Beyond the Cul-de-Sac:
A New Texture for the American Suburb

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Thank you to my advisors, Rick Mohler and Nicole Huber
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To Ben and Kappy, my parents, without whom none of this would have happened or even been possible.

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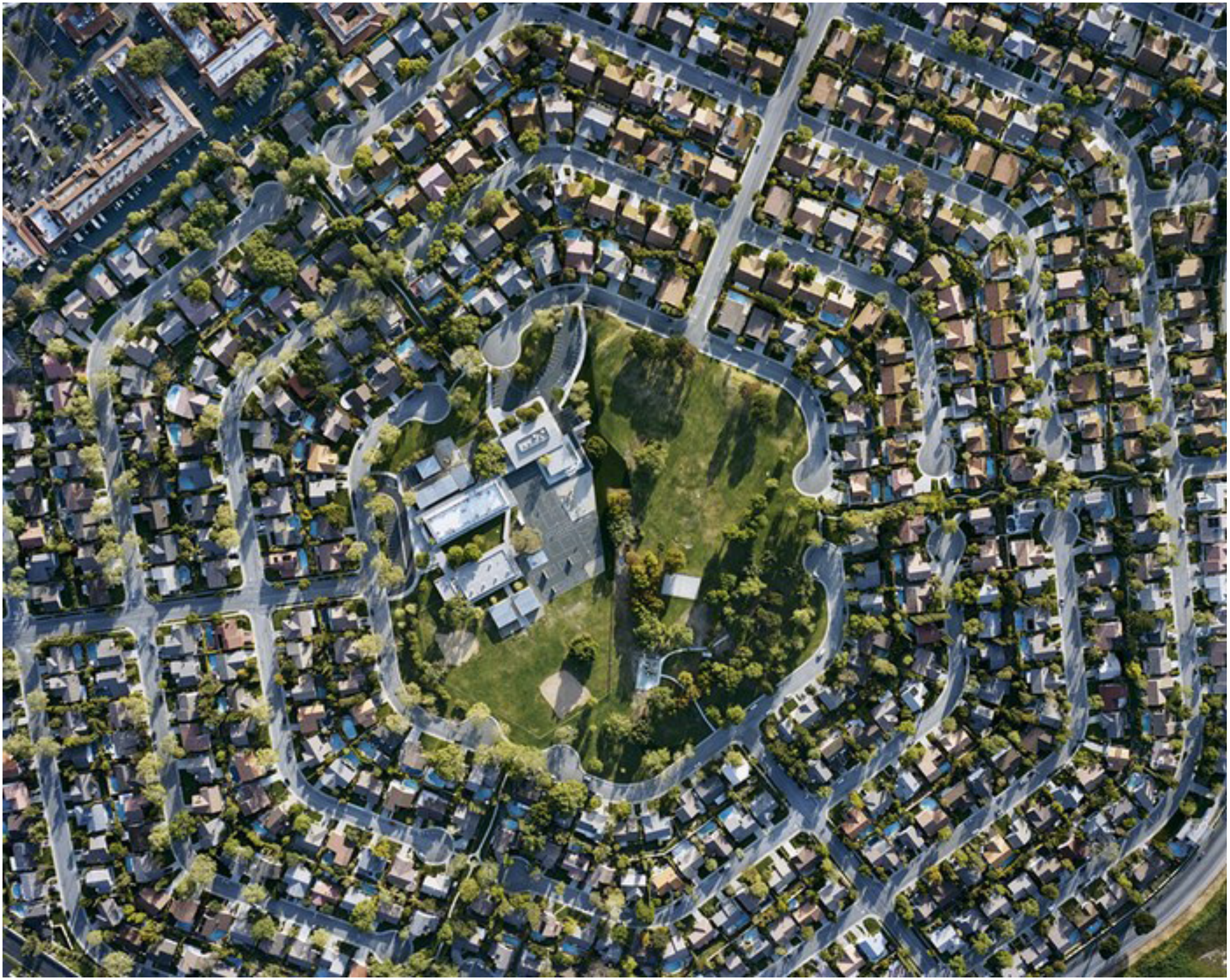
1. Failed Dreams and Future Challenges
A Nation Full of Placeless Homes

Left with a fistful of unrealized dreams, the American suburbs are in a state of peril. The gradual decay of suburbia has reached a critical point with the recent foreclosure crisis and in response the suburbs are labeled a failed experiment. Many have begun to look at what can be done with the vast expanse of highways, single-family homes and shopping malls that covers the American landscape. The suggestions range from subtractive in the form of demolition to additive in the form of build density. Although, many of these ideas provide partially useful solutions, none address the lack of place, a phenomenon apparent in suburbs all across the county and at the heart of the decay.

This thesis is an investigation of the current American suburban environment and is and examination of the relationship between what was designed and how it is actually useful today. The suggestion of a series of alterations to the suburban condition note the ways in which the American dream has failed. The city of Mill Creek, WA, a suburb North of Seattle, is used as a typological study. It is a planned community started in the 1950's and built around a golf course.

Mill Creek is similar to many of the housing developments built in the last sixty years which are centered around an office park, country club or golf course. The project is a retrofit, with the intention of preserving the elements of suburbia, people find desirable, like backyards, independent walls and ownership, while eliminating and transforming the features that no longer serve. Ultimately, the research is an effort to seek out a way to create more economically, environmentally and sociably viable places to call home from the remains of more than fifty years of a failed experiment.

"Americans sense that something is wrong with the places where we live and work and go about our daily business. We hear this unhappiness expressed in phrases like "no sense of place" and "the loss of community." We drive up and down the gruesome, tragic suburban boulevards of commerce, and we're overwhelmed at the fantastic, awesome, stupefying ugliness of absolutely everything in sight--the fry pits, the big-box stores, the office units, the lube joints, the carpet warehouses, the parking lagoons, the jive plastic townhouse clusters, the uproar of signs, the highway itself clogged with cars - as though the whole thing had been designed by some diabolical force bent on making human beings miserable. And naturally, this experience can make us feel glum about the nature and future of our civilization. When we drive around and look at this cartoon architecture and other junk that we've smeared all over the landscape, we register it as ugliness. This is the surface expression of deeper problems--problems that relate to the issue of our national character. The highway strip is not just a sequence of eyesores. The pattern it represents is also economically catastrophic, an environmental calamity, socially devastating, and spiritually degrading."[1]



A

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2. Current Affairs

Confronting a National Crisis and What is next for the American Suburb

B

Figure A: Suburban Sprawl Centered around a Country Club
Figure B: Suburban Sprawl

Read The New York Times, the Atlantic Monthly or any number of publications in the past year and you see the following headlines, “Designing a Fix for Housing,” “The Next Slum,” or “The American Dream: Phase II.” Numerous designers, politicians and critics recognize there is a problem with a vast portion of the built environment in America and the question of what to do with the struggling housing market is at the top of the list of concerns. It is certainly, a time of transition as some hold onto old methods for answers and others are ready for grand alterations. Of course there is difference of opinion on the course of action to be taken, but whether or not politicians, developers and architects jump on board, the American lifestyle is changing and in the not so distant future it will be drastically different.

While money is a powerful resource, it alone is not going to be the solution. In February of 2012, state and federal agencies constructed a $26 billion mortgage settlement with the major banks as a response to the mortgage crisis. It was hoped that for millions this would provide relief for homeowners and stabilize the housing market, but there in fact helps only a small portion. There are many, who were not helped

much, "750,000 people who lost their homes to foreclosure from September 2008 to the end of 2011 [who] will receive checks for about $2,000."[1] This doesn't help put people back into homes or figure out what to do with all the empty ones. Details of the plan were critiqued, such as the fact no coverage was provided for the millions of mortgages owned by Fannie Mae or Freddie Mac. In his acknowledgement of this as the biggest federal-state settlement in American history, President Obama noted, "No compensation, no amount of money, no measure of justice is enough to make it for a family who's had their piece of the American dream wrongly taken from them,' he said. 'And no action, no matter how meaningful, is going to by itself entirely heal the housing market. But this settlement is a start."[2] As Obama notes, the economic factors are only one aspect of the challenges ahead, but his speech still suggests an attachment to the American dream and the system that supports it. Obama refers to the dream as a collective one that all Americans have a piece of, perhaps even a right to. It is not simply a call for refinancing, but a call to rally behind a vision, the challenge is that Americans don't need to just rally, they need a new vision.

The unfortunate reality is that the crisis has spread far beyond singular challenges and is unlikely solved by so tidy a solution. The current condition is the result of decades of government support and bank funding for the construction of generic wood, vinyl and asphalt shells across the country. At this stage we are past "the point of a fresh coat of point and a new sales pitch. If we're going to continue to hold on to the single-family home, we need to transform it. . . In this era of anti-government fervor, subsidizing the American Dream isn't an option; transforming it is the only one we've got."[3] Physically alterations in the built environment are needed to create value as opposed to new labels, marketing schemes and advertisements. It is going to take physical work and tangible change. Refinancing may be a temporary bandage, but it is not a solution. Across the country, "we have an opportunity to rethink suburban housing: to make it responsive not to dated demographics and wishful economics but rather to the actual needs of a diversifying and dynamic population — not only to the so-called traditional households but also to the growing ranks of those who prefer to rent rather than buy, who either can't afford or don't want a

Figure C: Suburban Houses and Cul-de-Sacs

2,000-square-foot-plus detached house, who are retired and living on fixed incomes and maybe driving less, who want granny or nanny flats, who want to pay less for utilities and reduce their carbon footprint, and so on."[4] Better design is what the American suburb needs. The American Demographic has changed since the 1950's and particularly in recent years, so we shouldn't be building the same way today as we did then.


Figure D: Suburban Housing Development

Shifts in market value, an increasing interest in neighborhoods and changes in who constitutes a household have changed the demands for housing. The high maintenance, isolated McMansions are a bygone era, as are the swaths of master planned communities with thousands of homes miles from a market. As people are drawn to homes from which they can walk to a restaurant or bike to work, "we're all less interested in continuing to discuss "urban" and "suburban" as dueling polar opposites – and more interested in recognizing there's mutual benefit to some overlap."[5] The choices are out there and the ultimate goal is to create a better quality of life, no matter what it is named. It is going to take "rethinking the basic residential categories that define [a single family house], but can no longer accommodate the realities of domestic life. Designers and policy makers need to see the single-family house as a design dilemma whose elements – architecture, finance and resident's desires are inextricably linked."[6] The challenge of housing the American population is complex, difficult and many tiered. It will take analysis, design and innovation to solve and most importantly a new understanding of what the American dream and quality of life really mean.


Figure E: Suburban Patterns

While the American Dream made sense for many years, it may no longer. The population of 2012 America is not the same as the population of the 1950 America. The oddity is that many are still holding onto the dream. L Brooks, Oakland Michigan's County Executive, staunchly holds on to his love of sprawl, "I need it. I promote it. Oakland County can't get enough of it. Are you getting the picture? Sprawl is not evil. In fact, it is good …. [It] is new jobs, new hope and the fulfillment of lifelong dreams."[7] Now sprawl is promoted as what will fulfill the American dream and as Brook's speech indicates, "we as a culture are far

too invested in a vision of the American dream that doesn't make sense in the 21st Century. Over the past 30 years we've stripped away the supporting mechanisms of sprawl but have continued to create it."[8] Today, the vast differences in vision and reality are finally coming to a head. The ruthless and endless cycle of building more houses and father away has only increased traffic and proven that at its heart, "the American Dream can exist only within the framework of the single-family home on a large lot."[9] But slowly this dream is starting to change and it may soon be that instead of one, Americans have a plethora of dreams.

