WHITE AND **BLACK**, NO ROOM FOR GREY:

WHY WE NEED CONTRAST TO BE GREEN

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Design Thesis 2013

<u>WHITE AND BLACK, NO ROOM FOR GRAY: WHY WE NEED CONTRAST TO BE GREEN</u>:

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

by

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In Partial Fulfillment of the Requirements
for the Degree of
Bachelor of Landscape Architecure

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May 2013
Fargo, North Dakota

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Abstract

The American Dream is to have a good job in the city, a house and family on your own parcel in a good suburb and nice car or three in the driveway; the bigger the property the better. When one looks at the modern city in plan view, the largest area of developed land is devoted to residential use. It is the American Dream according to this standard that drives the dissipating and unsustainable sprawl of cities (commercial, civic and other developments catch up with pioneering residential areas). There usually simply isn't room for everyone to have their own exclusive 2 ½ acres, or if there is, it becomes an apprehensive, inefficient, uncreative locking away of land from the rest of the world. Sprawl wastes more than exploitable resources, it wastes the inestimable, inherent value of the land itself.

The desire for one's own piece of property, pleasant and exclusive, is not the problem however, but rather the method by which it is provided. Thus, the question this research seeks to answer is: how may residential space be best arranged so that natural space, urban space, and human activity harmoniously contribute to each other, and no one space or activity is neglected to the detriment of the others?

It is the hypothesis of this thesis that there are trends in site design, road design, and other aspects affecting density, land use and circulation within and away from neighborhoods which commonly produce superior results. If traditional development patterns are analyzed and then reorganized, the wasted space of today's paradigms can be used instead to preserve natural and agricultural lands.

Through research into and analysis of historical arrangements that have been tried, as well as prototypes to be invented based on this research, the resultant findings are trends in layout, proportioning, and connections. These form a base on which to begin building toward the goal; which is at least one fresh arrangement that can sustainably continue the standard of the dream; to provide the same sense of owning one's own piece of the world yet preserve open space in the environment. Everyone should have the opportunity to wander in undisturbed nature.

Narrative

The original inspiration and ongoing motivation for this project is deeply personal and yet, I believe, widely applicable. The problem and site chosen to explore and then illustrate my design solution to sprawl is in my hometown and selected for the impact that the growth and development of my town had on my own growth and development.

I witnessed the town's population grow by over a quarter and saw the effect it had on the surrounding farmsteads and forests (growing up, I could almost pick any privately owned open field visible from the main roads and safely say it'd be yet another development within years) the local schools (my father was on the school board through the most incredible growth period) and other sectors. I saw how other towns even closer to the twin cities grew and changed even more yet without improving in my mind. Every place just got bigger and more expensive and started looking like every other place. Everything was always automatically a drive away.

I grew up in 30 acres of small hills, forests, and meadows with a seasonably sizable pond at the bottom of a large backyard. I had 100 times more land to explore and live in than most of my peers (what's more, most of that land wasn't domesticated like theirs) and this ratio expanded exponentially when the housing bubble burst and I began exploring the field at the end of our 1/4 mi. driveway that was one step from being developed. I grew up mostly outside and can't think of a better way to have done so.

Tragically, the setting of my childhood is a rare instance that few get to experience. Most have but a patch of grass and maybe a potentially unsafe park to call their outdoor home and the lack of both interest and safety increases the draw to grow up in a living room in front of a TV or otherwise in front of a screen wherever one goes, especially once a driver's license is achieved.

Sprawl is, in a word, dissipation; its effect, in a word, is isolation. This is not good; at the core of this project, I want to find a way to grant more of the benefits of my upbringing, particularly its setting, to the greatest number of people or at least propose a viable, alternative system to the excessive, overreaching, wasteful, lazy, greedy, uncreative way we view land and land ownership/management today. As designers it is our very purpose to enhance people's experience of the landscape and promote the health, safety and welfare of both. I can think of no better way than by beginning with researching alternatives to sprawling land development patterns.

Problem Statement

Sprawl wastes more than exploitable resources, it wastes the inestimable, inherent value of the land itself. How may residential space be best arranged so that natural space, developed space, and human activity harmoniously contribute to each other, and no one space or activity is neglected to the detriment of the others?

PROJECT TYPOLOGY

This Project is highly theoretical,abstract, and conceptual in nature. Rather than focus on a site-specific problem and solution, my question and research examines a pervasive problem so widespread as to be ubiquitous in this country; It seeks to name and understand the original causes of and attempts to synthesize an alternative arrangement for the normally followed sprawling paradigm of development.

PROJECT EMPHASIS

Within the context of attempting to invent a better paradigm to develop according to, the emphasis of that better paradigm is greater access to and enjoyment of authentic, natural open space. This assumes first of all that there must be some left to readily enjoy which is not typically the case for most today. The land that is developed is remote and privately owned and thereby exclusive and those lands that are densely developed usually completely lose their identity as natural space. Secondarily, it also assumes a large number of people desiring such a possibility of natural setting to live in, but more densely than is currently customary.

We cannot increase the amount of land, so it is our organization and, more importantly, our perception of it as both environment and property that must be improved.

Major Project Elements

The three guiding program elements are density, diversity, and distinction. This first and foremost manifests in open spaces (which are preserved and where and why?), and how ownership of them is perceived and enacted. Closely related is the trail system helping to structure and encourage use of this open space system, and complementing these two are the housing units themselves.

The open space is a fluctuating fabric of many possible experiences provided by it's changing cover. The preservation and universalization of this benefit is the primary objective of this thesis

The trail systems are in place to draw as many as possible within the development into as broad of an encounter with the landscape as possible.

Housing units are exclusively multifamily and varied in form. They are clustered together to encourage community and preserve open space. By these two tactics, more people may more intensely enjoy more land and priceless undeveloped land can be spared needless utilization and saved for future needs.

User/Client Description

Residential housing applies to virtually everyone, so it is difficult to narrow down the list of users and clients, especially as a central program element/goal of my thesis is to increase diversity, not only in the landscape, but also within the community.

To attempt to narrow it down however, I can say that my intended users are those seeking a rural atmosphere to settle and live in and that my clients include their dependents and governments.

This is a broad range of people; but as already stated, it is a goal to broaden and maintain a diverse population, especially in age and economic state, by providing multiple styles of housing clustered together within the same development as opposed to generic copies of the same split level duplicated across the site in order to promote community and preserve history and relationships. Outdoor amenities match and support this paradigm.

Site Information

Like the narrative said, the site is very close to my home in central Minnesota. It was one of the earliest installments of the expansion of the Twin Cities metro area that made Big Lake the fastest growing city in the county, beginning it on the path many of its neighbors had found themselves on, the way of suburban status and identity. Without another option, it likely would have and still could make yet another satellite bedroom community spread out across the fields and lose forever the tight knit community and beautiful natural places and farms that surrounded it and make it unique.

next page: progressive location map depicting first location of county in state, then city in county and lastly development outside of city shown in yellow

two pages ahead: basic aerial photo basemap and existing streets.

SITE LOCATION

Sherburne County

City of Big Lake

221st Ave

181st
St

Co. Rd. 43

Site Basemap

0   500   1000
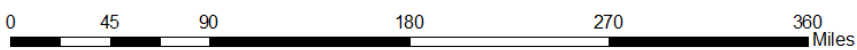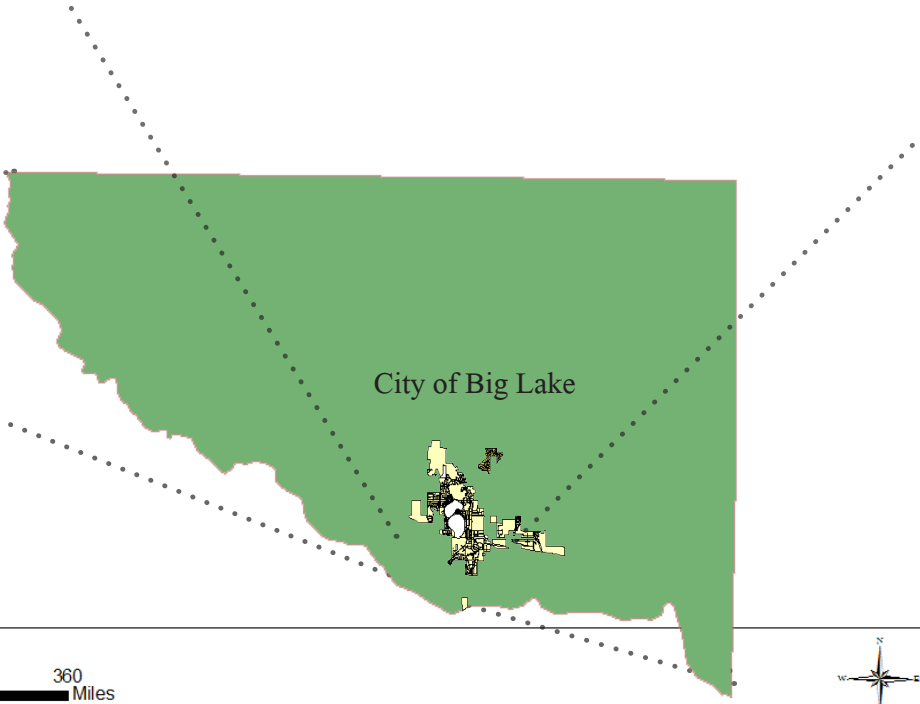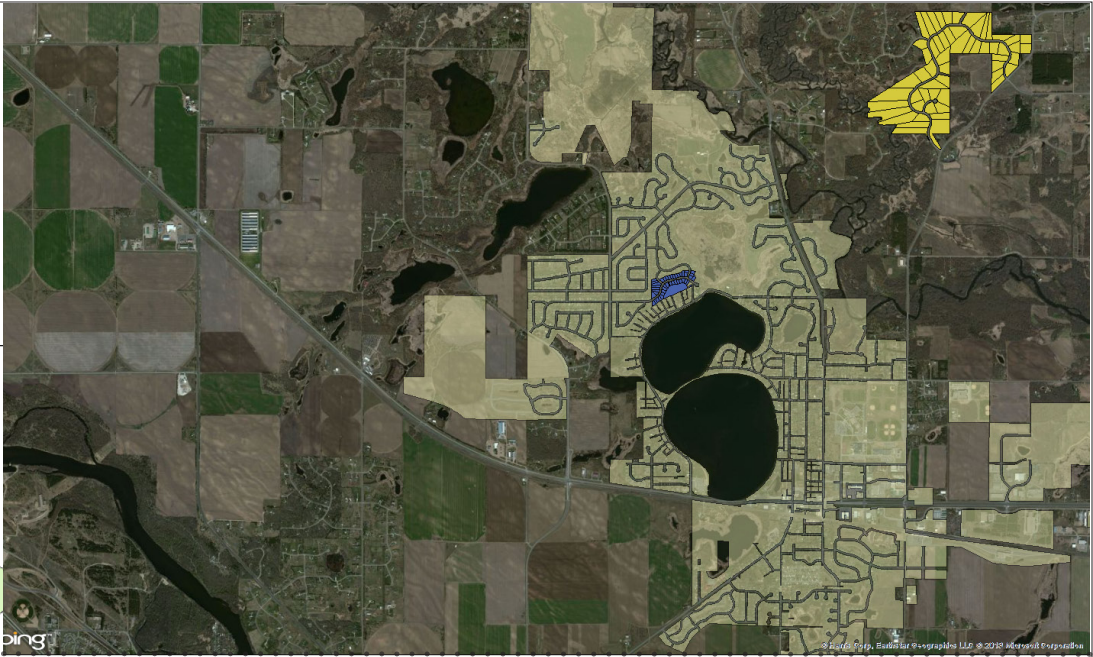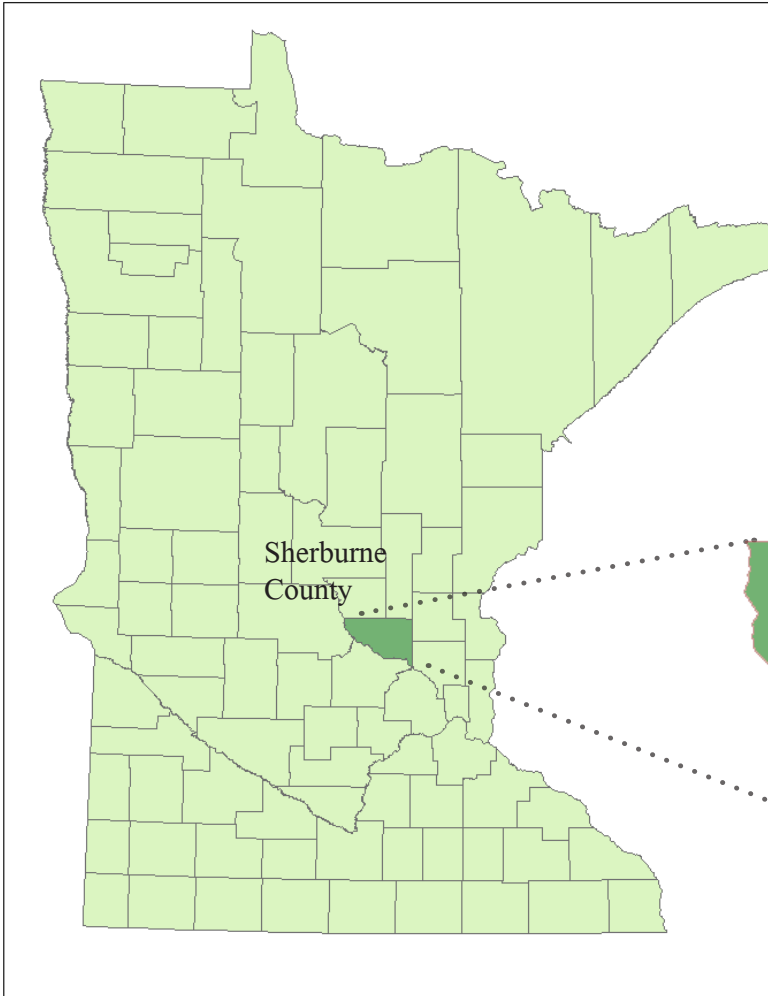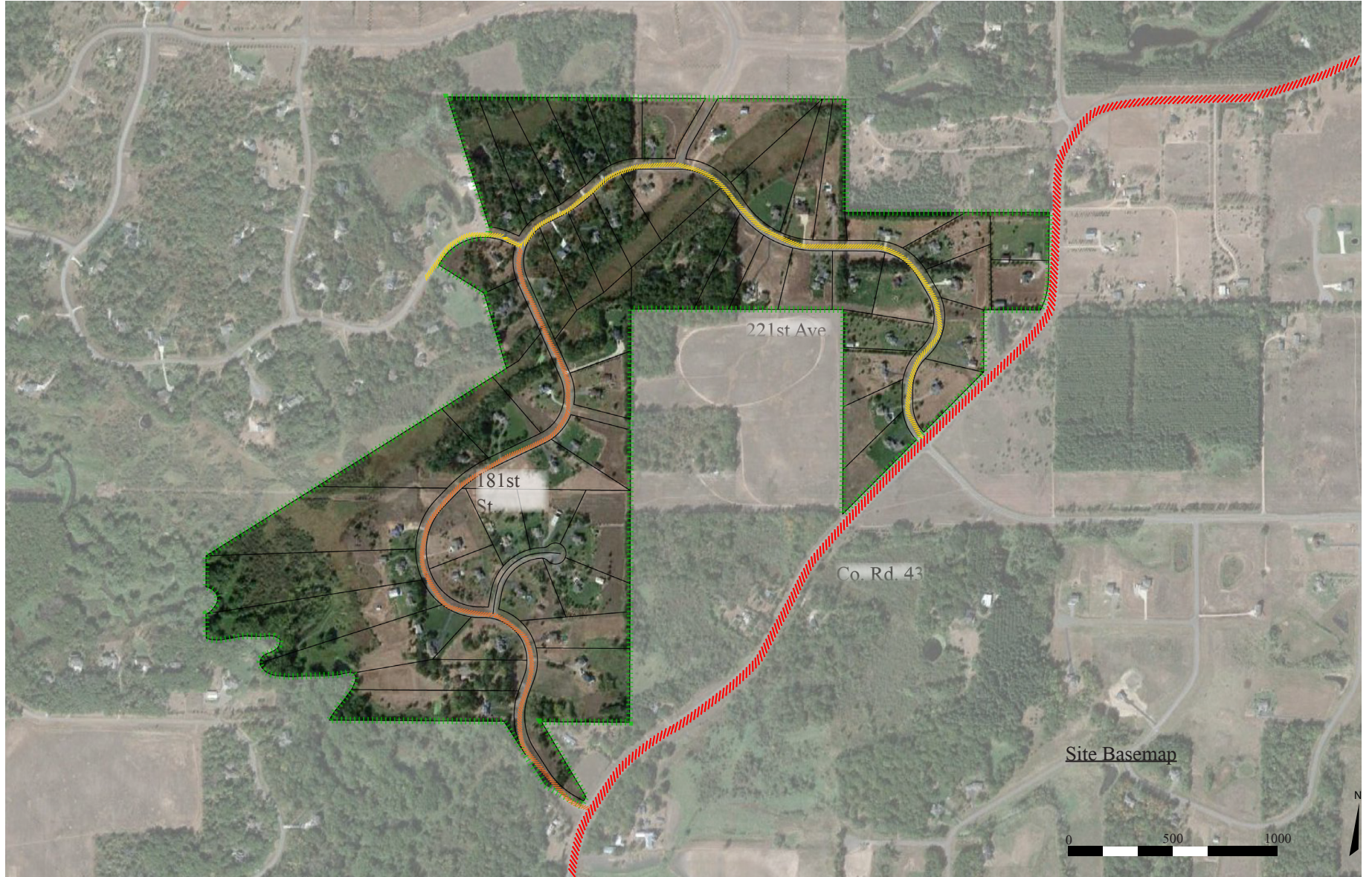
A Plan For Proceeding

In order to determine the best way to lay out a residential area I.e. a neighborhood, it is most useful to examine how this has been done already in past developments. Much preliminary research has been conducted on the history and origins of sprawl to discover the motivations, methods, marketing, policies, and other reasons behind it that made and continue to make building it such a world changing effort and investment. This historical research includes both quantitative and qualitative; the statistics and standards of historical examples and the effects, both positive and negative, as well as real and perceived of the trends and products of the varying forms of sprawling development.

Research has also been done on these factors in particular historical instances. Several case studies have been examined and analyzed for density, land use mix, transportation options, ease and efficiency of transportation, and site context including age, demographics, and distance from a major city. It was predicted that these independent variables, or objective measures, directly shape the dependant variables of property values and the length of ownership of properties, positive instances being indicated by higher values.

These data have been and will continue to be analyzed to determine the most efficient, well liked, and otherwise best layout trends based on the assumption that the environment of human persons greatly affects their experience and judgment of a place's merit and value. It was predicted that certain trends will develop from these case studies which will indicate positive planning aspects that new planning should include and detrimental ones which ought to be avoided.

This research was conducted mostly through archival evidence and data analysis. The reasons for this are twofold and closely related. The first is that to use other, more direct instruments, one would have to travel to many places and invest much time in observation. The second is more fundamental; there was insufficient time to conduct research on this wide of a scale. Besides, this, numerous studies have already been done with more time, wider scope, and more resources. Because this research question, "How may residential space be best arranged so that natural space, urban space, and human activity harmoniously contribute to each other, and no one space or activity are neglected to the detriment of another?" is so conceptual and translates into such a broad territory of geography and factors, and considering the briefness of the time for research especially compared to better research which has already been conducted, this study consists mainly of reviewal and analysis of archived material, supplemented with new observations.

Analysis of this data involves using descriptive analysis, GIS, and tables to discern the most economically successful layouts for long term development. Specific issues explored are distance from amenities, overall density, and internal and external circulation options. Health and general satisfaction of the residents are important derivative factors of these independent variables and also factor into research along with home value and length of ownership over time.

At the completion of this research and analysis, the resulting trends are used to guide and shape the proposed design solution to the research question. This solution will be a system of planning/layout for predominately residential areas which provides nearby insofar as possible the essential needs for living, an attractive setting, and sense of community. But most of all the solution aims to preserve undeveloped open space and does not waste land.

By assessing and comparing the methods and layout patterns used in the past, as well as some of the reasons behind them, I found development designs which cover many places that do not function as well as they should. There are some community designs that have positive reviews and have stood up well over time and these are important to the proposed solution. The final outcome is in great part, a 'short list' of the essential qualities of a successful neighborhood, as well as inspirations

for ways to combine these into a new pattern and/or concept of suburban residential areas.

Two case studies in particular were chosen to analyze in depth so their forms could better influence the design solution. These were Reston, VA and Village Homes, CA. These two were selected for their high aims to be more than a housing development, but a complete community their residents would love and would be in harmony with the environment. The two also balance out the other's impracticalities and outlying qualities that do not apply to the site selected for the design solution. For example, Reston displays fantastic community layout and linkages, but I am not designing a New Town from scratch. Village Homes is wonderfully integrated within itself, but represents a small area and population and does not address connections back to the larger community as effectively as Reston does.

The third site, chosen to redesign according to the findings and lessons learned in this study, is located on the north side of a small metropolitan fringe city riding the very foam of the wave of transition and change; Big Lake, MN. Big Lake is located on US Hwy 10 almost exactly midway between St.. Cloud and the Twin Cities, St.. Paul and Minneapolis at its intersection with MN Hwy 25 which also crosses Hwy 10's parallel counterpart, I 94, 3 miles south in Monticello MN. The city was the fastest growing in its county, on the frontline of the expansionary outward push of the

metropolitan region before the market crash in 2008 curtailed further housing construction and existing developments sat unsold and beginning to foreclose. The site selected represents a range of territory from city neighborhood to outer neighborhood to city fringe and must be this large to explore the broad problem the desires of the housing market poses to development. On one hand, development as near and integrated to the city as possible is to be encouraged first, but on the other, rural development will always be desired and must be provided as sustainably as possible.

Increased density is important to preserving environmental resources and saving, even increasing cultural resources. Perhaps almost more important than density however is circulation and the networks both within the site and leading from it to other places in the community. Without the two working in concert, creating a coherent, integrated community will be impossible. Depending on context, the other factor, diversity of land use can almost be ignored if circulation and density are accomplished well enough.

RESEARCH RESULTS & GOALS

Case studies

Reston, VA

•22 MILES from Washington DC

•Current population: 62,000

•Persons per square mile: 3,809.8

•Average single family house: $408,700

•Average house in Washington metro area: $316,300

•Average property taxes: $4,400

•Unemployment rate: 3.7%

•PROS: Great downtown, lots of outdoor activities

•CONS: Heavy traffic, planned community restrictions, and fees

7 [of the top 10 cities of the country to live in].

