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Agroecology
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Final Permaculture Design Project

Introduction

This permaculture design and implementation plan addresses the Rock Hill Park in the York Neighborhood of Bellingham, Washington. Located at 1329 Iron Street, the park encompasses five total plots with an area of 1.4 acres. On the east side of the park it buts up against Interstate 5, on the south side Lakeway Dr., and on the north and west sides the backyards of residential houses. The site lies within a zone 8a hardiness climate and the USDA "Chuckanut - Urban Land, 5 to 20% slopes" soil zone. This soil is well drained ashy loam which lies 40-60 inches thick over lithic bedrock (*Web Soil Survey*, n.d.). While the maps may do the best job of giving an accurate overview of the different sectors, elements, scales of permanence, advantages, and challenges of the site, let me elaborate on them in writing as an introduction to the site and what factors influenced my design.

Before diving any further into this project, it is critical to acknowledge that this site lies on traditional tribal land of the Nooksack and Lummi peoples which was unjustly stolen from them.

First, a look at the site's elements. The site is quite hilly, consisting of an upper area, accessed from Iron St. and a lower area accessed from the alley between Iron and Humboldt Streets. The two areas are separated by a hill which runs along a north-south axis. The hill is quite steep, ranging in grade from 20-50 degrees. The park also has a sizable number of large shade trees, most of them deciduous. However, there are a couple open areas which are free of trees, the most notable of which is a large field on the north end of the park. In addition to these factors, there are a few elements already in place at the park. To start with the greatest scale of permanence, there is a large concrete wall running along the east side dividing the park from I-5. At a slightly lesser scale of permanence the site contains a large concrete slab with a basketball hoop, a small playground structure, and a fence dividing the park from Lakeway Drive. The least permeant elements would still require a lot of work to remove and consist of two large raised beds running along the park's west side, a concrete bench and picnic table, a set of stairs running down the large hill, a fence adjoining the basketball court, and a large park sign on Iron Street.

There are many sectors influencing this site area, but even a quick look at the park shows water to be the most crucial. As the park lies on a hill (which has an exposed rocky summit) and

includes a lot of steep slopes, water drains very quickly off the site towards Lakeway Dr, the alley, or Iron street. Another sector which significantly influences the site is sound, as it lies right next to I-5 and receives constant road noise. While I have already touched briefly on the number of trees in the area it is important to note that their presence results in limited sun exposure, with about 50% of the park shaded throughout the day. One of the advantages of the trees, walls, and fences on the site is that despite its relatively high elevation, the park does not receive any sever winds.

Of these various factors, elements, and sectors, water and slope clearly appear to be the two major issues with the site. Because of its small land area, I was forced to find solutions for working with the steep slopes in the park and managing to retain some of the water on the property. However, as the park lies in city limits, it already has a connection to city water which could be used supplementarily where needed. Yet there are no ways around managing the steep slopes effectively, and in the spirit of creating a self-sustaining system I worked to retain as much rainwater as absolutely possible.

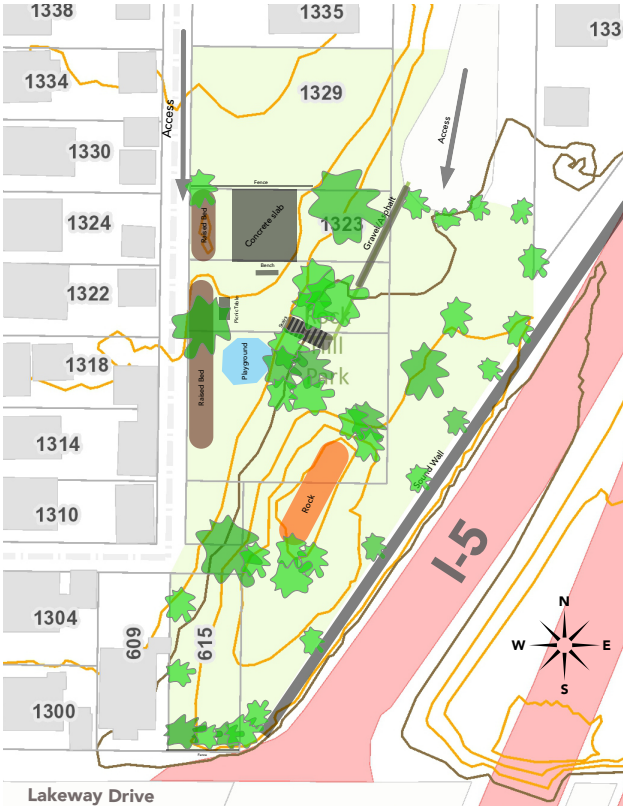

Figure 1: Map of site with elements (*CityIQ - City of Bellingham*, n.d.)

Figure 2: Satellite image of site (*Google Maps*, n.d.)