Figure F: Housing Development


Figure A: Traditional Town Development

"In building suburbia we embarked on the greatest missalocation of resources in the history of the world."
-James Howard Kunstler

3. Developing the Suburb
A Divergence from tried and true methods

The development of Suburbia has largely been a private, commercial activity and has digressed from hundreds of years of practice in habituating the earth and constructing a built environment. It has dramatically shaped the American landscape, particularly in scope and today is an artifact of 150 years of American culture. One dominant feature of the progression of suburban history and growth is that Americans, "stopped making towns and began making "pre-improved" subdivisions, in which all the houses were built before the residents arrived."[1] By inserting prescription and formula for experience and practice this method has created a separation between Americans, the landscape they occupy and the practices of daily life. Instead of making towns, which have centers, often a sense of community and place, public spaces and private spaces; home associations and developers divide land into isolated parcels, build nearly identical houses, install an entry sign and call it "Evergreen Heights," even if it is located in the middle of the Arizona desert, to construct a subdivision.


Figure B: Suburban Growth

This method of construction has been in practice for many years, all across the United States and

it continues. Again and again, "we construct the equivalent of many cities, but the pieces don't add up to anything memorable or of lasting value. The result doesn't look like a place, it doesn't act like a place and, perhaps most significant, it doesn't feel like a place. Rather, it feels like what it is: an uncoordinated agglomeration of standardized single-use zones with little pedestrian life and even less civic identification, connected only by an overtaxed network of roadways."[2] The focus has been to build the elements and make sure all the aspects of daily life are there and the assumption is that the road would connect the various activities. The automobile has played a central role in design. People rely on cars to go to work, to the supermarket, to get a cup of coffee. Parking lots surround stores and garages are closer to streets than front doors.

I. The Dream of an Ideal Suburb and A Brief History of How it Came to Be

Americans still hold onto the dream of an ideal suburb, as a place that provides security, community, green lawns and tree-lined streets. This notion of lifestyle goes back more than 100 years and is based on, Riverside, the planned residential community designed by Fredrick Law Olmsted and Calvert Vaux. Olmsted wanted to "suggest and imply leisure, contemplativeness and happy tranquility."[3] The project was unlike previous conventional towns and cities in America, instead it had "individual houses on spacious half-acre lots, winding country roads instead of gridded streets, thousands of newly planted trees, and many public green spaces. The development gave the impression of a vast park rather than an urban neighborhood."[4] Like many ideas in America, this one spread and was added to. Soon industry, the car and economics changed how the initial vision was realized.

The Garden City Movement and Sir Ebenezer Howard, of Britain and inventor of the Garden City, add the mixing of country and urban to the plot, by building an alternative to the dirty industrial city, Letchworth. None of the Garden Cities were ever economically independent, relying on neighboring cities for jobs. It was Frederick Law Olmsted Jr., the son of the man, who inspired Howard, who developed

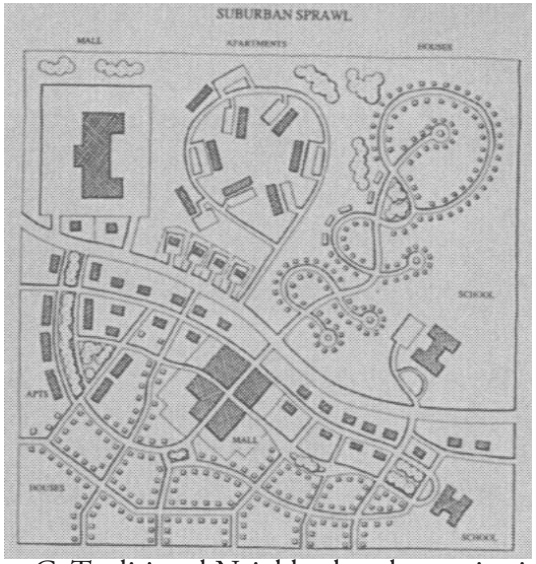


Figure C: Traditional Neighborhood organization compared to Sprawl

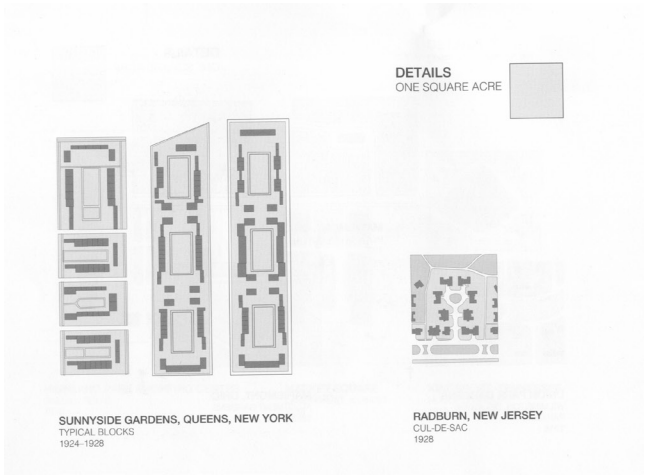


Figure D:1920's Subruban Plans

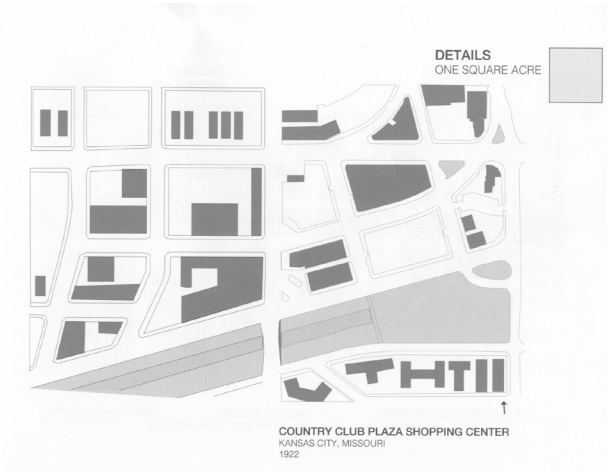


Figure E: 1920's Shopping Mall Plan

the first Garden City in America. In the early 1900's Olmsted designed Forest Hills Gardens, a 142-acre site in Queens and linked to Manhattan by rail. Olmsted was influenced by the European projects and his father's work, but "what he produced was entirely original. Opposite the railroad station, he laid out a town square to serve as a commercial center. Behind the square he placed a village-green, and leading away from it two so-called greenways, in a large existing park. The plan was thus a subtly orchestrated transition from urban to pastoral. Although the residential streets connected to the surrounding New York grid, they were anything but grid-like; Olmsted created a variety of crescents, internal circles, lanes and closes, laid out with all the design artistry that a talented and experienced planner could bring to bear."[5] The project illustrated a potential model for suburban developments and the ideas of green squares and using village plans embodied by the Garden City showed up in town planning all across America. It was incorporated in the first planned communities for the automobile in Mountain Lake Club in Florida and Palos Verdes Estates, South of Los Angeles.

It is from one of the most well know architects that the division of activities in planning and the instigation of zoning comes from. In the 1930's, Le Corbusier comes on a lecture tour to America and brings his vision of the Radiant City with him. Major cities in the states had already adopted zoning legislation, "but Le Corbusier gave zoning an aesthetic rationale. Henceforth, not only would residential and commercial uses be placed apart, but a variety of other functions would be isolated in self-sufficient "centers" – shopping centers, convention centers, cultural centers, government centers, sports centers and so on. The modern city would no longer be a hodgepodge of activities; it would be ordered, logical, *planned*."[6] The modern order of the Radiant City seemed novel and appealing to the 1950's American designers and apartments and public housing projects all over the nation adopted the vision. Nathaniel Glazer, author of *The Lonely Crowd*, observes, "that while in many ways Le Corbusier's Radiant City was diametrically opposed to Howard's Garden City—being vertical rather than horizontal—the two concepts shared a common assumption, "that the city could be improved by replacing its chaos and confusion with

a single plan, different from the urban plans of the past in that it was not conceived as a general outline of streets and major public institutions, but as a placement of every residence, every facility, every plot of green."[7] The idea that every part of a community could be planned and controlled was incredibly appealing to the populous.

II. Mass Production, Expansion and Making A Dollar

Suburban sprawl took off with a vengeance after World War II, in the 1950's. Veterans came home to start families and needed houses. The nation had spent years devoting resources, innovation and brain power into defense and now could turn to putting that same energy into nation building. The minds of the nation now had, "enthusiasm for single-use zoning and the government's commitment to homebuilding and highway construction were supported by another, more subtle ethos: the widespread application of management lessons learned overseas during the Second World War."[8] Pre 1930, town building and habitation had been developed situated in history and human characteristics, now it was based on a rational model full of simplified categories, numbers and logic.

The Mass-Production of housing also came into being in the 1950's and stared with William Levitt in New Jersey. Created by William Levitt, Levittown was a ready-made community built in the 1950's. By building replicated houses he was able to keep costs down. Levitt "boasted in *Time* magazine, his company was the "General Motors of the housing industry". The new suburb was composed of self-contained neighborhoods, each with its own school and swimming pool. Every street was reassuringly curved and shared the first letter of its name with the neighborhood to which it belonged. Holyoke Lake, Henderson Land and Hummingbird Lane all lay within Hawthorne Park."[9] Levittown like many other suburbs was a homogenous population, dominated by lower to middle class white people in their twenties and thirties with young children. It was designed to provide for this demographic because that was who would buy it. Building houses in this era became an economic production. It was treated as infrastructure and "the

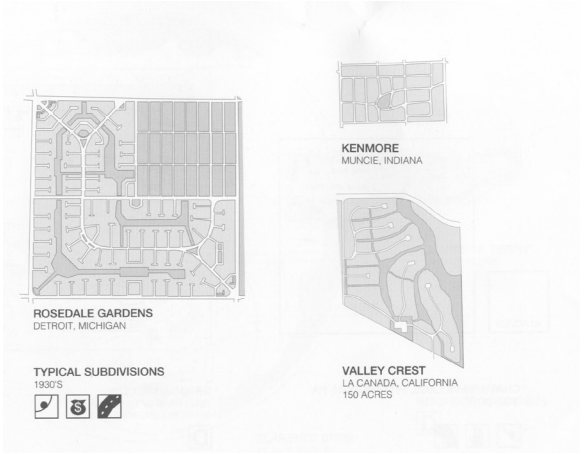


Figure F: 1930's Subdivision Plans

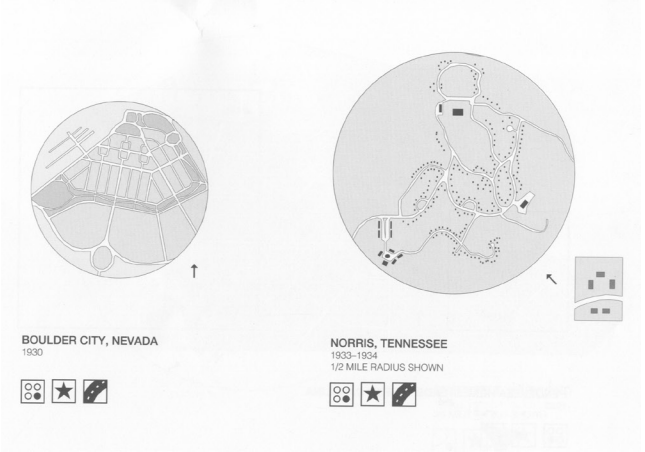


Figure F: 1930's Subdivsion Plans

LEGEND / SCALE

PLAN TYPE

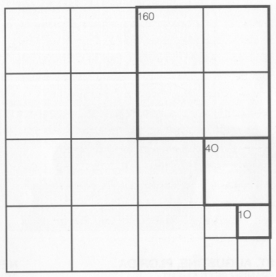
D DIAGRAM · CITY · SATELLITE · AUTONOMOUS

SPONSORSHIP

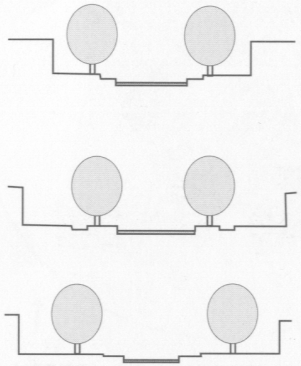
PRIVATE · INDUSTRY · FEDERAL · PARTNERSHIP