(Asher, 2012)

Organization:

•7 villages of about 12,000

•Village centers are mixed use and all feature a central plaza and should be in easy walking range of most residents of the respective village

•Housing designed by various architects to a number of scales for several markets, mostly town houses and garden apartments. Compact and PUD-like, many opened up to various forms of open space in the back including golf courses, parks, and biking trails.

•Circulation: separated forms similar to Radburn. Hierarchical roads and various pedestrian corridors

•3 streams and 4 artificially made lakes.

•23% of land devoted to public open space. Residents and local governing bodies encouraged to practice low maintenance landscaping

•Town center: gridded streets; a more urban, 'downtown' setting concentrating on then modern architecture and urban uses. Market Street and Square.

•Highway industrial corridor

•Villages centered on a distinctive landscape feature such as a lake and centers are connected with open space corridors flanked by high density housing.

(Girling, Helphand, 1994)

Village Homes, CA

•2.5 miles from downtown Davis, CA

•Less data is available for Village Homes' prices and may mean less regardless as the house values of the region fluctuate so drastically.

•1/5-1/4 of residential lots are part of a commonly owned strip containing an 8-10 foot paved collector path

•All houses oriented for maximum solar benefit

•12 acres of agricultural land including row crops orchards and vineyards (roughly 20% of the site), an apartment complex, and commercial area are owned by the homeowners association.

•20 to 24 foot wide streets

•Development built to conserve and clean natural resources; especially water, and to utilize alternative sources such as solar power

(Corbett, 1981)

•70 acre site

•4000 sq ft. lots

•Many of the street trees and other landscaping are fruit producing

•High approval ratings of residents

(Girling, Helphand, 1994)

•240 residential units (single-family houses, town houses, and apartments. 3.43 units per acre)

•Remains a commuter suburb

•"this community has benefited from countless variances from city codes and ordinances"

Crewe, 2007, 13)

Big Lake, MN

•Big Lake Township: 43.8 square miles.

•City of Big Lake: 4.4 square miles in 2000, 6.91 square miles in 2010

•Located and built around US Hwy 10 corridor and its junction with MN Hwy 25 (which connects to Hwy 10's parallel, I-94, in Monticello, MN, 3 miles south)

•43 miles from the Twin Cities, roughly 45 min. to 1hr drive and 28 miles or about 31 min. from St. Cloud in normal conditions

•Population: est. 10,205 in 2011—a 59% increase from 6,063 in 2000 "Big Lake Township added more people than any other township in the county during the last decade" (Design for Print).

•Number of people living within city limits: 1,456.7 persons/sq. mi. in 2010. 1378 persons/sq. mi. in 2000, only a 1.06% increase in density

•"The average value for a new home constructed in Big Lake Township in 2008 was $226,250" (Design for Print).

•This value averaged over 2007-2011 drops to $184,600 however

•Fairly broad spectrum of housing values offered

•84.4% city-wide home ownership

•87.9% city-wide lived in the same house for at least one year 2007-2011

•Numerous lakes, rivers and other wetlands of various sizes prevalent in landscape.

•Varied land cover and topography

•Sandy soil

•"Many residents find living in the country atmosphere of Big Lake inviting even though they may find themselves commuting into the cities to work. This growing community has an industrial base to balance the rapid residential growth (Design for Print)

•'Sherburne County rated as 22nd best in the country for job growth.'

Money Magazine

Site roughly 2.5 square miles

Covers rural 'Meadowlands' development, suburban 'Shores of Lake Mitchell' Development, and includes major circulation routes and rural and undeveloped land between them, including a river confluence and small lake.

(Design for Print.)

(Census 2000)

(Big Lake (city))

Goals

These case studies in particular out of the numerous examples I examined showed much potential as possibilities to imitate or in Big Lake's case, a perfect setting for the best place to showcase an improved model of development.

Especially by comparing and contrasting the good points of Reston and Village Homes, a broad range of better practices becomes more clear as a template for the new model; Reston being the overall regional example. Connections between separate places forming a comprehensive and cohesive whole may be it's most important influence. Village Homes shows a lively and integrated community at a closer level, with the commonly owned land open space network being of the greatest interest.

The goal is to synthesize in a new way the best concepts of these and other forms of development better than ever before.

Thesis Goals

Besides my personal interest in this project, other motivations and goals are numerous.

Studying, researching, and hopefully discovering a clear and comprehensive (and concise if possible) origin and cause of sprawl is actually more important than my goal of making a solution or at least alternative to it because it is more fundamental. Only by fully understanding the root or seed of the problem can a reasonable and lasting solution be made no matter who makes one. Knowing the various forms of development and other historical trends is valuable in and of itself as is practice at learning these and research in general.

On the note of personal skills, practice of self motivation and time management are tested by a project like this as are production and presentation abilities. Many levels of graphic design from deciding which images best convey the facets of the project one wishes to show, to crafting the actual image, to arranging the image on a layout, to ordering the pages of the presentation, to presenting that presentation all must be performed to a high level of competency and these are all areas of significant opportunity for improvement in me.

Introduction

There is a very good reason why vast, standardized suburbia is the setting of the jarring, alien, frightening worlds presented in such classic books as A Wrinkle in Time and Fahrenheit 451. It is in many ways, an unnatural landscape. Granted, these are worst case scenarios played up to emphasize a point, but behind every stereotype is at least a grain of truth.

Sprawl began as and was sold on the idea of the happy medium; the best of both worlds, a home with space in the country yet close enough to the city to enjoy the benefits of culture and civilization. People have thus always longed for the best standard of living they could obtain. Patterns in the past however, have often been based on infrastructure rather human needs and proportions, dominated by narrow minded planning policies, and imposed en masse with corners cut off of good design.

The purpose of this project is to study sprawling suburban development patterns, specifically those of residential developments, and propose alternative planning to better house the increasingly urban population. This is a subject of great importance for many reasons. On a natural level they have laid waste to unimaginable amounts of land including precious, irreplaceable agricultural and forested lands along with other natural resources.

…each day, several thousand more acres of our countryside are eaten by the bulldozers, covered with pavement, dotted with suburbanites who have killed the thing they thought they came to find. Our irreplaceable heritage of Grade I agricultural land (a rare treasure of nature on this earth) is sacrificed for highways or supermarket parking lots as ruthlessly and unthinkingly as the trees in the woodlands are uprooted, the streams and rivers polluted and the air itself filled with the gasoline exhausts (products of eons of nature's manufacturing) required in this great national effort to cozy up with a fictionalized nature and flee the 'unnaturalness' of the city. (Jacobs, 1961, p. 446)

There has been much damage on the human level as well. Flattening and sterilizing nature into such bland and useless facsimiles as suburban open spaces alone is a detriment as it is a loss to human enjoyment, but there are also numerous, material injuries to health caused and or worsened by a sprawling pattern of development. Major issues pointed out in Urban Sprawl and Public Health are ailments from poor air quality, lower levels of physical activity, trauma from entanglements of traffic with pedestrians, maladies from low water levels and poor water quality, mental disorders, and loss of community (Frumkin, Frank, Jackson, 2004, p. viii-ix). Socially, the spreading out and isolation of individual residences and their occupants coupled with

locating any normal public arena where meetings of different people might take place out of walking distance has built up conditions favoring loneliness and decreased social skills (Frumkin, et al., 2004; Jacobs, 1961). Economically as well, sprawling is proving so unsustainable, that this disadvantage alone may be what eventually ends sprawl. Like Michael Corbett (1981) says, "Given our existing built environment and economic production and distribution system, we can only go so far with energy conservation; then there is no more we can do…the only realistic long-range answer will be to reduce the need for transportation through appropriate planning" (p. 76-77).

Though there are scores of factors which contribute to producing and perpetuating sprawl, few are as visibly effective as automobiles, or more accurately the overwhelming preference for private automobiles which carries over into primary planning policy.

Sprawl is designed and built to center not on the human, but on the human being who is traveling in an automobile. The primary design goal is to allow vehicular traffic to move from point to point with a minimum of difficulty and a maximum of speed. (Frumkin, et al., 2004, p. 19-20)

By planning and developing principally for vehicular circulation, "[coherent downtown

areas are reduced to] a great, thin smear; incapable of generating the metropolitan facilities, diversity and choices theoretically possible for the population and economy concerned" (Jacobs, 1961, p. 350).

It is ironic that this philosophy toward planning should produce such dissipating, chaotic results when it was formulated to better order cities into more manageable places. Separating and segregating uses is programmed into the development pattern and is functionally possible only with the extensive use of automobiles. Developed areas are continually spread thinner and thinner by encouraging further and further exploitation of the easiest solutions to the problems of city life (in a word, expansion). Huge amounts of land are sparsely developed, but not in any way which preserves the benefits of rural land. Perhaps worst of all, this mindset has set the pattern for so long that it is now upheld and promoted by law so that even if a more sustainable idea comes about, it must not only convince a contrary, default public mindset, but also battle legal obstacles to progress.

Today we are left with a legacy of rigid separation of different land uses. Even within categories, such as residential, different subcategories are separated; in many areas, zoning codes prohibit multifamily segregation by social class and raise disturbing questions of social equity. They also thwart elderly people

who want to downsize while remaining in their neighborhoods. In addition, the practical effect is to create the long distances between different uses that a fundamental characteristic of sprawl. Low-income workers, for example, are systematically distanced from their workplaces, requiring long commutes. These long distances, in turn, contribute to a heavy reliance on automobile travel. (Frumkin, et al., 2004, p. 38)

In the face of this problem and under-applied research, the question of this thesis is, "How may residential space be best arranged so that natural space, urban space, and human activity harmoniously contribute to each other, and no one space or activity are neglected to the detriment of another?"

Literature Review

America as a nation and people is in large part a success story of big dreams, big efforts, and big accomplishments. Perhaps the most easily and commonly understood manifestation of this is the archetypical "American Dream". Girding up the other successes of the nation, the American Dream of owning one's own house on one's own lot has transformed this country and culture as well as others the ideal was exported to. This Dream is foundational to the resultant America we know today because it is the ideal and goal that was sold to and sought by the majority of its citizens. Referenced in Girling and Helphand's book, Yard, Street, Park (1994), "A 1980s real estate advertisement said, 'the American Dream is very simple. A better house and a new car.' (p. 15).

"Garden cities, greenbelt towns, PUDs, New Towns, and neotraditional communities all seek in some variant an ancient promise, the classical ideal of a golden mean, the best of both worlds, an equal opportunity for cultural connectedness and pastoral privacy." (Girling, Helphand, 1994, p. 9). The great promise of the suburbs, the name given to the place where most of those most actively seeking the Dream, was to be the best of both worlds; a place near enough to both city and country to enjoy the benefits of both, near enough for civilization to nurture, yet far enough from it so as to live in unspoiled nature. This desire is indeed an ancient one as evidenced in Urban Sprawl and Public Health,

[In his Crabgrass Frontier, Kenneth T.] Jackson explains, 'cities… were densely settled and congested… Even in the earliest cities, members of privileged classes sought the fresher air of the nearby countryside, and built country homes and retreats. This occurred in Babylon as early as 2300 BC, in Italian city-states and in London by 1500, in Paris by the 1600s, and in U.S. cities such as Boston and Philadelphia by the 1700s. (Frumkin, et al., 2004, p. 27)

For those with the means to have a home outside the city, this was often the choice. These well off had good reason for wishing to have a home outside city limits; conditions in cities had been rank almost as long as they had existed. As Americans, it is difficult for us to imagine what life was like in all cities, even our own cities, a little over a century ago and earlier. We have urban problems still today that we put huge efforts towards avoiding such as crime, pollution, and high expenses, but these are practically trifles with what city dwellers of the early 20th century and before had to deal with. People with the means to do so naturally sought to live away from the build-up of sewage, garbage, industrial waste, dead animals, and other filth, as well as polluted air and water. Those who were left in cities were often left with inadequate and deplorable housing besides; all of which added up to awful epidemics. As Jane Jacobs (1961) puts it, "Cities were once the most helpless and devastated victims of disease…" (p. 447) and within them were found the most terrible standards of living (Frumkin, et al., 2004, p. 46-59).

The same incentives and perceived advantages of cities, mostly industries and the employment they provided, were also often what produced many of their disadvantages such as being crowded, filthy, and prone to disease epidemics. Most people living in cities did not have the means to leave and countless millions suffered horribly. Yet in spite of these failings cities remained as they do today, almost irresistible magnets of attention because of the very fact that they are culture concentrated and manifested. Within them are jobs and goods and services, not in nature.

Frumkin, Frank, and Jackson (2004) cite famed historic suburb researcher, Kenneth Jackson who points out five consistent characteristics of cities at this time in history. In this era, all cities were "densely settled and congested", and clearly delineated (one could very easily tell where the city began and ended, likewise with the country). Land uses and functions were well distributed (many things including jobs, shopping, education, homes, and leisure existed near each other rather than clustered into massive, single use districts), and the distances between these were small; within

walking distance. Lastly, downtowns were the heart and height of the city and culture. The most prestigious people and places were here, the country estates of the rich and well-to-do notwithstanding. It was here that people aspired to be and not the edge. The edge then was the worst place to be, 'In fact, member of the lower classes tended to live at the edges, and sub-urb connoted moral inferiority, the lairs of prostitutes, ne'er-do-wells, and rascals' (p. 27).

All this changed when technology put the means to leave the squalor of the city tenements within the reach of the middle and even some of the lower class. No one can blame others for desiring to improve these conditions, and for such a large problem, no tools then existing seemed powerful enough to fix them. As a result, attention turned once again outward to fresh territory just as the founders of the original city had when they established it. Tools enabling expansion were far easier to understand and develop and thus, trolleys and other early mass transit as well as changes in housing development schemes provided a whole new option for many city dwellers (Frumkin, et al., 2004).

Before, the few who could afford to live well at a distance from the city did so in isolation compared to later expansion and the birth of the suburb as we know it. The great difference between suburbia and the country estates that predated and in a way foreshadowed them however is one of

numbers (it was only later after this initial push that suburban houses began to be "a democratized version of the country estates of the wealthy" (Girling, Helphand, 1994, 40). This social preference based on status beyond quality of living conditions is perhaps the most powerful driving force of sprawl). The resulting development outside the city due to greater powers and availability of transportation as well as the expansion of the other means necessary to make this vast new undertaking succeed was all but inevitable, so great was the desire. Cars soon replaced the earlier means and rapidly further amplified the impact of expansion.

From 1920 to 1930 the suburbs of the largest ninety six cities grew twice as fast as the core cities. And by 1933, the President's Research Committee on Social Trends noted that 'imperceptibly, car ownership has created an 'automobile psychology.' The automobile has become a dominate influence in the life of the individual and he, in a real sense, has become dependent upon it. (Frumkin, et al., 2004, p. 35-36)

In over a century (in particular the past few decades) of development and expansion of suburbs especially here in the US, has the original desire been met, and has it been met in a sustainable way? Has it lived up to its own promise of being the ideal way to live?

In actuality, the Dream has turned sour

in many places. The short-sighted but far-reaching method of development that has been carried out has in fact not usually given us the best of both worlds, but rather has ruined our ability to enjoy either, creating instead great bland swaths of wasted space ("People moved to the suburbs to be near the countryside, but new development often left them surrounded my more suburbs (Girling, Helphand, 1994, p. 1-2)).

Rather than the boons of nature or even agriculture, we now have over-fertilized and underutilized lawns and driveways. Rather than the benefits of the city at our fingertips' or arm's reach, we have monoculture residential developments made entirely out of 'cookie cutter houses' and must use a car to get anywhere. Even in the commercial areas, it is nearly always and in some cases actually impossible to move around without a vehicle. Rather than an easier, healthier, and more friendly and open lifestyle, we have to drive privately everywhere to keep our schedules and rarely have time to exercise. Isolated, underused, fenced-in backyards, and closed doors, large setbacks, and other social barriers further prevent meetings and interaction with neighbors.

The single family home and yard laid out in various formats has become the cornerstone and building block of sprawl; incrementally gobbling more rural land with larger and larger lots in an effort to escape the

negatives of the city, all the while dragging them with it by insisting that quick and easy access to necessities by vehicle be brought along.

The development in the fringe is consuming more land per person than the suburbs. Tom Hylton sadly describes the evolution of suburban sprawl into fringe sprawl: 'In every decade it gets worse. In the 1950s, when people first started leaving the cities, if you lived on a quarter-acre lot, that was really something. Then, in the '60s, you wanted a half-acre lot. Now, for every house we build, we're using up an acre or two acres. For every shopping center or corporate center, we're using up more land than ever before. It's an incredible waste' (Daniels, 1999, p. 13)

"Collectively, suburbia is the multiplication of this basic module, landscape building blocks strung together along winding streets. Even in higher-density and clustered-housing suburbs, attempts are made to retain the fundamental individualized house and garden" (Girling, Helphand, 1994, p. 21). This incredible waste has the additional negative effect beyond usually uselessly using up land—by developing so lightly on such large lots, all forms of transportation and circulation besides the automobile are rendered inefficient or impossible.

Commercial and other uses follow closely behind residential developments following the same low-density pattern, decentralizing and spreading the city thin. Zoning laws, crusty with age and the buildup of so many years of town planning on a city's scale and built upon automobiles' proportions, help to promote, perpetuate, and enforce the great dull standard of separated uses and structures too far apart and dangerous to reach on foot or anything but a car; sapping the community of life rather than cultivating it (Jacobs, 1961). How did it come to this?

Sprawl is a sneaky problem; again, one that began as an immediately good answer to the real life problems of cities suffering from overcrowding, disease, and otherwise poor living conditions. By a piecemeal process however, a little more here, another new development there, the size of this form of development aggregated to a scope few people imagined. This problem was difficult to control, manage, or even improve in large part because responsibility for the problem was so dissipated and far flung geographically and through all levels of authority. Michael Corbett (1981) describes piecemeal planning as "…the result of our tendency to try to deal with each goal or problem as if it existed in a vacuum, as if our attempts to deal with it had no impact on other values and problems" each sector planning their own solution for merely their own particular piece of the problem (p. 2). Thus, when influential groups powered by development such as builders, labor unions,

governments, and car manufacturers naturally promoted more of it, the result was a patchwork system. As more and more people desired the promises offered through development by the colossal groups who have a vested interest in spreading growth, the area developed grew far larger and more expensive than anyone predicted with no way to control its further expansion. Prolonged continuation of this practice through decades of massive amounts of development has enshrined the method in legal codes, hardening them further against efforts at improvement (35, 37, 41, Arendt, 2000. 29-34, Barnett, 2000, p. 78).

Many if not most or all of the promises offered by suburban development have fallen flat in the face of the realities of suburban planning's outcomes. Early offerings of a better life than could be had in the city were easy enough to grant, but as both marketing and demand grew, more was required to continue to provide "the classical ideal of a golden mean, the best of both worlds, and equal opportunity for cultural connectedness and pastoral privacy" (Girling, Helphand, 1994, p. 9). Design focus shifted to the housing unit (and even more the quantity/profit return of them) offered and less and less on the neighborhood since everything a neighborhood had traditionally offered was still in reach with a car. The individual, almost exclusively, single-family house set in the center of its lot became the basic building block of the bulk of new suburbs. Essentially identical versions of the house and yard became the neighbors of every

house up and down the street because of the twin forces of low prices and restrictive zoning (Girling, Helphand, 1994). With everything a car ride away, and monocultures being cheaper and easier to plan, lay out and construct, vast groups of purely residential spaces sprang up. But vast though they were, these were limited in scope:

> There was no consideration for families and residents who did not fit into the proscribed mold of restrictive domesticity. Limitations on mobility, lack of proximity to services, and insufficient community services added to the burdens of single parents, children, and the elderly. The privatized suburban world made no provision for cooperative endeavors in child care or a liberation from household labors. (Girling, Helphand, 1994, p. 13)

Monocultures of design are built for demographic monocultures; those who do not fit the description have a much more difficult time living in the neighborhood and the neighborhood suffers much more difficulty in being a community because it is made up of mostly the same sort of people. This artificial layout devoid of natural diversity, particularly public places and especially 'great good places' such as local cafes, coffee shops, and grocery stores, has a negative effect even on health because it renders the social capital of a place, the stuff of the sense of community, almost nonexistent (Frumkin, et al., 2004, p. 184, Jacobs, 1961, 447, Morris, 2000, p. 43). This is the weakness of otherwise comparatively strong developments such as Straw Hill in Manchester, New Hampshire. There, the cluster plan developed was far superior to any grid plan for the site. More houses were able to be built and each was easy to appropriately site for energy conservation and aesthetic advantage (Spink, 1987). The best feature of this case study was the capacity for preserving natural open land and the greater than average ease of fostering community based on design, but it still lacked the level of commercial and community amenities that make a development a full neighborhood.

> New Urbanism reaffirms the neighborhood as the basic building block of all residential districts. Within the 10-minute walking circle, a neighborhood includes a mix of different house and apartment types. Streets make legible connections that are easy to walk as well as drive, and there are neighborhood shops, schools and civic buildings, all within walking distance… All residential districts should be made up of neighborhoods. (Barnett, 2000, p. 74-75)

This balance and comprehensive mix is a difficult goal to achieve. Even Village Homes in Davis, California, which is designed almost as a new town and is specifically designed in its entirety with the environment in mind, has drawn criticism in other areas, such as its homogenous population and unusual economic stability due to two local, large, institutional employers, University of California Davis and the State of California in Sacramento (Forsyth, 2007, p. 13). Still, the ideal remains, and should be, a lofty one; to have a low impact on nature while taking advantage of nature's benefits and not losing a sense of community, but providing a vibrant setting for urban uses.

How to accomplish this is not universally agreed upon, nor is it or should it be done the same way in every place. There are significant arguments for both clustered (Arendt, 2000, 29-33. Spink, 1987) and gridded systems (Kulash, 2000, 83-88. Paul, 1996, p. 22). The context drives much of which system will be adopted, especially when it comes to transportation circulation.

Older goals of residential suburban development focused more around the ease of automobile movement and conversely, keeping traffic away from residences (Charmes, 2010, 357. Davis, 2002, 187. Frumkin, et al., 2004, p. 16). Newer ideals look more fully at streets as public places for more than vehicular traffic, and vehicular traffic as only one among several transportation options (not even the most preferred one) which improves health and increases sense of community. (Abbington, 2000, p59-61. Appleyard & Cox, 2006, 30-35. Calthorpe, 2000, 17. Frumkin, et al., 2004, p.