Site Goals

In addition to considering an overview of the site I laid out some baseline goals and objects before launching into this project. While I primarily aimed to create a self-sustaining permaculture system on the site based on the principles and process laid out by Jessi Bloom and Dave Boehnlein in their book *Practical Permaculture*, on which this project leans heavily, there were a few other specifics I wanted to incorporate into the design. In addition to agricultural systems I hoped to include spaces and tools for crafting, building, repairing, and generally learning and making through hands on production. This was largely inspired by a book I recently read called *Craeft: An Inquiry into the Origins and True Meaning of Traditional Crafts* by Alexander Langlands which lays out the value of crafts for sustainable and regenerative systems. These spaces and tools will allow me to increase my self-sufficiency, diversifying my income streams and serve my community. I also wanted to make

sure to include a farm stand for selling produce and craft goods and as a space to interface with the community. Additionally, I plan on creating a garden bed space specifically dedicated to growing crops for seed. I am motivated to include this space as a way to fight against the global issue of seed monopolization outlined by Vandana Shiva in her book *Stolen Harvest*. Through all the aspects of my design I hope to create a space which is healthy and enjoyable to live in and through which I can grow my relationship with nature, land, plants, and animals.

The overarching plan for tackling this site's difficult topography is to implement the permaculture idea of zones into a path network which would allow me to conveniently survey all the zone 1 sections of the homestead without cramming them into a space which is far too small. By creating a loop path which goes past all the tasks which need to be attended to on a daily basis such as the chickens, rabbits, and primary garden beds I will be able to implement the permaculture principle of managing and maximizing edge space. The path will create opportunities to interact and observe a large portion of the space throughout the day without having to go out of my way. As it is a quite small area to begin with, walking throughout the site multiple times a day will not be burdensome.

Design Outline

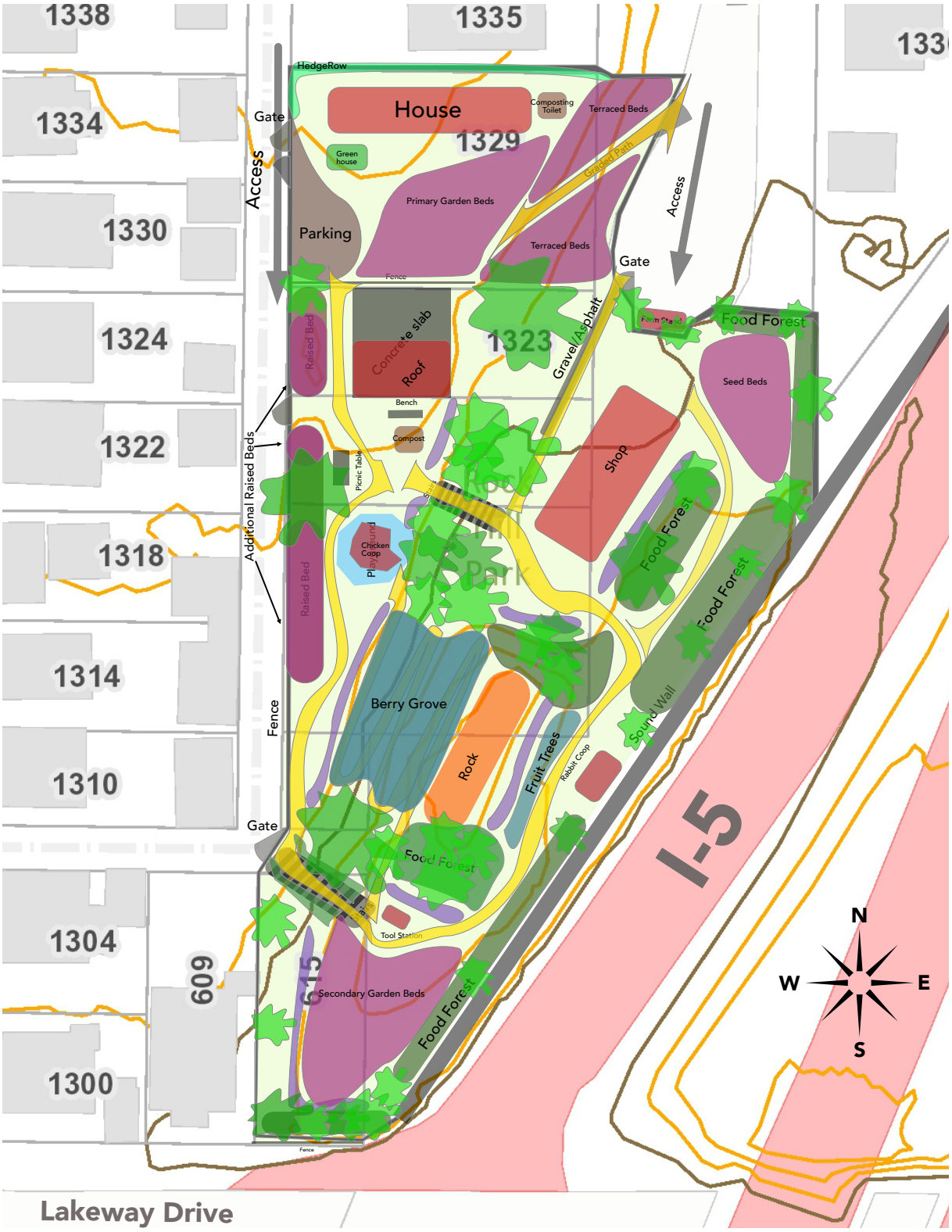

Figure 3: Design plan map (*CityIQ - City of Bellingham*, n.d.)