TRANSPORTATION

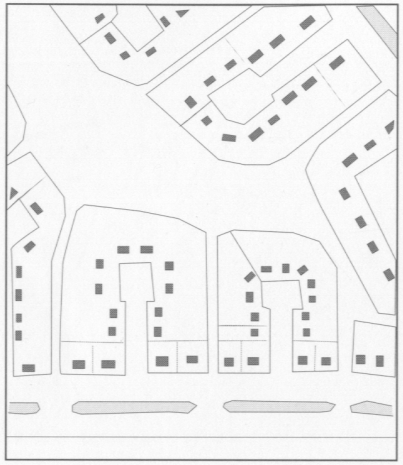
RAILROAD · STREETCAR · AUTOMOBILE



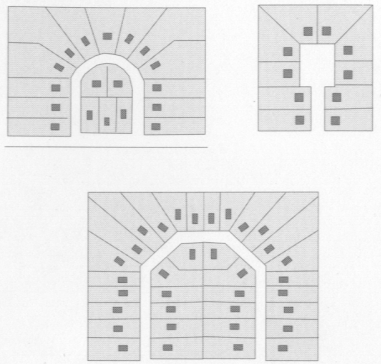
ONE SQUARE MILE
ONE SECTION
640 ACRES



STREET SECTIONS



RADBURN MODEL



HOUSING GROUPS

FEDERAL HOUSING ADMINISTRATION
TECHNICAL BULLETIN #5
1936
NO SCALE

D

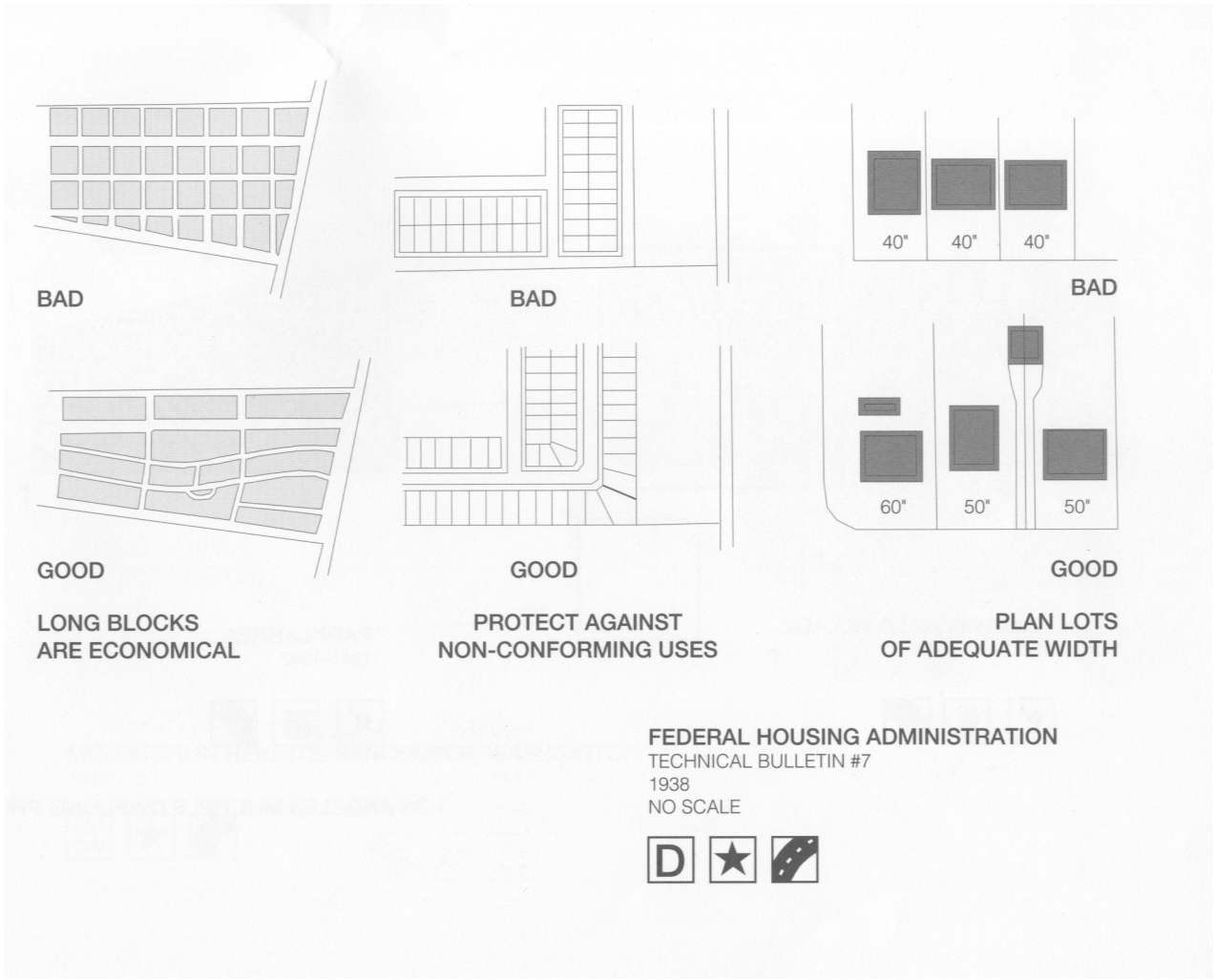


Figure G: Federal Housing Adminstration Development Plans

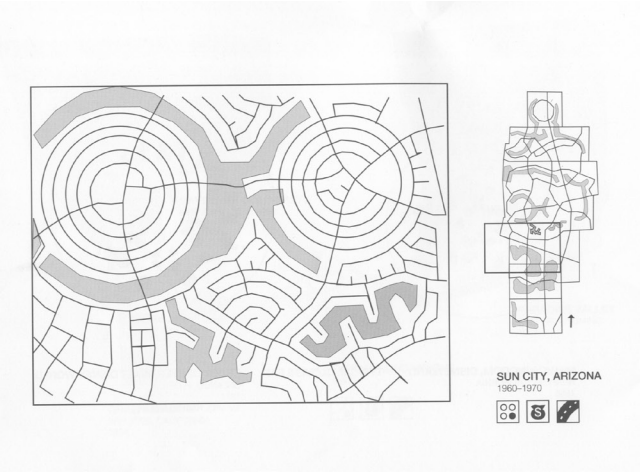


Figure H: 1960's Suburban Plan

Figure I: 1960's Suburban Plan

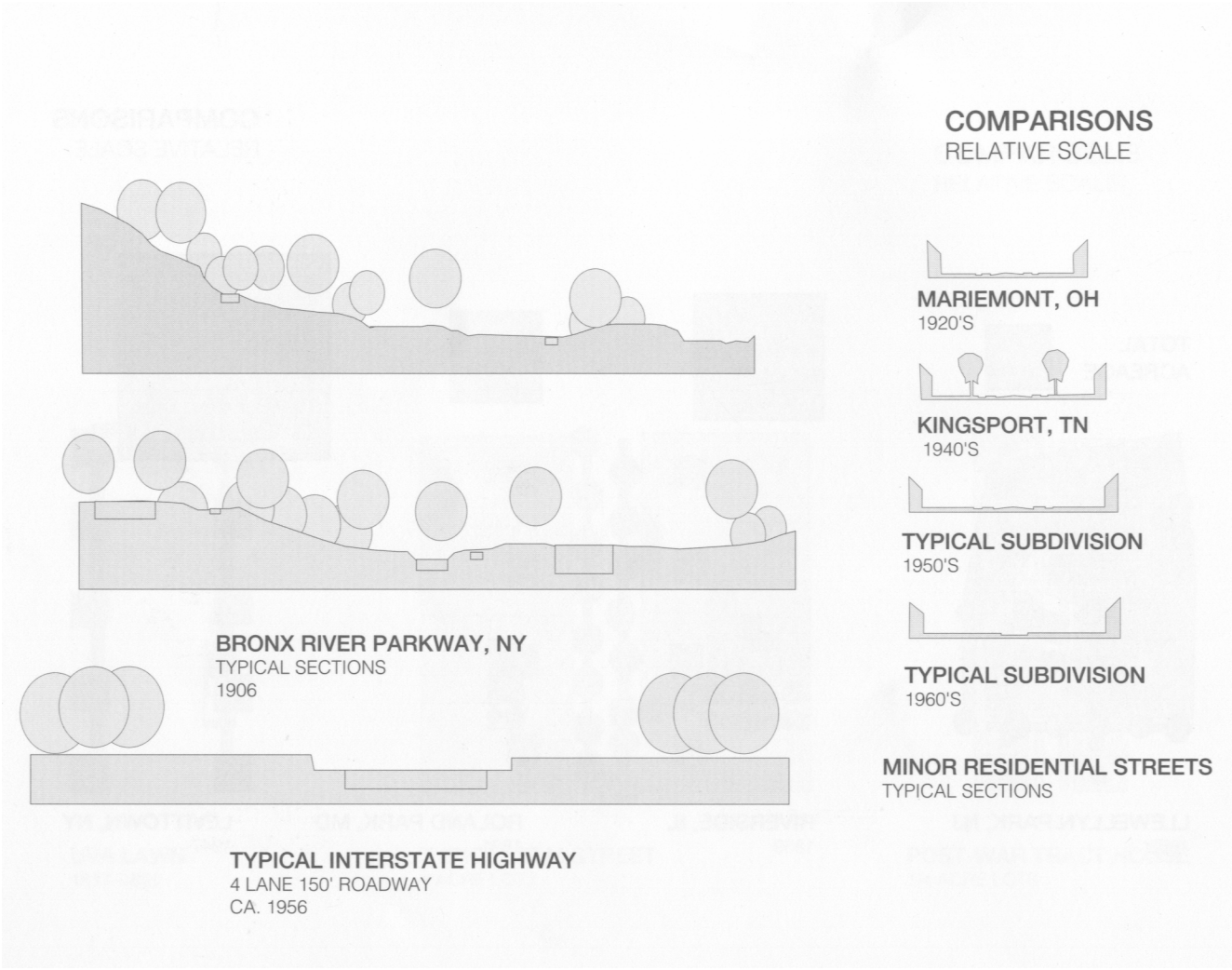


Figure J: Road Section Comparisons

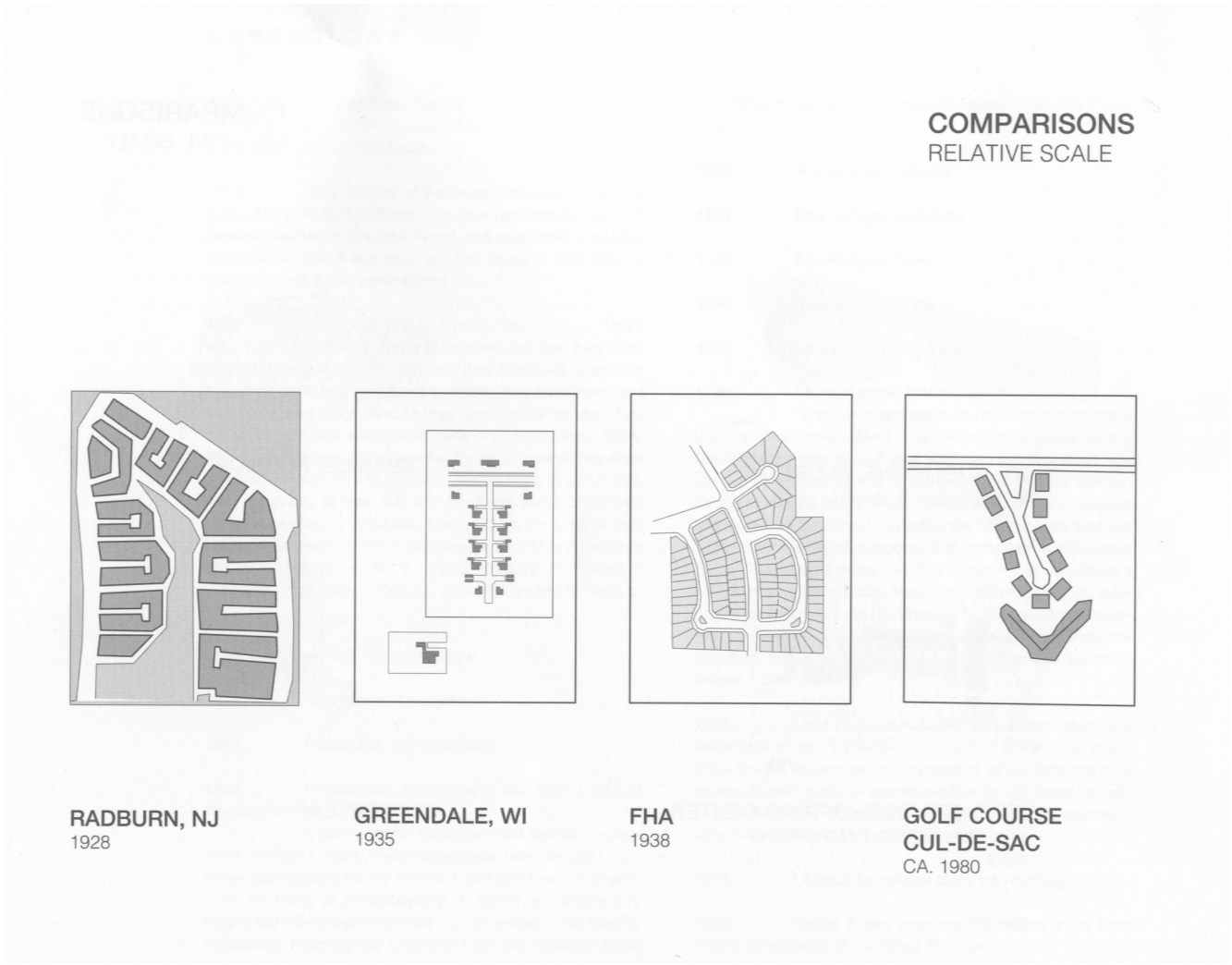


Figure K: Small Scale Cul-de-Sac Development Comparison

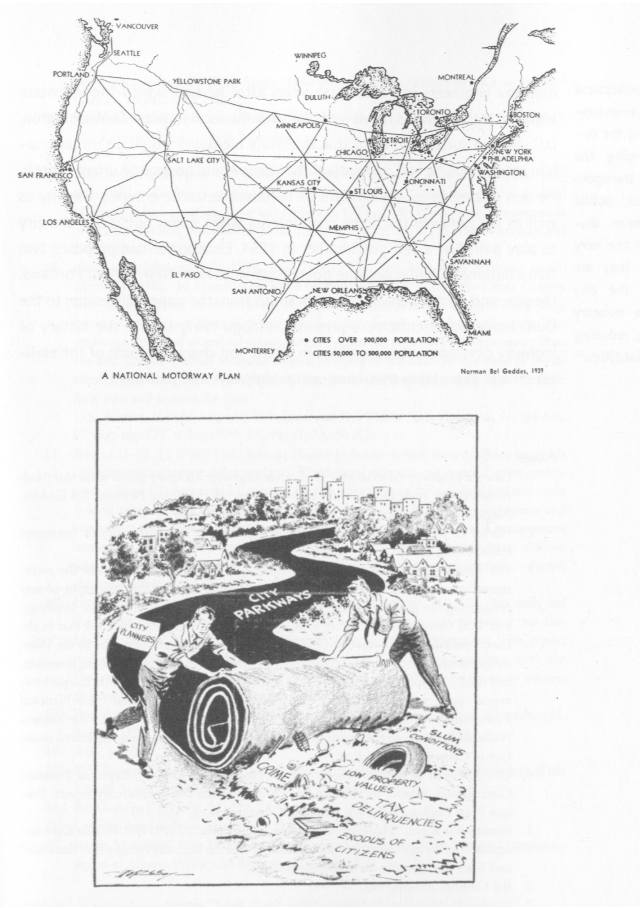


Figure L: 1939 US Highway System Plan. Norman Bel Geddes, Magic Motorways and "Nature's Carpet Cartoon.

suburban house was not designed with our conventional skills. The depression FHAhome was a protocol for formatting the land in a way that would revive banks and provide employment through in the building trades. The building trades employed the most people in America after agriculture at that time. Beyond an infrastructure of networks or grids, here was an infrastructure as aggregated field of repeatable spatial items tied to distributed services."[10] House building, community development and living were viewed as systems that could be manufactured and mass produced, like the automobile. No longer was the concern to fill the needs of the occupants, money could be made in the housing industry.

Initially, like the town, suburbia was associated with social and political ramifications, but by the 1930's was connected to industry and American economic recovery. After the Depression and World War II, "the housing industry, like the automobile industry, would be inextricably involved in the nation's economic machine. Even while being sold under fictions associated with individualism and patriotism, suburban living during mid-century became one of the most bureaucratically controlled and uniform types of development in American history. Suburbia become a kind of currency."[11] The divide between suburbia and the physical environment only widened. The concern was not with what kind of life could one house, but how much money could one make in land development. Guidelines and regulations set up by the Federal Housing Administration drove out design and welcomed standardization, leading to an environment that "seems to derive from a formula which neutralizes attractions between the various parts. All the imported pieces are kept floating in a disconnected proximity that resists relationships."[12] Mass production and streamline design supported repetition and consistency in mortgage valuation and policy, which the FHA fostered. Engineering and regulation were favored over integration with landscape and uniqueness.

4. Current State
2012 is not 1950

Through the previously outlined progression America developed a model for community building that is heavily reliant on master planning, and pre-constructed order. Communities do not develop organically or naturally, but are masterfully laid out with graceful strokes of a pen on large sheets of paper. What has happened in the last decades is that the spaces we live and work in are not chose by us, but instead are governed by zoning laws and the specifications of the automobile. The development of the American landscape was so heavily determined by the needs and use of the automobile. Although the American dream was built on the premise of suburbia supported by highways, shopping malls and rows of identical houses, it didn't turn out to bring a higher quality of life for people today. The initial dream of living in a park-like setting is still in the American psyche and drives the marketing, designing and building of so many planned communities across the landscape, but the built reality is that today's suburb is many steps away from that dream.

Individuals still seek the privacy and quiet of suburbia, but the establishment of community has

transformed from actual relationships between residents to a catch phrase in marketing. In developments, "windows that face onto the neighbor's house are avoided. So are side entrances that might lead to chance encounters. And the obsession with privacy is matched by the concern for safety. Security is paramount, and much effort is devoted to alarms, fences and protective lighting and landscaping. No wonder gated communities are the fastest growing sectors of residential construction. Their roads, sidewalks, plantings and driveways are superbly controlled means to private ends."[1] One constant feature of nearly every American sub-division is the single entrance, which supports an image of security. Replication of appearance and consistency of image provide a sense of control and security. Owners feel more secure in the investment of a house, if it is a lot like the one next door. Zoning and strict regulations than become ways to keep security and value in neighborhoods. In many of these places all that ties them to the 1950's dream are entrance posts and street signs stamped with pretentious names, such as "Primrose Path" and "Birch Tree Lane."

