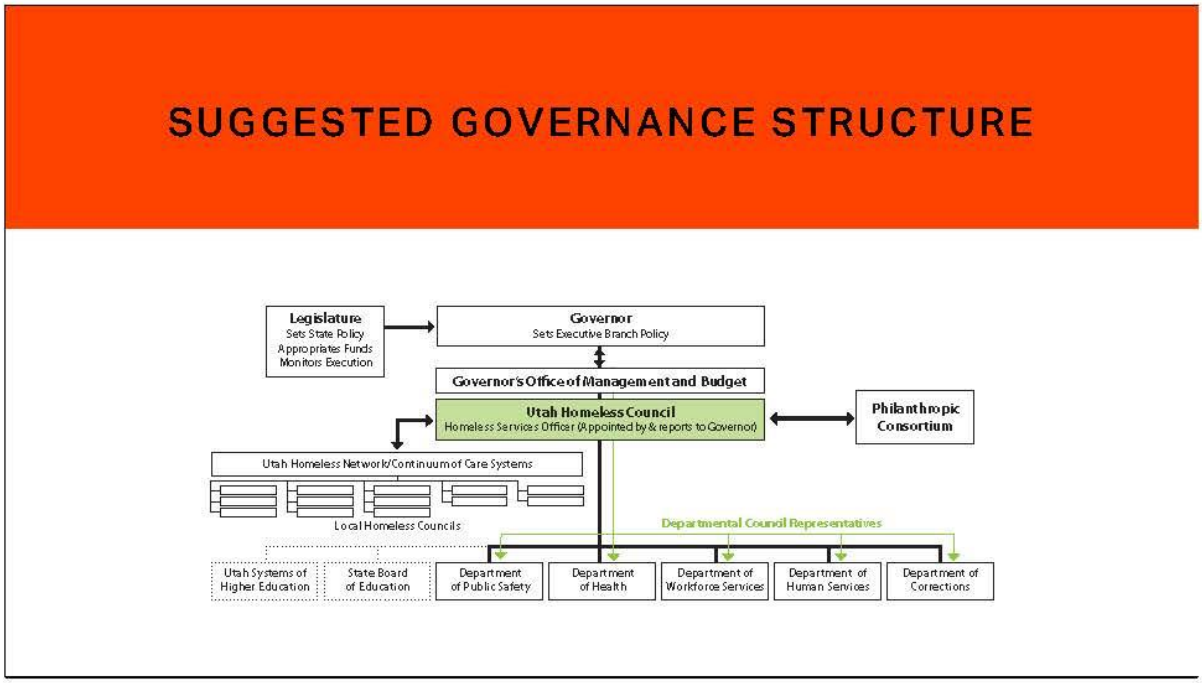
- Despite measurable progress in the past decade or more, 3 or 4 years ago, Utah's existing homeless services system was reaching the end of its effective lifespan.
- In Utah, the pandemic both exposed and exacerbated what some officials have called a "perfect storm" of adverse circumstances which make life even harder for Utahans experiencing homelessness. Many public buildings like city libraries, were closed and so the public saw more people on the streets during the day. Pitching tents is prohibited by the police and many found themselves having to sleep out in the open, exposed to the elements. Also, public building and business closures have made it difficult for those same people to find restrooms.

- All of this shed light on the issue.

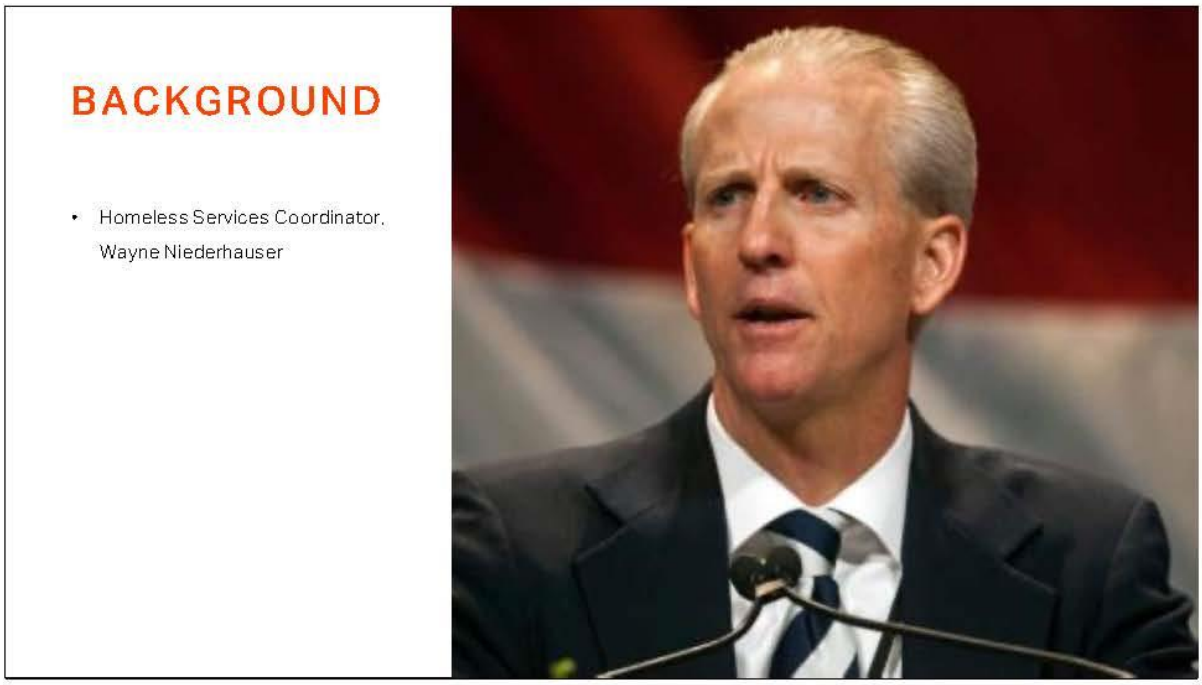
EXISTING GOVERNANCE STRUCTURE



- In 2020, a report from the Kem C. Gardener Policy Institute described the state's existing homeless services system as "confusing," and overly "complex," due to a system rife with misalignments, inefficiencies and unnecessary redundancies.
- Governor Spencer Cox even described it as "a ship with 12 steering wheels."
- With increased public awareness, frustration, hostility, and concern about the state of homelessness in Utah, state lawmakers created a new Office of Homeless Services within the Department of Workforce Services in early 2021.



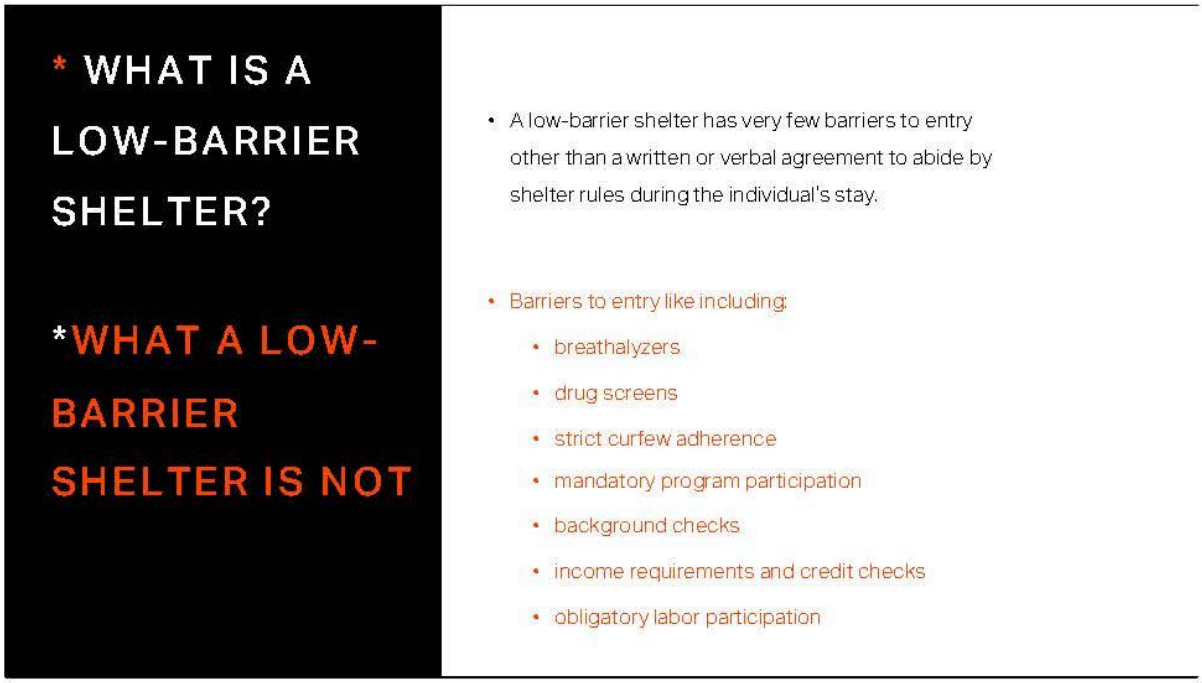
- This new structure consolidated top level governance, improved coordination, and streamlined some of those inefficiencies.
- One such step was creating the Governor-appointed role of Homeless Services Coordinator.



- This role was appointed to former Utah Senate President, Wayne Niederhauser, who is joining us today over zoom and sits on my committee.
- In early October of 2022, he reached out to Utah State University's department of Landscape Architecture and Environmental Planning to request assistance in the development of a site plan for a shelter in the Salt Lake Valley.
- This was part of a statewide effort to redress a worsening national problem, only made more evident to the public during the Covid-19 pandemic.
- The design was intended to shelter up to 500 individuals in a combination of congregate housing like dormitory-style bunk rooms, non-congregate shelters like

mini home clusters, and car/RV camping spots.

- It was meant to be modular and easily replicable across a site and would likely need to provide wrap around services to the users.
- It also needed to be low-cost.
- More specifically, Niederhauser requested a document with which he could raise awareness and funding for the design and construction of the project during an upcoming legislative session.
- The timeline was approximately 6 weeks.
- Because a few middle and high-barrier resource centers already exist in Salt Lake City, this project was also meant to serve as what's called a LOW-BARRIER SHELTER to capture an underserved demographic of the homeless community.

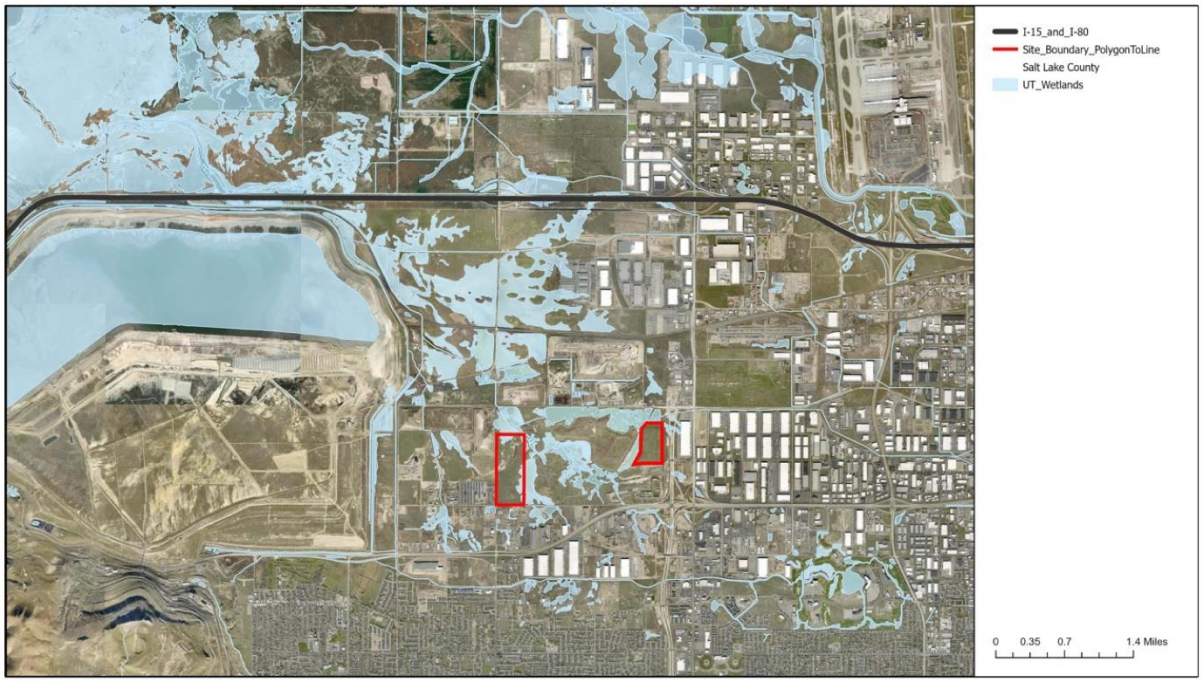


- What is a low-barrier shelter?
- One of the main objectives of this project is to provide relief, safety, shelter, food, opportunities for hygiene, support, and services to people in need with few hoops to jump through so that they can immediately begin addressing the personal challenges they face.
- These shelters often have few barriers to entry other than a written or verbal agreement to abide by the shelter rules during the individual's stay.
- Many shelters screen out individuals experiencing homelessness for a wide variety of reasons including but not limited to sobriety (on-site breathalyzers and screens),

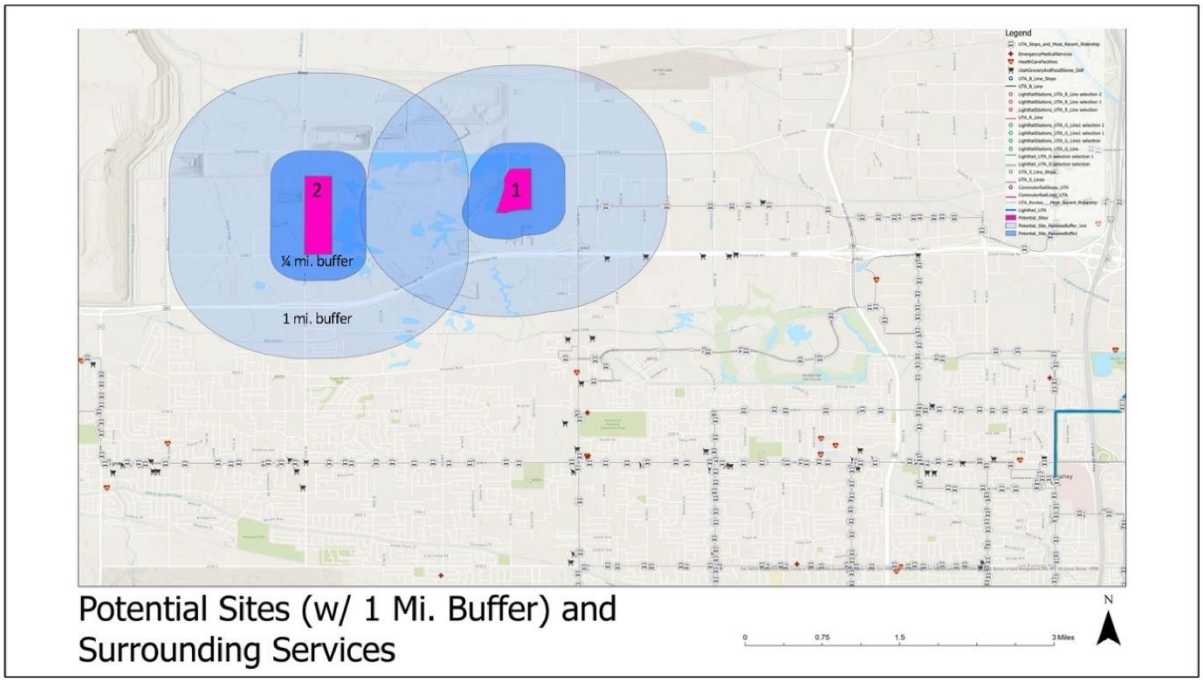
strict curfew adherence, mandatory program participation, criminal records (background checks), income requirements and verification, credit checks, and obligatory labor participation.

- With the client's criteria in hand, we began discussing site selection.
- In an effort to keep costs low, the city looked for land that was already in their possession.
- Initially, this led to two potential sites in the Glendale neighborhood of Salt Lake City, just northwest of West Valley City pictured here in the orange stroke.

- We immediately began a context analysis after accepting the project.
- Here is a simple wetland, riparian, and lake context study.
- The sites sit at the southeastern extent of the Great Salt Lake wetlands.



