Planning Homeless Settlement Communities

Western Washington University - ENVS 474 - 2014
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“for a while, in the mid-1980s, when they were “new”, they held out attention, but when it be- came clear that their presence among us was not the result of some aberration in the socio- economic mix but rather a manifestation that something in the country had gone seriously wrong, we disengaged.


THE PROBLEM

Appropriate and equitable shelter support for portions of the Bellingham/Whatcom County home- less population is required in order to increase dignity, reduce suffering, manage vulnerability, overcome social disintegration, and help to achieve recovery from tran- sitional periods that displaced persons face. Displaced persons require protection from both the environmental elements and from further social isolation. In order to improve the living conditions faced by our fellow citizens who live in Homeless camps, public resources are necessary to help the Homeless segment of society regain their footing in society.

PROJECT FOCUS

This course examined sustainable design solu- tions for the immediate improvement to the conditions faced by many Homeless People through the creation of Homeless Settlement Communities as a transitional stepping stone solution. The student’s planning and de- sign concepts were informed, in part, by current public policy and approaches to providing homeless relief, as well as independent research and conversations with informants. The students was challenged to imagine new approaches to providing homeless shelters in a way that would meet the following design objectives:

• Building and maintaining a community with a strong sense of dignity
• Encourage self-help in creating a sustainable Homeless community
• Enable self-maintained and self-governed Home- less communities
• Adapting principles of sustainability in homeless settlement design

The faculty and students at Huxley College of the Environment wish to especially thank our community partners and mentors for their invaluable assis- tance in helping our students conduct this investigation of alternative approaches that can be taken to address the conditions of homelessness within our Bellingham community. Greg Winter, Director, Whatcom Homeless Service Center, Theresa Meurs, Hope House Street Outreach; Gail de Hoog, Whatcom County Health De- partment; Claudia Viscara, Bellingham Police Depart- ment. We further wish to thank the numerous individu- als who live on the Streets of Bellingham for taking the time to talk with out students and help them to gain a better understanding about the conditions that Home- less People face on a daily basis.

We hope some of these design concepts may serve as a short term solution for addressing the still largely unmet needs of so many people that continue to live in Homeless camps throughout our community. Students: Brian Anderson, Lauren Anderson, Jesse Ashbaugh, Claire Bertuluf, Thomas Briesanden, Joshua Dolachek, Nathan Emery, Elliot Fitzgerald, Sa- brina Gassaway, Mathieu Gautier, Jeannine Godber, Katherine Healy, Bailey Jones, Carson Massie, Ashkon Nima, Nick Peterson, Kyle Roxcamp, Colin Strickland, Kirk Turner, John Wachler, Kevin Ward, Cort Wilson, Olin Wimberg.

Instructors: Nicholas Zafaratos and Arunas Oslapas, Western Washington University
INTRODUCTION

Our interest in the tremendous task of improving the quality of care and infrastructure for marginalized groups in today’s society is in response to a history of economic, social, and political issues. These conditions have resulted in a significant portion of people today finding themselves unable to provide adequate housing, medical provisions, and other basic necessities for themselves and their families. This has led to a situation where people are left to fend for themselves and often end up in situations that are not sustainable. We began by taking a close look at several questions relating to our interest in the issue, the answers to which would point towards a new direction to take in providing transitional and permanent housing for marginalized groups in society. The following were identified:

- How can one design homeless communities that provide a sense of dignity and social inclusion for its occupants?
- Are the homeless part of a new insurgent citizenry? Do they have a voice in our society?
- What does self-sufficiency look like to a homeless community? What provisions are necessary to make this feasible?
- Is green building limited to those that can afford it? Can green building be integral in our design?

Despite the best efforts of many, today’s economic conditions and often severe circumstances have resulted in a strikingly wide variety in the appearance of homeless populations. This includes a broad range of needs, the financial burden of which is presumed necessary to help segments of the homeless community currently underserved by existing programs.

The clientele for this project are the largely unrepresented, informal homeless community currently living in temporary residency largely in unorganized, and often, illegal settlement camps. Assisting in our study includes local professionals in the local Bellingham/Whatcom County area who are engaged in homeless assistance programs. We began by careful assessment of the conditions evident today in Whatcom County, with the intent of developing a set of goals, along with possible visions for the future of these groups who currently are often considered to be reclusive into our local society, and have done so with the hopes that the information this document contains will be useful to those in any and all corners of the world also attempting to solve these and similar issues.

People of all walks of life are entitled to livable housing, adequate food and medical needs, and a place where social interactions that bind all of us into a civilized, dedicated and productive society, cultural and historic ties are preserved. This is the core assumption of our research and the resulting work to be found in later chapters. The pages that follow will define the existing conditions and detail a variety of possibilities for mitigating, and concepts for potentially solving one of today’s most immediate and painful social problems. We hope to provide a framework for future studies, as well as some new ideas that may potentially inspire others to develop their own innovative solutions in whatever local context. Our direct concepts may not be fitting for every situation, but the motivation and the process are.

Throughout this process we must constantly remind ourselves that the people whom we seek to provide for are living, breathing humans who are entitled to the same quality of life as us all, and that no single magic bullet solution can be introduced that will end homelessness and its related problems in a short span of time. We must endeavor that it will require a variety of interdisciplinary action from technical, social, legislative, economic, and cultural designs that can be woven to form a coherent fabric for reassembling these groups, and preventing these detrimental circumstances from further developing to affect others in the future.

PROJECT CHALLENGE

The purpose of this work is to mitigate the social consequences of homelessness, by providing public infrastructure for the benefit of those in need, and lessen the affiliated negative societal impacts. This includes the financial tax burden on the community, the loss of social capital from marginalized groups occupying undesirable public spaces, and shifting away from the misconception of today’s organized efforts combating homelessness.

We began by taking a close look at several questions relating to our interest in the issue, the answers to which would point towards a new direction to take in providing for marginalized groups in society. The following were identified:

- How can we design transitional settlements to be embedded in the diverse urban fabric? Our design concepts will be informed on the review of current policy and closely working with local professionals in the local Bellingham/Whatcom County area who are engaged in homeless assistance programs.

PROJECT GOALS

- Accessible and equitable shelter support for portions of the homeless population that have not been reached by existing programs.
- Providing temporary residency largely in unorganized, and often, illegal settlement camps. Assisting in our study includes local professionals in the local Bellingham/Whatcom County area who are engaged in homeless assistance programs.

We will examine Sustainable Design Solutions for creating Homeless Peoples Settlements to be embedded in the diverse urban fabric. Our design concepts will be informed, in part, on the review of current policy and closely working with local professionals in the local Bellingham/Whatcom County area who are engaged in homeless assistance programs.

Can greening be integral in our design?

Enabling a self-maintained and self-governed community. What provisions are necessary to make this feasible?

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OPENNESS, CONSOLIDATION, EDUCATION, ASSIMILATION, AND THE NETWORK

Our plan to successful community care is characterized by five key themes which fall under the acronym OCEAN:

1. OPENNESS and willing attitude from the community and lawmakers to shift their perception towards homeless people and those underpinning unfortunate conditions
   - Humanity
   - Collectiveness
   - Functionality
   - Community Creation
   - Services and Amenities

2. The consolidation of human needs and services to provide for those needs
   - Self-empowerment Opportunities
   - Socialization Mechanisms and Reinforcement

3. The education that can power a net positive social capital and benefit everyone for the long term
   - Service Workers and Caretakers
   - Employers
   - Community Members

4. The seamlessness assimilation back into the fabric of society with safe, secure, long term employment and housing options for all
   - Final Community Integration
   - Reinvestment in the Local Community
   - “Bloom” and Incentive Programs Throughout

5. Finally the network of people in the process and those who positively contribute to the system as a whole
   - Role Models
   - Community Members
   - Employers
   - Service Workers and Caretakers

THE OCEAN PROCESS: FIVE STEPS TO COMMUNITY BUILDING

OPENNESS

OPENNESS is the primary stipulation of the entire OCEAN process, and perhaps the most necessary for tangible steps. It holds that we all must actively engage crossregional and each other to prevent ignoring and negative attitudes from spreading towards people based on appearance, choices, company and overall circumstance. While this is a lofty supposition, it is a requirement for positive impact to take place in later steps. Without a strong local involvement and goodwill towards all in the community, the trends toward ostracism and judgment will only perpetuate further. This cultural shift is quite necessary to even begin to consider the following steps, though it will take adjustments from the whole community.

HUMANITY

Selflessness is essential in the long run. The natural human tendency to help fellow beings will be extremely beneficial in this case to shift cultural perceptions towards homelessness and its associations. When the entire community embraces a simple consciousness of these issues and chooses not to simply ignore or look down on those in less fortunate situations, a more equitable and ethical community can be realized.

COLLECTIVENESS

Every human needs to feel pride. This can come from taking part in joint community efforts and bearing responsibility for one’s self and others. Our actions undoubtedly have an effect on the system as a whole, and we must consider these at every turn. Close contact with people of all groups keeps us reminded of the range of topics issues and problems deal with in a society. Social capital is the product of our combined actions, not the result of a few individuals. If we as individuals feel mutual responsibility for the well being of our local community, we will each feel a greater stake in keeping it enjoyable by all.

PATIENCE AND UNDERSTANDING

Though this contradicts many of the urges of modern human impulse to help fellow beings will be extremely beneficial in this case to shift cultural perceptions towards homelessness and its associations. When the entire community embraces a simple consciousness of these issues and chooses not to simply ignore or look down on those in less fortunate situations, a more equitable and ethical community can be realized.

SERVICE WORKERS AND CARETAKERS

Employers

Community Members

Service Workers and Caretakers

THE OCEAN PROCESS AND PROJECT PATH

CONSORTIUM

The second phase of our process is intended to bring together all the services and provisions needed for the later phases to be successful. This entails a series of steps, though it will take adjustments from the whole community.

TERRITORY

The acquisition of land (the process of which will be discussed in subsequent sections) is the foremost tenant for substantial positive impact to occur. We posit that a mere community space is enough for most needs, but most public spaces are detrimentally affected by overuse from certain demographics, like alcohol users, as well as the general perceived public nuisance from the appearance of “homelessness” on or around public spaces. Therefore we propose that the establishment of formal public land for the sole intention of the gathering and provision of services for ostracized groups be included in any serious effort to provide aid. This does not mean the formation of ghettos with large segregated districts dedicated for those of a few individuals. In essence, one wouldn’t have to be homeless or suffer from addiction to benefit from the services at these proposed sites.