Identity came not from the landscape, but from name and advertising. Wander any American suburb and each group of houses is labeled with such names as "MapleWood," "Willow Creek," or "The Birches." More often than not the names have nothing to do with location and everything to do with marketing. This provided greater flexibility as times and what was popular changed, subdivisions could be easily adjusted with renaming and thus always be at the top of the market, with little real change. For example, a golf course subdivision, "got a fresh new spin by calling itself a "planned community."[2] The place didn't actually change, just the aspect the real estate agent highlighted did. Other elements of suburbia, such as the curved streets, street names and signs are used to create superficial variation on the landscape. Much of suburban design is the same method applied to many locations and it is through these two-dimensional alterations that difference is created. As one can see in plans of suburbs from all over the country, "in the spatially neutralized mid-century suburban neighborhood, a self-contained box sits apart in the center of the lot, and the approach to garage and driveway is similar in every house. The streets of that

Figure A: A Devolopment Street in Mill Creek, WA

Figure B: The shorter travel distances in traditional urbanism compared to suburban sprawl, where the trips are longer and the reliance on the automobile is greater.

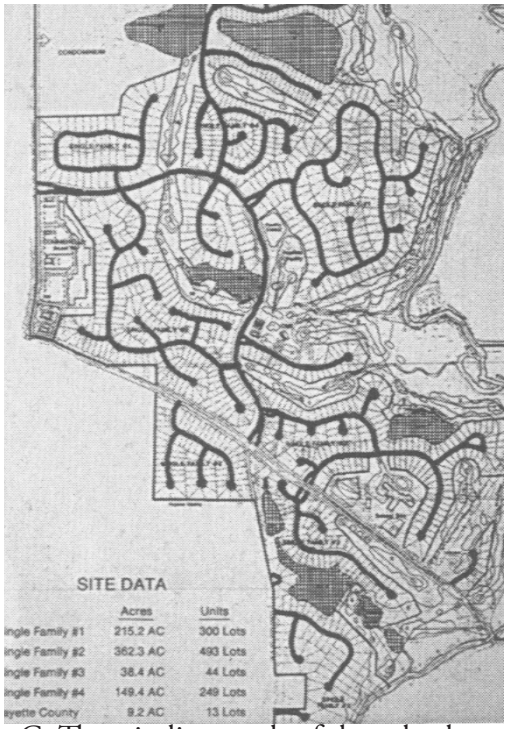


Figure C: The winding roads of the suburbs

neighborhood are largely an indistinguishable weave of curvilinear throughways."[3] The scale only increases and highways are laid out across the nation to connect all the otherwise isolated parts. Further this practice leads to a misallocation of space as there are large patches of spaces between that are difficult to use. As so much is designed around the automobile, the human scale and speed is diminished; edges and details become increasingly big to be taken in at father distances and faster speeds. Formulas and solutions are repeated, ignorant of landscape or habit to create a homogenous environment that ignores human behavior and how people actually live.

Since activities of commerce and daily life are scattered across the landscape, access became an essential component and in particular the highway. Access rather than centrality become the determining factor in location for businesses and developments. In the last thirty years jobs have moved to the suburbs. As "Henry L. Diamond and Patrick Noonan, authors of *Land Use in America,* report, approximately 95 percent of the fifteen million new office jobs created in the 1980s were in low-density suburbs, Various studies in the mid-1990s of the fastest-growing businesses and the areas of job growth also show them all in the suburbs."[4] Decentralization has been a dominant pattern in all sectors of the built environment creating scattered and disconnected uses. Proximity and geography no longer tie similar or sequential uses. Trucks, planes and cars, all of which run on oil, instead create an artificial proximity. Up until recently, when resource costs for the individual finally caught up with actual costs, it didn't matter if one had to travel thirty minutes to work each morning, or that the supermarket was on the far side of an eight lane highway and little Timmy's Saturday soccer game was two hours away, all you had to do was hop in a car to get there.

The practice of building repetitious patterns befitted mass production and supported the effort to allow every American to claim ownership of a home. It filled a need to make a lot, for a large number of people, with a concern for making money rather than conserving resources. To make all of this possible,

there was also a need to separate each element or system. This allowed designers and builders to "act "unilaterally," to use Alexander Ross's term here, unconstrained by the need to coordinate with others. The highway engineers gave no thought to what would be built at the end of their off-ramps, the sub-dividers took no responsibility for those outside their preferred income niches, and no one worried about larger impacts to the rural hinterland or the older cities. By contrast, the alternative to sprawl requires precisely that capacity for coordinated actions and alliances at the regional scale that our present economic and political system makes almost impossible."[5] It was too complex and time consuming to figure out how to interweave, interconnect and combine. After all at this point resources were plentiful, time was money and the attitude of, if we can each have our own, why shouldn't we have our own, prevailed.

