

ABSTRACT

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 TOWARD SUSTAINABLE COMMUNITY IN
 PENNSYLVANIA'S RURAL LANDSCAPE

 Audra Dale Harleman, Master of Architecture, 2011

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With the increasing rate of land development, consumption of natural resources, and destruction of ecosystems in the United States today, it is crucial to investigate sustainable alternatives to current development practices and patterns of settlement. This thesis proposes strategies for environmentally responsible land use and partial development of 40 acres of overgrown, family-owned farmland in rural Pennsylvania. It investigates ways in which the creation of community can help to promote sustainable patterns of development for this rural landscape. The proposal aims to strengthen connections within the community as well as between the community and natural environment. By questioning current zoning codes and existing values surrounding land ownership and dwelling, we can design and develop in less invasive ways that help to preserve the beauty of the landscape and the places that we love.

A NEW GENERATION:
TOWARD SUSTAINABLE COMMUNITY
IN PENNSYLVANIA'S RURAL LANDSCAPE

By

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Thesis submitted to the Faculty of the Graduate School of the
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Preface

History and Heritage

In the 1940s my grandparents, Mary and Alphonse Citro, bought the land on which this project is proposed. My mother grew up on the property in the 1950s and 60s and my father grew up in the nearby town of Lehigh. During its heyday, the farm grew orchard fruit, pumpkins, corn and other vegetables. My grandparents worked on the farm part time and a local farmer tended to the fields daily.

Family hardships and divorce lead them to abandon the site for several years, and the farmland has been largely neglected ever since. With considerable struggle as a single mother in the 60s, my grandmother managed to retain the property and pay its taxes for nearly 40 years thereafter. She was unable to properly afford the maintenance of the buildings and grounds, however, and the house, barn, and other buildings on site fell into disrepair. The land became somewhat of a black sheep in the family. My grandmother gave the land to my parents in 2000, shortly before she passed away in 2002. The buildings were condemned; and they were demolished in 2004.

Nature and Growth

Despite these seemingly abysmal circumstances, the land is a product of a complex history and, for better or worse, has thrived and changed independent of human actions and experiences. Independent of our social issues and economic hardships, the land remains. It changes slowly. It endures all of our behaviors and thoughts surrounding it, and our actions to it. It has a quiet will to live and grow and a humble permanence that will exist long after we die. The land is not just a thing or an asset but a symbol of our family heritage and of our ancestors' resolution to provide for us better than they were ever provided for.

Now, the forest, however young and unruly, has reclaimed its territory. Most

of the orchard trees have ceased to bloom. The water in the stream keeps trickling down through the valley. The birds and squirrels and deer have made the land their home. While the surrounding valleyscape has changed, our 40 acres have been left to grow and decay in a perpetual cycle that will slowly revert back to the natural ecosystem. Buildings around it have come and gone; trees have been cut down; fields have been plowed and replanted each season. The presence and constancy of the land has helped preserve a memory of the valley's past. In these quiet places in the valley, there exists a reminiscence of simpler days of living, when people worked with hands and tools instead of in front of computer screens.

A New Generation

And here I am, in front of a computer, another generation later, investigating my family's past and trying to forge my future. I don't quite know how I ended up studying architecture. I don't have an appropriately cute story about playing with legos or an erector set as a child. But I did make mud pies and play in the dirt. I did play hide and seek and capture the flag in the woods. I did love animals and riding horses; I still do. I sometimes watched the stars at night and fell asleep to the rhythmic sound of katydids chirping in late August. I jumped in piles of leaves in autumn. I built snow forts and went skiing in winter. I felt an indescribable happiness at the smell of the very first day of spring.

My brother, Max, and I grew up 20 miles northeast of the site in an equally rural area of Pennsylvania. Though we didn't spend much time at "the farm" when I lived in the area, it represents our ancestral home. I think, to some degree, Northeast Pennsylvania will always be home. The rural, woodland landscape is part of who I am, and I'm convinced that I'll never become a true city dweller. Living in a high-rise apartment building in Pittsburgh made me feel claustrophobic. Now, I live in the

Washington, D.C. metro area, and I don't think I will ever function at its speed. I will never own a home that doesn't have a direct exit onto solid ground. Most of us need this connection to the world, and we *should* need it.

While it is wise to advocate density and the benefits of living in urban areas, I want to live in rural America. The millions of suburban and rural dwellers prove that I'm not alone, either. I've witnessed the growth of small towns and the rapid increase in development of land around where I grew up. Increasingly, farmers are selling their land to developers that build drab, lifeless homes and plop them down onto the anylandscape. Development, however slowly, is steadily encroaching on the project site.

My favorite architectural essay, "Replacement," written by W.G. Clark discusses ". . . looking finally not for a way out of the forest, but for a way to stay there with grace." "I think it will always be difficult to build; it should be difficult." "Our home is here, and what we build will be its parts. It is worth the effort to try to build well."¹ When I read this for the first time, I felt how intensely he captured the very essence of my own connection to both architecture and nature.

Max and I will one day be given or will inherit the farm, and it is our decision what to do with it. I feel a personal sense of responsibility to make good decisions with what I have been given in this life. My grandma faced too much adversity for us to take the easy way out and sell the 40 acres to a developer. I would feel like a sellout and an ingrate. The land has more value than just the money we would gain from selling it.

Like many other generations before it, ours has been criticized as lazy, entitled, irresponsible, and perhaps unable to function in a world without cell phones and televisions. I think this is not altogether incorrect. I am probably guilty of all

1 Clark, 6.

these things. In our defense, we were born into a fast-paced, consumer-driven world and have inherited the problems of other vastly irresponsible and selfish generations before us. But no sense whining about it. All we can do is make better decisions now. I have a will to be better and do better. I probably won't change the world but I can try to set a good example.

Dedication

To Max, who planted the seed of the idea for this thesis.

Acknowledgments

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Chapter 1: Introduction

Statement of the Problem



Image 1: Farmland and Development near the Project Site

“Man in space is enabled to look upon the distant earth. . . He sees it to be green, from the verdure on the land, algae greening the oceans. . . Looking closely at the earth, he perceives blotches, black, brown, gray and from these extend dynamic tentacles upon the green epidermis. These blemishes he recognizes as the cities and works of man and asks, “Is man but a planetary disease?”

- Loren Eiseley (from Design with Nature)¹

If population growth is assumed inevitable, then it is essential to design new models for land development and settlement patterns. W.G. Clark points out that “the American landscape is being sacrificed to building.”² It doesn’t seem wise to avoid planning for growth and adopt a “not in my back yard” point of view, especially in rural landscapes. The question arises then: how can we cope with growth responsibly?

The rural Appalachian valley in which the project site is located has been facing increasing development pressure due to sprawl from urban and suburban areas of Allentown and Bethlehem to the South, as well as from larger metropolitan spheres

1 McHarg, 43.

2 Clark, 3.

of Philadelphia and New York City. Nearly 1/4 mile from the site, 50 acres of former farmland has been subdivided for single family homes. The Mahoning Valley has historically been an agricultural valley.

Current settlement patterns and land development practices around the project site in Northeast Pennsylvania reflect status quo development trends and do not adequately take environmental concerns into consideration when planning and building. The planning of such developments does not take into account the fragile, vital, or beautiful places in the landscape in order to preserve and protect them for future generations.

The current zoning code for Mahoning Township does not promote a suitable approach to land development from an environmentally conscious standpoint. The legislation is short-sighted in that it fails to address any mindfulness of comprehensive development strategies toward the future well-being of the valley as a whole.

Public and private interests surrounding the land and its ecosystems seem to be out of balance. There is a vital sense community and interconnectivity that seems to be missing from conventional patterns of living.

Typical developments don't seem to promote community interaction or interaction with nature. The sizes and configurations of lots and houses near the project site don't seem to be appropriate for different types of residents. Dwellings offered by conventional developments do not necessarily provide what every person wants or needs in terms of size, configuration, or quality.

Typical market house types often do not reflect any planned relationship to historical context. The Mahoning Valley offers a richness of vernacular building forms and traditions that are worthy of being honored and even replicated.

Project Summary, Intent, Scope, and Goals

Summary

This thesis proposes a residential community with 40 dwelling units on a 40 acre site in rural Northeast Pennsylvania. The site, and the Mahoning Valley in which the site is located, have an agricultural past. Proposed land use for the master plan includes forest and wetland preserve, orchards and agriculture, housing, community facilities, and outdoor recreation areas. The design of the site plan has been influenced by conservation development models and sustainable communities. Architecture draws from vernacular houses, barns, and settlement patterns in the surrounding region.

Intent

The project is intended to act as a seed that can be copied throughout the landscape of the Mahoning Valley. It is intended to serve as a case study of how to develop more wisely in rural landscapes in order to preserve the places that we love.

The intent of this thesis is to propose steps toward sustainable development practices in rural landscapes. It has specifically set out to investigate existing patterns of development in *rural* landscapes and to propose better ones. The project acknowledges that it is commonly best to concentrate new development near existing cities, towns, and other pockets of density. While some may argue that new development proposals ought not occur in rural places at all, this seems to be avoiding the immediacy of the issue at hand. Rural land development is happening. There has been pressure to build in the Mahoning Valley and in other similar landscapes. This thesis addresses a real, immediate problem that is adversely affecting both the short-term and long-term health of our ecosystems and our communities.

This is not to imply that rural land development should be an ultimate goal of sustainable growth. While the most seemingly prudent solution (from an environmentally conscious standpoint) might appear to include allowing the land to revert back to its original woodland state, this may not be an economically viable option in reality. Private landowners, when faced with difficult economic times or other factors, are facing pressure to sell their land for development. Without new comprehensive land development strategies and policies in place, status quo development of rural land will continue to happen unchecked. This thesis aims to promote better planning strategies in order to protect the future life of the of the land and its integral position within the greater surrounding ecosystem.

Scope

The primary focus of this thesis is environmental conservation in the midst of increasing development pressure in the Mahoning Valley and the surrounding region. A secondary focus involves the creation of community that promotes stronger connections among people and between people and nature.

Both the site and the problem have been analyzed at a wide range of scales. The site master plan and its associated residential community site plan define the central the scope of this thesis. The macro and the micro applications of design decisions on the site have been considered and tested.

Goals

Given the problems associated with rural land development, this thesis proposes alternative patterns of settlement, low-impact development strategies, and environmentally conscious site analysis and planning approaches. It strives to influence

positive change toward more responsible land use and preservation. It has aimed to introduce new housing types, community facilities, and outdoor spaces to the site in order to enhance sense of community, revitalize local economies, and help to improve quality of life for residents in the immediate community and of the larger Mahoning Valley. Given the structures of private property ownership in America, this thesis strives to achieve a better balance between public and private interests surrounding the land and its ecosystems.

This thesis has investigated the implications of developing in accordance with existing zoning codes in Mahoning Township. Potentially out-dated municipal legislation that may promote harmful development practices has been analyzed and questioned. A goal of the project has been to provide better alternatives to development practices currently allowed by right. A new approach to zoning that looks toward the future of the valley as a whole and considers the landscape with the larger public interest in mind is integral to the proposal.

Another goal has been to honor and revitalize the historic sense of place found in this rural valley. The existing historic fabric is rich in character and cultural value that conveys a proud sense of the valley's past. This thesis strives to knit the proposed site architecture and landscape into the fabric of the Mahoning Valley. Con-



Image 2: Photos at Project Site

ventional developer housing can be quite dull and has probably not been designed for its context. Housing that is designed with both modern efficiency and cultural/contextual significance in mind has been a goal.

Finally, this thesis has aimed to enhance connections between people and nature. It has explored site planning strategies that maximize spatial and visual connectivity between us and the environment in order to enhance our sensory experience. The proposal encourages residents and visitors to interact with the surrounding natural environment in a more effortless way. With thoughtful design, we can hopefully increase our desire to care for and appreciate the landscape.

Chapter 2: Theory

“I cannot convince myself that settlement, even the most economical, the most beautiful, is better than wilderness. Even the mill is not better than no mill; but the mill is necessary for our existence, and therefore worthwhile. It is an image that keeps returning, proof that use of the Earth need not be destructive, and that architecture can be the ameliorative act by which, in thoughtfulness and carefulness, we counter the destructive effect of construction.”

-W.G. Clark¹

¹ “Replacement.”, 3.

On Sustainability

Not to pick on my mother who is a smart and lovely human being, but in the fall of 2009 she asked me, “what does sustainability mean?” I hadn’t heard of the word prior to the start of architecture school in 2007. Apparently, outside of the academic community, the concept of sustainability is one that has just started gaining widespread familiarity. When you mention the word “green” however, everyone seems to be on board. But are enough people actually *doing anything about it*? It’s easy to identify problems but not the means necessary to change them. In order to turn what Tom Friedman, author of Hot, Flat, and Crowded: Why We Need A Green Revolution. . ., refers to as the “green hallucination” into a “green revolution”¹ it is probably imperative to start taking considerable steps toward a more sustainable future.

Sustainability is a modern word with an ancient meaning. It is both an ideology and an attitude. It encompasses the ideals and behaviors necessary to perpetuate our society and our preserve our earth. The Brundtland Commission report of 1987, sponsored by the United Nations, defined ‘sustainable development’ as “development which meets the needs of the present without sacrificing the ability of the future to meet its needs.”² Sustainability has been described as the balance and successful interaction of social, economic, and environmental concerns. There is economic sustainability, ecological sustainability, institutional sustainability; they talk about different subjects but they all converge on the singular goal to sustain all forms of life and their interrelated systems.

What sustainability really gets at is the notion of an awareness of the intercon-

1 Friedman, Tom. Hot, Flat, and Crowded. . . 253.

2 Phillips, Christine. Sustainable Place. . . vii.

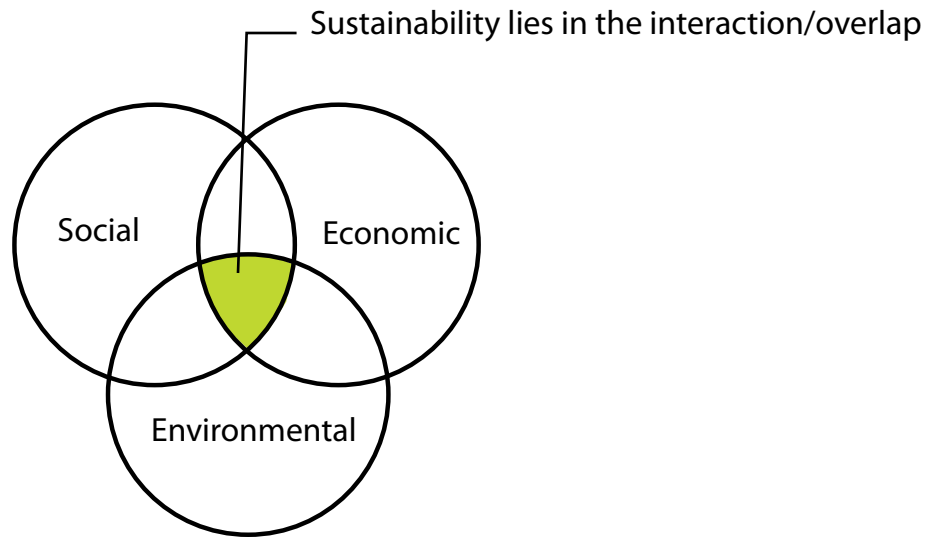


Image 3: Sustainability Diagram

nectedness of the many facets of our world and our responsibility to nurture it and its processes toward perpetuity of all forms of life on earth.

People and Nature

The earth consists of places that we love and depend upon. Forests, farms, streams, rivers, lakes, and oceans provide us with food, water, resources, and all things necessary for survival. We once lived more closely with the land than we do today. People and nature have an existential connection that most of us probably take for granted on a regular basis. Protecting the health of these places is vital in order to sustain future generations.

Due to the specialized nature of modern American lifestyles, we no longer need to be responsible for hunting, gathering, or growing our own food, capturing and disinfecting our own water, making fires or clothing for warmth, or designing and constructing our own shelters. Technology and the evolution of modern lifestyles have helped to establish a sense of disconnection from nature and a lack of under-

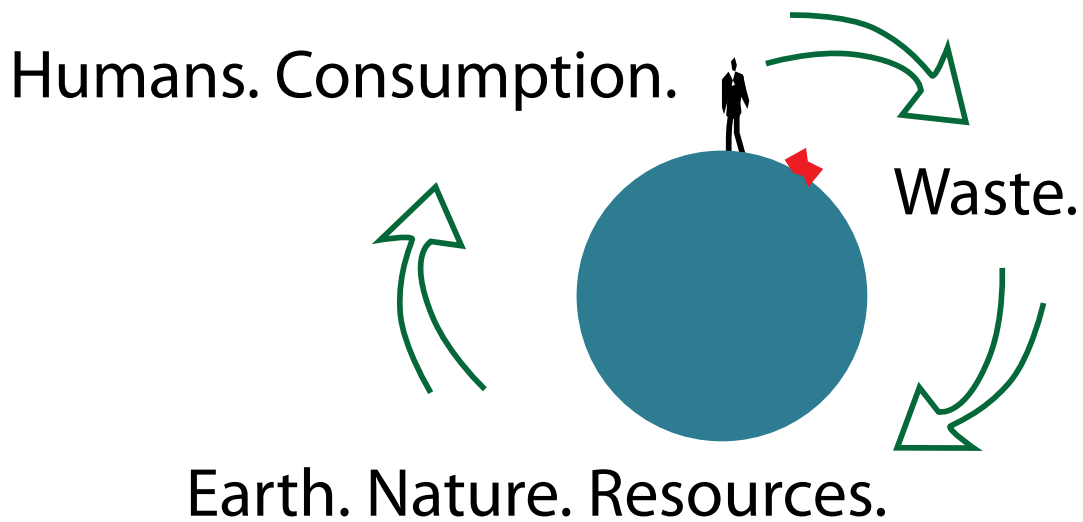


Image 4: Earth Diagram

standing of the most fundamental systems that sustain us. The holistic view of the earth impresses upon the fact that there is no away, and collective actions have inevitable impacts in a relatively closed-loop system. Everything is connected.

The Future and Change

A marketing expert working for Dell, Inc. coined a seemingly appropriate nickname for our generation, “The Re-Generation.”³ Tom Friedman elaborates on this concept by suggesting that “the Re-Generation’s task is to do nothing less than help repair both the Market and Mother Nature by bringing the concept and the values of “sustainability” to both realms. This is not a job we can leave for our grandchildren. This is our problem. We lapsed into a set of behaviors that have endangered our economic well-being and made us an endangered species.”⁴ Books such as this have made the argument of the inextricable domino effect linking modern lifestyles, energy use and waste, climate change, weather disasters, market collapse and recession, extinction of animal and plant species, and so on.

3 Friedman, 50.

4 Friedman, 50.

Americans are hard-working. We are leaders and doers and helpers. We are clearly a smart species, with the ability to devise ways to live better and easier, with more comfort and less stress. A “science will find a way out attitude” is not wise to continually perpetuate, however.⁵ Schumacher points out that technology often increases the stress that it was originally designed to alleviate.⁶

John Dernbach, author of *Agenda for a Sustainable America*, writes, “. . . [sustainable development] provides a framework for humans to live and prosper in harmony with nature rather than. . . at nature’s expense.”⁷ While it is admirable to argue for the preservation of the natural environment, it is probably more beneficial to argue for achieving a state of equilibrium between natural and man-made environments. Essentially, development and its structures protect us and provide us with comfort. It is what differentiates our experience of living from that of earlier societies, not unlike some types of lifestyles prevalent in many developing nations today.

Altering the way we develop and build is arguably the most critical way to slow the rate of destruction of our world. The built environment is the most obvious manifestation of a societies’ physical environment. Buildings and other infrastructure simply make up a large percentage of all man-made matter on earth. We live, work, and play in and around buildings. The built environment is as integral a part of our lives as the natural environment. As future architects, planners, and policy-makers of our generation, we have big shoes to fill. Despite the seemingly overwhelming number of problems we are faced with in modern society, there is a hope and an enormous potential for change.

Incorporation of technology is integral in initiating positive change and es-

5 Schumacher, E.F. Small is Beautiful. . . ,17.

6 Schumacher, 122.

7 Friedman, 52.

tablishing new patterns of living, designing, and operating. Friedman believes that American technological expertise is key in changing the course of our destructive path of development. It has been argued, however, that technology, if not used wisely and thoughtfully, may only exacerbate existing problems.

The concept of incorporation of appropriate levels of technology is vital for both architectural and non-architectural development and problem solving. E.F. Schumacher addresses the importance of “intermediate technology” in the context of economics.⁸ Appropriate technology can be described as not necessarily a modern technological innovation but rather a critical evaluation of the appropriate level of technology needed to best provide for the needs at hand.

A Holistic View, and the Importance of Community

Thomas Fisher advocates design and development that considers the welfare of the community equally (if not more) than that of the individual. He references Native American settlement patterns, commenting that living lightly on the land, building with natural/local materials, and communal land ownership structures can help sustain our society and future generations. He provides evidence that the inequity of distribution of wealth worldwide is a prime factor contributing to pollution, climate change, lifestyles of excess and consumerism, and perhaps even the collapse of many societies around the world, notably our own. We need to reduce our impact on the environment to prevent collapse.⁹

Most people of my generation in America have never been truly hungry or truly cold during the winter months. We are a culture of multitaskers; we own more, do more, work more. We check our work e-mail from our home computers. Many

8 Schumacher, 149.

9 Fisher, Thomas. “A New Social Contract. . .”

of us have ceased working with our “hands and brains” and work at a computer instead.¹⁰ The internet both connects us to people and cuts us off from them. We are in touch with so many people but can we ever really maintain meaningful connections with all of them?

Is American culture one that is lacking substance and deeper spiritual meaning? We have substituted verbal communication with text messages and e-mail. We are often unable to differentiate between technology and recreation. Leisure activities have expanded to encompass watching television, surfing the internet, and playing video games. In the morning we walk out of our houses, get in our cars, drive to work, sit at a desk, stare at a computer screen, and then do the reverse process in the evening. Lack of exercise and sun exposure are common among many Americans. Many of us have become so detached from our world that we never think to question the policies, structures, and systems that surround us. We should perhaps realize that we have the ability to choose, to be critical of status quo policies and patterns, and to change them with thoughtful design and decision making.

The concept of abstraction can be used to describe to American lifestyles and our modern consumer culture. E.F. Schumacher promotes sustainable economics and the importance of scale. “Giantism” has created chaos and separation.¹¹ Often we accept the fact that we live in an abstract world where we don’t fully understand basic the structures of daily life. We flip on a light switch or turn on a faucet and on comes a light and out comes the water.

John Maynard Keynes comments that “[modern economics gives] vastly more weight to the short term than to the long term, because in the long term. . . we are all

10 Schumacher, 124.

11 Schumacher, 48.

dead.”¹² This statement is profound since it not only relates to the problem of short-sighted development trends but also illuminates the need for sustainable attitudes in all realms of life.

The Landscape and the Problem of Development

“The planet Earth has been the one home for all of its processes and all of its myriad inhabitants since the beginning of time. . . It is in this sense that ecology. . . is the science of the home.”¹³ At a macro scale, earth is home. The way that we live and build often has negative side affects on our larger home.

Ian McHarg, author of Design with Nature, advocates the necessity to design, build, and develop in an environmentally conscious manner that acknowledges our existential connection to the earth and its processes. He discusses “man’s physiological and his psychological dependence on nature. . .”¹⁴ and a goal to think critically about our symbiotic relationship with nature as it relates to necessity and survival. Designing *with* nature implies not only conserving and protecting it, but integrating our processes [of living and building] with its processes. According to Ian McHarg, development should be related to the “intrinsic suitabilities” of the land.¹⁵

The American landscape contains a continuum of beautiful and diverse ecosystems that we are fortunate to have the opportunity to experience. What we design and what we choose and/or deem necessary to built provides us with a vantage point from which we can perceive and perhaps better appreciate nature. It is from the clearing that we can appreciate the forest. True wilderness can be a scary place. Many

12 Schumacher, 29.

13 McHarg, Design with Nature, 29.

14 McHarg, iii.

15 McHarg, 140.

of us criticize the existence and proliferation of highway systems and construction of roads in rural areas. Interstate highways essentially plow through the land with asphalt. However, their existence is necessary in order to provide a literal path that links us to the places we want to go and what we want to see when we get there (and along the way). The allure of the American road trip, lies in the opportunity to *see* the landscape.

The repetitious nature of developer housing scattered all over the American landscape is perhaps partially a representation of a more transient, global mentality. Some may argue that it is also a representation of an American lack of substance and identity. Building in this manner contributes to a sense of placelessness and buildings that seemingly have little, if any, connection to their surroundings. This is not only disadvantageous from an aesthetic point of view but also an ecological one. The excessive size of houses contributes to increased energy consumption. While standardization in building is a good thing for lowering cost and speeding up the rate of construction, it has also resulted in houses that lack character. Not to mention, when prototype houses are placed in any landscape, they are obviously not as well suited to address environmental or cultural concerns.

The concept of an expansive American frontier as a limitless landscape seems to have perpetuated the increased quantity of land development and size of homes. In Europe, for example, natural and political boundaries as well as different property ownership structures seem to have helped keep land development, sprawl, and home size in check.

The choice to be critical about where, what, and how we build is important in achieving sustainable development. “Farms, barns, and silos always seem appropriate and beautiful. That is why we like pig pens and deplore theme parks, because it is

not necessary that buildings be beautiful, but it is necessary that they be necessary.”¹⁶

The question of necessity is a vital one. Structures that have intrinsic value based on their necessity are rare commodities. Our lives and environments are filled with an over abundance of stuff, and also an over abundance of buildings. We live so far beyond our means in America today that many of us forget what we need and replace it with what we want.

Against Sprawl

In his book The Fractured Metropolis, Jonathan Barnett discusses how insensitive, unplanned development has increasingly been ravaging our natural landscapes since post World War II. He calls this “accidental development” which has occurred due to the lack of widespread comprehension and lack of planning involved with development.¹⁷ He writes about the “strangely fragmented way in which development occurs.”¹⁸ Unplanned, suburban developments are not people-friendly, often do not have sidewalks, and are therefore often unsafe for anyone outside of a vehicle. The prolific use of vehicles has enabled our increased mobility. This innovation has not only caused sprawl but has continued to ensure that we retain a level of disconnection from people and places. Patterns of development today are less contained and condensed and are more linear, following the development of arterial roadways. “More comprehensive methods should emerge as designers look at these places, evaluate what exists, and invent ways to improve them.”¹⁹

A crucial point made by Barnett is that zoning often *needs to be changed*. He

16 Clark, 2.

17 Barnett, 21.

18 Barnett, 17.

19 Barnett, 46.

argues that zoning is often out-dated and does not address current concerns relating to land use and sustainability. Local codes and regulations may hinder or delay the approval of plans that aim to incorporate new policies and technologies. Status quo policies in local governments as well as control exerted by utility companies may create obstacles for new development initiatives.

Existing building codes and legislation often do not reflect and promote the best and most environmentally conscious methods of design and construction. With the rapid development of sustainable building technologies and systems, it seems necessary for local governments to remain adaptable and open-minded to such technologies and their potential benefits. Unfortunately, more often than not, this is not the case. Outdated code-books, policies, and views held by individuals in office may create roadblocks that are disadvantageous to sustainable planning initiatives. The increased amounts of valuable time, energy, and money involved in order to request variances to existing codes may subsequently prevent the best possible design solution from being implemented.

Quality over Quantity in Homes and Lifestyles

“If you want to save your environment, start at home.”²⁰

American ideologies surrounding competition and a “bigger is better” approach promote ways of living that not only divide us from each other but also from our environment. According to E.F. Schumacher, “man is small, and, therefore, small is beautiful.”²¹ He calls for a simplification of lifestyles and structures in ways that better relate to the actual size of man. Economics considers only quantitative values.