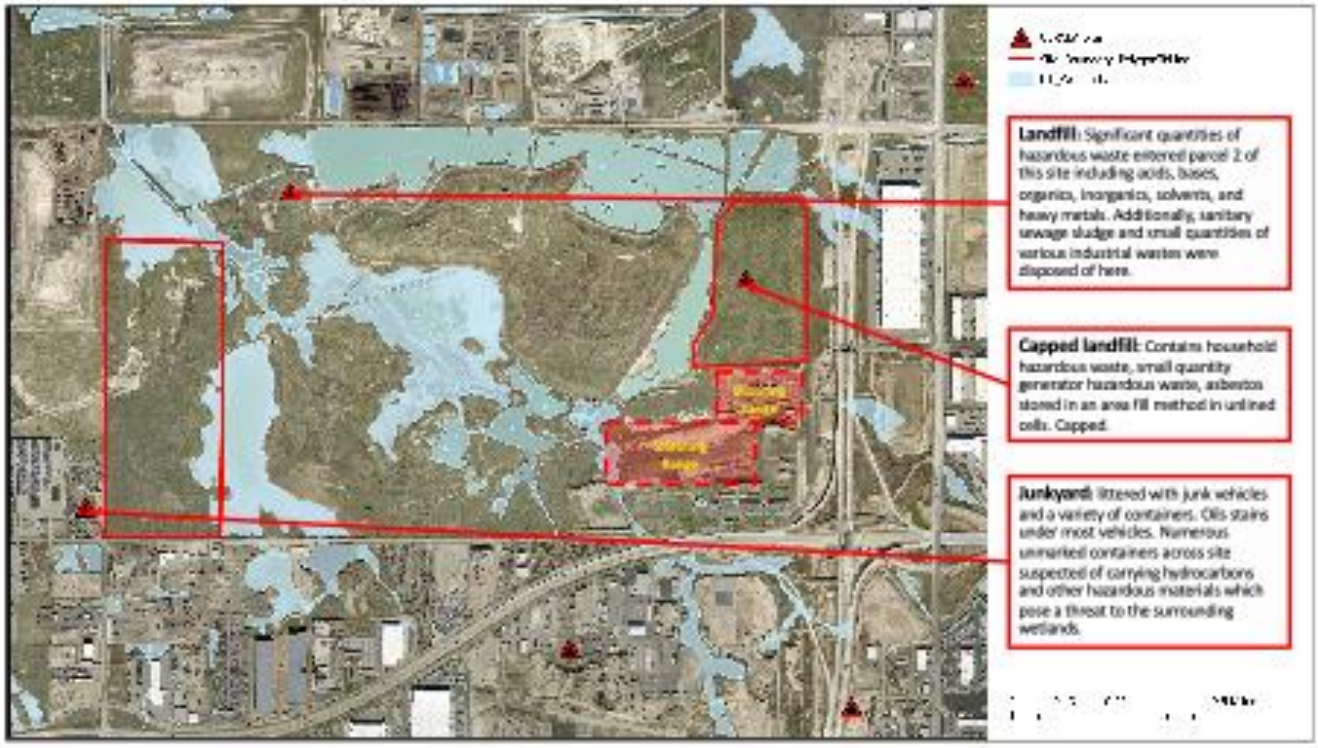
- The wetlands that reach this far south could be categorized as "playa" wetlands as described by the Utah Geological Survey. These are defined as "ephemeral ponds or depressional features with mineral soils; primary water sources include precipitation, and ephemeral surface flow inputs.
- That is to say, they are dry sometimes, and and other times will contain water.



Potential Sites (w/ 1 Mi. Buffer) and Surrounding Services

- Preliminary evaluations of site 1 and 2, represented in pink, showed many constraints to overcome
- Here you can also see an inventory of surrounding services like transit stops including bus and light rail, grocery and food stores, healthcare facilities and emergency medical services.
- The blue buffers around each site are simple walkability studies. The light blue shapes are a 1-mile buffer, and the darker blue shapes are an 1/4-mile buffer from the site. 1/8 mile is considered the benchmark for a “walkable” distance.
- As you can see, there are quite a few constraints to overcome on either site

including almost no transit or services within either buffer and literally no services within the walkable distance.



- Here is a brownfield analysis using CERCLA data, otherwise known as the Comprehensive Environmental Response, Compensation, and Liability Act under the EPA.
- Ultimately, site 1 had the added issue of being near and technically downrange of two, gun ranges. The added political optics of this, made site 1 extra difficult to justify.

SITE 2

- Ultimately, site 2 was selected because it had less constraints than site 1 and none of the dangers of damaging public perceptions caused by the shooting ranges.

SHELTER SERVICES AND SPATIAL REQUIREMENTS

Precedents

THE ROAD HOME - GAIL MILLER RESOURCE CENTER

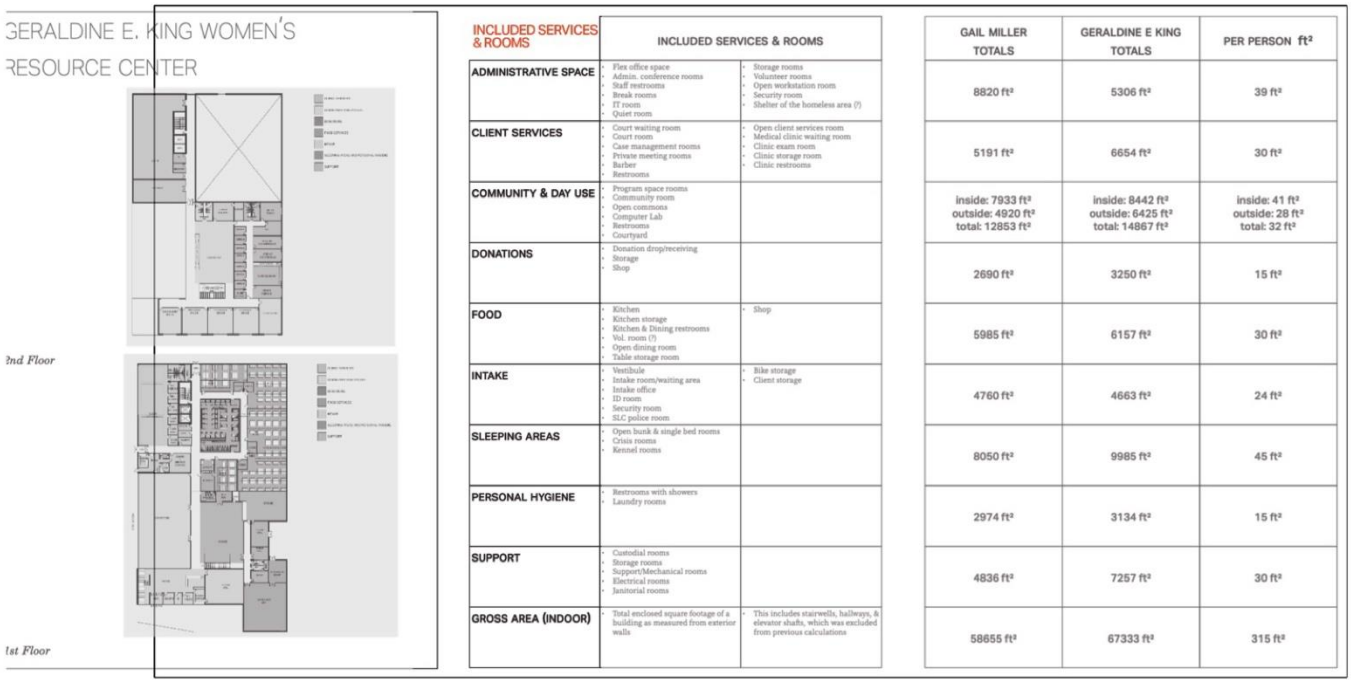
GERALDINE E. KING WOMEN'S RESOURCE CENTER

Service breakdown by ft^2

	INCLUDED SERVICES & ROOMS	
ADMINISTRATIVE SPACE	Flex office space Admin. conference rooms Staff restrooms Break rooms IT room Court room	Storage rooms Volunteer rooms Open workstation room Security room Shelter of the homeless area (?)
CLIENT SERVICES	Court waiting room Court room Case management rooms Private meeting rooms Barber Restrooms	Open client services room Medical clinic waiting room Clinic exam room Clinic storage room Clinic restrooms
COMMUNITY & DAY USE	Program space rooms Community room Open commons Computer lab Restrooms Courtyard	
DONATIONS	Donation drop/receiving Storage Shop	
FOOD	Kitchen Kitchen storage Staff & visitor dining restrooms Vol. room (?) Open dining room Table storage room	Shop
INTAKE	Vestibule Intake room/waiting area Intake office ID room Security room SLC police room	Bike storage Client storage
SLEEPING AREAS	Open bunk & single bed rooms Crisis rooms Kennel rooms	
PERSONAL HYGIENE	Restrooms with showers Laundry rooms	
SUPPORT	Custodial rooms Storage rooms Support/Mechanical rooms Electrical rooms Janitorial rooms	
GROSS AREA (INDOOR)	Total enclosed square footage of a building as measured from exterior walls	This includes stairwells, hallways, & elevator shafts, which was excluded from previous calculations

GAIL MILLER TOTALS	GERALDINE E KING TOTALS	PER PERSON ft^2
8620 ft²	5306 ft²	39 ft²
5191 ft²	6654 ft²	30 ft²
inside: 7933 ft² outside: 4920 ft² total: 12853 ft²	inside: 8442 ft² outside: 6425 ft² total: 14867 ft²	inside: 41 ft² outside: 28 ft² total: 32 ft²
2690 ft²	3250 ft²	15 ft²
5985 ft²	6157 ft²	30 ft²
4760 ft²	4663 ft²	24 ft²
8050 ft²	9985 ft²	45 ft²
2974 ft²	3134 ft²	15 ft²
4836 ft²	7257 ft²	30 ft²
58655 ft²	67333 ft²	315 ft²

- Obviously, this was not a project about architecture or interior architecture
- However, it became evident that I needed to have a pretty good understanding of the spatial requirements for these services to begin placing structures on the site and experimenting with spatial relationships
- Here is a precedent study I conducted of two resources center in Salt Lake City to begin to understand the different use-categories of a shelter and their spatial requirements.



GERALDINE E. KING WOMEN'S RESOURCE CENTER

2nd Floor

1st Floor

INCLUDED SERVICES & ROOMS	INCLUDED SERVICES & ROOMS		GAIL MILLER TOTALS	GERALDINE E KING TOTALS	PER PERSON ft²
ADMINISTRATIVE SPACE	• Flex office space • Admin. conference rooms • Staff restrooms • Break rooms • IT room • Quiet room	• Storage rooms • Volunteer rooms • Open workstation room • Security room • Shelter of the homeless area (?)	8820 ft²	5306 ft²	39 ft²
CLIENT SERVICES	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms	• Open client services room • Medical clinic waiting room • Clinic exam room • Clinic storage room • Clinic restrooms	5191 ft²	6654 ft²	30 ft²
COMMUNITY & DAY USE	• Program space rooms • Community room • Open commons • Computer Lab • Restrooms • Courtyard		inside: 7933 ft² outside: 4920 ft² total: 12853 ft²	inside: 8442 ft² outside: 6425 ft² total: 14867 ft²	inside: 41 ft² outside: 28 ft² total: 32 ft²
DONATIONS	• Donation drop/receiving • Storage • Shop		2690 ft²	3250 ft²	15 ft²
FOOD	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Vol. room (?) • Open dining room • Table storage room	• Shop	5985 ft²	6157 ft²	30 ft²
INTAKE	• Vestibule • Intake room/waiting area • Intake office • ID room • Security room • SLC police room	• Bike storage • Client storage	4760 ft²	4663 ft²	24 ft²
SLEEPING AREAS	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms		8050 ft²	9985 ft²	45 ft²
PERSONAL HYGIENE	• Restrooms with showers • Laundry rooms		2974 ft²	3134 ft²	15 ft²
SUPPORT	• Custodial rooms • Storage rooms • Support/Mechanical rooms • Electrical rooms • Janitorial rooms		4836 ft²	7257 ft²	30 ft²
GROSS AREA (INDOOR)	• Total enclosed square footage of a building as measured from exterior walls	• This includes stairwells, hallways, & elevator shafts, which was excluded from previous calculations	58655 ft²	67333 ft²	315 ft²

- You can see here, there are 9 different use-categories: Administrative, Client Services, Community & Day Use, Donations, Food, Intake, Sleeping Areas, Personal Hygiene, and Support.

GERALDINE E. KING WOMEN'S
RESOURCE CENTER

2nd Floor

1st Floor

	INCLUDED SERVICES & ROOMS		GAIL MILLER TOTALS	GERALDINE E KING TOTALS	PER PERSON ft²
ADMINISTRATIVE SPACE	• Flex office space • Admin. conference rooms • Staff restrooms • Break rooms • IT room • Quiet room	• Storage rooms • Volunteer rooms • Open workstation room • Security room • Shelter of the homeless area (?)	8820 ft²	5306 ft²	39 ft²
CLIENT SERVICES	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms	• Open client services room • Medical clinic waiting room • Clinic exam room • Clinic storage room • Clinic restrooms	5191 ft²	6654 ft²	30 ft²
COMMUNITY & DAY USE	• Program space rooms • Community room • Open commons • Computer Lab • Restrooms • Courtyard		inside: 7933 ft² outside: 4920 ft² total: 12853 ft²	inside: 8442 ft² outside: 6425 ft² total: 14867 ft²	inside: 41 ft² outside: 28 ft² total: 32 ft²
DONATIONS	• Donation drop/receiving • Storage • Shop		2690 ft²	3250 ft²	15 ft²
FOOD	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Vol. room (?) • Open dining room • Table storage room	• Shop	5985 ft²	6157 ft²	30 ft²
INTAKE	• Vestibule • Intake room/waiting area • Intake office • ID room • Security room • SLC police room	• Bike storage • Client storage	4760 ft²	4663 ft²	24 ft²
SLEEPING AREAS	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms		8050 ft²	9985 ft²	45 ft²
PERSONAL HYGIENE	• Restrooms with showers • Laundry rooms		2974 ft²	3134 ft²	15 ft²
SUPPORT	• Custodial rooms • Storage rooms • Support/Mechanical rooms • Electrical rooms • Janitorial rooms		4836 ft²	7257 ft²	30 ft²
GROSS AREA (INDOOR)	• Total enclosed square footage of a building as measured from exterior walls	• This includes stairwells, hallways, & elevator shafts, which was excluded from previous calculations	58655 ft²	67333 ft²	315 ft²

- Directly to the right are the specific services and their necessary rooms within each category.

GERALDINE E. KING WOMEN'S
RESOURCE CENTER

2nd Floor

1st Floor

	INCLUDED SERVICES & ROOMS		PRECEDENT SPATIAL REQUIREMENTS		PER PERSON ft²
ADMINISTRATIVE SPACE	• Flex office space • Admin. conference rooms • Staff restrooms • Break rooms • IT room • Quiet room	• Storage rooms • Volunteer rooms • Open workstation room • Security room • Shelter of the homeless area (?)	8820 ft²	5306 ft²	39 ft²
CLIENT SERVICES	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms	• Open client services room • Medical clinic waiting room • Clinic exam room • Clinic storage room • Clinic restrooms	5191 ft²	6654 ft²	30 ft²
COMMUNITY & DAY USE	• Program space rooms • Community room • Open commons • Computer Lab • Restrooms • Courtyard		inside: 7933 ft² outside: 4920 ft² total: 12853 ft²	inside: 8442 ft² outside: 6425 ft² total: 14867 ft²	inside: 41 ft² outside: 28 ft² total: 32 ft²
DONATIONS	• Donation drop/receiving • Storage • Shop		2690 ft²	3250 ft²	15 ft²
FOOD	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Vol. room (?) • Open dining room • Table storage room	• Shop	5985 ft²	6157 ft²	30 ft²
INTAKE	• Vestibule • Intake room/waiting area • Intake office • ID room • Security room • SLC police room	• Bike storage • Client storage	4760 ft²	4663 ft²	24 ft²
SLEEPING AREAS	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms		8050 ft²	9985 ft²	45 ft²
PERSONAL HYGIENE	• Restrooms with showers • Laundry rooms		2974 ft²	3134 ft²	15 ft²
SUPPORT	• Custodial rooms • Storage rooms • Support/Mechanical rooms • Electrical rooms • Janitorial rooms		4836 ft²	7257 ft²	30 ft²
GROSS AREA (INDOOR)	• Total enclosed square footage of a building as measured from exterior walls	• This includes stairwells, hallways, & elevator shafts, which was excluded from previous calculations	58655 ft²	67333 ft²	315 ft²

- Here are area calculations for each use.