FUNCTIONALITY

The overall usability and ability of the site must also

TRANSITIONAL SETTLEMENTS

The overall usability and ability of the site must also

INTRODUCTION

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CHAPTER 2

INTRODUCTION

The overall usability and ability of the site must also
COMMUNITY CREATION

We view Community Creation as the culmination of all the OCEAN themes fully realized, but it is included under consolidation as it represents the notion of functional collective. We imagine the final appearance of all the OCEAN themes fully realized in a harmonious, self-sustaining community of individuals with unique skills and needs, working together while learning from one another on their completely unique life stories and needs, working and encouraging progress without pretexts. This is a huge obstacle to the success of the OCEAN. We discourage learning that requires a defined tangible result, but instead seek to employ an open form of education that allows for the efficient learning of skills they know well. We believe the best learning occurs when the individual is engaged and interested in the topic or skill at hand; nothing in this theme can be forced. We want individuals to encourage each other to pick up new skills, and without any administration to monitor progress, which could discourage some from taking part in the process.

SELF-EMPLOYMENT

The best strides to be made under education should come from within the local community, and if possible, from experienced individuals within the marginalized groups alone. We discourage learning services to come and "preach" formal knowledge at those in need, as the information presented will seem distant and pretentious to them. Instead the mechanisms for gaining skills and knowledge can be taught from those already in the system, and informally at that. We see the "social worker" model, with members offering up their own knowledge for the benefit of the community, and any one who wishes may sit in and benefit. Employing each person's individual wisdom to a variety of skills and disciplines would yield positive results for not only potential employers, but also the entire marginalized community, helping to increase the benefits of consolidation within the local society.

SOCIALIZATION

Socialization is the transition from gained self-empowerment into tangible societal benefits. Employing the skills and knowledge gained from within the OCEAN process and long-term employment in education’s ultimate goal.

ASSIMILATION

The fourth theme is the implementation of the previous themes into something tangible. Our goals for the individual are:

1. The OCEAN process essentially flows into assimilation, a functional community of caring and hardworking individuals, where all are engaged and interested in working towards others around them, the final realization of a successful OCEAN process, as the individuals as started from nothing, joining the community, finding and holding long-term employment without issue, and moving into long-term, livable housing with their needs fully provided. There is no time-frame for ensuring that this happens, instead we expect to see a full range of people completing the system successfully. This community is a mini society, with a long history of developing, working and encouraging progress without pretexts. This is a huge obstacle to the success of the OCEAN. We discourage learning that requires a defined tangible result, but instead seek to employ an open form of education that allows for the efficient learning of skills they know well. We believe the best learning occurs when the individual is engaged and interested in the topic or skill at hand; nothing in this theme can be forced. We want individuals to encourage each other to pick up new skills, and without any administration to monitor progress, which could discourage some from taking part in the process.

2. Education may be the single factor that prevents individuals from reasimilating into society on their own. Capable, intelligent people are kept from contributing tangibly to the community through a lack of basic skills, technical knowledge, and understanding of the social structure. We must provide additional systems of learning in simple formats for a variety of people in places and ways that fit their personal situations, and encourage the provision of services and the information needed to date in the OCEAN process and reassimilated into society. ROLE MODELS

Role models are the individuals who have completed the OCEAN process and fully reassimilated into society. They tell us about community outreach programs, and other services to marginalized groups will undoubtedly be involved in OCEAN. These service providers and those in OCEAN will have a drastic effect on its outcome. The question of employment should be close to OCEAN participants.

SERVICE WORKERS AND CARETAKERS

Who provide medical assistance, needle exchanges, and other services to marginalized groups will undoubtedly be involved in OCEAN. These service providers and those in OCEAN will have a drastic effect on its outcome. The question of employment should be close to OCEAN participants.
lish any temporary and permanent homeless settlement community must be covered with a liability and safety insurance protection policy. If an individual party is injured, not due to their own fault, another entity may be responsible for a claim. Transitional communities would be covered under the city’s liability coverage.

The City of Bellingham is self insured with a coverage limit of $50 million in liability. As the city’s contribution to the Bellingham Transitional Housing Program, the City of Bellingham would provide the hours to review all the case information and make a decision whether to pay or deny the claim. If approved, the city should agree to extend its liability insurance program. This would ensure that there would be someone responsible for claims made in the case of an accident or injury within the establishment. Potential risk exposures may include, but are not limited to: fires, general injuries, flooding, and personal property theft and damages. To extend liability insurance to transitional housing solutions, the city should agree to extend its liability insurance to cover these transitional communities.

Within this system, if an individual is hurt in a building which is a city owned, the city is then liable as a client with the finance department. The finance department forwards the claim to the city’s legal department for review. The legal department shares the case with the city’s public affairs department. The city then reviews all the information and makes a decision whether to pay or deny the claim. If denied, the claimant has the opportunity to file a case and receive with a check money taken out of the city’s liability coverage funds.

The concepts proposed in this plan intend as a part of the Bellingham Comprehensive Plan. These make-shift communities offer less than ideal health and safety of the occupants living in these transitional communities. As a transitional step to help alleviate the conditions of Homelessness, and, in particular, to address the conditions found in most homeless camps, this project proposes short-term measures that can be taken to create Self-Sufficiency Settlement Communities as alternatives to unplanned Homeless camps. It is intended as a short-term gap measure that can be used to allow the health and safety of the occupants in these transitional communities. The city should agree to extend its liability insurance to cover these transitional communities.

Classes can be taken to address unofficial and unplanned Homeless Settlement Communities. These make-shift communities offer less than ideal health and safety to the occupants living in these transitional communities. As a transitional step to help alleviate the conditions of Homelessness, and, in particular, to address the conditions found in most homeless camps, this project proposes short-term measures that can be taken to create Self-Sufficiency Settlement Communities as alternatives to unplanned Homeless camps. It is intended as a short-term gap measure that can be used to allow the health and safety of the occupants in these transitional communities. The city should agree to extend its liability insurance to cover these transitional communities.

The acquisition of private properties for temporary use would ensure that there would be someone responsible for claims made in the case of an accident or injury within the establishment. Potential risk exposures may include, but are not limited to: fires, general injuries, flooding, and personal property theft and damages. To extend liability insurance to transitional housing solutions, the city should agree to extend its liability insurance to cover these transitional communities.

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Planning for a homeless settlement confronts a wide range of social challenges. The initial hurdle for the city is to find an appropriate site with a determinable vacancy period. Vacancies may be numerous but this research will outline and show examples of the specific site factors to consider to help create a more functional and accommodating settlement.

The design of the settlement will be greatly influenced by the location and site features. This is why it is important to designate a site location before figuring out logistics and suitable architecture of the settlement. Different sites will vary in scale, proximity, infrastructure, and accommodating settlement.

### FACTORS AND SUITABILITY

#### Existing Structures:
Sites with various existing structures (brick, concrete, gravel, etc.) have advantages and disadvantages to site design on top of gravel, concrete, grass, and soil.

#### Ground Cover Type:
There are advantages and disadvantages to site design on top of gravel, concrete, grass, and soil.

#### Privacy:
The value of privacy is something that can be taken for granted when you have a home. Those without a home are forced to exist under the eye of the public at all times. It stands to reason that a homeless settlement would value additional privacy during such a turbulent time in their life.

#### Infrastructure:
While the availability of all infrastructure (water, electricity, sewer etc.) is greatly preferred, it is not always available. Whether or not a homeless settlement utilizes these things will also influence the cost of a site. If a site design utilizes self-sustaining utilities then utilizing the city’s infrastructure may be less necessary.

#### Proximity:
The proximity to bike lanes, trails, and bus routes should be considered. Homeless families further make a site’s proximity to schools another important factor.

#### Amenities:
Having close access to grocery, laundry, counseling, and health services will make the settlement functional and livable.

#### Safety:
It is important to create an environment that will be safe for a variety of clients as well as the surrounding community. Staying away from highways, waste zones, and industrial traffic will reduce accidents. Protection from the inclement weather can be offered by some sites and not others. This will dictate the extent of roof cover in the design.

#### Site Access:
If the site is not near the city center it should be within walking distance of one or more transit lines. The site choice should not put availability or ease in front of connectivity for the homeless.

#### Client Appropriateness:
The homeless community is comprised of a broad spectrum of people with different abilities and issues. Some people have debilitating mental health issues or substance abuse issues. Others are families who are out on the street because they haven’t been able to find work for too long. The homeless who are the target clientele in this planning endeavor have been interviewed extensively to determine their various wants and needs. The sites chosen were intentionally picked to suit certain groups of the homeless community better than others.

#### Designing a Site:

### TRANSITIONAL SETTLEMENTS

#### SITE TYPES

**Outdoor With Infrastructure** - These locations will not contain structures that could be used for housing. They might be chosen where the site is already occupied by various structures where some or all structures could be taken over by the homeless community. These sites might be owned by various agencies or private owners.

**Port/Industrial Areas** - These sites would take advantage of large open spaces on our waterfront and our industrial parks that are currently under utilized. Many of these parcels are owned by the Port of Bellingham and can be considered Public Land. This gives the advantage of not needing to acquire the land but instead being able to work out a deal with the city for its use as a temporary homeless community.

**Marine Areas** - Similar to the houseboats of Seattle, this community could be living on the water aboard boats or other seaworthy craft. These locations could harbor a diversity of live aboard boats, houseboats and floating houses.

**Vacant Buildings** - The advantage of this category is that shelter from the elements and utility are provided. The buildings at the locations would be temporarily outfitted with an indoor homeless settlement design.

**Outdoor With Limited/No Infrastructure** - The advantage to an outdoor site without infrastructure may be its potential. It could be considered a blank canvas ready to accommodate a variety of different design solutions. These sites also harbor the potential to contain a community completely off the grid.
This image displays local sites in context, chosen for their suitability to the criteria identified at the beginning of this chapter. Yellow sites are possible public and private areas that could be dedicated to community building, while green sites are the five specific locations identified later in the design concept chapters.

CONCEPTUAL SITES
FIVE DESIGN LOCATIONS

- Mercer Field
- Old RV Park
- Elwood Heights
- Lakeway Gardens
- Hilton Avenue
TRANSITIONAL SETTLEMENTS

PROFILE OF CLIENTELE

INTRO

With the goal of designing a transitional housing settlement for a diverse group of people who are currently homeless, a familiarity and understanding of the end user was required. A variety of approaches were employed to achieve this insight, including literature reviews, casual observations, and personal interviews with members of the homeless community. Individuals working to end homelessness, and members of the business community. Furthermore, in an effort to avoid overlooking the needs of the client and designing a settlement that functions improperly, the final goal was to be able to shed light on the needs and desires of a population about which little was known. Examples of such research will steer the project’s development process and the designs of housing and community facilities in a manner that is compatible with the lifestyle preferences of the users. In addition to aiding in design strategies, the findings have allowed us to recognize which capital assets and transferable skills these individuals already have (i.e., employment experiences, education, hobbies) so that they can build capacity amongst each other during the implementation stages, and make community contributions during and after their tenure at the transitional housing settlement.