20 Sommer, Robert. Design Awareness. 33.

21 Schumacher, 131.

Over the past several decades we have increasingly started living in bigger houses, driving bigger, faster vehicles, and buying more stuff. Schumacher discusses the concept of “enough” and questions, “What is enough?”²² The problems of development can be linked to that of overconsumption and its threat of disturbing the equilibrium between man and nature. This pattern of behavior “does not fit into this world because it contains within itself no limiting principle, while the environment in which it is placed is strictly limited.”²³

Quality over quantity is the primary argument made by Sarah Susanka in her book, The Not So Big House. Susanka emphasizes the importance of comfort and personalization of a home: a bigger is not necessarily better approach. She echoes the “Small is Beautiful” argument, stressing the importance of improving quality of living. She focuses on the importance of human scale of the home, primarily related to

22 Schumacher, 12.

23 Schumacher, 16-17.

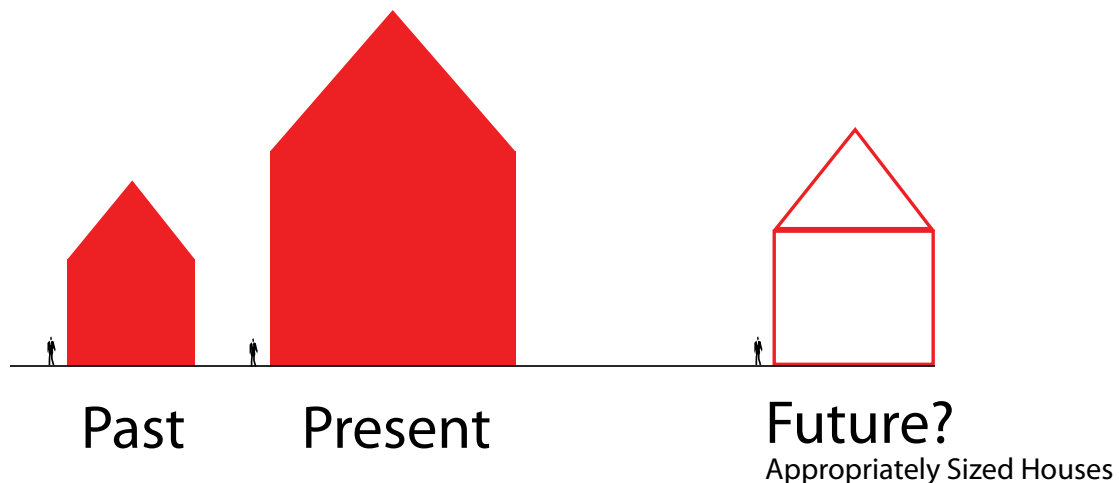


Image 5: Future House Size Diagram

its interiors and our sensory perception of spaces. Home is a place of that provides us with comfort. Smaller homes consume less energy, use less materials, and generate less waste. Also, larger homes mean more time and money spent on maintenance, higher energy bills, and so on. Many homes contain formal living rooms, dining rooms or other accessory spaces that are rarely used.²⁴

Bigger homes built with inefficient techniques and materials can result in greater energy consumption and greater expense. Architect and Kea distinguished professor at University of Maryland, George Hartman expressed the idea that with energy prices on the rise, the future of housing may include abandoning 1/3 of existing dwellings in America. Average residents may not be able to afford utility costs of homes that are excessively large, inefficiently constructed, and/or insufficiently insulated and sealed.

Architecture and Connection to Nature

“As nature has receded from our daily lives, it has receded from our ethics.”²⁵ In his book Ecological Design, Sim Van der Ryn advocates for the design of buildings that “make nature visible” in order to help us to see, understand, and thus be educated by our environment. If we incorporate connections to nature into our designs, we can draw attention to the environment and its processes, become more aware of them, and increase our potential to appreciate them. “Making nature visible is a way to reacquaint us with wider communities of life, but it also informs us about the ecological consequences of our activities.”²⁶ “Many of us live in cities where both ecological and technological processes are hidden from our everyday awareness. . . Our working

24 Susanka, Sarah. The Not So Big House.

25 Van der Ryn, Sim and Stuart Cowen. Ecological Design. 161.

26 Van der Ryn, 164.

days are spent in modern buildings that are sealed from the elements. Often we can't even open the windows. . . ”²⁷ We often lower the temperature on the thermostat before we even think of opening a window.

Architecture exists partially as a tool with which we can better interpret the world. We are able to better love and appreciate the winter season from the comfort of a warm building. A thoughtfully placed window in a home can capture a view that may have otherwise remained underappreciated or perhaps even unnoticed. While the building cuts off some of our direct sensory experience, it has the potential to increase our connection to the snow covered landscape in that we can take time to appreciate its beauty at length without the negative effects of extended exposure to the harsh elements outdoors.

Robert Sommer promotes involvement with our surrounding environment, not only in the natural world but in our homes, communities, and places where we work and play. By simply being consumers, we give up our freedoms, power of creative expression, problem solving skills, and lessen meaningful human interactions. We are becoming detached from our surroundings, unaware of our actions and their impacts on other people and our environment.²⁸

David Orr advises an improvement in how we design buildings and live in them. Winston Churchill said, “We shape our buildings, thereafter they shape us.”²⁹ Environmental problems are the result of a design failure.³⁰ We must stop living beyond our means and squandering our resources. He defines and advocates ecological design, reducing impact and waste, and systems that mimic natural processes. Our

27 Van der Ryn, 161.

28 Sommer.

29 Orr, 15.

30 Orr, 16.

society needs to transform our thinking and use of technology, change our habits as consumers, and refocus our intelligence. He stresses the importance of using ecological design as a tool to educate people about how to live more sustainably.

Christine Phillips writes, “Building development constitutes the single largest energy-consuming human requirement.”³¹ She also points out that the environment acts as a buffer and mediator between the by-products of our excessive energy consumption and the planet. For example, the carbon emissions from burning fossil fuels that pollute our atmosphere and contribute to climate change are absorbed and used by plants in order to carry out the process of photosynthesis. We often forget about our symbiotic relationship with plant species on our planet. They provide us with oxygen and with food. They act as a sink for CO₂, thereby preventing the buildup of greenhouse gasses in the atmosphere and helping to stabilize the earth’s climate in order to keep it hospitable.

Regionalism, the Micro and the Macro

The discussion of regionalism and architecture deals mainly with the link between architecture and contextual conditions of a given region. A regionalist attitude in architecture addresses climate, surroundings ecosystems, local building materials and construction methods, vernacular typologies, cultural context, character and sense of place, etc. This approach is beneficial not only in designing a building that maximizes performance and minimizes energy use, but one that also has cultural significance and a relationship to its surroundings. Regional and local building practices have may been viewed as the antithesis of globalization in architecture. However, it is this global outlook that may help to keep our intentions in check as they relate to

31 Phillips, vii.

the greater good of the planet.

The concept of “critical regionalism” is described by Kenneth Frampton as a universal approach with a discerning eye for place specificity.³² Starting with a global mind-set, we can then look to regional examples of form, materials, culture, and so forth to critically inform the design. In this way, we can honor local traditions while helping to preserve sense of place and our memories associated with them. Here emerges the importance of balancing concerns relating to both the macro and the micro environments simultaneously.

32 Frampton, Kenneth. “Towards a Critical Regionalism. . .”, 82.

Chapter 3: Site

The Region and the Mahoning Valley

The project site is located in Northeast Pennsylvania. Notable cities in the region include New York City, Philadelphia, Harrisburg, Allentown, Bethlehem, Scranton, and Wilkes Barre. The Regional Travel distance diagram (Image 7) shows the approximate travel time (via motor vehicle) from the project site to surrounding metropolitan areas. Cities included in the 1 hour travel radius are Allentown, Bethlehem, and Wilkes Barre. Philadelphia, Harrisburg, and Scranton are within the 2 hour radius. The site faces the threat of increased growth as a result of population migration out of these cities and into rural areas. Sprawl is increasingly encroaching on rural lands to the south and east of the project site, largely in the opposing directions of Philadelphia and New York City. The site is surrounded by many major highways--namely, the Northeast extension of the PA Turnpike, I-476. Also, I-78, I-80, and I-81 each pass within 30 miles of the site. These same threats may also serve as potential opportunities for attracting visitors and potential residents to the community.

Mahoning Valley, Pennsylvania is located in the southernmost valley of the Appalachian Mountain chain. (Image 8) The combination of the Appalachian mountain formation and glacial erosion has created the undulating texture of ridges and valleys that are unique to the landscape of Northeast PA. The Appalachian Trail follows the Blue Mountain Ridge, just 4 miles south. Four miles to the east, the Lehigh River runs through the town of Lehighton, the closest town to the site. These features are assets of the site that have provided incentive to explore the its position within the larger ecosystem of the region. These natural features may also provide future opportunities to incorporate recreational or eco-tourism related activities into the proposed site program.

The differentiation between ridges and valleys can be seen in Image 9. The forest habitats are discernible, as well as farmland and developed land primarily oc-

curing in the valleys. The urban/suburban corridor of Allentown and Bethlehem is outlined in red. Other areas of population density are also highlighted in red.

As previously mentioned, the project site is located 4 miles southwest of Lehigh, PA. (Image 10) Other surrounding towns include Jim Thorpe and Tamqua. Hazleton, Allentown, and Bethlehem are within an hour travel distance. The Mahoning Valley exit from the Northeast extension of the PA turnpike, 476, is located approximately 7 miles east of the site.

State park lands, state game preserves, and other outdoor recreational amenities are shown in Image 11. Much of the Blue Mountain Ridge is preserved as state game lands. Larger swaths of state parks can be found to the Northeast of the site. The region offers many outdoor recreational amenities. Rafting, kayaking, hiking, biking are popular activities along the Lehigh River. Ten miles east of the site is Blue Mountain Ski Area, just east of Palmerton, PA which operates from mid-December to mid-April. Glen Onoko falls in Jim Thorpe is a spectacular feature of the region. Tourism is a notable strength but also encourages population migration and development. These amenities draw people to both visit and permanently settle here.

Residents have been migrating to this valley due to lower costs of living and abundance of natural amenities and recreation. The historically agricultural valley is imbued with cultural value and character. In order to ensure that the historic/cultural value, beauty of the land, and health of its ecosystems remain intact for future generations, planning for growth is essential.

Population density near the site is still relatively low. (Image 13) The forested ridge to the north remains undeveloped. The agricultural land in the valleys, however, is being developed more rapidly. The agricultural land and its associated buildings are evidence of the valley's past. These features are worthy of being preserved

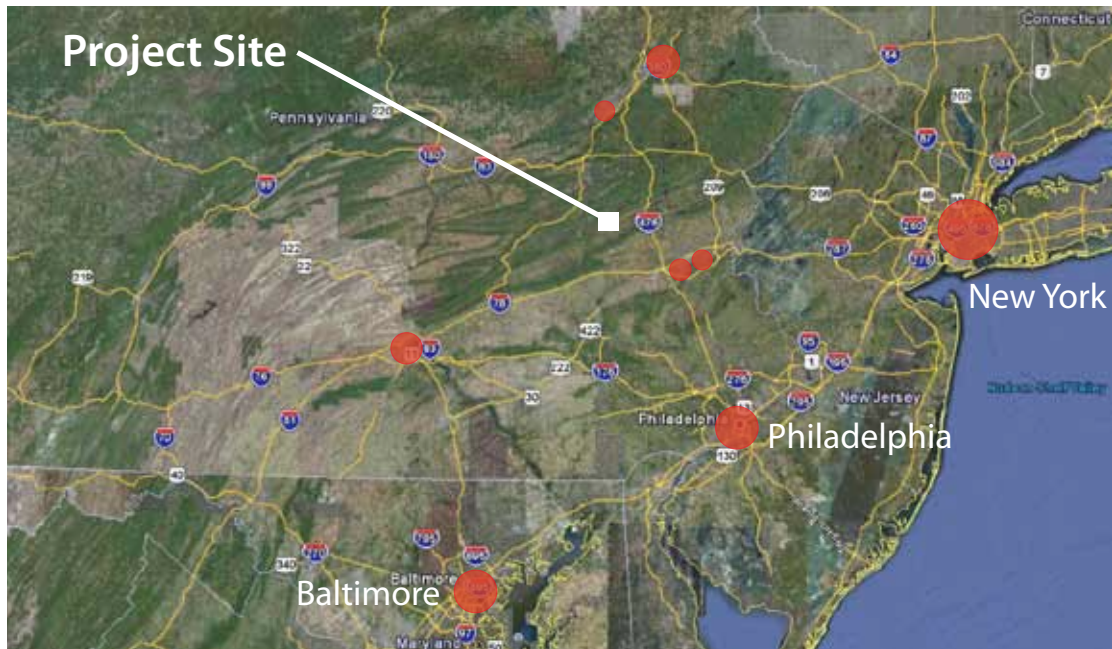
for future generations to enjoy. This highlights a need for planning alternative development patterns in order to slow land use/consumption in agricultural valleys such as this. Sprawl from surrounding suburbs and more densely populated urban areas of Allentown and Bethlehem to the Southeast are likely to be on-going development threats to the Mahoning Valley. Eventually, the woodland habitats of the valley may be threatened by development pressure as well. (Image 12)

The abundance of agricultural land in the Mahoning Valley and its texture can be seen in Image 14. The large expanse of forested ridge to the north is a notable feature. Among this ridge is Mauch Chunk Lake to the Northwest of the site. The abundance of farmland in the area implies that the land is productive. An inventory of existing agricultural land can be found in Image 21.

The site's distance from town and necessary retail, civic, and other amenities make it essential for residents to rely on vehicular transportation. Planning for the car is an important aspect of community planning. Nearby building and land uses in the Mahoning Valley include: country club/golf course, drive-in movie theater, race-tracks, airport, churches, schools, health care, newspaper company, 84 lumber, tractor supply, grocery store, retail/strip mall, restaurants, fast food, gas stations, Walmart, Lowe's. (Image 15) A new Super Walmart threatens local economies and has ravaged the hillside east of the project site. Mahoning Valley Farmer's market along Route 443 to the south was in operation for approximately 50 years and has recently gone out of business. There seems to be a considerable need to revitalize local economies.

The diagrams in Images 17 to 23 show site features: ridges, roads, existing sewer, agricultural land inventory, development threats, etc. Also, a potential proposed future location for wastewater treatment site(s) has been identified centrally in the valley. The sectional diagram in Image 25 shows the significant portion of the

valley encompassed by the project site. The site coverage from North to South covers approximately .6 of a mile. This draws attention to the site's important position in the larger ecosystem of the valley.



● Urban Centers

Image 6: Regional Context Aerial Map

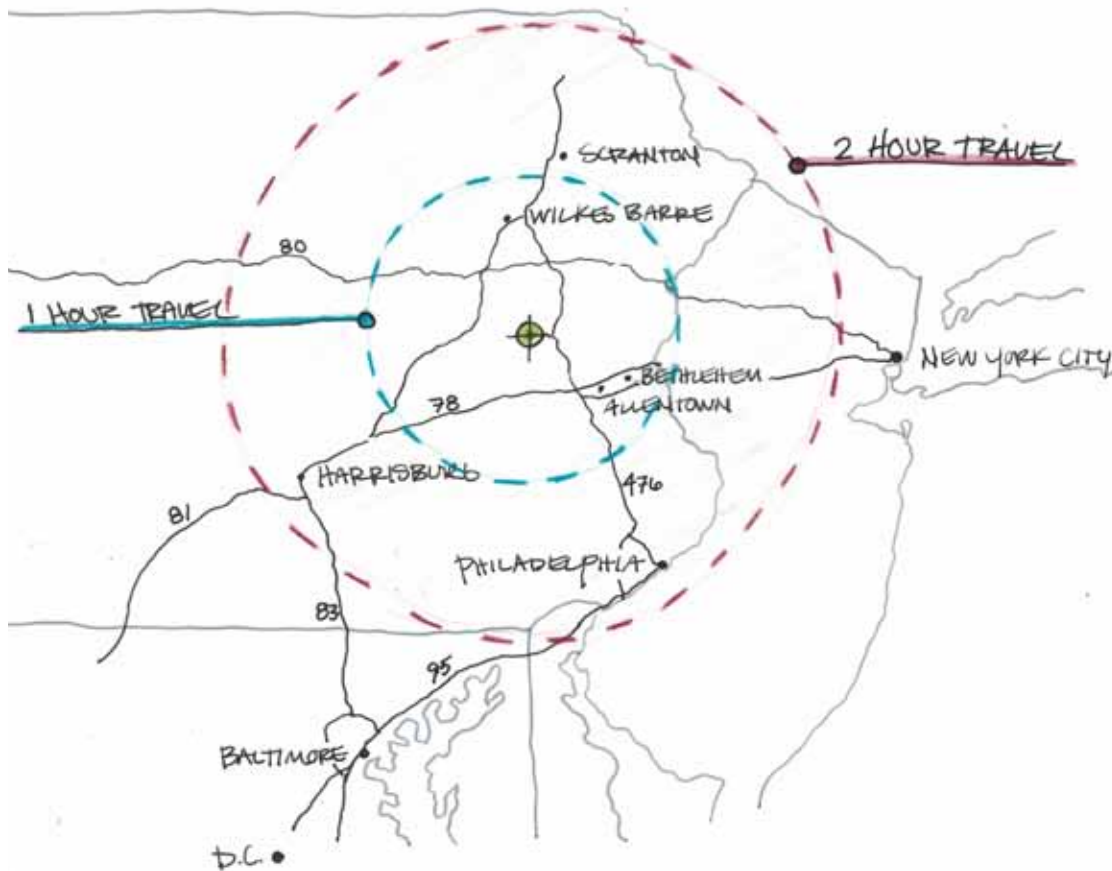


Image 7: Regional Travel Distance

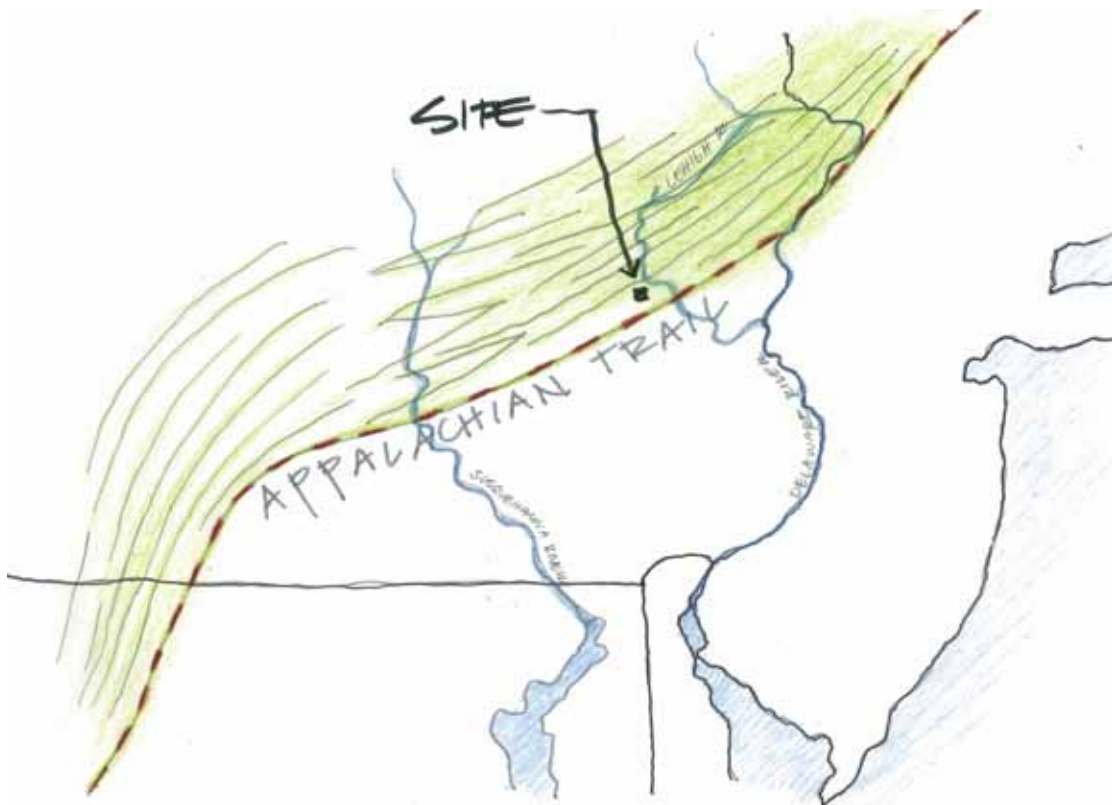


Image 8: Regional Land Features

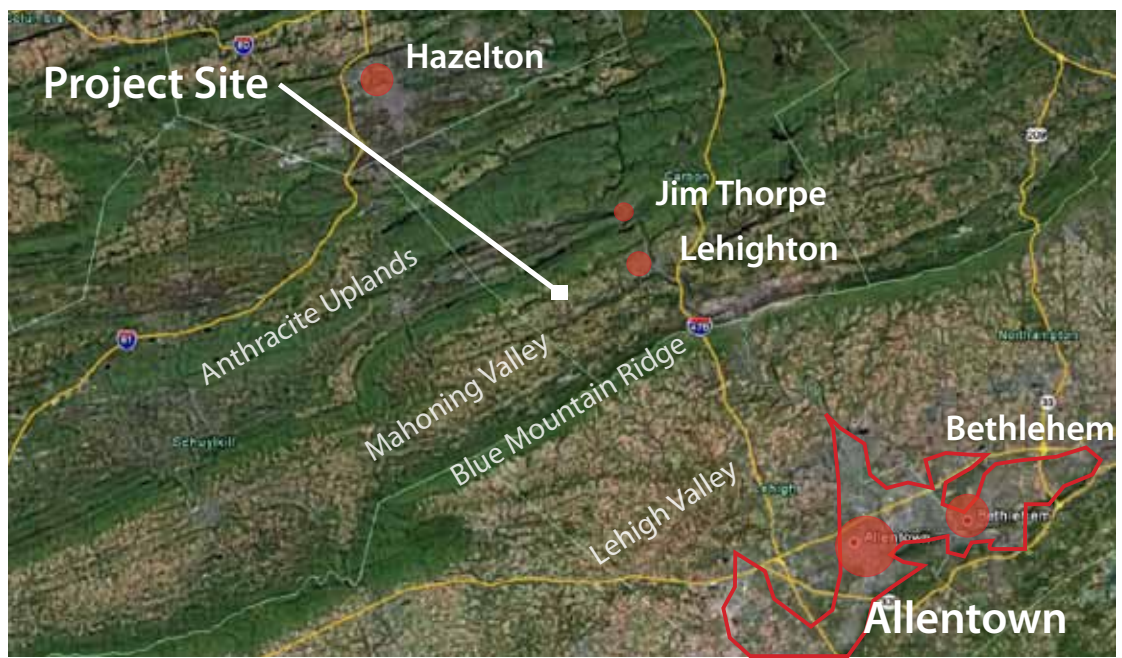


Image 9: Ridges, Valleys, and Development Pressure

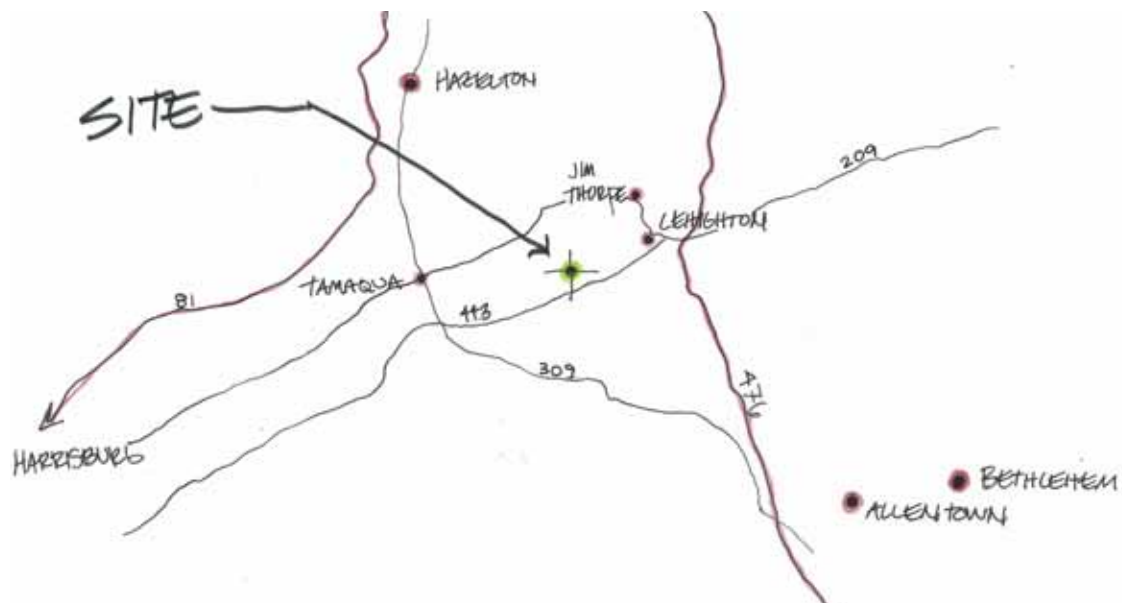


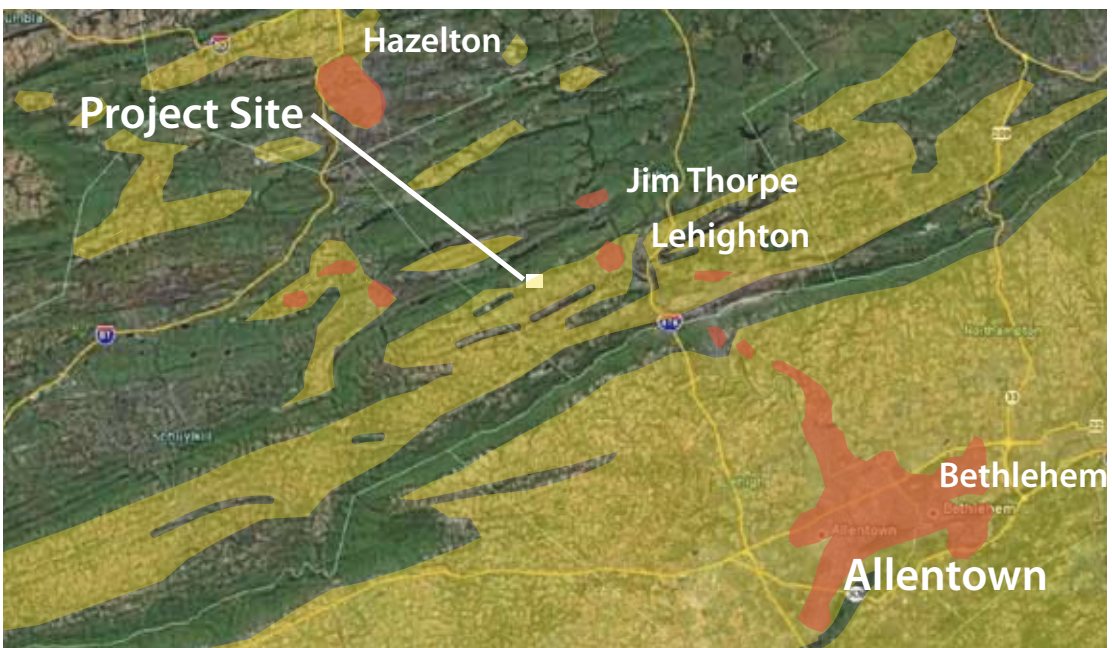
Image 10: Surrounding Towns and Highways



Image 11: State Parks and Recreation



Image 12: Undeveloped, Contiguous Woodland Habitat



- High Population Density= 3,000-7,000 persons per square mile
- Moderate Population Density= 200-3,000 persons per square mile
- Other: Low Population Density= Below 200 persons per square mile