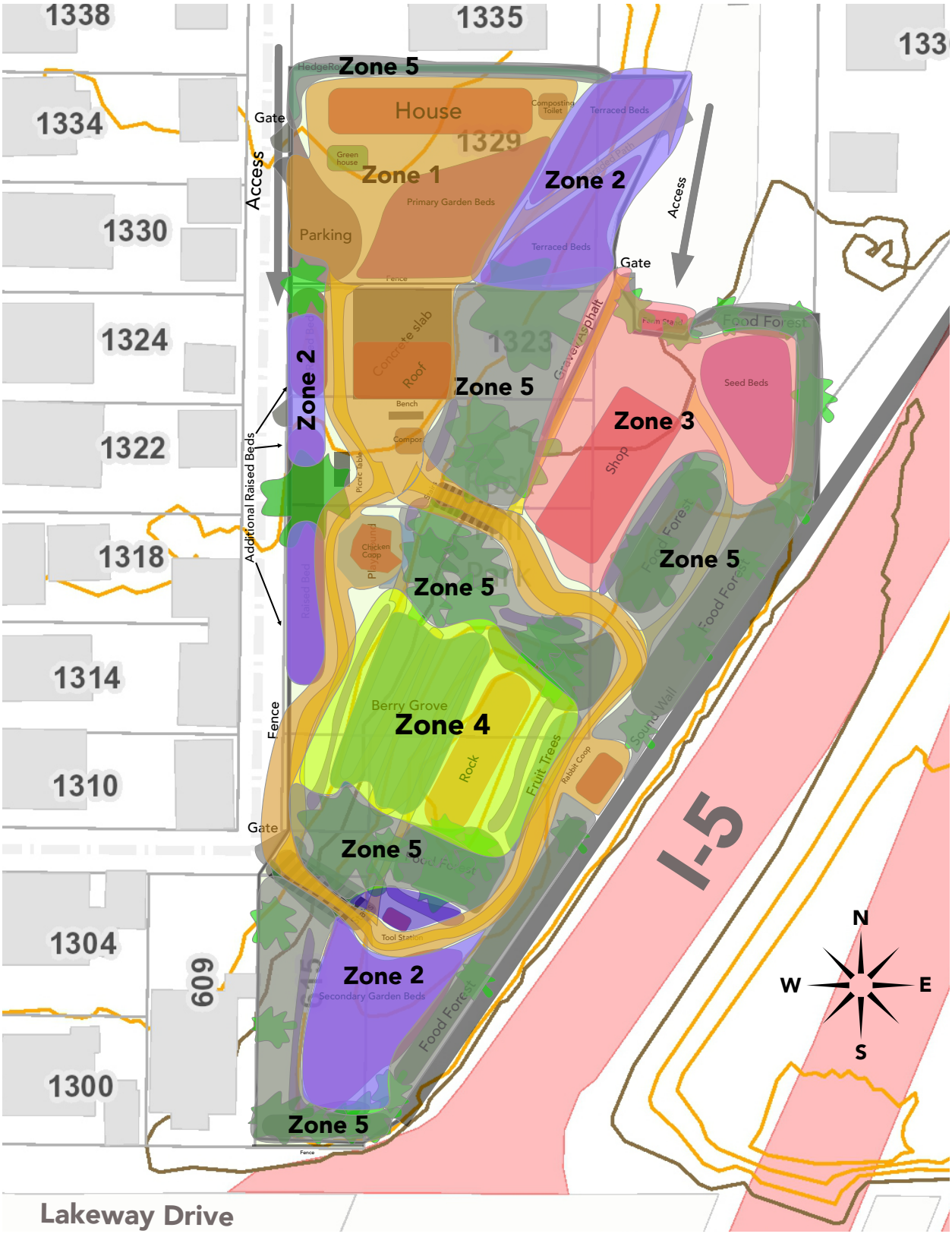

Figure 4: Zone Map (*CityIQ - City of Bellingham*, n.d.)

Gardens:

My plan for this site will include five different garden bed areas. As there are many shade trees, the locations with enough sun exposure to sustain a conventional garden bed were limited. This forced me to break up the garden beds into many separate locations. While the distance between gardens will certainly make some work inconvenient, my hope is that through organizing the gardens carefully and implementing my zone one path plan effectively, I will be able to mitigate these restraints. All of the garden beds will be planted on contour to maximize water use(Jessi Bloom & Dave Boehnlein, 2015). The first and most important of the gardens is the "primary" garden immediately adjacent to the home. Lying within zone one, these garden beds will host the plants which need the most attention and will most commonly be used while cooking. Thus, these beds will be comprised largely of annual plants, primarily vegetables and herbs (annual and perennial). With these gardens so close to the house it will be convenient to keep an eye on them throughout the day, and by closely monitoring these beds I will be able to get some sense of what is going on in the other gardens around the homestead. This area receives the most sun of anywhere on the site and will be immediately adjacent to the toolshed/outdoor workshop.