HOMELESS POPULATION IN WHATCOM COUNTY

As of 2013, there are approximately 561 citizens that are homeless in Whatcom County and the reasons for their homelessness are necessary to find and implement ways to get back on their feet. The median age of the dispossessed population in Whatcom County is 46 years old, and of the total homeless citizen population, 27% of them have a disability and 21% are veterans. 129 of the homeless are single individuals of which 236 are currently in transitional housing, and 178 have been homeless for 12 months or more. These statistics were based upon records at a specific time, meaning these number could only be estimates of the real number of homeless people in Whatcom County. A goal of this research was to look past the numbers and find what these people were experiencing and what they as individuals needed from the design and from the livable community. The following case studies gave some of that insight that was then broken down into qualitative information.

CATEGORIZATION - BREAKDOWN BY RISK

The homeless population of Whatcom County can be divided into four risk assessment categories: high, medium, low, and beneficial. High risk individuals are those that are dangerous to themselves and others. These include drug users, those who suffer from chronic alcoholism, people with severe psychiatric problems, sexual predators, and individuals prone to inciting violence. Although these individuals have their issues, getting them into a home would help them become safer human beings.

Medium risk persons are citizens that are solely dangerous to themselves. These include dependent drug users, alcoholics, and citizens with minor psychiatric issues. The third category is low risk citizens that source negligible nuisances. These citizens are illicit drug users, those who suffer from chronic alcoholism, people with severe psychiatric problems, sex offenders, and individuals prone to inciting violence. Although these individuals have their issues, getting them into a home would help them become safer human beings.

Low risk citizens also have behavioral quirks like paranoia, obsessive compulsive disorder, and socially isolated lifestyles. The final category is beneficial citizens who execute positive actions towards their collective groups and society at large. Examples of beneficial citizens are social individuals with high social capital, motivated leaders, mediators, and technically competent persons.

VOLUNTEER COORDINATOR AT THE LIGHTHOUSE MISSION

The volunteer coordinator at the Lighthouse Mission, Jessica, was able to offer unique insight into how the diversity of clientele might affect the settlement. In describing a night at the Lighthouse Mission shelter, Jessica said that everyone shared one large room, and this posed no problems. This reveals that our proposed settlement, or may need to seek other services. Due to its wide range of factors, individuals ranging in ages from newborns to 73-year-olds are struggling to find permanent housing establishments. [1] Whether this is a result from socio-economic struggles to find permanent housing establishments ranging in ages - from newborns to 73-year-olds - are home. Due to a wide range of factors, individuals ranging in ages - from newborns to 73-year-olds - are struggling to find permanent housing establishments. [1] Whether this is a result from socio-economic struggles to find permanent housing establishments ranging in ages - from newborns to 73-year-olds - are home.
Sonny

After meeting with Sonny, an individual currently looking for work and a citizen without a home, it is apparent that he is a person of striving hard to get back on his feet. Sonny made it clear that he became homeless due to conflicts with his employers. Soon, due to not having a job, Sonny’s life spiraled towards homelessness and he is faced with the situation he currently lives through daily. Staying at a friend’s home in Bellingham, riding miles from interview to interview, Sonny still looks for a job. Although Sonny realizes that he is in his current situation due to his own mistakes, the fact that he does not have a family as a fallback leads to the conclusion why he is homeless. There isn’t a doubt that due to Sonny’s incredible work ethic, as depicted by his self-propelled cart to daily job interviews miles away, and positive outlook on life, he will soon find a job and get his life back on the right track.

Craig

Craig is a homeless resident in Bellingham who is originally from San Jose, California. He is 52-years-old and he has spent the last 20 years in Washington State. He used to sleep along Whatcom Creek near Maritime Heritage Park where he explained that he had some of his possessions stolen from him. He said, "It’s gone. I can’t control it - its over. Someone else had some of his possessions stolen from him. He said, "It’s gone. I can’t control it - its over. Someone else needed it more than me." Despite this, he still feels that Maritime Heritage Park is a safe place to be because you can surround yourself with good people. At one point he was employed by Heritage Electric out of Campbell, California. He worked a lot of jobs as an electrician at residences throughout Woodside and Palo Alto - he even did a job for Bill Walsh, the former head coach of the San Francisco 49ers and the Stanford Cardinal Football team. They were asked to speak about the homeless settlement Carl Deal and his crew meet with the police department. The manager, who also volunteers at a local men’s homeless shelter, described his experiences and gave recommendations for a holiday gift to the homeless. "They only wanted to sleep, but getting eight hours of sleep is hard. At the center they must be out by 6 A.M." He expressed his dissatisfaction with the drag of "the us and them" social barrier, as long as it’s like a neighborhood.

DOWNTOWN BUSINESSES

To ensure that the public was well represented, businesses were asked to speak about the homeless situation in Bellingham. Everyday Music is in close proximity to the Whatcom County Station which makes it a destination for transient individuals. Two employees revealed their experiences of encountering the homeless while working at Everyday Music. Potential customers were reluctant to enter Everyday Music due to the presence of homeless citizens that were believed to be participating in an "open-air drug market". This barrier to customers, combined with incidents of illicit behavior and disorderly conduct, has had a detrimental effect on Everyday Music’s business operations. Both employees gave positive responses to the proposed temporary homeless settlements. They believe that having an isolated area of transitional and safe and supporting community are paramount for the successful transition of the homeless individuals.

The manager of the Horsehead Cafe, a small business that open 24 hours a day in the heart of downtown Bellingham, explained that the Horsehead is frequented by a variety of patrons, including the transient population. The manager, who also volunteers at a local men’s homeless shelter, described his experiences and gave recommendations for a holiday gift to the homeless. The manager, who also volunteers at a local men's homeless shelter, described his experiences and gave recommendations for a holiday gift to the homeless. "They only wanted to sleep, but getting eight hours of sleep is hard. At the center they must be out by 6 A.M." He expressed his dissatisfaction with the "the us and them" social barrier, as long as it’s like a neighborhood.

References

Community facilities encompass a significant portion of any housing settlement. There are a multitude of basic, daily necessities that any individual resident of a community requires, but specifics will vary greatly depending on the specificities of the settlement. The biggest decision is whether to create individual private amenities, shared facilities, or to rely upon offsite facilities. For example, individual bathrooms may not be feasible in a common building were utilities were used and all bathrooms were consolidated together in a single location. The following is an overview of physical assets and facilities that should be considered.

Water is the fluid of life so it’s logical to start there. The bare minimum necessities should include bathrooms, laundry space and kitchen space. When considering numbers, 4-6 individuals per bathroom is a good baseline to start with, fewer facilities necessary for laundry and other shared tasks. In the kitchen, the amenities could be comprised of a sink, stove, microwave, refrigerator, and menu kitchen space (that could be included: library, personal or shared garden areas, visitors quarters with cots, a separate room or small private space (that could be used for medical facilities, organization, family/tenant requests, filing complaints, and other organizational functions). This office could either be staffed by an external hired individual(s) or self-governed by residents. Community communication is an important and could be maintained using a blackboard/whiteboard to share information. Additionally, a community phone, internet, and computer(s) with internet access would provide community members with the library that is heavily relied upon in today’s society.

After initial necessities have been addressed, additional amenities could be included on budget and needs. The following is just a sample of items that could be included: library, personal or shared garden areas, visitors quarters with cots, a separate room or small private space (that could be used for medical facilities, organization, family/tenant requests, filing complaints, and other organizational functions). This office could either be staffed by an external hired individual(s) or self-governed by residents. Community communication is an important and could be maintained using a blackboard/whiteboard to share information. Additionally, a community phone, internet, and computer(s) with internet access would provide community members with the library that is heavily relied upon in today’s society.

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Community facilities provide a vital hub for the well-being of a settlement community’s residents. At its base, there is a need for healthy and safety issues that may arise with individuals not accustomed to utilizing basic necessities like a large kitchen space and pantry, laundry area and the full range of water-based amenities. Physical features alone don’t create a thriving community, however, facilities for those who have hearing and sight disabilities. Buses are a fantastic asset, but many other options exist too. But these facilities would provide a home for services and externalized services offered to residents of these and similar communities.

The first type of services and arguably the most important category are health-based. Though there are some resources available for low-income residents to receive treatment for various conditions, these facilities can be challenging to access or inappropriate for some by populations who particularly need this type of guidance and services. Providing both an on-site and outreach services can offer services, similar with an updated calendar to advertise the multitude of services available in the greater community however. The services offered by such communities may not be presented on fixed route or flex buses to receive discounts. For women of childbearing age, the “Born in Bellingham” website outlines resources provided at low to no cost and includes services available in the greater community. The Services Program for pregnant women, families, and newborns. For women of childbearing age, the “Born in Bellingham” website outlines resources provided at low to no cost and includes services available in the greater community. The Services Program for pregnant women, families, and newborns. For women of childbearing age, the “Born in Bellingham” website outlines resources provided at low to no cost and includes services available in the greater community. The Services Program for pregnant women, families, and newborns.

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A second important service in need of provision, one at
which resources are going to be the most needed and
important since the top two reasons for homelessness
in Whatcom are “economic” and “loss of job”. Some
reasons they were homeless was because of domestic
violence issues. This group would also need access to
special health care needs that would sometimes need
to be very urgent, so easy access to facilities for this
category of needing a sense of community would be cru-
ial. Counseling services would also be important for those
with mental illness and substance abuse, and it was found
that 21% of the 2013 A Home for Everyone: Whatcom County Co-
munity Services data showed that a significant proportion
of the homeless population would be crucial.

There are a number of large homeless families in
Whatcom and children under the age of 18 make up
24% of the homeless population. Families have unique
health needs, as with busy schedules parents may be
unable to carve out the time necessary for adequate
wellness when caring for one or more young chil-
dren. Pregnant women have ongoing needs including
obstetric care, as well as enhanced maternal health
measures. Education for the children is necessary so that
they don’t fall behind in school. As far as physical facili-
ties are concerned, the homes that are being designed for
the families will need to be larger and have more resources
inside to be able to accommodate a greater number
of people. A private bathroom with a toilet and shower
would be great for each housing unit as well as kitchen
area with some appliances to be able to cook meals for
so there will be enough to go around.

There are some resources that are equally important
for all homeless people. A basic need is stable housing
special health care needs that would sometimes need
to be very urgent, so easy access to facilities for this
population would be crucial.

A large number of the Whatcom homeless also have
disabling conditions such as mental illness, permanent
physical damage and chronic illness. These individuals
would need easier access to specialized health care
resources. These conditions can make it very difficult
to get jobs or having a steady income, so providing
services to provide income, possibly from government
sources, would be crucial. Counseling services would
be important for this large group of people who have
mental illness, so having these resources onsite would
be very helpful. There was a correlation between mental
illness and substance abuse, and it was found that 24% of
people who reportedly had a mental illness also had a problem with substance abuse. This group would also need
advice on counseling services, and it would be crucial for them to be part of a community where they would feel safe
dand comfortable.
An adequate supply of fresh clean water is essential for the health and wellbeing of any community. Ensuring that this necessary amenity is safely and reliably supplied requires adaptable and scalable solutions that can be custom designed for unique site specifications.