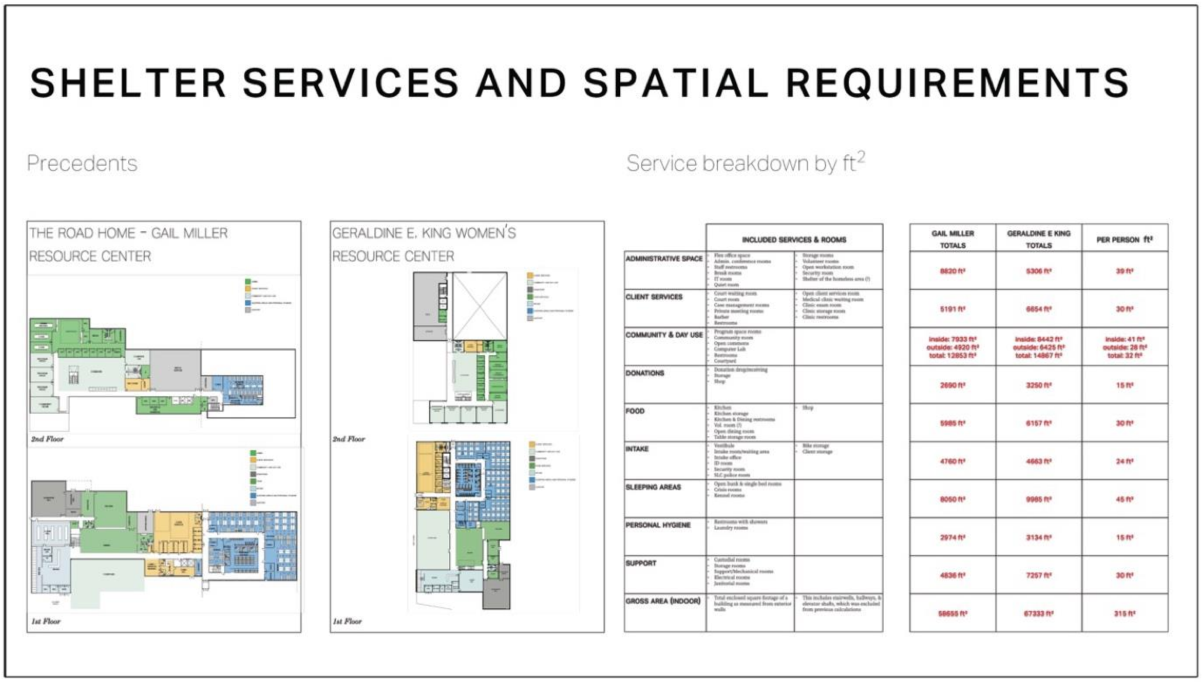
GERALDINE E. KING WOMEN'S
RESOURCE CENTER

2nd Floor

1st Floor

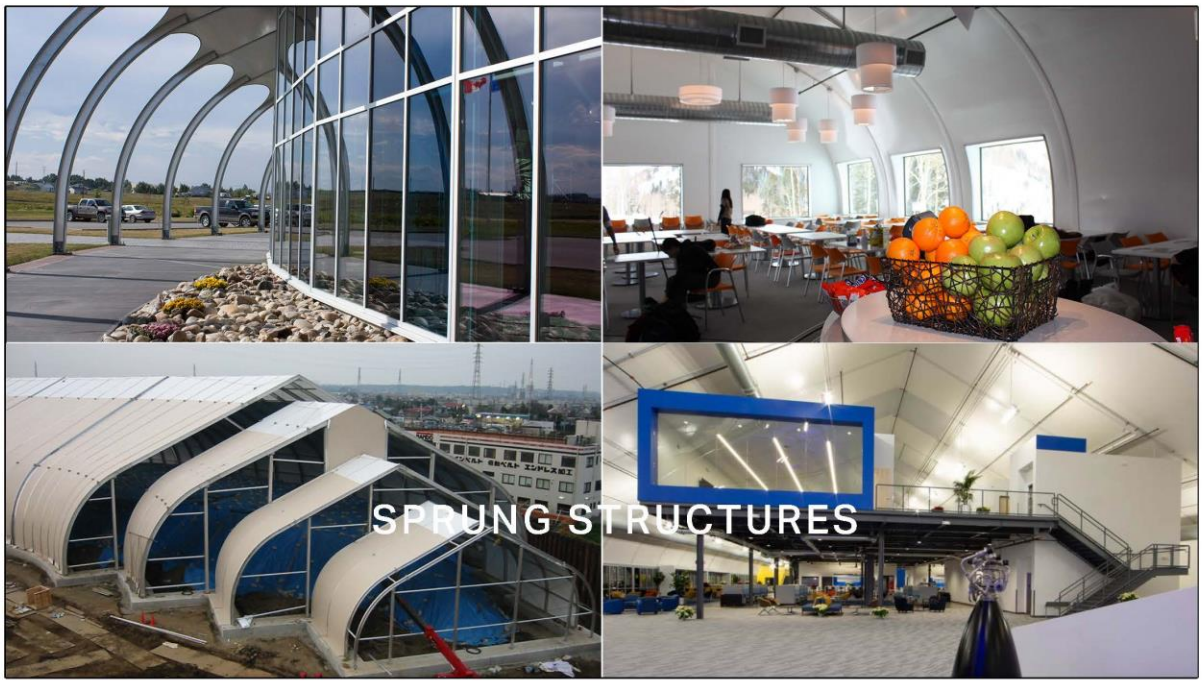
	INCLUDED SERVICES & ROOMS		GAIL MILLER TOTALS	GERALDINE E KING TOTALS	PER PERSON REQUIREMENTS
ADMINISTRATIVE SPACE	• Flex office space • Admin. conference rooms • Staff restrooms • Break rooms • IT room • Quiet room	• Storage rooms • Volunteer rooms • Open workstation room • Security room • Shelter of the homeless area (?)	8820 ft²	5306 ft²	39 ft²
CLIENT SERVICES	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms	• Open client services room • Medical clinic waiting room • Clinic exam room • Clinic storage room • Clinic restrooms	5191 ft²	6654 ft²	30 ft²
COMMUNITY & DAY USE	• Program space rooms • Community room • Open commons • Computer Lab • Restrooms • Courtyard		inside: 7933 ft² outside: 4920 ft² total: 12853 ft²	inside: 8442 ft² outside: 6425 ft² total: 14867 ft²	inside: 41 ft² outside: 28 ft² total: 32 ft²
DONATIONS	• Donation drop/receiving • Storage • Shop		2690 ft²	3250 ft²	15 ft²
FOOD	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Vol. room (?) • Open dining room • Table storage room	• Shop	5985 ft²	6157 ft²	30 ft²
INTAKE	• Vestibule • Intake room/waiting area • Intake office • ID room • Security room • SLC police room	• Bike storage • Client storage	4760 ft²	4663 ft²	24 ft²
SLEEPING AREAS	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms		8050 ft²	9985 ft²	45 ft²
PERSONAL HYGIENE	• Restrooms with showers • Laundry rooms		2974 ft²	3134 ft²	15 ft²
SUPPORT	• Custodial rooms • Storage rooms • Support/Mechanical rooms • Electrical rooms • Janitorial rooms		4836 ft²	7257 ft²	30 ft²
GROSS AREA (INDOOR)	• Total enclosed square footage of a building as measured from exterior walls	• This includes stairwells, hallways, & elevator shafts, which was excluded from previous calculations	58655 ft²	67333 ft²	315 ft²

- Then, these areas were divided by occupancy to give us a baseline understanding about how many square feet per resident is needed for each of these uses. These numbers were not set in stone, but it gave us something to experiment with.

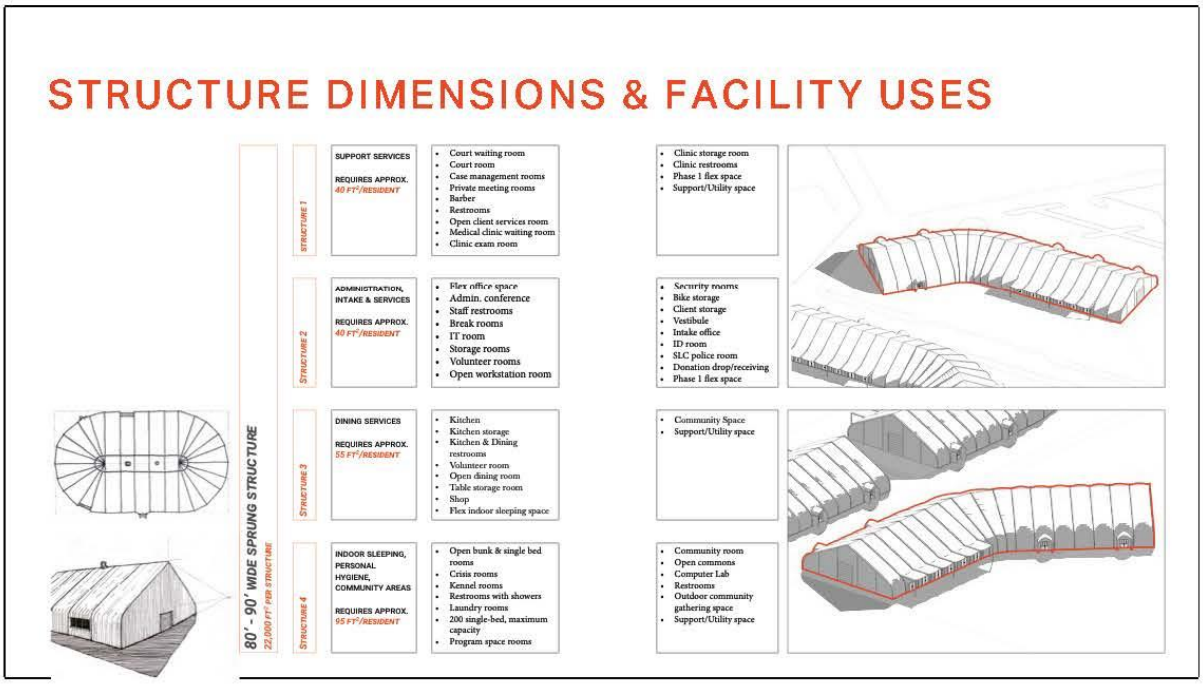


- For example, Wayne knows how these existing resource centers run on a personal level and knows when some spaces are used inefficiently or are underutilized so we could use that information to make better decisions for this project.

- The client was interested in using, at least in part, Sprung Structures on the site
- Sprung Structures are high-performance tensioned fabric structures.
- They are easy to construct and repair

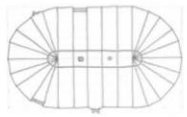


- They are low cost and durable. You can insulate them, include HVAC systems and all manner of utilities
- They are also endlessly modifiable and modular, attributes that serve one of the primary goals of the project which is to create designs that are easily replicated and flexible to change.



- A bit of research and expert interviews led me to reduce those previous 9 categories into four different structures that could contain the necessary services.

STRUCTURE DIMENSIONS & FACILITY USES



80' - 90' WIDE SPRUNG STRUCTURE

22,000 FT² PER STRUCTURE

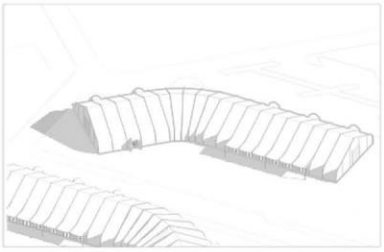
STRUCTURE 1

SUPPORT SERVICES

REQUIRES APPROX. 40 FT²/RESIDENT

- Court waiting room
- Court room
- Case management rooms
- Private meeting rooms
- Barber
- Restrooms
- Open client services room
- Medical clinic waiting room
- Clinic exam room

- Clinic storage room
- Clinic restrooms
- Phase 1 flex space
- Support/Utility space



STRUCTURE 2

ADMINISTRATION, INTAKE & SERVICES

REQUIRES APPROX. 40 FT²/RESIDENT

- Flex office space
- Admin. conference
- Staff restrooms
- Break rooms
- IT room
- Storage rooms
- Volunteer rooms
- Open workstation room

- Security rooms
- Bike storage
- Client storage
- Vestibule
- Intake office
- ID room
- SLC police room
- Donation drop/receiving
- Phase 1 flex space

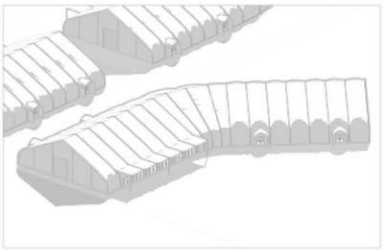
STRUCTURE 3

DINING SERVICES

REQUIRES APPROX. 55 FT²/RESIDENT

- Kitchen
- Kitchen storage
- Kitchen & Dining restrooms
- Volunteer room
- Open dining room
- Table storage room
- Shop
- Flex indoor sleeping space

- Community Space
- Support/Utility space



STRUCTURE 4

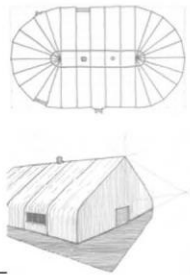
INDOOR SLEEPING, PERSONAL HYGIENE, COMMUNITY AREAS

REQUIRES APPROX. 55 FT²/RESIDENT

- Open bunk & single bed rooms
- Crisis rooms
- Kennel rooms
- Restrooms with showers
- Laundry rooms
- 200 single-bed, maximum capacity
- Program space rooms

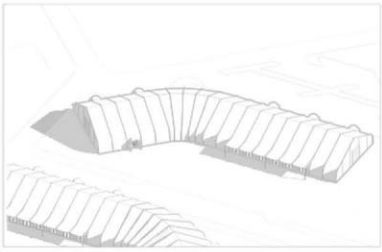
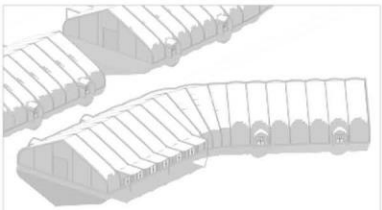
- Community room
- Open commons
- Computer Lab
- Restrooms
- Outdoor community gathering space
- Support/Utility space

STRUCTURE DIMENSIONS & FACILITY USES

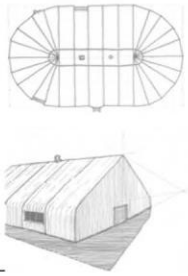


80' - 90' WIDE SPRUNG STRUCTURE

22,000 FT² PER STRUCTURE

STRUCTURE 1	SUPPORT SERVICES REQUIRES APPROX. 40 FT²/RESIDENT	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms • Open client services room • Medical clinic waiting room • Clinic exam room	• Clinic storage room • Clinic restrooms • Phase 1 flex space • Support/Utility space	
STRUCTURE 2	ADMINISTRATION, INTAKE & SERVICES REQUIRES APPROX. 40 FT²/RESIDENT	• Flex office space • Admin. conference • Staff restrooms • Break rooms • IT room • Storage rooms • Volunteer rooms • Open workstation room	• Security rooms • Bike storage • Client storage • Vestibule • Intake office • ID room • SLC police room • Donation drop/receiving • Phase 1 flex space	
STRUCTURE 3	DINING SERVICES REQUIRES APPROX. 55 FT²/RESIDENT	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Volunteer room • Open dining room • Table storage room • Shop • Flex indoor sleeping space	• Community Space • Support/Utility space	
STRUCTURE 4	INDOOR SLEEPING, PERSONAL HYGIENE, COMMUNITY AREAS REQUIRES APPROX. 95 FT²/RESIDENT	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms • Restrooms with showers • Laundry rooms • 200 single-bed, maximum capacity • Program space rooms	• Community room • Open commons • Computer Lab • Restrooms • Outdoor community gathering space • Support/Utility space	

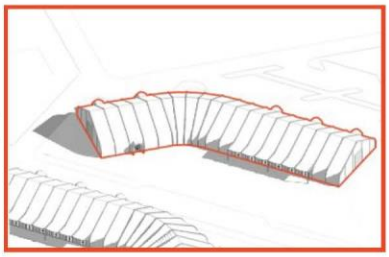
STRUCTURE DIMENSIONS & FACILITY USES

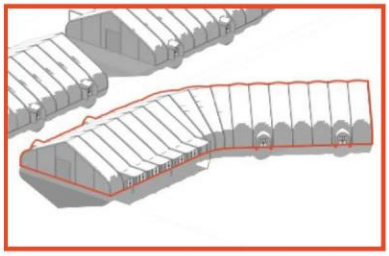


80' - 90' WIDE SPRUNG STRUCTURE

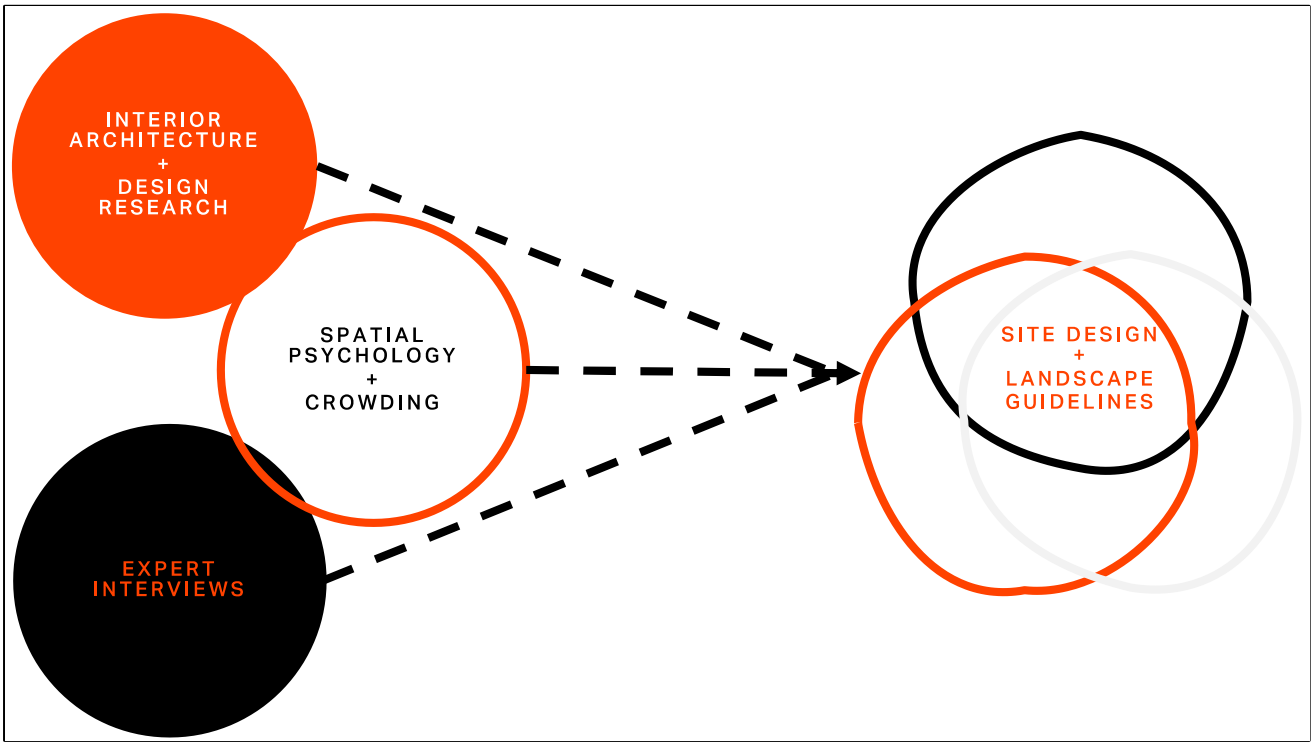
22,000 FT² PER STRUCTURE

STRUCTURE 1	SUPPORT SERVICES REQUIRES APPROX. 40 FT²/RESIDENT	• Court waiting room • Court room • Case management rooms • Private meeting rooms • Barber • Restrooms • Open client services room • Medical clinic waiting room • Clinic exam room	• Clinic storage room • Clinic restrooms • Phase 1 flex space • Support/Utility space
STRUCTURE 2	ADMINISTRATION, INTAKE & SERVICES REQUIRES APPROX. 40 FT²/RESIDENT	• Flex office space • Admin. conference • Staff restrooms • Break rooms • IT room • Storage rooms • Volunteer rooms • Open workstation room	• Security rooms • Bike storage • Client storage • Vestibule • Intake office • ID room • SLC police room • Donation drop/receiving • Phase 1 flex space
STRUCTURE 3	DINING SERVICES REQUIRES APPROX. 55 FT²/RESIDENT	• Kitchen • Kitchen storage • Kitchen & Dining restrooms • Volunteer room • Open dining room • Table storage room • Shop • Flex indoor sleeping space	• Community Space • Support/Utility space
STRUCTURE 4	INDOOR SLEEPING, PERSONAL HYGIENE, COMMUNITY AREAS REQUIRES APPROX. 95 FT²/RESIDENT	• Open bunk & single bed rooms • Crisis rooms • Kennel rooms • Restrooms with showers • Laundry rooms • 200 single-bed, maximum capacity • Program space rooms	• Community room • Open commons • Computer Lab • Restrooms • Outdoor community gathering space • Support/Utility space