The next closest gardens to the house are the terraced beds on the far northernmost section of the hill, immediately adjacent to the house and the primary garden beds. While these gardens are quite close to the house, they receive less sun as they are primarily west facing and will be less convenient to work in due to their terraced nature. Despite the slight inconvenience, these beds will contain similar plants to those in the primary beds but will focus more on less time intensive plants and more perennials. Similar to these beds will be the raised beds along the west edge of the site. With these raised beds already in place, using them as a garden seemed obvious. However, the beds are quite wide (~15ft.) and thus will be a little difficult to work on. They will be at a similar priority to the terraced beds and contain similar vegetation with a little more focus on perennials and guild planting.

The fourth garden bed lies on the southernmost end of the site. With a southern aspect and plenty of sun this is an ideal location for garden beds but is much further from the house and on the top of the hill, making access inconvenient. This garden will contain plants similar to those in the primary garden (annual vegetables), but with the end goal of sale in mind. With this garden on the same side of the hill as the farmer's stand and the Iron Street access point, transporting harvested

goods to these locations will be much easier than taking them back to the house. With a small tool depot next to this garden and its central location on the zone one trail, it will still be convenient to check in and work on this plot.

Lastly, the bed in the northeast corner of the plot adjacent to the farmer's stand and workshop sits in a small patch of open area which receives decent, but limited sunlight. The primary purpose of this plot will be to grow seed. Its lower hierarchy and zone placement are by no means indicative of its importance, as growing seed is a crucial aspect of farming (Vandana Shiva, 2016). Yet, as the process for growing seed is so different than that for food harvest, separating it from the other gardens made sense. This area is close to both the workshop and the farm stand, making tool access convenient and maximizing opportunities to discuss the issue of seeds with those visiting the farm. While I believe firmly in the importance of growing seed as an issue of global justice and resiliency it will also help me to grow crops which are uniquely suited to the microbiome of this sight (Rachel Foster, personal communication, May 27, 2021).

Livestock:

With the small area of this plot, working with large livestock was not a feasible option, but the limited space also makes maximizing every opportunity and stacking functions crucially important. Thus, I chose to incorporate two small livestock: rabbits and chickens. Incorporating chickens into the plan also gave me the chance to discover an alternative use for the play structure currently in place, transforming it into a chicken coop. However, I will start the chickens off in a tractor to maximize use of land and transition them into the permanent coop later. The current structure makes some great opportunities for roosting, all I will need to do is add a nesting coop, replace the woodchips with grit, and add netting to protect the chickens from predators. The play structure currently has an area of approximately 450 square feet, assuming each chicken requires 4 square feet of coop space and 10 square feet of range space this will be fare more than enough to house 20 chickens (20 x 4 + 20 x 10 = 280). I will choose Australorp chickens as they are both good egg layers and good meat birds, have a quiet and friendly temperament, have no particular health issues, and are easy to raise (*Australorp Chickens: Everything You Need To Know* -, n.d.). My main intention for the chickens is egg production, but if one occasionally gets broody, I could also use them for meat. I may choose to experiment with some more breeds based on my experience with Australorps.

In addition to the chickens I will also raise rabbits as livestock. With a small spatial requirement, efficient manure production, and good meet, rabbits make a great option for a small homestead like the one I am designing. I will start out with ten New Zealand White rabbits as they make for a good meat and fur breed which are medium sized and mature quickly(*Raising Meat Rabbits – Importance of Your Choice of Rabbit Breed*, n.d.). I will originally house these rabbits in a tractor which I can move around the grassy areas I plan to turn into garden beds. As I transition into a more permanent stage, I will move the rabbits to a cage free range area along the zone one path on the east side of the site. With this decrease in space, I will also need to decrease the number of rabbits. However, I was unable to find definitive numbers on range size for rabbits and thus will have to experiment and figure out as I go what will work best and still be humane for the rabbits.

Workshops:

As I stated in my goals for this permaculture site, incorporating workspaces for crafts, woodworking, production, and tool maintenance is an important feature for my homestead design. There will be two workshops, one will be on the old basketball court and will consist of a roof over the southern half of the area which will provide a space for storage and to work while it is raining, but not shade out any garden beds. This workspace will include ruff carpentry tools, gardening tools, and a car lift. The second workshop will be on the higher level of the park adjacent to the farm stand and seed garden. This workshop will be fully enclosed and will include a sewing machine, a fine woodworking shop, and a welding area with space to expand into other crafts such as pottery, glass blowing, basket weaving, leather work, flax composites, etc. This workshop will also be close to the "public interface" of the homestead and will operate as a space for teaching classes and helping community members learns skills and make repairs.