Image 13: Development and Population Density



Image 14: Mahoning Valley

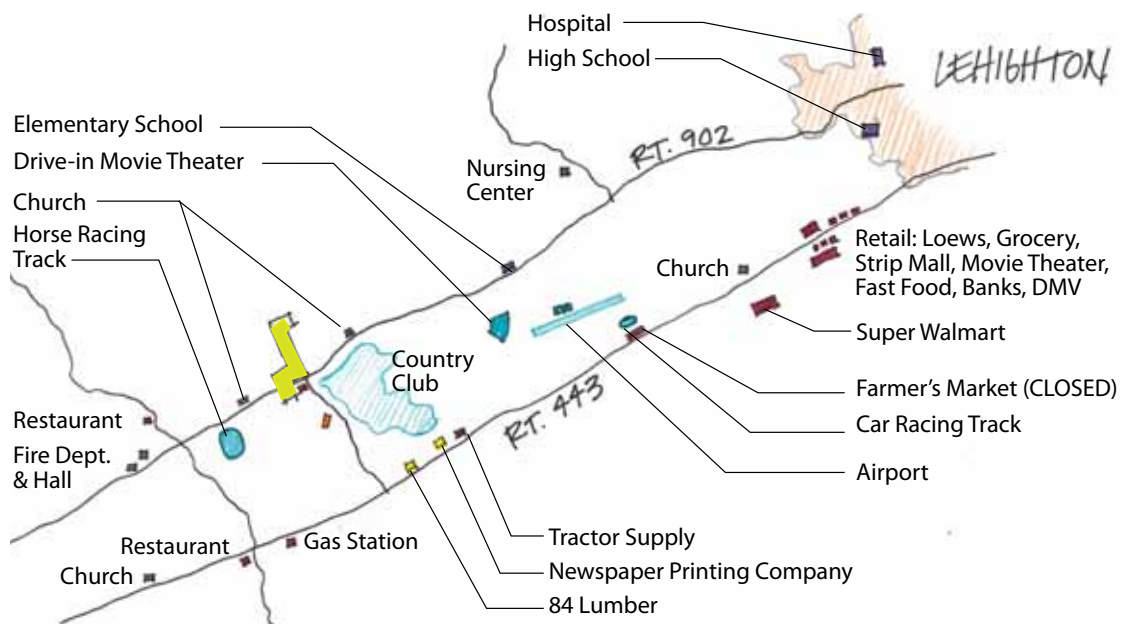


Image 15: Mahoning Valley, Context and Building Use



Image 16: Map Key, Mahoning Valley



Image 17: Mahoning Valley Ridges

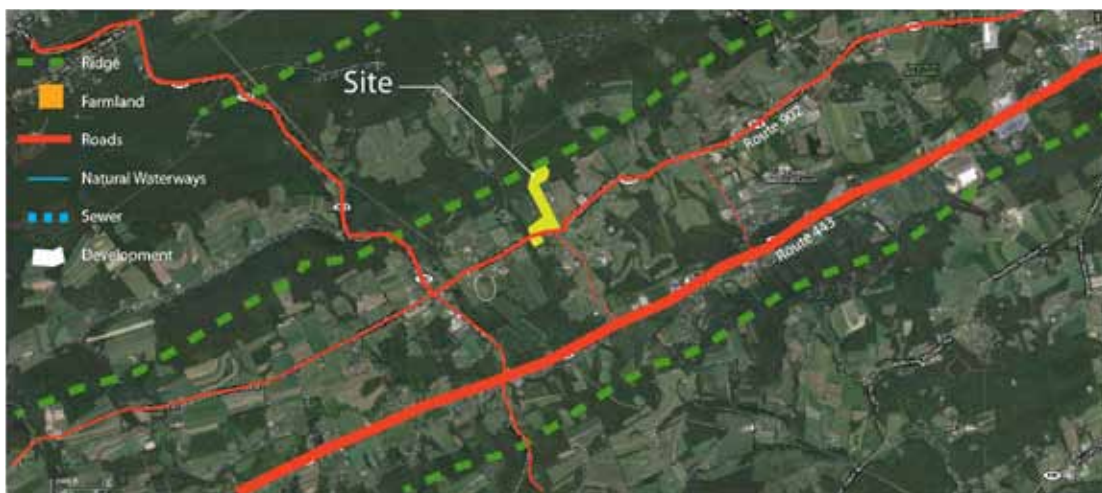


Image 18: Mahoning Valley Roads

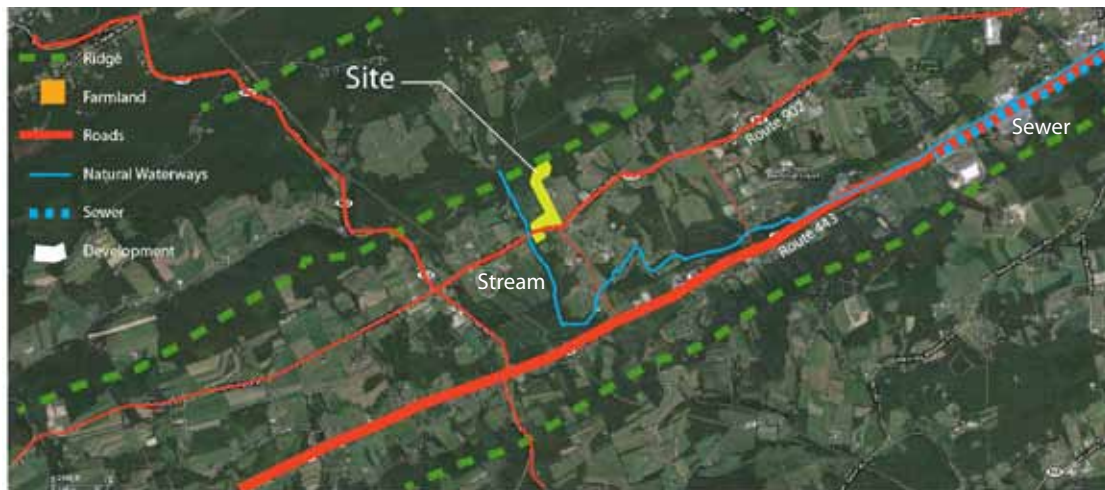


Image19: Mahoning Valley, Natural Waterway and Existing Sewer



Image 20: Mahoning Valley, Future Wastewater Treatment?



Image 21: Mahoning Valley, Agricultural Land Use



Image 22: Mahoning Valley Recreation Areas and Amenities



Image 23: Mahoning Valley Development Threats

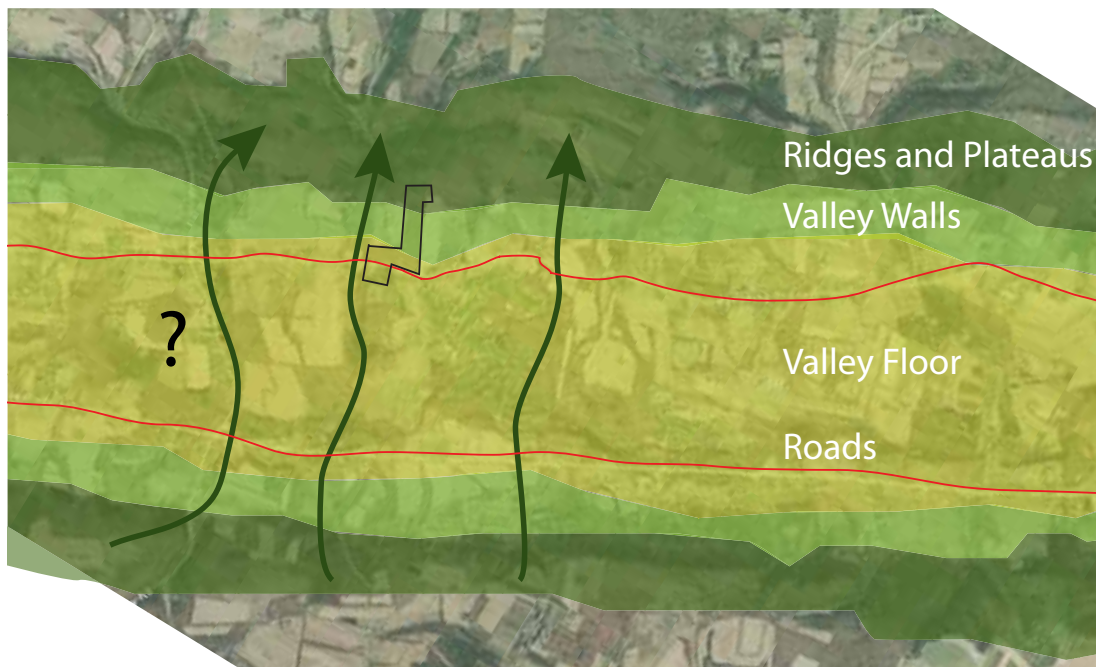
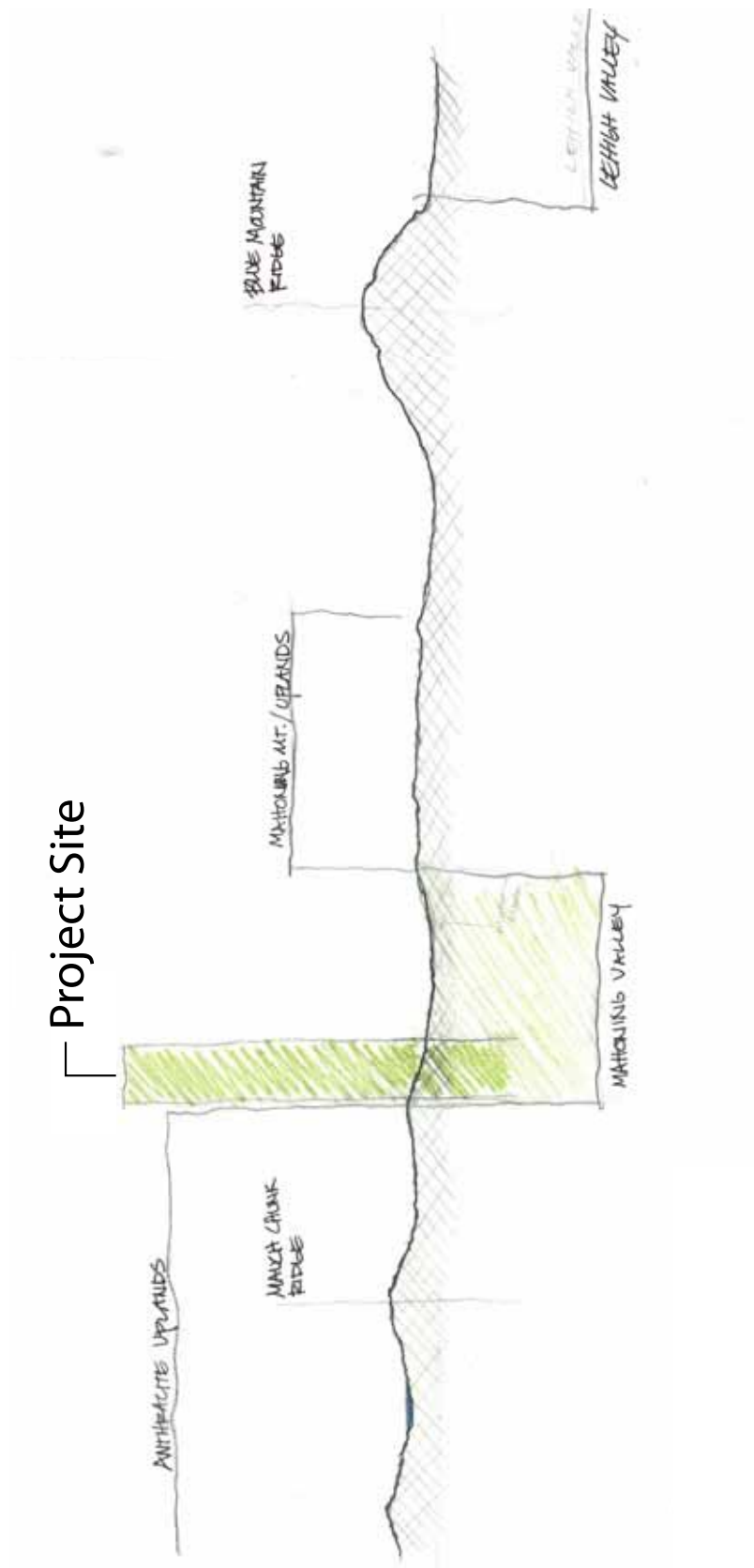


Image 24: Mahoning Valley Physiographic Features



Project Site

Image 25: Mahoning Valley Section

Site Problem: Development Pressure

Development is taking place primarily east and south of the site. Photographs show two different large-scale housing development projects. (Image 26) They are located 12-15 miles east of the project site, surrounding Beltzville Lake State Park. Conventional development practices do not adequately consider their broad range of negative environmental impacts. Excessive excavation and regrading, paving of roads, driveways and parking lots, use of septic systems and detention ponds are just some of the potentially ecologically detrimental features of typical housing developments. Often, projects are not planned to conserve vital natural features such as forests or wetlands, let alone historically valuable or aesthetically pleasing natural features.

Until recently, Mahoning Valley has remained relatively undeveloped. Previously a farm, a 50 acre (+/-) site 1/4 mile west of the project site has begun development. The roads and driveways have been paved and 7 houses have already been built. (Image 27, 28)

Mahoning Valley Zoning

This thesis has questioned whether responsible land use and development patterns can be achieved while adhering to the current municipal zoning codes of Mahoning Township. Residential zoning on the project site allows a maximum of one dwelling unit per acre. This means that zoning permits:

$$1 \text{ dwelling unit/acre} \times 40 \text{ total acres} = 40 \text{ dwelling units on site}$$

Typical lot layout diagrams permitted by Mahoning Valley Zoning codes have been drawn in Images 30 and 31. Minimum front yard setbacks are 30 feet and 50

feet for rear yards. The position of the house is required to be located in the central portion of the site. The potential for clustering dwellings is not mentioned in the zoning code. However, attached duplex units are permitted by R-2 zoning, located along rural route 902.

The necessity to question existing legislation in order to implement the project proposal and other unconventional development strategies is likely. A variance request would therefore need to be approved in order for the following project proposal to be realized. This could be a challenging and lengthy process depending upon the views of local officials and fellow township residents. For this reason, it is crucial to provide substantial evidence in support of sustainable development initiatives in order to gain local support toward collective land preservation efforts.

Allowed, Projected Site Development

Images 32 and 33 show the existing site and adjacent properties in juxtaposition with the allowed, conventional development projection case as currently permitted by zoning of Mahoning Township. This is what could potentially happen by right, if private lands are sold for development. Image 33 shows the aggregate landscape with one dwelling unit per acre. The projection was created by copying the current typical house footprint on each acre surrounding the project site. This image has been continually referred to as “the landscape with the measles” drawing-- again, calling attention to the unhealthy nature of typical land development.

The land use diagram (Image 34) shows a typical result of conventional development. Most of the acreage is dedicated to individual lots: houses, garages, porches, patios, yards, swimming pools, landscaping, etc. Secondly, large quantities of land are necessary for roads, driveways, parking lots and other infrastructure. In develop-

ments such as this, little or no land is preserved for contiguous tracts of agriculture or woodland/wetland preserve. Likewise, land for community facilities and community recreation areas are only rarely incorporated into site plans.

Conversely, the proposed land use diagram (Image 35) shows that by clustering the same number of dwelling units, much larger tracts of agricultural land and woodland/wetland preserve can result. This model can provide a win-win situation in that potential development capital is retained and valuable land and resources are preserved. The agricultural land could be leased and farmed by a local farmer, or, agricultural land could be owned and operated communally by residents living on site. Forest and wetland preserves would provide places for wildlife habitat as well as community recreation.

The proposed ownership structure of the preserved land area remains somewhat unresolved and open to further investigation. It would seem beneficial for on-site property owners to also own a portion of common land. In this way, all residents would share the use of the larger landscape. Orchards and agricultural land, forests and fields would be available for use by residents and friends.

Smaller sizes of private lots and dwellings would most likely be necessary in order to achieve this result. While there may be some trade-offs and/or sacrifices necessary, smaller homes can result in lower utility costs and less house area to maintain. Similarly, smaller lots require less maintenance and time commitment toward yard maintenance and landscaping.

The current average lot size in Mahoning Valley is one acre or larger (Image 36). The project proposal aims for lot sizes of 1/6 acre or less. If a square lot, it would still be 85 feet per side, although rectangular lots seem advantageous for clustering dwellings. This thesis also proposes that house footprints aim to be roughly

half the current typical footprint size in the area. (Image 37) Smaller house footprints mean less land covered by houses and more land remaining for outdoor space and natural vegetative land cover. This doesn't necessarily mean that square footage of homes would be reduced by half, however, as houses could gain an additional floor or 1/2 floor in order to compensate.

Currently, single family detached homes are the most prevalent housing type in the region. In Lehighton, Palmerton, and Jim Thorpe, duplexes are very common. Attached housing offering higher density is somewhat atypical but there is some apartment style housing available in the area.

According to Onboard Informatics' demographic data for Lehighton, PA, the median household income was approximately \$36,000 in 2008. The primary occupation of men is identified as "Laborers and material movers, hand" and "Textile, apparel, and furnishings workers" for women.¹ A broader overview of employment industries includes a high percentage of involvement in construction, health care, public administration, apparel, and education. This may present opportunities to involve local builders, tradespeople, etc. in the construction and furnishing of proposed structures, thereby promoting economic sustainability and community involvement.

¹ Onboard Informatics. "Lehighton, Pennsylvania." www.city-data.com. . . <Dec 4 2010>



Image 26: Development East of Project Site



Image 29: Mahoning Township Zoning Map

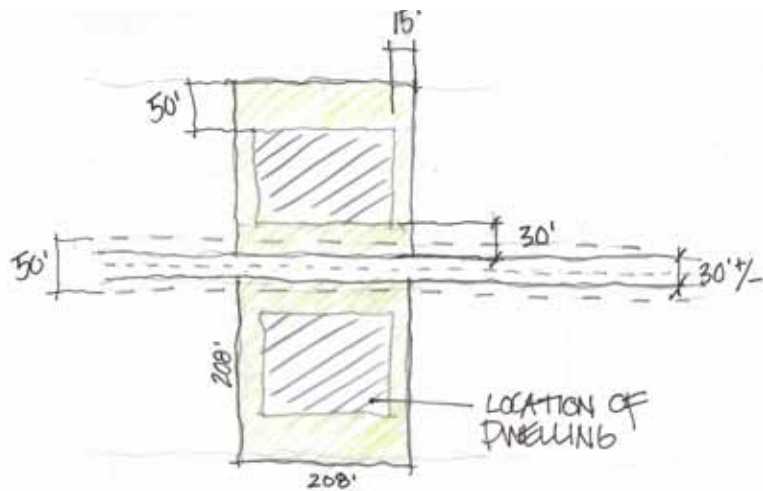


Image 30: Mahoning Township Zoning Lot Plan Diagram

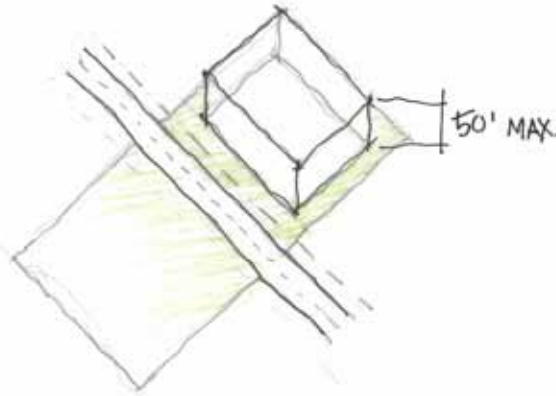


Image 31: Mahoning Township Zoning Lot Axon Diagram



Image 32: Existing Site Development Aerial



Image 33: Projected Site Development Allowed by Zoning

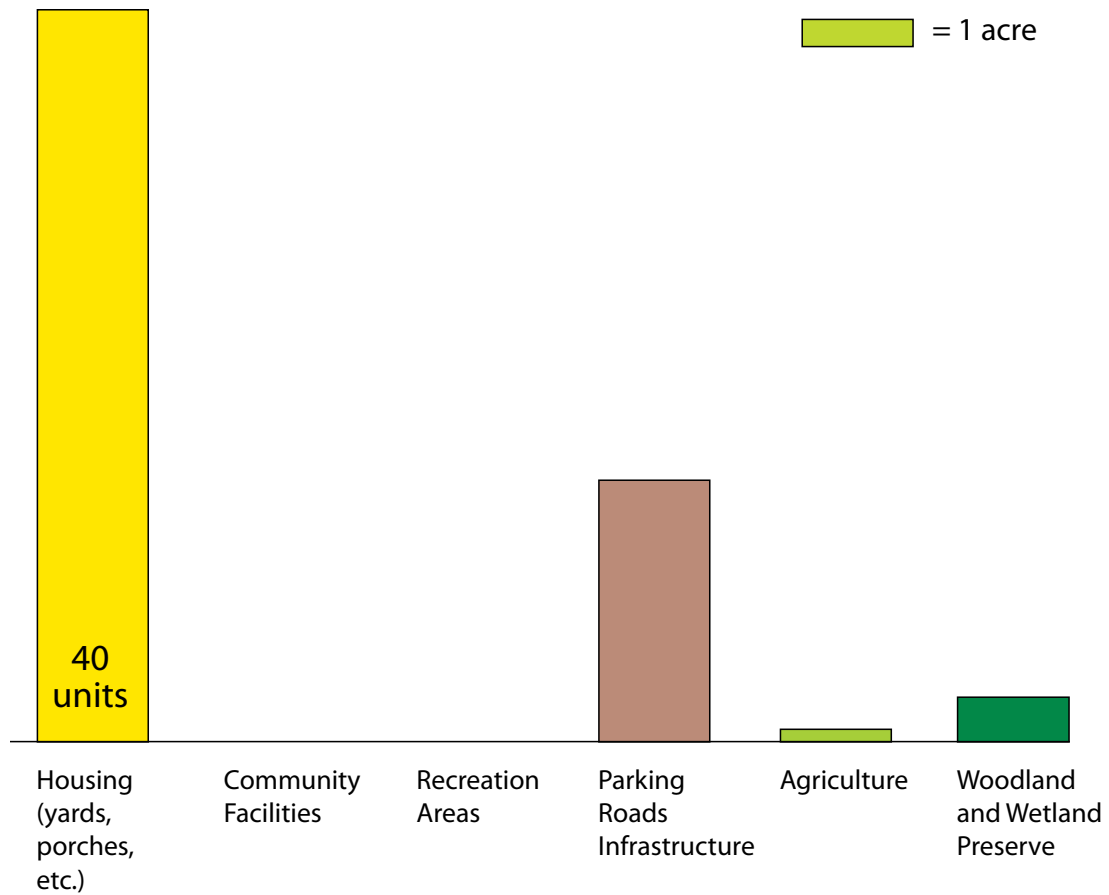


Image 34: Allowed, Conventional Land Use for 40 Acres

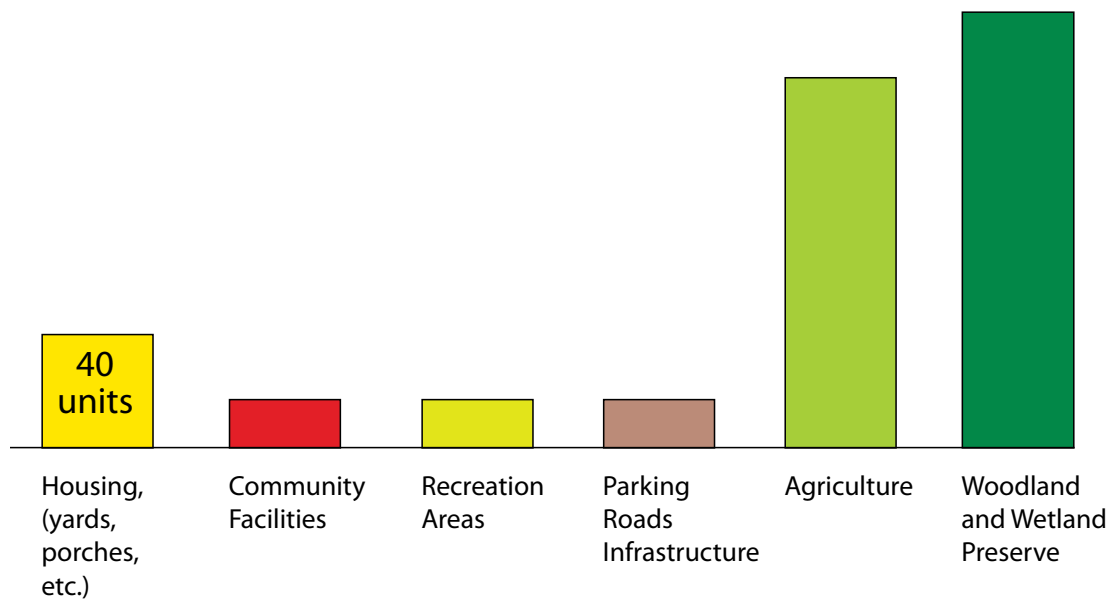


Image 35: Proposed Land Use for 40 Acre Site

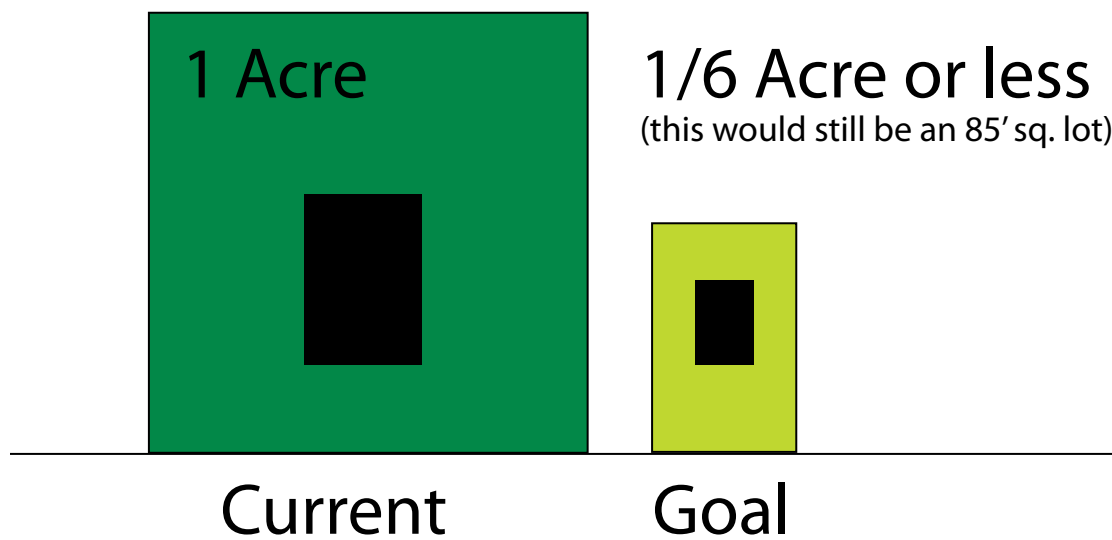


Image 36: Lot Size Near Project Site

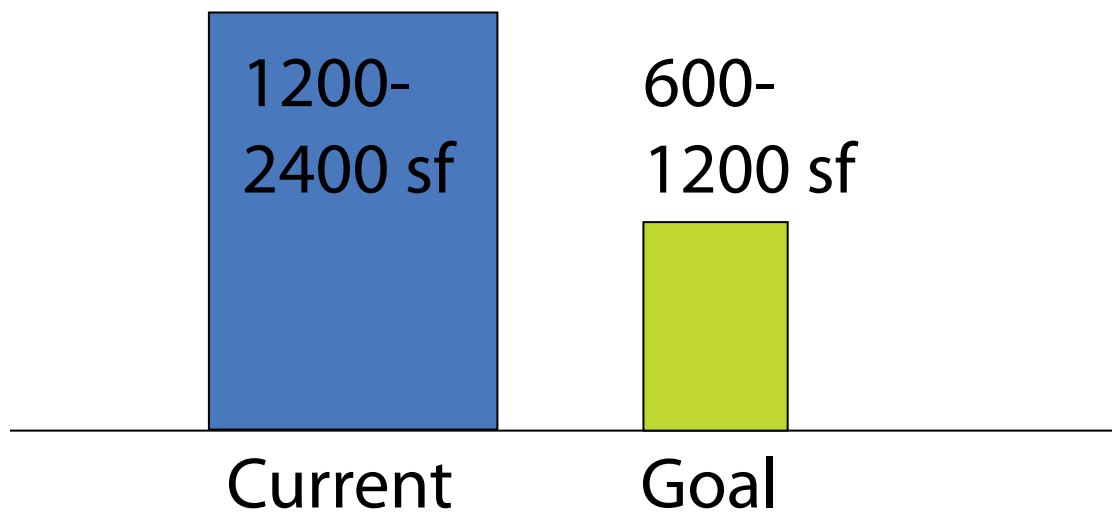


Image 37: House Footprint near Project Site

Project Site

The project site consists of 40 acres of overgrown farmland. Most of the site is currently covered with young forest. Mahoning Valley Country Club is located adjacent to the site and is among the notable amenities of the valley. Cousins Restaurant and Bar located on the corner of Country Club Road and Route 902 is also adjacent. A condominium complex on Country Club Road was completed several years ago. (Image 38)

Five acres of the site are on the south side of Mahoning Drive (rural Route 902) and the remaining 35 acres are to the north. The property once contained fields and orchards, but has not been farmed since the 1960s. Some apple and cherry trees remain. (Image 41) The south portion of the site is the former location of the farm homestead that once contained a farmhouse, barn, several outbuildings, chicken coops, a stream, pond, vegetable patches, etc. See Image 42 for location of historic buildings on site.