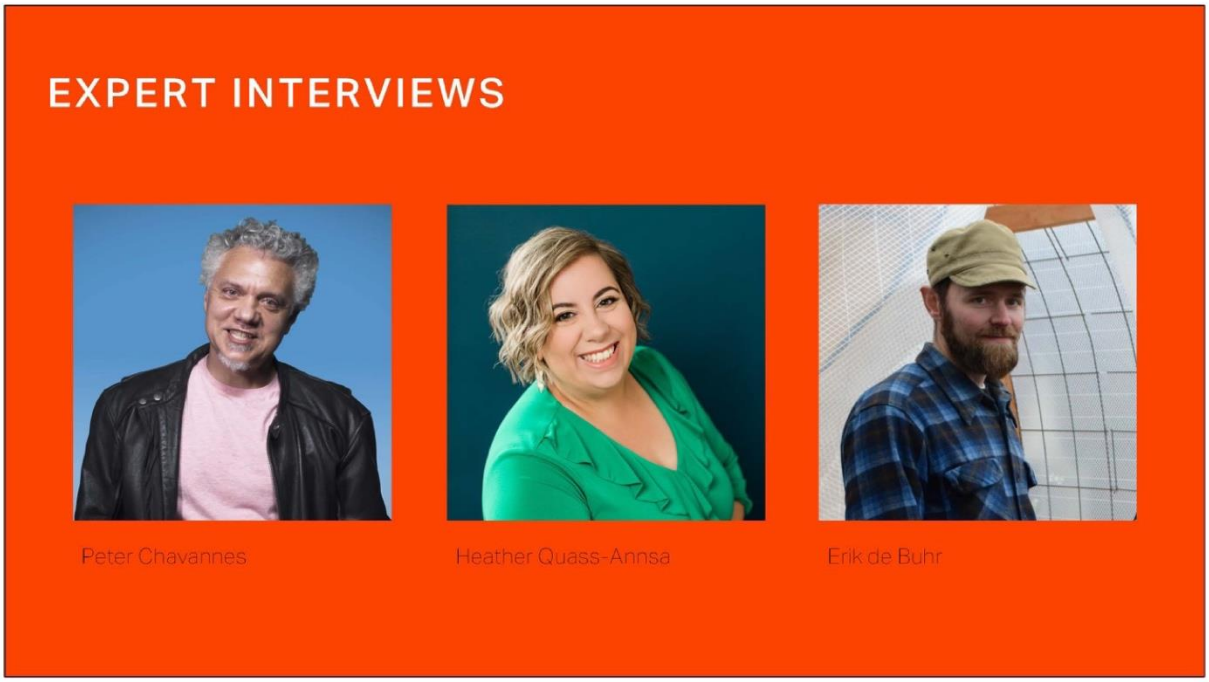




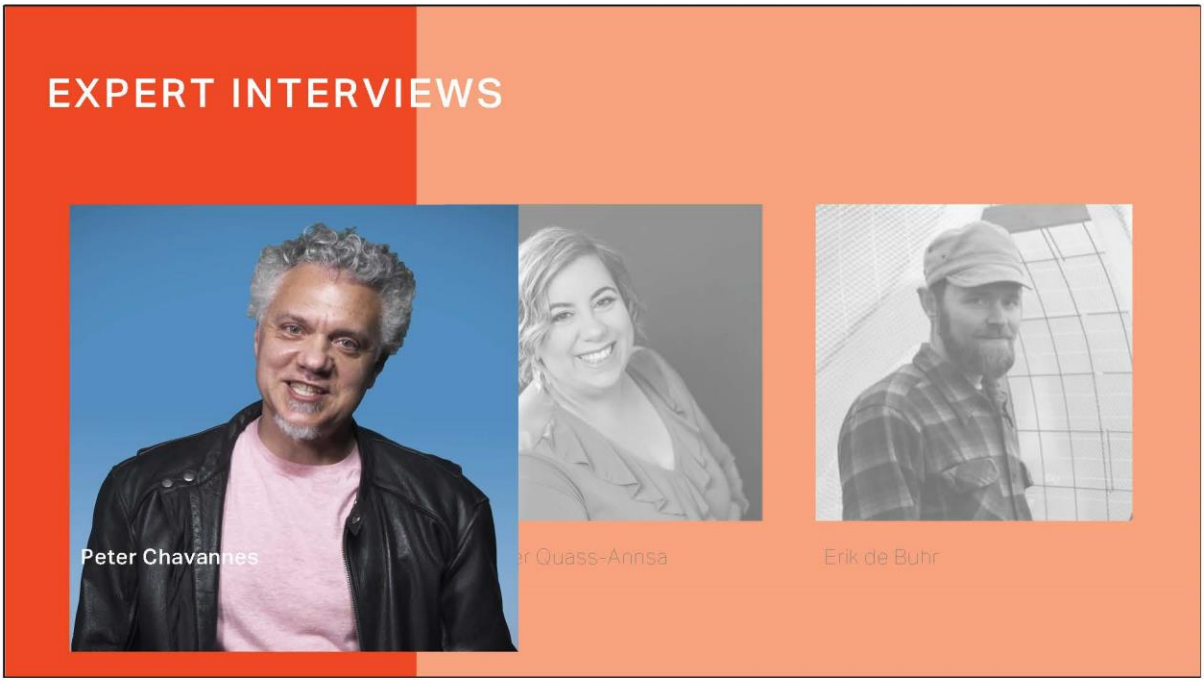
- My lit review ended up having about 60 sources. It quickly became apparent that there is a significant gap in academic research addressing best practices for shelter site design, particularly as it relates to landscape. The role of landscape and greenspace within and around a shelter is not well studied.
- Much of the literature that was reviewed for this project was only tangentially related to the design problems at hand. Although most design decisions were informed by academic studies, the findings often had to be translated from other areas of study like architecture into decisions about landscape architecture and site design.



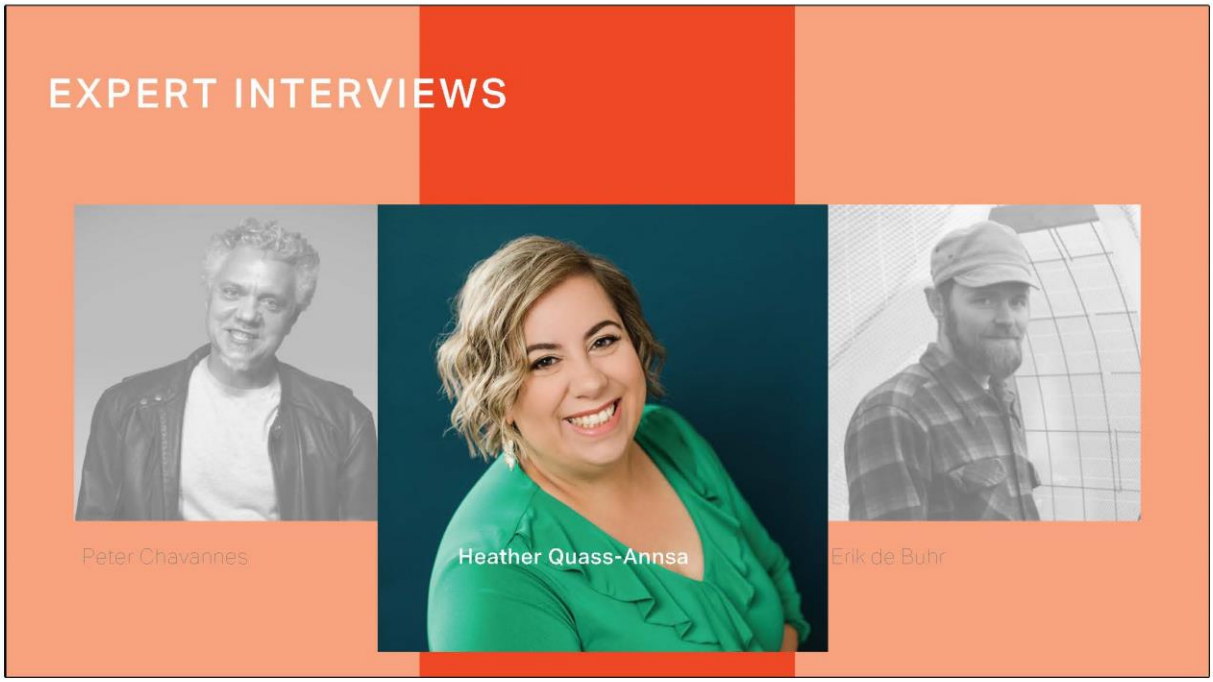
- All of this related literature ended up falling into roughly three categories:
    - Interior architecture guidelines for shelters
    - Expert Input and Case Studies
    - Spatial Psychology



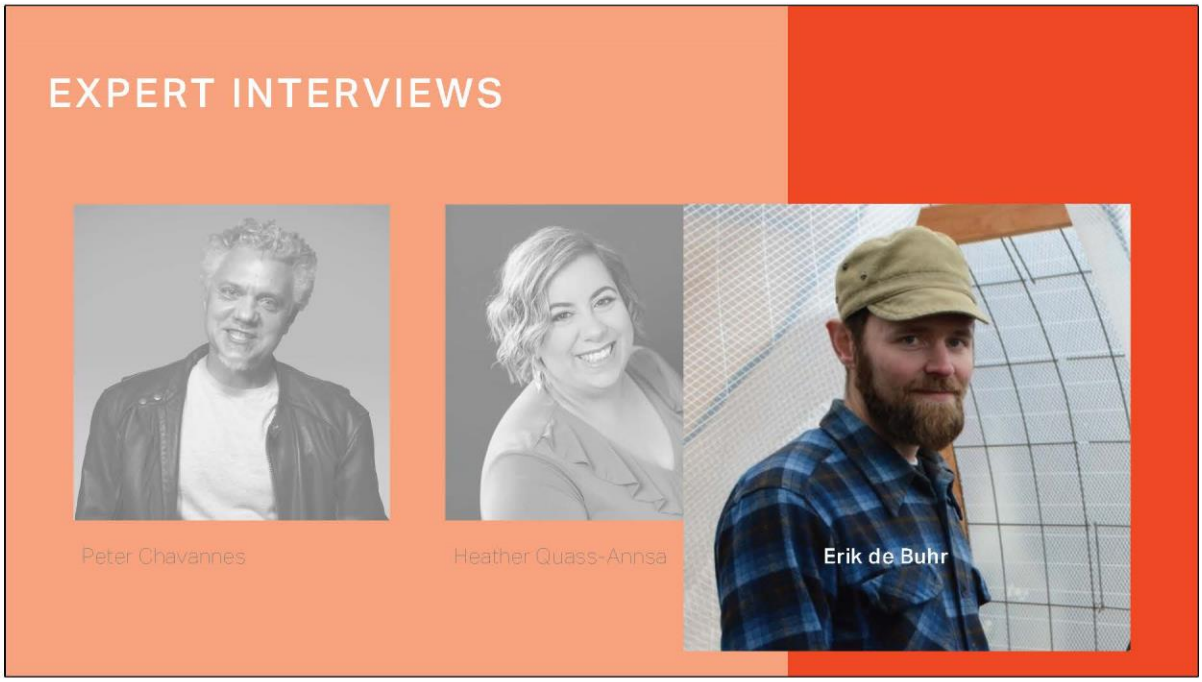
- As I was researching services, spatial requirements, and basic spatial psychology, I began engaging some experts to gain further, "ground-proofed" insights into shelter design.
- And, as it happened, I ended up getting connected with several people working in the City of Eugene in Oregon.



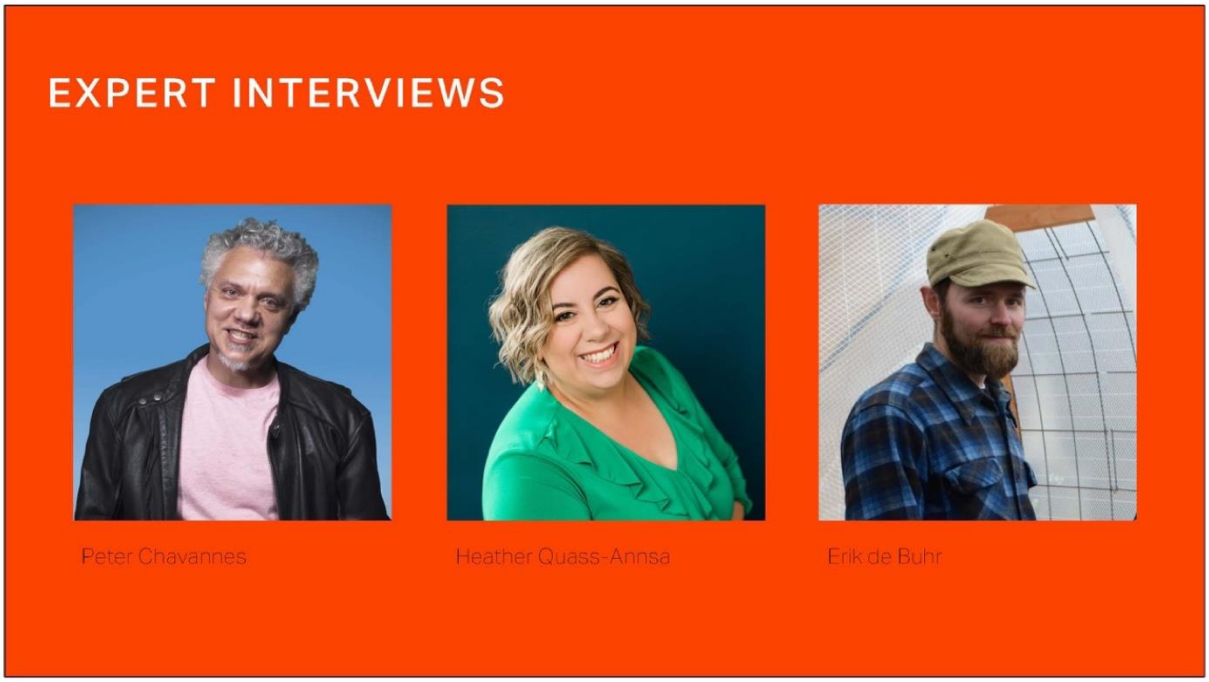
- First here on the left is Peter Chavannes who is the Homeless Systems Policy Manager working out of the Community Development Division for the City of Eugene.



- Second, is Heather Quass-Annsa who serves as the Director of Philanthropy for a 501(c)(3) called Community Supported Shelters.

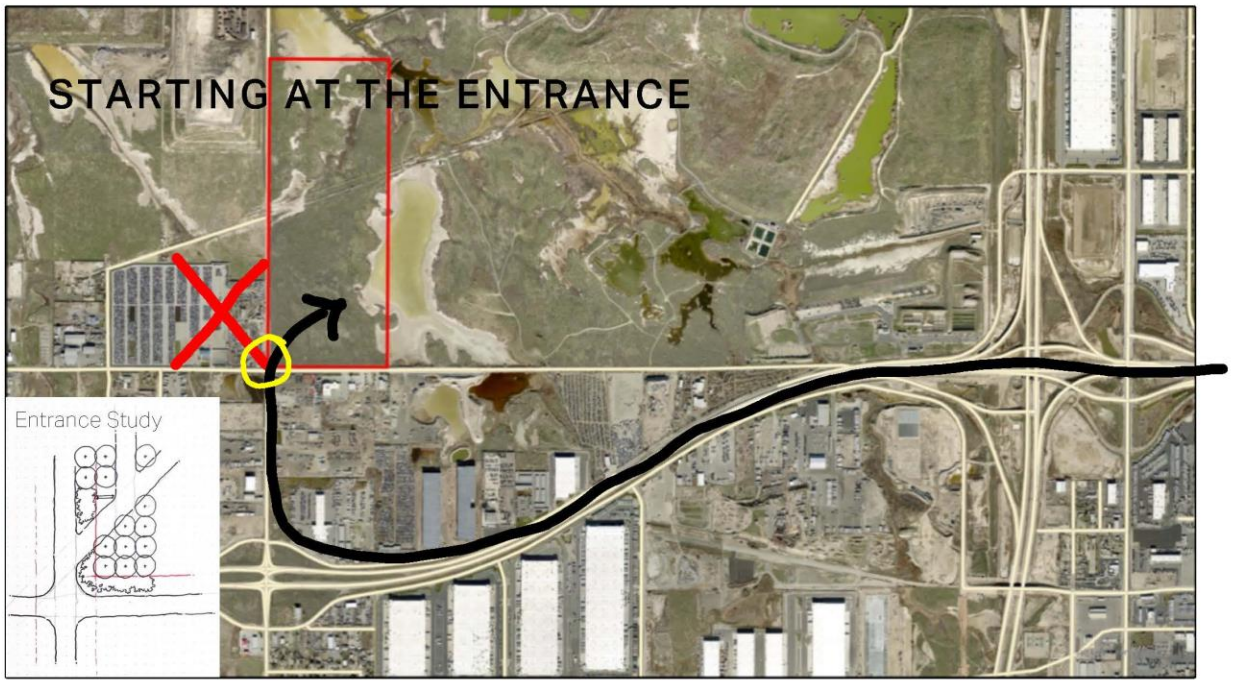


- All the way to right is Erik de Buhr, the former Director of Operations for the same non-profit.
    - He also designs and manufactured microshelters and really dug into the nitty-gritty details about social engagement dynamics on shelter sites.