25). If streets are once again seen as public space, and not mere conduits exclusively for vehicles, then layout can be more urban in terms of density, though they need not be in character necessarily. To put it another way, with streets as a network of public space, planned public open spaces, such as parks, can be sited and placed more rationally and effectively (according to the context instead of a quota). Furthermore, they and other open spaces such as yards may be smaller and not required to function as buffers from a hostile world.

Viewing the world is the initiating motivation behind this thesis. From my own experience and here validated in research, exploration of space especially natural or even naturalistic open environments is quintessential to the growth and development of children.

Exploring the environment is an integral part of normal child development…a child benefits in many ways from exploration. Part of the developing sense of self involves place identity, gained through exploration. Children build their 'cognitive maps'— their knowledge of the world and their ability to navigate it successfully— through exploration. And through exploration, children develop competence, mastery, adaptability, independence, and new skills. Children

cultivate their imaginations, and form their lifelong memories, by finding and being in 'secret spaces' the outdoors seems to be an especially important setting for exploration. (Frumkin, et al., 2004, p. 192)

Sprawl, especially sprawling residential areas is the furthest cry possible from an ideal setting to explore. Even assuming the area is safe to wander in, all else being equal, the typical subdivision is boring. It is no wonder children no longer play outside except some in their own comparatively small backyards, their environment is not worth seeing; it was designed for young families, to be left by car or to keep one in/near the house if one does stay.

I don't say this to promote the idea that there should be no new development in rural areas. As Jane Jacobs says,"… cities need real countryside close by. And countryside—from man's point of view—needs big cities…so human beings can be in a position to appreciate the rest of the natural world… (1961, p. 447). But there must be a better way than the norm, the usual tasteless plotting of land, often valuable farmland, into monotonous, expressionless, placeless, lifeless bedroom communities with no value of their own greater than that of a giant motel. There must be a way to sustainability and realistically accomplish the American Dream of land and home ownership without squandering the priceless natural environment it rests on. This study seeks to find

out how; to begin we must know what has been tried and where it succeeded and where it failed and why.

Historical Examples

Riverside, IL

The great catalyst for change and expansion arrived around the turn of the century with the advent of widespread, affordable mass transit in the forms of trolleys and electric street cars and cable cars. Suddenly, whole new classes of people became mobile and the owners and operators of the transit networks saw an opportunity to capitalize on the formerly pent up desires of this enormous group. Naturally collaborating with developers, transit lines expanded beyond the city establishing new places and communities removed from many city hardships, yet within easy reach of its advantages, especially employment. Thus transit then, like highways and utilities do today, guided the direction and extent of city development and expansion and new neighborhoods were built.

One of the first among these was Riverside, IL outside Chicago designed by Frederick Law Olmstead in the early 20th century. Already of fame and prominence for

the design of Central Park, Olmsted brought much skill to the early suburban design. His picturesque style and beneficial landscapes philosophy greatly shaped and affected his approach.

"For Olmsted, 'the essential qualification' of suburban life was domesticity balance with community life. Each need to be addressed in the design; however, given the limits of physical design, these relationships could only be 'suggested through the arrangement of the means of division, and the passage between private and public ground'… Riverside's restrictive covenants mandated 30-foot minimum setbacks with no fences allowed, and each 100 by 200-foot lot had a space for a barn, stables, and gardens—a rural landscape in miniature." (Girling, Helphand, 1994, p. 51-52)

His design was far more rural for its population than many today dare attempt. Coming out of English trends and ideas as well as being of a time where much of the population was still employed in and by agriculture, the American suburb was pastoral in nature (Girling, Helphand, 1994). It focused on providing the sense of a village and naturalistic setting. Many trees were planted. What made it function however, what kept it alive was its link back to the city of Chicago. It was built at the meeting of a rail line and a rural stretch of the Des Plains River. The relationships and approaches between the railroad town center and the homes though, and the homes to each other are what really mattered to Olmsted.

'The main artificial requirements of a suburb then, are good roads and walks, pleasant to the eye in themselves, and having at intervals pleasant openings and outlooks, with suggestions of refined domestic life, secluded, but not far removed from the life of the community.' (Girling, Helphand, 1994, p. 52-53)

Garden Cities

Like Riverside, Garden Cities also had a rural emphasis, but were as much about business as they were for aesthetics. Where the most beautiful fully functioning community was Olmsted's aim, Ebenezer Howard's model's ultimate goal was sustainable, essentially autonomous city-town systems.

Begun as a reaction to the terrible living conditions in London, Howard like Olmsted and other designers and thinkers of the time held nature in high regard. In a somewhat mysteriously obvious way, simply being exposed to nature and natural settings was intuitively deemed healthier and more beneficial than city life. In response to the conditions of city life, Howard looked outward to fresh land declaring new towns, not new contiguous suburbs were what was needed, and not just new developments, but new self sufficient communities, not dependent upon nearby large cities.

He proposed that new towns be regionally dispersed, living, working, and recreating communities, limited in size and population. Convinced that such communities needed physical and economic autonomy, he suggested that they be located as safe distances from urban centers. For economic prosperity, they needed a variety and sufficiency of commerce. They were to be self-governing, with urban lands under public control, planned and developed in and orderly manner, and not subject to speculation. In addition to private yards, urban people had to have free and easy pedestrian access to many kinds of public spaces: public gardens, parks, boulevards, indoor shopping, allotment gardens, farms, and forests. The goal was not complete self sufficiency, for isolation did not ensure success. Howard advocated a regional network of small communities which he called 'social cities.' This larger network, connected by train, of perhaps 10 such cities including a central city would have the mass and economic base to balance employment with people. Social cities would dispense with the traditional urban hierarchy in

favor of a more democratic distribution of wealth, culture, and industry. (Girling, Helphand, 1994, p. 57)

A large part of achieving this goal is a heavy emphasis on agriculture and productive greenbelts and parks. All urban locations are highly localized into towns, but in plan are generously laid out within the borders and routes of the extensive public spaces. A great key to the long term viability of a garden city is its set borders. Development (and many other functions and choices) are highly regulated towards the goal of preserving the ideal conditions of the town. Thus, the outer greenbelt of a garden city places a physical barrier and limit to the expansive development as well as size and population for the city. When such a limit is reached, a new town must be formed.

The Garden City seems to many as overly idealistic. The design looks good and workable, even great on paper, but its success assumes a lot, most of all that the citizens of the town will willingly adhere to the program of the city's design and that this will be nearly perpetually preserved. Michael Corbett takes garden cities as his founding inspiration and this is reflected most prominently in his Appropriate Planning Area concept which retroactively applies decentralization to cities. For this and other reasons however, Jane Jacobs and I do not regard Garden Cities highly but rather see the principles of them when adopted into the policies of 'great cities' as the death of great cities and the foundation of suburbia; "A city however big, is still a city, with great interdependence among its places and its parts. It is not a collection of towns and if it were it would be destroyed as a city" (Jacobs, 1961, p. 392). This is the fundamental conflict between the centralized diversity of the city and the decentralized open, 'natural', and rural setting for which suburbs have always tried to be the bridging compromise or even synergy of.

Radburn, NJ

In planning research, few suburbs if any collect more attention or are cited as a case study more often than Radburn, NJ. Radburn was an American contemporary of Garden Cities and like them started with revolutionary new plans. Though when built both were smaller in scale than the grand model design and in actuality unsuccessful at completely meeting the ideals of it, both Garden Cities and Radburn had very far reaching effects on future planning that are still felt today.

Radburn was a response to the growing and increasingly auto-centric culture. "Radburn was promoted as 'A Town for the Motor Age' and as 'A Town for children'" (Girling, Helphand, 1994, p. 61). Radburn was entirely focused on the old ideals of domesticity, especially the provision for a walkable open space system completely separate from vehicular systems and other measures intended to promote quiet and safe community environments. In all, the Radburn plan depended on 5 interdependent components as stated by the designer, Stein in his 1957 book, Toward New Towns for America (Girling, Helphand, 1994). They are:

1.   The Superblock

2.   Specialized Roads Planned and Built for One use Instead of all Uses

3.   Complete Separation of Pedestrian and Automobile

4.   Houses Turned Around

5.   Park as Backbone (p. 61)

The first three were all intended to control and restrict the automobile to specified areas where it would reign supreme and be allowed to travel at its naturally faster pace unhindered. This part of the plan acknowledged that the automobile was no mere fad or passing or insignificant trend but a key issue for future planning that must be addressed. No plan would succeed unless it successfully managed traffic. For all the importance of this goal however (it occupies 3 of the 5 key components), it is secondary to the overall goal of an intimate and safe community, particularly for children and their raising. Managing traffic was done with

efficiency in mind but primarily for avoiding interference or even contact between it and residents. To do this and go further to provide this sense of tight, safe community, the last two are also necessary.

One of the most interesting ideas Radburn introduced was the idea of 'houses turned around.' "Each house fronted both a pedestrian walkway and a cul-de-sac street of 15 to 20 houses. These culs-de-sac wrapped around a green park spine to create a superblock of 35 to 50 acres served by arterial roads" (Girling, Helphand, 1994, p. 61). Thus, in a fractal sort of way, the Radburn plan sought to be a perfect suburb at multiple levels. The combination and interaction of urbanity represented by the automobile/cul-de-sac side, and rustic present in the greenway park system connected to the other side met in almost a kind of incarnation and summary manifestation of the idea of a suburb at the level of the house. Both of these sides connected the house to the rest of the suburb and in the case of the roads, the rest of the world, (unfortunately, the superblocks created sealed the greenway park system within single-use arterial roads.)

Houses were arranged on 'superblocks', blocks of 35 to 50 acres, 1,200 to 1,800 feet long (over twice the length of standard blocks), and only partially penetrated by cul-de-sac roads (Girling, Helphand, 1994, p. 61). These were laid out according to the neighborhood unit proportions (4,000 to 7,000 people) set

by Clarence Percy which centered around the elementary school (Girling, Helphand, 1994, p. 61). These are pervasive themes which have been implemented in many if not most development schemes ever since. "With the Radburn project, the cul-de-sac and its counterpart, the loop street, became considered the best way to provide vehicular access to houses" (Charmes, 2010, p. 358).

In the United States the use of the cul-de-sac, a hierarchical road system, and common open spaces, along with Perry's neighborhood unit plans of curved streets, became semiofficial doctrine… Portions of the plan, aspects of the idea, are found in virtually all planned (and unplanned) communities. Unfortunately, they are most often just pieces, segments of the idea: a cul-de-sac, an interior park, a superblock, or a walkway. (Girling, Helphand, 1994, pp. 67-69)

The Radburn plan has many good qualities. Considering the historical context, it was visionary and ahead of its time. Designers Stein and Wright carefully considered and creatively addressed the looming conflicts of ease of movement, especially for automobiles, and quiet residential life safe and ideal for children.

The success of dead-end streets can also be explained based on the benefits to developers. Cul-de-sacs diminish the cost of

land development:

The pattern is popular with developers not only because it sells well, but also because the infrastructure costs are significantly lower than for the traditional interconnected grid pattern, which can require up to fifty percent more road construction. Cul-de-sacs, being disconnected, adapt better to topography. Since they carry no through traffic, they often have reduced standards for street widths, sidewalks and curbs. (Southworth & Ben-Joseph, 2004, p. 30). (Charmes, 2010, p. 359).

The greatest strength of Radburn at least in concept is the complete park/open space system which serves pedestrians. It is a revolutionary idea, to move toward sharing the backyard. The considerably larger than usual amount of open space is co-dependent however on the other half of its skeleton, the dendritic, hierarchical road system. It is this consolidation and arrangement of roads which begins to get at preserving enough open space in shapes to make a sizeable network.

Though Radburn never saw the full fruit of its originally planned-for development, the ideas it put forth became extremely influential.

Although the Radburn plan was mentioned in the [Federal Housing Administration] guidelines, it was the traffic system, rather than the open space network that was praised. The FHA

encouraged developers to take advantage of natural site features by furnishing both developed parks and linear natural areas; however, it skirted one critical lesson of Radburn: providing both safety and community vitality through a spine of interconnecting parkland. Also missing was a convincing argument that open space amenities were essential. (Girling, Helphand, 1994, p. 88)

In its completeness, it is one of the most balanced paradigms or prototypes yet conceived and so it is no wonder that it was imitated, even around the world. But, it is not perfect and is extremely easy to abuse and build poorly. "The overall result of this design ethic was the development of sprawling city/town forms throughout Zimbabwe, with large areas of land given over to spacious, pleasant, low- density residential areas surrounding the main town centres" (Davidson, 2002, p. 188). Just like Jane Jacobs (1961) says about the factors necessary for vibrant urban life, all of the components must be present to mutually support each other or the entire system fractures and falls apart. It is a classic situation of all or nothing.

Levittown

Levittown often gets a bad name as the beginning of nightmarish suburbia, but there are many important things to learn from it. Though it represents the first massive jump of development into the rural outlands of the city and at first glance can be revolting to our modern eye, we must examine the planning behind it and remember to keep in mind what the world was like when the Levittowns were built.

The country was in post war mode with increased national debt, but a strong economy and one of the highest morales ever. Poor city conditions and especially severe housing shortages encouraged the growth of new suburbs. The G.I. bill and other conditions put new housing within the means of many. "At Levittown the pioneers arrived en masse, much like participants in a gold rush, finding a ready-made community to fulfill their desires for a home of their own and more (Girling, Helphand, 1994, p. 95).

For many of its first residents, the post-World War II American suburb of the detached single-family house achieved its promise—the best of city and country life in a home of their own. A new ranch-style house on its spacious lot provided the ideal environment for raising children. Curving, curbless streets edged by open lawns created a spacious rural character while also providing an informal community open space for children's games and spaces for field sports. The memories of suburban dwellers of the 1950s and 1960s are filled with recollections of pickup ball games in the front yards, or game of hide-and-seek encompassing whole blocks. (Girling, Helphand, 1994, p. 81)

Though small by today's standards, for the time when it was built Levittown had considerably more space per family than most of the residents were used to. "The home was 750 square feet on a 60-by-100-foot lot (The average new home in 1992 was 1950 square feet, 250% larger)" (Girling, Helphand, 1994, p. 95). This proved to be an extremely attractive and popular option and spread across the country for, "laws designated mile after mile of land for single-family residential uses, allowing unplanned, incremental land subdivisions around the fringes of most cities" (Girling, Helphand, 1994, p. 81). Government programs played a massive and often overlooked role in the spread of suburbanization. Under their programs, housing was made easier to attain and this greatly increased demand for larger supply. The second part of this influence was what the supply was allowed and/or encouraged to look like. While many of the design attributes proffered by the FHA were positive, such as the encouragement to develop subdivisions as neighborhoods, there were also the seeds of change, notably a confidence in the automobile to lessen the need for more comprehensive development including various needs such as groceries and other uses, and thus make up for a design's short comings.

Parks were encouraged, but often in an incomplete way, as stand-alone amenities, valuable in themselves in a very local context, but ignoring the value of open space networks. Thus the lessons of Radburn were lost.

The concept of public open space as a community network was consistently overlooked. FHA-designed parks were most often isolated parcels or leftover corners. Although the Radburn plan was mentioned in the guidelines, it was the traffic system, rather than the open space network that was praised. (Girling, Helphand, 1994, p. 88)

Here at Levittown is in large part the birth of the establishment or perhaps enshrinement of what we know as the traditional front and back yards. The broad egalitarianism among the residents and residences of Levittown began with the yards. Every property had their own set, the backyard which was private, and the front which was presented to the public. In these earlier times front yards truly were public and neighborliness abounded. "'W.D. Wetherell's marvelous short story, 'The Man Who Loved Levittown,' describes the early pioneering days when there were no hedges and 'everyone's home was your home; we all walked back and forth like it was one big yard'" (Girling, Helphand, 1994, p.98).

As time went on however and the young, initial families grew up, these and other public amenities (which mostly centered around recreation) began to be less publicly used and more privatized. A good example is the community pools. The generous public amenities available became less and less used over time and private pools and other private amenities increased. Part of this was a good thing; home owners were personalizing their standardized housing to the point that the neighborhood looked completely different.

Twenty three years after completion an observer commented, 'None of the houses look like any other…Almost every single one of them has been added on to, extended, built out, remodeled to the max…And those once pathetic saplings have grown and flourished in to fifty thousand shade trees spreading and merging, casting cozy coverings of shadows and privacy over rococo renovation.' (Girling, Helphand, 1994, p.100)

Thus, the initial basic building blocks evolved into a more mature neighborhood, but there were still less visible shortcomings.

Like usually happened throughout planning history, these large developments were geared to a specific audience, namely young families looking to raise children in an ideal setting. At this Levittowns succeeded. The problem then lied in what would happen to them after all the children grew up. The diversity and efficiency of the city being a non option, adolescents, elderly and other groups found themselves in unaccommodating places. All the subspaces were too similar, too non-distinctive for mid-level, neighborhood relationships to easily form. Neighborhoods within the suburb were not usually planned to complement or even attach to others. Community-scaled planning went undone in favor of project-by-project piecemeal planning which eventually overwhelmed the original balance these first suburbs achieved by virtue of their novelty in the then urban fringe. Growing problems produced by more of the same subdivision methods necessitated a fresh approach (Girling, Helphand, 1994).

Cluster subdivisions, PUDs, and New Towns

As the pattern and style of Levittown spread across the country and encountered different terrains and other conditions, questions arose about the traditional subdivision methods of planning. The typical subdivision was not very flexible, especially as planned at the hands of the typical developer whose natural first priority was volume and thus profit. According to Girling and Helphand (1994), septic systems were the main limiting factor on the number of lots a developer could make because they mandated a minimum lot size. Once the minimum size of lots was

determined to accommodate the septic systems, lots were laid out in a simple, regular pattern to fill the site. The usual method of development was to make the most amount of lots possible and this often meant at the expense of the environment; changing it from diverse settings to simple, easily buildable land—filling in swamps, cutting down groves, etc. Cluster planning offered a more creative and adaptable alternative.

There were two significant differences. Rather than set upon larger, nearly identical lots repeated in rows, houses were clustered together on much smaller lots. These still had the same septic system requirements, but rather than arrange them one to a lot, systems were relocated to open spaces between and made possible by the clusters. The great advantage of this system is that overall density and volume of housing is preserved, but so is open space. Too, the cost of development in this manner is less due to the reduced size of infrastructure required to serve clusters vs. a subdivided field of houses. "Both developers and the community would benefit from more economical layouts and the qualities gained when features such as streams and woodlands remained for everyone's enjoyment" (Girling, Helphand, 1994, p. 111).

Lots are much smaller, but can be placed to preserve and even take advantage of natural amenities as well as provide more flexibility for the house's design and siting

itself. "Cluster subdivisions allowed the flexibility to group houses, respond to difficult site conditions, and reserve portions of the property for common open space" (Girling, Helphand, 1994, p. 111). Yards are smaller, but residents gain much larger spaces in the public open areas formed by the clusters.

An example of a fairly successful cluster development is Straw Hill in Manchester, New Hampshire. To quote the Urban Land Institute's short film on the development

Developers quickly realized that a grid was not the best solution given the topography and drainage needs, instead they came up with a cluster plan… Clusters…kept grading to a minimum, while creating large open areas. It yielded three more houses than the grid and imposed logically phased construction which later was seen to be a real asset. The cluster plan also permitted each house to be uniquely situated for privacy, individuality and passive solar energy advantages. (Spink Jr., 1987)

Besides the obvious economic benefits to the developers and environmental benefits of planning in clusters around topography, the plan was a success to the residents as well. Landscaping worked in tandem with site planning and was key to making it function. The open, public spaces were owned and

managed by the neighborhood association and the houses were much closer together than in usual developments ("There were no set back constraints because there are no lot lines" (Spink Jr., 1987)) and were, as stated before, different from each other. All this uniqueness was ultimately a big selling point. Said Robert Mackenzie, the then assistant planning director city of Manchester,

They [residents] were used to single family homes on fairly large lots…and a unique project coming in here frankly scared a lot of people here in this city…I think once they realized it was still single family similar in design to their own houses but laid out and designed in a different way, they still had some reservations about condominiums in general but they were more accepting of the project (Spink Jr., 1987).

While cluster development planning was surely a step forward, it still had its shortcomings. While preserving open space was good, in environmental terms, these spaces were mostly insignificant. "These were fragments of much larger natural system, which really needed preservation to be anything other than local amenity" (Girling, Helphand, 1994, p. 112). Straw Hill itself is an exclusive community socially, but also environmentally though it did very well with native plantings. A wider view was needed. William Whyte promoted 'linkages' between neighborhoods to interconnect people and preserve the natural

systems;

The great opportunity of clustering, said Whyte, was for communities to plan linked open space systems ahead of development, then encourage developers to align their open spaces within the community framework. The landscape would determine the location of open space linkages by the very existence of riparian corridors. The community would accept nature's framework, then fill in elements such as parks, schools, and community centers…

He argued that a spacious landscape quality would best be achieved not by setting aside large tracts for parks, bur by utilizing both nature and human-made corridors to connect a series of smaller spaces. (Girling, Helphand, 1994, p. 112)

One approach that was generated to both better leave open space and be a viable option for a wider range of developers rather than only the largest ones was a new mode of development that arose around this time known as the Planned Unit Development, or PUD. Here, we will give just a brief mention.

PUDs

In a word, PUDs are compact. They seek the same goals of resolving private and public space and providing both natural and semi urban settings in the same place, but on a smaller scale than before. The biggest difference was their treatment of space; yards were tiny compared to other layouts and houses were often attached or built as multifamily housing. A mix of uses and types of housing was encouraged and parking too was treated in varying ways; set in lots, small garages, and especially in angled parking along the streets, though this approach often gave the impression of a long drawn out parking lot (Girling, Helphand, 1994).

After compact, the most intrinsic characteristic word of PUDs is impact. Everything was considered in terms of how it would impact the environment and the residents and this kept the goals of the format pure. However, problems still arose and less than ideal characteristics unintentionally came to be unspoken standards:

...entry drives often looked like parking lots or , in upscale development uninterrupted lines of garage doors; walls, berms, and planting along public streets enclosed the development but excluded outsiders; complex, awkward configurations of drives and housing were difficult to navigate, even with the map found at the entry to the community; weakly defined yards backed onto undifferentiated green space; and common open spaces were never developed but remained as green wastelands. Landscaped and maintained by the home owners association with a primary objective of tidiness, the grounds often had an impersonal, institutional quality. (Girling, Helphand, 1994, 115)

What began as before with good intentions as usual encountered problems and while some particular models of PUDs such as Edgewood Homes by Landscape Architect Lloyd Bond in Eugene, OR won awards, for the most part, "The PUD suffered from the same problems as the subdivision. Multiple, introverted, isolated projects were constructed. Development continued to outstep planning, especially in regard to community wide networks of open space and nonvehicular circulation" (Girling, Helphand, 1994, 121).