On the north side of the road the property extends up the south-facing slope and steepens near the top. Across the street from Cousins, a tractor path cuts north from Mahoning Drive through the forest. On the property to the east is a new house with a garage, patio, and swimming pool. A paved driveway runs along the western edge of the property line. Rows of Christmas trees are planted south of the home. The south-facing slope, presence of water, street frontage, location adjacent to an intersection and other amenities, and existing clearing provide assets of the site.

Former buildings on the south portion of the site include a house, barn, orchard house, garage, shed, chicken coops, outhouse, and a well house. A circular driveway connected the primary buildings for ease of vehicle and tractor access. (Image 42) The roofs of the house and barn suffered damaging leaks and thus collapsed. The buildings on site were demolished in 2005. Some pieces of concrete, stone, and

metal debris remain on the site; a few large pieces are in the stream bed.

Image 44 shows the major topographical contours on the site. The overall elevation change is approximately 270 feet. The south-facing slope provides an advantage for growing crops and for solar access/daylighting of buildings. The slope rises primarily from south to north with the exception of a swale in the topography on the western side. Near the forested, northernmost portion of the site, the terrain is considerably steep: approximately a slope of 1:4. It seems disadvantageous to build on this portion of the slope.

Water drainage on site occurs primarily from northeast to southwest. In Image 45, arrows indicate the direction of water flow. Runoff collects in the streambed to the Southwest and in the ponds to the south. The pond on site is stagnant and is currently bright green in color due to excess nutrients, sunlight, and algae content. The project proposal includes introduction of bioremediating plant species into the pond. Fishing dock and a rock-lined swimming area are included in potential plans. During an August site visit, water levels were low. The pond is principally supplied by stormwater runoff. A stream runs north to south, down the hillside, across the road, and along the edge of the southern portion of the property. A wetland and an old stone dam are just south of where the stream crosses under Mahoning Drive. Here, cattails and flowering bushes are growing in the stream bed.

Prevailing breezes blow from Southwest to Northeast and follow the road and stream corridors. Breezes flow uphill, as evidenced by local weather patterns. Local breezes may change seasonally, however. The average yearly wind speed is relatively low at 9 mph. (Image 48) There may be more potential for wind power on the top of the ridge, especially with the incorporation of a tower element. South-facing solar access may provide an opportunity for power. According to Onboard Informatics

Website, the yearly ave temp= 50 F, Ave high=59, Ave low=39¹

The project site is located at approximately 41 degrees latitude. The summer sun angle at midday is 72 degrees. The winter sun angle at midday is 25 degrees.

(Image 49) Consideration of summer and winter sun angles may be helpful during site planning and consideration of building siting, planning of outdoor spaces and seasonal use. Trees/shade, crops/clearings, public spaces, private spaces, etc. can be planned with regard to these seasonal solar angles and their interaction with the natural and built environment.

Sectional site diagrams show the basic landform and slope. (Image 49)

Young successional forest growth covers most of the site. The forest understory is thick with shrubs, berry bushes, and vines. The canopy consists mainly of tall poplar and oak trees. Evergreens are found in increasing numbers farther up the slope. Most of the acreage is very difficult to walk through. Some apple, cherry, pear, and plum trees remain. (Image 50)

1 Onboard Informatics. "Lehighton, Pennsylvania."



Image 38: Project Site and Adjacent Properties Aerial



Image 39: Site Features and Views Map

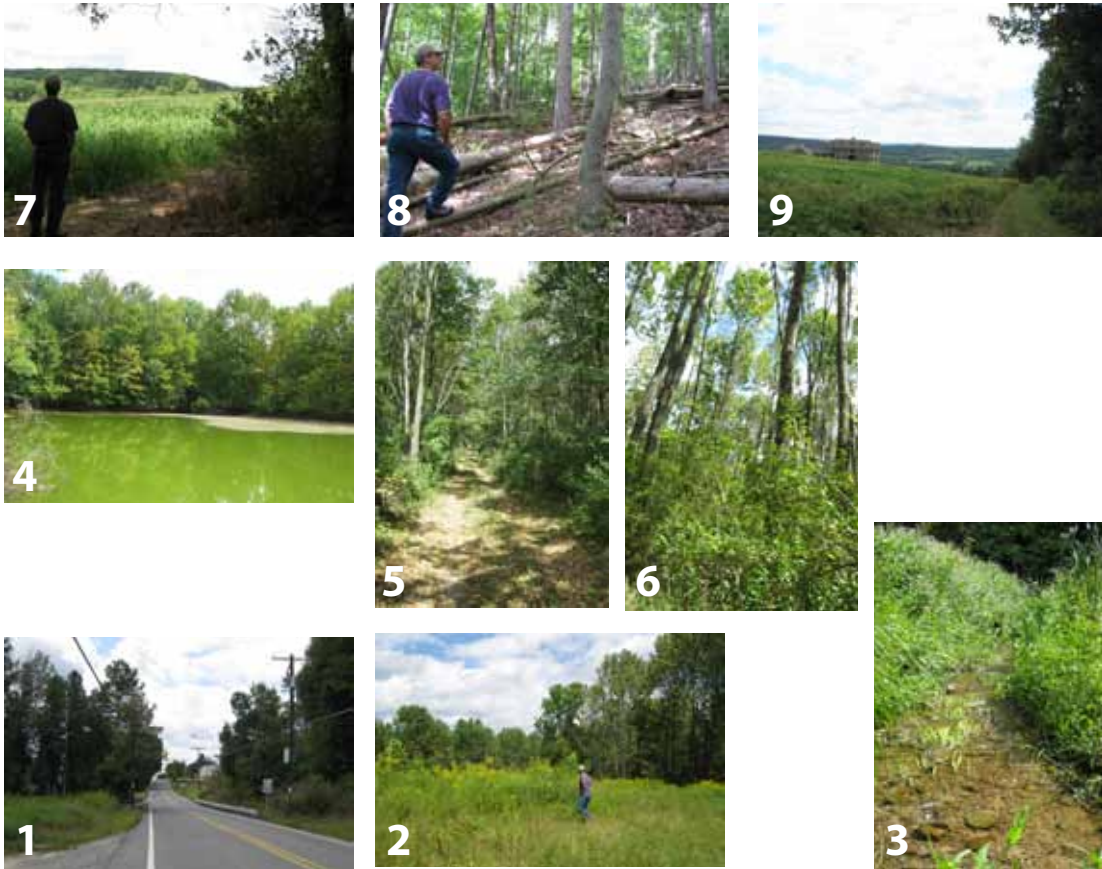


Image 40: Site Features and Views

1. Rural Route 902
2. Clearing at former location of house, barn, and outbuildings
3. Stream that runs along westernmost site boundary
4. Pond
5. Tractor path cuts up through the forest to the corner of the neighbor's field
6. Young forest and understory
7. View into neighbor's corn field
8. Top of hill where slope steepens. Forest understory is more sparse here.
9. View south of neighbor's property



- Orchard Trees: Apple, Pear, Cherry, Plum
- Crops: Corn, Pumpkins, Asparagus, other vegetables
- Developed Site: House, Barn, Garage, Orchard house, Chicken coops, Outhouse
- Pond

Image 41: Site Historic Land Use, circa 1960

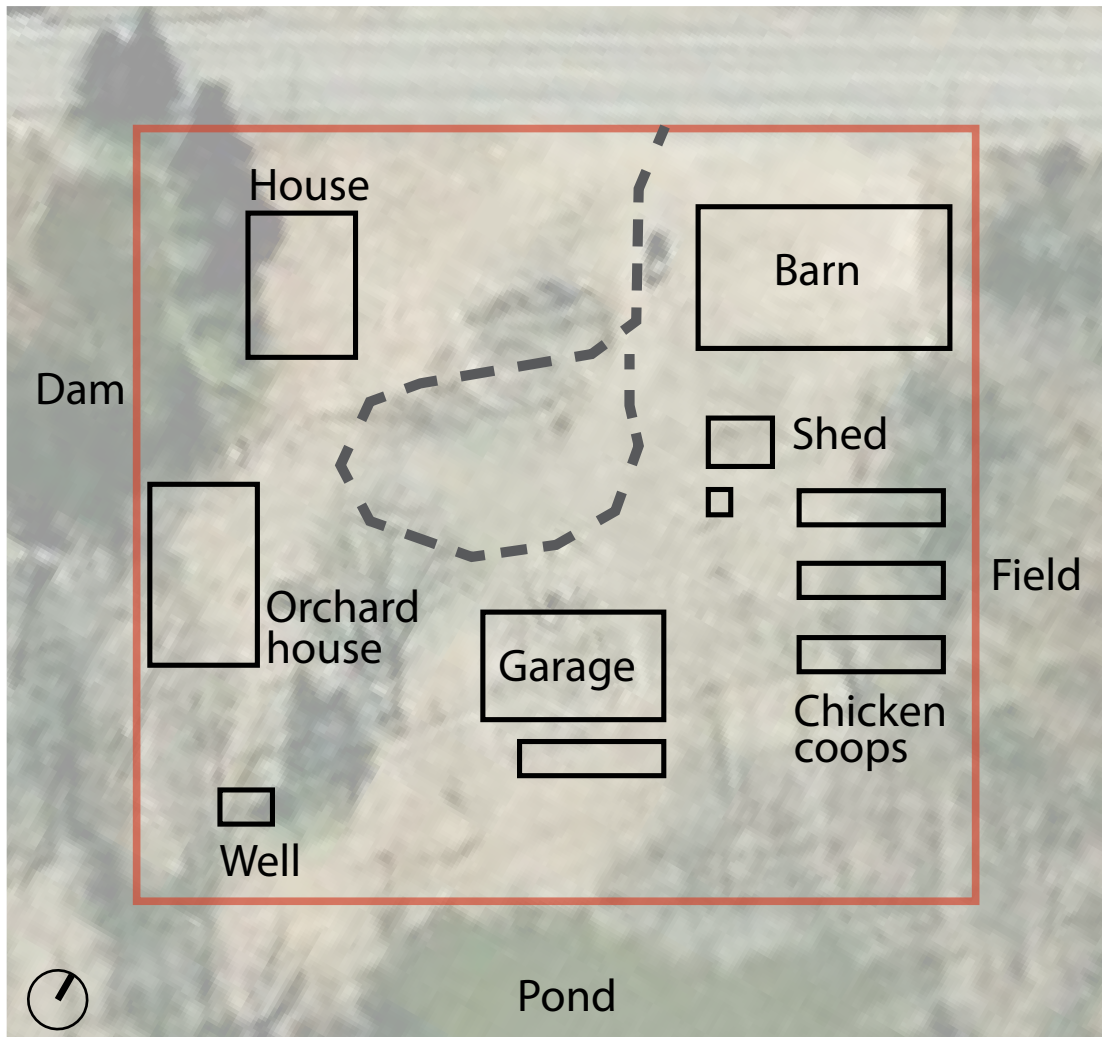


Image 42: Former Location of Buildings on Site, circa 1960



Image 43: Historic Site Photos, circa 1960

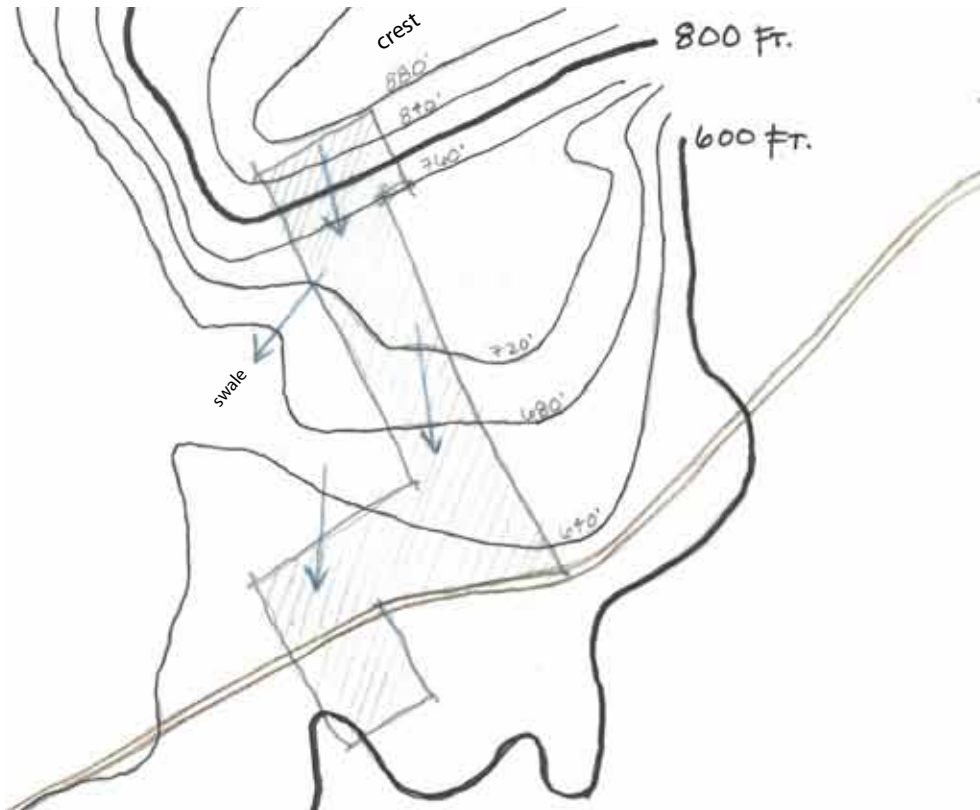


Image 44: Site Topography Diagram



Image 45: Site Hydrology, Slope and Runoff Diagram

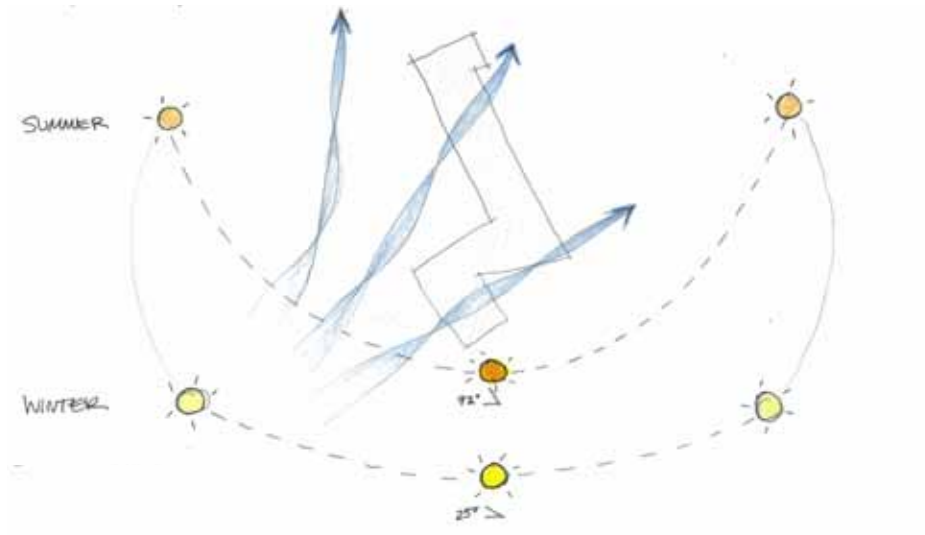


Image 46: Site Sun Path and Prevailing Breezes Plan Diagram

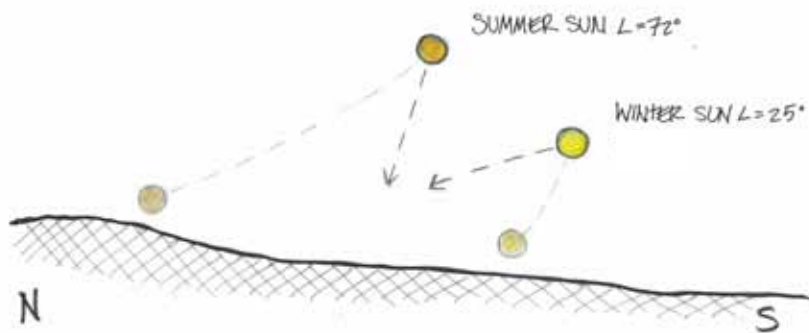


Image 47: Site Sun Angle Section Diagram

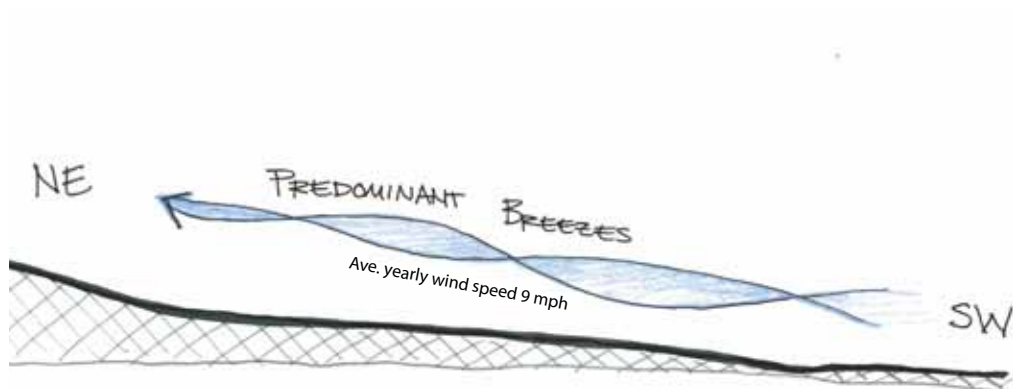


Image 48: Site Prevailing Breezes Section Diagram

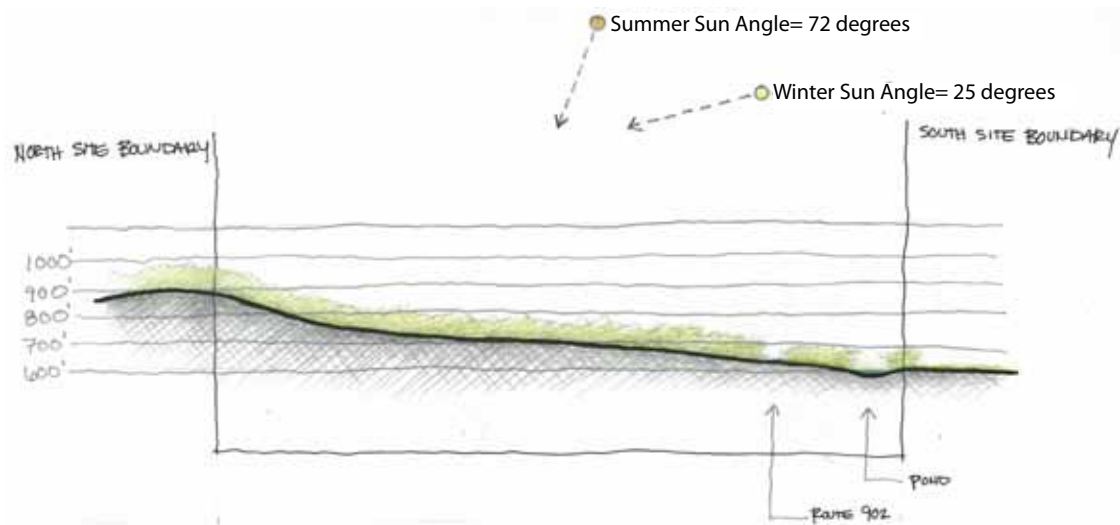


Image 49: North-South Site Section

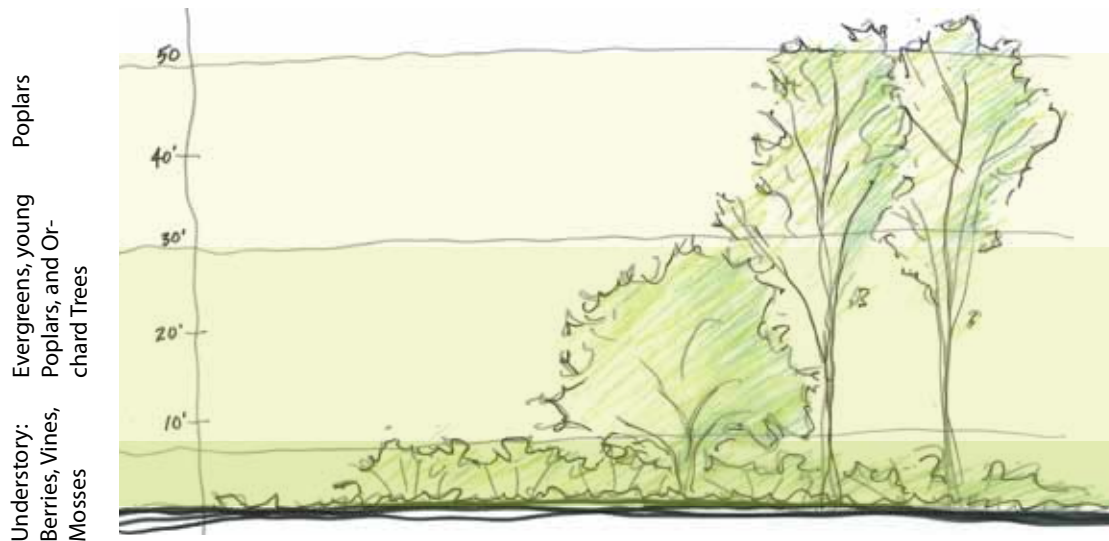


Image 50: Successional Forest Section

Landscape Inventory and Beginning the Design Process

The design process emerged out of a series of careful studies of the existing landscape features on site. Photographs, drawings, and site model aided in the inventory of the site's indiosyncrasies. (Images 51 to 55)

There are particularly fragile areas of the landscape on this site (as for most tracts of land) such as low-lying wetlands and steep slopes. In order to minimize impacts of harmful development practices such as excessive excavation and regrading, it is imperative to identify these fragile areas and preserve them. For example, wetlands and natural drainage swales allow stormwater runoff appropriate time to percolate through the vegetation and soil before flowing into the nearby stream.

Likewise, it is disadvantageous to built on steep slopes as the soil may be prone to excess erosion. For this reason, the subsequent design proposal avoids building in wet low-lying areas and on steep slopes, both present on the project site.

In other locations on site, it is environmentally advantageous to build. The clearing at the former location of the historic homestead is one of such places. It seems wise to propose the large community facility here, in order to avoid clearing trees and vegetation from an alternate site location. The final proposed location of the residential community is advantageous for several reasons. It is sited up-slope approximately 15-20 feet from the low-lying drainage swale and down-slope from the community well located at the top of the ridge. The average slope of the site area is about 3 percent, or 1/30, minimal but sufficient enough to prohibit excess stormwater from settling in unwanted areas in the community, especially near dwellings.

There are beautiful places in the landscape that we wish to preserve and intensify. (Image 55) By building mindfully in proximity of these places we can provide physical and visual connections to them. For example, an old stone row serves as a

barrier between the project site and the adjacent farmers field to the north. Currently, the thick underbrush prevents one from walking along the stone row to appreciate this valuable historic feature. By cutting a tractor/pedestrian path through the successional forest, users are able to walk along the path and enjoy the old stone row and the large oak trees along it. The act of planning and design can provide us with heightened sensory experiences while enjoying the natural environment.

The landscape of the project site is in need of care and rehabilitation. Upon completion of the comprehensive landscape survey, the following natural features are intended as part of the thesis proposal: rehabilitation of pond with introduction of bioremediating plant species; clearing of underbrush in successional forest for paths and recreation; removal of invasive plant species in wetland/streambed; removal of unhealthy/unstable trees, etc.