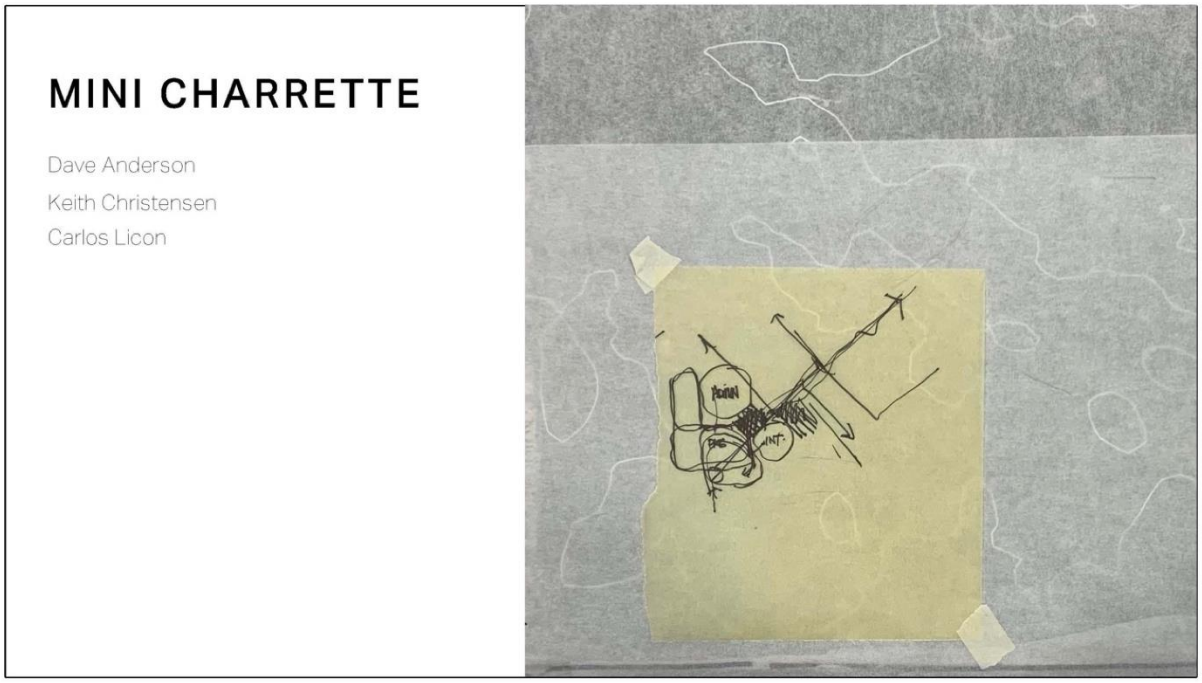


After several forms of correspondence with these three, I was able to glean some information about different scales of the relevant issues.

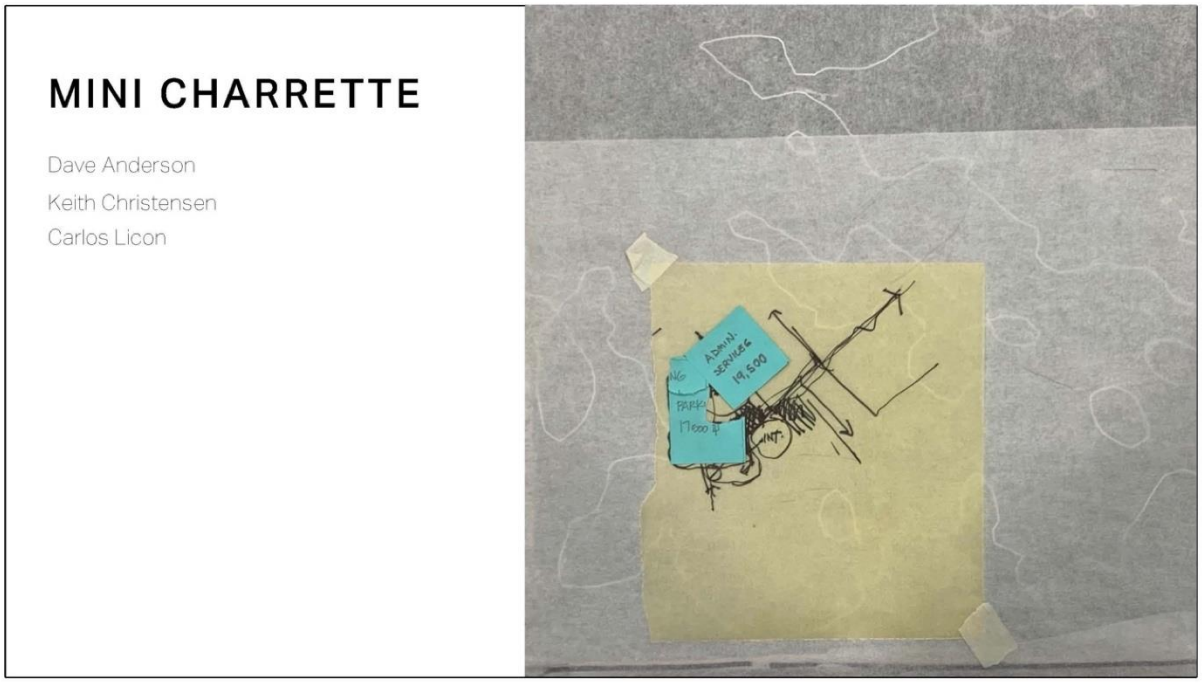
- Chavannes spoke to me about, as his title suggests, systems and policy level considerations.
- Quass-Annsa spoke to me about the non-profit and site-level strategies
- De Buhr spoke to me about site layout and social dynamics



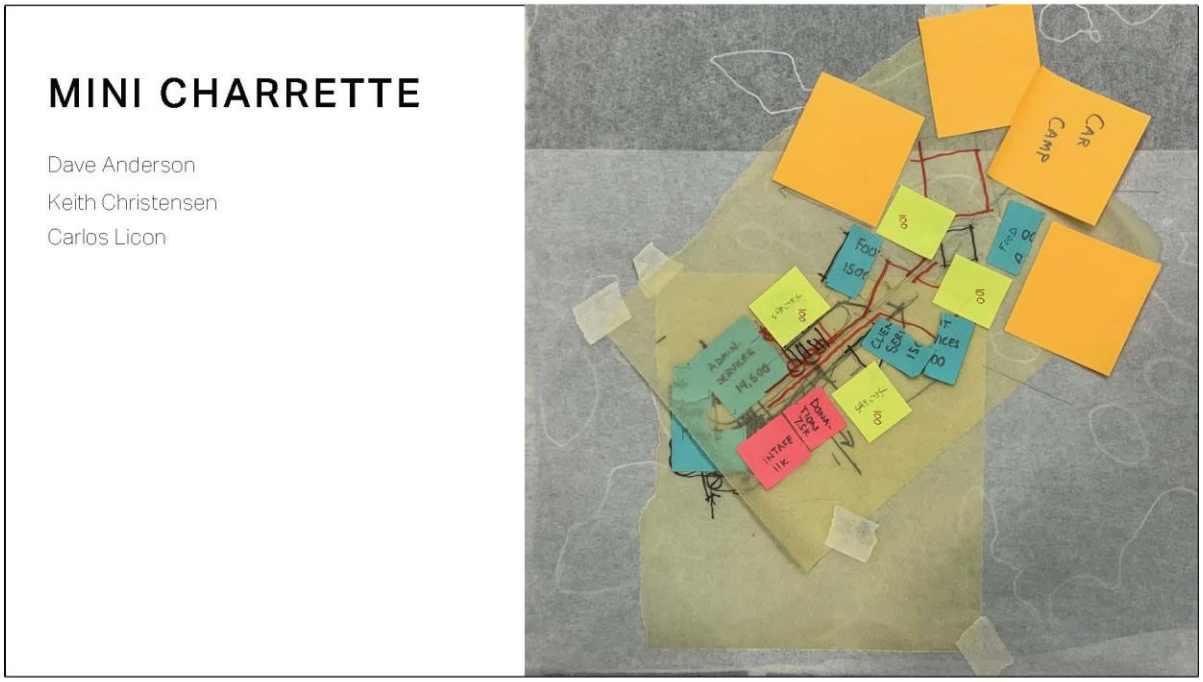
- When first addressing the site, it became clear that the southwest corner is the best point of entry.
- Although it sits adjacent to the junk yard, there are no other easy points of access along the southern frontage, as it is a minor road
- So the thought was to get vehicles through the intersection and immediately steered up and into the site to the northeast.
- Once it became clear that this was the most suitable entrance, concepting for the rest of the site could begin.



- Next, a mini charrette was held with my department committee members to find some organizing principles for the site.
- I printed posters of all of the precedent studies and spatial calculations I had done and brought a map and drafting supplies.
- Here is a sketch from Carlos supporting a 45-degree orientation.



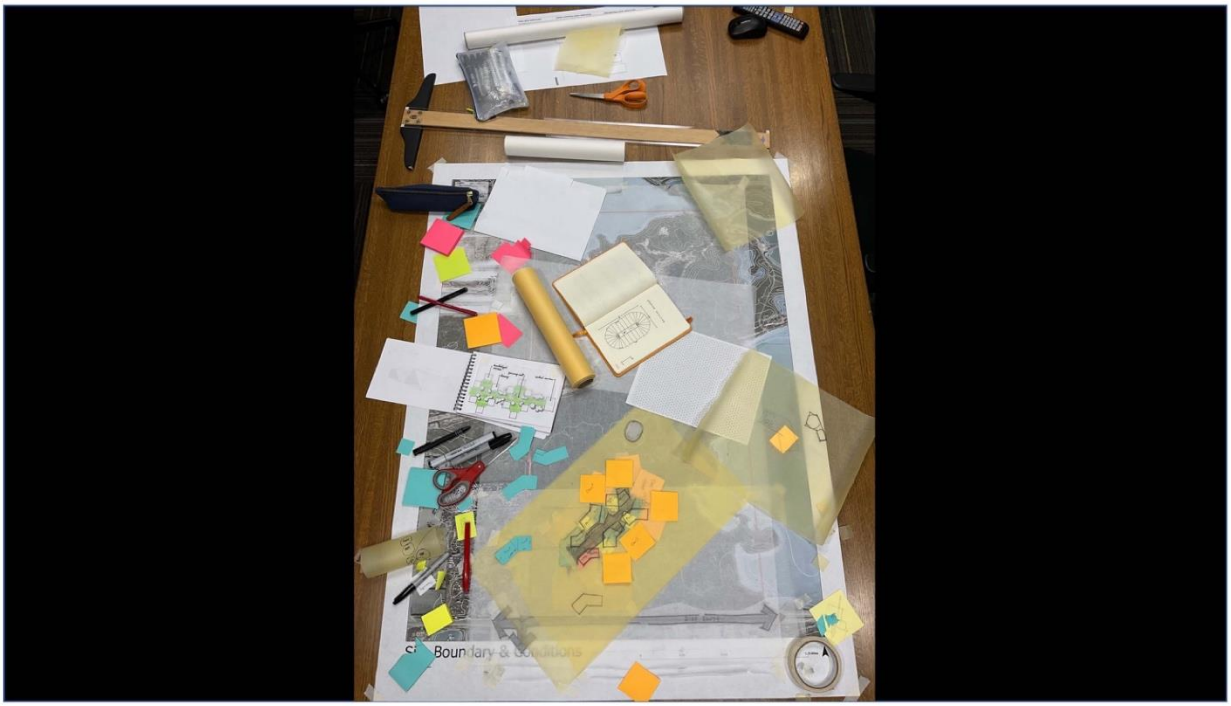
- Here is the beginning of a scaled building placements.



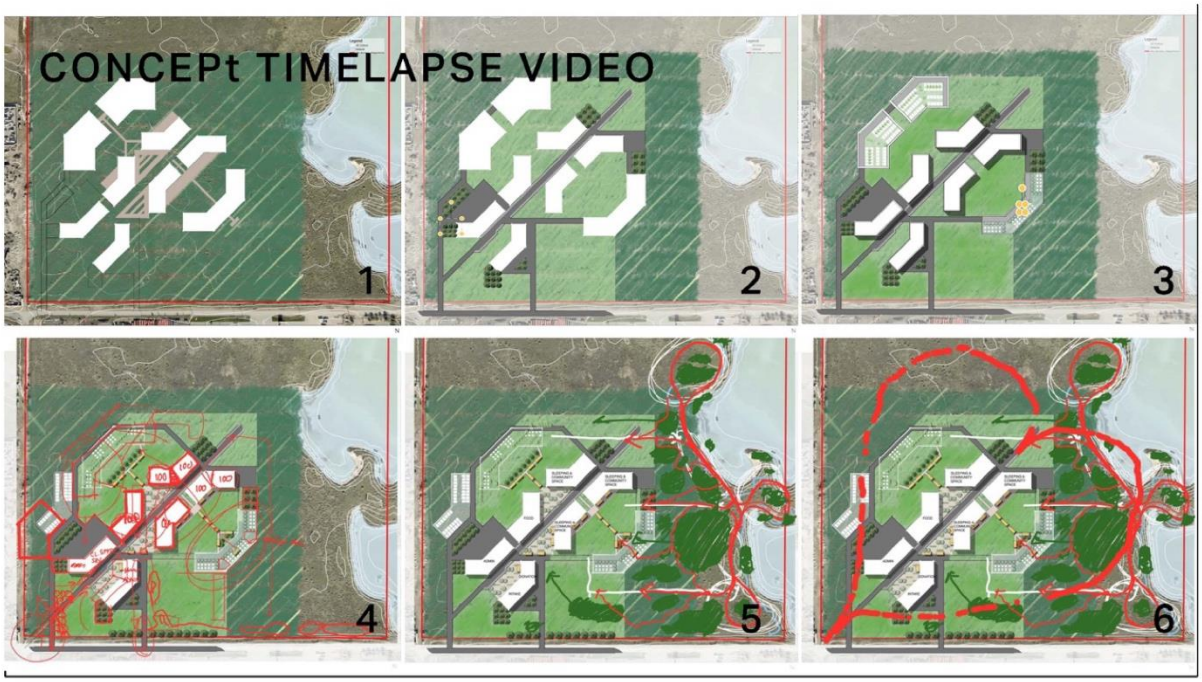
- More building footprints and programming…

- A corridor begins to form…

- The chevron shape gets proposed and implemented as a building footprint typology.



- Here's the aftermath.

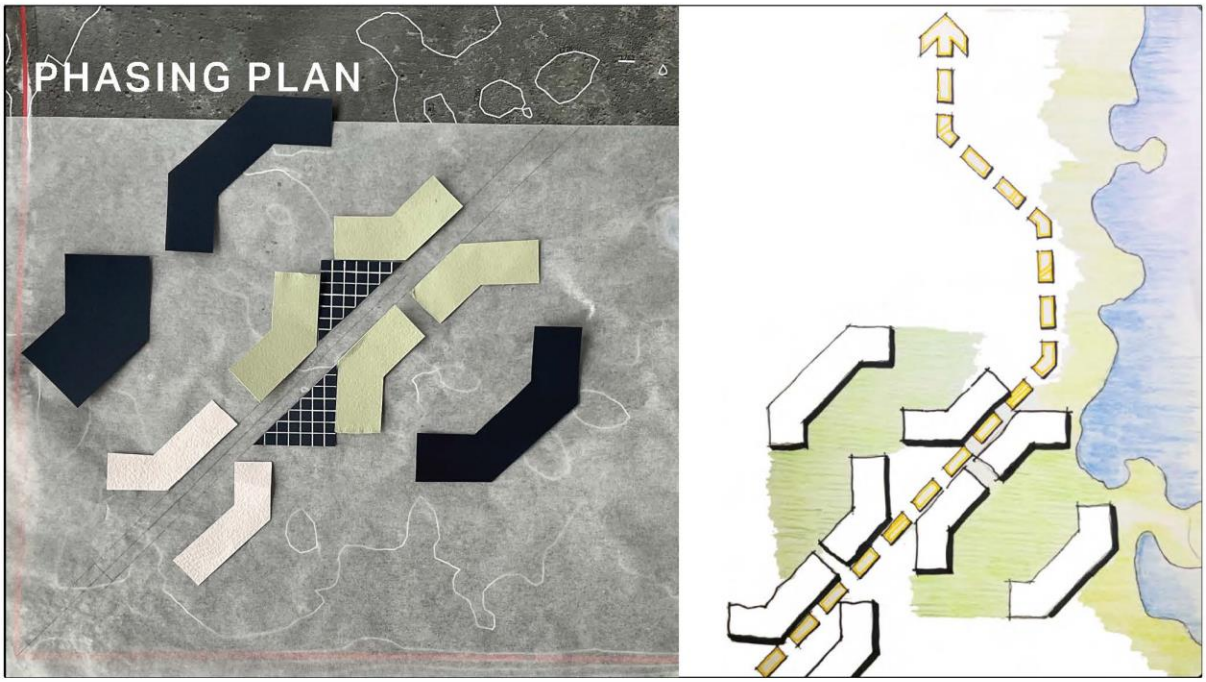


- After much of the research, lit review, and expert interviews were conducted, I began trying to work out some of the ideas we generated in the charrette.
- I was trying to put that mess you saw on the table into one image so we could start to see how all these ideas worked in conversation with one-another.
- I recorded a timelapse of some of that work, in part, to keep track of the critiques and red lines which you will see toward the end.
- We had the opportunity to meet with Wayne Niederhauser during the design process to hear his thoughts to get feedback.
    - Some of the takeaways from the charette and critiques included