There are many alternatives that present options for accommodating communities of any size and delivery techniques for handling water quality concerns.

When negotiating off-grid scenarios, it is important to distinguish “potable” water from “non-potable” water. Potable water is safe enough to be consumed by humans while non-potable water is not. However, non-potable can be used for irrigation and other uses where it is not consumed.

Like utilizing the existing power grid where it is available, the most reliable and economical option for supplying water is to simply connect to the municipal water network when possible.

If the community is located within, or close to the city limits, it is likely that a power pole is located nearby for connection.

To avoid unnecessary cost and complications, a temporary power service may be requested. Temporary power is often used in the construction industry and allows for 110v and 220v extension cables to be run from a centrally located power meter, circuit breaker, and outlets provided by the utility company or electrical contractor.

Alternative energy options may be considered if there is no electricity connection readily available, or the community is looking to eliminate or reduce the variable monthly cost of an electricity bill.

Solar panels and small-scale wind turbines are both viable options for raw energy production. A proper system will require solar photovoltaic panels and/or a wind turbine, a battery bank, a charge controller, and an inverter. Some electrical amenities, such as a food cooler, fan, or cell phone, can be connected directly to the 12v battery bank and will not require an inverter.

Televisions, computers, and standard lighting will require an inverter. An alternative energy system will both systems would require a more substantial upfront cost, but comes with the benefit of eliminating an electric utility bill.

Solar Panels are becoming an increasingly more efficient and less expensive method for producing electricity. During cloudy conditions that frequent NW Washington, solar photovoltaic cells will continue to collect energy, although at a reduced rate.

Solar panels are easily mounted on top of most any type of structure, and for increased mobility, a solar system can be self-contained within a trailer.

Small-scale wind turbines work very well in conjunction with solar panels. They can be integrated into the system, and have the advantage of providing a supply of energy at night and when solar panels are producing at a reduced rate.

Wind turbines should be elevated as high as possible to collect the most energy. A metal pole braced to the ground with cables is an inexpensive method for mounting a turbine, or if available, trees are often used to elevate wind turbines.

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If the community is located within the city limits and privately owned, accessing the existing infrastructure provides the most logical solution. Municipally supplied water is clean, safe, and requires minimal improvements to infrastructure and no filtering or other treatment to insure its potability.

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Drinking water holding tanks provide the next-best solution in locations where municipal access is not feasible. Holding tanks may be used to store imported water and/or water harvested on-site. They are available in multiple sizes, styles and fabrics to accommodate the needs and requirements of outdoor, indoor and long-term storage.
Chemical treatment is accomplished both by filtering out harmful micro-organisms and also by adding disinfectant chemicals. Water is disinfected to kill any pathogens which pass through the filters and to provide a residual dose of disinfectant to kill or inactivate potentially harmful micro-organisms in the storage and distribution systems.

The most common disinfection method involves some form of chlorine or its compounds such as chloramine or chlorine dioxide. Chlorine is a strong oxidant that rapidly kills many harmful micro-organisms. This method is used by local water utility agencies but requires special training and the handling of toxic chemicals.

**ACTIVE FILTRATION**

Reverse osmosis (RO) is a water purification technology that uses a semipermeable membrane. This membrane technology is not properly a filtration method. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, a colligative property, that is driven by chemical potential, a thermodynamic parameter.

Reverse osmosis can remove many types of molecules and ions from solutions, and is used in both industrial processes and the production of potable water.

**PASSIVE FILTRATION**

Slow sand filters may be used where there is sufficient land and space, as the water must be passed very slowly through the filters. These filters rely on biological treatment processes for their action rather than physical filtration.

The filters are carefully constructed using graded layers of sand, with the coarsest sand, along with some gravel, at the bottom and finest sand at the top. An effective slow sand filter may remain in service for many weeks or even months and produces water with a very low available nutrient level which physical methods of treatment rarely achieve. For all homeless people. A basic need is stable housing.
SHOWERS AND TOILETS

Often taken for granted, these utilities can vastly improve the quality of life for transient people. There is also a variety of options available that vary by cost or by the site selected.

**SHOWER OPTIONS**

A PORTABLE SHOWER TRAILER—

Initial higher capital expenses may deter some, but the benefits of a prefabricated mobile shower trailer more than make up for the upfront cost. Renting or leasing a small trailer can be upwards of 1,000 dollars a month or a used shower trailer can be purchased for a few thousand dollars depending on its condition.

These trailers come in a variety of options and sizes. They require a source of water, power and a way to dispose of wastewater. They come ready to use and can be set up or taken down in a moments notice. They provide all the comforts of a regular shower with the added benefit of mobility.

SOLAR CAMP SHOWER—

Small camp showers can be both cost effective and sufficient for the needs of a small group. They come in a variety of designs each with their pros and cons. A simple camp shower could be built for under one hundred dollars.

A very basic solar heated shower bag can be purchased for less than twenty dollars. This option is cheap, but it does have drawbacks. For one, they serve far fewer people. Another drawback is that if they are solar heated, people will be taking many cold showers in this climate.

**TOILET OPTIONS**

PORTABLE TOILET TRAILER—

As with the shower trailer, this option has higher upfront capital expenses. And again, it would need a water and power source and also a method to dispose of sewage. These trailers are easy to setup and maintain however. They can quickly provide an essential utility. They come in a variety of sizes. There is even the option to have a complete bathroom trailer that would completely serve the needs of a small community all within one trailer.

COMPOSTING TOILETS—

This option is cheaper and requires little in terms of infrastructure. A composting toilet can be built for a few hundred dollars. They require no water or sewer connections. They can also be used to compost food scraps. The drawback to these is that they require periodic maintenance and can only service a few people.
WASTE MANAGEMENT

Whatcom County

Whatcom County is serviced by the Sanitary Services Company (SSC), who provide a variety of recycling and garbage options. It's a private company with 3 recycling centers and transfer stations throughout the county. The services they provide include the disposal of household garbage, medicines/sharps, electronics, scrap paper, newspaper, bottles/cans/plastic, cardboard, and Food. Pool Composting.

The wide variety of services and pickup plans allows for a lot of flexibility in the overall cost and options of a given site. Size options also vary greatly, from small household pickup to large dumpster service. Education and encouragement of proper sorting will be important for the cleanliness of the site.

WASTEWATER SOLUTIONS

One of the most burdensome infrastructure needs of a community is what to do with sewage and wastewater. Dealing with raw sewage can be hazardous to the environment and it can be a human health risk as well. Luckily, there are a couple of good solutions to this.

TAP INTO SEWER LINES

Perhaps the easiest and most effective is to make use of existing municipal sewage lines. If a site is within city limits, this can often be a viable solution to a community's sewage disposal issue. For a multi-family site in Bellingham, sewage disposal rates are under one hundred dollars a month.

HOLDING TANKS WITH PRIVATE PICKUP

When tapping into the sewer lines is not an option, wastewater can be held in storage tanks. A private sewage pumping service would then have to come and periodically pump out the tanks. This option can get rather expensive, but it requires little in terms of sewage infrastructure. Holding tanks range in size and can be as cheap as a few hundred dollars. Pumping services are expensive though and can run as much as a couple hundred dollars per pump session.

WASTEWATER REUSE

In certain setups, water that doesn’t contain raw sewage, such as from showers and sinks, can be reused to flush toilets or for other purposes. This greatly reduces the amount of water consumed and the wastewater produced at a site. It requires more complicated infrastructure and therefore the cost of implementing this system can be high.

SEPTIC SYSTEM AND LEACH FIELD

Where possible, the use of septic tanks and leach fields can be very effective. These systems require minimal maintenance and can serve the needs of a community with little disadvantage. They tend to only be allowed outside of city limits and often require a large empty area for the leach field, so sites capable of using this are few.
FOOD PRODUCTION AND SELF-HELP

COMMUNITY GARDEN
A community garden can be used as a stepping stone to reintegrate homeless back into society. Incorporating a community garden into a transitional housing site provides many benefits to its residents. A garden both nurtures and requires nurturing; this results in a therapeutic atmosphere while providing residents with the opportunity to develop a diverse skill set. The skills residents obtain by caring for a garden will play an essential role in securing their future out of homelessness.

Benefits of having an on-site garden:
- On-site therapy
- Life skills development, social & character education
- On-site employment experience
- Food production

ON SITE THERAPY
It is of the utmost importance to get struggling individuals off of the street and provide them with a stable environment which promotes personal development. An onsite garden can help support and improve an individual’s psyche by providing a therapeutic and nurturing environment.

According to the Substance Abuse and Mental Health Services Administration, 20-25% of the United States homeless population suffers from a form of severe mental illness [Hackett, 2014].

In Portland, Oregon, the Legacy Therapeutic Gardens uses garden environments to provide therapy for depression and anxiety [Legacy Health]. Providing quiet, green and stable environments is important for the personal development of these people. According to Theresa Hazen, the coordinator of Legacy Therapeutic Gardens, “Gardening stimulates the mind in a positive and creative way and helps increase socialization skills and promotes working as a team if gardening is in a group atmosphere.”

LIFE SKILL DEVELOPMENT, SOCIAL & CHARACTER EDUCATION
A transitional housing community which offers its residents the opportunity to develop skills while providing services that can help the residents apply them, is a system built for success. It is recommended that the transitional housing community residents are encouraged to help maintain the garden, this instills a sense of responsibility and will act as a safe, consequence free “work-like” environment. An on-site work-like environment promotes and stimulates leadership, life and technical skill development, as well as social and character education.

Instilled life skills:
- Responsibility
- Leadership
- Time management
- Teamwork
- Home economics

Providing these services for struggling individuals will help bring them back to the realities of living out of homelessness. Building upon their sense of self worth and mental health, a garden, no matter how big or small, is an easily implemented tool that can greatly contribute to the generation of social capital and well being for homeless or other struggling populations.
There are resources within the Bellingham community that can be utilized to train and educate the transitional housing residents about gardening. Joe's Gardens has stated that they would be willing to provide seeds/cold crops as well as informational sessions on site at Joe's Gardens to residents. [Gary, 2014]

Another community resource, Cloud Mountain Farms, offers a wide variety of classes which cover nearly all the farming techniques one would need to know in order to start and maintain a thriving garden; these classes range from agricultural techniques to infrastructure and construction techniques for onsite building. The majority of the classes taught at Cloud Mountain Farms are free.

A garden can be implemented on nearly any site to create a self-sufficient community and provide benefits to the residents to ensure both communal and individual success. It is also possible, if the site is permits, to scale up the garden to a profitable farm. An onsite farm would offer an even more abundant range of benefits to the residents, such as real on-site work experience and developing a close connection with the outside community. Not only is there the ability to produce food crops but also room for other programs to be implemented such as beekeeping, canning, gleaning, and livestock such as chickens or goats.