Farm stand:

I will build a small farm stand on Iron street where the rock hill park sign currently lies. The stand will have a cooler for eggs and vegetables, a space for selling craft goods, a bulletin board for community use, and information about a seed library and trading seed. This farm stand will act as a point from which I can interact with the public and the community.

Food Forests:

I will position food forests throughout the site in locations which are not big enough or do not get enough sun to be worth turning into annual garden beds. These food forest areas will focus on guild planting and perennial vegetation which takes minimal maintenance and provides harvestable food and material. Guild planting focuses on putting plants in proximity that work well together to create a mutualistic system. In order to design guilds, you must consider the needs of all the plants and what they have to offer. Some common guild ideas are two arrange plants based on their function and what layer of the forest canopy they occupy. Some important functions are nitrogen fixers, predatory insect habitat, and pollinator attractors. The layers of a food forest include large trees, small trees, vines, shrubs, herbs, and ground cover. Some plants I specifically plan to include in my food forest are Siberian pea shrub, Lemony Sorrel, Sea Kale, Lupin, Strawberries, Daikon Radish, Groundnut, Goumi, Yarrow, Borage, Lemon Balm, Turmeric, Chokeberry, Red Current, White Mulberry, Black locust, and Dill. These plants work across many of the guild categories and will provide important function for the farm such as food for the chickens (Siberian Pea shrub & White Mulberry) and craft material (Black Locust) (Jessi Bloom & Dave Boehnlein, 2015).

Greenhouse & Compost Pile:

Another important feature I will build on the site is a greenhouse, I will position the green house next the house and the primary garden inside of zone one. In this location the greenhouse will receive a lot of sunlight, be easily accessible, and be close to the most important garden beds. My Compost pile will reside between the primary stair set and the open-air workshop. In this location the compost pile will be equidistant from most garden beds and not impinging on another elements' space.

Path:

A primary path which circulates through the site was the grounding idea behind my whole design idea, thus it is very critical that it be carefully thought out and implemented. The central path will run south from the house and primary gardens, past the open-air shop and chickens, it will then turn east up the hill going past the secondary garden beds before turning north past the rabbits, and finally back east past the shop and down the main stairs. Most of the area where this path will be running is currently grass, so it will be easy to transition to a path. However, there is one spot next

to the chicken coop where the raised beds will need to be re-positioned and then a set of stairs will need to be constructed at the south end of the hill where the path runs up it. There will be a few secondary paths to complement this main one. Describing these from north to south, the first will be a wide well graded path running through the terraced beds to the east of the house. This path will allow me to move wheelbarrows and other cumbersome items up the hill. The next path will run from the access point off Iron Street by the farm stand to the top of the main stair set. Another trail will run from the front of the shop, through the seed garden, and meet the main path by the rabbits. The last sub-trail will break off the main path next to the tool station and switchback down the hill through the berry patch.

Berry Grove and Fruit Trees:

There is a large swath of the main hill which is free of trees, and though it faces west, receives good sunlight. As this portion of the hill is currently covered in Himalayan Blackberries and Snowberries, and the slope of the hill is less that it is elsewhere, I thought it would make a great location for a terraced berry grove. This was also an opportunity to look to nature for guidance and copy the system which is already in place. The grove will have a small trail running through it, allowing access to the plants, and will contain species such as salmonberry, elderberry, chokeberry, raspberry, and blueberry. The clearing of this area to make space for the berry patch would ideally be achieved through borrowing a friend's goats, but if this is not possible it could be done by hand. In addition to the berries there will be a small grove of fruit trees next to the swale on the west side of the rocky hill summit containing at least one apple, cherry, and plum tree. I chose to only implement a fruit tree growing system like this in this one location because it receives good sun and I am unsure how effective it will be; thus, this will give me the opportunity to experiment and see if it works.

Hedges, Fences, and Edges:

One way of working with the edges and stacking functions that I am very eager to learn more about and experiment with after reading are hedge grows. I plan to create a hedge grow on the far north edge of the property next to the house. This will give me space to grow fuel and craft material, divide the house from the neighbor's property, and experiment with this difficult technique to see if it could be implemented elsewhere on the homestead (Langlands, 2017). As the site will have many gardens spread out over the whole area, I choose to implement one large fence around the whole site rather than many smaller fences. The fence will help to limit pest problems and

specifically will keep deer out. There will be five gates in the fence. One by the house and parking area, another between the raised beds on the west side, and another next to the secondary stair set. I will deconstruct the fence between the basketball court and the field and rebuild it as part of the fence around the property.

House:

While I don't have the time or space to dive too deeply into the house's design, there are a few design elements I am excited to implement to maximize passive energy use. The house will be long, stretched north to west to maximize sunlight. Adjacent to it on the east side will be a small composting toilet in an outhouse. The house will contain thermal masses and have large south facing windows with a roof overhang to maximize sunlight in winter and minimize it during summer. It will also have a wood burning cob oven with a coiled waterpipe to heat the house and as much of the water as possible. I would also like to implement a thatched roof on the house as it is an excellent opportunity to learn a traditional craft skill and to use sustainable, locally sourced building materials (Langlands, 2017). The house will also have a roof shape which maximizes southern light exposure with solar panels installed on it. Lastly, the house will be outfitted with a rainwater collection system which will feed into water tanks lining the west side of the house, and a grey water collection system. All of these measures will help in following the permaculture principle of catching and storing energy (Jessi Bloom & Dave Boehnlein, 2015).