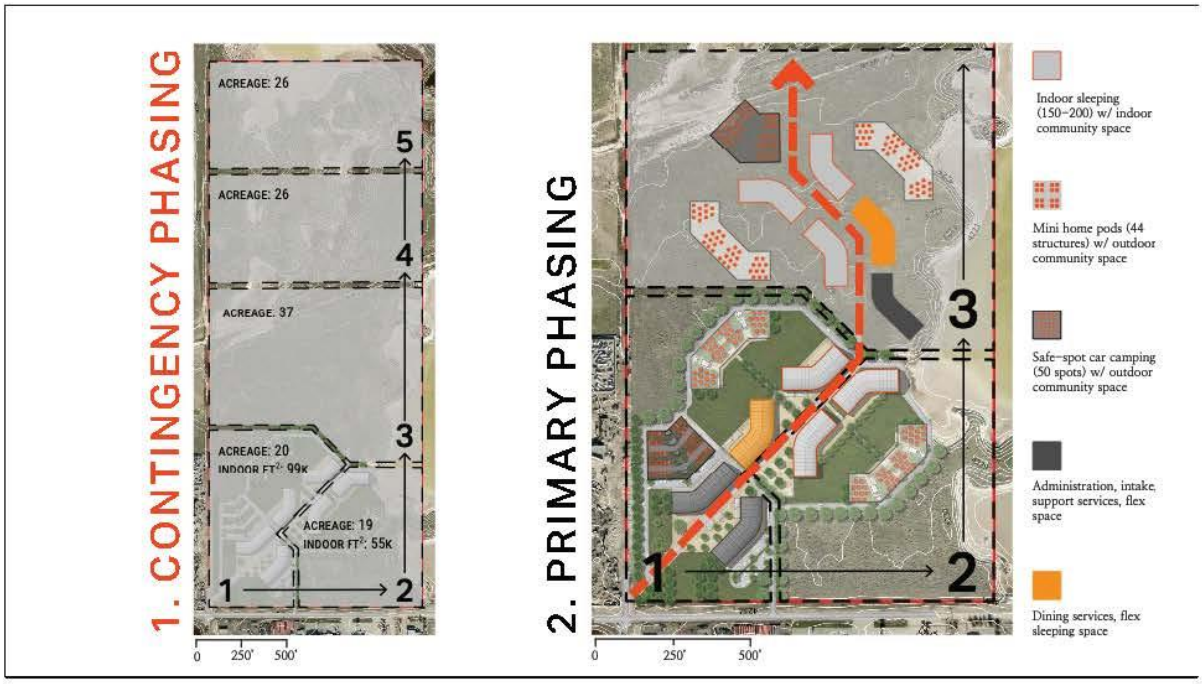
- Creating a second non-congregate shelter area on the northern side of the site
- Moving the car camping to the western edge
- Creating a centralized food service building that could include emergency indoor sleeping
- Moving the entrance to the southeastern corner so the road aligns with the intersection
- Creating a relationship with the wetland

- Here is a photograph of southeastern corner, the future entrance to the site. That's the Wasatch Range in the background.

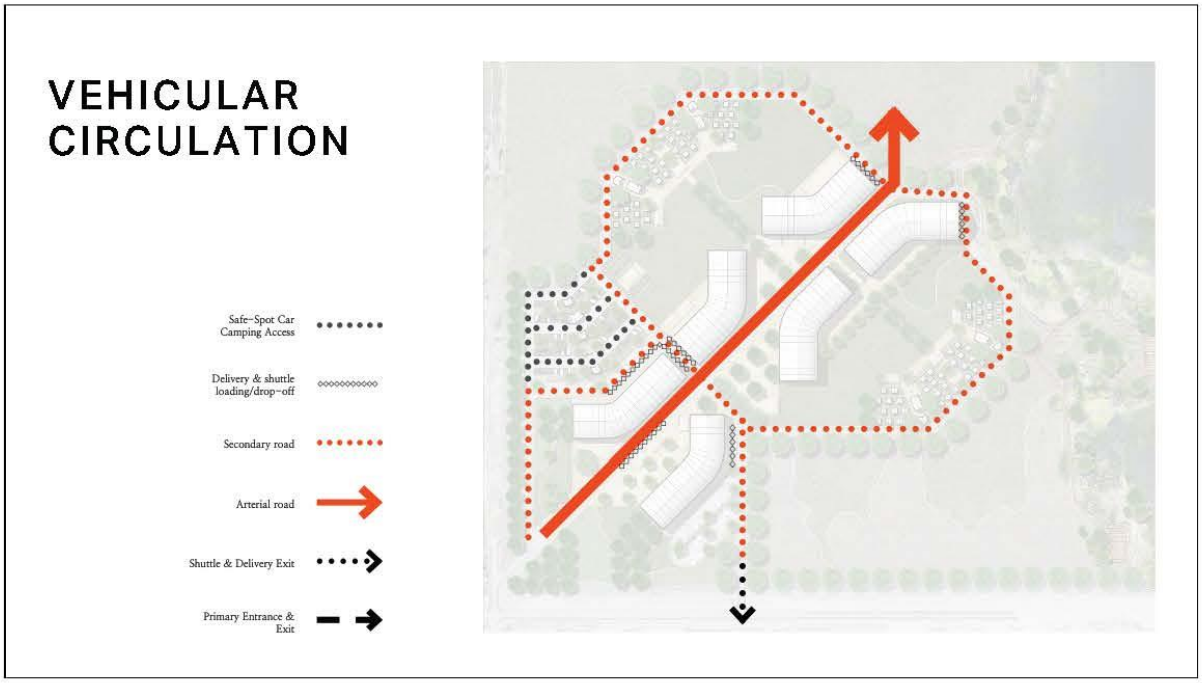
- The final site plan demonstrated a strong relationship with the wetland, an easily replicable design language that sits on a 45-degree angle and allows for flexible circulation and outdoor programming.



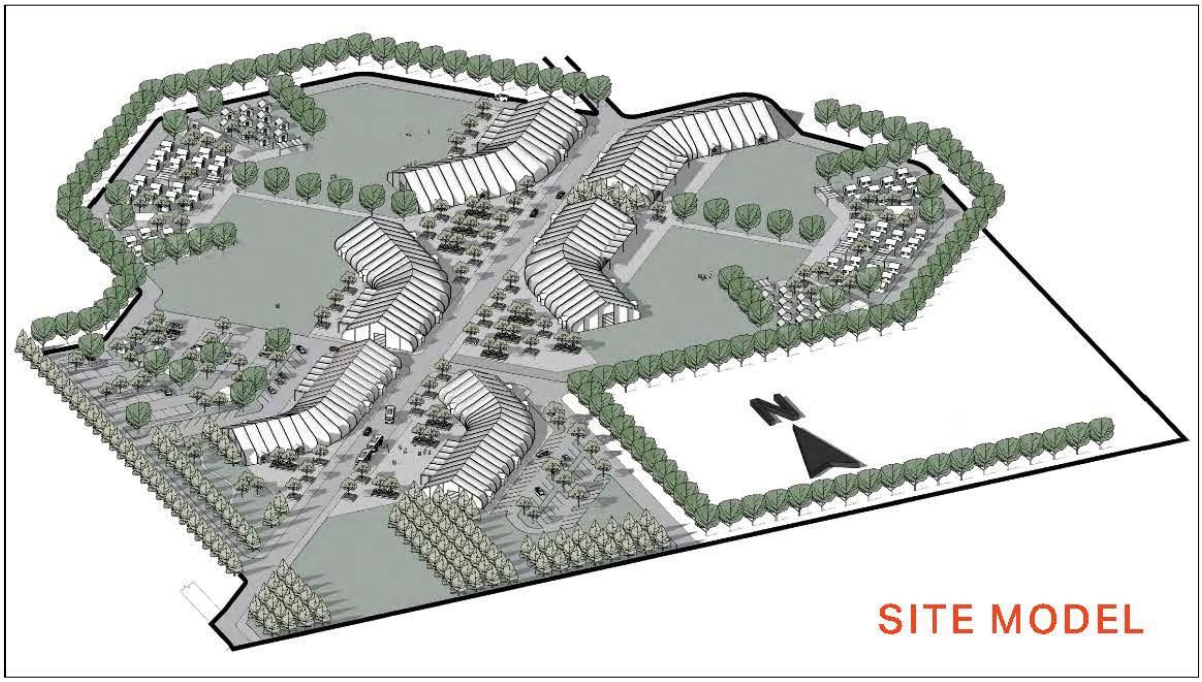
- I knew that creating the symmetrical or semi-symmetrical chevron shapes would make spaces a lot easier to replicate across the site if demands required it in the future.
- I began figuring that out by cutting the scaled shapes out of construction paper and then rearranging them across the base map.
- Sketching also helped my figure out the arterial road placement as well.



- Here's the final phasing deliverable which shows a few things
- The contingency phasing diagram shows the entire site and acreages. It provides suggestions for potential future phase expansions if and when needs arise.
- The primary phasing shows short and middle-term development options, particularly how some services will start in the same structure and then migrate to phase 2 as the resident population grows.
- Then phase 3 is a full replication of phases 1 and 2 minus one admin. building.



- Here is a vehicular circulation analysis / functional diagram.
- Emergency vehicles have to be able to reach all areas of the site as do service vehicles for trash collection, deliveries, shuttles services and the like.
- However, it is also important that this is not a heavily trafficked site as one of the biggest exposures while living on the streets is, in fact, traffic.
- That is one reason why you can see a lot of perimeter roads instead of gridded roads that fragment the spaces. It leaves more open areas unimpeded by vehicles.

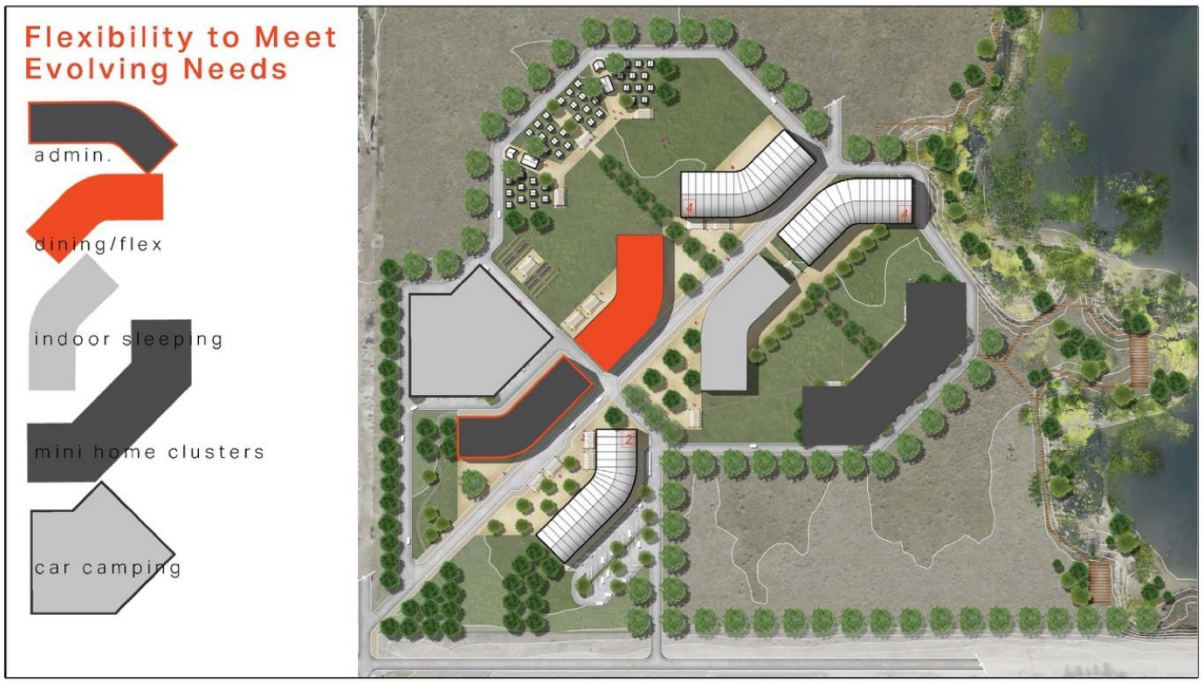


- Here is a site model, which further demonstrates some of the spatial relationships and can be used to create any perspective views or renderings that the client might want in the future.

- Here are a couple perspective images to demonstrate some of the specific requests of the client.
- Here is an example of the non-congregate shelters and their shared amenities.

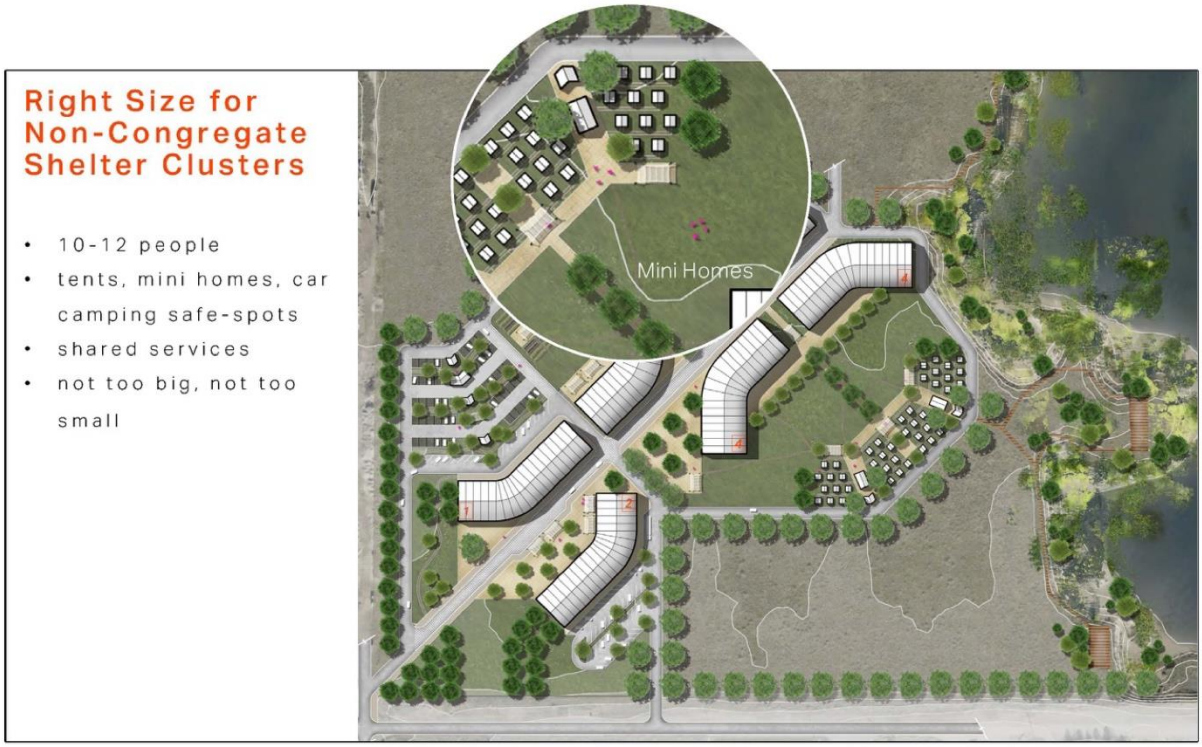
- Here is the Safe-Spot car camping site with shared amenities and connections to the greenspace.

- Now we will go through the conclusions we drew from this design-research.



Flexibility to Meet Evolving Needs

- One of the most repeated concepts in the existing literature is flexibility of use
- Shelters should integrate flexibility into both their use and in their ability to change configuration for future forms of support and housing. The demographics of homelessness and causes of homelessness change throughout time.
- The site should not feel temporary or institutional; however, shelters should have imbedded flexibility to accommodate changing needs
- The typology you see here is one of our responses to this instruction



The Right Size for Non-Congregate Shelter Clusters

- Research suggested that non-congregate shelters like tents, mini homes, and car camping spots should be grouped in clusters of 10-12 people
- Better social outcomes and community building are, in part, a result of these smaller clusters.
- The number is large enough to create a diverse and balanced social ecosystem, but small enough that residents feel comfortable to leave their belongings unattended in their sleeping quarters during the day to carry out normal activities of daily living.