This gets back to the critical lack of links between systems Whyte observed and further developed from Frederick Law Olmsted as the main problem of developments. He cited many examples of ways to do this better while explaining his ideas. One of the examples he praised was the New Town of Reston, VA

Reston, VA

Whatever else Reston and the other New Towns are, they are after Garden Cities the most ambitious of all the planning patterns and systems. More than the simple common suburb, they are complete, comprehensive communities

in their own right. "Robert Simon's vision for Reston was a townscape so compelling and complete that a diverse population could live and work there for their entire lives" (Girling, Helphand, 1994, p. 124).

A sort of newer, urban type of the old idea of Garden Cities, New Towns are meant to be more autonomous. They are still connected to more major cities, in the case of Reston to Washington DC through the Dulles freeway, but are intended to be complete in and of themselves for normal day to day activities and not dependent upon outside developments. This was also the intent of Radburn, but Reston was more ambitious. Drawing upon the history and lessons of Radburn and other developments as well as psychology and sociology and other fields, Robert Simon and his team sought to achieve the ideal comprehensive New Town where others had failed to fully follow through; To make a completely new and whole community rather than a contiguous suburban sleeper town for commuters, or other merely residential development (Girling, Helphand, 1994, p. 124).

Reston was similar to Radburn in that it borrowed the idea of hierarchical roads and a distinct pedestrian system. An interesting difference however was the overall order of the layout. Where the Radburn plan was focused around the twin goals of vehicular hierarchy and domesticity, Reston took the goals farther, applying the desirability of the town to more

than young families, but seeking to appeal to all age groups and walks of life. A large part of how they achieved this is additional steps of hierarchy between those of just the roads. The town of Reston itself is centered around the existing highway system with the industrial and town centers located near the intersection. From there, seven village neighborhoods built around characteristic landscape features, some constructed such as Lake Anne, and each with their own smaller village center housed the majority of the residents in diverse forms of housing (Girling, Helphand, 1994). These centers were connected to each other through high density, multifamily housing and open space corridors as well as roads and were made to be accessible by foot to the residents of the respective village.

The real and tangible importance of nature carried through into the design and policies of Reston. The connecting loop roads were heavily landscaped and the local roads were narrow and minimal (Girling, Helphand, 1994). 23% of the town's area was set aside as open space, most of it natural and to be mostly unmaintained. Only high performance playing fields were to be chemically treated and residents were further discouraged from using chemicals, rather "Various promotional brochures educate home owners about how to encourage lands to succeed from open ground through meadowland stages, to the climax of northern hardwood forests that originally covered the site" (Girling, Helphand, 1994, p. 126).

The contrast of this natural area to the urban centers is an idea as old as Olmsted and an extremely significant part of what makes Reston work. More than many other development patterns, Reston and other New Towns are capable, in plan, of providing the ancient promise of perfect access to both city and nature. They are able to do this because they start from scratch and plan comprehensively up front as compared to an existing community adding onto itself and attempting to manage development and maintenance after the fact. This ability to plan ahead and create a balanced and lasting community from the beginning is both a New Town's greatest strength and greatest weakness, for though they hold the greatest promise as complete communities, the cost for comprehensive planning is, well, comprehensive.

The ambitious, forward-thinking of completely planning communities typically greatly increases the initial development costs due to the same feature that grants them the ability to have so much freedom planning, the blank canvas. The longer timeline and larger initial investment run counter to the predominant attitude of quickness: quickness of acquisition, quickness of financing, quickness of development, sale and turnaround for profit and enjoyment. "…the development of new towns required vast resources. They were too big and clumsy for most of the development industry and too long to reach maturity for a culture compelled by instant gratification

(Girling, Helphand, 1994, p. 130).

This also creates an interesting paradox in the proposal of Jane Jacobs against "cataclysmic development", or sudden large scale change. These changes are unnatural and greatly interfere with the natural processes that produce diversity and thus, vibrant urban life. New Towns, however, though in a way are the greatest form of cataclysmic development, a complete new community where there was none, also are by this fact of starting from scratch incapable of ruining urban diversity. Furthermore they are planned as diverse, complete communities from the beginning, a great improvement over other forms and are in a way part of the counter proposal to developing cataclysmically.

Diverse planning was accomplished through more modern research. "They emphasized 'scientific' planning, or what would not be called interdisciplinary planning" (Girling, Helphand, 1994, p. 130). Their serious and in depth look at development contributed to a reinvigoration of thought about planning. "They revised the central role of a network of open spaces and public lands in the structure and life of communities and crystallized the role of the village and shopping center" (Girling, Helphand, 1994, p. 130). Their extensive research provided a new more up to date synthesis of the best of what had been done. "Most important, they revived though and discussion about community form, population,

and politics, again raising the question of how design contributes to the creation of good communities" (Girling, Helphand, 1994, p. 130). In the consideration of many however, the answer to that question was somewhat negative. Planning, though important, was determined by some such as Richard Brooks to be secondary to larger regional influences such as governments and large private institutions beyond the control of designers. The design itself is not sufficient; a perfect plan does not a perfect community make. For example, "New planned communities were particularly weak in meeting resident's expectations for the provision of medical and social services… [Due to conflicting theories, plans, and designs expressed in Reston's villages planning experiments] such major commercial centers were slow to arrive" (Girling, Helphand, 1994, p. 130).

In spite of these and other difficulties however, the main problems of New Towns have not to do with design but logistics and much potential still exists in their design and their approach. Unfortunately, these were in large part ignored in the next trend of development, Master Planned Communities

Master Planned Communities

Master Planned Communities or MPCs are in large part the result of high demand

housing economies coupled with advertising efforts. This took the unfulfilled but best intentions of planning that preceded them and subjected them to the production mentality.

The aspiration to create complete, diverse, economically and politically independent communities was boiled down to lifestyle themes tied to recreation and family type…Although initially seeming to match the quality of physical environment provided by the new towns, they proved to be even more socially limited and contributed to an unprecedented level of mobility among suburbanites (Girling, Helphand, 1994, p. 134).

New Towns had been founded upon extensive interdisciplinary research, MPCs were all about image. They often lacked the substantial integrity which characterized New Towns and functioned only as bedroom communities, focusing on the glamour and style of the design based on what was most marketable and connected via car to the various amenities as opposed to all-inclusive, self-sustaining communities with wants and necessities for all age groups and interests near enough and made accessible to walk to.

Whereas new towns were planned as small cities, with a full range of services for their residents, solid employment bases capable of supporting their populations, and the intention of evolving self government, MPCs were generally more limited in scope.

Many were built within commuting distance of major metropolitan areas and had little or no office, warehousing, or industrial lands. Most addressed several very specific market niches, defined by income level, personal or family status, likes and dislikes with regard to activities, and general qualities of neighborhood and house, whereas new towns were geared toward a broad spectrum of the population in an effort to create balanced demographics (Girling, Helphand, 1994, p. 139).

The often bodiless image provided was usually the typical ancient one, a home in a natural setting, but with the help of new advertising allies this image was sold with more verve and vigor than ever before. "Not surprisingly, most predominant was the marketing of nature through names, slogans, imagery, and landscaping. Since the suburban genesis, proximity to nature in pastoral, sylvan, or rural surrounding has been a compelling desire "(Girling, Helphand, 1994, p. 134). Style was perceived as more important than substance because they sell the same but style costs much less to develop than a working comprehensive plan. MPCs sold the idea of stylish living in nature but like less complete development systems offered that nature on their own terms, quietly redefining nature as the landscaping they provided and photogenic framed views through the house's large picture windows (Girling, Helphand, 1994). To many, this marketing of the image was basically harmless and far cheaper and easier to design and build; but this passing off of facsimiles of nature and natural systems as the real thing had far reaching consequences. Jane Jacobs referred to this action and attitude as sentimentalizion of nature and held it mostly responsible for suburban sprawl. "It is no accident that we Americans, probably the world's champion semtimentalizers about nature, are at one and the same time probably the world's most voracious and disrespectful destroyers of wild and rural countryside" (Jacobs, 1961, p. 445). This mad rush of the masses for 'nature' and the subsequent settling for whatever the market sold as 'nature' translated into large demands for more which in turn produced more and more of the same.

"The MPC was the profit-driven product of a corporate developer (Girling, Helphand, 1994, p. 144). Being profit driven, cultural rather than design informed developments were what was sold. As the saying goes, the customer is always right. Developers planned based on what would sell the best more than ever as opposed to what the best design could be. This was not a new trend; the pattern is at least as old as Levittown where

…quality would be achieved by the spacious design of streets and yards without dedicating extensive lands to public agencies. Many local governments, particularly county governments covering large unincorporated suburbs, supported this approach. 'Suburban planners worried first about roads and sewers, second about zoning to protect new residential subdivision, and only third about neighborhood amenities. (Girling, Helphand, 1994, p. 86-89)

Furthermore, where Levittowns had provided whole planned neighborhoods of similar components and features but left residents to personalize them to their individual tastes, MPCs came as themed developments with attention directed outside for activities and strict covenants for maintaining this image; leaving little margin for personalization. Buyers too were more interested in the investment angle of the development compared to community integrity provided it was safe and provided a few basic, aesthetic amenities. Often this meant MPCs were walled and gated communities with enough open space to meet legal requirements, frequently in the form of a golf course (Girling, Helphand, 1994).

Master Planned Communities house many people in this country. They have the distinct advantage of being easy to do and being regularly large in scale. They are completely planned out and usually built in manageable, logical phases. The problem is that the planning is not very deep and serves mostly to fit and sell as many units as possible rather than to create the best or even most efficient design and arrangement possible. Because of their large scale and that they have been so successful at selling themselves, they account for huge portions of the wasted land that this thesis aims to protect and better utilize through better design.

Technoburbs

From MPCs then came the particular type of technoburb. Technoburbs followed the advent of the freeway system and the expanded mobility it provided, and became something between a New Town and an ordinary MPC. Not quite an edge city but more than a residential development and usually occupying a large area, technoburbs are semi autonomous and in a way form the start of the next/current wave of development, fringe sprawl. "They are located within metropolitan regions, but well beyond central cities. As socioeconomic entities, they offer a full range of housing options accompanied by shopping malls, schools parks hospitals businesses, and high-tech industrial parks" (Girling, Helphand, 1994, 146).

Far from cities they often lose a few degrees of overall coherence and appear as a jumble of uses. Here there is an incomplete and often deficient form of the linkages promoted by Whyte. At Irvine Ranch, this loose pattern of various uses connected by roads and some alternate means practically fills an entire valley. "No town center was planned, and none exists to this day. Rather, networks of arterial roads, freeways, open space corridors, and telephone and computer cables weave together the widely separated parts of this planned technoburb" (Girling, Helphand, 1994, 147). These limited transportation systems, predominantly the limited access highways govern and dictate the remaining land use. This development takes its cue from the greatly expanded scale of high speed automobile traffic and translates into dispersed, loosely connected, low-density sites.

Views were influential and locations were planned more around amenities than in relation to each other. The various connections between them served at least as much to separate as to link them. Not all of these were bad in and of themselves however and some were planned to be significant open space corridors for pedestrians.

Other aspects Irvine Ranch did well were providing a variety of housing and extensive landscaping as well as recognizing and responding to natural amenities such as the lakes on the site. The early village within the overall project, Woodbridge, also succeeded in drawing clear borders for the village while permitting some inter-village traffic. Serious problems exist however.

Studies show this layout has not worked out for the best but is actually harmful to the health of the inhabitants. Though pedestrian routes exist, they are commonly seen as security liabilities and the greater than necessary distance between uses increases commuting. This increase in commuting and commuting impedance has been shown to produce "more sick days out of work, more self-reported colds and flu, and even more days in the hospital," and "longer commutes predicted higher blood pressure and more self-reported 'tense' and 'nervous' feelings" as well as decreased job satisfaction (Frumkin, et al., 2004, p. 143). Though not a direct health hazard, the most pervasive effect of the brightest examples of technoburbs is actually the overachievement of their advertising. They become the worst when they succeed in actually providing what they sell.

After having driven more than 50 miles around the Irvine Ranch, I came away convinced that anything messy, dirty, or tasteless was not allowed, that every shingle and shutter, every shrub and succulent was professionally designed, installed and maintained…

Communities can be overplanned and overdesigned, the quality a bit too picture perfect, the place too often treated like a product…Irvine today presents an extreme example of where a repeated pattern of master-planned communities can take us: walled paradise next to walled paradise, all with the sterility of golf course greens, connected by equally monotonous roads: no litter allowed, either natural or human, no spontaneity, no nature—and engineered life. (Girling, Helphand, 1994, pp. 146-153)

This is designing gone too far; micromanagement of use enforced by strict CC&Rs (Covenants, Codes, & Restrictions).

Natural diversity and growth is frozen and expensive, high-maintenance features persist because of these. In spite of these downfalls, technoburbs have in large part taken over as the predominant paradigm, technology assisting and enabling the dispersion more than ever, spilling over the old edge of the first tier of suburbs and splashing out across the current fringe.

Fringe Sprawl

The fringe is today's concern, though it has grown out of the past models already mentioned, it is a new and bigger problem, the direct result of Jane Jacob's (1961) quasi-prophesy concerning past patterns and desires for development; "The semisubrbanized and suburbanized messes we create in this way become despised by their own inhabitants tomorrow" (p. 446). Early models had a more active, outgoing, and mutual sharing of culture. The first suburbs in an area also had the advantage of novelty itself and of not being in competition with other developments from the beginning.

A precarious balance developed as streams were still running, orchards still producing, and woods still wild. The promise was realized. But it was soon lost, as subdivisions, shopping malls, and freeways slowly engulfed the remaining rural and wild places that suburbanites had sought. (Girling, Helphand, 1994, p. 104)

This trend of leaving the problem behind and developing afresh in new locales in order to recapture the Dream is obviously limited. Undeveloped land exists in finite supply and much of it we need for other uses besides development not to mention the difficulties with resources and logistics of remaining connected to existing development and its resources and amenities. Yet the philosophy of new over renew runs rampant and unchecked into the fringe countryside surrounding more major development.

This commonly practiced method is in a way a regression back towards younger more immature planning ideas such as the original subdivisions of which Levittown is an example. These types of developments

Commonly…occurred in advance of systematic land planning. The result was 'a hopeless jumble of housing, industry, commerce and even agricultural uses,' guided only by the availability of land for sale, road access, and the marketing savvy of the speculator. Subdivision developers commonly stripped sites of all vegetation prior to grading and constructing roads, they filled marshes and culverted streamways in an effort to maximize buildable land. By the time residents moved in, all traces of the natural landscape were obliterated and replace with roads, driveways, houses, and lawns. (Girling, Helphand, 1994, p. 83)

We have since made much progress over these earlier methods and these inform styles and methods and even laws and policies. For example, natural systems must now be preserved and done are the days of blindly turning a site to a clean slate. In other respects however such as street layout and housing design, the updates are shockingly absent; the main difference being one of size; newer development is bigger.

The hallmark of fringe sprawl, that which sets it apart from suburban sprawl as a new kind of problem then, is "their greater distance from a central city, less economic and political clout, newness, lower population density, scattered developments amid open space, the more noticeable impact of newcomers, less sophisticated land-use planning, and greater growth management challenges (Daniels, 1999, p. 11). What makes fringe planning worse than a step back is that it is a step further outward, beyond reasonable distance to cities and lacking experienced planning, scattering far and wide wherever the land become most available first. The irony is that this puts pressure on neighboring properties to develop and planning for the maintenance and service of these properties lags behind

actual development. The result is chaotic, piecemeal planning which lacks integrity and efficiency and wastes every sort of resource.

It is actually the observations of the growth of this form of sprawl in my own hometown that inspired this thesis. Completely random in terms of planning, housing developments of slightly varying quality would pop up in bought-out farm fields; ugly additions to formerly picturesque and useful settings. Traffic became congested where there had never been regular congestion before. Commercial developments sporadically emerged along the highway the town had been built on with no pedestrian connection between them. Acres and acres of looped streets and cul-de-sacs plowed into forests and fields and for the first time, we had more than one neighbor. The main road into the city had to be expanded and so did the schools, much to the chagrin of the taxpayers and stress of the school board. No natural place seemed sacred, only a potential place for more houses for more commuters many of whom, to generalize, didn't have time to get involved, but wanted city level schools and services at town level prices—a not uncommon attitude.

…urban sprawl restricts the time and energy people have available for civic involvement. … As early as the 1950s, sociological studies in Cobourg, a suburb of Eugene, Oregon, and in Claremont, outside Los Angeles, showed that commuters in suburban communities participated less than non commuters in voluntary organizations. The Claremont study showed a direct relationship between longer commutes and less community participation… [Robert Putnam] writes that 'each ten additional min. in daily commuting time cuts involvement in community affairs by 10 percent—fewer public meetings attended, few committees chaired, few petitions signed, fewer church services attended, and so on' (italics in original). (Frumkin, et al., pp. 172-173)

As bad as this was, this was not uncommon and Big Lake was the outer edge of the great push out from the Twin Cities. Other communities farther out than Big Lake also received its effects, but one tier closer, the cities of Monticello, Elk River, and especially St. Michael-Albertville became in some places almost unrecognizable. All shared the onslaught of big developments on big lawns with vast parking lots and even larger space between uses, ruining that land for other uses as well.

Under conventional development scenarios, the first 5 percent of development often ruins 50 percent of the countryside. If you take a small amount of development, even just three buildings, and put them in the middle of a farm field, you effectively destroy the field. If you put these buildings at the edge of the field, or behind some trees, you can preserve the character and the function of that landscape (Arendt, 2000, p. 33).

Development in this patch of fringe was as it long has been, a business and economic enterprise, and as such it is primarily subject to the forces of supply and demand which lately have pointed to unlimited growth and production as the greatest level of success. With such monumental tasks of massive development to distract effort and attention amplified by deficient zoning laws and other policies holding back new ideas, high-quality, long term planning is a subject for the backburner and may never see the light of day until it is too late and governments must try to cope with the mess they have allowed and/or encouraged (Daniels, 1999). This is why we see developments and additions built wherever land becomes available rather than where it is the most sensible. There is a lot of work required for planning communities ideally before they are constructed and this asks for a great deal of patience on those seeking to move there and those wishing to develop for them. The wait and cost appears too great to most and in the smaller cities of the fringe, governments have much less planning power and experience. Thus, it is very rare that cities are developed according to a logical master plan even if the city has one. But this only changes the time for waiting and paying for the costs of development, delaying and furthermore increasing them. Where development could have been set aside until a more complete plan was made so that it could be effective

and efficient, planning gets set aside until development sprawls and scatters far and wide across the landscape and the costs for their needs and wants are much higher and harder to provide for and greater patience than ever must be exacted.

Conclusion

This thesis began with the question: "How may residential space be best arranged so that natural space, urban space, and human activity harmoniously contribute to each other, and no one space or activity are neglected to the detriment of another?" In all of these past designs and throughout history as well as current research there is at least one common thread of the highest importance; no other single factor of community design holds as much importance as the street, the networks it forms, and the relationship of other elements to it. New urbanism planning examines and holds as foundational the street, block, and building as the most basic building blocks of any development rather than the house and lot.

With a majority of the world now living in cities and the trend only projected to increase, New Urbanism planning is the most vital; cities must be livable and desirable, a realistic and decent choice for living lest the masses spill out in every direction expanding the fringe and running the surrounding landscape's systems, both natural and artificial, beyond their carrying capacity. Not everyone will be able or will want to live in the city however and fringe development will continue to happen no matter how successful New Urbanism becomes.

The hypothesis that certain design trends would be revealed as superior in the course of history has yielded results which will be displayed and discussed in the remaining chapters. These results contribute to ultimate goal of this thesis: that by employing the lessons and positive trends of past examples, development may happen in such a way that it is not old and dead in a generation or two, but remains as fresh and lively as the ancient mean promises; nature (real nature) and city reconciled and brought to mutually beneficial harmony at the contact.

Discussion and Limitations

Looking now to the actual data results, what useful themes and characteristics can we draw from past examples and case studies? For my in depth case studies, I chose Reston and Village Homes to compare and contrast to my site because their ideas are the most daring and comprehensive. Both aim as a goal to be the best possible community paradigm and layout while others are more concerned with marketability and purely short-term, economic profit.

Reston

As stated earlier, Reston was a vast undertaking. "Reston, VA and Columbia, Maryland, were both planned to be economically self sufficient communities with their own quasi-governments and arrange of jobs for their populations" (Girling Helphand, 1994, pp. 121-122). The idea to gather as much information from as many angles and disciplines as possible to inform the creation of the so-far-as-possible perfect (and not merely picture perfect like some MPC products) communities starting from scratch is alone audacious and inspiring enough to be commended as an effort.

Simon hired more than 35 consulting firms, including land planners, architects, engineers, economists, lawyers, and various social planners… While physical designers analyzed the site and identified major open space corridors and developable areas, social planners worked to define the elements of neighborhood, community, and town. Lawyers worked with Hoard county to develop a planned community ordinance that would protect the surrounding rural areas while providing the company maximum freedom in configuration, density, and mixes of land uses. (Girling Helphand, 1994, p 124)

Even though the resulting development fell short of achieving all of its goals, there is much to be learned from the titanic efforts and wealth of findings that went into and came from the planning of New Towns like Reston.

William Whyte praised the open space linkages of Reston and it is still considered one of the best cities in the country to live in.

RESTON MAY BE a planned community, but don't expect cookie-cutter homes here. Thanks to famed master planner Robert Simon, all shapes and sizes sit next to one another. Activities in Reston come in all stripes too, from an über-urban downtown to 55 miles of bike paths, 52 tennis courts, and 15 pools. "In seven seconds, we can be in the forest," says Reston resident and small-business owner Radhika Murari, 41. (Asher, 2012)

Its vicinity to Washington DC and especially the Dulles Airport has also attracted a lot of attention however and several large firms have entered the area contributing to traffic congestion so much that a new extension of the Washington Metro public transit is being built to it and will soon serve the area.

Its greatest strength is in its far-reaching variety in recreation, social and cultural as well as circulation possibilities. "Simon and Rouse emphasized balanced, preplanned, and contained communities composed of a full range of economic, social, educational, recreational, and housing opportunities (Girling, Helphand, 1994, 123).