Water Systems:

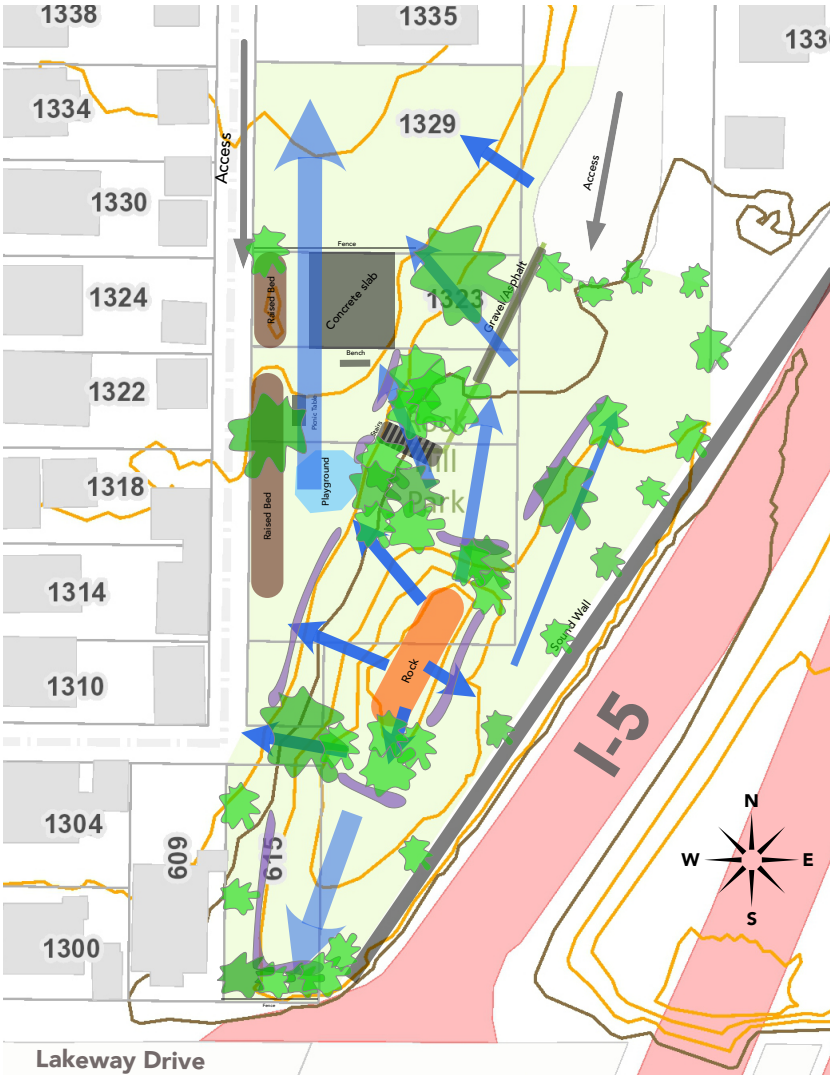

Figure 4: Water analysis map, swales shown in purple (*CityIQ - City of Bellingham*, n.d.)

As I mentioned earlier, water management is a serious concern for this site and will require careful planning and design. The primary water management steps I will take will be to install swales at the base of many of the steep slopes on the plot. While it would be ideal to be able to put these swales midway up the slopes, the gradient is so steep that this would drastically compromise the stability of the hill. These swales will all have overflow ditches which will lead water off site in the case of a high-water event(Jessi Bloom & Dave Boehnlein, 2015). On the lower, western end of the site, the ditches will lead onto the paved alleyway and from there will flow out into the road and the sewer system. In the upper, northeast corner of the plot the overflow ditches will flow out onto Iron

Street. The overflow ditches in the southeast corner will flow out onto Lakeway drive. The planned locations of the swales are highlighted on the water map. Another important aspect of managing the water on the slopes will be to keep them heavily vegetated, in some places this will require planting of food forest guilds or terraced gardens, but in many places, I will simply leave the native vegetation already present.

The other half of the water management system will be collecting rainwater on the roofs of the structures. However, with the incredible amount of yearly rainfall western Washington receives during the wet season, storying all of this water is an unrealistic goal. Along with the water harvesting system, each large structure will be equipped with at least one 275-gallon cubic water tank. I want to use these large tanks because they are easily stackable and thus more efficient for a small space like this one. Ideally, I would have at least 10 of these tanks split between the major structures, but I plan to be flexible with this based on cost and space restraints. With a total area of 2645 square feet of roof space, multiplied by 2.9 cubic feet of water per year this is equal to 7670 cubic feet or 57, 375 gallons of water per year. This is obviously far too much water to be stored, so I will equip each set of tanks with an overflow system which will lead to the closest swale, or in the case of the house, the alleyway.