A farm could produce food and other products year round which could be sold to the local co-ops, at Saturday Markets, etc. A “farm model” has the potential to profit, which could be used to help pay off site expenses.

This model would also provide a unique opportunity for homeless individuals to assimilate back into society by making face to face connections with people at the markets and other social events. This up-scaled farm model will be discussed in depth in Chapter 5: Site Plan 5: Serenity Gardens.

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HILTON HARBOUR SITE PLAN

SITE FEATURES

The Hilton Harbour site has two main sections to it; the hill and the lower area directly adjacent to Bellingham Bay, with some water access. Our design concept focuses on the area to the Southeast of Hilton ave, shown at right in red. Currently, the site is not subdivided from the land West of Hilton Avenue, however it is zoned for subdivision from the rest of the property, and we propose not using the entire parcel for our design scheme. There are no existing structures on the site, but there are existing utility hook-ups extruding from the ground. If these are not functional currently, utilities would be easily accessible due to the site’s proximity to other functional structures. The hill is currently covered in grass, while the lower section is a mixture of grasses and graveled areas. Because of the site’s location just outside of downtown, it is highly accessible to emergency, transportation and general health services. This location would also be ideal for providing our clients with employment.

CLIENT PROFILE

The target demographic for the design process was high risk homeless people. These individuals may have illicit drug use, chronic alcoholism, severe psychiatric problems, or have history of violence and sexual offenses. It was important that the design of the settlement reduced stress. This would help residents heal by

SITE LAYOUT

The concept for the proposal at the Hilton Avenue site along the industrial waterfront includes a variety of human-scale designs that can be implemented at minimal cost per unit. It features a community kitchen situated on a tugboat or otherwise attainable structure outfitted with the proper utilities and cooking necessities, and a communal open space and event/workshop space on the northwest corner of the site, possibly atop a semi-covered barge or otherwise flat, usable space. Living units in this concept appear in the form of re-purposed non-seaworthy vessels. These can be acquired through public donation, or found inexpensively from local boat dealers. To be living units the “boats” must be at least 18 feet in length, with the potential for some retrofitting to accommodate long-term housing for between one and three people per unit. If donated boats are under the 18-foot minimum, they can be gutted and the hulls can be re-purposed as raised garden beds to be shared by the community. Boardwalks will connect the units to the kitchen and rest room area with a public forum space at the center. This can appear as a gazebo or outdoor seating area capable of fitting the entire community for social gatherings and group votes. Boardwalks connect the residences to each other and to the community structures, maintaining the maritime theme and contributing to the atmosphere of the site.
TRANSITIONAL SETTLEMENTS

HILTON HARBOR DESIGN
THE VISION

The reclamation of non-seaworthy boats as retrofitted homes is an idea that, if seen into fruition, would change the lives of many. Bellingham is a city rich with maritime history and holds an abundance of resources for this project. The project site sits on Bellingham Bay, and is a perfect temporary fit to host a community of boats on land to house the previously homeless. By taking advantage of pre-existing structures, such as old boats, half the work of “building” housing is already done.

This project is unique in that it is intriguing and full of character whilst serving its main purpose; to be a home. Every boat that comes in brings its own stories and harbors a foundation of liveliness for the community group. With the right guidance and support, the community members have a chance to be an active part of building their home. As the community develops, the current members can gain experience and skill in either re purposing old boats to make them fit for living or salvage and recycle parts that would have otherwise gone to waste. This process could turn into a program that can be assimilated into other job skills and develop a new local industry.

From preliminary research done in the area, there are plenty of boats that can be suitable as a living unit that are either free or very inexpensive. The structure of the community design calls for a communal facility. This would be one larger boat, such as a retired tugboat or commercial fishing vessel. The communal boat could be the sole boat outfitted with full utilities such as toilets and showers, electricity, and kitchen facilities. The consolidation of utilities to one boat would cut down cost and stress on the site location. The communal boat could also be outfitted for solar panels and rain barrels, as well as composting toilets, to mitigate use of resources. The optimal community size is around 20 to 30 members. The site layout would promote community involvement while maintaining the integrity of one’s own space. The remaining boats would be simple living units to accommodate 1 to 4 people per boat depending on the acquired boats and preference of inhabitants. The boats would be stationed in boat cradles and would not constitute permanent structures. They would be connected by paths of raised boardwalk to define the shape of the settlement and provide the concept of a cohesive community through obvious connectivity.

WATER, HEAT, BATH, AMENITIES

Potable water would be accessible through a community boats existing water systems. Filtering systems, siphons, and pressurizing systems could be removed and water would be supplied directly via piping in the boats hull. Drainage would connect to through-hull fittings and work with nearby sewer systems. Using Washington State plumbing system code as a guideline it was decided that this site would require 6 toilets. This is based off the assumption that Hilton site would provide space for 20-30 people. If a boat lacks sufficient utilities they can be supplemented with external units. They would be separate bathroom facilities accommodating either men or women.

In addition to showers aboard the boat a portable trailer with separate gender stalls may be appropriate. It is partitioned down the middle with 3 stalls on each side to accommodate separate gender facilities. This trailer does require a connection to water with a minimum water pressure of 40 psi and a flow rate of 5 gallons per minute (http://www.cohsi.com/rentals.htm).

The boats may not be designed, or in good enough condition, for keeping the occupants warm during colder months. It is a relatively simple process to add insulation to the boats in the form of some reflective and insulating layers. Each boat will have a layer of Reflectix double reflective insulation, followed by a layer of polyethylene foam, and finally another layer of Reflectix insulation. Further insulation could come in the form of greenery atop the boats, which would buffer the internal temperatures as well as add characteristic aesthetics to the residences.

CHAPTER 5
SITE PLAN 1: HILTON HARBOR

Canopy provides outdoor rain cover and shade
Reinforced hull stands would support boat outside of the water
Front door has ground access for visitors
Kitchen Area would ideally have a cooking area that would encourage residents to get together for meals
Management operations could be ran in the bow of the community boat
Lounging and eating
Office for any resident looking for a well work suited space
Healthcare unit could give a private space for a resident in the case of a medical emergency or illness recovery
TEAM CONCEPTS
INITIAL IDEAS AND RESEARCH

CHAPTER 5

HILTON HARBOR IMPLEMENTATION

Hilton Harbor could potentially become a landmark and a strong step towards a self-helping community. The abundance of unused boats and proximity to Bellingham’s rich maritime heritage makes Hilton Harbor the ideal transitional settlement near downtown.

The approval process for this settlement would begin with building public awareness. This will help mitigate costs as more people may be willing to donate their unused boats. Afterwards, boats would be surveyed and selected for based on the needs of the settlement. Volunteers would then help strip the boats of their unneeded components while providing instruction and examples for new and future residents. Once the community is established, they can set their own ground rules and management plans. Boats could continually be added, installed, and modified.

Since the Hilton Harbor design utilizes retired vessels, costs are on a lower range for encampment structures. Re-purposing boats is not difficult to do and would require only basic re-engineering. Campaigns to raise funds will help pay for the use of tools and labor, other public involvement could also potentially cut costs. Costs are mostly long term and can be integrated to different extents with different boats.

This settlement would be the stepping stone for high-risk homeless to live healthy lifestyles. Individuals wanting to live in the settlement would be required to abide by the community’s procedures. Seasoned residents could be elected to be in charge of managing meetings.

Many options were considered in the design process. Hilton Harbor was chosen because of its message in sustainability, equality, and culture. It is a feasible solution and appropriate for the Hilton avenue site, and our client group.

ESTIMATED COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing &amp; Garden boats:</td>
<td>Free/bought used $1000-$2000</td>
</tr>
<tr>
<td>Insulation</td>
<td>$75 liner, $69 caulk and $50 foam core $/ft</td>
</tr>
<tr>
<td>Starting ~$140 w/o hardware</td>
<td>$500</td>
</tr>
<tr>
<td>Community Tugboat</td>
<td>$10,000</td>
</tr>
<tr>
<td>Community Space</td>
<td>Contracted to company</td>
</tr>
<tr>
<td>Parking lot</td>
<td>Contracted to company</td>
</tr>
<tr>
<td>Boardwalk</td>
<td>$7.59 per board foot</td>
</tr>
<tr>
<td>Wood</td>
<td>$8.25 per 5 lbs box of screws</td>
</tr>
<tr>
<td>Hardware</td>
<td>$50 per 48’, $20 per 100, $13 each</td>
</tr>
<tr>
<td>Lighting (Lights, clips, timer)</td>
<td>$500 per 48’, $20 per 100, $13 each</td>
</tr>
<tr>
<td>Community Space</td>
<td>Potential temporary lease of half lot</td>
</tr>
<tr>
<td>Weatherproofing</td>
<td>25 residents: $4,500 per/year</td>
</tr>
<tr>
<td>Heating, electricity, water, and</td>
<td>$40,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

SITE PLAN 1: HILTON HARBOR

TRANSITIONAL SETTLEMENTS
CHAPTER 5

SITE PLAN 2: LAKEWAY GREEN

LAKEWAY GREEN SITE PLAN

The Lakeway Green is a proposed transitional housing settlement located at the corner of Lakeway Drive and Woburn Street. Currently, the City of Bellingham operates its Clean Green facility where green waste is recycled and transferred to larger compost facilities. In addition to this site-specific service, the site hosts the Lakeway Community Garden, a newly designed native plant nursery, and a woodshop operated by the Parks Department - all of which provide opportunities for the residents to oversee and assist the City’s operations in which they could gain work experience and transferable skills.

In addition, the settlement is in close proximity to public transportation and is conveniently located within a mile of the Lakeway Center, thus making grocery shopping easy and accessible. Residents’ homes will be located next to the community garden as well as in the forested areas in the lot’s southeast corner. This location provides noise mitigation measures and pleasing aesthetic factors. The Lakeway Green’s forested segments, with a paved trail system and well maintained lawns, coupled with a new community facility, will allow the residents to live in an engaging community that fosters healthy interactions while simultaneously providing them with quiet and quiet living quarters.

SITE

The overarching goal of Lakeway Green is to provide an opportunity for homeless individuals to get their lives back on track and start acquiring work skills, thereby building their work skill capacity. Building capacity consists of skills training, community involvement, and social development. The extensive opportunities for skills training, including the Clean Green Waste facility, a community garden, a native plant nursery, a community kitchen and a woodshop. These opportunities make Lakeway Green an ideal transitional work-to-housing settlement. This specific site is well positioned to teach residents a variety of skills that they will be able to take with them, thus allowing them to begin to build the foundation for their new lives. In addition to learning new skills, the residents may allow for Clean Green Waste to increase its hours of operations, making it more convenient for users of the facility. Here, residents have a place to call their own and will have the opportunity to fall into a routine in which they can sleep easy, learn, and become mentally and physically healthier.