In order that the community might be self-supporting 1,000 acres were set aside for an industrial park. The population would be contracted into seven villages, each with shopping and service areas, libraries, a community center, facilities for young people, schools, offices, churches and places to live…

Originally, 85 per cent of the housing was to be detached homes and 15 per cent apartments, but the private land around the houses took up so much of the green areas reserved for parks and lakes that the draft was changed to concentrate on

"cluster" housing—row or town houses of various types, all contemporary. (Ebony, 1966, 91)

It is likely that the design of Reston has played a significant role in its success. Its housing values have remained consistently and substantially higher than the regional average and have held their value well. In fact, they have increased almost completely back to early 2008 levels and only fell about $40,000 in the last 4 years compared to the regional average which fell almost 80,000 and is struggling to recover. The two values track fairly closely, though Reston always remains higher and is recovering better. These data indicate that something about Reston sets it above average especially considering its distance from the high-priced city center.

[Robert Simon's] primary contribution to the continuum of new community development in the United States might be seen as the physical plan that brought together principles that planners had been pursuing since the Radburn days: a complete town with all the physical social and employment opportunities of small town America, composed in a plan that integrated a full complement of housing types and densities and all the services needed for daily life. (Girling, Helphand, 1994, 128-129)

Still, Reston failed to live up to its great dream of a city one could stay in for whole generations. It was not seen as walkable as Radburn where "47% of residents shopped for groceries on foot versus 23% at the new town of Reston and 8% in an unplanned community" (Girling, Helphand, 1994, 64). It was not developed in full to its original plans due to its nontraditional pattern and massive investment. According to Michael Corbett, they did well in their organization, but did not address the larger problems of impact and interaction with the environment or how to effect community at the very local neighbor to neighbor level. Both he and New Urbanist designers attribute this failure to complete the development to a lack of authoritative support. The bulk of this research indicates that though developers are those who design and construct the various new paradigms and styles of development, it is the governing bodies and cultures which produce them that dictate the focus and goals of their results. "Lacking regional tools of governance that employ the opportunities of the new metropolitan reality, policy makers persist in treat the symptoms of our problems rather than addressing their root causes" (Calthorpe, 2000, p. 15).

There is no unified planning authority demanding designs that integrate a variety of needs and goals. The power over planning is divided among many individuals, officials, and institutions, each concerned only with some small par to the total picture—bankers concerned only with profit and financial security, public engineers concerned only with efficient sewage and traffic flow, and fire departments concerned only with providing adequate fire protection.

None of these problems is unimportant, but the official concerned with only one of them usually prefers to solve it in the easiest and most direct way. He or she has no responsibility for the overall plan, and therefore no incentive to be creative or flexible in solving his or her own problem. (Corbett, 1981, p. 26)

Village Homes

Village Homes is an environmentally Master Planned Community; an Ecoburb. Not many examples exist of ecoburbs, still fewer of successful ones, but Village Homes is just such an example. It is a much more manageable scale to build at than a New Town but has the same comprehensive range of thinking about issues.

In a way Village Homes is a synthesis of many of the characteristics of past formats. The importance of nature, agriculture, and aesthetics calls to mind Riverside and Garden Cities. The separated pedestrian circulation system and two faced houses is a definite nod toward the earlier Radburn. The same do-it-yourself neighborly

collaboration found in Levittown is encouraged in design here. It's planning around nature and relatively compact design speaks of cluster developments and PUDs. It considers the full, broad range of planning like New Towns do and it actually is an MPC. Its tree-lined, curvilinear streets and extensive provision of community spaces and amenities both indoor and outdoor are all features it shares with several other models.

What sets it apart however is the synthesis of these characteristics into one, appropriately sized community and the primary consideration always given to environmental impacts and effects starting from the ground up. Designer and developer of Village Homes, Michael Corbett (1981) has much to say about his design in his work, Building a Better Place to Live. The improvements on the site can actually be called improvements because they respect the existing natural systems while adding amenities for human habitation.

Rather than an arbitrary, geometrically flat, utilitarian layout, Village Homes is based around the existing topography and drainage patterns requiring immensely less water infrastructure and treatment as well as earthmoving and development in these areas. These natural accommodations make all of the land an amenity and temper the effects of normal and even extraordinary weather events further reducing the need for expensive artificial replacements. Rather than drain into the street or culverts and other channeled systems which then feed into ever harder to maintain civic systems, runoff remains on the site and drains off of the streets through a network of natural swales to its usual resting places over a far greater amount of time during which it is naturally filtered and soaks into the ground, though heavier events overflow into supplemental standard storm sewers. "It is interesting that natural drainage was one of the most difficult innovations to get approved for Village Homes" (Corbett, 1981, p. 89). Governing bodies at all levels stood in opposition to this natural and far less expensive method, confident he was wrong and that it would be overwhelmed as a system and reduce the quality of the neighborhood as well.

The planning director said it would harbor vermin—an engineering term for wildlife I suppose. So far there have been no such problems. Each winter around Christmas…storm drains back up and pumps fail in other parts of Davis, while Village Homes is beautiful with it multitude of little streams and its gentle waterfalls. (Corbett, 1981, p. 89)

The unorthodox improvements don't stop there. Agriculture is a central theme to Village Homes, but not always in the traditional format. Productive landscapes, utilizing fruitful, productive plants in place of other options in landscaping, is highly promoted. Landscaping as a feature has so much more potential than only aesthetics. Through various techniques, it can temper and influence climate control and full size farms are not necessary to produce any, all or even perhaps most of the necessary products. Only until recently, average houses and yards and communities were much more self sufficient because they produced much of their own food. The design of Village Homes aim at returning to this lifestyle and incorporating it in community building as well by reversing the usual roles of front and back yard like Radburn attempted and making the neighbor-facing 'front' yard a productive and pedestrian area supplemented with a commonly owned strip while the private backyard faces the street connection. This puts the front yard to work and opens it up to the public again without losing the private yard which solves the national problem of isolation felt in many residential areas. "Where each household owns a separate lot surrounded by a fence, and all the public facilities…are zoned in another part of town…there is no necessary contact with anyone in the neighborhood" (Corbett, 1981, p. 104). These pedestrian areas reach continuously through the entire town and connect to larger public places which are also productively landscaped with the logic that productive landscaping provides more benefits for essentially the same amount of maintenance of traditional landscaping. This is not living in a park; this is living in community in nature, or at least with nature.

On that note, circulation is another of the features that make Village Homes akin

to an updated and improved modern take on the Garden city. A sort of combination of Garden city's radial concepts and Radburn's superblocks, cul-de-sacs, and separated pedestrian paths, Village Homes attempts to remove so far as possible the influence of the automobile rather than accommodate or encourage it. This factor is what determines many of the site's other characteristics.

Dependence on the auto will only be reduced when towns are designed to a scale that makes bicycling and walking convenient means of transportation. Overall size must be kept within certain limits, and a balance of residences, places of employment, entertainment, goods, and services must be provided in a design that makes walking and riding a bike safe and pleasant…although it is very difficult to get along without a car in a world designed for cars rather than for people, it would be not much of a hardship to do without a car in a world designed for that style of life. (Corbett, 1981, pp. 99, 103)

While not an utterly autonomous community, Village Homes does many things well, most especially conserving resources by maximizing the effects of naturally available environmental products and conditions such as solar energy, rainfall and native and productive planting. "A 2002 case study ranked Village Homes high for quality of life, climate control, and fuel savings" (Crew, 2007, 13). It does this in such a way as to increase community and

activity and health and decrease driving (though it remains a commuter suburb and owes at least part of its success to unusually positive settings such as close proximity to employment in state government offices and UC Davis), useless landscaping and other land uses, and other wasteful features of less effective paradigms. It represents a good model for a neighborhood where the residents are in communication with their environment and each other.

Project site: Meadowlands (compared against the Shores of Lake Mitchell), Big Lake, MN

When Mitchell Shores was first built, quickly covering the last dairy farm in the city and township, I was, at age 12, disappointed. For months driving through it on its overly wide and sharply curved roads as a 'shortcut' to my grandpa's mystified both myself and my parents. I took to calling it the beige maze. Years have passed and it is hardly better, only bigger. The streets remain confusing, the houses mostly nondescript, and the landscape locked away and useless but for the bike paths, the beautiful undevelopable area around the small lake on site, and perhaps the random neighborhood park.

Because it is closer to the city, it did remain somewhat denser than other developments which cropped up several more

miles away in scattered forest and field plots. To this day it represents the bulk of the largest inhabited residential area within city limits. As such there are many who stand to gain from better design, especially as it pertains to connection with the community in the town center about 2 miles away. The proximity and relative density of this part of the site actually makes it far better in terms of how sprawling it is in relation to another development of similar size only a few miles away and one mile further from the town center, Meadowlands.

Developments such as Meadowlands could be considered among the closest developments in the fringe of Big Lake to the town's center. Many more exist further out, but for the sake of comparison, it makes sense to pair it with the Shores of Lake Mitchell. The two represent the opposing forces of urban amenity and rural expansiveness and require different treatments though both are so similar in population and proximity.

The greatest challenge for the Shores is its confusing circulation and imperfect pedestrian link(s) back to the city it is a part of. Pedestrian options exist, but are not encouraged through design strongly enough. Besides a numbing layout, an equally dull aesthetic pervades the community leaving the outdoor space often feeling sterile and dominated by cars coming and going.

Meadowlands suffers even more from

disassociation with the city, though the same level of attachment is not to be sought as it is more rural. Meadowlands marks the end of the beginning of where both city amenities end and essentially all necessities must be driven for. Tens of thousands of extra miles are put on millions of cars because of developments like these for grocery errands, shuttling children to school and other activities, dining at restaurants and any other urban tasks. Those extra three miles traversed over and over begin to add up. Alternate transportation is admittedly laughable as a solution as development is spread so thin, public transportation would never be economical, and provisions for bicycling are minimal at best.

This twofold problem of ugly and ineffective suburban development and pleasing but sprawling rural development on the fringe requires a twofold solution. Development within and near cities must be made more pleasing and effective and thus attractive so as to lessen the demand for sprawling development in the fringe, but the problem is bigger than that. New Urbanism cannot solve this problem by itself in the city. Fringe development will always be desired in some capacity and so it is important to not deny this fact, focusing on contiguous development only, but by also refining and integrating fringe development to be as economic as possible. Thus New Urbanism and Decentralization are not to oppose each other but to work as contemporaries, cooperating insofar as to form a diverse yet integrated whole community

which offers opportunities and amenities for all its residents. The problem of sprawl especially in the fringe is a problem based on bad principles and thus is too large to solve using patches of design solutions. Redesigns will show first how it might have been designed better, then possibly how they might be fixed or at least partially ameliorated

What then is the conclusion, how can this renewal and improvement be accomplished? The answer to that question rests within the answer to the question: what are the positive aspects that can be drawn and reproduced from these examples and welded together into a new, superior form of residential development?

Riverside, IL can be thought of as a wide stretch of rural farmland homesteads miniaturized, upgraded slightly with more modern urban amenities and aesthetics, and condensed in villages around links back to the larger city of Chicago. The most significant feature of this example is the attention paid to detail, especially in the connections and circulation network of the suburb. These were multimodal, safe, varied, aesthetically pleasing, and integrated every place to every other very well for their time. The weakness of Riverside is the same weakness of all models, there is hardly an acceptable amount of land which can be turned into enough lots for all possible buyers.

Garden Cities are a bold concept. In theory, they are essentially self sufficient and do not depend unnecessarily upon outside resources. The trade off however is rigid adherence to the model for this ideal city. Planning design is very restricted and predetermined, yet there are some unavoidable conclusions they draw for other models. By enforcing definite boundaries outside of which development is forbidden, sprawl is effectively cut off from overstepping its bounds. This may not necessarily always be appropriate however and design must be flexible enough to adapt to changing needs lest the community grow stagnant. On the other hand, the danger in allowing exceptions is a potential slippery slope to the condition we're in today anyways where all boundaries are blurred and ignored as meaningless. Some form of taking plans seriously and not inconsiderately extending beyond them is essential as is a focus on the local economy of essential resources in order to be sustainable.

Radburn does much well, especially its provision of safe and enjoyable pedestrian corridors and spaces, and excellent access to both these and vehicular circulation. The problem with creating superblocks however is the greater isolation between them caused by the intensified traffic. Whatever gains are made by the separated pedestrian system are tempered by the lack of accommodation for pedestrians on and near the roads. There are also issues with some lack of diversity in uses and population, being designed and imitated

thereafter primarily as a good neighborhood for young families to raise children Still, Radburn is conceptually very successful at managing circulation and preserving open space.

Levittowns have a bad reputation with many, but does have several good qualities it can claim. There are reasons after all they became so popular. The idea of an affordable basic starter home kit is extremely attractive and there is nothing wrong with this desire (in any case, the desire is too strong to deny regardless). The problem is the method and scale by and at which it is provided. The simplicity of design and especially financial devices are what worked together to provide for the masses the basic groundwork on which to start and build up. The initial open atmosphere too was almost ideal. A large part of both this sense of community and individual pride in ownership may be cultural at their root however and beyond design's capacity to effect or change. This can be seen in history, as culture changed balance between development and undeveloped nature tipped, and as the population grew older, Levittown became much less promising and open and more like the typical current subdivisions it is an ancestor of. The initial goodness offered by Levittowns was never a negative thing however, and where possible, new designs should foster this initial community unity as well as uplift the individuals that make it up.

Cluster subdivisions have the right idea in concept, beginning to design according to site context thereby both preserving and saving existing and investment resources rather than utterly imposing arrogantly and expensively upon the landscape. The most common mistake is a soft attitude when it comes to preserving actually significant accommodations for natural conditions and linkages both natural and constructed between developments.

PUDs expand the palate by offering a different scale of development. As opposed to the MPCs that followed, they are compact and efficient. This emphasis on lessened cost and impact while providing both public and private space and amenities and preserving natural space is a great starting point to begin to conceptualize new ideas in a world dominated by vapid expansionist planning. Clarifying uses and ownership as well as cleaning up aesthetics and creating inter-development linkages will be key as well.

Reston is a unique beacon, being exactly what the name of its type implies, a New Town. It has the great advantage of starting from scratch and building to the best design proportions and guidelines and according to the best ideals from the beginning and not as a patch attempting to integrate into existing development. Thus it has great layout and linkages and connections to both culture and nature. Unfortunately, this comes at a high initial cost up front, which though offset by lower development and maintenance costs later, is a very difficult idea to sell to traditional investors.

MPCs keep the scale of new towns, but trade in scope of value and diversity for marketability. Thus, massive areas are planned ahead, but lack many of the interior qualities needed to make them complete communities and most end up being merely bedroom developments for commuters. Buyers were easily sold on the image put forth, but the image often lacks the substance to vivify it for more than one or possibly two generations.

Technoburbs are slightly better, offering more amenities which make them more livable MPCs. Their scale is still off however and without automobiles would bring about their collapse as successful developments. Technology can only provide so many things; one can't telecommute to form community with neighbors. Furthermore, though the landscaping and high investment in appearance is inspiring, the strict requirement for it often comes off as unnatural and forced.

Fringe sprawl is in large part, the methods and patterns of technoburbs shot-gunned almost at random across the often unsuspecting and unprepared countryside. It is sprawl spread even thinner. There are no advantages to be imitated in this format besides perhaps the growth and improvement of existing towns, but this presupposes proper development allowances and patterns,

something even experienced city planners have yet to achieve with unqualified success or without letting development get away from them.

Village Homes is one of the greatest examples I've seen thus far of a synthesis of the best qualities of the various forms. Built from the ground up to be environmentally cooperative and hospitable, even constructive and positive (natural drainage, productive landscapes, local energy production), it yet remains economically viable and even personally enhancing. Through creative design and financial methods, owing much to code variances and individual support/input from the clients, a much better and tighter than typical community was built by the developer/designer working side by side with the future owners. In some cases literally building their own houses. This level of involvement is surprising and not typical, yet it should be. The landscape serves primarily to connect resident and help them provide for themselves and each other, rather than to give each buyer a plot to call theirs and feel proud about with no regard to relation to context.

Every site then can benefit from taking these past examples into account, though indeed, each site is unique and requires its own analysis. Depending on this and the site's conditions, some aspects will be more important than others. Overall however, these aspects are the summary lessons to be learned from these past examples and to be implemented and improved upon in future cases.

In the case of my selected site, the main issue to be addressed will be connections back to the town center, followed by a reordering of layout and addition/provision for greater on site amenities, both natural and cultural/economic/social.

The most major disadvantage to my approach is that there is so much data to analyze. This is because there are many details and factors and combinations which make for a successful community, particularly a sustainable one. Also, the data is not cutting-edge current. This limitation is not decidedly significant however as much of the data is in historical research, health and psychology. History and human nature do not change and this lends permanence of value to some design concepts.

The advantage of this research is that it can be done remotely, without requiring further direct studies such as interviews. The nature of the research and subject is such that it is actually most efficiently done through analysis of other studies.

The outcome is a 'short list' of factors shared and/or highlighted by at least a majority of the successful case studies. These indicate positive attributes that a good community design should have and thus will be included in and guide the proposed design solution. Utilizing these findings enables progress both to propose fresh new ideal layouts and to continue informing and improving the overall pattern of general development which holds short term goals and 'tried and true' methods in higher esteem.

Example	Aspect(s) to Imitate	Aspect(s) to avoid
Riverside, IL	Varied, pastoral, multimodal, comprehensive connections	Large, single-unit lots
Garden Cities	Productive landscapes, clear boundaries/ development limits	Overly strict regulation and, in the instance of the site, isolation
Radburn, NJ	Pedestrian circulation, multimodal access of residences, Control/restriction of traffic, preservation of open space	Superblock enclaves, single use monotony
Levittown	Affordability, initial neighborly openness, customization,	Widespread, simplistic, auto-dependent planning and land use, cellular isolation of residences
Cluster subdivisions	Site sensitivity, preserved existing resources and resources put in	Typical lack in inter-development linkages
Planned Unit Developments (PUDs)	Compact housing, common open space	Use and ownership ambiguity
Reston, VA	Comprehensive planning ahead, designed for the whole range of users	Unaffordability, size
Master Planned Communities (MPCs)	Appeal and success	Shallowness of value, waste of land and lack of diversity
Technoburbs	Landscape aesthetic, site specific design	Vast consumption of land area, restrictive programming
Fringe sprawl	Attractiveness, growth of local economy, community	Waste of land, money and other resources
Village Homes, CA	Neighbor interaction, common, productive land, pedestrian emphasis and accommodation, sense of community	Monoculture population

SITE INVENTORY & ANALYSIS

Meadowlands; Big Lake, MN

The project site is of a fairly ordinary character for rural, central Minnesota.

Forested areas contrast with meadows and smaller cover makes interesting in-between spaces forming a savannah landscape overall.

The small St. Francis River and its flood plain form the western border and other wetlands along with the moderately hilly topography shape the layout of the circulation and thus the site in both the existing model and new design.

Sandy soil provides good drainage and Minnesota's continental climate ensures variable weather year round.
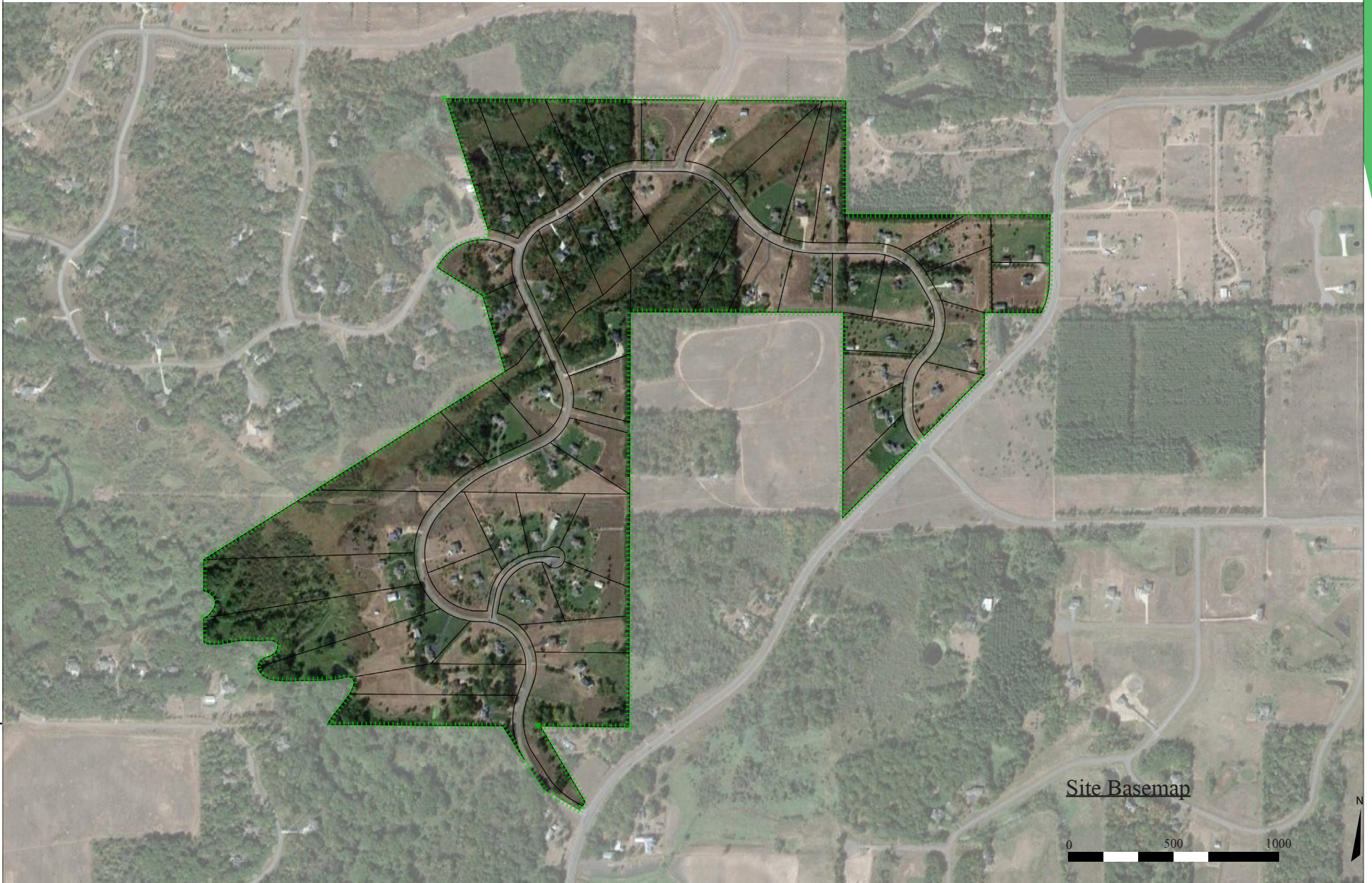
Site Basemap