Image 51: Existing Site Sections



Image 52: Existing Site Model, Oblique View



Image 53: Existing Site Model, Plan View

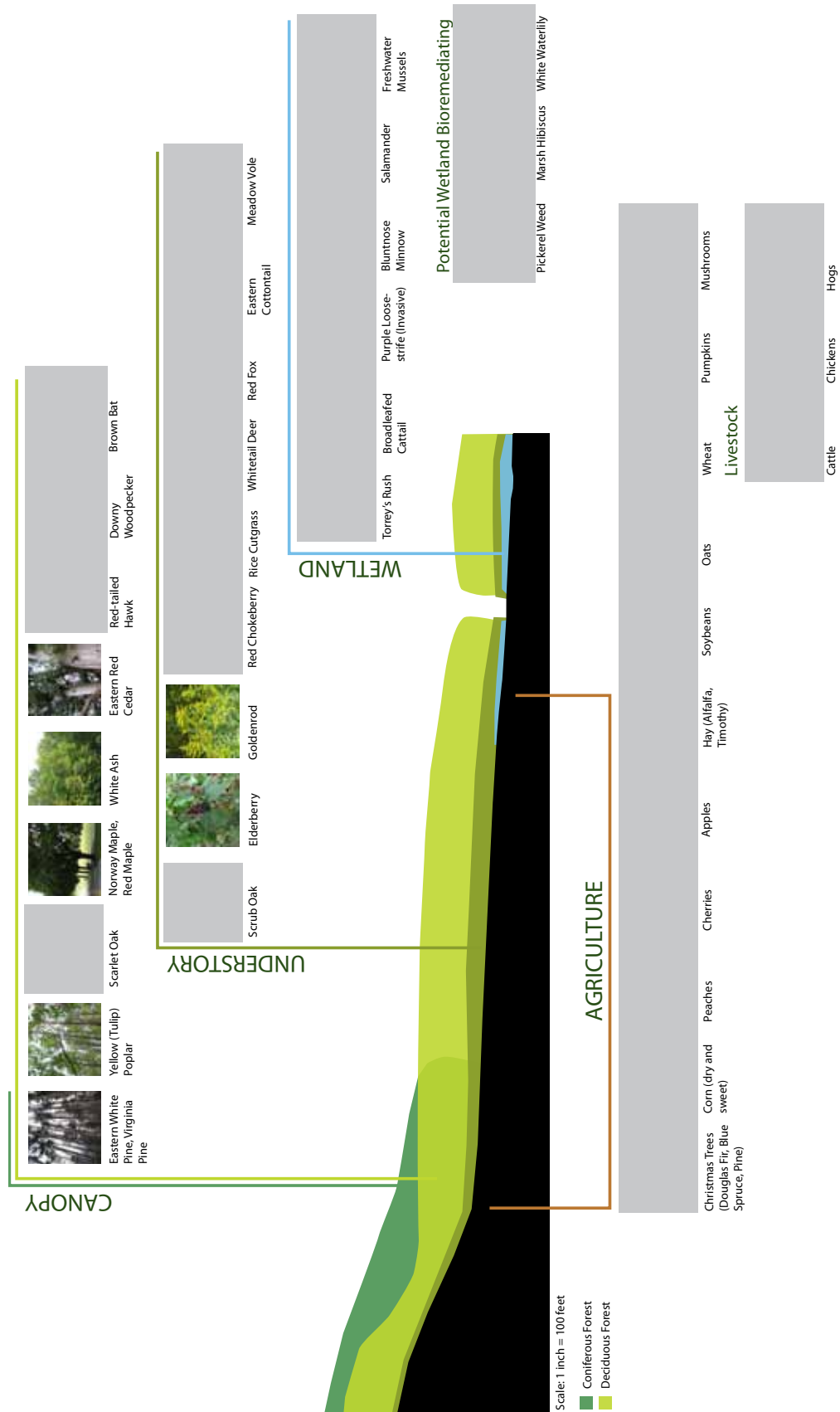


Image 54: Diagrammatic Site Section with Inventory of Native Species and Agriculture

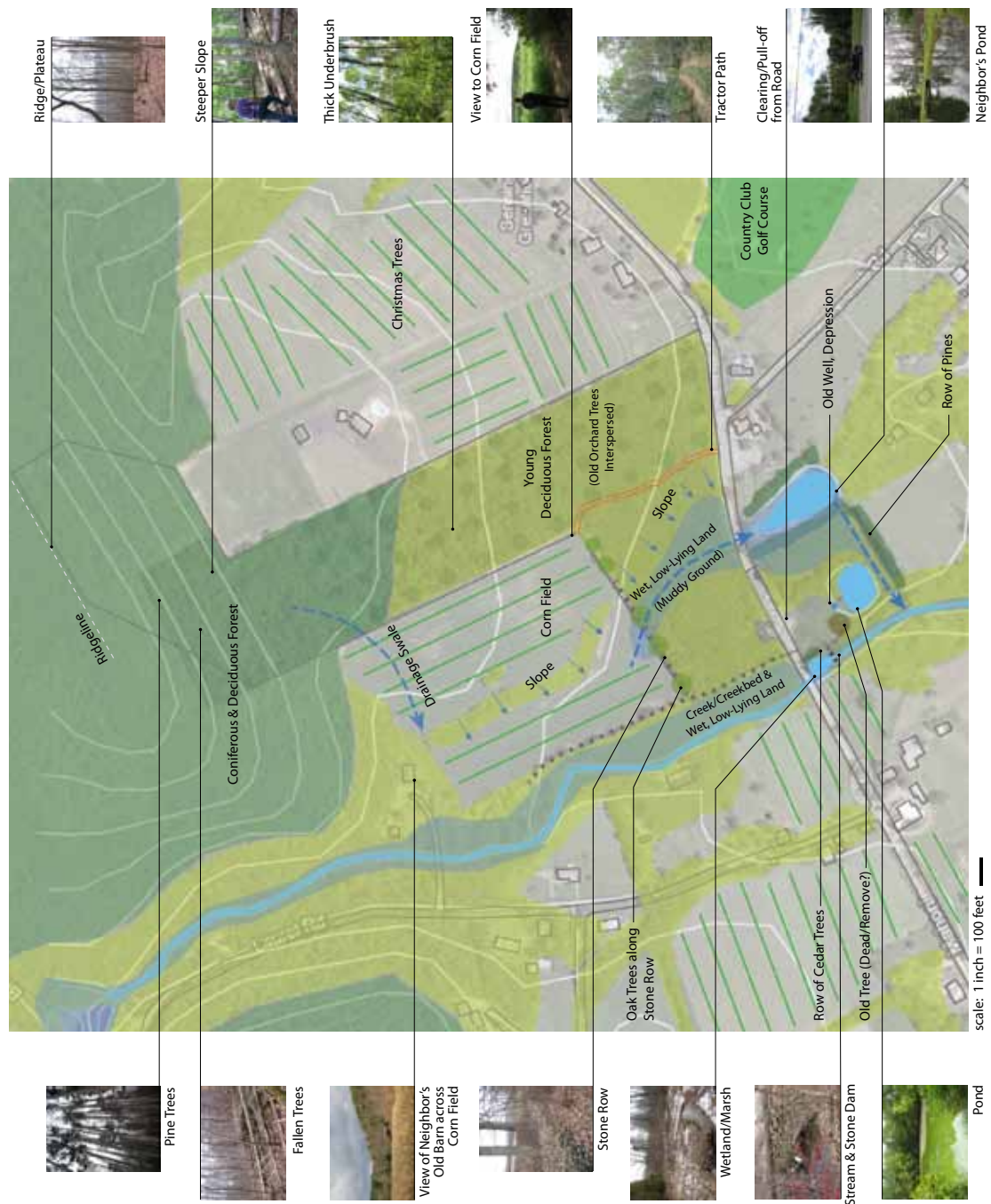


Image 55: Inventory of Existing Landscape Features and Views

Chapter 4: Precedents and Models for Development

Conservation Design Model

Randall Arendt advocates the use of a conservation subdivision process model. Steps in this process are broadly defined as:

1. Define ideal conservation areas
2. Locate sites of individual houses/units
3. Weave in roads and pedestrian paths
4. Define lot boundaries

This design model provides for sites to have between 50% and 80% of land in conserved open space.¹ It privileges the unique features of the land and places emphasis on common open space over large, privately-owned lots. The diagram in Image 57 shows a conservation development subdivision in comparison with a conventional subdivision. Both models include 32 detached dwelling units; however, smaller lot sizes result in more natural open space. A cluster housing design model groups dwelling units together in order to gain larger contiguous areas of open space. Using this model seems beneficial in that it can result in larger contiguous tracts of undisturbed woodlands or revitalized farmland.

Arendt discusses the New England Village prototype as one which evolved from rural farmstead communities. A central piece of agricultural land between 1 and 2 acres in size was characteristic of these places. A common meeting house, Inn, and a few dwellings were typically found around this central green. Most other dwellings and farm properties were scattered on the fringes of this central space.²

Arendt also poses an argument against typical gridded plans of cities, towns,

1 Arendt, Randall. Designing Open Space Subdivisions. . .

2 Arendt. Crossroads, Hamlet, Village, Town. . . , 15.

and other American settlements. Often these orthogonal plans are based on increased efficiency, lower costs, and comparative ease of both implementing and understanding. However, a grid plan cannot intrinsically relate to the unique characteristics of landscape features and topography. It may therefore be too rigid to be implemented on sites with unique site situations.³ It seems that less rigid and more organically planned community layouts may be better suited to the hilly rural topography of the project site.

*Village Homes in Davis, California*⁴

This sustainable development was designed in 1975 by designer/developer Mike Corbett. The project is located in the suburbs of California, a much more densely populated area than the project site. This project exhibits conservation design strategies in that it includes small homes, small private lots, and shared public open spaces. The site at Davis is 70 acres and has an average total density of 3.5 units per acre. There are 225 homes and 20 apartments. Most notably, there is 23 acres of open space containing orchards, vineyards, gardens, parks, fields, pedestrian and bike paths. Only 47% of land is private lots. The houses are situated close together and most have an enclosed private yard or courtyard on the street side. Many lots have carports although the developer says he should have built garages. Other amenities include a community center and pool. Streets are 24 feet wide with no sidewalks in order to minimize hardscape; there is no on-street parking permitted. The community design incorporates an abundance of vegetation and drainage swales to control runoff.

House footprints are approximately 800-1000 SF. Most houses are 1.5 stories,

3 Arendt. Crossroads, Hamlet, Village, Town. . . , 16.

4 Village Homes, Davis, California. <http://www.villagehomesdavis.org/>

accounting for total square footage averaging around 1400 SF. The lots are minimally sized at about 1/10th of an acre (50 feet x 80 feet or less), and exterior walls of adjacent houses are only 20 feet to 30 feet apart. (See Images 58 and 59)

Oleson Woods Apartments and Townhomes, Tigard, Oregon ⁵

This project by Carleton Hart Architecture consists of affordable, multifamily housing with 3 and 4 bedroom townhouses and one bedroom flats. Here, townhouses are clustered in groups of five. A community center serves as a meeting house and social hall for residents. The total project area is 3.15 acres, much smaller than the proposed project site. The density of 10.16 units/acre is much higher than the 1 unit per acre density permitted by Mahoning Township zoning. The Oleson Woods site contains 32 units, building footprints cover 15.2% of the site and parking covers 10%. Buildings are staggered and stepped to relate to the surrounding landscape and topography. Green building features, wetland preserve, open spaces, and an environmental education program are sustainable aspects of this project. The ordered yet organically arranged site plan is rich with character. The dwellings are reminiscent of woodland cabin or shed vernacular forms. (See Images 60 and 61) Similar roof pitches would seem appropriate for helping to divert snow loads in the winter in Pennsylvania.

The Oleson Woods project shows that 32 units seem to fit comfortably on just over 3 acres. In a similar manner, attaching dwelling units in the proposal helps to leave areas of land undeveloped for agriculture, conservation woodlands, public amenities and recreation.

5 Gause, Jo Allen and Richard Franko. Developing Sustainable Planned Communities. pages 192-201.

Town of Jim Thorpe, Pennsylvania

The town of Jim Thorpe is a tourist destination attracting visitors from New York City, Philadelphia, and the Lehigh Valley. The Lehigh River cuts through forested hills and the town is nestled in the valley along the river banks. The historic Lehigh Railroad follows the river and hosts train tours up the scenic Lehigh River Gorge State Park. The Victorian style Asa Packer Mansion and Harry Packer Mansion are tourist attractions as well as the quaint shopping district of the town. Stone and brick are primary building materials in this district. The two principal streets, Broadway Avenue and Race Street (Image 62, bottom right) provide local examples of attached housing, shops, and offices that are rich in historic character with potential for replicability in the project proposal. Jim Thorpe achieves considerable density and community charm in the midst of hilly, forested terrain without seeming overly urban given its rural and woodland surroundings.

Agricultural Vernacular of Mahoning Valley

The local buildings and their arrangements, forms, construction methods, and materials suggest the way in which our families historically lived and worked on the land. They suggest perhaps a simpler time and sense of nostalgia. The imagery of a farm homestead evokes a sense of comfort and connection to the land. (Images 62 to 64)

Vernacular structures are typically sized appropriately. They are necessarily utilitarian. They are typically undecorated and often display their materials of construction to the exterior. Simple forms and local construction techniques are characteristic of the vernacular, as they have historically helped to keep construction costs low and construction efficiency high.

The buildings that comprised farm homesteads were typically placed in clusters close to existing roads for purposes of convenience. For this reason, older structures in the valley are located closer to the road than their newer counterparts. Currently, zoning requires minimum setbacks from the road for reasons of safety and future precautions relating to widening of thoroughfares, among others.

This thesis looks to these earlier architectural examples for suggestions on how to build more densely and efficiently in a timeless way that is reminiscent of past settlement patterns. We can learn from the integrity of design and construction of these buildings and from the aesthetic and cultural value that they lend to the imagery of the landscape. Wood and stone are prevalent construction materials that are readily abundant in the forested Appalachian hills of this region.

While historic dwellings and barns can be viewed as “traditional” examples, they can actually lend themselves to be translated into more modern housing types quite easily. There is a parallel between simple vernacular forms and their practical construction techniques and the sleek, energy efficient designs of minimalist modern/contemporary structures. Using vernacular building traditions can result in structures that have a higher level of craft.

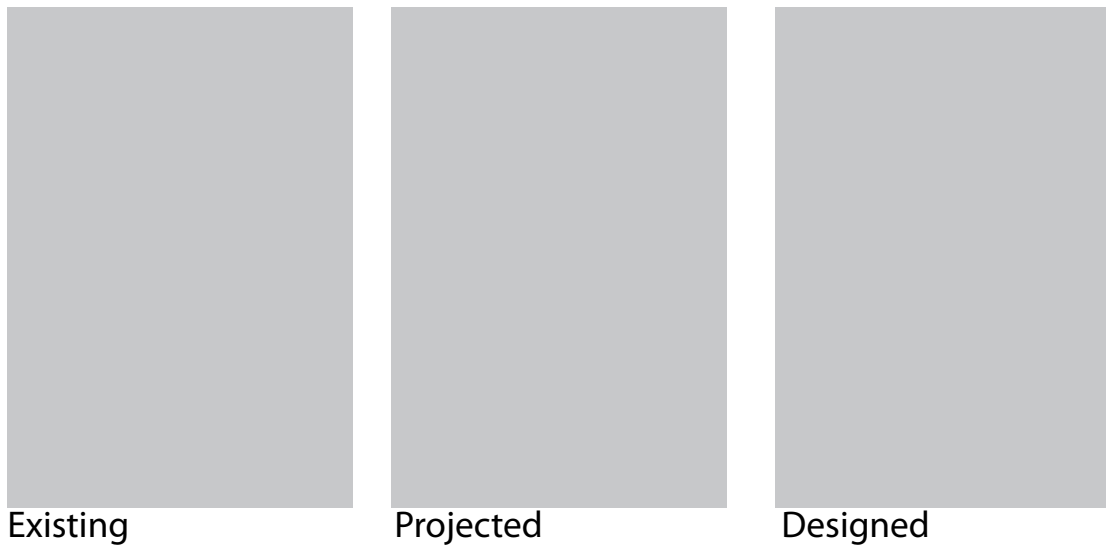


Image 56: Conservation Development Model (Source: Arendt, Rural by Design, pages 92, 94, 97. New labels added by author.)

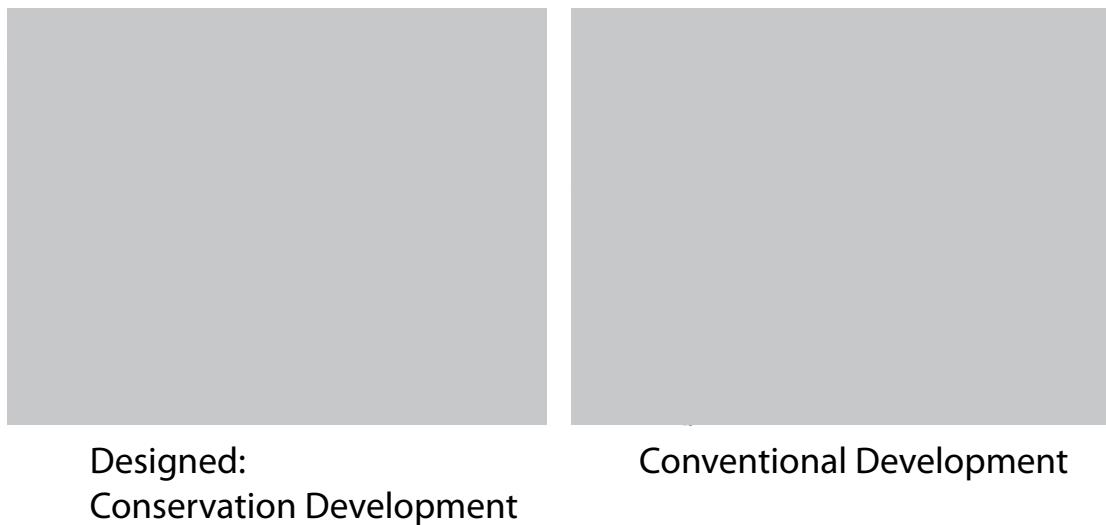


Image 57: Conservation Design Model (Source: Arendt, Designing Open Space Subdivisions, 104. New labels and color added by author.)



Image 58: Village Homes, Davis, CA Aerial

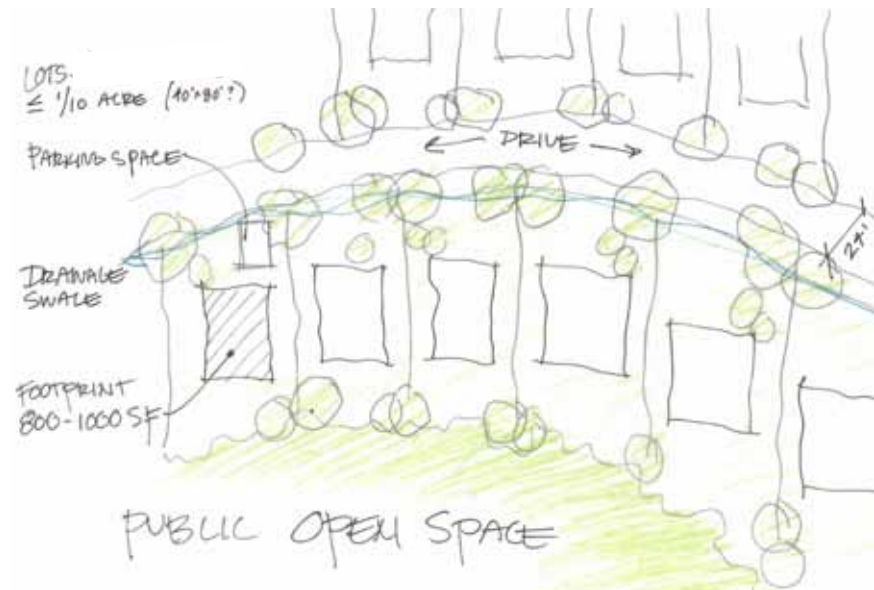


Image 59: Village Homes Lot Diagram

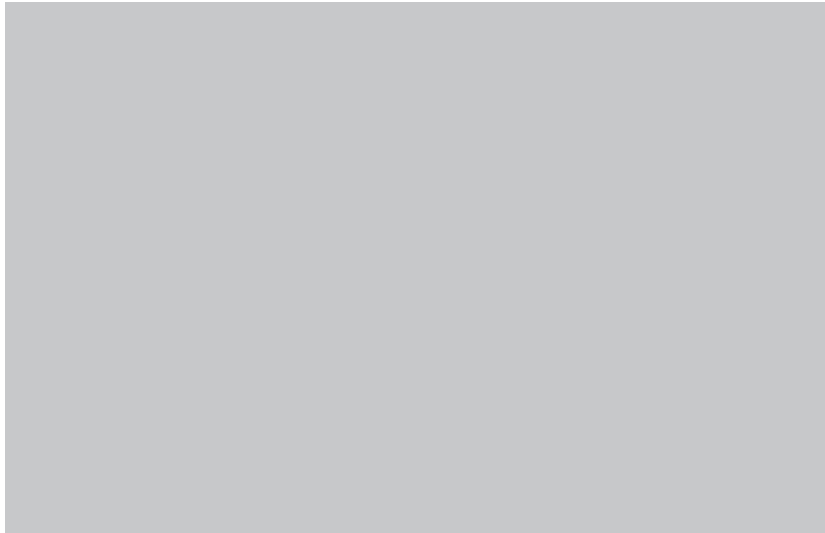


Image 60: Oleson Woods Townhomes (Source: Carleton Hart Architecture, P.C. www.carletonhart.com)

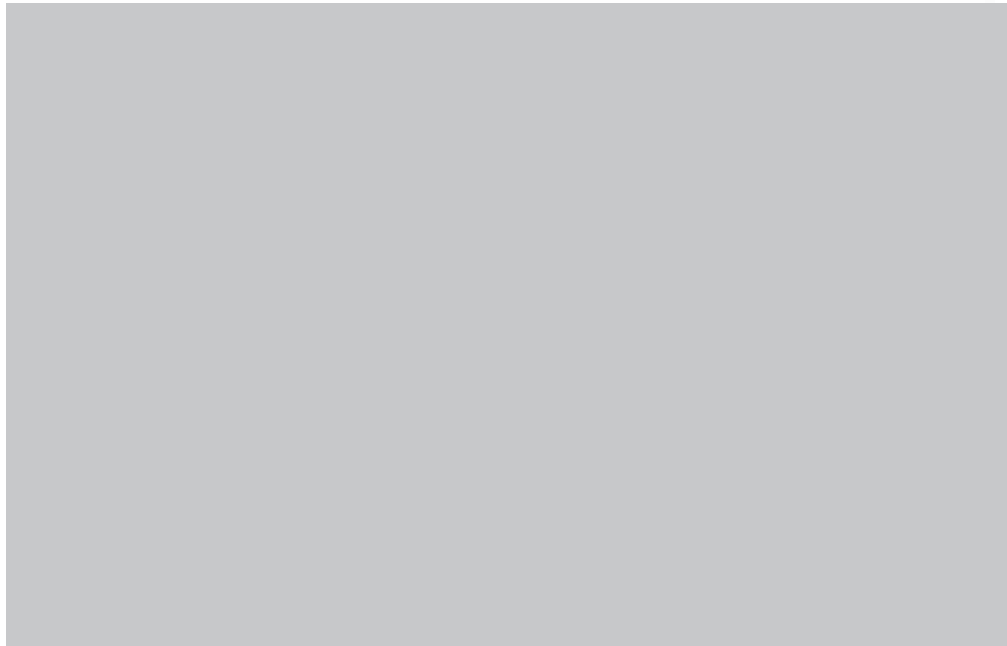


Image 61: Oleson Woods Townhomes Site Plan (Source: Gause, 194.)













Image 62: Site Context Photographs



Image 63: Barn Sketches

Site_Vernacular_Forms, Materials, Textures, Colors

Image 64: Vernacular Building Context Inventory

How do buildings meet the sky?									
How are roof forms made? What is the typical slope?									
How are chimneys articulated?									
How are openings made? What is the window to wall ratio?									
How are entrances made/announced? How are porches articulated? Overhangs?									
How are edges/boundaries made?									
How do buildings meet the ground?									
What are prevalent construction materials? How do materials meet each other?									
What are common colors, textures, and patterns?									

Chapter 5: Design Considerations, Approach, and Process

This thesis project is intended to serve as a case study toward sustainable development of a 40 acre property in Mahoning Valley, Pennsylvania. It does not assume that all proposed strategies should be implemented on similar sites, but rather, provides an example of a holistic approach toward environmental, social, and economically sustainable development practices.

Echoing the spirit of sustainability, the design process and proposal have relied upon a careful consideration of the whole. The “micro” aspects of the site as well as the “macro” applications of potential design decisions made on site have been investigated in this thesis. By designing for both the private interests of the individual or family, and the semi-private and public interests of the community simultaneously, we are able to gain a more wise and comprehensive understanding of how small decisions regarding where and what to build can add up to larger environmental, social, and economic impacts.

The “Macro” Considerations: The Project Site as a Seed

This project has explored ways in which the design of the project site can be copied or “seeded” throughout the entirety of the Mahoning Valley (and potentially other similar rural landscapes). It is intended to provide an example of sustainable development strategies and settlement patterns that can help inform future development policies adopted by the local municipality.

Alternative Development Strategies for Mahoning Valley

Relating back to the quote by Loren Eiseley in Chapter 1, which draws a parallel between humans and bacteria in the ways that we settle and build upon the earth, it would seem beneficial for us to organize ourselves according to patterns that minimize the detrimental effects to natural ecosystems. Planning of many of our major cities have already accomplished this task to some degree, however, rural landscapes have seemed less prone to receiving attention in terms of comprehensive planning. By increasing density and establishing strategic settlement patterns, larger contiguous areas of land are able to be preserved.

In order to accomplish this task, this thesis has examined several strategies for alternative settlement patterns and sustainable development in the Mahoning Valley (Images 65 to 68). Each strategy was conceived first at the scale of the site and its adjacent properties. Then, each was duplicated and applied to the larger context of the valley landscape. These strategies offer potentially beneficial alternatives to conventional development practices.

After carefully considering the pros and cons of each of these 4 strategies, the “Nodes” or clusters scheme, which studies the implications of developing more densely around intersections, has seemed to be the most clearly and holistically advantageous strategy for this thesis. Note that the other 3 strategies offer helpful ideas toward sustainable settlement patterns and continued to be considered throughout the entirety of the design process.

Following much the same pattern as urban counterparts, small clusters of rural settlement can help to concentrate development at nodes thereby protecting larger swathes of land. The “nodes” cluster development strategy mimics the existing historical pattern of development in the area (Image 69). An old Inn and general store

are located around an intersection approximately 1/2 mile west of the project site.

This development strategy would help tie the site to its historical context. Also, clustering buildings around nodes at intersections helps to preserve sections of farms and forests along rural route 902. This provides drivers and passersby with scenic vistas and helps preserve fragile areas of landscape such as low-lying wetlands.

Conversely, the current zoning code in Mahoning Township does not consider these and other factors, and development is allowed to sprawl along road edges. The nodes scheme does, in fact, investigate building near existing roads and infrastructure, thereby minimizing additional infrastructure and the excess costs and environmental disruption that it can incur. This strategy preserves a swath of relatively uninterrupted agricultural land in a prime location between roads and forested ridges.

The clustering of dwellings quite literally brings people closer together. Community interaction and sense of closeness between neighbors are likely to be heightened by concentrating dwelling density at intersections. By providing social, economic, and environmental interaction at these places, we can encourage sustainable living. Providing places to live, work, recreate, buy goods, grow food, etc. helps to achieve this goal.