Timeline

While my map and design plan depict the proposed end design for the site, its conversion into a permaculture homestead will not be a quick or direct process and instead will be gradual process allowing me the necessary time to implement the permaculture principles of observation and interaction and small and slow solutions. Here I will lay out the plan for the first five years with the proposed site map as the goal for year five. Of course, this timeline comes with the caveat that as I spend more time on the site, experiment on a smaller scale and gather as much information and intuition as possible about the space my design plan will most certainly change and evolve. Furthermore, as this design timeline is following the Permaculture principle of designing from patterns to details, it may breeze over many specifics, this is not a result of inattentiveness but of realization that details are subject to change and evolve(Jessi Bloom & Dave Boehnlein, 2015).

Year 1:

My first step for year one will be to purchase/acquire a small camping trailer and to create space on the site to park it, likely next to the Iron Street entrance. After moving onto the site, I will

continue to maintain my off-site income streams with the main priority for the first year being settling into and observing the site to form a more detailed and accurate idea for the final design. However, there are a few projects I will undertake in the first year. The first priority will be to build a composting toilet on to supplement my trailer. From there I will create, through tilling by hand and adding compost, a small garden plot in the northeast corner of the park where I plan to eventually have a seed garden. Next, I will move to building a roof over one half of the concrete basketball court. This roof will give me a space to begin acquiring tools and to work on projects out of the rain. I will also take down the fence separating the basketball court from the field and begin constructing a fence along the north and west edges of the park to keep deer out. The last project will be to build two animal tractors, one for chickens and another for rabbits, to introduce these two livestock into the system and begin moving them around the areas which will eventually become garden beds.

Year 2:

In year two I will begin to chip away at some of the larger projects on the site. I will put in the "secondary" garden beds on the south end and convert the raised beds on the west side into productive beds. I will also plant the hedge along the north end of the site so that it can get started growing as soon as possible. I will construct the zone one path which will flow through the site allowing me to easily access all the critical sections with relative ease. Constructing this path will require creating a graded path along the northernmost end of the site which will allow me to bring wheelbarrows up and down the hill without going all the way around the block. I will also need to build another set of stairs up the hill on the southwest end to complete the loop. Another project for year two will be clearing the Himalayan Blackberries and Snowberries off the hill and constructing and planting a terraced berry grove.

Year 3:

The primary objective for year three will be installing the swales. While it would be nice to have these in place earlier for the sake of the vegetation on the site, I feel that building the swales in exactly the right places to hold as much water as possible will be critical to the long-term success of the site. Because they are so crucial and have a high scale of permanence, I did not want to plan on rushing the building of the swales(Jessi Bloom & Dave Boehnlein, 2015). In year three I will also tackle planting the food forest guilds and planting some small fruit trees where I indicated on the

map. Lastly, I will construct a permanent chicken and rabbit coop and transition the livestock into these.

Year 4:

Year four will host the biggest project: building the house. By waiting till year four to build the house I hope to have the best possible idea of how to build a home which fits the site well and can optimize energy use and be comfortable to live in. Like the swales this will take a lot of careful preparation and planning, but the actual work of constructing the house will also require a huge amount of labor and the project may run over into year five. The other part of the work for year four will be constructing the primary garden beds which surround the house, while it would be optimal to have these beds up and running sooner, I was concerned that they would get damaged during the house building process and might be best left at least until the foundation is in place.

Year 5:

On the list for year five will be constructing the terraced beds along the hill on the east side of the house, constructing the shop and farm stand, and transitioning the beds I created in the first year into a seed crop specific garden, and building a green house. If any of these projects prove too large for completing in year five, I will prioritize building the terraced beds and greenhouse and transitioning the seed garden as these will be more pressing than constructing the workshop and farm stand.

Analysis of Inputs

This plan would be incredibly expensive and require a vast number of inputs. Firstly, there is the cost of the land itself, and the trailer I plan to park on it. There will also be a huge cost and time investment to rent out an excavator to: grade the path on the north hill, dig the swales, grade and install the foundation for the two large buildings, and put in the parking area. As I am not experienced with operating an excavator, I would also have to either find someone to help me with this and pay them in some form (work, food, money, barter) or acquire the necessary experience on my one. The construction of the structures, especially the house, will require a huge material and time cost, however I do have some carpentry experience so there will not be as much as an educational process. While I currently have a handful of tools, they have taken me years to accumulate and acquiring all the tools needed for a homestead like this would also be a large

investment. Additionally, many of the gardening tools would need to be redundant as transporting them back and forth across the property would be very inefficient. Other costs would include components for the house and structures such as solar panels and water barrels as well as gardening and landscaping necessities like gravel, composted manure, fencing material, paving stones, plant starts, and seeds. Hopefully most of these would be a one-time cost. Other inputs like city water and wood fuel for the stove would be more constant inputs into the site and would be ideal to eliminate, but on such a small site I do not see this as feasible.