CLIENT

The structure of Lakeway Green is best suited to serve clients who can be identified as low risk and beneficial. High and medium risk clients should not be overlooked, but more intensive services should be focused on these individuals. Low risk and beneficial clients would thrive at Lakeway Green, which offers plenty of capacity building opportunities in a setting with relaxed oversight. This relaxed oversight will be supplemented through beneficial individuals, who have high social capital and are already well suited at making positive influences within their communities. The amount of capacity building and skill training opportunities will provide all residents with skills to learn, keeping themselves busy and igniting positive changes in their habits and state of mind.

SITE PLAN

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The goal of Lakeway Greens lies in helping residents promote a sense of community. The communal active communication between neighbors by putting neighborhood that encourages favorable behavior and owned facilities, mimicking the style of a traditional the community will be oriented so that the residents’ eyes fall onto the community spaces and city- the community through their work.

The site is adjacent to city owned and maintained service lines - water and sanitary sewer lines could be readily installed and/or extended to service the proposed community. Since there are currently no building structures and minimal impervious surfaces, the necessary underground infrastructure could be put in place, using traditional open trench methods and situated without constraints from any other existing utility lines. Furthermore, because the proposed housing units are mobile and can be easily rearranged, future maintenance of buried piping would not require costly trenchless methods (i.e., pipe bursting, cured-in-place piping). Additionally, the advantages and disadvantages of the various piping materials should be considered. Polyvinyl chloride (PVC) is commonly used and chlorinated polyvinyl chloride (CPVC) can withstand corrosive temperatures up to 122 degrees Fahrenheit. Orangeburg pipe on the other hand is common among older homes – it is relatively cheap and easily ruptured under pressure and should be bedded in sand and/or pea gravel to prevent rupture.

There is adequate space within the site to integrate parking amenities for the tenants with vehicles. However, there are multiple bus stops adjacent to the site and it is a feature that, if extended around the perimeter of the site, could serve various beneficial functions. Currently in operation on the site is the Bellingham Waste from Whatcom County residents. It is operated by the Solid Waste Division of Public Works and only accepts certain wastes with certain dimensions and is currently just a transfer station - all of the biomass consolidated there is transported before any significant composting processes take place. The Lakeway Greens transitional housing community would utilize the potential benefits of integrating on-site composting facilities in two different ways. First, compost heat recovery systems could be set up following a model compost-based energy production system that was developed in the 1970’s by Jean Pain, a French inventor. From one pile of compost, he heated his home of 1,000 sq. ft and could heat water to 140 degrees Fahrenheit at a rate of four liters per minute. Essentially, the design consists of a large pile of yard debris and/or wood wastes while spiraling piping is embedded throughout the pile to reconvey heat generated by the microbial breakdown of organic material. This heating method would be cost effective and could sufficiently heat the small, enclosed housing designs. Furthermore, on-site composting facilities could supply organic matter to use as mulches and compost-amended planting mix for the community garden and the new native vegetation nursery along Woburn Street. The native vegetation nursery is currently maintained by the Parks Department and it is a feature that, if extended around the perimeter of the site, could serve various beneficial functions.

Essentially, it would provide a: • Visual screen for more privacy and increased aesthetics • Biosolids cell to sequester pollutants from stormwater, thus protecting the community gardens from heavy metals associated with high traffic volumes • Green buffers to minimize noise pollution.
CHAPTER 5

SITE PLAN 2: LAKEWAY GREEN

TRANSITIONAL SETTLEMENTS

BIORETENTION FACILITIES

ZONE 3

Area with dry soils, infrequently subjected to saturation. Plants within this zone should be used to transition or blend with the existing landscape.

<table>
<thead>
<tr>
<th>Species</th>
<th>Mature Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosa canina var. spinosissima - Cherokee Rose</td>
<td>6 - 8 ft.</td>
<td>Tolerant of urban pollution, white flowers</td>
</tr>
<tr>
<td>Philadelphus villosus - Partridge Pea</td>
<td>6 - 8 ft.</td>
<td>Drought tolerant, attractive flowers</td>
</tr>
<tr>
<td>Ligustrum ovalifolium - privet</td>
<td>12 - 15 ft.</td>
<td>Drought tolerant, evergreen</td>
</tr>
</tbody>
</table>

ZONE 2

Area that is periodically moist or saturated during storm events. Plants within this zone are also applicable in Zone 3.

<table>
<thead>
<tr>
<th>Species</th>
<th>Mature Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artemisia ludoviciana - Northern Blazing Star</td>
<td>1 - 2 ft.</td>
<td>Drought tolerant, attractive flowers</td>
</tr>
<tr>
<td>Acer saccharum - Sugar Maple</td>
<td>15 - 25 ft.</td>
<td>Tolerant of shade &amp; wet soils, pretty fall colors</td>
</tr>
<tr>
<td>Rosa nigra - Cherokee Rose</td>
<td>6 - 10 ft.</td>
<td>Tolerant of shade &amp; wet soils, fragrant flowers</td>
</tr>
<tr>
<td>Rubus spectabilis - Salmonberry</td>
<td>5 - 10 ft.</td>
<td>Magenta flowers, nectar source for hummingbirds</td>
</tr>
</tbody>
</table>

ZONE 1

Area with frequent standing or flowing water. Plants within this zone should tolerate summer droughts without extra watering.

<table>
<thead>
<tr>
<th>Species</th>
<th>Mature Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malus floribunda - Pacific crabapple</td>
<td>Up to 40 ft.</td>
<td>Tolerant of prolonged soil saturation</td>
</tr>
<tr>
<td>Albizia julibrissin - Silk Tree</td>
<td>30 - 40 ft.</td>
<td>Highly adaptable, rapid growing, nitrogen fixer</td>
</tr>
<tr>
<td>Hydrangea arborescens - Oakleaf Hydrangea</td>
<td>6 - 13 ft.</td>
<td>Drought tolerant, white flowers</td>
</tr>
</tbody>
</table>

*List of appropriate trees and shrubs for the three planting zones of bioretention facilities with respect to soil moisture characteristics and desirable size of mature specimens.
The “Green Micro Housing” concept emphasized an energy efficient and environmentally conscious/healthy living environment. The micro homes would be at the pinnacle of energy efficient design, with slanted roofs for grey water collection, and solar panel attachments for electricity production. The homes would also come furnished with composting toilets for waste management and a reduction in needed sewage limbs. Bamboo flooring paired with radiant floor heating would help heat the home and eliminate the need for lumber. Twenty units, each occupying 120 square feet could be placed on the lot, housing between 20 and 40 people, with the possibility of a couple occupying one unit.

Storage containers would be at the foundation of the second housing concept, in which two shipping containers laid horizontally would be split by a vertically situated housing container. The two horizontally placed shipping containers, with solar panels affixed to their roofs would act as homes to the Lakeway Green inhabitants. The vertically placed shipping container affixed with a solar panel would act as a divider to the two horizontally placed shipping containers complete with composting toilets. The housing concept with a dimension of 20x8.5 feet would take up 388 square feet with every 194 square feet providing a home for one person.

“Housing on wheels” encapsulates using compact, mobile homes complete with a kitchen, bed, dining room, and bathroom complete with a shower for an all-in-one home amenity approach. The small, 120 square feet size of the mobile homes would allow for 30 of the homes to be placed in the Lakeway Green lot, utilizing its forested areas efficiently.

RVs would be used in the fourth housing concept, utilizing a cement slab laden composting station across from the community garden. The cement sections would be used as parking dividers and section enders for the RVs to allow for their positioning. At the heart of this housing concept is to utilize the compost being dumped in the proposed RV lot and using the Jean Pain composting technique to capture heat for constant supplies of hot water and heat for the RVs.

The finalized and selected housing solution for Lakeway Green involves utilizing 17 foot truck trailers/U-hauls and retrofitting them with a bed, kitchen, cutting surface, lower and upper cabinet, sink, composting toilets, bamboo flooring, drywall, and windows. 21 of these units would be placed on the lot allowing for the housing of 21 to 42 citizens in total. Next to these homes, a community center would be built to satisfy residents need for social interaction and community membership.
TRANSITIONAL SETTLEMENTS

CHAPTER 5

SITE PLAN 2: LAKEWAY GREEN

COMMUNITY BUILDING

Lakeway Green offers plenty of community spaces, including the forest and trail network, community garden and native plant nursery. In addition to these amenities, a community building is planned that will provide residents with a place to use the restroom, shower, and do laundry, in addition to common facilities for leisurely activities, recreation, and a large kitchen facility where meals can be prepared and shared in a manner in which the residents can learn cooking skills alongside kitchen safety. The community building will encourage interactions with residents of Lakeway Green and the public, making this space a crucial component in breaking down socio-economic barriers. Case workers can also utilize this space, delivering an efficient way to consolidate services. It is recommended that an onsite manager be present during the day, with an office in the community center. The onsite manager should be an expert in dispute resolution techniques, and may delegate tasks to the residents.

The community facility will add to the aesthetic value of the site, and is designed with sustainability in mind. It is planned to meet or exceed Washington state law, which mandates that public buildings must be certified to at least the LEED silver standard. A green roof, water harvesting system, energy efficient windows, and solar panels will reduce the environmental impact of this building, and make it an attractive and resident-friendly public space.

ESTIMATED COST

The team has been trying to reach U-haul for a potential corporate partnership in which old U-Haul trucks would be donated and then retrofitted. If this falls through, the option to buy old U-Haul trucks would raise the cost to approximately $2,000 per unit, and buying the trucks in bulk would reduce the per unit price.

The Lakeway Green’s homes will require furnishment to foster a positive and comfortable living environment for residents. Through potential partnerships with Home Depot and Uhaul, homes and community centers could be substantially equipped with little to no cost to the City of Bellingham. The total cost of retrofitting all 21 units, which includes insulation, bedding, and adding windows, a composting toilet and bamboo flooring, comes out to approximately $20,000. If the U-Hauls are not donated, acquisition of these units would cost approximately $42,000. The Community Building’s kitchen appliances, six shower stalls and toilets, and laundry appliances would amount to $15,000. The hiring of an on-site manager to help facilitate day-to-day operations would cost approximately $25,000 a year. Partnerships with local nonprofits and businesses, and a heavy reliance upon work from volunteers and future residents, will help drive down the cost. Partnerships with local non-profits and businesses would also help drive down the cost.

A heavy reliance on work from volunteers and future residents would cut costs for the retrofits and add to the residents’ skillset.