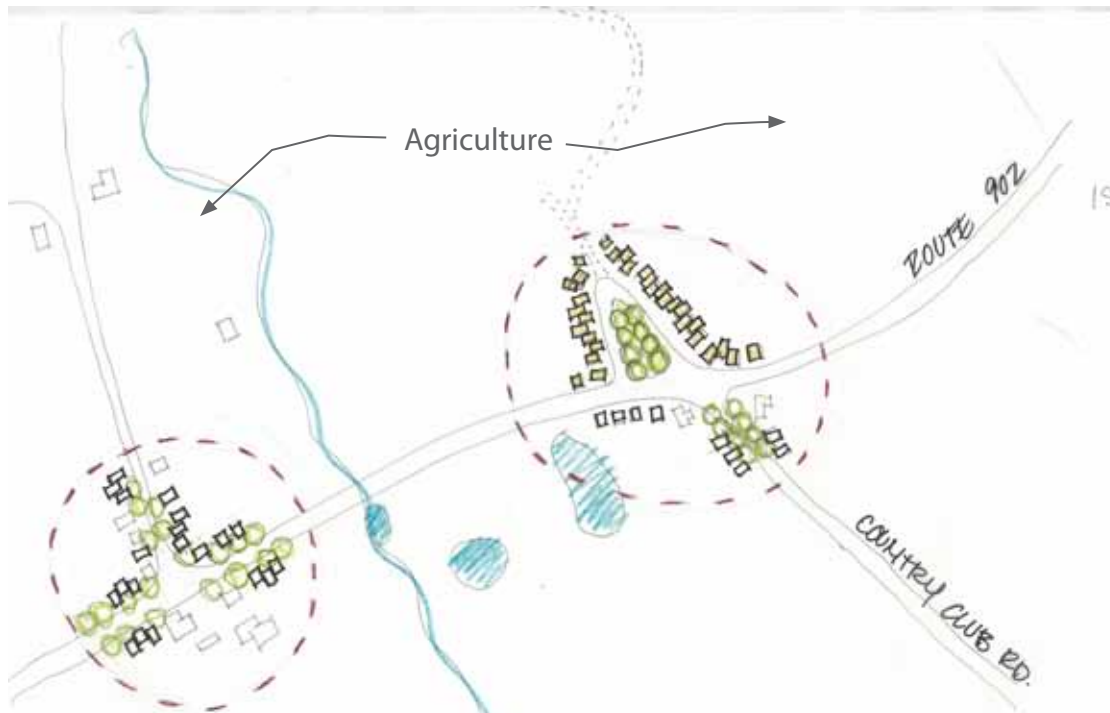


Image 65: Development Strategy 1: Develop “Nodes” at Intersections

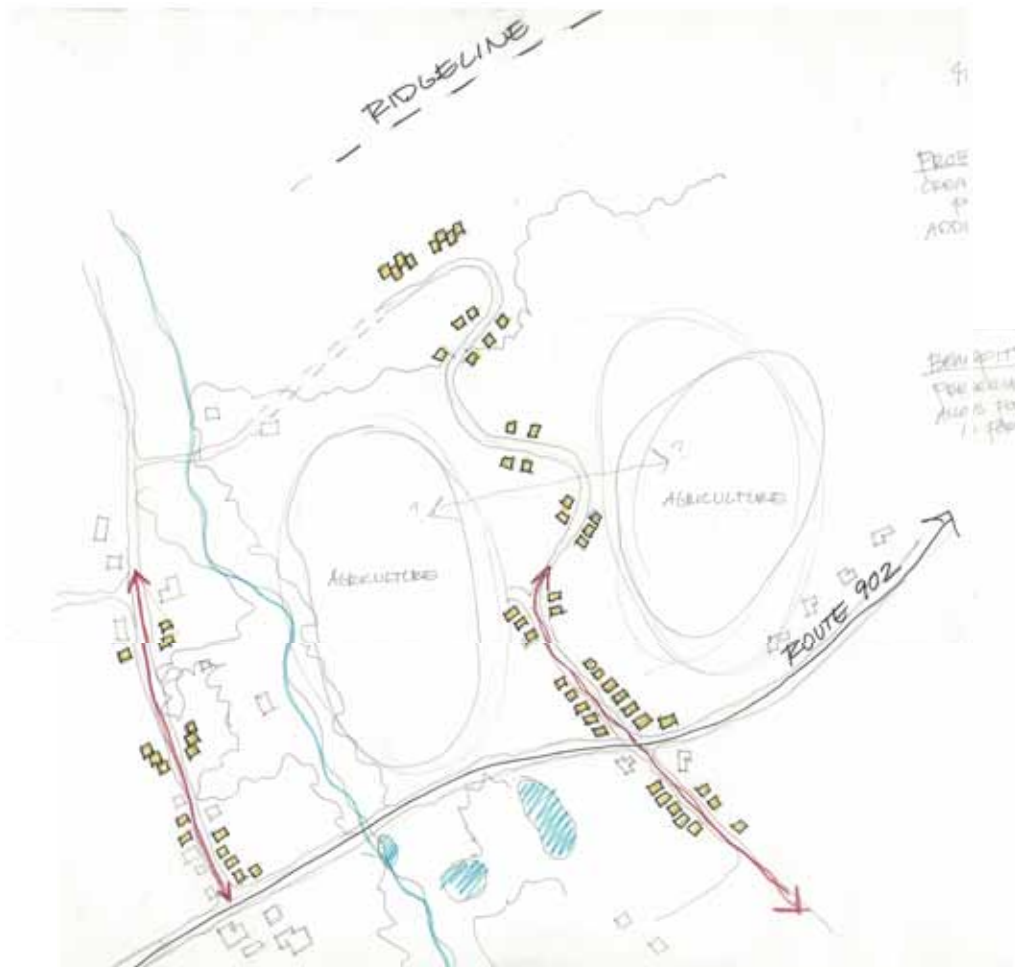


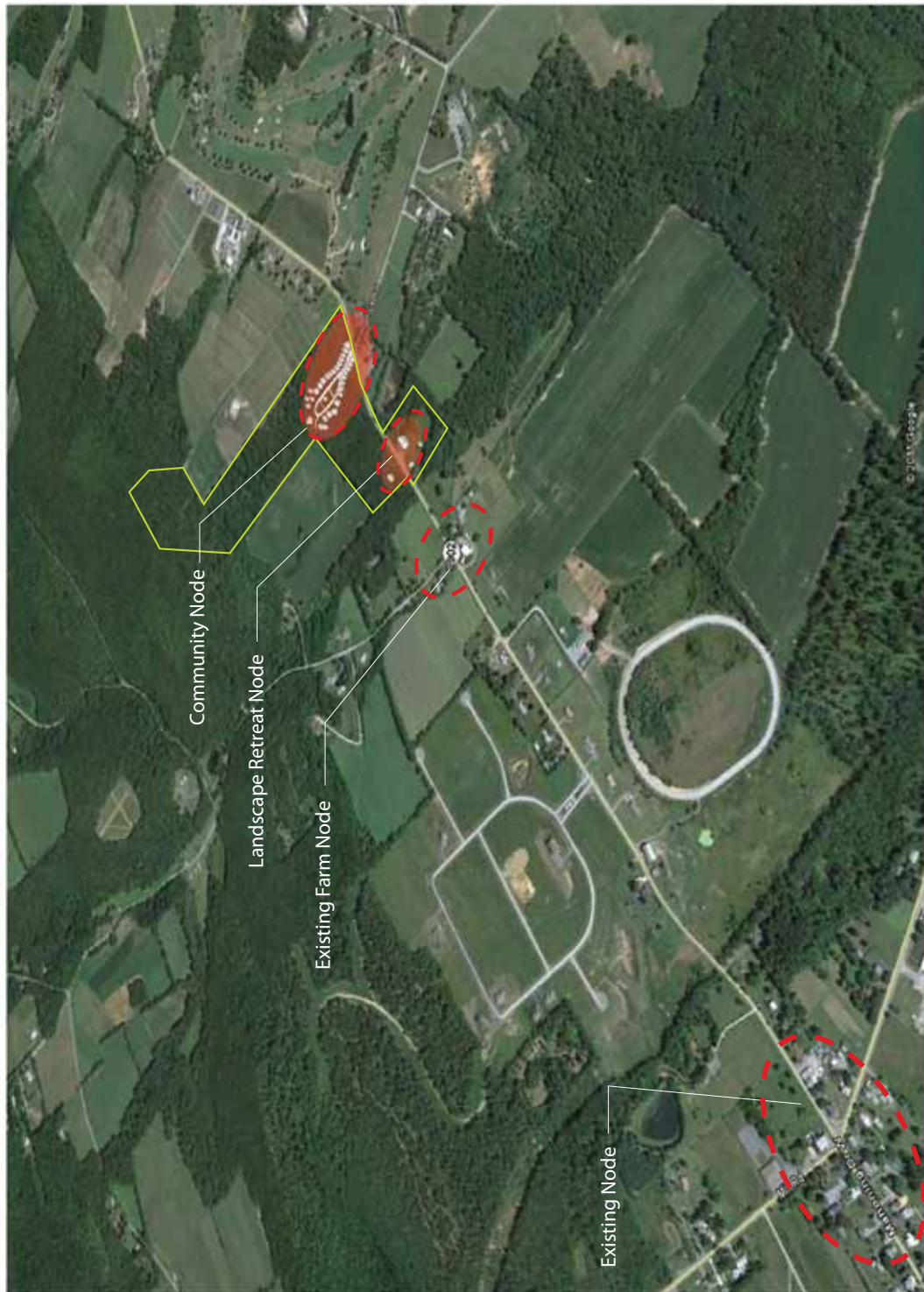
Image 66: Development Strategy 2: Develop Perpendicular to Main Roads



Image 67: Development Strategy 3: Develop Forested Areas on Ridges and Plateaus



Image 68: Development Strategy 4: Develop “Loops” near Main Roads



Proposed Site Development_Nodes

Image 69: Proposed Development Strategy, Develop in Nodes at Intersections

The “Micro” Considerations: The Conceptual Design Process on the Site

The conceptual design process for the master plan began as a segue from the site landscape inventory. The most advantageous places to build and least advantageous places to build were identified. This informed decisions relating to where and what to build on the site. The design process included iterative cycles of site visits and landscape inventory, photographs, design drawings, diagrams, and brainstorming. Often, designs were questioned and altered after each new site visit. Seasonal changes and weather conditions prompted new discoveries in the landscape. This highlights the crucial nature of a thorough and continual series of site visits and analysis throughout the entirety of the design process.

The site boundaries have acted as limits for this particular case study but the design process has explored potential to blur the lines between properties in order to design toward a more cohesive functioning whole. The design process has explored the connections to the adjacent properties in an attempt to link individual tracts of land for the benefit of the larger ecosystem.

Looking to Vernacular Context and Building Tradition to Inform the Design

A goal of this thesis has been to knit the proposed site architecture and landscape into the existing fabric of the Mahoning Valley. Integral to the design approach was a series of photographic inventories of vernacular buildings in the surrounding rural landscape. Building roofs, chimneys, window and door openings, porches, foundations, materials of construction, fences, road and path edges were all part of the building inventory. (See Image 64)

Existing historic buildings informed the design and character of proposed buildings on the project site. The agricultural vernacular of the Mahoning Valley

holds both aesthetic and historical value. It is worthy of being honored and used to inform future housing in this rural landscape.



Image 70: Preliminary Site Plan Diagrams



Image 71: Conceptual Site Plan A, Develop Densely at Intersection and Less Densely Up Hillside



Image 72: Conceptual Site Plan B, "Loop" Scheme, Dwellings Integrated with Agriculture

Conceptual Site Plans A & B (Images 71 and 72) incorporate aspects from one or more of the “Alternative Development Strategies for Mahoning Valley.” Working at a variety of scales, development density and articulation of individual units were studied.

Determining suitable dwelling density and where and how to appropriately concentrate it was a critical factor in this thesis exploration. As mentioned previously, the existing zoning allows for 40 total dwelling units on site. For purposes of an “apples to apples” comparison, it has seemed wise for the proposal to include as close to 40 units as possible.

While townhouses and attached house types other than duplexes are not incredibly prevalent in valley, attached dwellings can provide many benefits. Primarily, attaching units together helps to prevent heat loss through the building envelope in the winter season (Image 73).

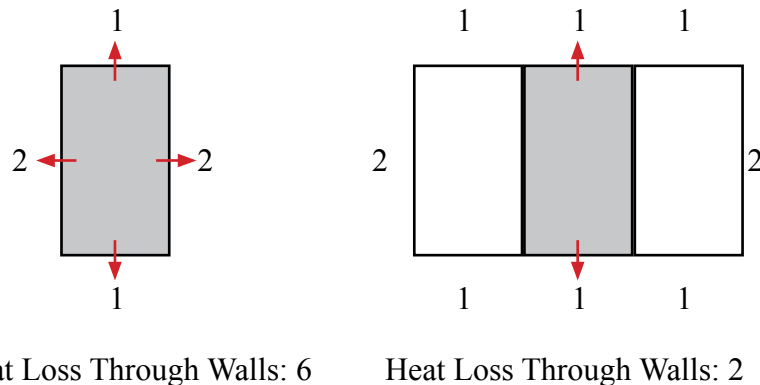


Image 73: Minimize Heat Loss in Winter by Attaching Dwellings



Image 75: Design Progress of Site Plan B, “Loop” Scheme, Dwellings Integrated with Agriculture



Image 76: Residential Community Design Progress and Housing Sketches

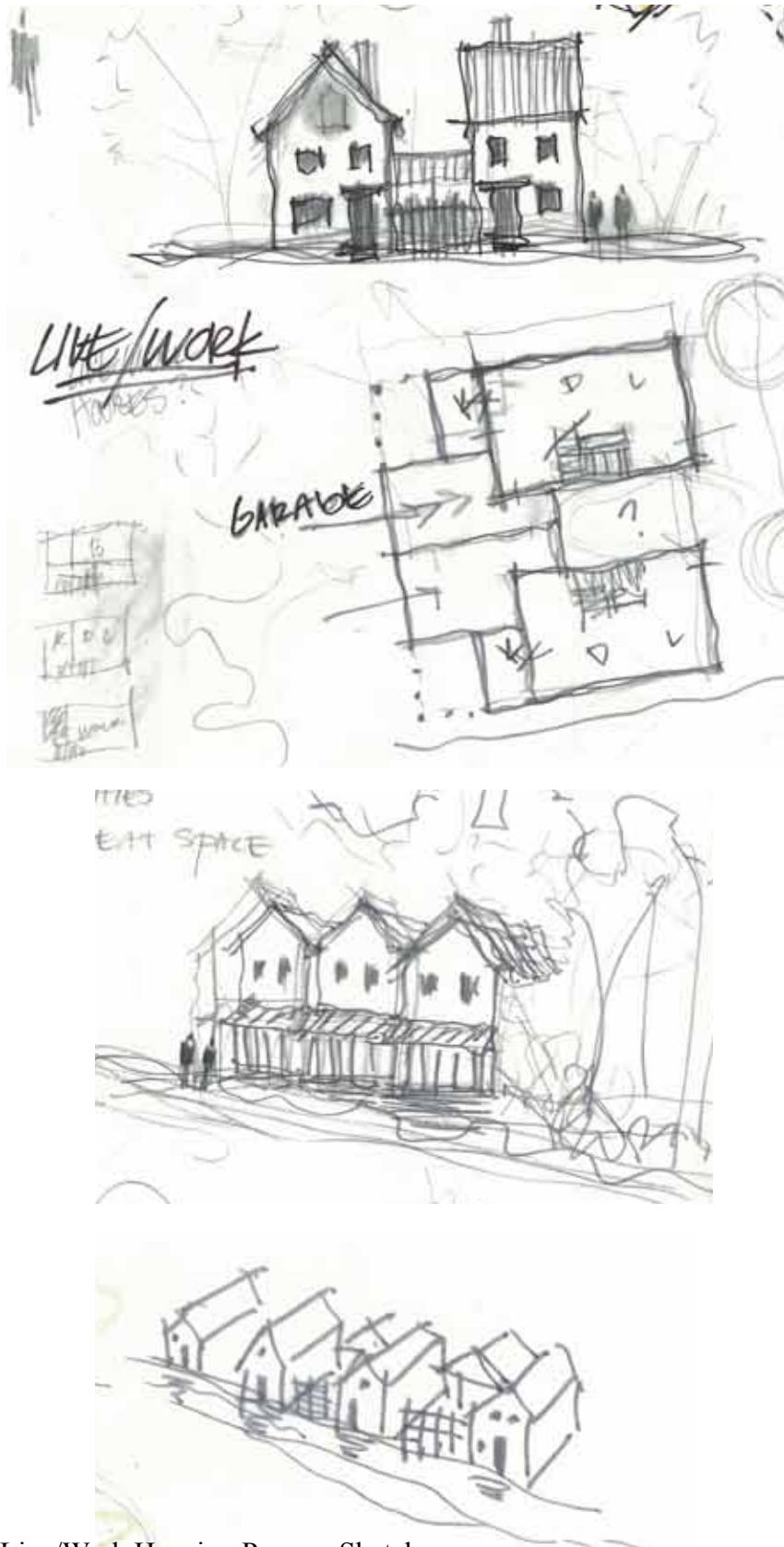


Image 77: Live/Work Housing Process Sketches

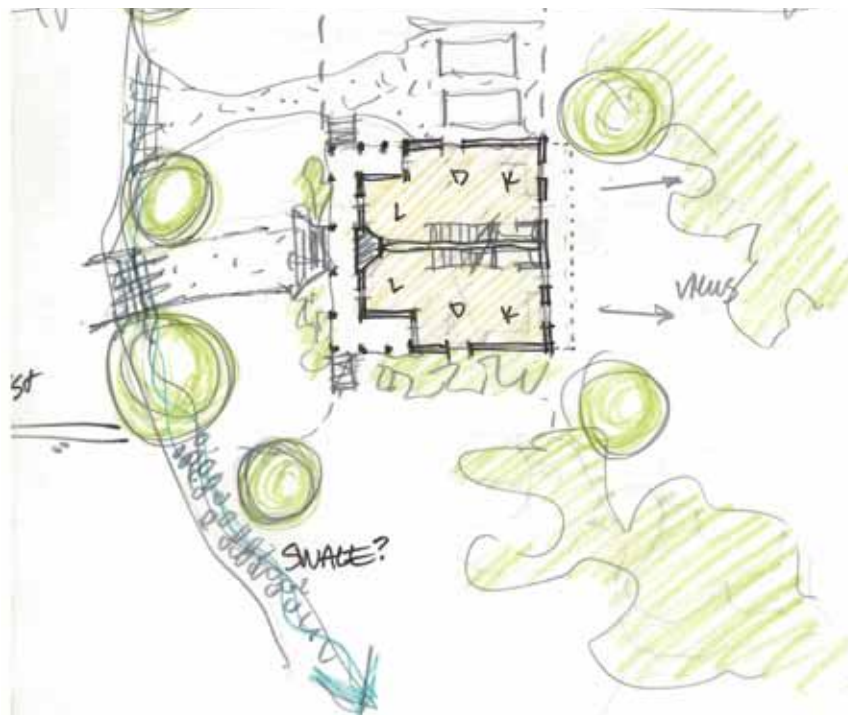
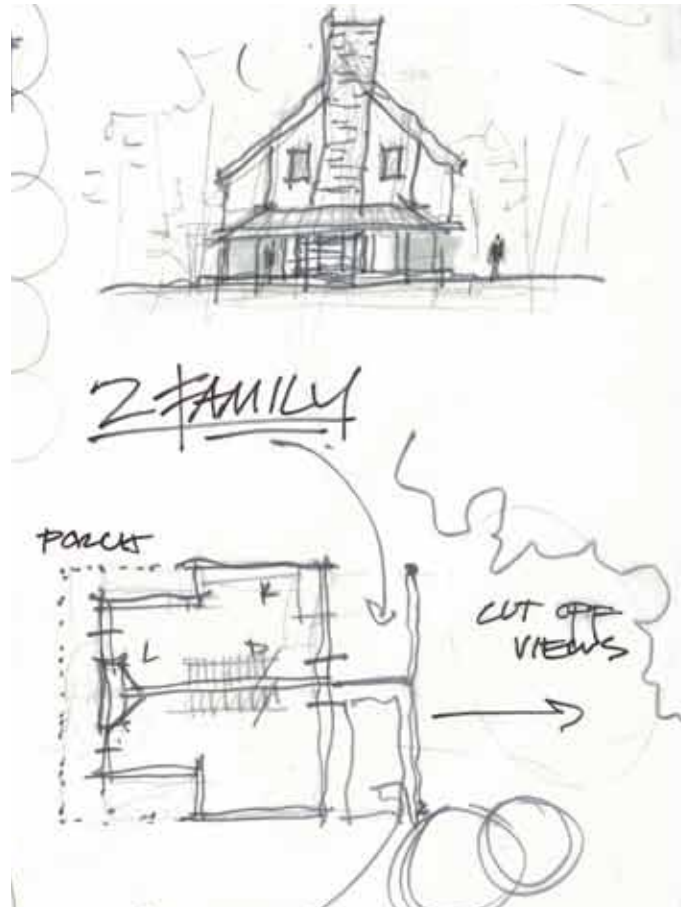


Image 78: Duplex Process Sketches



Image 80: Community Use Buildings in Residential Community Concept Sketches

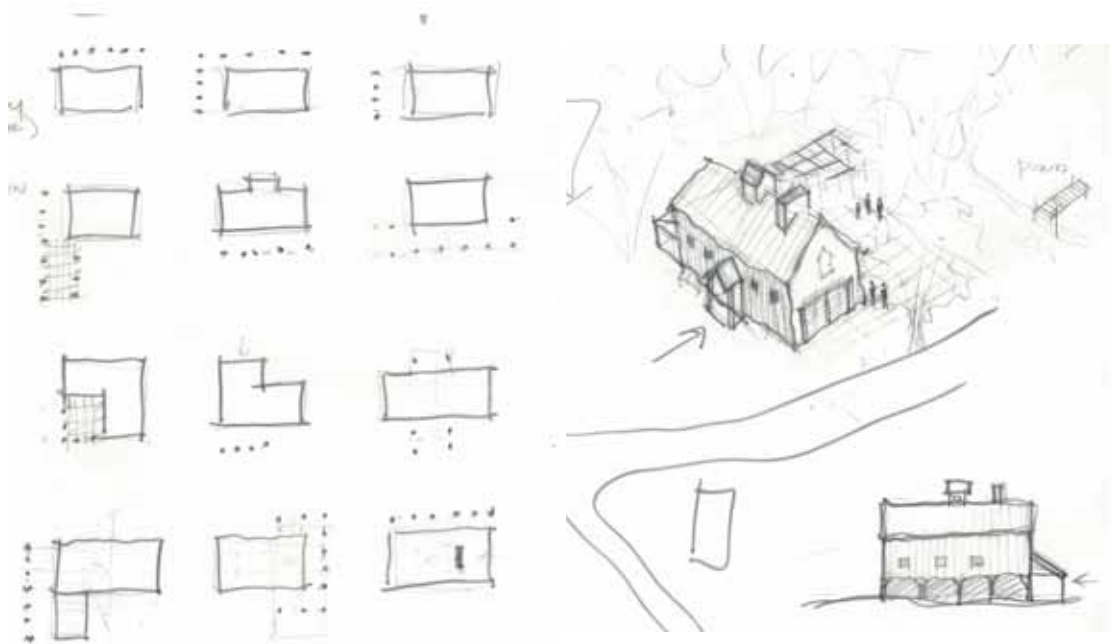


Image 82: Process Sketches of Community Barn at Public Recreation Area



Image 83: Sketch of Community Barn at Public Recreation Area

From Design Process to Proposal

The design has grown and evolved over time in a way that has resulted in its gradual development from one stage of design to the next. The “final” design proposal relies heavily on much of the process-oriented explorations. There was not much paper or trace that was scrapped throughout the course of this project; most of the process drawings occupied a position on the wall during the public presentation.

Near the end of the design process, the proposal incorporated advantageous strategies of both conceptual site plan schemes A and B (Image 74 and 75). The design includes a version of the residential community node of Scheme A with a secondary “loop” of Scheme B, conceived as a limited-access tractor and pedestrian path that provides a connection for residents to the public recreation area along route 902.



Image 84: Agriculture/Storage Barn

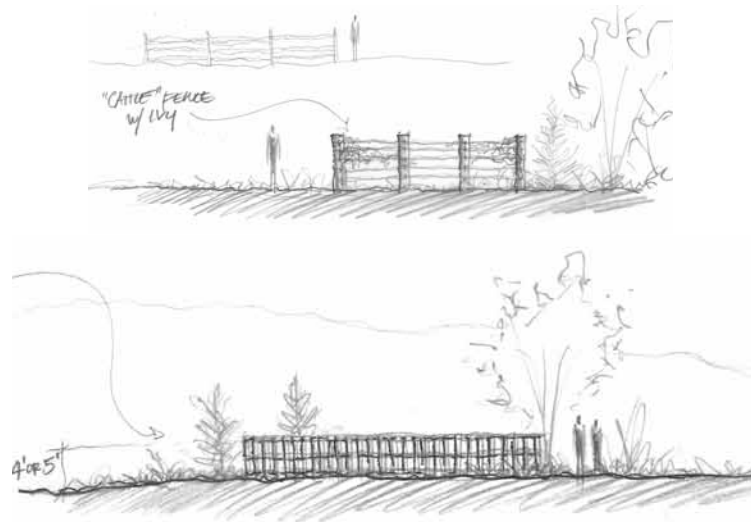


Image 85: Fencing Types Sketches

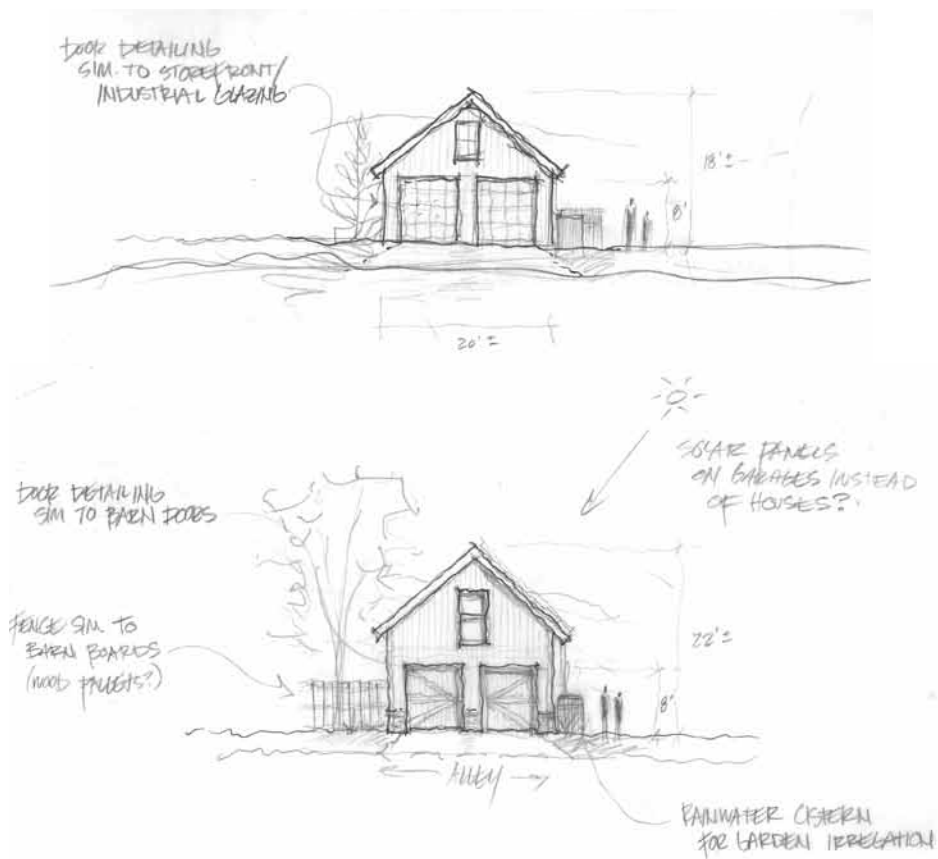


Image 86: Garage Sketches

Blurring the Lines Between Imagery and Design

The integration of perspective collages with the design process helped to inform the resulting proposal. Collages enabled site photographs to be transformed with the inclusion of local vernacular and precedent architectural examples. This technique served as a helpful link between analysis and design. This thesis proposes architecture that draws upon the local vernacular and precedent housing types such as Oleson Woods Apartments and Townhomes and cottages of Cotswolds in England. (Images 97 to 91).



Image 87: Concept for Residential Community at Intersection, Perspective Collage



Image 88: Residential Community Street Perspective Collage



Image 89: Public Recreation Area, Perspective Collage



Image 90: Community “Barn” Exterior Perspective Collage



Image 91: Community “Barn” Interior Perspective Collage

Chapter 6: Design Proposal, Drawings and Diagrams

The Master Plan and The 3 Places

1. Residential Community: located at the Intersection of Country Club Road and Route 902/Mahoning Drive

Buildings and Accessory Spaces:

(Housing: Total 40 Dwelling Units)

Live/Work Housing: 20 Dwelling Units

Farmhouse/Duplex Housing: 12 Dwelling Units

Cabin/Cottage Housing: 6 Dwelling Units

Accessory Decks, Patios, and Porches

Bed & Breakfast/Country Inn with Live-in resident(s): 1 Dwelling Unit and
3-4 Transient Units

General Store with Apartment above: 1 Dwelling Unit

Common House

Barbeque/Picnic Pavilion on Central Green

Landscape Features:

Orchards and Agriculture

Successional Forest

Community Garden Plots

Central Green Spaces

Pedestrian Paths

Bioswales

2. Public Recreation and Landscape Area: Located at Existing Clearing and Former Location of Historic Homestead

(South of Route 902)

Buildings and Accessory Spaces:

The Community Hall/"Barn"

Picnic Pavilions

Pond Grotto

Landscape:

Pond with Fishing Dock and Swimming Area

Wetland and Stone Dam

Meadow/Open Play Field

Pedestrian Trail

(North of Route 902)

Buildings and Accessory Spaces:

Agriculture/Storage Barn

Lean-to Pavilions overlooking farmland

Landscape:

Orchards and Agriculture

Limited-Access Tractor Path along existing Stone Row

3. Forested Ridge Retreat Area: located on the forested slope and ridge in the Northern-most portion of the site

Buildings:

Water Tower with Lookout Deck

Woodland Sanctuary

Lean-to Structures at Campsites

Landscape:

Campsites with Fire Pits

Hiking Trail

Forest Preserve

(See Images 92, 93, 94, and 109 for detailed descriptions and locations of design elements)

The public, the semi-private, the private

Providing public, semi-private, and private areas in the site plan in order to provide residents with a sense of holistic comfort has been a goal of the proposal. Individual homes and lots have been considered the private realm. Semi-private is the residential community and its associated outdoor spaces, adjacent orchards, gardens, central green and pavilion, pedestrian paths, and the common house. The forested ridge retreat area is also a semi-private destination place for residents. The public area to the south of Route 902 contains the larger community “barn” facility and associated outdoor/patio spaces, picnic pavilions, pond and grotto, pedestrian path, and play field.