0   500   1000

PROXIMITY

Compared to other developments, Meadowlands is not significantly farther from the town center, but due to character, it feels much further away. Part of this is that only one route exists and it is solely vehicular.
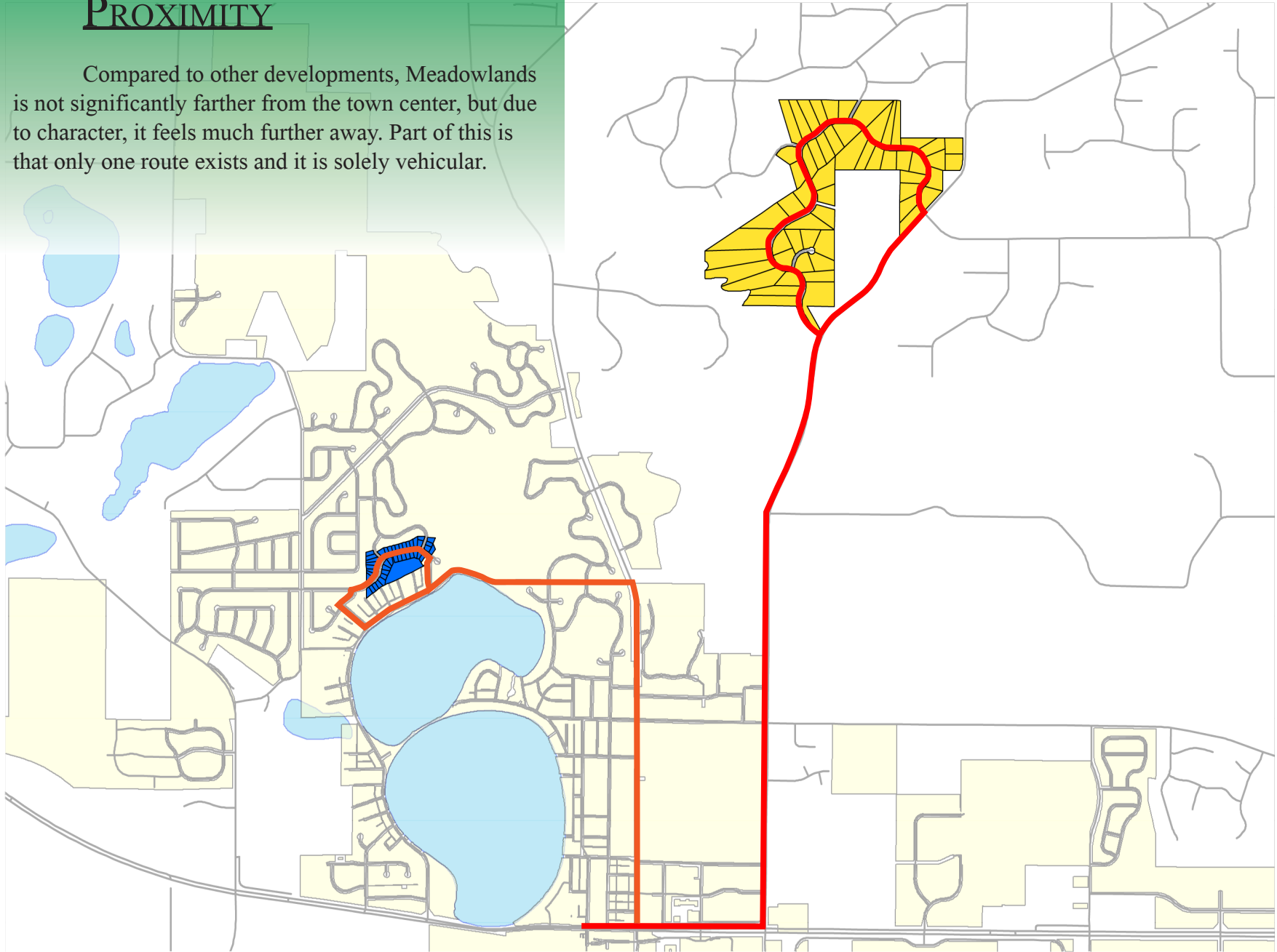
DENSITY
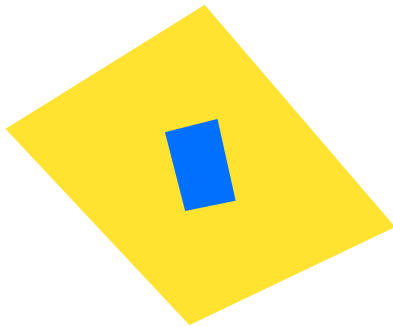
Fringe developments use extraordinary amounts of land. Meadowlands has 57 parcels filling its 200 acres. This translates to 3.51 acres per lot or .285 dwelling units per acre. That is 9 times the amount of land used compared to another local, more suburban development, the Shores of Lake Mitchell.
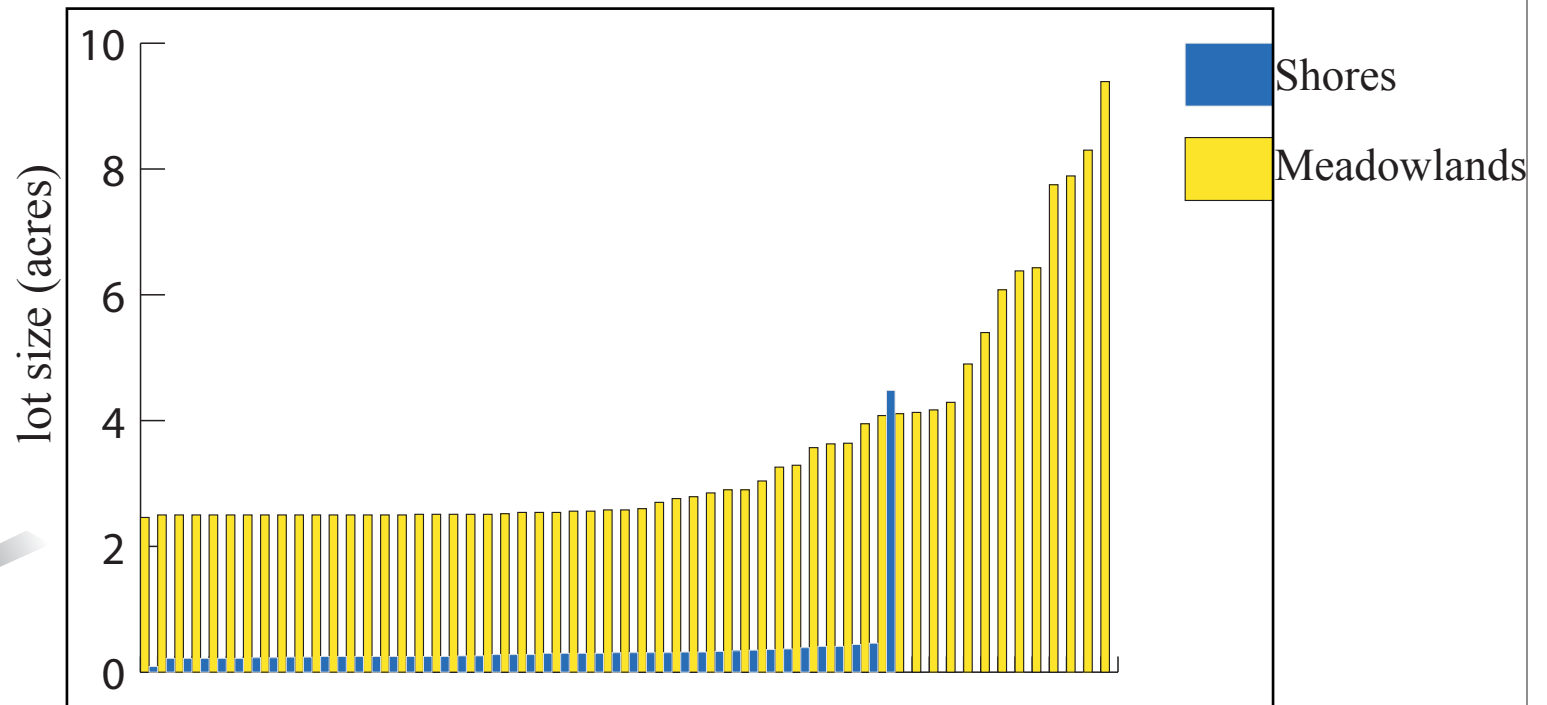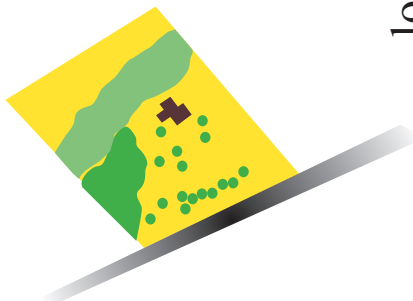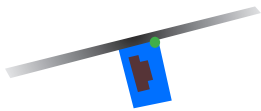
EXISTING CONTEXT

Topography creates interesting views, routes, and character throughout the site
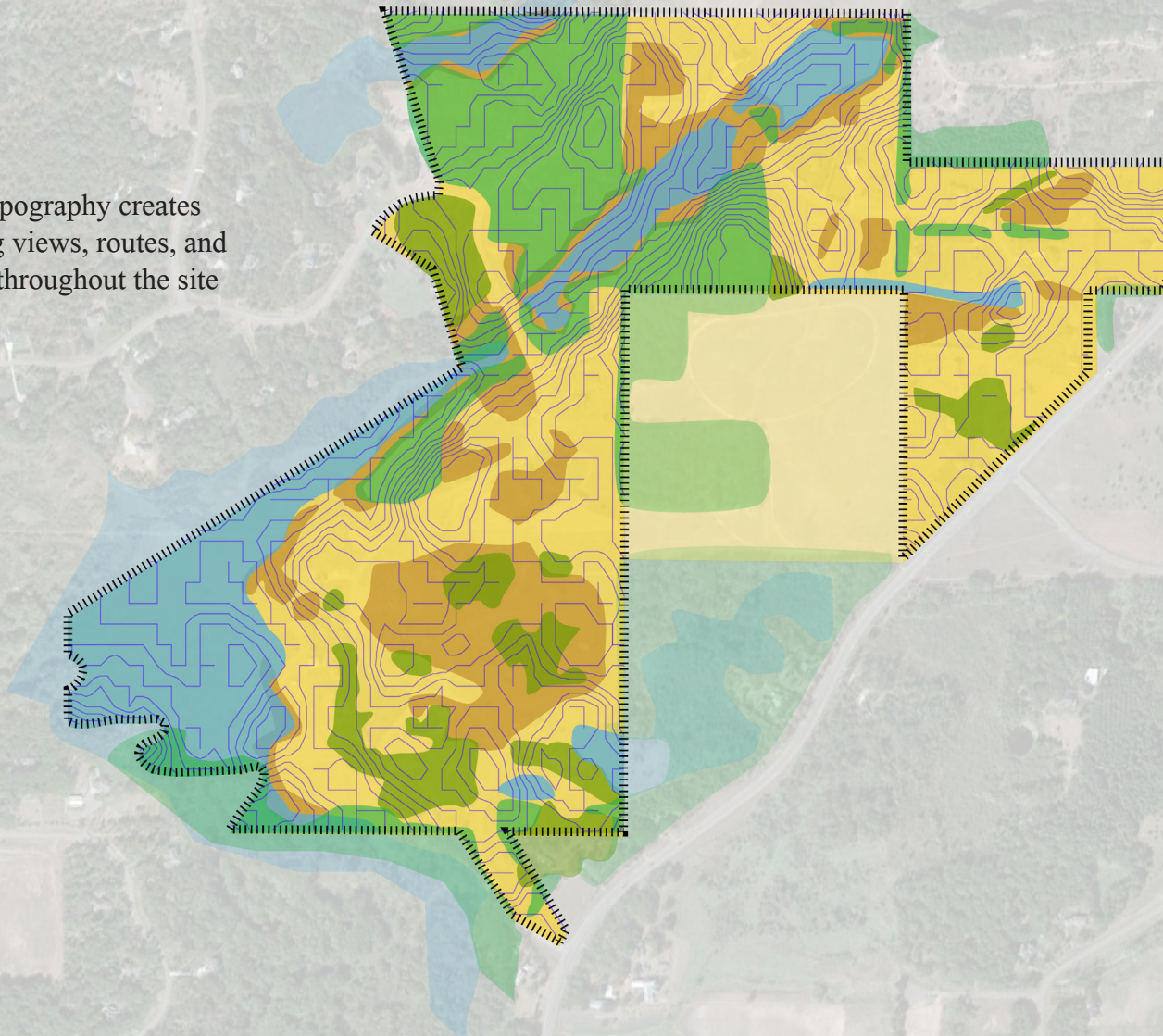
Meadowlands has more expansive yards, greater biodiversity and variation in topography, more wildlife, and much more undeveloped land than the usual suburban development, but experience of it is still limited to each individual private lot cell.

Topography and Land Cover

N

| 0 | 500 | 1000 |

LANDSCAPE DICED;
EXPERIENCED DIMINISHED

Forested

Canopied

Meadowed

Intermittent Cover

Wetland
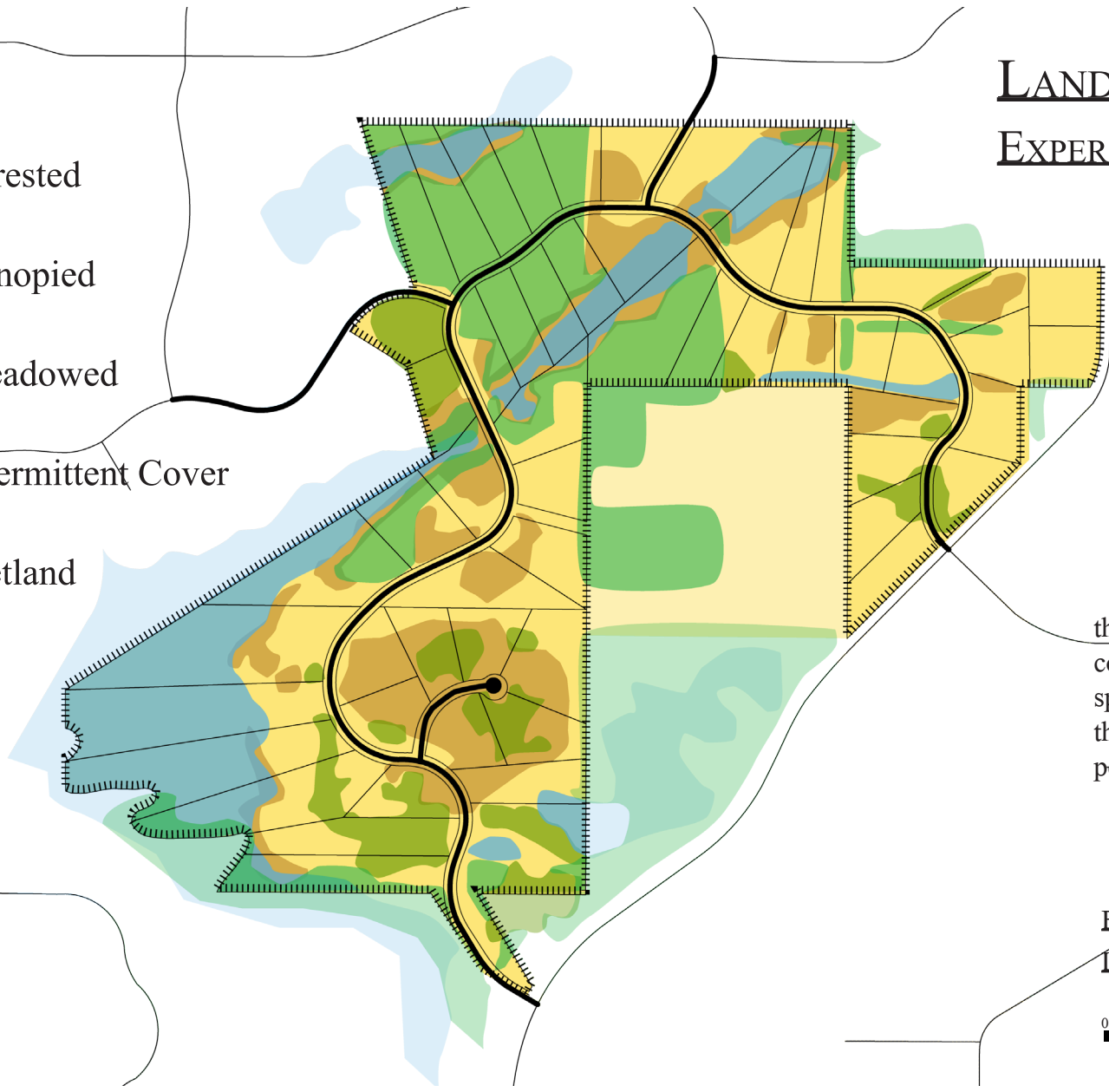
The only way to feel the landscape as the diverse but continuous fabric it is is as a spectator from the road running through the site. A road with no pedestrian amenities whatsoever.
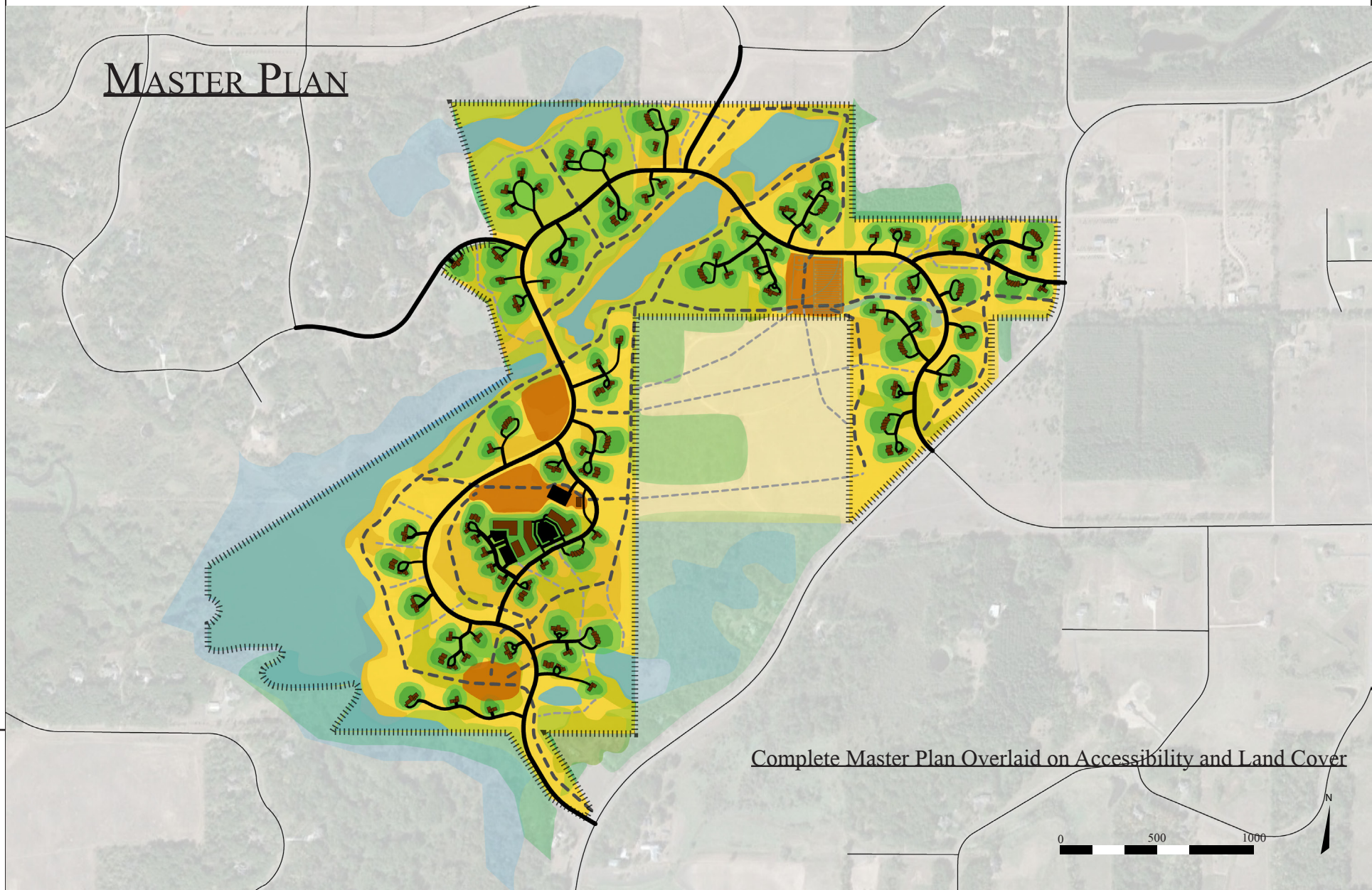
Existing Circulation, Lots, and Land cover

0   500   1000

N

Conceptual/Project Proposal

This brief chapter illustrates the concepts and program elements shaping the final design: Density Diversity, and Distinction. My thesis isn't so much about this particular region or site as it is about conventions. The concepts and issues I address with my design are abstract and numerous and are meant to apply in general to residential development at many scales and regions. I concentrated on solving several overlapping symptoms of sprawl such as waste of land resources, inefficient circulation, uninteresting landscapes, loss of community, and general isolation of people from their neighbors and surroundings rather than to make the perfect arrangement specific for this site.

MASTER PLAN

Complete Master Plan Overlaid on Accessibility and Land Cover

0   500   1000

This graphic shows the disproportionate amount of exclusive private space present under the long-established standard for the American dream. How can we as designers give the people wanting life in a rural setting the landscape they desire? The answer to this lack of access isn't to decrease the number of lots in order to make room for parks; there actually is too little density already. Nor will increasing lot sizes to provide greater coverage and variety and depth of experience for each person do anything but amplify the problem. No, in order to give everyone more land, we must first start by grasping less of it.