COMMUNITY BUILDING COST BRAKEDOWN

- Kitchen appliances ~ $11,400
- Showers for 6 stalls it will be $983 brand new
- Toilets for 6 it will be $528 brand new
- Laundry ~ $1500 to $2000 for new appliances

TOTAL ~ $15,000

OPERATING COST BRAKEDOWN

- On site manager ~ $25,000 per year? potential for a beneficiary member to eventually take over this position

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ELWOOD HEIGHTS SITE PLAN

EXISTING SITE

The site proposed for the development of the Elwood Heights neighborhood is a 9 acre parcel located in the Samish Neighborhood. Of Bellingham’s 24 designated neighborhoods, the Samish Neighborhood is the largest, with over 2,000 acres including Lake Padden park. Close to 3,500 residents call this South Bellingham area home. The primary building types are both large and small single-family lots, with dense areas of open green space, trails access and recreational spaces. This specific 9 acre plot is located at the corner of 40th Street and Elwood Avenue. The plot is currently owned by the City of Bellingham and is wholly undeveloped besides a few narrow trails used for recreation. However, the site is well-equipped for future development as its bordered by utilities including power lines, gas mains and sewer lines that serve nearby residential neighborhoods.

In terms of natural settings, the site is densely forested in a curved swath from the upper Northeast corner around to the lower Southwest corner. The proposal involves working with the tree cover, as it would provide a sound buffer and recreation area for the future residents of the Elwood Heights community. Additionally, it is an unmarked small stream that is a tributary of Whatcom Creek flowing through the canopy cover in the forested area. The biggest consideration in terms of site is the wetland areas. Though only covering certain sections of the plot, they do signify areas of special consideration. Best Management Practices could ideally be exercised in tandem with development, respecting the parts of the land containing wetlands. An additional measure could involve purchasing credits through a wetlands bank such as The Lummi Nation Wetland and Compensation for the unavoidable impacts of building in an area containing ponds.

In terms of the development timeframe on the site, ideally the establishment of this transitional community, with its necessary utilities and other intensive features would cater to a two year plus residency on the site. There would likely be family turn-over cycling in then out of the community, so founding residents would not necessarily reside in Elwood Heights for this entire time period. One consideration to note in terms of the site’s time frame is the nearby location of San Juan Boulevard and the Samish Crest Greenway. There are tentative plans to develop this corridor to merge with Elwood Avenue. However, in the city’s TIP plan for 2010, this corridor was in the bottom half of development priorities and in a recent WSDOT Whatcom Council of Government Model a two-lane new Boulevard Connector was forecast only in their 2035 model, and that given funding needs are met for the proposal.

The clientele for the Elwood Heights community site is families, in the variety of forms which this group could be composed. Included in this designation are both nuclear and non-traditional families, including single parents with kids. Parents with children under 18 qualify, as do pregnant women. Additionally, the proposed community would be trained-out friendly. According to the 2013 Whatcom County Coalition to End Homelessness Annual Report, of the 561 homeless persons counted there were 70 families. This amount—represented by the 47% of family respondents cited inability to pay rent or mortgages as the most significant reason for their homelessness.

There are a number of specific considerations to take into account when establishing a settlement to house families. This could include providing easy access to health care and hospital access for pregnant women or children with disabling conditions that need medical treatment. Specific needs will vary depending on the community’s residents, but providing both user-friendly housing features alongside as valuing child safety in relation to nearby streams and roads as well as the boardwalks connecting the yurt housing pods will prove essential.

Beyond basic amenities, there are a number of key services especially important for homeless families. These families with children were extremely likely to cite domestic violence as a reason for homelessness (46%) as well as family break-up (21%). In these situations, both law-based resources to deal with custody and visitation (46%) as well as family break-up (21%). In these situations, both law-based resources to deal with custody and visitation (46%) as well as family break-up (21%).

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Minimizing the cost of building Elwood Heights was also a priority because the chances are there is not going to be a significant amount of funding for the project. Reducing costs was another reason for having the pods of homes with communal bathrooms since it would be significantly cheaper to provide upkeep for infrastructure for one bathroom unit as opposed to 5 separate ones per housing pod. Also, building the homes close together would reduce costs and require shorter access roads. The site was designed around the existing vegetation and wetlands so additional resources would not need to be spent on the deconstruction of the area. This would also give the community more of a spacious feel. The natural vegetation that is already on-site is a great buffer to the surrounding neighborhoods. The north, east and south sides of the site all contain a tall tree buffer that would reduce noise from the direct neighbors.

A major goal in designing Elwood Heights was to create a housing site within a location that is family-friendly and a place where the residents feel they are actually part of a community. In order to create more of a communal setting the design for the site consists of two pods of 4-6 houses that are arranged in a circle with the fronts facing each other and a unit on the end to serve as the shared shower/bathroom unit. The center of the circle could serve as a communal area where people could garden or children could play. This design would allow for easier interaction between the families. Additionally, Elwood Heights was designed to incorporate a general community building and space. This area would include gardening space, a playground and a community building where all of the residents could hold meetings, make group meals or whatever they desire.

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TRANSITIONAL SETTLEMENTS

CHAPTER 5

SITE PLAN 3: ELWOOD HEIGHTS

COMMUNITY/SHARED SPACES

The large community building will be the center of the community, both metaphorically and literally. The community center will be a large yurt somewhere in the 30 to 40 foot radius range. The community center will include segregated showers, laundry facilities and a large kitchen space suitable for large meals or gatherings. Communal bathrooms will be available, solar hot water could be utilized due to the south-facing exposure.

Though gardening can be a very positive and therapeutic activity for individuals of all ages and all walks of life, it can be particularly powerful for families. It allows a break from the stress and anxiety for both parents and children and provides an opportunity to reconnect with the natural world. This site is well-suited to accommodate gardening for community members on both a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale. Both in-ground or above-ground raised beds could provide gardening work, with a small and larger scale.

HOUSING DESIGN CONCEPT

Yurts are circular, semi-portable housing concepts made out of simple materials in a way that provides for strong structural integrity and longevity. The base of a yurt home is a raised wooden platform which can be built with a variety of different styles ranging from $1,000 - $6,000, depending on design. The structure of yurt’s walls are composed of circular vinyl latte that is then insulated and finished with a canvas wall snap on the outside of the structure. The dome shaped roof is built out of wooden rafters and insulation, with a dome costing extra at the top. The base of the roof structure is held together with a compression ring and tension band that runs around the whole structure, providing incredible strength and requiring no internal support system. This leaves the inside of the yurt completely open and spacious. On average, an entire yurt and platform can be set up in 1-2 days with a 4-5 person team. The structure on top of the platform can cost anywhere between $8,000 - $20,000 depending on diameter size, which ranges from 16 to 33 feet.

The circular yurt design provides for efficient wind/snow resistance, efficient heating, and portability at an affordable price. Heating can be provided using wood, electric or gas stoves. Electricity, kitchens and bathrooms can all be easily installed within a yurt residence for additional start-up costs. Walls and lofts can be erected in larger yurts to create different rooms and more space.

Many families choose to live in yurts due to the low startup costs, limited financial commitments, availability for all resources and facilities that are found in traditional homes and the creative and communal nature of yurt life. For these reasons, this style of housing seems ideally suited for the proposed clientele and site location.

Each individual yurt in this proposal will be around 22 feet in radius and will have a small cooking area consisting of a stove, microwave, and shelves/cabinets. Additionally, each unit will have a small fridge and a sink with hot and cold water. Electricity and water will be wired/truncated underground potential boardwalks to each yurt in order to limit burying of infrastructure and as an attempt to keep this housing concept semi-temporary. The water pump from the community center at a central boiling location. Several power outlet ports will be present for electric and lighting needs. Basic sleeping necessities will take up most of the yurt layout space; however, layout can ultimately be rearranged based on resident personal preference. Heating will be maintained using radiant floor heating pipes that have hot water pumping from the community center. There are no bathrooms proposed within each individual unit. Bathrooms and showers will instead be offered within a nearby gender-segregated shower/bathroom yurt.
EXISTING SITE

This site R.V. park is located at 341 Telegraph Road Bellingham, WA. The 3.23 acre, commercially zoned property has existing infrastructure and utility hook ups that lend to near immediate occupation. The ground has already been graded and paved and the current R.V. hook ups are ideally placed and can be readily accessed with minimal improvements.

The site is close to many entry level employment opportunities, close to bus lines and groceries, and other amenities.

The site is Privately owned and is listed at $3,576,696

CLIENT PROFILE

This mobile living solution is targeted at individuals who prefer transient living as a way of life. Rather than requiring a more stationary and permanent residence, this idea offers the flexibility and mobility of existing homeless communities, but more of the amenities that allow for greater levels of health, shelter, security, and belonging.

This site is specifically designed for older males who statistically are the majority of those choosing this lifestyle, but is not exclusive to this demographic. The layout makes it inclusive of all people and situations, though families aren’t recommended to be here due to the location of the site and the nature of mobile living.

RV SITE PLAN

The goals of the Elwood Heights community development are ambitious and multi-faceted. With careful consideration of site placement to meet the needs of the clientele including location near schools, easy transit access and the naturally-enhanced nature of the site with the forested tree buffer and stream adjacent, the site provides an ideal transitional staging ground for families down on their luck to be safely housed. The nature of the surrounding Samish Neighborhood zoned Residential Single makes placement of this community in line with current planning paradigms. The yurt housing design concept fosters community building and hands-on, quick start-up housing construction. This allows for neighborhood interaction even before the yurts are fully erected. Yurts provide a low-cost, scalable and mobile option for meeting the needs of this under-valued clientele group in a dignified manner.

CONCLUSION

CHAPTER 5

SITE PLAN 3: ELWOOD HEIGHTS

SITE LAYOUT

TRANSITIONAL SETTLEMENTS

CHAPTER 5

SITE PLAN 4: RV PARK

EXISTING SITE

This site R.V. park is located at 341 Telegraph Road Bellingham, WA. The 3.23 acre, commercially zoned property has existing infrastructure and utility hook ups that lend to near immediate occupation. The ground has already been graded and paved and the current R.V. hook ups are ideally placed and can be readily accessed with minimal improvements.

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This site is already organized in a community setting. By using existing infrastructure, the new community can be set up and established rapidly. A ring of sites for RV’s will encircle the community space. There will be sites reserved for people to pull up with their own vehicles, be it an RV or a car. Donated RV’s will also be available for people to move into. The individual RV spots have ample personal green space around them that acts as backyard. There will be space for temporary greenhouse and/or planters for food production. Most of the infrastructure will be consolidated in the center.

INFRASTRUCTURE / SANITATION

The 341 Telegraph Rd. site has the advantage of existing sewer, water, and electricity hook-ups. Straightforward access to sewer, water, and electricity lends itself well to the highly mobile community concept for this site. Mobile RV’s and trailers can quickly be placed and connected to these existing utilities. In the event that the community should need to move, dismantling of the site will be equally as efficient as the set up.

SEWER / WATER

Sewer and water utilities will be used for the communal spaces and shower facilities, and will be made available for any RV or trailer that is equipped to accept a sewer or water connection.