Today resource costs, clogged roadways and increased commute times have changed the ease of car travel. Americans have responded partially due to need ¨C the baby boomers, who now can no longer drive as easily and partially due to desire ¨C the younger generation in the late twenties and early thirties, who can't afford to or don't want to drive. These two groups make up a significant portion of the population and will be dominant forces in the near future. (See Census Data Appendix) Another demographic shift is within households. Today the majority of households do not resemble the image of a working Dad, a stay-at-home Mom, 2.5 children and a white picket fence. By "1999 only 7 percent of U.S. Households had a working dad, a stay-at-home mom, and children under eighteen. Suburban households increasingly reflect the changing demographics of the country, 65 percent of households do not have children, and 25 percent of households are people living alone. All of which suggests that the suburbs are not as "suburban "as they use to be."[6] Not only can the design of systems and the allocation of resources more closely fit how people live, but so should house design.

Figure D: Sprawl lacks center and edges

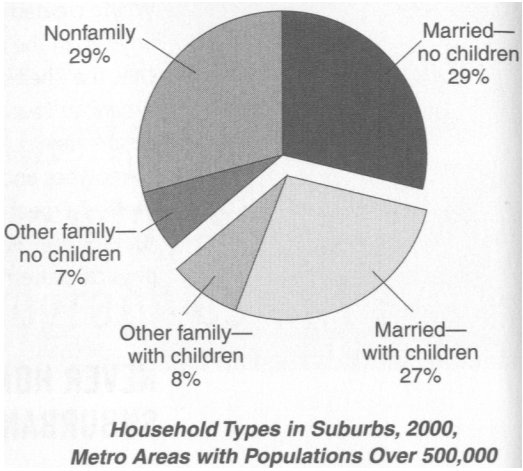


Figure E: Households without children outnumber those with children and that number is expected to rise.

5. Tallying the Results
The End of a Failed Experiment

With the current foreclosure crisis, it may sound surprising that Americans will soon experience an excess of housing. Population growth will certainly fill some of the housing stock and it is expected that there will be about 4 million more households with children in 2025 than in 2000 according to US Census Data. The disparity is that more than 10 million new-single family homes have been built since 2000 and the majority in the suburbs.[1] It isn't difficult to surmise that the problem is not in numbers, but rather in usefulness. It thus raises the question of what are the elements besides a shelter that create value in housing and provide spaces for living. Questions such as what do humans need from a house? What are the landscape, Infrastructural, resource and social needs of Americans and the relationships between each system? How can design enable better quality of life? become increasingly important to answer.

I. Not Everyone Wants to Live in the City

It was the 1950's and 1960's when suburban living became a national phenomenon. In 1960 the cities and countryside still dominated as places to live, but by 1970 more people lived in the suburbs and

by 2000 they contained more people than the cities and countryside put together. Despite more than a decade of "urban boosterism, beginning with sitcoms like "Friends" and "Sex and the City" and continuing with expensive efforts to spruce up downtown districts, the drift to the cul-de-sacs continues. Between 1990 and 2006 the city of Chicago added 50,000 residents, reversing a long decline. Not bad but in the same period the sprawling metropolis outside the city proper grew by well over a million."[2] Even if the most desirable real estate is now close to city centers, many are still moving to the peripheries of metropolitan areas. Looking at "the 2010 U.S. Census would make it perfectly clear that rather than heading for density, Americans are voting with their feet in the opposite direction: toward the outer sections of the metropolis and to smaller, less dense cities. During the 2000s, the census shows just 8.6% of the population growth in metropolitan areas with more than 1 million people took place in the core cities; the rest took place in the suburbs. That 8.6% represents a decline from the 1990s, when the figure was 15.4%"[3] Not only do demographics factor into the discussion, but so do places of project growth in the built environment. It is estimated that much of the future growth will take place in the sprawling cities of the South and West in the United States and it will be a challenge to preserve qualities of life, Americans have become accustomed to and manage environmental concerns.The low density, sprawling neighborhoods will be an existing condition and millions of Americans will drive endless miles, living on cul-de-sacs, sit in traffic jams and shop at box stores. A huge portion of the population currently lives in the suburbs and even if recent trends of moving to urban neighborhoods continue there will still be people, who want to live in suburbia and a vast built environment to manage.

Although some Americans are moving back to the cities for the benefits of walkability and urban amenities, many still desire the qualities of suburban life and prefer to live in the suburbs. Many studies have shown, "the portion of the population that prefers to live in a big city has consistently been in the 10 to 20 percent range, while roughly 50 percent or more opt for suburbs or exurbs. The reason? The simple desire for privacy, quiet, safety, good schools, and closer-knit communities. The single-family

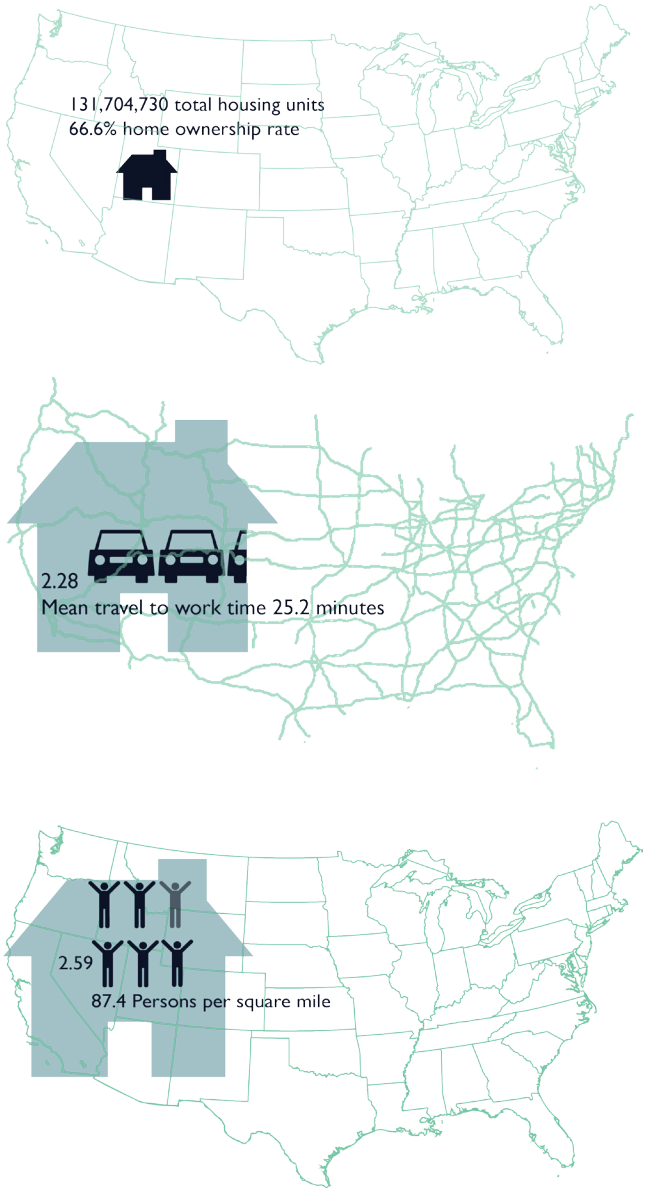


Figure A: US Demographics

house, detested by many urbanists, also exercises a considerable pull. Surveys by the National Association of Realtors and the National Association of home Builders find that some 83 percent of potential buyers prefer this kind of dwelling over a townhouse or apartment."[4] Even with the changes in the American housing and economic markets, people still want to live in the type of places that afford them the security and quiet of ideal suburbs. This is what drew people to the suburbs initial, what kept them growing and why the suburbs won't instantly disappear.

II. Not Everyone Wants to Live in a Car

The time and cost of car transport in America is a significant deterrent to Suburbia and making urban living increasingly appealing. Arthur C. Nelson, who is the director of the Metropolitan Institute at Virginia Tech has looked at the trends in demographics and housing in America in order to project demand for various types of housing. The outlook is "bracing: Nelson forecasts a likely surplus of 22 million large-lot homes (houses built on a sixth of an acre of more) by 2025—that's roughly 40 percent of the large-lot homes in existence today."[5] This surplus is the result of the trend of Americans moving back into urban areas from the suburbs. Since the 1950's, drawn by the promised safety and prosperity, Americans moved away from the cities and into the suburbs. In a pleasant landscape, that was neither city nor country; fathers could commute into the city to work, mothers could be homemakers and kids had the whole neighborhood at their disposal for play. The model American family no longer looks like this. Today, "most Americans now live in single-family suburban houses that are segregated from work, shopping, and entertainment; but it is urban life, almost exclusively, that is culturally associated with excitement, freedom, and diverse daily life. And as in the 1940s, the real-estate market has begun to react."[6] Many people would like to spend time with family or enjoying an activity than sitting in traffic on the freeway and so until the distance between activities decrease the desire to live so far away will too.

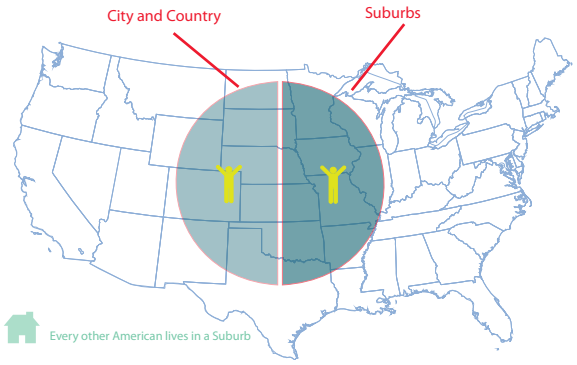


Figure B: Half the population lives in the suburbs.

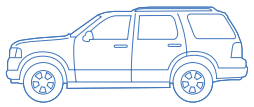
Future American demographics are also going to make living in suburbia difficult as a significant

portion of the population will be soon too old to drive. Recent "changes in the United States also are working against conventional suburban growth, and are likely to further weaker preferences for car-based suburban living. When the Baby Boomers were young, families with children made up more than half of all households; by 2000, they were only a third of households; and by 2025, they will be closer to a quarter. Young people are starting families later than earlier generations did, and having fewer children. The Boomers themselves are becoming empty-nesters, and many have voiced a preference for urban living. By 2025, the U.S. will contain about as many single-person households as families with children."[7] The changes in household size and type will influence what type of houses people can afford and want to live in – the five bedroom, three car garage McMansion may not be everyone's top choice.

III. Suburban Pitfalls

Decentralization

A reasonably explanation for why there might be an excess of single-family houses could be location. It might not be that people don't need places to live, but they may not be able to afford a car and transportation costs. Much of the new housing stock is located in isolated subdivisions strung around the perimeter of metropolitan regions. At a time when goods, services and people could be transported by cars and trucks cheaply, geography wasn't a concern. Today increases in oil cost have made heating and transportation costs unaffordable. It is apparent as the cost of living in suburbia increase, the convenience will decrease. If this becomes a consistent pattern and it is left unchecked, it is not hard to understand how the deterioration of suburban living will escalate. As more people move to Urban Communities, quality of schooling and safety "may worsen in many suburbs if the tax base—often highly dependent on house values and new development—deteriorates."[8] To some extent value in many suburbs is reliant on stability in appearance and small blemishes quickly become large. As James Kunstler likes to describe suburbia,



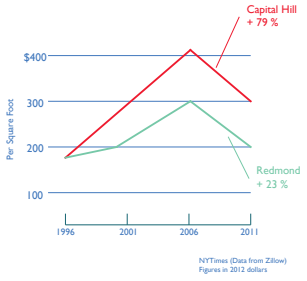
WA

vehicles 5,115,866
licensed drivers 4,154,501
licensed drivers per 1000 driving age 912
motor vehicles per licensed drivers 1.23
vehicle miles per licensed driver 12,837

Seattle

Daily Vehicle Miles / Capita 25.8
Average Commute 25 min?