EXISTING

Trespassing

Available

Existing Open Space Availability

0   500   1000

N
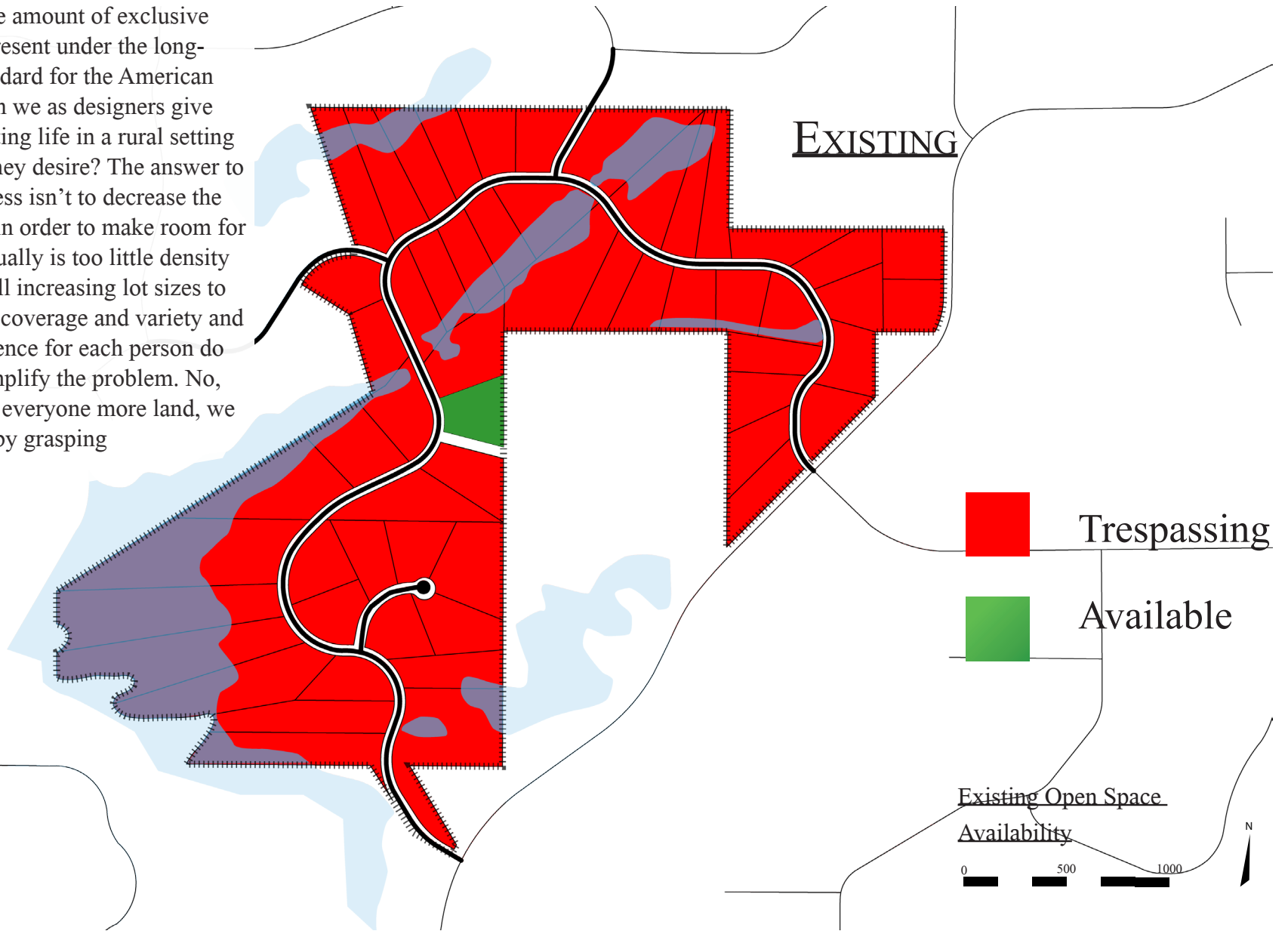
This is the same system contrasted against the new design guidelines I'm proposing. The key difference is that there are 4 types of space rather than 2 with the emphasis on semi public space where the usual emphasis is on exclusively private space with the exception of parks and road right of ways. By sacrificing exclusive, large yards this approach in effect grants everyone a back 100 acres
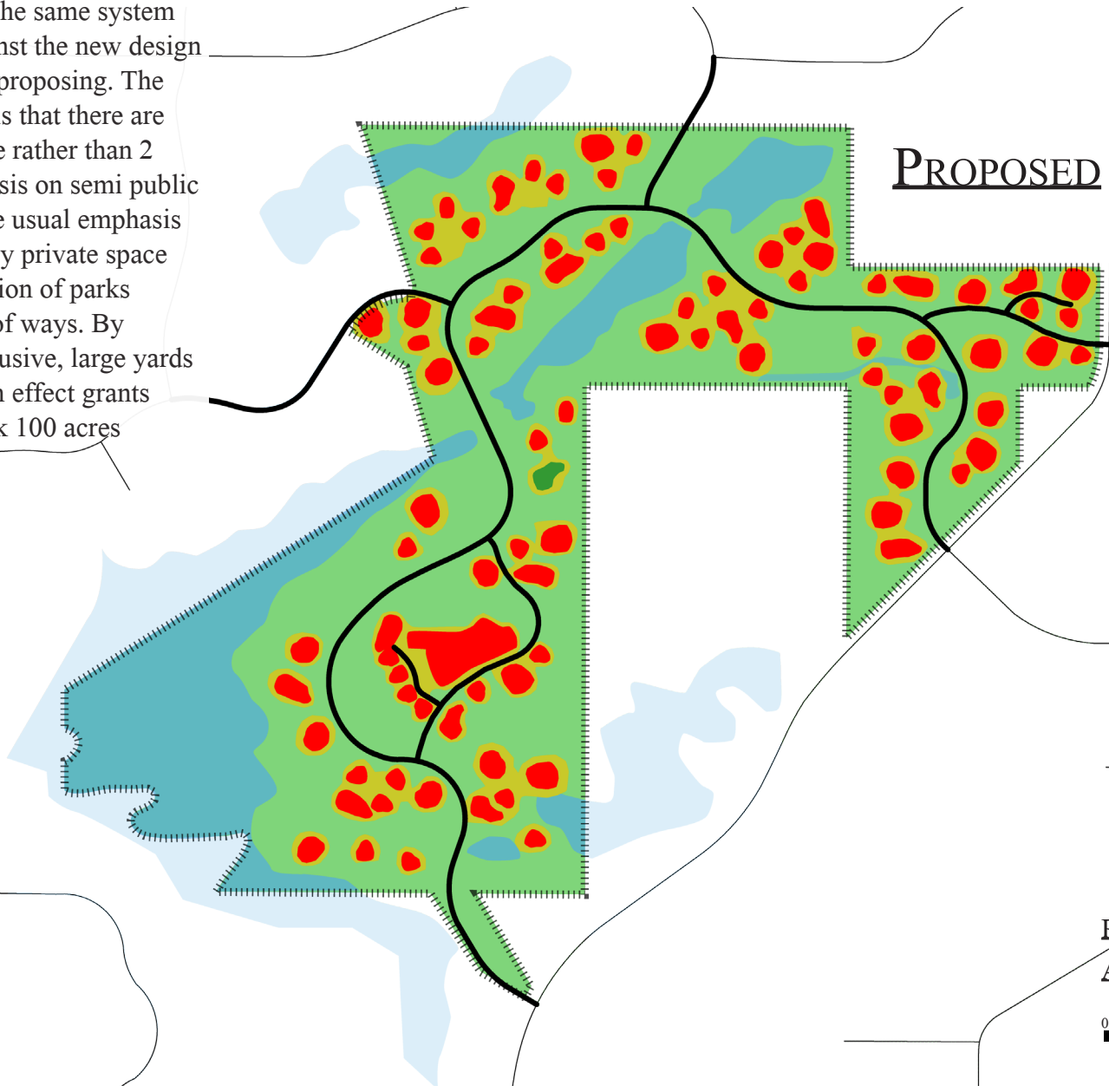
PROPOSED

Proposed Open Space Availability

N

0   500   1000

MOTHER: Vicky aged eight in 1979 was allowed to walk to the swimming pool alone half a mile away.

SON: Ed, now eight is only allowed to walk on his own to the end of his street (300 yards).

GRANDFATHER: Jack aged eight in 1950. Able to walk about one mile on his own to the woods.

GREAT-GRANDFATHER: George aged eight in 1919. Allowed to walk six miles to go fishing

Chapeltown
Grenoside
ROTHERHAM
Concord Park
M1
Moorgate
SHEFFIELD
M1
A630
Treeton
Orgreave
Beighton
Rother Valley

FREEDOM TO ROAM

■ Countries with 'freedom to roam' policies

No matter how large lots get, they are still only (usually arbitrary) cells of landscape. They render nature merely so many private microcosmic properties and lock land away from the world.

Encapsulating as much of the world as possible and doling these pills out to residents is a poor substitute of living with nature and in community with others Encapsulating as much of the world as possible and doling these pills out to residents is a poor substitute of living with nature and in community with others

FTR As Circulation Plan

Legend:
- Private Space (dark green)
- Semi-Private Space (light green)
- Semi-Public Space (yellow)
- Public Space (orange/brown)
- Wetland (light blue)

Minor Route

Major Route

This radically different way of looking at land ownership is actually not that radical. In other countries, especially those highlit in green here, a different mindset exists.

Here, pedestrians are legally allowed to traverse private property and in some countries such as Finland, are even allowed to set up temporary, primitive camps. England officially has 865,000 hectares of open access land through the CRoW act and walking in the country is something of a national pastime to this day.

Freedom to Roam Plan

0   500   1000

N

This old way of thinking about the landscape is generally referred to as the Freedom to Roam and strongly differs from contemporary development which tends to restrict pedestrian range and movement as shown in the upper left graphic. Where our paradigm blockades, removes, displaces, and thus restricts experience of the world to its programmed elements, the freedom to roam expands human creativity and experience to the fuller world beyond human programs and helps them to better know their place in it.

Forested

Canopied

Meadowed

Intermittent Cover

Wetland
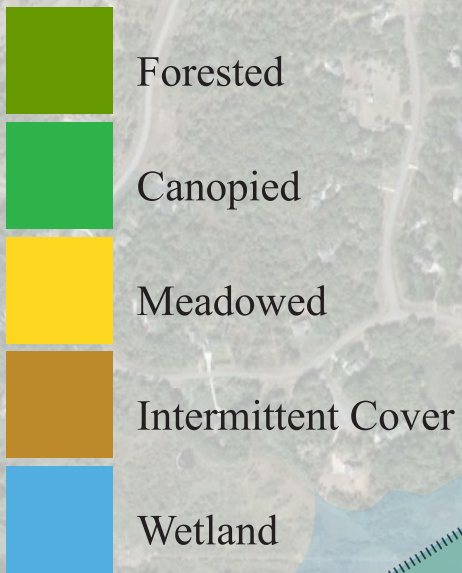
DIVERSITY...

Though the Freedom to Roam opens the landscape to the public, it simultaneously preserves its diverse fabric.

These maps overlay the new land availability on top of the existing land cover. The areas outside of these private spaces is the semi public domain anchored around landforms and these specifically public areas.

The roads and hierarchical trail system help to structure and encourage the full use of this diverse, expanded, universally available area.

Land Availability Overlaid on Land Cover

N

0   500   1000

Private Space

Semi-Private Space

Semi-Public Space

Public Space

Wetland
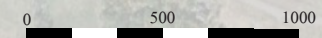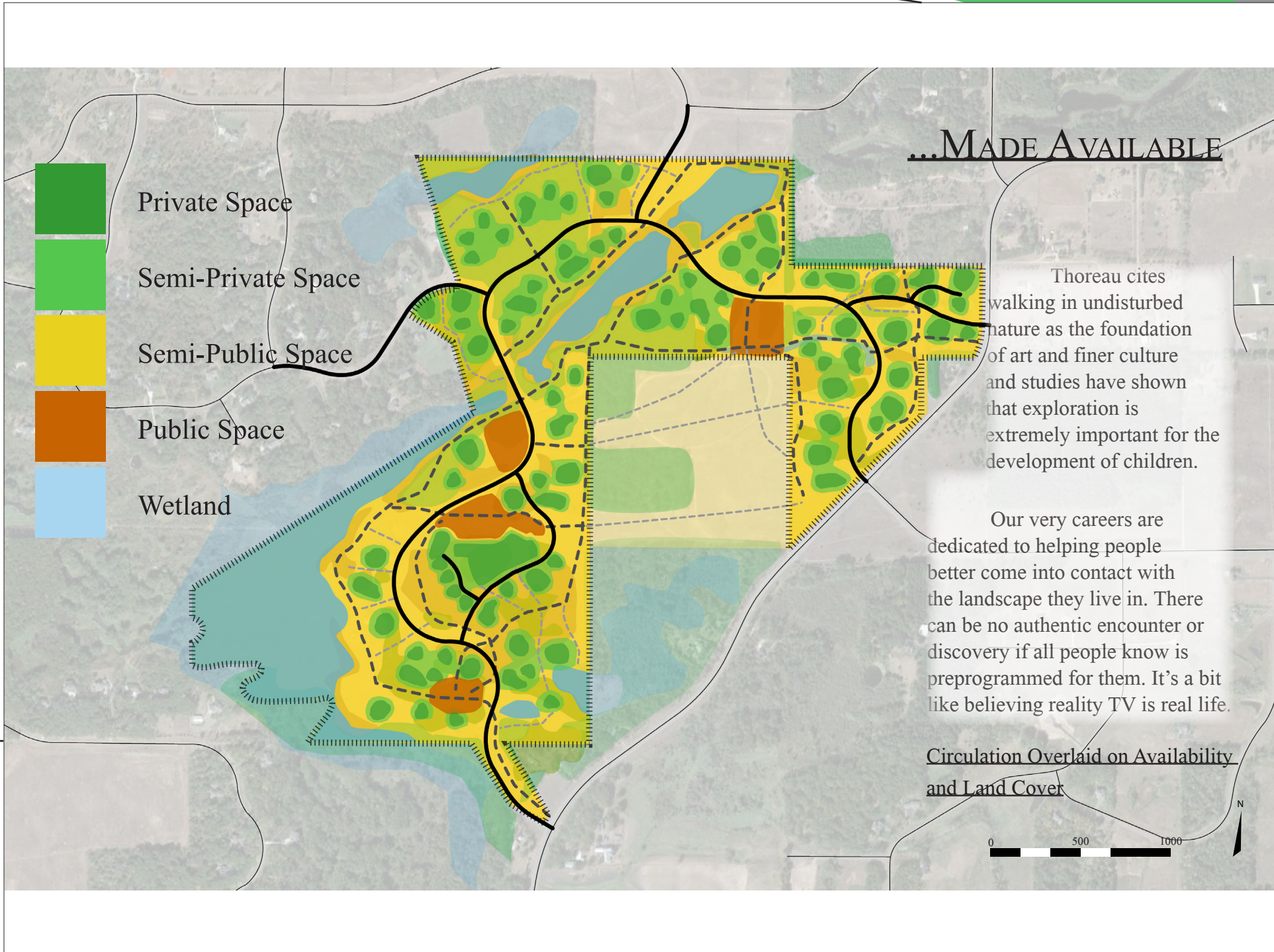
Thoreau cites walking in undisturbed nature as the foundation of art and finer culture and studies have shown that exploration is extremely important for the development of children.

Our very careers are dedicated to helping people better come into contact with the landscape they live in. There can be no authentic encounter or discovery if all people know is preprogrammed for them. It's a bit like believing reality TV is real life.

Circulation Overlaid on Availability and Land Cover

N

0   500   1000
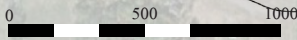
Conceptual/Project Proposal

Density Diversity, and Distinction. Utilizing the same area, land cover, and circulation base structure, I have completely remade the site according to these three.

Developing with density made change possible. This is accomplished by reducing lot and yard sizes, combining all structures into multifamily units, and clustering these so as to create a network of semi public space. But density alone is not enough.

Diversity is also of vital importance and worthy of preservation because in a way it is the main value and attribute of the natural environment. Nature is made of and requires many interworking systems to function and the escape from the constrictive monotony of single use development is one of the main motivations to seek rural settings for living in. If all of the available land is turned to yards, albeit larger than usual ones, the problem has been spread instead of solved.

Distinction is the fusion of density and diversity. By distinction I mean the clear presence of both built and exclusive space and wild and explorable space; the existence of authentic nature alongside, or rather upholding and complementing, the forts of development and civilization.

MASTER PLAN

Complete Master Plan Overlaid on Accessibility and Land Cover

0   500   1000

N

SEMI-PUBLIC   SEMI-PRIVATE   PRIVATE

     The distinction I intend will be along a gradient, but unlike the gray of sprawl which blends this gradient so neither end is left, there is a clear difference between private and common space. Various landscape elements will suggest this separation without blatantly marking it and gently introduce residents and visitors to the idea of the freedom to roam and universally available semi public space. Besides the open end of every backyard, anchors such as Gateway Park will especially serve as thresholds and destinations to come and leave from within the site as opposed to restricting movement to one's own yard and wherever a car can take you outside of the development.

GATEWAY PARK

Near the main entrance to the development. Gateway Park serves as a key threshold to both the concept and guiding trails.

Wood-Chipped Minor Trail

Native Planting

River View Major Trail

As important as the trails are for establishing structure, the goal of the Freedom to Roam setup is for residents to explore and make their own paths.

Playground

Formal Park

0   50   100   150   200   300
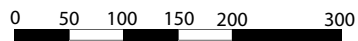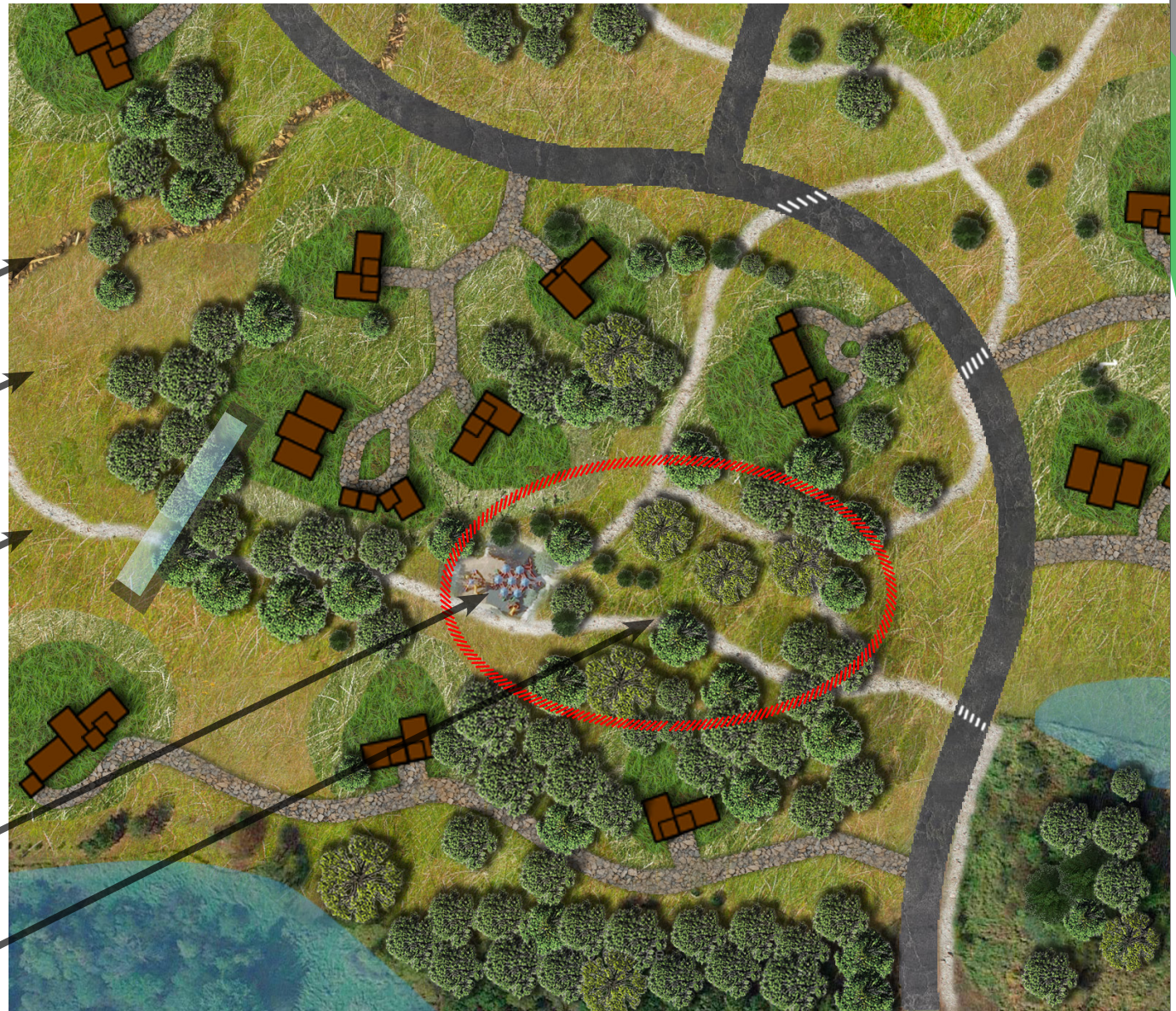
Formal Gateway Park and Canopied Residential
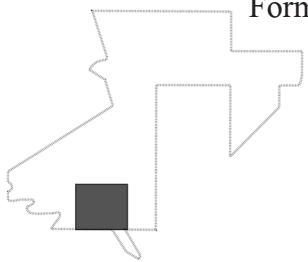
Four programmed Public spaces are planned into the site. The first near the main entrance serves as a traditional canopied park and a formal gateway to the Freedom to Roam Trail system.

These public space anchors are not isolated or generic cutouts of each other and do not have definite boundaries, but flow into the overall open space network. High Line Park is the largest of these and serves the site as the largest public, unprogrammed open space. This offsets the most densely populated area of the site directly adjacent.

It is normally unusual to place apartments in a rural setting but it is done here because diversity in landscape is not enough to make a development a neighborhood; neighborhoods are made of people, all kinds of people, and different people require different housing options and amenities. Developments currently are typically made for one demographic category, requiring those people to eventually move and the relationship roots that make a development a neighborhood are broken.

Adjacent to both of these, central in the overall site, is the shuttle transit stop. Currently in this area it is common for there to be countless 3 mile drives into town and back several times a day. This puts much more stress on the critical arterial street, co. rd. 43, and wastes many resources. Transit is also currently laughable as a solution to this problem in rural areas, but this is because regional density is so outlandish for any transit model.

Clustering housing and increasing density opens up park space and provides it a ready population to enjoy them. Arranging these open places in a networked system expands that population to include the entire development.