ELECTRICITY

Electricity has the potential to be a highly variable, and expensive monthly cost for the community. It is for this reason that it is recommended to limit electricity access to the communal facility and showers. Limiting access to electricity allows for the use to be monitored, and therefore, there will be no unexpected costs associated with heating the facility.

PROPANE

A propane stove can easily be used to heat the communal tent facility. Propane tanks can be purchased, refilled, and used as necessary. The advantage of propane is that the fuel is pre-purchased before use, and therefore, there will be no unexpected costs associated with heating the facility.

WOOD STOVE

A wood stove can be installed in the communal facility as long as the smoke is safely vented through the roof of the tent. Wood fuel can be sourced locally by community members, and is often available for free in trade for the labor to chop and remove it. Blankets, sleeping bags, and warm clothing are simple, inexpensive methods for retaining body heat during the winter months when nightly temperatures drop below freezing. This centrally located heated space can provide a comfortable sleeping arrangement during the winter for residences, and also act as a cold weather shelter for the county’s homeless citizens that are without refuge from the cold.

NATURAL BODY HEAT RETENTION

Body heat retention methods should be prioritized before wood or propane heat is used in order to minimize costs.

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Body heat retention methods should be prioritized before wood or propane heat is used in order to minimize costs.
**SIPS HOUSING**

Structural Insulated Panels are pre-assembled, and consist of insulating foam sandwiched between two sheets of Oriented Strand Board (OSB). SIPS can be custom ordered in various shapes and sizes for ease of assembly. SIPS are structurally engineered and require very little additional support framing. A small SIP structure can easily be transported by truck and placed with a forklift due to the lightweight characteristics of the panel. SIPS have a nearly 50% increase in insulation efficiency compared to standard wood framed structures.

**TUBE HOMES**

Pre-cast concrete pipes are a carefully designed and engineered product making it an unique material to be used as innovative housing. With a little imagination you can see where this idea could take the minimalist tiny concrete village. For example what if you took a few of these and connected them at the center with a common area via some kind of custom breezeway. Add plumbing, power, and some skylights and you’d be in business.

**VINYL HOUSING**

The vinyl housing consists of vinyl siding a roof area garge-insulation and a bamboo floor all placed on cinder blocks. These dwelling units could be cut off site and then assembled by the occupants of the site. These units would be cheap and create a sense of ownership at the site.

**COMPACT CAR TRAILERS**

These small units would be lightweight and pack flat. Inside the only amenities would be a bed and small table, making it suitable for a car or those who could be towed behind vehicles or delivered directly to the site as imperative house structures, and then easily moved again to a new site.

**HOUSING DESIGN**

**EXISTING RVs**

Mobile Estates is an homage to the old RV site that closed a number of years ago. By making use of already existing infrastructure, this property is basically “move-in” ready. A short term lease would be procured from the private owner with the added benefit of tax write offs. Residents of Mobile Estates will find a nice and convenient space waiting for them. If they have their own vehicle already, they can just pull up and claim a spot. If not, donated RV’s and campers will be provided here.

Everything a person will need will be available in shared communal spaces in the center of the site. They will be able to take a hot shower, grab a hot meal, and even learn some mechanical skills at the mechanic shop. If a resident is able to fix up their RV to a drivable condition they are free to hit the open road. For those that choose to stay, some level of cooperation is expected of them. They can tend the gardens, clean the rest rooms, work in the shop, or pay rent. Therefore, there will be no unexpected costs associated with heating the facility.

**ESTIMATED COSTS**

- WATER: $73.81 (monthly)
- SEWER: $367.9 (monthly)
- ELECTRICITY: $350 - $600 (monthly)
- PROPANE: $200 - $400 (monthly)
- GARBAGE/RECY.: $300 - $500 (monthly)
- SHOWER TRAILER: $7,000 - $10,000
- RESTROOM TRAILER: $7,000 - $10,000
- WOOD STOVE: $300 - $500
- SOLAR HOT WATER (2): $2,000

**SUMMARY CONCLUSION**

Mobile Estates is an homage to the old RV site that closed a number of years ago. By making use of already existing infrastructure, this property is basically “move-in” ready. A short term lease would be procured from the private owner with the added benefit of tax write offs. Residents of Mobile Estates will find a nice and convenient space waiting for them. If they have their own vehicle already, they can just pull up and claim a spot. If not, donated RV’s and campers will be provided here.

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Serenity Garden is a transitional housing model designed to help homeless and low-income individuals assimilate back into society. This model is designed to run as a permanent site with transitional residents. A permanent site will be a year-round garden. Unlike most transitional housing models which can last a year or less, this site will be permanent. Serenity Garden is also a transitional housing model designed specifically for homeless individuals to both be helped, and help themselves, get out of a state of homelessness. This site is approximately a total of 620,000+ sq ft and has already a significant amount of existing infrastructure. According to the University of Florida drip irrigation costs $500-1200 per acre.[6] For a 6 acre plot this means an estimated installation cost of $3,100-7,440. This number does not include annual maintenance. Low cost PVC drip tubing can be utilized reducing costs. Training someone to maintain the irrigation will also reduce associated maintenance costs.

C. NEW SITE LAYOUT

As mentioned in Serenity Garden, section a, there is already a significant amount of existing infrastructure. One of the main things that will need to be added to the site, however, is to make it a functioning garden.

a. Irrigation lines
b. Composting area
c. A crop wash station
d. A shed for storage
f. Resident housing
e. High tunnels
h. Bathroom building

D. FARM DESIGN

As depicted in Serenity Garden, Figure 1, approximately 6.2 acres of the property will be used to round producing garden. A few crops that can be cultivated year round in the Bellingham community are: kale, carrots, beets, yellow onions, and turnips. All of the produce grown on this site will be sold to local eaters, all the proceeds will go to help cover the cost of running the site, however, to make it a functioning garden:

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2. Crop Wash Station - This could double as a large utility sink that would be used for other purposes as well. Estimated cost $250-400 from the Home Depot.
3. High Tunnels - Used for extending the growing season and year round growing. High Tunnels are essential tools for anyone who is serious about agricultural output. Trapping solar energy high tunnels can create a greenhouse effect for larger areas of crops. The cost for one Economy Round Style High Tunnel 30’ x 6’ x 7’ 2 & x 7’ 2 from Farmtek costs $5,394.98. The farm would need at least two for beginning stages of construction. As well as extending the growing season it is proven that High Tunnels increase both production quality of produce (H) it is possible to apply for a grant to help cover this cost. The grant is through the USDA natural Resource Conservation Services "Know Your Farmer, Know Your Food" program. [H]

4. Plumbing Sewer System - As well as irrigation, a sewer system is needed to collect wastewater from on site. The video-67 earlier electricity will be available for connection and use from Marine Ave utilities.

5. Soil Testing and Conditioning - The soil on site should be chemically analyzed to determine the nutrients available. This can reduce costs associated with fertilizers/minerals as well as prevent over fertilization and associated problems. This test can also provide soil tests to determine what is needed for specific crops. The test could be done by William F. Black Soil testing located in Burlington WA.

6. Community Center - Referred to in depth in section E.
RESIDENT LIFE ON-SITE
At Serenity Garden residents will develop skills that will provide Serenity Garden’s members with marketable skills which will be helpful during their transition process. Some of these skills include: gardening, canning, meal prep, cleaning, and selling produce, farm work, small building projects (chicken coop, dog house, etc.), and more. Different jobs will be available to Serenity Garden’s residents. These positions include: gardener, maintenance, livestock caregiver, produce washer, salespersons (goes to a farmers market and other community events), sales managers (makes sales arrangements with community), and managers who will have an opportunity to upskill in each position.

Residents will be trained by Cloud Mountain Farms, a local nonprofit community farm center dedicated to providing hands-on learning experiences to aspiring farmers [E]. They have many free workshops that Serenity Garden residents can attend to learn how to properly maintain the farm. Some of these workshops include: Beginning Vegetable Gardening, Learning to Know Fruit Trees, Learn to Garden Sustainably, Build Tunnels and Cold Frames, Using Tunnels and Hoop Houses for Producing Gardening, and How to Harvest. By attending these workshops, Serenity gardening residents will gain valuable knowledge and skills that they can apply to both life at and after, Serenity Garden.

E. COMMUNITY/SHARED SPACES
During phase one, the two community buildings will be army tents and with revenue and time during phase two a double wide trailers. There are the HDT Base-X Model 8D36 large dome shelters, which have a clear span of 31'. There is an integrated floor, outlets and it has ventilation. It is lightweight and portable but at the same time is durable and strong. It takes about 20 minutes to set up with about 6 people. It has HVAC plenum, which means it has heating, ventilation, and air conditioning. The first building will include bathrooms, showers and washer dryers. There will be 2 showers and 3 stalls for each gender and 2 industrial washers and dryers. In addition, there will also be an office for self-management, and an office for Serenity Garden’s management. The second building will include the community kitchen, and a community living room. The kitchen will be used when the residents can attend to learn how to properly maintain the farm. Some of these workshops include: Beginning Vegetable Gardening, Learning to Know Fruit Trees, Learn to Garden Sustainably, Build Tunnels and Cold Frames, Using Tunnels and Hoop Houses for Producing Gardening, and How to Harvest. By attending these workshops, Serenity gardening residents will gain valuable knowledge and skills that they can apply to both life at and after, Serenity Garden.

F. HOUSING DESIGN
The individual housing will be HDT Base-X Model 103 tents that are military grade. They are 9’5” x 15’ (area of 142 square feet) and are lightweight, and durable. The frame allows for an easy and quick setup of less than 5 minutes with only two people. The price range is from about $400 to $500 and some tents can even be donated by local government agencies. The HDT Base-X is a pre installed floor, electrical wiring, and a ventilation system (HDTClear frame). There’s also an electrical outlet every 5’.

G. ESTIMATED COST
The cost for the Serenity Garden’s program would sit around $794,232.99 with the potential of having $227,380 of this cost donated.

H. SUMMARY
Serenity Garden is a place to help assimilate the homeless back into society and get them back on their feet. It’s a place where they can feel safe and connected, be with people who share the same experiences, and help develop skills that can be applied to the real world. They finally can have a roof over their heads, a place to sleep, and food, while at the same time benefiting them to help in the future. By completing their duties, activities, and chores, they develop by learning job skills and improving their overall health. Gardening can be therapeutic, and can be used as a tool for therapy of mental illnesses. Serenity Garden offers multiple resources and activities to keep the community members busy.

The products grown by the residents at Serenity Garden will be sold to local co-ops and other food markets. Two days a week Serenity Garden will be open to members of the public who wish to come and purchase produce, eggs, and other products. The projects funded by the residents at Serenity Garden will be used to local co-ops and other food markets. Two days a week Serenity Garden will be open to members of the public who wish to come and purchase produce, eggs, and other products.

RESIDENT LIFE OFF-SITE
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