Figure C: WA state Vehicle Use



"Walking isn't just good for you.
It has become an indicator of socioeconomic status. Until the 1990s, exclusive suburban homes that were accessible only by car cost more, per square foot, than other kinds of American housing. Now however, these suburbs have become overbuilt, and housing values have fallen. . . .

Some research has shown that walkable urban infrastructure is substaintially cheaper on a usable square foot bassis than spread-out drivable suburban infrastructure; the infrastructure is used much more extensively in a small area, resulting in much lower costs per usable square foot.

2-4 miles / person / week

Figure D: Walkability is increasing in popularity

"they represent the greatest misallocation of resources the world has ever known."[9] Today, the increasing number of environmental concerns, the vast expanse of single family lots and miles of highway seem not just wasteful, but harmful. The economic challenges of suburbia are not helped by the recent collapse of the American housing market and the consequences of years of lax lending standards.

Economies of Scale and Politics

The allocation of resources is tied to politics and governance. One of the challenges faced by suburbs is economies of scale. Unlike larger cities, suburbs lack the same monetary support, public services and safety services. Cities generally have larger and more centralized governing systems. In some cases it is also the associated city that is the governing body. In many cases the economics do not makes sense for each suburb to support a police station, a fire station, and schools. These arrangements lead to further reliance on resources further afield that simply increases the cost to move people and goods. In other cases, the taxes and resources of the residing population don't support all of the public service needs. There is a lack of resources to develop community and recent changes in demographics have made suburbs less social and cohesive, making governance and organization more difficult.

> "As conventional suburban lifestyles fall out of fashion and walkable urban alternatives proliferate, what will happen to obsolete large-lot houses? One might imagine cul-de-sacs being converted to faux Main Streets, or McMansion developments being bulldozed and reforested or turned into parks. But these sorts of transformations are likely to be rare. Suburbia's many small parcels of land, held by different owners with different motivations, make the purchase of whole neighborhoods almost unheard-of. Condemnation of single-family housing for "higher and better use" is politically difficult, and in most states it has become almost legally impossible in recent years. In any case, the infrastructure supporting large-lot suburban residential areas—roads, sewer and water lines-cannot support the dense development that urbanization would require, and it is not easy to upgrade. Once large-lot, suburban residential landscapes are built, they are hard to unbuild."[10]

The political and infrastructure systems support separation and make new living configurations difficult, both in terms of ideological structures and physical resources.

Lack of Built Space and Quality

The expansion of the built environment is not just in housing, by "2030, about half of the buildings in which Americans live, work, and shop will have been built after 2000. The nation had about 300 billion square feet of built space in 2000. By 2030, the nation will need about 427 billion square feet of built space to accommodate growth projections. About 82 billion of that will be from replacement of existing space and 131 will be new space. Thus, 50 percent of that 427 billion will have to be constructed between now and then."[11] These figures point out, even with shifting economic patterns, there will still be spaces built and where and how we build them can make a huge impact on American daily life.

Another reason so much new space will be needed is because of the quality of infrastructure built since World War II. Compare the public buildings built pre and post War -- the post offices, libraries and banks. The notion of a building serving as a symbol of the stability and merit of an institution is no longer expressed. Churches, town halls and police stations are all constructed of the same cheap materials. The irony is that when America was a far less wealthy nation, buildings were made to outlast the generation, who built them. This loss of quality in the built environment is in part a response to mass production and the American desire for quantity. The mass production of housing after the war led to a national understanding and belief that every American deserved to own his house. The dream of one -- was for all. This meant that a tremendous number of houses and roadways had to be built for all the people, who wanted a house, a backyard and a two car garage on a quiet cul-de-sac. National television and advertisements sold this as the perfect American life. These dreams were made possible by the return of labor and resources to inside national borders. Veterans returned to the states to start families and were in need of houses and jobs. The advancements in technology and manufacturing made during the War were then applied to the challenge of American

Housing. It was an approach that focused on doing a little for a lot of people; seeking quantity instead of quality.

Everything in its own box

Suburban development hasn't followed the traditional patterns of habitation that have prevailed for nearly three hundred years in America. Instead it replaces a method of habitation developed organically overtime through experiment and practice, with a romanticized unnatural system. Suburban sprawl doesn't develop in response to human need nor does it produce a healthy sustainable system. Part of the success of suburbia is in its apparent simplicity. Much of the development since the 1950's has been based of zoning that divided each of the components of living into separate homogenous zones. Living happens in one zone, shopping in another and working in yet another. The separation of activities means that people and goods have to be moved between each one, usually by car which leads to an oasis of parking lots. The increased distances between the various activities of daily life alter the economic relationship and increase the distances service infrastructure must traverse. The spreading out of elements increases the quantity of resources needed to support the various structures and activities. Efficiency and economic relationships are imbalanced and "low-density land-use patterns require greater lengths of pipe and conduit to distribute municipal services. This high ratio of public to private expenditure helps explain why suburban municipalities are finding that new growth fails to pay for itself at acceptable levels of taxation."[12] The relationship between resources and efficiency is skewed. Zoning and policies followed the new method of development. It was supported by the building of thousands of miles of highway, funding of millions of mortgages and making new zoning laws.

Figure E: Sequence of Suburban Sprawl around a city center.

Many have expressed the "shared belief in a direct causal relationship between the character of the physical environment and the social health of families and the community at large."[13] This lifestyle is affecting the health, psychology and general quality of life for Americans. Read the headlines of the past few months on the webpage the Atlantic publishes about cities and you will see, 'The true cost of Unwalkable Streets," or "Big Box Stores Linked to the Presence of Hate Groups," as headlines. Long commutes, lack of walking and isolation have degraded the health and happiness of these communities. For many the American Dream is no longer coming true. The subdivisions, parking lots, strip malls and office parks are not aiding in the development of communities or making people happier. Decades of advancement in technology, science, health care and economics have created higher standard of living, but not a better quality of life.[14] The fact that nearly every American household has a microwave, a T.V, and a car does not mean Americans are happier. In fact, many inventions, particularly the car, have done the opposite and isolated individuals. Commuters spend hours in cars getting to work daily; parents drive miles to soccer practices, music recitals and swim meets.

6. Mill Creek, WA
A Typological Study

Mill Creek City is located in Snohomish County in the state of Washington. It is considered part of the Seattle metropolitan area and located 20 miles North East of Seattle. To the North, Mill Creek is bordered by the City of Everett, Lynnwood and Bothell and it is part of Snohomish County's southwestern urban growth area. It was incorporated on September 30, 1983 as a non-charter code city. Started as a planned golf club community in the 1950's, the City developed and expanded over subsequent decades. Today the community still has the original country-club atmosphere and is composed of single-family homes, townhouses and apartments. From the start, "the golf course was the primary focus, and individual, named subdivisions surrounded it. Those subdivisions names have since become major identity brands for Mill Creek residents, many of whom associate themselves directly to the neighborhoods in which they reside."[1]

The City is organized as a group of inwardly focused and isolated sub-divisions strung along main roadways. The majority of streets dead-end in cul-de-sacs, rather than connect through to other

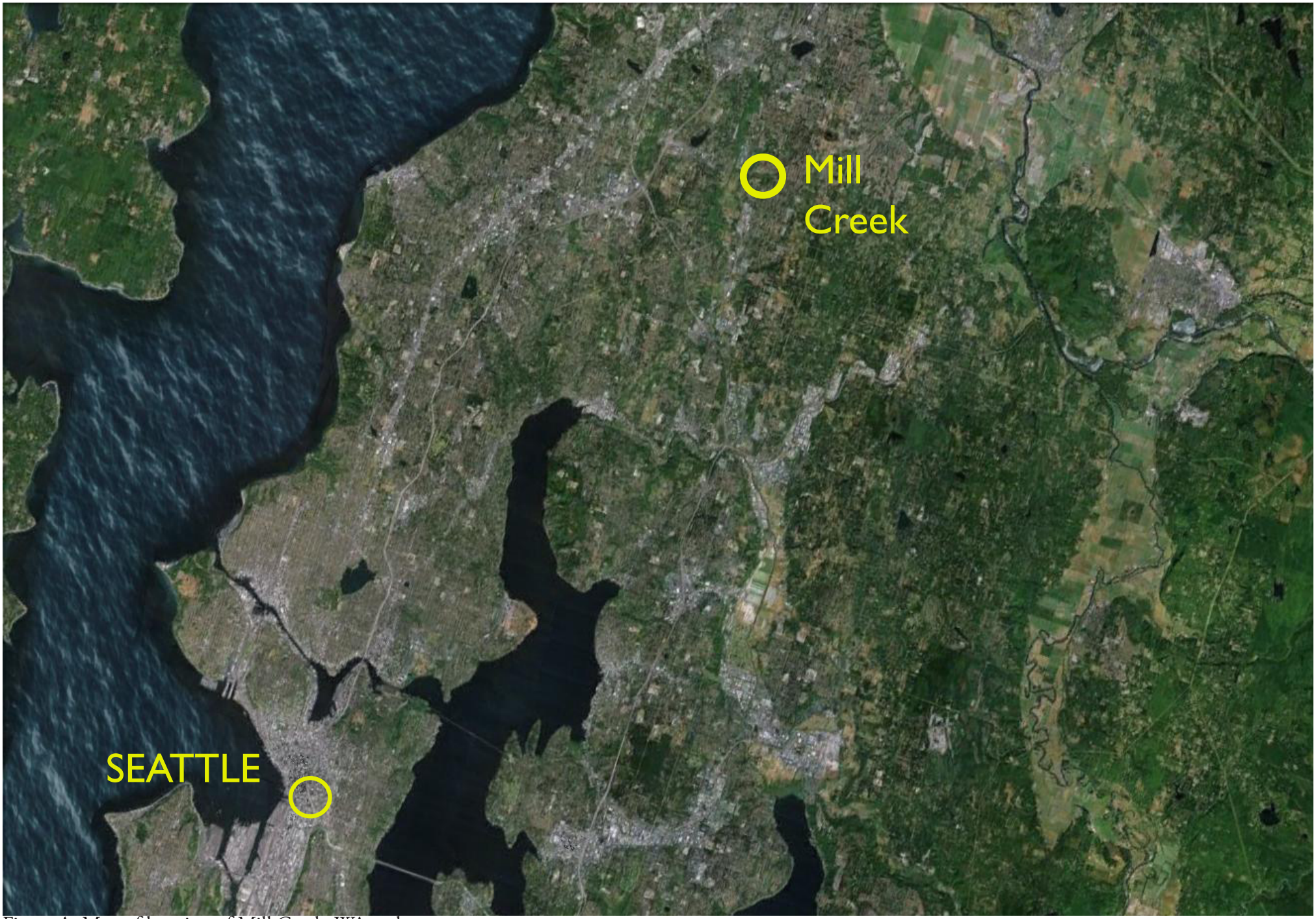


Figure A: Map of location of Mill Creek, WA and proximity to Seattle, WA

Figure C: Hughway Access from Mill Creek, WA

Mill Creek

20 miles north of Seattle

Golf Course and Country Club as its centerpiece.

Most popular companies with Mill Creek jobs: Boeing, Microsoft, Amazon, Nordstrom, Starbucks

Most common occupations: Management, professional, and related occupations 51%, sales and office occupation 25% and service occupations 9%. Approximately 78% of workers in Mill Creek work for companies, 11% work for the government, 6% self-employed.

Most commonly listed Mill Creek jobs: physical therapist, occupational therapists, occupational therapy, software engineer, physical therapy and web developer jobs.