Image 92: Project Site Master Plan

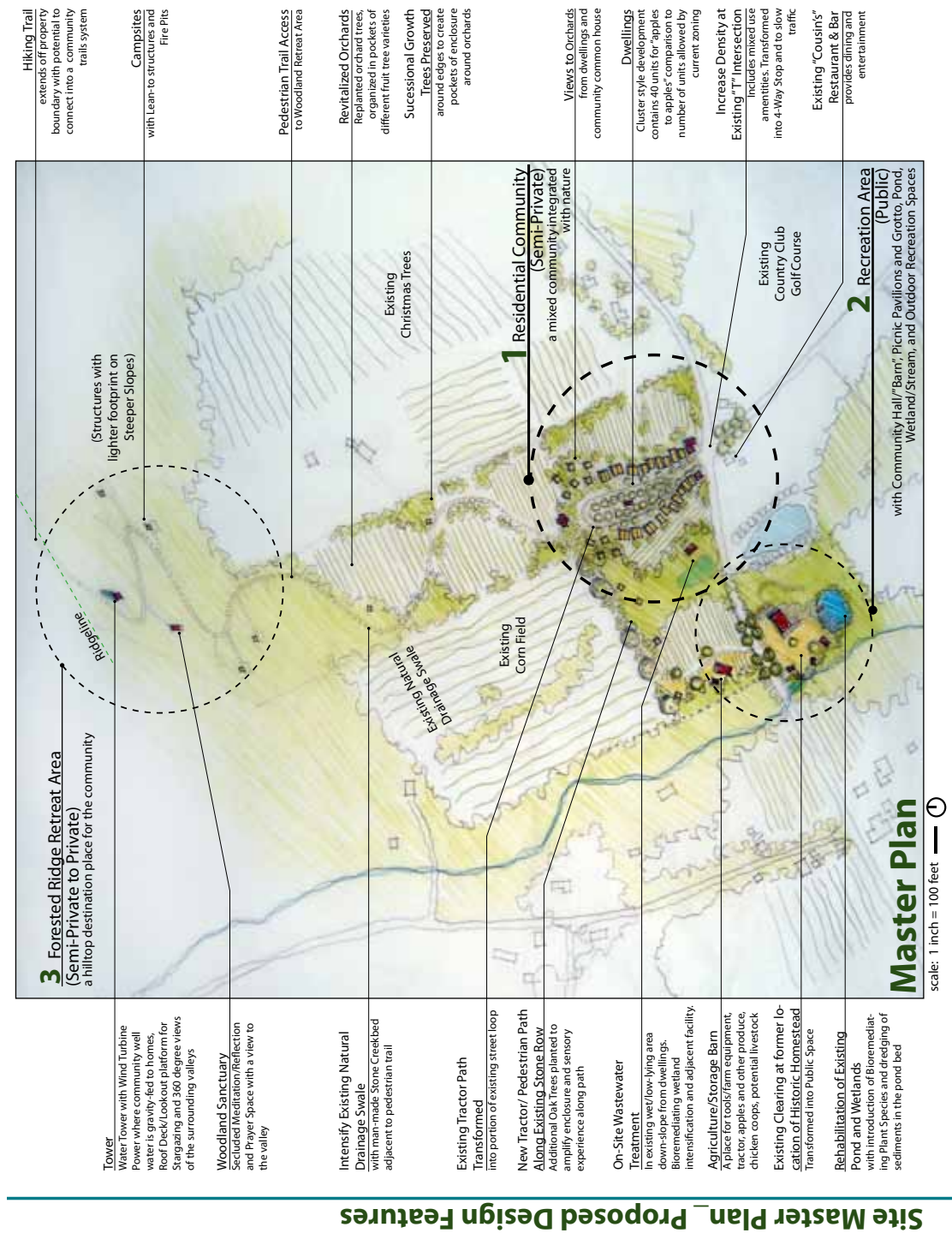


Image 93: Site Sections

Site Sections Diagrammatic Master Plan

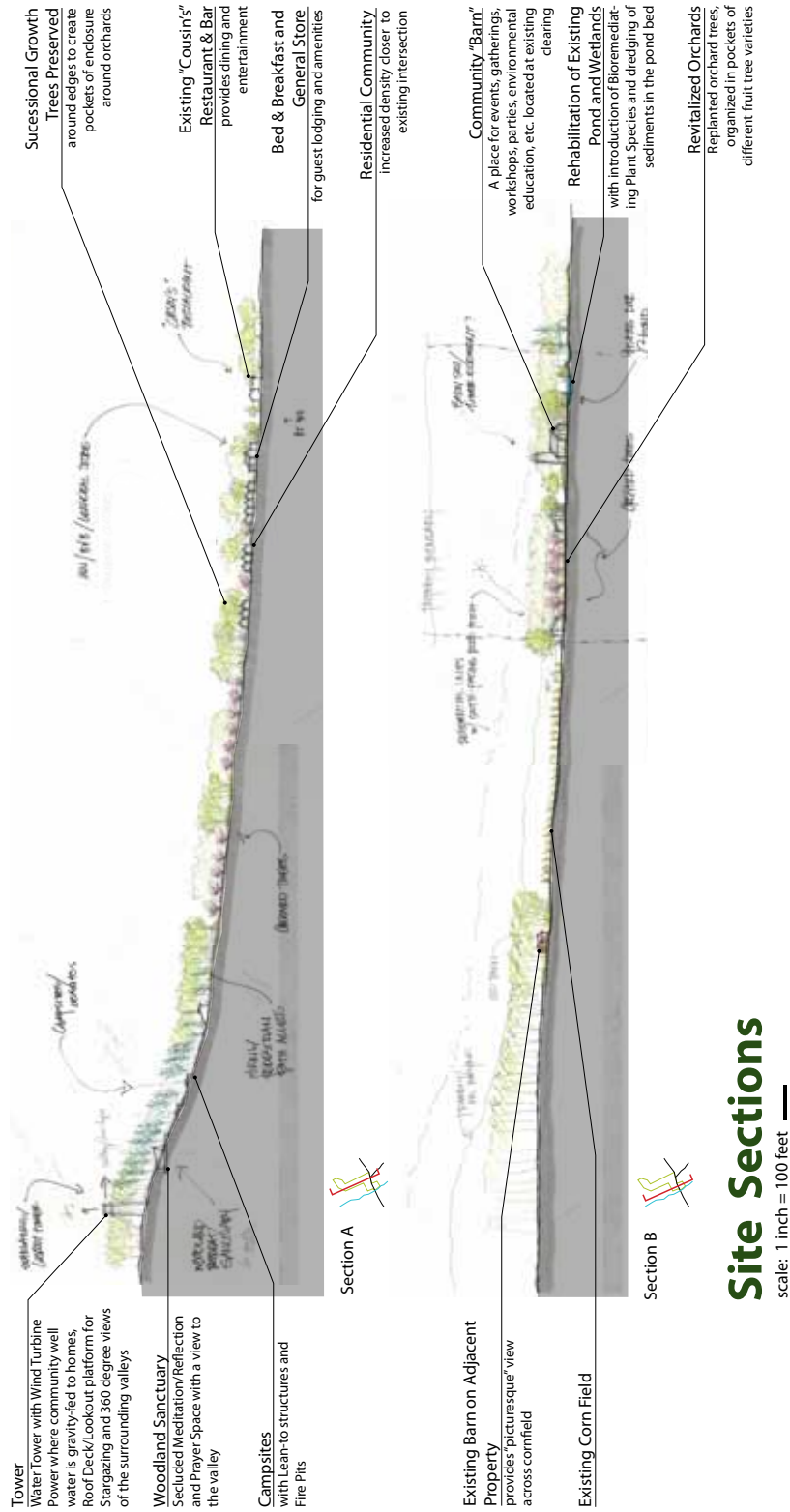
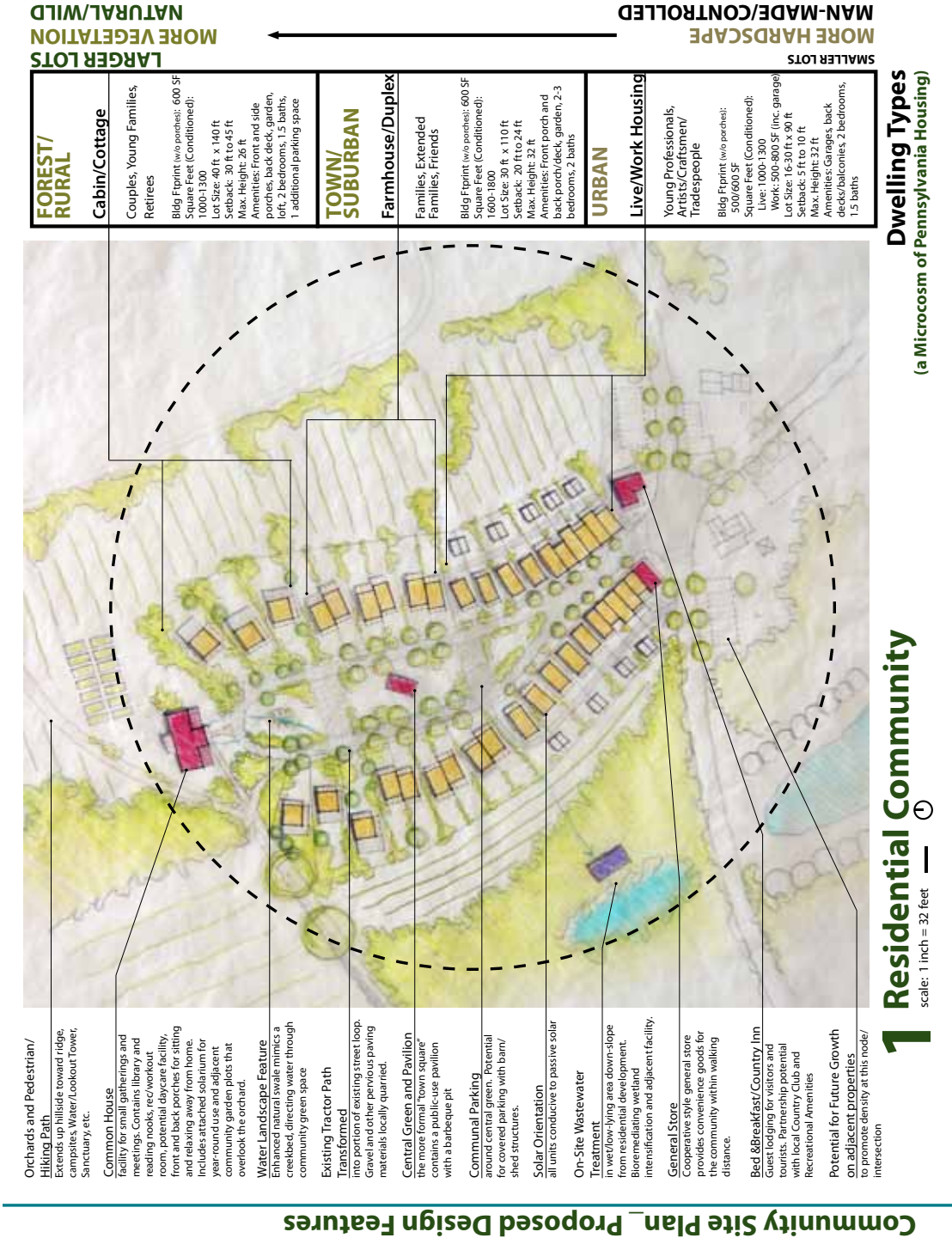


Image 94: Community Site Plan



Residential Community Diagrams

Lot sizes range from smaller near Route 902 to larger moving away from the road. Dwellings are spaced closer together near the road in order to achieve increased density. Dwellings are spaced farther apart in the North. (Image 95)

Agricultural land for orchards and agriculture is located behind individual private lots. The land could potentially be owned communally by residents. (Image 96)

Portions of the young, successional forest have been preserved and allowed to continue growing. The forest helps to create a sense of enclosure and privacy around lots and pockets of agricultural land. (Image 97)

The community green located at the center of the community consists of both forested areas and grassy clearings for recreation. Buildings include the common house and associated outdoor spaces/gardens, barbeque/picnic pavilion on the center green, general store, and bed & breakfast along route 902. (Image 98)

A parking lane has been incorporated into the planning of the residential street loop. Additionally, 2 parking areas are located around the center green for additional/guest parking. There is potential for covered parking with barn/shed structures at these locations. Additional private pull-in spaces can be located on front edges of individual lots. Two lots flank the General Store and B & B for visitor/transient parking. Locally quarried, pervious paving materials are to be used. (Image 99)

Stormwater runoff flows in a Northeast to Southwest direction. Bioswales designed along streets are lined with vegetation and pervious materials. An enhanced natural swale, designed to mimic a rocky creek bed, doubles as a focal point of the Northernmost portion of the central green. Water is allowed to percolate slowly back into the natural water system. (Image 100)

A community wastewater treatment facility is located downslope. Treated wa-

ter then passes through a series of bioremediating wetlands in order to further cleanse/purify water and allow it to return to the natural water system. (Image 101)

A communal well is located up the hillside to the North, on the forested ridge. A water tower with wind-powered pump system supplies water to the community via a gravity-feed system. (Image 102)



Image 95: Lots and Dwellings

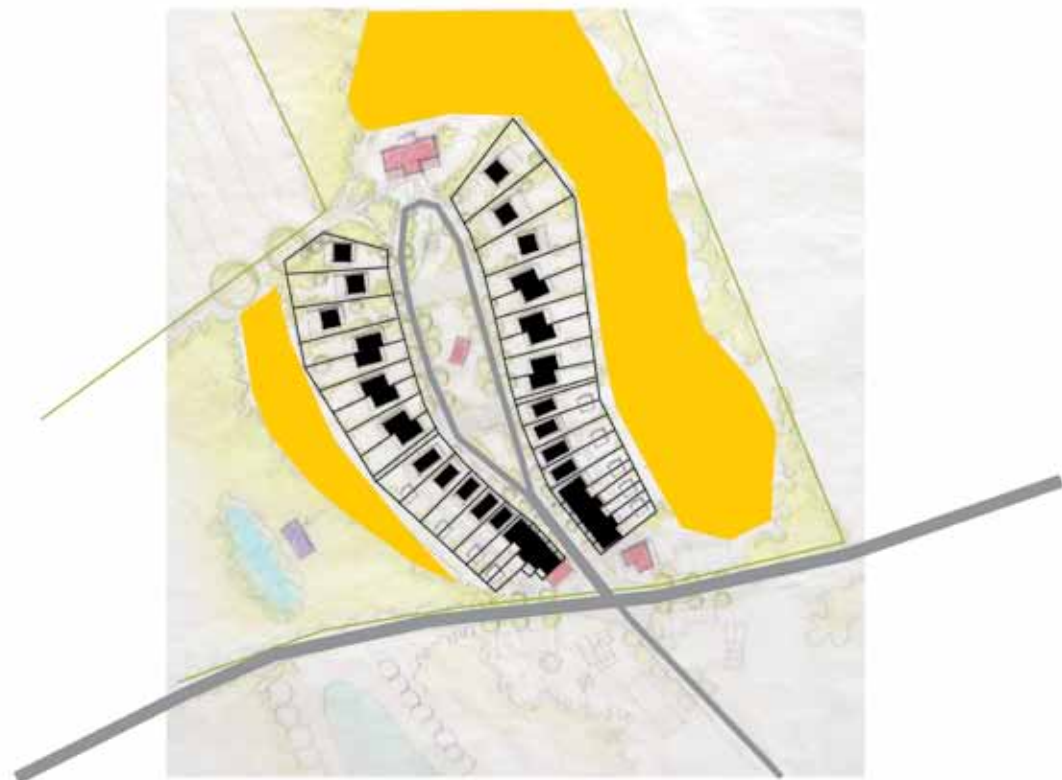


Image 96: Agricultural Land



Image 97: Successional Forest Preserved

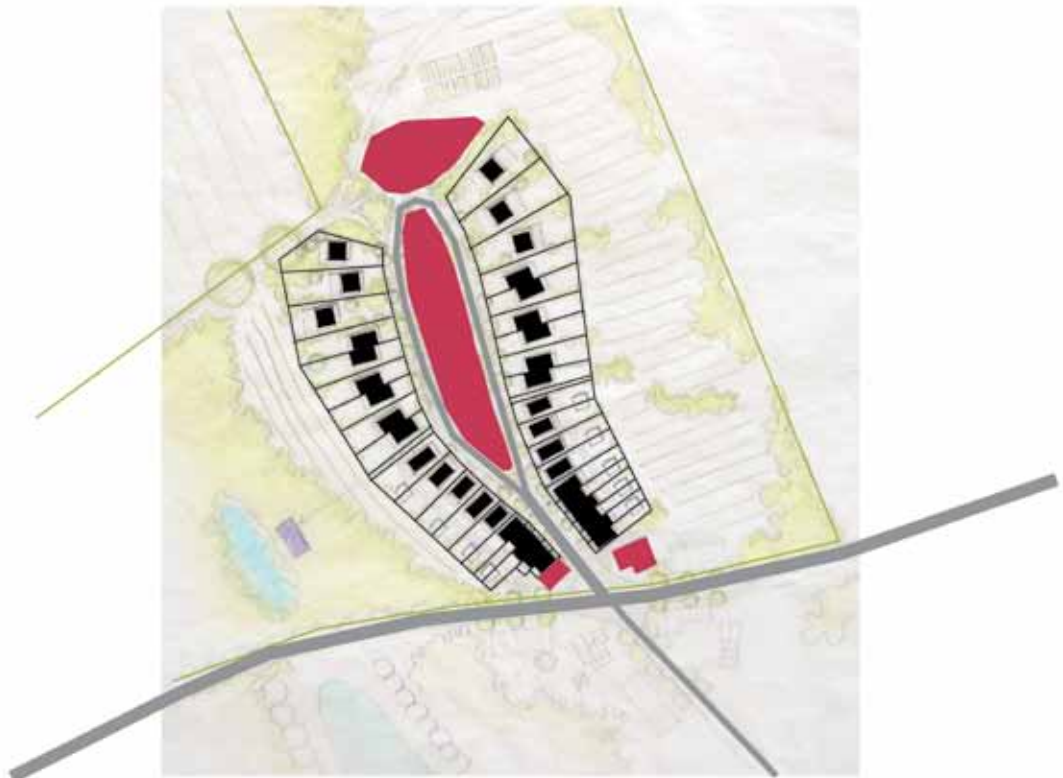


Image 98: Community Spaces

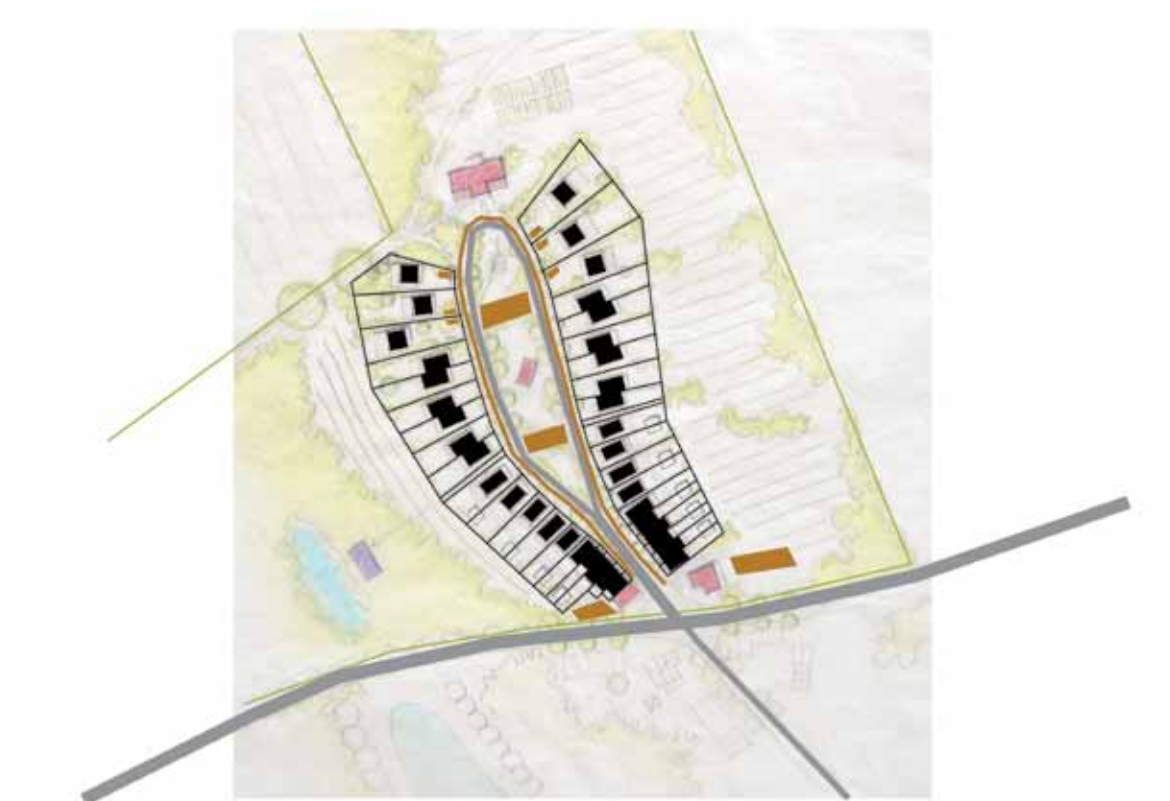


Image 99: Parking

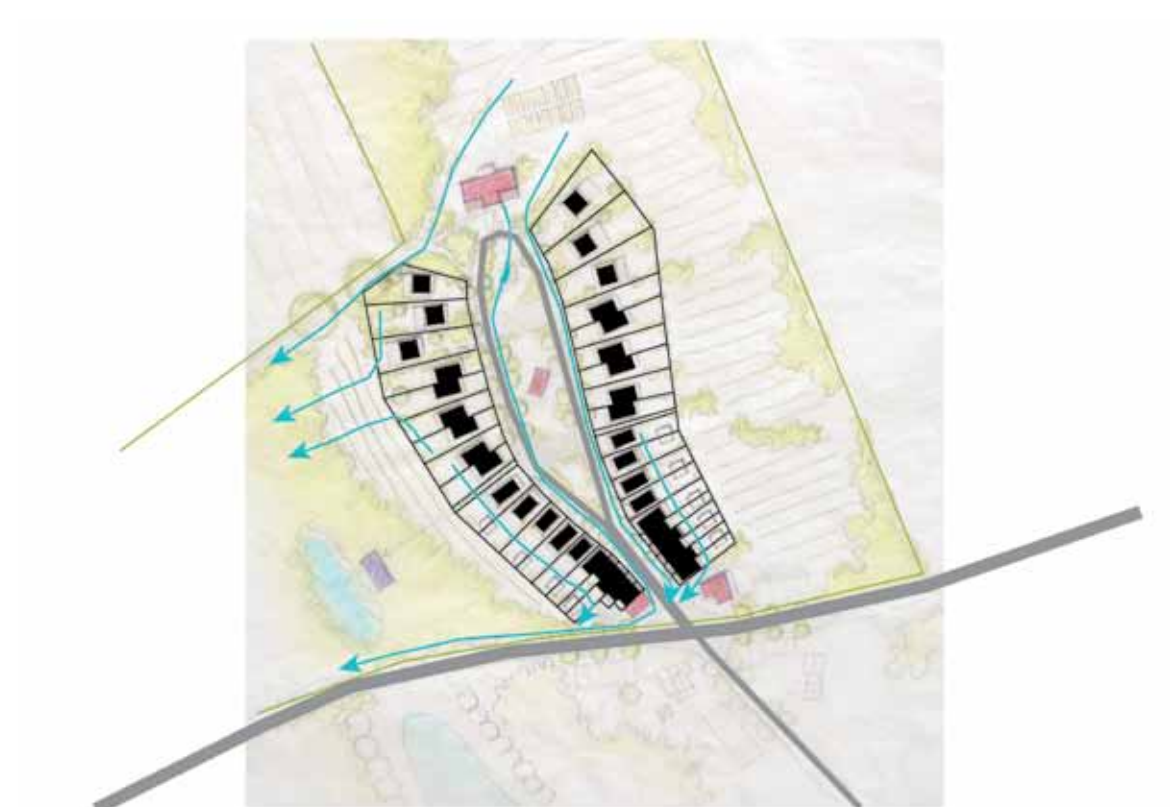


Image 100: Stormwater Management

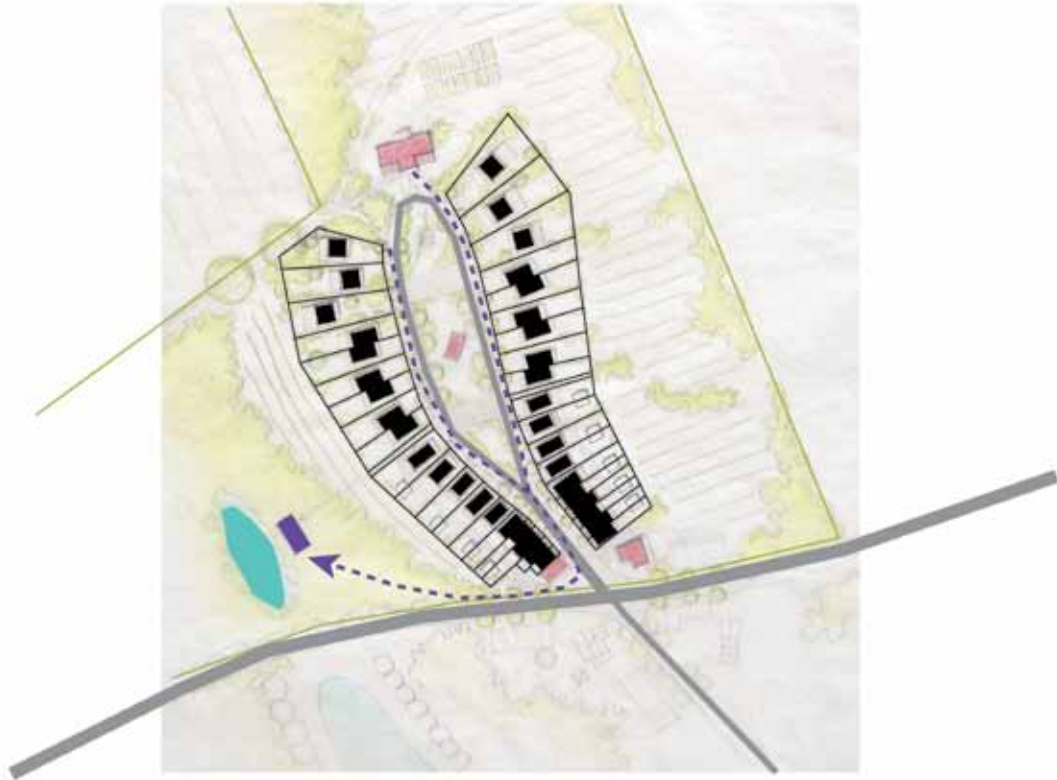


Image 101: Wastewater Utility and Treatment

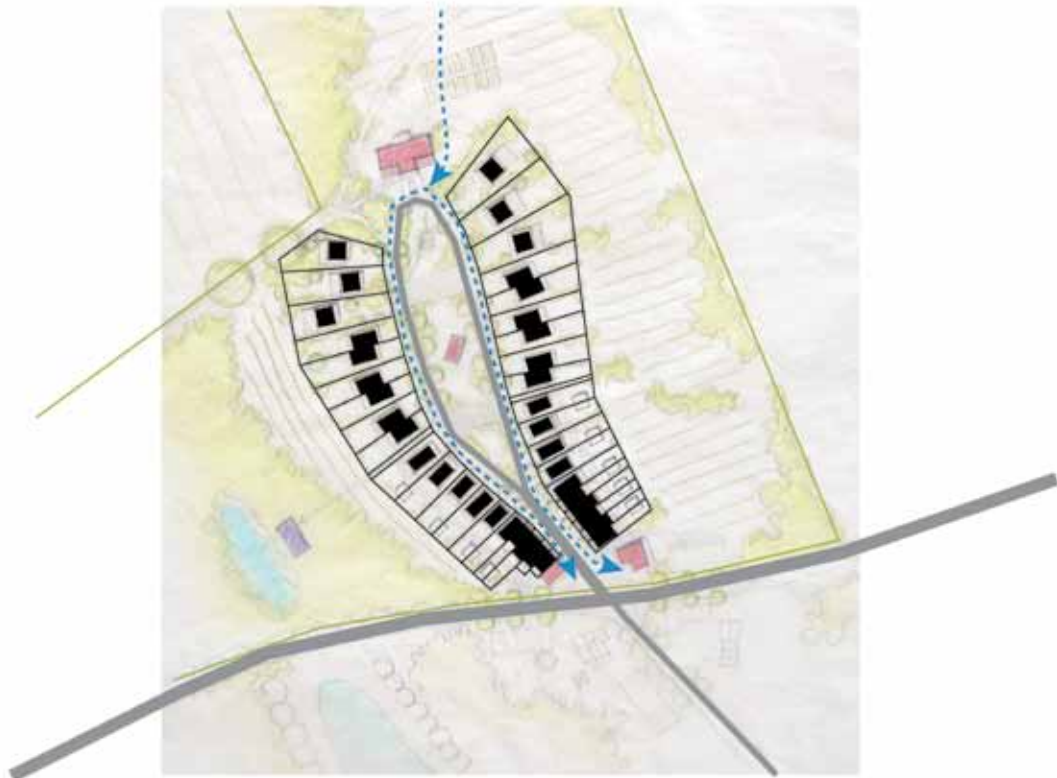


Image 102: Water Supply Utility

Residential Community Design Concept

Dwelling Types: A Microcosm of Pennsylvania Housing

This thesis proposes a variety of housing types in order to help cultivate a diverse, vibrant, and interconnected community. Each housing type has been envisioned to appeal to and provide for a specific group but residents of all demographics could potentially live in any dwelling in this community. (See Image 103 for more detailed information.)