The Right Size and Configuration for Congregate Shelter Sleeping Clusters

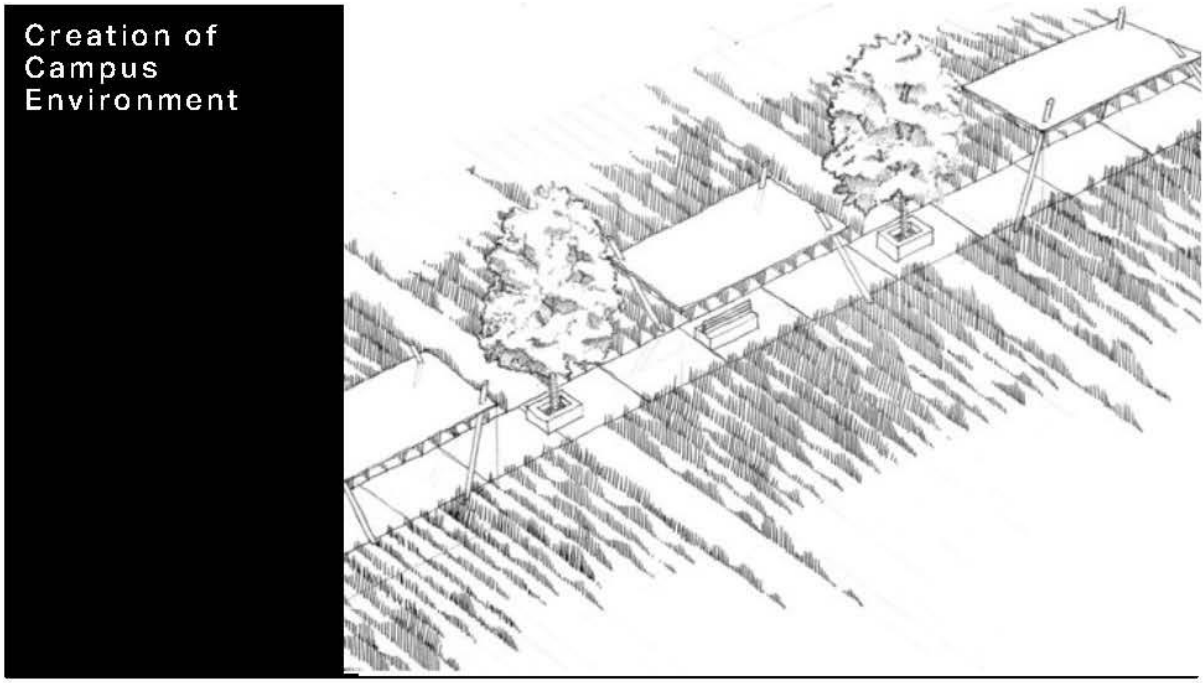
- A congregate shelter's capacity can, of course, exceed 12 people, but physical separation from other sleeping quarters is necessary for better social outcomes as is clustering residents in smaller subgroups of 10-12 individuals. When physical separation of spaces like sleeping quarters is not possible, partitioning is the next best option.
- Enclosed sleeping rooms are perhaps the best example of an opportunity to create the sense of privacy, personal autonomy, and safety with these partitions.

- This site's current Sprung Structure dimensions can house up to 200 people by partitioning the floorplan into sleeping "pixels."
- 1, 2, and 4 bed pixels, efficiently arranged within one larger structure, create the best balance of psychological well-being and space efficiency.
- 3-bed pixels can encourage negative social dynamics where one person becomes ostracized by the other two residents and are not recommended.

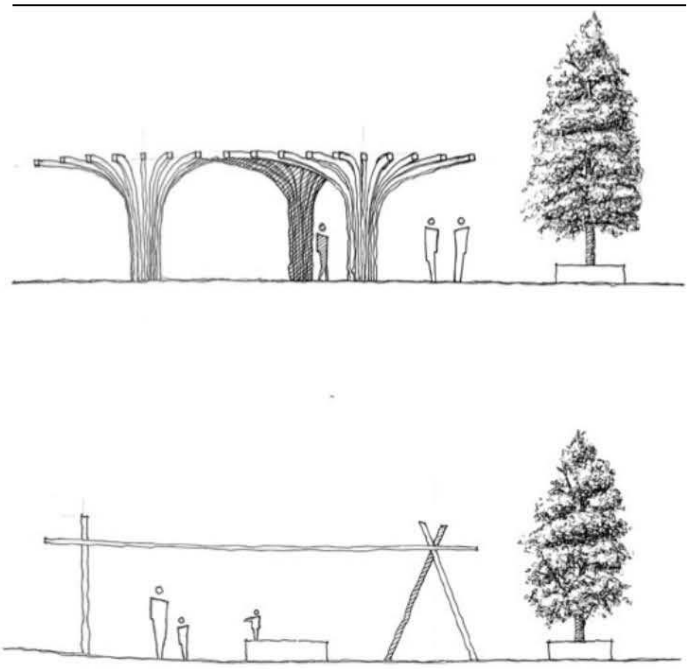
The Creation of a Campus Environment

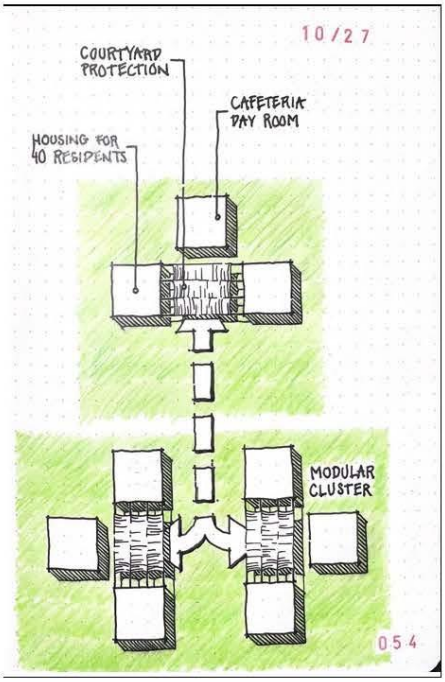
- One of the most valuable resources on this site in the abundance of space.
- Creating a campus-like environment on the site can create a sense of agency over one's experience,
- The benefits are fourfold:
    - Reduced sense of crowding which is a pervasive problem in shelters
    - Increased sense of spatial autonomy
    - Increased sense of community

- And lessening that institutional feeling

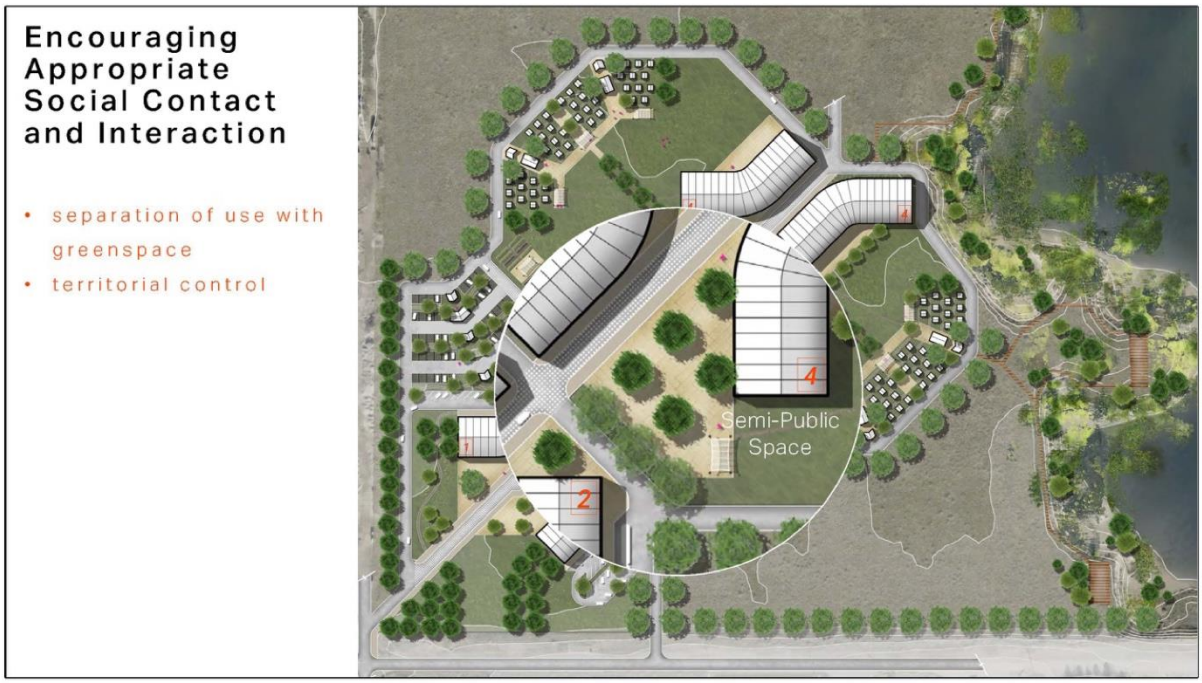


- These are some sketches of some campus principles.





- These are some sketches of some campus principles.

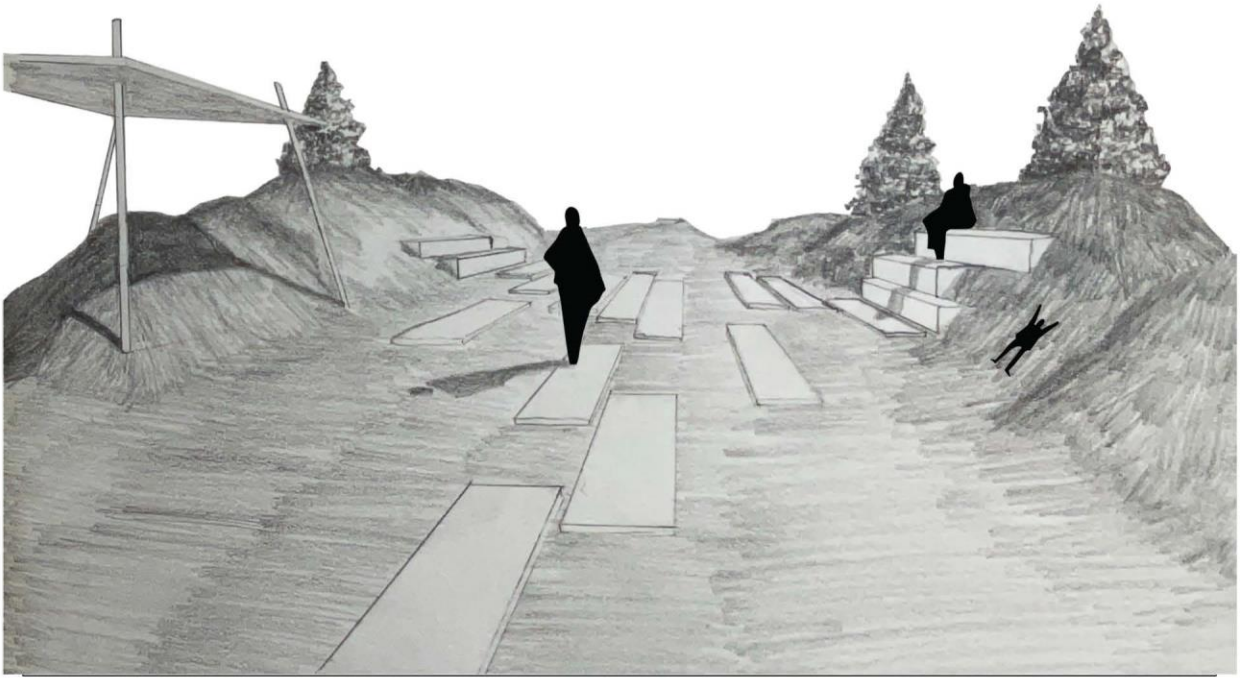


Encouraging Appropriate Social Contact and Interaction

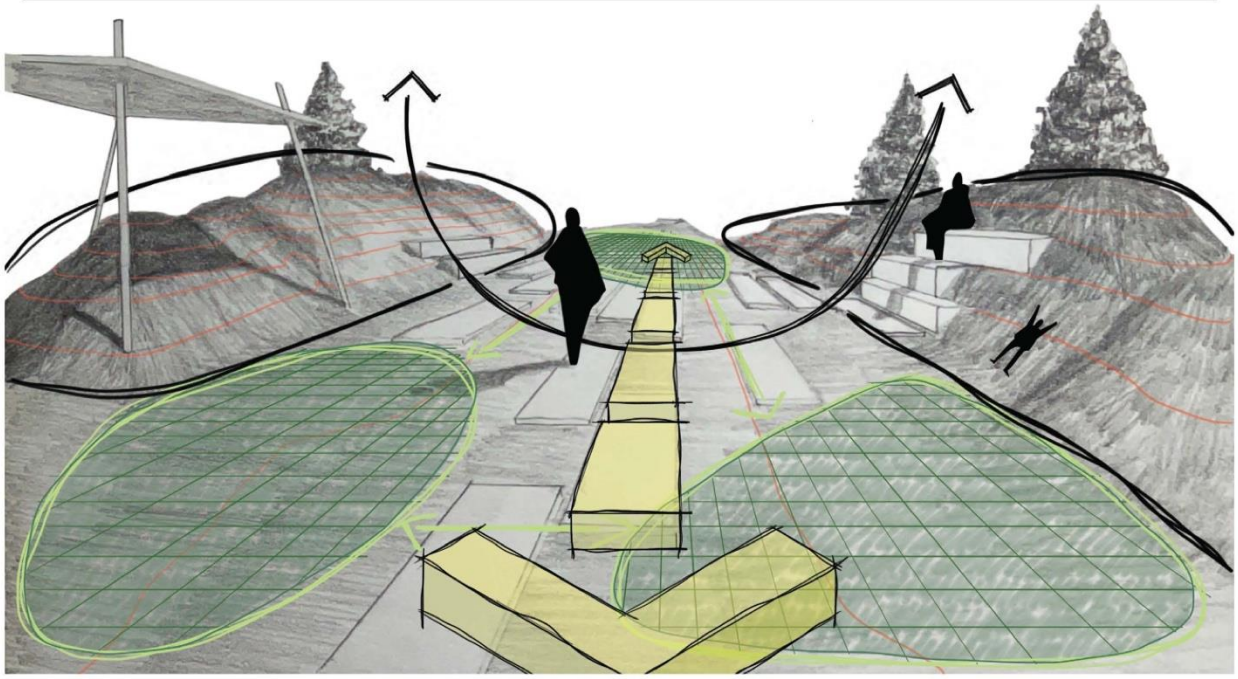
- Thoughtful design of outdoor spaces can also foster healthy social and community-building outcomes. These spaces are important to foster social interaction, because they provide a "gentle transition between public and private space." We are talking about semi-public space.
- Open, semi-public space can act as a barrier that provides some "privacy and territorial control," but "with options for active contact into adjacent public space," that might, presumably, have new and unknown residents from the shelter. Again,

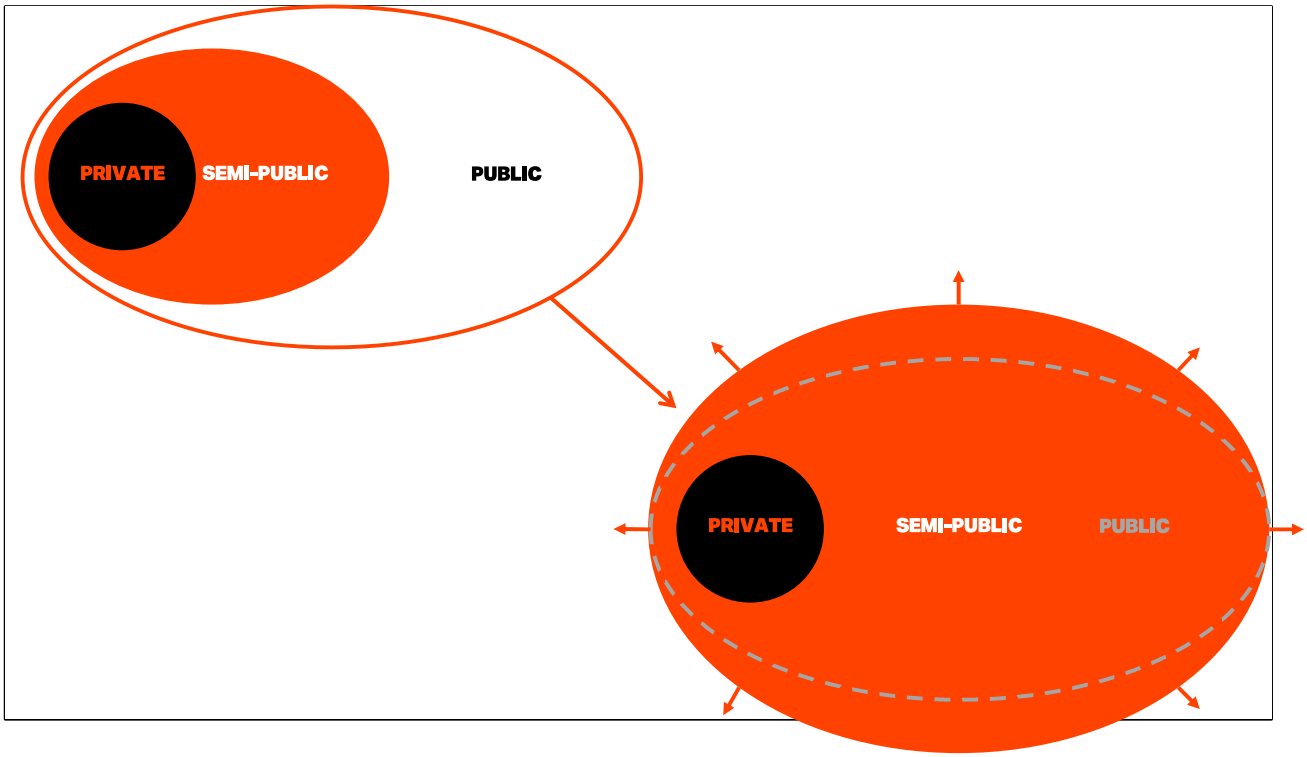
areas like this can foster healthy socialization and community building.

- Physical features that block some sight lines also creates a sense of temporary spatial autonomy without creating dangerous, unmonitored areas
- This concept sketch is an example of programming that can be put in the greenspace. The site is flat, so adding fill in the form of berms and terraced seating could create spaces that feel private for new social interaction but still retain the safety of public space.



- This concept sketch is an example of programming that can be put in the greenspace. The site is flat, so adding fill in the form of berms and terraced seating could create spaces that feel private for new social interaction but still retain the safety of public space.





- Semi-public space plays an outsized role.

Supporting Physical Health and Mental Wellbeing

- Aside from wraparound services and professional care, there should be ample opportunities to engage in healthy activities that promote physical and mental wellbeing like gardening, team sport, and cycling.
- Even dog runs provide residents the opportunity to connect and interact with their pets
- All these activities can interrupt negative rumination, offering stress relief and elements of social inclusion and self-actualization.