Resiliency Plan

While it is my goal and hope that this homestead would be able to create a sustainable life for those living on it, it is important to acknowledge that it is an incredible financial investment and risk which may fail. In order to prepare for this possibility, I have a few back-up revenues options, and some ideas on how to responsibly create a profit from the land outside of homesteading. Firstly, I have a range of skills from landscape and product design, to carpentry and farm labor, to climbing gym management and route setting to fall back on as revenue streams. It is likely that I will need to continue working in at least one of these fields while constructing the homestead regardless of how successfully it pans out. In the case of complete financial failure, I would also transition the farm over to a community gardening space and rent out individual plots, food forest space, and chicken/rabbit housing. I would also move back into the trailer and use the house as an Air B&B or rental residence. While none of these options are my ideal choice, I believe a combination of them could help me to recover from financial downfall and maintain some level of a sustainable life on this site.

Pest and Weed Management

Like any other aspect of this homestead, I plan to approach the issue of pests and weeds in as holistically a manor as possible. For large pests I will build a fence around the site, specifically to keep deer out, which are a major problem around Bellingham. However, controlling insect, fungal, and bacterial pest proves to be a much more difficult and complex problem. In order to address this, I plan to look to nature for guidance and inspiration and follow the permaculture principle of cultivating diversity. I will thus create boarders around my gardens of plants which attract helpful insects, such as bees and spiders, and repel pest insects. Many species of herbs, such as lemon balm and basil are great for this, other plants such as yarrow and borage are also good options. Other

steps like planting in guilds, rotating crops, and working with polycultures will help to maintain a healthy system which is less susceptible to pests. Additionally, it will be important to use ground cover plants like squash and sweet potatoes which can help reduce weed growth and maintain soil health. Additional alternative solutions for pest management will include creating traps for insects and slugs and treating fungal infections with teas. It is my goal use natural processes and plant relationships to control pests wherever possible and to fall back on manual methods like weeding, chemical use will be an absolute last resort (Mars, 2005).

It is also important to consider how individual plant health effects pest issues. If plants are healthy, thriving and living in a healthy soil community, they will have a much easier time fending off pests than if they are stressed. When one uses pesticides and herbicides, they may temporarily fix pest issues, but they will have a significant long-term impact on the health of the plants and will worsen pest problems in the long term (Rachel Foster, personal communication, May 27, 2021). Thus, taking the time to asses plant and soil health regularly and then taking every step possible to maximize crop health will be crucial steps in pest management, and is also an important form of the permaculture principle of self-regulating and accepting feedback.

Social Equity

The inequality evident in permaculture is blatantly obvious as it is a system which has stolen indigenous practices from around the world and used them to create a program which is marketed for profit to the extremely wealthy who can afford thing like get-away trips on farms and buying and developing large tracks of land (Stella Strega Scoz & Jose Lorenzo Zamora, 2015). While acknowledging this reality is important, it is only the first step in de-colonizing permaculture. I have a few specific ideas for how this homestead can work to operate in a just and equitable manner. Firstly, paying rent to the native Lummi and Nooksack tribes will be a top priority for the homestead. Furthermore, I will charge at the farm stand according to each by their means and create a donation box for those who can more than afford the produce to help provide food for those who cannot. This is especially important as there are many houseless and food insecure people in this part of Bellingham. They last way I will address inequity through the homestead will be by providing crafting classes at my shop. While these classes will be open to any community member, I will work with the community and local organizations to market them specifically to black, indigenous, people of color, and other marginalized groups within the community. Part of this will be to create scholarships for those who cannot afford the classes. Those each of these is a small contribution to

reforming a huge system of inequality, each step is vital and important, and looking to create an impact on the community level can lead to changes on the systemic level.

Appendix

Preliminary Maps:


FENCE
HEDGE Row.
GARDEN BEDS
1329
TERRACE
BEST ACCESS
330
324
322
1318
1323
ZONE 2.
ZONE 1.
HEDGE Row
609
615
AREA #1.
City of Bellingha


1329
G-BEDS.
TERRACES
1323
SHOP
PARKING.
No Scale.
SMALL LANDSCAPE
HOUSE.
CHICKENS.
G-BEDS.
BERRY
FRUITS.
BERRY.
GREEN HOUSE.
609
615


POND
ZONE 1
1329
HOUSE
TERRACE
1330
1324
1322
1318
PUBLIC INTERFACE
FARM STAND
SHOP
SHOP 2
FOOD
STAIRS
ZONE 2
K-BED
CHICKENS
FOREST
BED
BERRY
RABBITS
PATH
TOOLS
609
"BACK" GARDEN
IDEA #2
City of Bellingha


HEDGE
POND
1329
HOUSE
TERRACED GARDEN
PUBLIC
1330
PARK
1324
SHOP
STAND
GARDEN
1322
1318
CHICKENS
BERRY
RABBITS
609
City of Bellingha

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