Leading industries: Manufacturing 15%, educational, health, and social services 14% and professional, scientific, management, administrative and waste management services 14%

Average job salary is $49,104 and the median income of households in Mill Creek is $69,702

Mill Creek commute: Carpool 12.3%, public transportation 5.5%, average travel time 31 minutes.

Figure B: An abundance of cars in suburbia

neighborhoods, forcing drivers back out onto the main road. This development pattern limits each subdivision to one entrance, which can more easily monitored and creates a perception of security and neighborhood identity.

Like many suburbs, Mill Creek was constructed from a master-plan that developed a large swath of land in one sweeping motion. The focus was to create a community nestled into a park-like setting, with trails, creeks and the golf course integrated with the houses. Subsequent house building that has filled in is primarily single-family houses, townhouses and apartments, much like the rest of suburban housing in Puget Sound. Another result of the master planning was zoning and the separation of resident activities. Living occurs in the perfectly contrived named subdivisions, the golf course is for recreation; work is in nearby cities and shopping in the town center or the cities. It was designed as a suburban community for commuters working in Boeing, Amazon and Microsoft, which are located miles away in Everett, Seattle and Bellevue, respectively.

Since the initial community was planned it has only become more popular. The population has rapidly increased as families have moved to the area and the city has been annexed multiple times. The population of Mill Creek has steadily grown over the years. In 1980 the population of the community was 1,803 and by 2010 it was 18,244, which is a growth rate of 3% per year. In the 1980's and early 1990's the resident population tripled. (Figure with 1990 census 7,180 2000 census 11,525 people 60.5%increase 2010 census 18,244 people 58.3% increase) While the city has also grown in size, methods of development have changed and new master-plans drawn up. Recent additions to the built environment have focused on denser housing types and the Mill Creek Town Center on the western edge of the city, which is a mixed-use complex sponsored by the city. Much of the new development and building has been focused on the perimeter of the city limits leaving the golf course and original subdivisions intact.





Figure D: Garages instead of front doors as street fronts in Mill Creek, WA


THA LAKE
PUB
WELLS
FARGO

Figure E: Road Intersection in Mill Creek, WA

I. Green Spaces

Aside from the Golf Course, the city has an extensive trail system included in the green spaces within the city limits as well as a nature reserve and a few parks. The Golf Course is private green space as is the Nature Reserve and large portion of the trail system, which are private. The private network is run by The Mill Creek Community Association (MCCA) which is made up of the residents of the nearly forty suburban divisions that are in the original planned residential development of Mill Creek. The voting members are nearly 10,000 in number and make up half the population of Mill Creek.

Figure F: The road up to the golf course development from highway access road in Mill Creek, WA

II. Land Use

Mill Creek is primarily residential and that is dominantly single-family subdivisions. The earliest developments are in the first ring of subdivisions around the golf course. Later developments expanded the area of the city outwards and many of them were single family residential as well. (Figure Developments phases) The next largest land use is open space. Mill Creek is 4.68 square miles in area (2,995 acres) and over 220 of those acres, nearly ten percent are devoted to open space. The City owns 57 acres of public neighborhood and park land for the entire community. The MCCA owns another 160 acres, which is privately owned and serves the association's members. The open space covers a range of types from built recreational parks, trails, and undeveloped natural space. The MCCA owns and maintains a large Nature Preserve on the western side of the city that runs North-South. The majority of commercial land is on the main arterials of SR 527 (Bothell-Everett Highway), 164th Street SE at the South end of the City and 132nd street SE at the North end. The recent addition of the Mill Creek Town Center, a mixed residential, office and commercial space is on SR 527. All of these uses are pushed into spaces along the perimeter of Mill Creek and little space is given to Industrial or manufacturing. Therefore many of the residents have to commute to other towns and cities for work.

Figure G: New Development advertisement, Mill Creek, WA

III. History

The development of Mill Creek, in its modern form has been in the works since the 1950's and was planned in the middle of the 1970's. Recent history begins with the purchase of 800 acres in the 1930's by Dr. Garhart. The acres, Garhart purchased would become a large portion of Mill Creek today. Dr. Garhart was a naturalist and his large tract of land was surrounded by many smaller farms of 20 to 60 acres. Nearly, nothing remains of the cabins, farmhouses and structures that were initially built on this land, although the dam and reservoir (east of the intersection of SR527 and 164th street SE) constructed in 1935 still exists. Garletts built a cabin on what is today the 13th tee of the golf course and where the Laurel subdivision is now.

In 1974, an Environmental Impact Statement (EIS) was formulated for the Planned Residential Development (PRD) of Mill Creek. The plan was as follows, "In 1965 Northwestern Properties organized a series of partnerships which optioned and controlled approximately 3,000 acres. The principal owner was Mr. Elmer Kerns who purchased his ownership from Garhart on a real estate contract basis. At this time a planned new community, to be called Olympus, was proposed. The Olympus plan was a forerunner of the present proposed new community and it differed from the concurrent plans in terms of the land use layout. In this plan, an overall higher density of uses would have occurred than with the proposed project. The investigations for planning and financing were oriented toward federal participation. In the course of such investigations, the feasibility for obtaining such long-term assistance was diminished and alternate means were sought."[2] When the plan failed in 1968, Howard T. Harstad took over the options and brought in the Morrison-Knudsen interests, which supplied the financial backing needed. Unfortunately, due to fatal plane crash of one of the principals at Morrison-Knudsen, finances were withdrawn and the project was left in limbo. A few companies expressed interest in the development project, but due to the economic downturn in 1969 and 1970, nothing stuck. In 1973, Tokyu Land Development Ltd. Took over the option

Figure H: Town Center Shopping Mall, Mill Creek, WA

Figure I: Town Center Shopping Mall, Mill Creek, WA

and therefore controlled the 1,200 or so acres that would become Mill Creek. Their interest was given to the United Development Corporation and the Ohbayashi Corporation, who generated a new master plan for the area. The company hired Wilsey and Ham to do the job and a master plan was submitted in 1974 to the Snohomish County for review. Revisions were made and by 1975 the plan was accepted.

Over the subsequent eight years, "all nine sector plans would be prepared and accepted. The final sector plan anticipated a citywide total of over 4,600 dwelling units with a population of 12,000 t0 14,000 when construction was completed. The Sector Plans were implemented by individual Division of Development Plans and Subdivision Plats."[3] The admittance of the plans lead to the incorporation of 1,160 acres as the City of Mill Creek in 1983. The driving force for incorporation was equitable tax structure and police security for the residents. Previously, the "unincorporated territory served by the Alderwood and Silver Lake Water Districts, the Everett School District, two fire districts and three telephone exchanges, as well as having a Bothell mailing address, left the area without a community identity."[4] Interestingly enough the first committees to be established were a City Council, a Planning Commission and a Recreation and Parks Advisory Board. Since, its incorporation on August 30th, 1983, the addition of 14 Annexations ranging in size from two to three hundred acres expanded the City limits.

Figure J: Dead End Streets, Mill Creek, WA

IV. What is in a Name?

Inspired by the Mill Creek City Council, in 2000, the city renamed a small creek, known as Smokehouse Creek to Mill Creek, providing the city with a namesake. The reasoning of the council was that the creek "should be given a name that complements the Town Center and establishes a namesake for the City. After some discussion, it was decided that the creek should be named Mill Creek.[5]

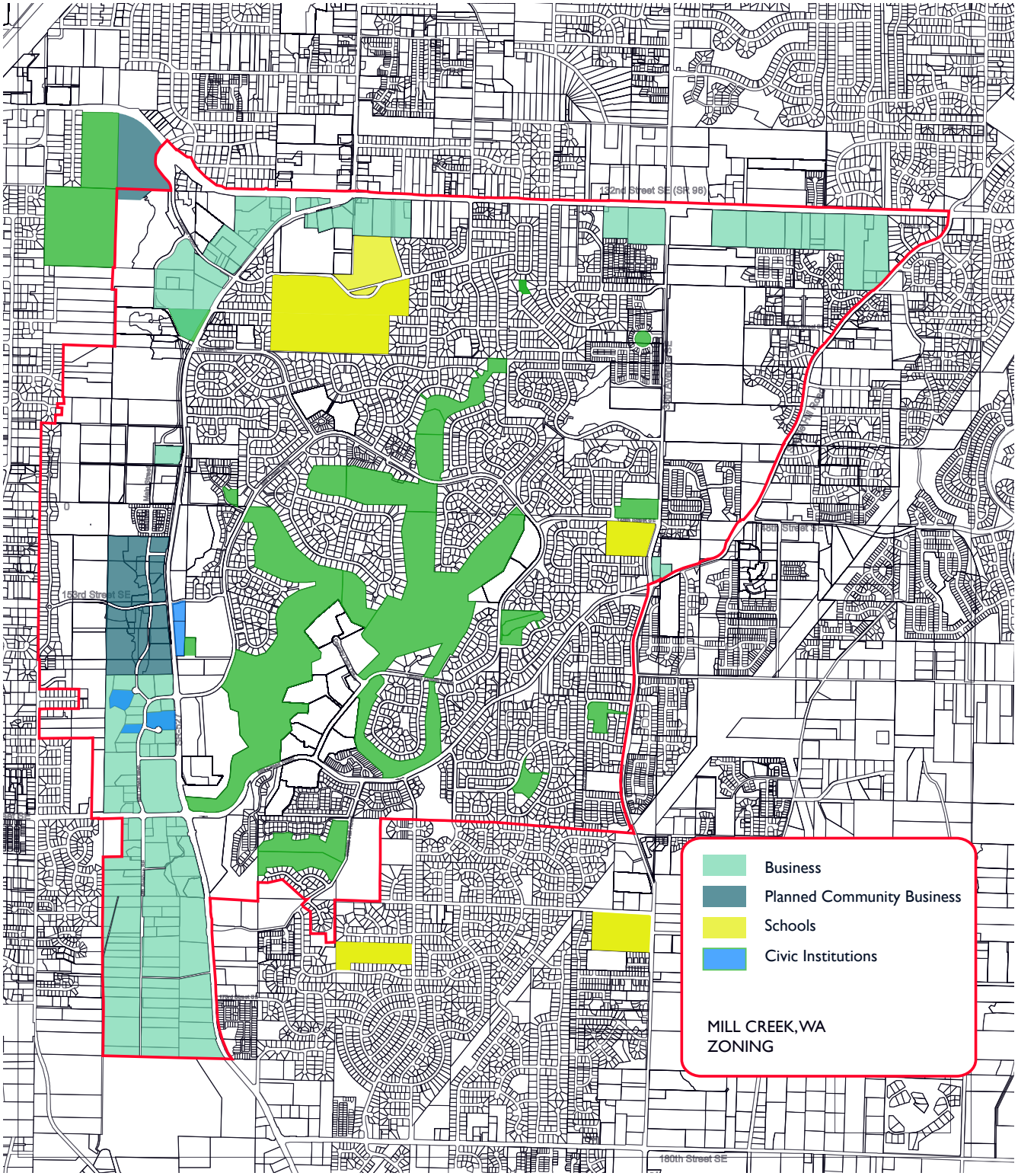
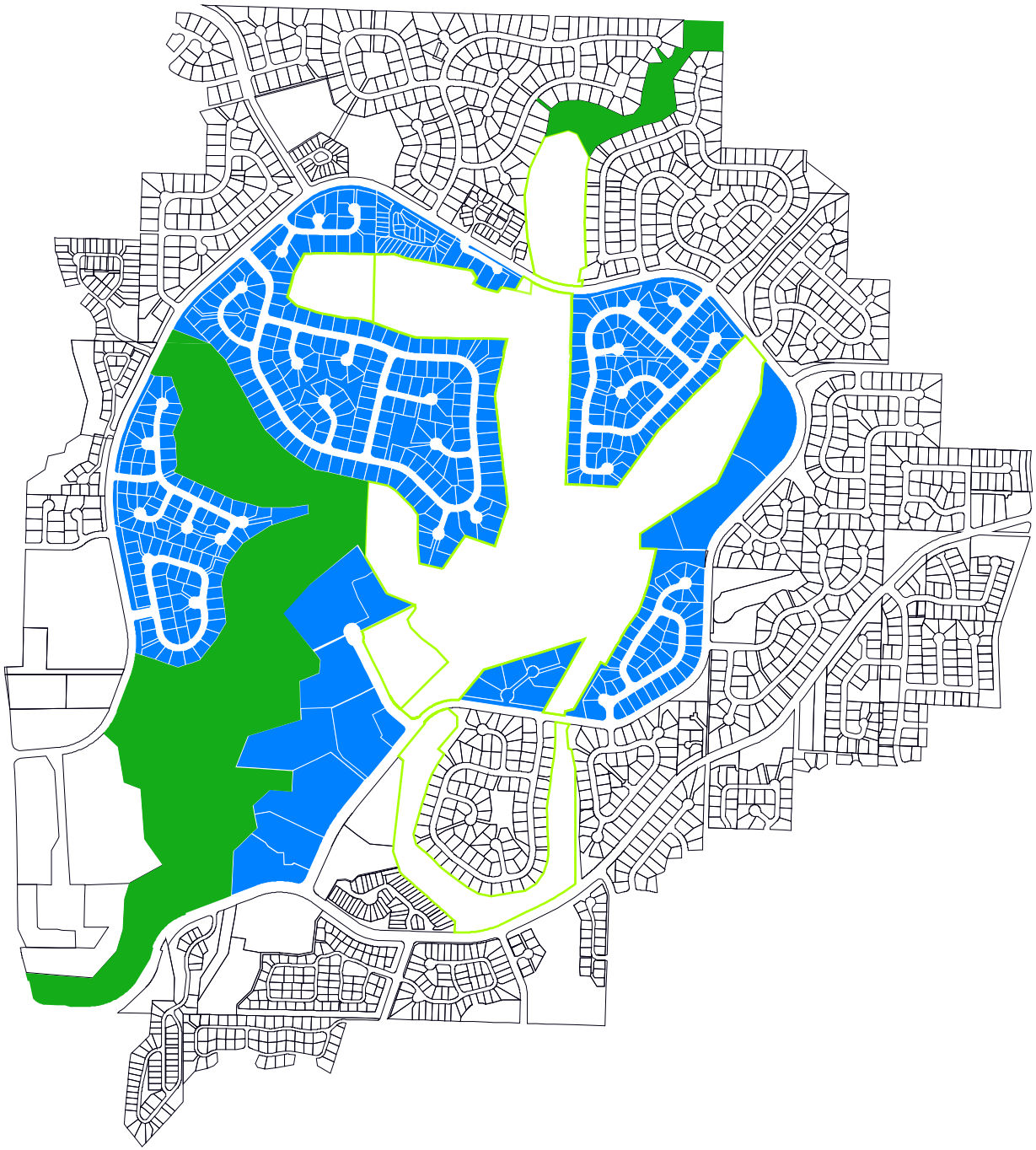