Conceived as a microcosm of Pennsylvania Housing Types, there are 3 housing types proposed:

The live/work housing type (Image 106, 107) draws inspiration from more dense dwelling configurations reminiscent of urban environments. To maintain a sense of rural living and market appeal however, it has seems crucial to avoid characterizing these dwellings as strictly “urban.” Instead, live/work housing aims to emulate the scale and character of Jim Thorpe as well as the quaint atmosphere of historic villages such as Cotswolds in England. These houses are intended for a range of users. A typical resident, for example, could include a friend of mine who currently lives in the nearby town of Palmerton. She is a young professional engineer who commutes 30-40 minutes to work. She commented that she would ideally like to own a small, low-maintenance property. In addition, live/work housing provides an attractive option for craft/tradespeople and also for individuals who are able to work remotely from home. The ground floor of the space could be used as an office or workshop. It could provide a convenient place to meet with clients. Additionally, a 200 SF garage provides additional work or storage space and protects vehicles from the elements.

The farmhouse/duplex type (Image 105, 107) is designed with families and extended families in mind. Farmhouses and duplexes are prevalent types in the region and have been combined into this housing type. Lots and dwelling sizes are larger than the live/work type. Front porches and back gardens provide connections to the outdoors. Layering of vegetation and fencing can help to create a sense of threshold and privacy between lots. These units flank the central portion of the community green.

The cabin/cottage type (Image 104, 107) is conceived as the most rural and highly vegetated of the three lot types. Lots are larger with more interstitial space between dwellings. Incorporation of coniferous trees helps to increase the forested character of these lots. Dwellings are intended to appeal to couples and retirees. There is potential for the master bedroom to be located on the ground floor with additional living and sleeping space in a lofted area on the second floor. Front porches and large back decks are amenities. A large chimney/hearth to the rear of the home provides a place for barbequing outdoors.

The orientation of lots and houses are conducive to passive solar. Dwellings are oriented to allow residents to have direct connections to the street as well as direct connections and views to gardens, orchards, and successional forest from the rear of the houses.

Proposed dwellings have simple, straightforward geometry, a nod to contextual vernacular dwellings and barns and their construction methods. (Image 108) This also reflects a consciousness toward energy efficiency and affordability. Simplifica-

tion of the building envelope prevents excess surface area and thus excess heat loss. Likewise, attaching live/work and duplex houses helps to prevent heat loss through the building envelope in the winter season. Minimizing the number of corners and irregular geometries in small buildings such as this helps to minimize necessary connections between materials. This can result in a more efficient building envelope and lower construction costs.

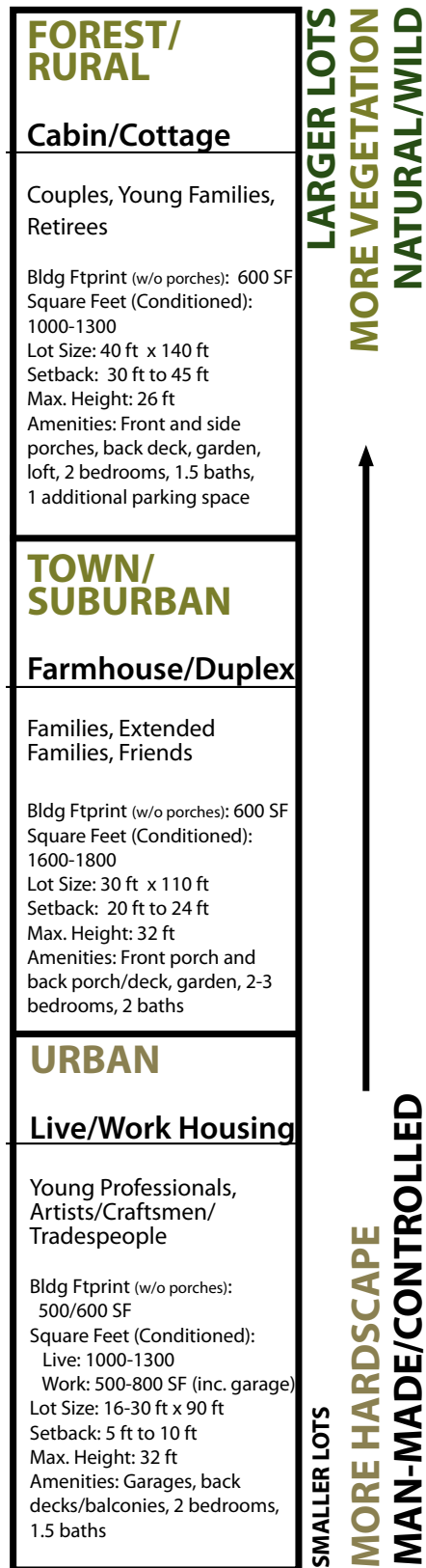
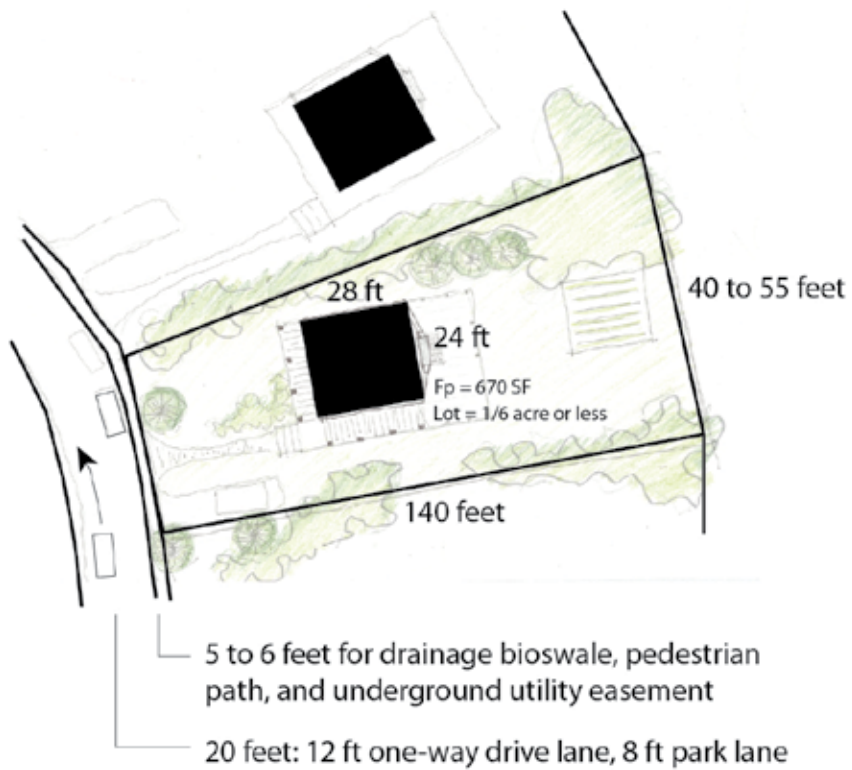


Image 103: Dwelling Types: A Microcosm of Pennsylvania Housing

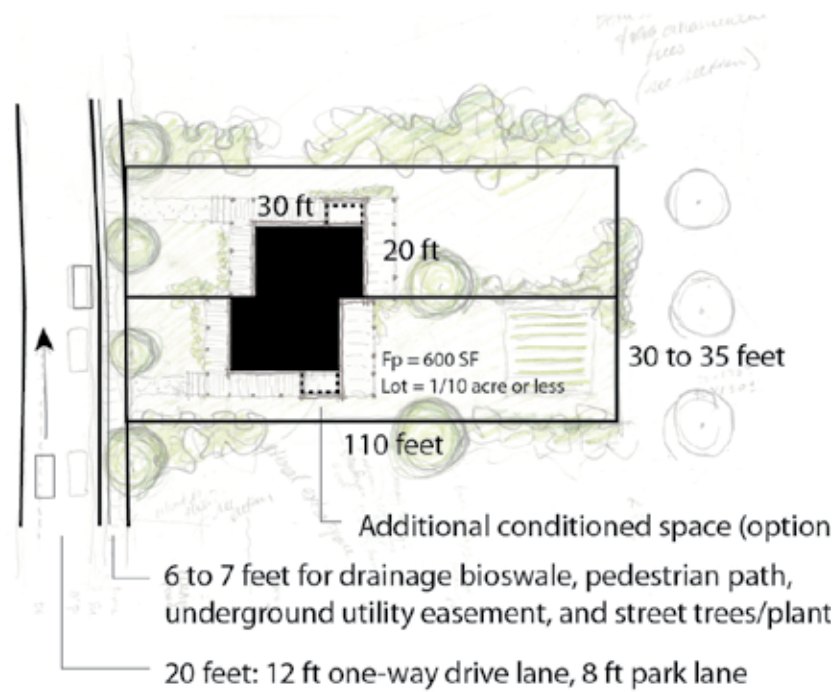
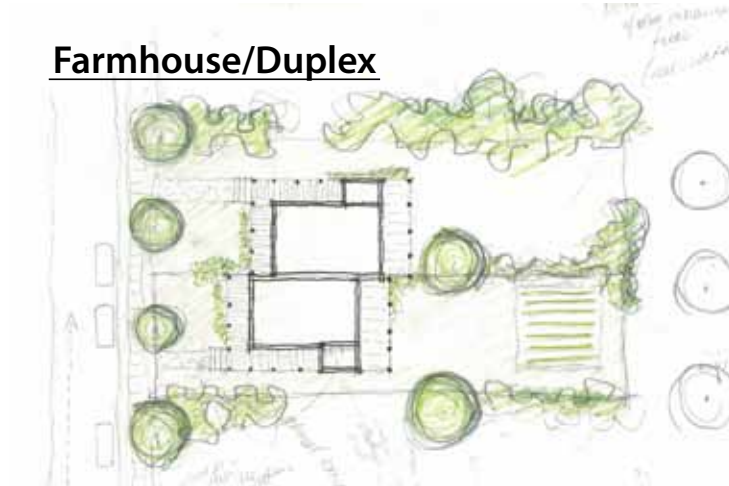
Cabin/Cottage



Cabin/Cottage

Image 104: Dwelling Types: Cabin/Cottage Plans

Farmhouse/Duplex



Farmhouse/Duplex

Image 105: Dwelling Types: Farmhouse/Duplex Plans

Live/Work Housing

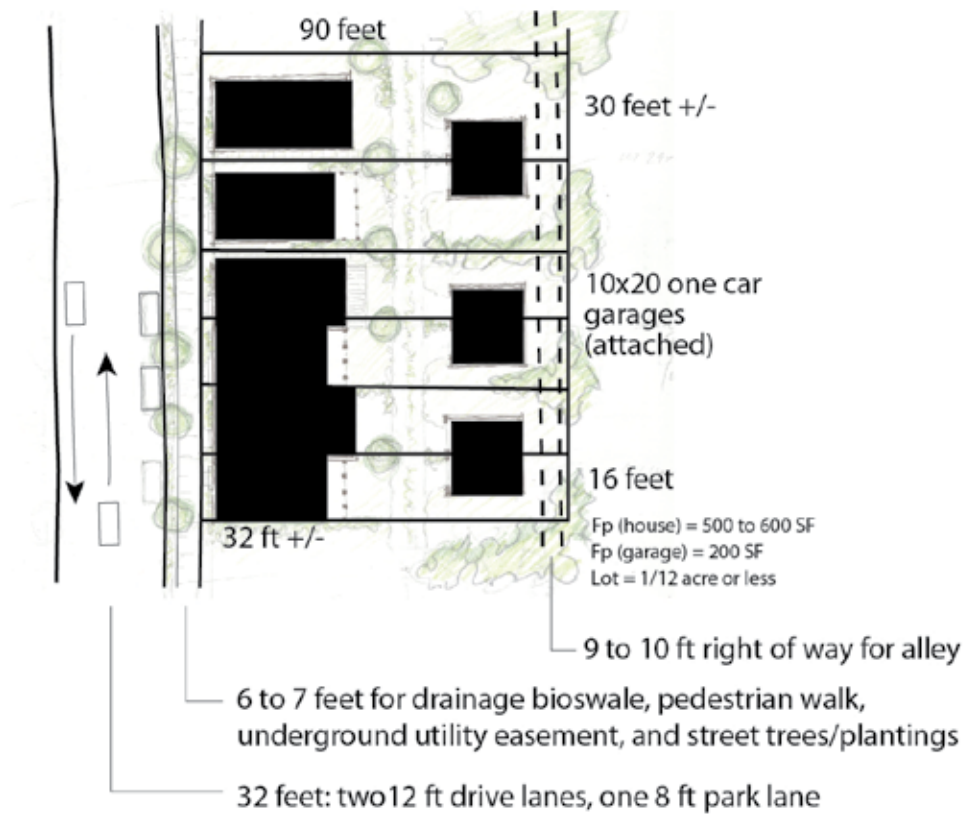
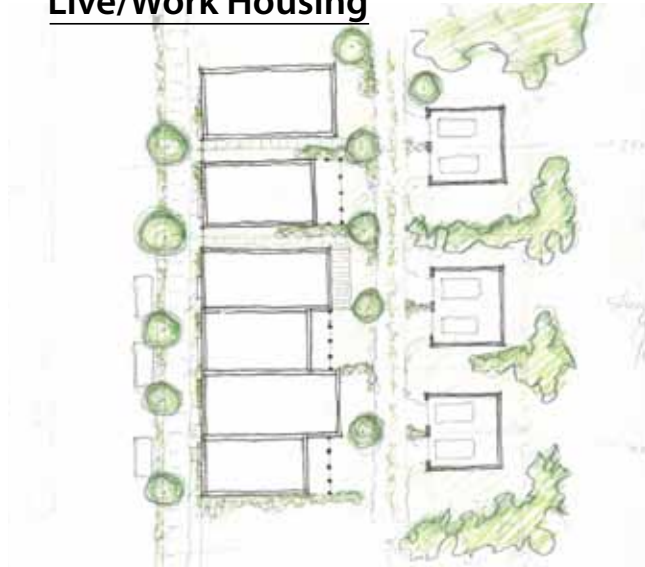


Image 106: Dwelling Types: Live/Work Housing Plans



Image 107: Dwelling Types: Sections, Elevations

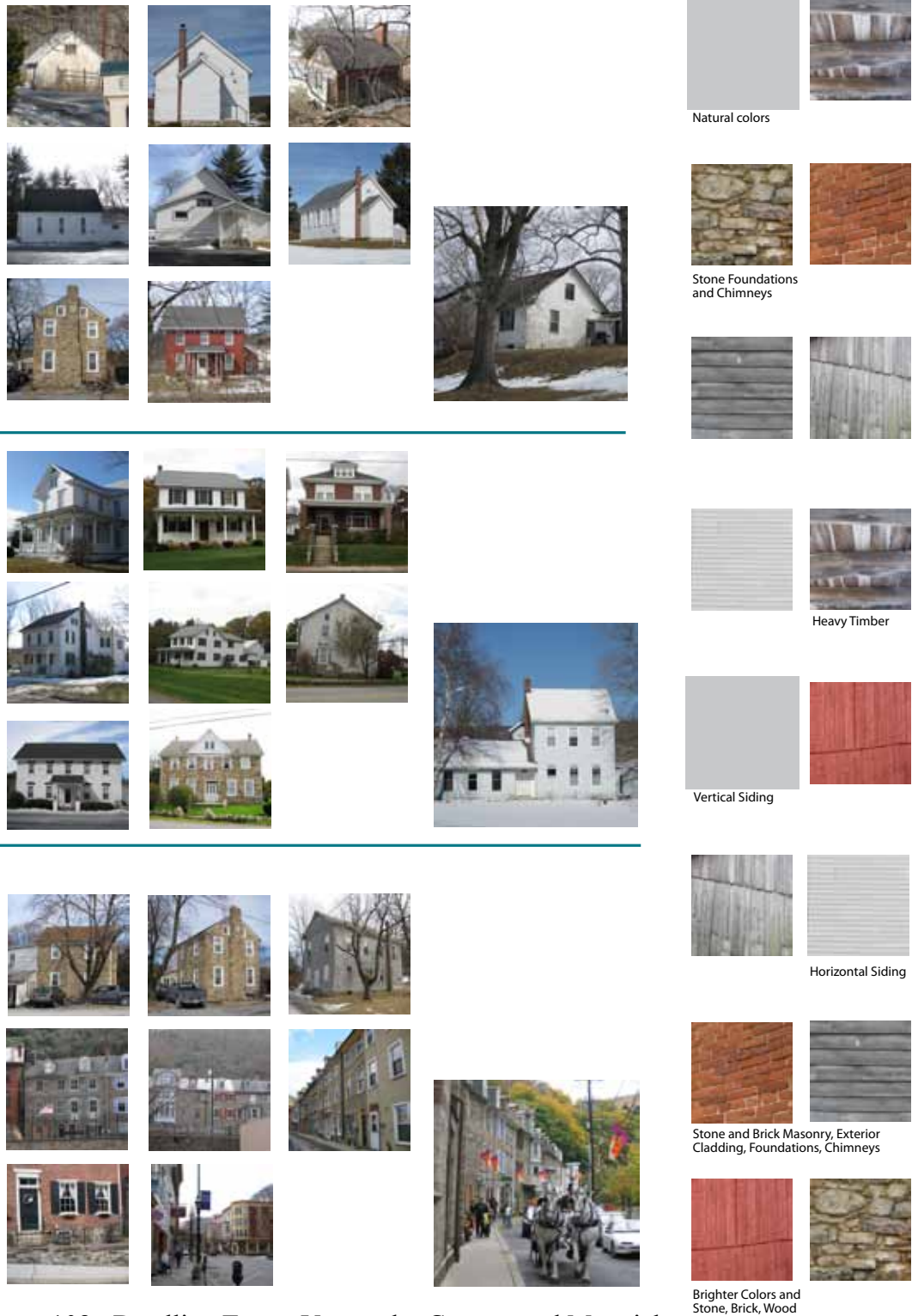
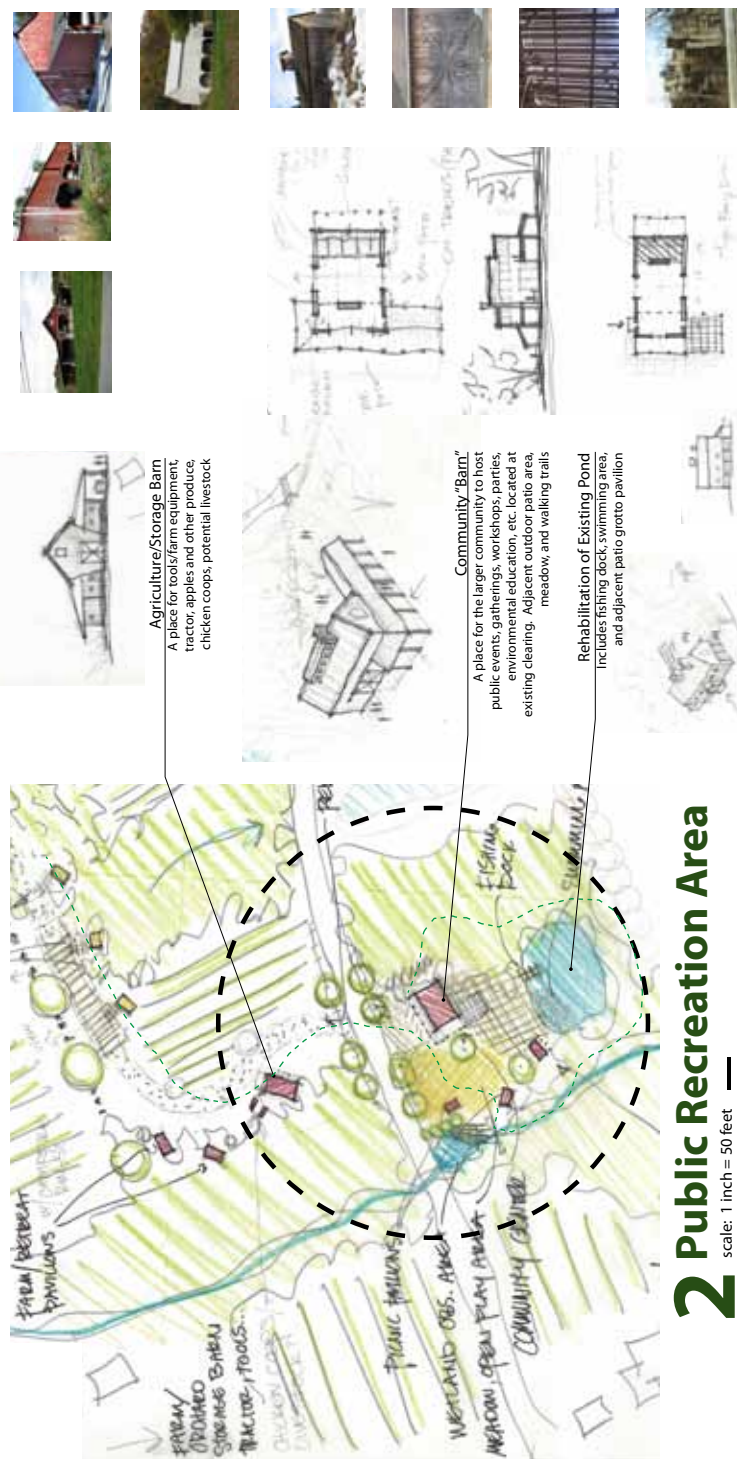


Image 108: Dwelling Types: Vernacular Context and Materials

Image 109: Public Recreation Area





Perspective Views

Image 110: Perspective Collages and Views

Chapter 7: Conclusion

Reflections After The Public Presentation

The goal of this thesis has been to propose sustainable alternatives to current development practices in order to preserve the natural landscape and to promote sense of community in the Mahoning Valley in Pennsylvania. Overall, I feel that the proposal has achieved this goal and provides a better approach to development.

Addressing Issues

The marketability of projects such as this have been questioned. There seems to be a need for places that are well-designed and provide alternatives to what already exists and is readily available. Designing new places with character and variety can provide more options and can appeal to a wider range of residents. There is already an overwhelming prevalence of conventional developments.

A couple months ago I explained my project to my uncle and he asked, “but is this what people really want?” (referring to smaller homes, smaller lots, potential decreased sense of privacy, etc.) I responded, “I’m not sure that people really know what they want.” Like any other consumer products (food or fashion, for example), we buy what is available; we buy what is on the shelves. Unless we are provided with new alternatives, how can we imagine what is possible? How can we know what we want? Given pressing environmental issues and rising energy prices, it seems necessary to move toward designing communities and homes that better serve our needs and have more cultural value.

Of course, there are trade-offs and perceived sacrifices that go along with a shift toward more sustainable development and lifestyles. Looking toward the future, downsizing is probably essential. Currently, there may be resistance to change. Planning that includes decreased sizes of lots and dwellings and perhaps sacrifices privacy

may not seem initially appealing to many. However, it seems vital that we aim to look ahead, beyond our immediate wants and comforts. If we are open to change and are aware of the current impacts of design and development, we can take steps toward better design of our natural environments, our lifestyles, and our communities.

While an appropriate amount of change is probably necessary, it seems crucial that proposals such as this encourage a step toward sustainable development rather than a leap into an idealistic or utopian plan. More aggressive goals toward sustainable ways of living are admirable, but may not be achievable in the immediate future. This project has aimed to remain mindful of practical feasibility. Concerns of constructability, affordability, energy-efficiency, marketability, etc. have been valued and considered as realistically as possible.

The Process and Lessons Learned

The importance of community resonated throughout the research and design process. Midway through the semester I commented (somewhat in jest, but not really) that my project had gotten so large, I could use an assistant. Resolving and honing the scope of the thesis was continuously challenging and ever-evolving. Each scale presented new challenges and opportunities. By the end, I probably could have benefitted from the assistance of a small project team. Alas, I have completed this project on my own, but would not have been able to succeed without the support from faculty, friends, family, and colleagues, as well as the many strangers I have encountered along the way. On many occasions, I have patronized Cousin's Restaurant and Bar, adjacent to the project site, and have befriended the owners. I have since prided myself on my apparent rise to the status of "regular" customer. Experiences such as this have helped integrate my education with other aspects of my life.

The research process focused on communication and interaction with people as well as practicing the act of “seeing” the landscape of the site and the context of the valley. While drawings have been critical to the design process, I have benefitted immensely from a more consciously holistic approach to this project. Most drawings have been completed by hand, using digital media to add polish to the work. Many of the “final” drawings were printed on a fast draft setting, using less ink and taking less time to print. Drawings were used time and time again, gaining scribbled notes and sketches in the margins rather than being tossed and reprinted. The process has seemed to echo the spirit of sustainability and the product seems to echo the spirit of the place for which it is designed.

My goal for this project was to maintain a relatively sustainable, healthy, and well-balanced lifestyle throughout the prothesis and thesis semesters. I feel that I have done so (however marginally) which was no easy task, but I can say with confidence that it is, in fact, possible to complete a master’s degree in architecture without pulling a single all-nighter. I have learned that balance is essential, and that it is not wise to sacrifice meaningful time with people in order to be a hermit and strive to perfect your work. None of us can succeed alone. There is immense value and strength in collective efforts.

This project is not over. It has become an important aspect of my life. Engaging in this thesis process has brought me closer to my family, friends, and the place that I am from.

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