HIGH LINE PARK
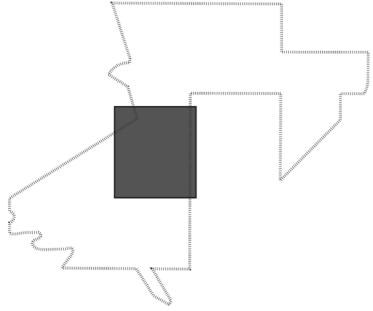
Formal
Event
Space

Transit
Center

Informal
Public Space:
High Line
Park

Apartment and
Group Living
Complex

Authentic Open Space Network: not living in a park

- native plants
- destination public places serve as anchors, landmarks
- diversity preserved for full and common experience
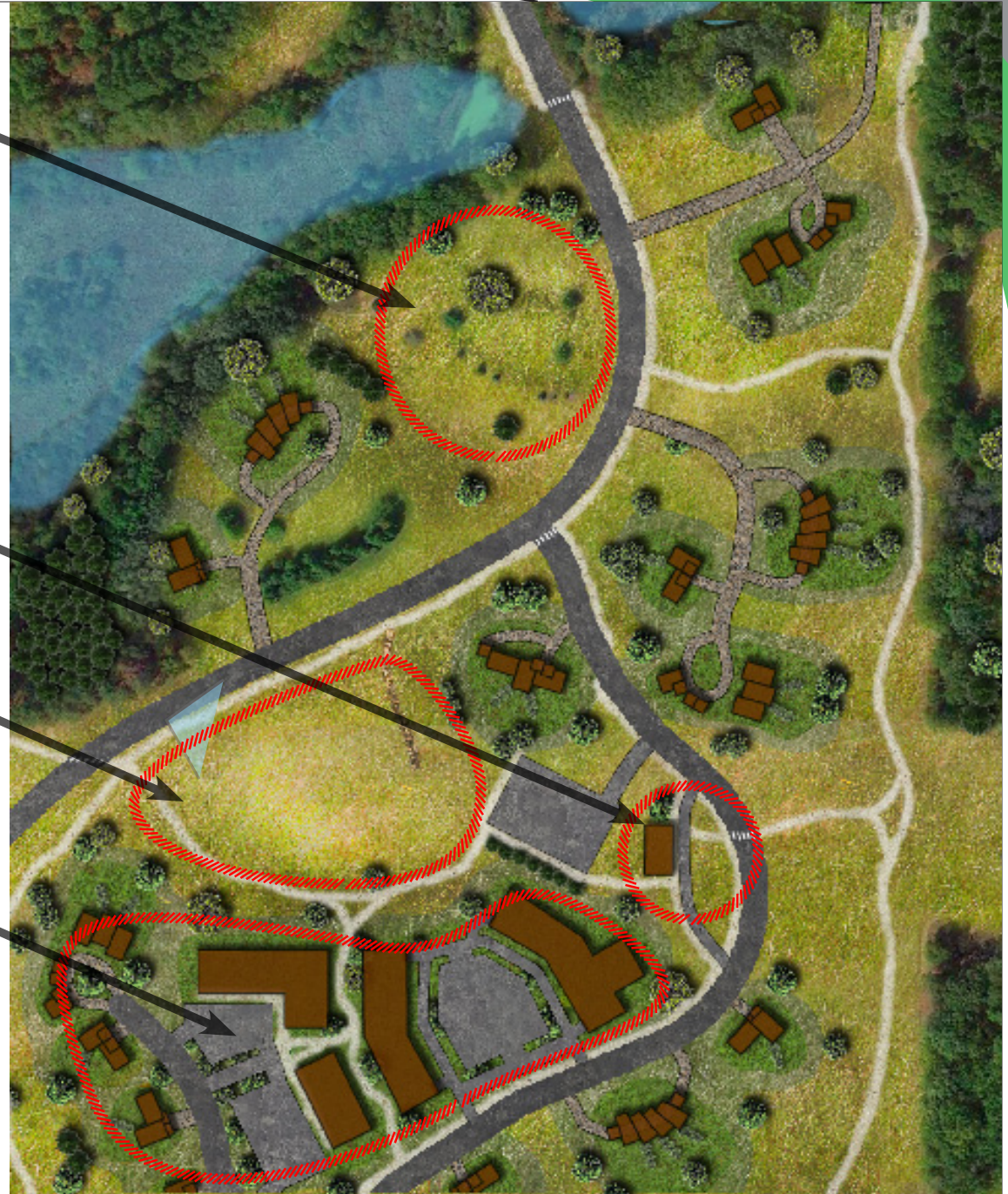
0   50   100   150   200   300

Apartment Complex, Transit Center, and Public Space

FORESTED AREAS

The wide range of landscape and land cover influences housing arrangement and circulation patterns as well as pedestrian experience.

Forested regions offer:

• greater density
• complementary land cover to open spaces
• alternative landscape experience

With the Freedom to Roam, wetlands become amenities rather than obstacles

Interesting interface between woods and wetland: major trail

Forested Land Cover and Housing

0 50 100 150 200   300

PRIVATE   SEMI-PRIVATE   SEMI-PUBLIC
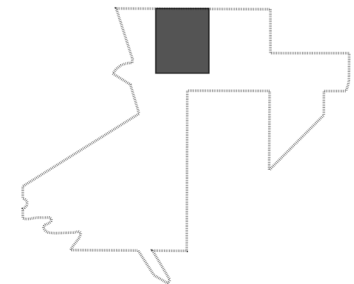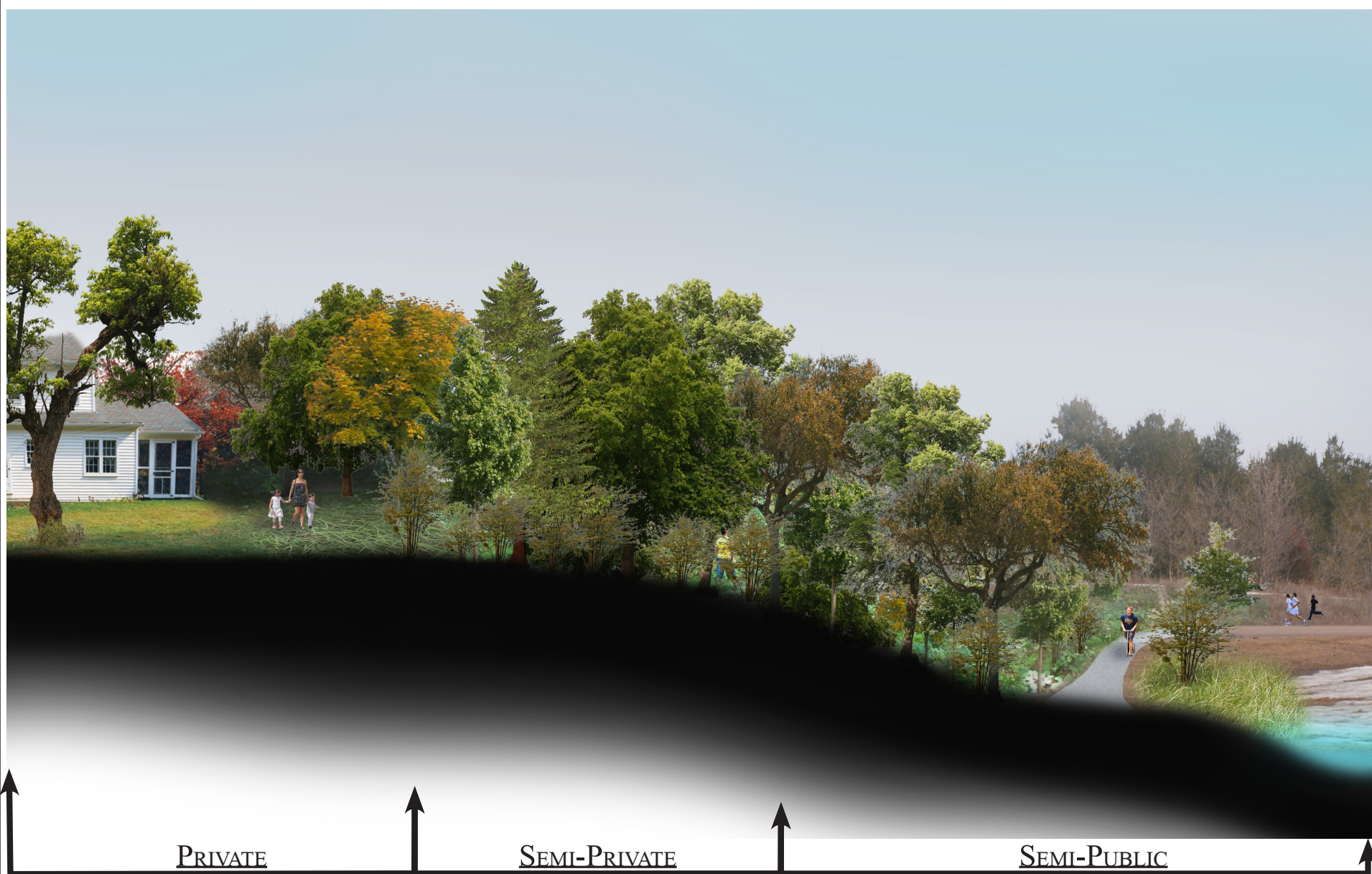
   This forested region contrasts well with the meadows offering another level of diversity, but it too also centers around the natural amenities present, namely the wetlands. These form a natural corridor across the site and provide the widest biodiversity and some of the most interesting experiences for traveling overland.

MEADOWED AREAS

Various groupings of housing into multifamily structures and distinction between Private areas reduces the cluttered look of development in open space while increasing density.

Meadowed regions offer:

- easier access
- complementary land cover to forested spaces
- infinite approaches

Athletic Fields
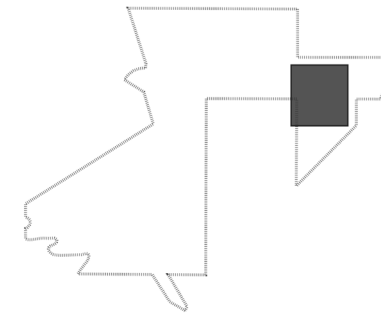
Roughly the same number of structures are present in the field as exist today, but every unit is a multifamily configuration. They are designed to function aesthetically as one structure. This along with shrinking lot size enables far higher density and greater preservation of land due to the elimination of unused buffer space which typically consumes large percentages of yards.

0   50   100   150   200   300

Meadowed Land Cover and Mixed Housing

Neighbors are visible, but separated by contextually different, mutually owned property, not only excessively large yards and fences or shrub boarders.

This last region is representative of the character of the majority of the site, meadowed with scattered tree and shrub cover, and best depicts the spirit of the concept of the Freedom to Roam. This more than any other type of land cover presents itself as a perfect blank canvas for residents to craft experiences in the landscape. With endless possibilities for approaches and viewpoints here and throughout the site, the landscape becomes living space, not a backdrop. This is an amenity deserved by everyone, not merely the fortunate few who can afford lots massive and far enough from other development to enjoy.

Previous Design Studio Experience

2nd Year:

Fall 2009: Introduction to Landscape Architecture Studio: Kathleen Pepple

Tea House and Garden; Fargo, ND | Fine Arts Club; Fargo, ND

Spring 2010: Parks and Open Spaces Studio: Matt Chambers and Dominic Fischer

Cold Smoke; Fargo, ND | Woodlawn Park; Moorhead, MN | One to Two Way Conversion; Fargo, ND

3rd Year:

Fall 2010: Environmental Art and Site Design Studio: Stevie Famulari

Defining Space; Fargo, ND | Snow Symposium; Fargo, ND | Land Art Installation (planning and construction); Fargo, ND

Spring 2011: Community Design Studio: Kathleen Pepple

Community Planning; Ft. Yates, ND | Naturalizing the Exhausted Urban; Chicago, IL

4th Year:

Fall 2011: Urban Design Studio: Jay Kost

Street, Block, and Building: Fargo, ND | Creating Neighborhood; Auraria, (Denver), CO

Spring 2012: Environmental Remediation and Plant Design Studio: Tyler Kirchner and Dominic Fischer

Remediation; Dillworth, MN | FM Park System: Fargo, ND and Moorhead, MN

5th Year:

Fall 2012: Environmental Planning Studio: Mehran Madani

Qualifying Urban Landscape; Fargo, ND

Spring 2013: Design Thesis Studio: Jay Kost

Retrofitting the Residential Paradigm; Big Lake, MN

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"Understood correctly, Love is all there is
and there is never too much of it."

APPENDIX

OLD MODEL

Backyard: private, personal, fenced in, exclusive, small. Relatively highly used

Side yards: difficult to maintain, usually unused. Loss of shared wall heating advantages
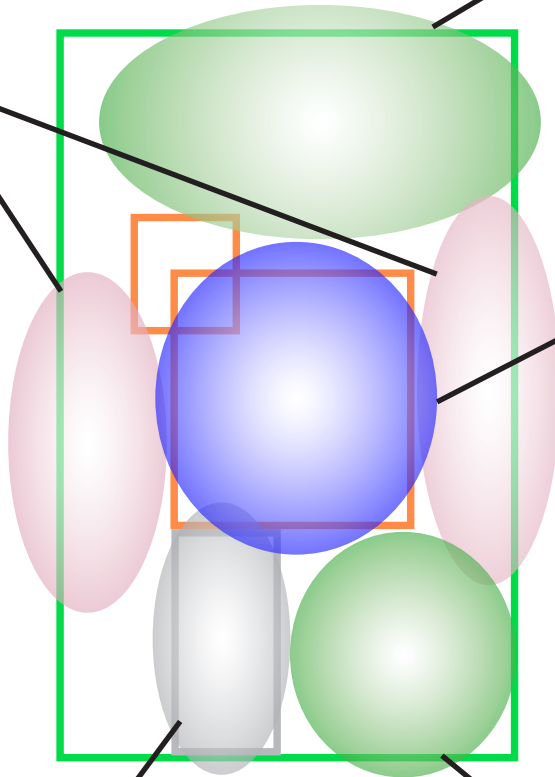
House: often to a standard design differing little from neighbors; almost always occupies the center of the lot.

Driveway: competes with front yard for space. Large size denotes the great devotion of culture to automobiles.

Front Yard: part of the face of the property; high maintenance, often large due to setbacks though usually little used. May or may not have sidewalk.

This basic unit is repeated ad nauseum to fill all available lots. Private, self contained estates are the goal, but none of them can be very big and usually, cannot be traveled to or around except by car. Routes with sidewalks are programmed and uninteresting, and any natural, real, undeveloped areas that happen to remain are sealed off by developed lots and connectivity is lost.
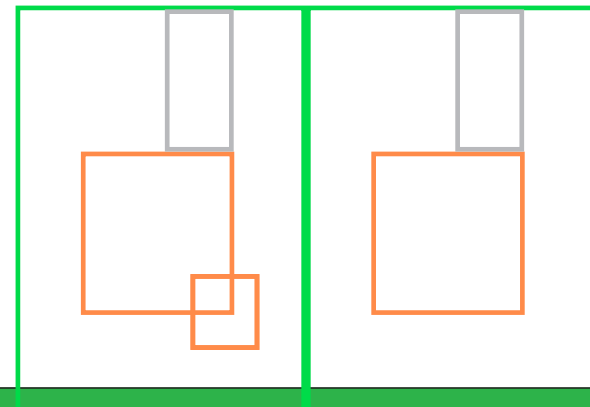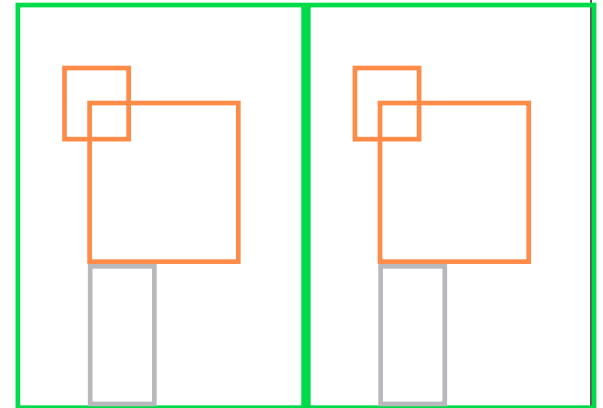
Visual separators; cues distinguishing private from semi-private
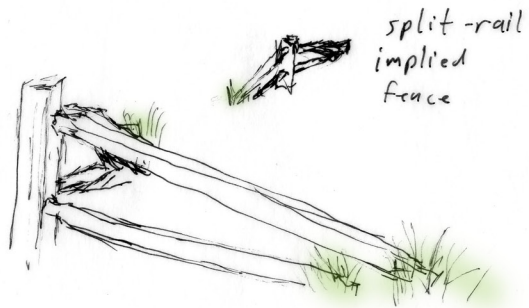
split-rail implied fence
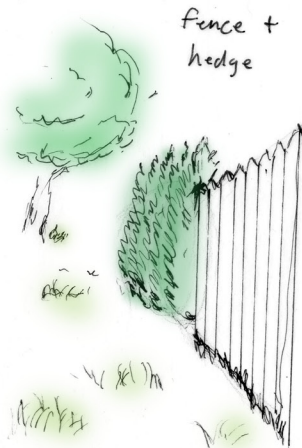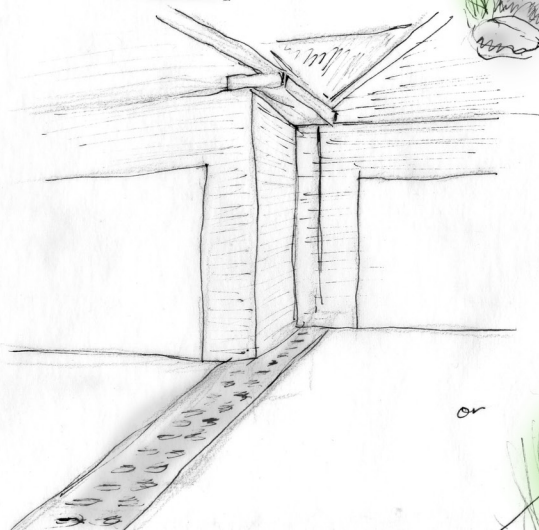
fence + hedge

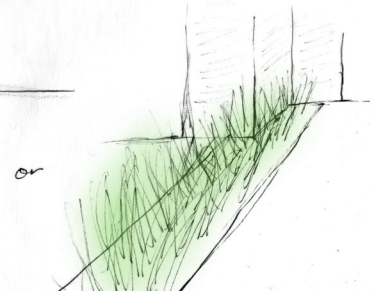tree lines, groupings

shrub groupings

tall grass

boulder markers
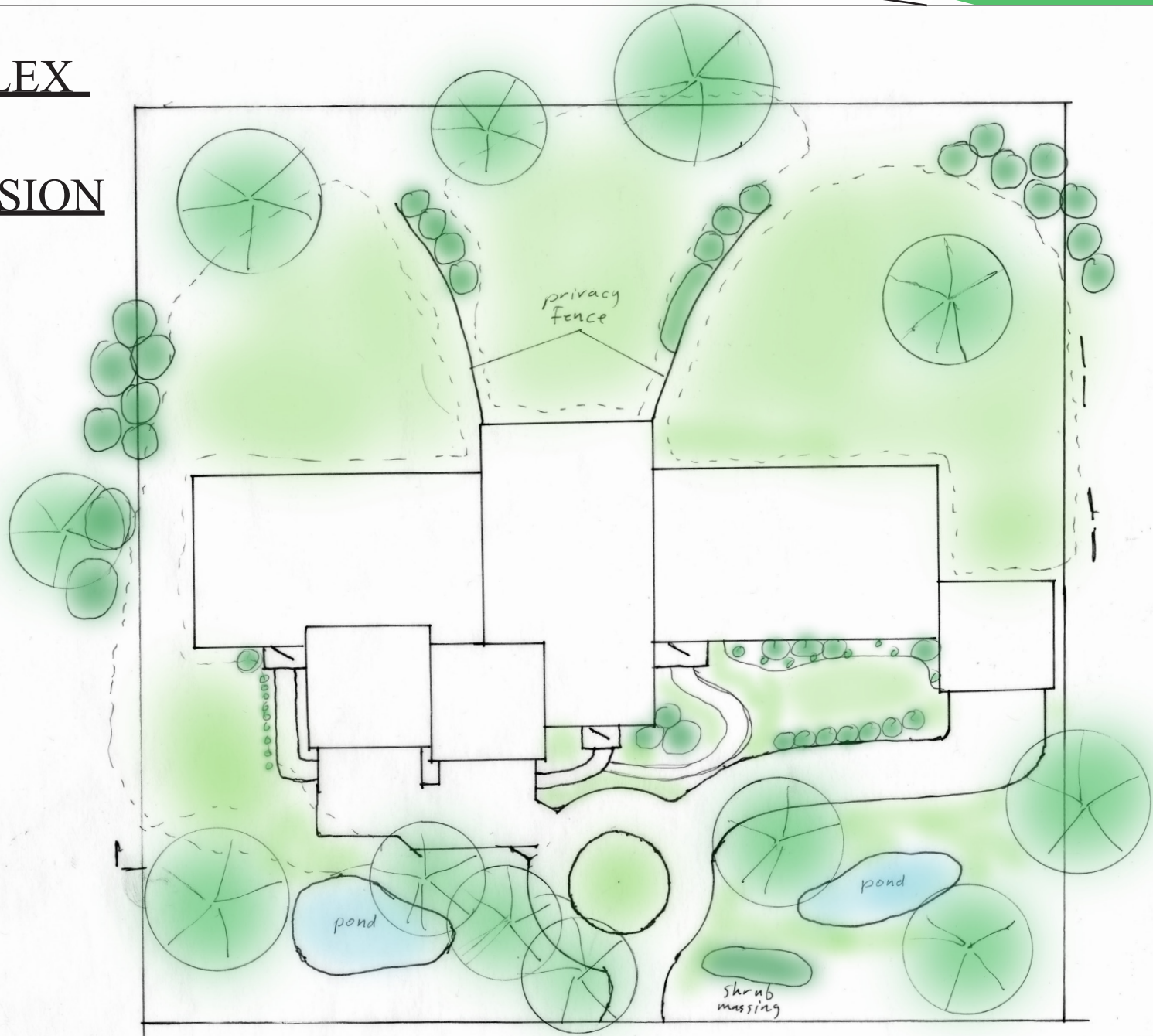
ground plane, material change

or

veg. screen

boulder market

privacy fence

shrub massing

implied fence

front door 2

front door 1

veg. screen

ornamental divider

1:20   0   25   50   100   200

TRIPLEX

MANSION

privacy
fence

pond

pond

shrub
massing

1:20   0   25   50   100   200

boulder marker

boulder marker

implied fence

detached garages

1:20　　0　　　25　　　50　　　　100　　　　　　　200

TRIPLEX 2

boulder n

implied fence

privacy fence

detached garages

shared courtyard

shrub massin

1:20   0   25   50   100   200

veg. screen

implied fence

privacy fence

finished basement

false garage exit

private

garage underground

false garage

pond
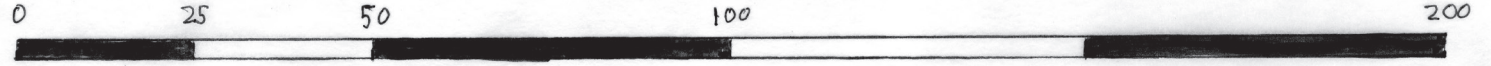
1:20   0   25   50   100   200

Apartment/
Group Housing

0   25   50   100   200   ft   1:50