Opportunities for Meaningful Employment and Create Positive Value Perceptions

- These guidelines are a bit more complicated and have to be achieved with a more holistic mindset than, say, one design decision. So I will give you an example of what I am talking about in the next slide.
- Low barrier shelters often run into the issue of high turnover and therefore the residents don't develop shared values and a sense of community. Lowering the bar, creates less buy-in.

- Because of this, low barrier shelters can cost significantly more to run and maintain.
- Low barrier shelters often score lower on indicators of success like occupancy rate, length of stay, crime rates within reasonable proximity of the site, etc. This can happen because they offer very little for residents to get involved with.
- So, I'll give you an example of an idea that could serve these two guidelines on this site.

- As it stands the wetland is likely a contaminated feature on the site. By partnering with a non-profit like Verra, the state government could develop a strategy to restore and conserve the onsite and surrounding wetlands. This would do several things:
    - It would provide meaningful employment opportunities for the residents
    - It would provide a shared goal and foster community building among
    - The project would generate revenue through the Verified Carbon Credit Standard Program
        - This money can be put back into the site or toward the larger effort

to alleviate homelessness in the state. It could start to pay for itself.

    - Simultaneously, a wetland restoration can also elevate the perception of the site by the surrounding community

- As we all know, shelters are often the target of NIMBYism
    - If you can create a site that improves the landscape on which it sits, it will make it more appealing and hopefully provide future opportunities for the surrounding community to visit or get involved. If remediated, the wetland could become a destination.

- A common public perception is that the very existence of people experiencing homelessness stands in opposition to the goals of the public realm. Landscape architects play a key role in the visioning and design of the public realm and yet pay little mind to the fact that many users, and perhaps the most consistent users, of their designs are people experiencing homelessness.
- Furthermore, most design efforts to address this relate to hostile architecture or exclusionary design which is intended to discourage certain people from using a space. This gap between the design-goals of public space and the needs of many of its users should be narrowed.

- One of the main challenges is that many landscape architects are trained and motivated to design spaces that are visually appealing, functional, and safe, but they lack a deep understanding of the needs and experiences of people who are unhoused. Although design, alone, will not solve the issues related to homelessness, site designs should be appealing, functional, and safe for all people.
- This includes the notable gap in research related to this subject. This is a gap that needs to be bridged.
- The intent for the guidelines is that they can be adapted and applied to other sites in UT and around the country, and maybe more importantly, that this type of work continue to be pursued by professionals and students in our field.
- Landscape architecture and design in general can be an aesthetic tool, a cultural influencer, a business strategy, and an elegant problem solver. It can also be an accomplice to social inequality, and enabler of consumer culture, and warrant to displace people who don't fit the prevailing cultural norms. All of these outcomes live in constant dialogue with one another, none of which are perfectly wrong or right. My hope is that the arc of our profession continue to bend toward compassion and inclusion for everyone.

- Thank you for listening to my presentation.
- I would also like to give a heartfelt thank you to to my committee. Thank you, Wayne, for giving me the opportunity to work with you. This project has been meaningful to me. I will carry these ideas with me for my entire career. Thanks to Keith, my committee chair for tolerating me early every Tuesday morning for the last 7 months. Thank you to Dave and Carlos for your enthusiasm, insights, and encouragement throughout this process. And thank you to my dad and girlfriend for entertaining all my bad ideas and nudging me toward better ones. Thanks.

Appendix B

Design Recommendation Axons

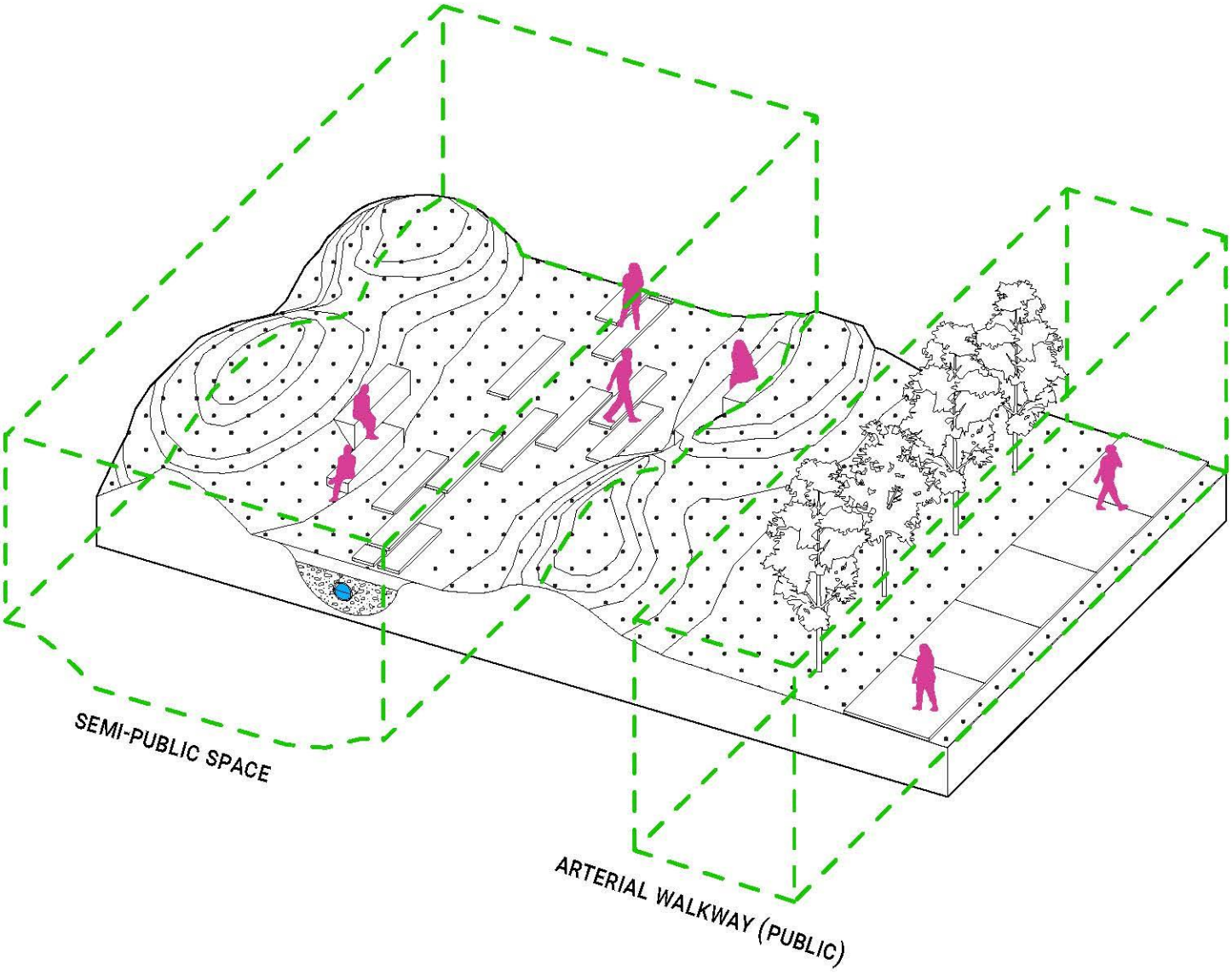
Design Recommendations

These axon diagrams are meant to help demonstrate some of the design and spatial recommendations that came out of the research phase of this project.

ENCOURAGING APPROPRIATE SOCIAL CONTACT & INTERACTION

Outdoor spaces are a great opportunity to foster healthy social and community-building outcomes in a shelter that provide a "gentle transition between public and private space," i.e. semi-public space. It can act as a barrier that provides some "privacy and territorial control," but "with options for active contact into adjacent public space," that might, presumably, have new and unknown residents from the shelter. Areas like this can foster healthy socialization and community building.

Physical features that block some sight lines also creates a sense of spatial autonomy without creating unmonitored areas. The site is flat, so adding fill in the form of berms and terraced seating could create spaces that feel private for new social interaction but still retain the safety of public space.



Design Recommendations

OPPORTUNITIES FOR MEANINGFUL EMPLOYMENT

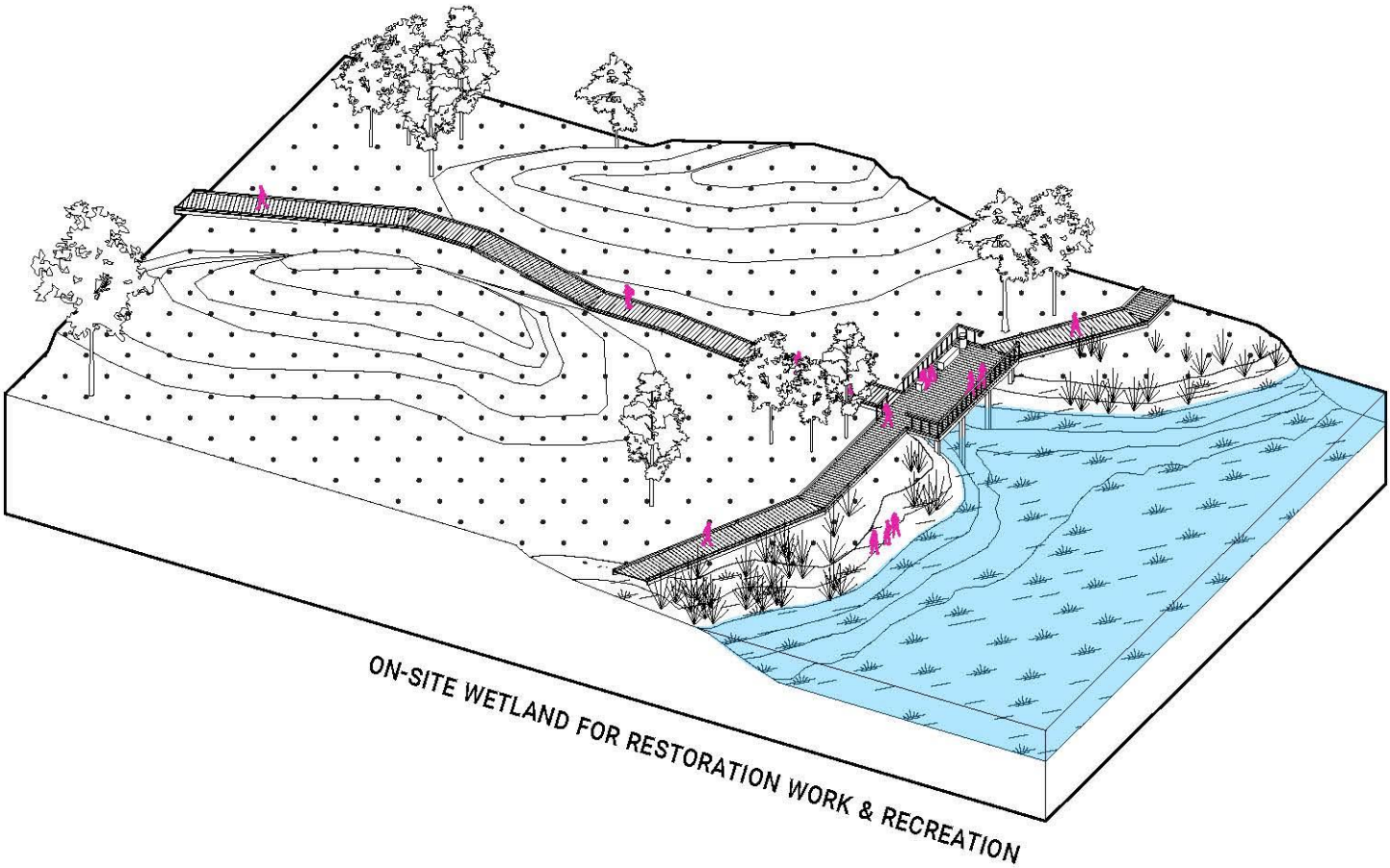
Low barrier shelters often run into the issue of high turnover and therefore the residents don't develop shared values and a sense of community. Low barrier can also mean low buy-in. These shelters can actually cost significantly more to run and maintain.

Low barriers shelters also often score lower on indicators of success like occupancy rate, length of stay, crime rates within proximity of site, etc. This can happen because they have little to get involved in on-site.

CREATE POSITIVE VALUE PERCEPTIONS

The wetland on the site is contaminated. By partnering with a carbon credit non-profit like Verra, the state government could develop a strategy to restore and conserve the onsite and surrounding wetlands.

These measures would provide a shared goal to help foster community building for residents and a meaningful employment opportunity. It would also generate revenue through the Verified Carbon Credit Standard Program. This money can be put back into the site or toward a larger effort to alleviate homelessness in the state. Also, restoring the wetland habitat can elevate the perception of the site by the surrounding community.



Design Recommendations

RIGHT SIZE & CONFIGURATION OF NON-CONGREGATE SHELTERS

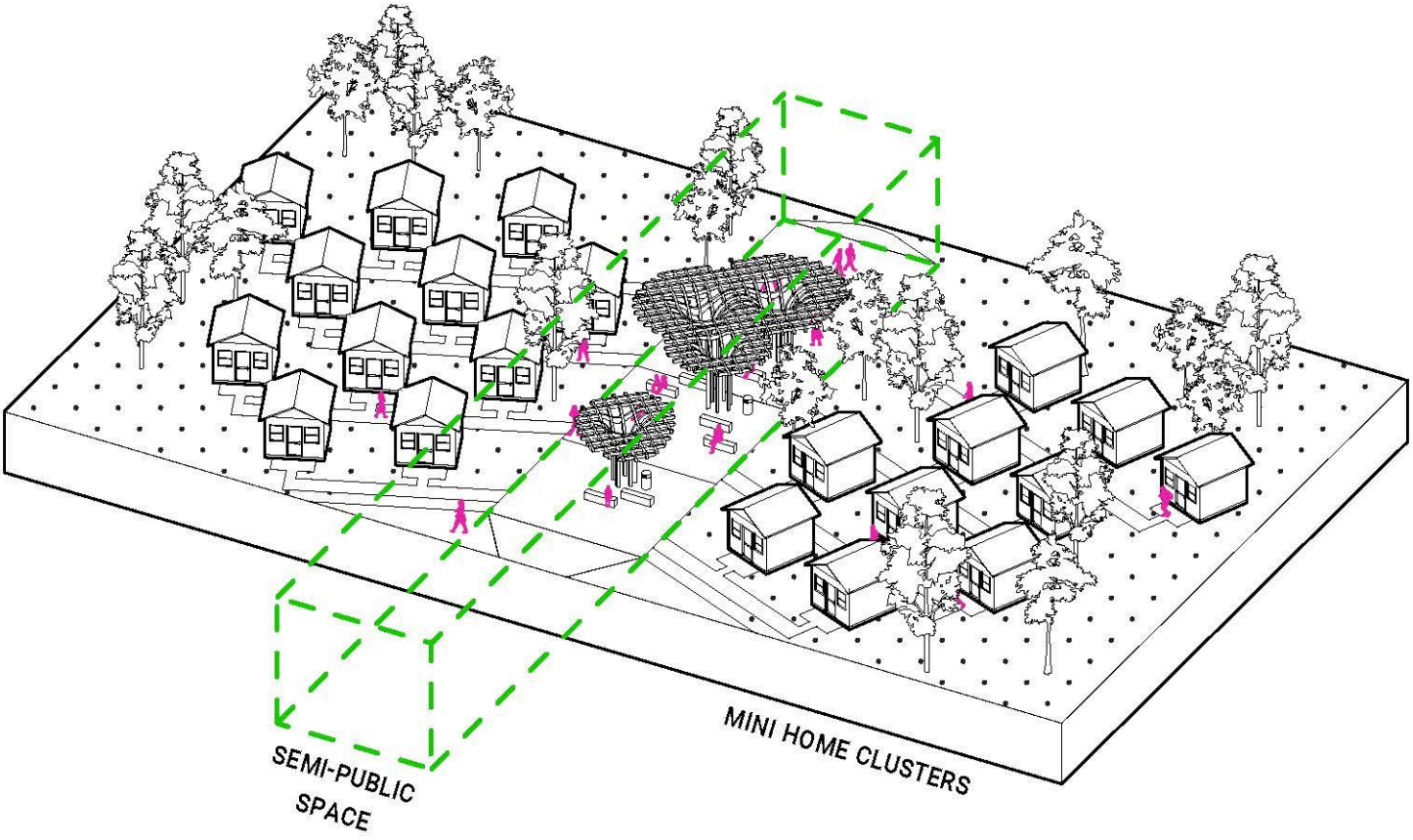
Expert interviews and academic research suggests that non congregate shelters like tents, mini homes, and car camping spots should be grouped in clusters of ten to twelve. Better social outcomes and community building are, in part, a result of these smaller clusters.

The number is larger enough to create a diverse and balanced social ecosystem, but small enough that residents feel comfortable to leave their belongings unattended in their sleeping quarters during the day to pursue normal activities of daily living.

RIGHT SIZE & CONFIGURATION OF CONGREGATE SHELTER SLEEPING CLUSTERS

A congregate shelter's capacity can, of course, exceed 12 people, but physical separation from other sleeping quarters is necessary for better social outcomes as is clustering residents in smaller subgroups of 10–12 individuals. When physical separation of spaces like sleeping quarters is not possible, partitioning is the next best option.

This site's current Sprung Structure dimensions can house up to 200 people by partitioning the floor plan into sleeping "pixels."1, 2, and 4 bed pixels, efficiently arranged within one larger structure, create the best balance of psychological well-being and space efficiency. 3-bed pixels can encourage negative social dynamics where one person becomes ostracized by the other two residents and are not recommended.



Design Recommendations

SUPPORT PHYSICAL HEALTH & MENTAL WELLBEING

Aside from wraparound services and professional care, there should be ample opportunities to engage in healthy activities that promote physical and mental wellbeing like gardening. These features can interrupt negative rumination, offering stress relief and elements of social inclusion and self-actualization. It is a place for residents to engage both in work and recreation.

The yield of the garden can also be used by on-site food services or sold to the surrounding community to create a opportunities for community integration