Figure J: Single Use Zoning
Businesses and Civic Institutions
Mill Creek, WA

Figure K: Figure Ground
Single Family Housing in Original Development
planned aroung the Golf Course
Mill Creek, WA



Subdivision Name	*# of Lots*
Aspen	43
Juniper	65
Evergreen	190
Laurel	22
F Greens	34
Willows	6
Fairway	106
WoodFern	51
Farirway Fountains	7
HeatherStone	52
Spring Tree	97

Figure L: Suburban Developments surrounding Golf Coutse and Nature Reserve, both private amenities
Mill Creek, WA

Figure M: Road Network, a vein-like structure of arterials and dead ends
Mill Creek, WA

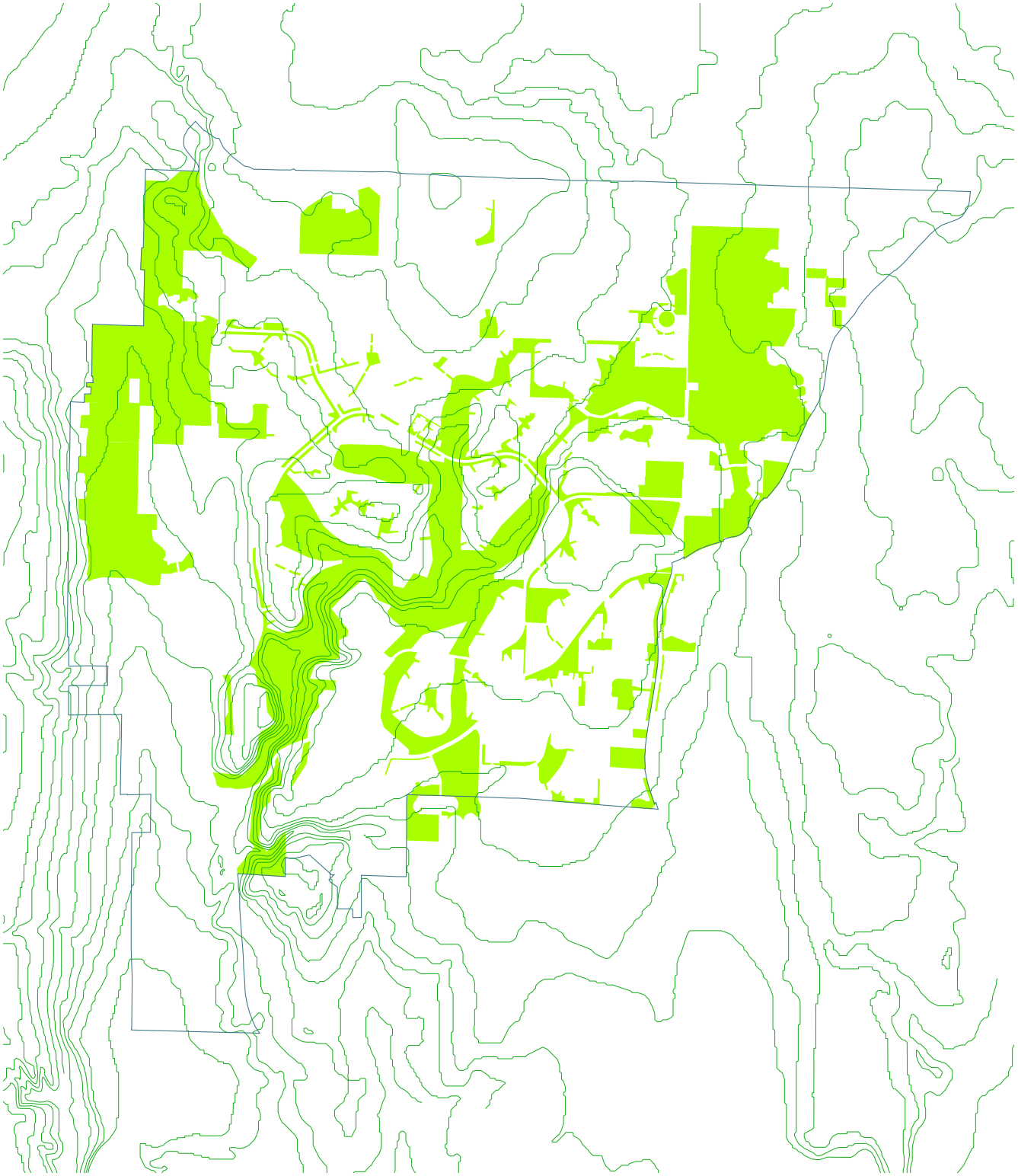


Figure N: Map of Green Spaces
Mill Creek, WA

7. A Focal Point
A Golf Course at the Center of Mill Creek

Many suburban developments are centered-around office parks, country clubs, or golf courses. In doing so developers added economic value to houses. Whatever entity was down the road could be advertised as an amenity to the community. The value of the house then becomes tied to the feature. For a number of years this was a successful model as the economy was strong, people were willing to pay and there was less concern for environmental and resource deprivations. Often the golf course or country club is privatized and focused on a singular activity, which further isolates and increases the expense of such communities. Many of these activities are recreational and often expensive and so when economic times are difficult they will be difficult to maintain. It is not hard, therefore, to imagine that when economics fail, these communities will falter.

I. The Development of the Golf Course

At the end of the Twentieth Century, the number of golf courses expanded all over the nation. Golf became an increasingly popular sport as did golf course developments and an entire market was born. Land values increased as homeowners were willing to pay top dollar for properties adjacent to the

course, even if they didn't play and it was just for the view. Aside from the game, people have been drawn to golf courses as a housing theme. As expressed by Mark Boud, a real estate consultant in Irvine CA, "Golf was so dramatically overbuilt in the 1970s, 1980s, and 1990s that I believe we'll continue to see a conversion of older public courses to residential."[1] The addition of 3,206 golf courses between 1990 and 2005 was a twenty five percent increase. Part of boom in growth was the use of the golf course as a sales tool for developers. Many communities were built around golf courses, highlighting the manicured greens and man-made lakes as amenities. The country club and the golf course, as places of leisure activity were symbols of success and became attached to an image of prosperity. They were places of community, one bought into, making them exclusive. Many invested, expecting that it would result in a retirement of golfing, leisure and dinners at the club.

Since 1960, master planned communities have been popular in America and developers have used images of leisure and a more affluent lifestyle afforded by the addition of pools, country clubs and golf courses, to advertise the difference between a standard development and master planned community is the addition of large scale amenities, such as a pool, country club, office park or a golf course. These places had something more. In 1990, "in Victor N.Y., 15 miles south of Rochester, work is under way on Cobblestone Creek, a 412-acre project with an 18-hole golf course and 282 homes that will be priced $350,000 to $600,000. In Carlsbad, Calif., 30 miles north of San Diego, work has begun on Aviara, a 1,000-acre complex with an 18-hole course and 2,000 condominiums, town houses and detached homes priced from just under $300,000 to just under $600,000."[2] Even just the association or adjacency to the golf course generates an increase in land values. The 1980's and 1990's were decades of boom as golf course communities gained momentum and appeal. In 1990, Mr. Cornish, a golf course architect said, "in many parts of the country developers have been able to charge 35 percent more for homes beside a golf course."[3] Although it is an expensive recreation, millions of Americans spent more money to be near courses and thousands of dollars on annual membership fees.

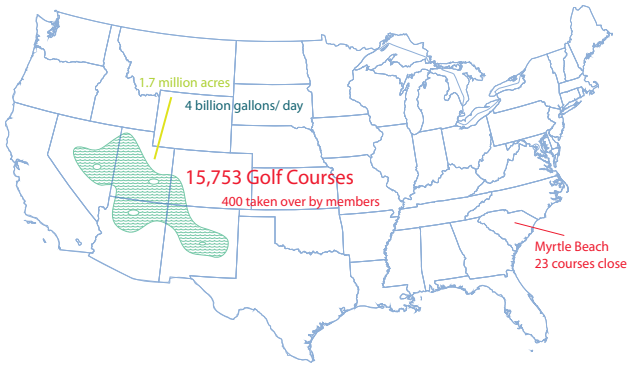


Figure A: Golf Courses in the United States

II. The Other Side of the Peak

Figure B: Golf Club members planting

In the United States golf courses cover more than 1.7 million acres and use up nearly 4 billion gallons of water each day. The golf industry has taken over a large portion of the American landscape. Unfortunately is an exclusive, expensive and high resource use industry. When energy was cheap and everyone could get a mortgage, people sought McMansions tucked between cul-de-sacs and the ninth hole. It didn't matter if they had to drive around the other nine to get to work or the market as they had a garage full of cars and they could afford to. Today, the economics are different and the cost of daily-life more expensive and the house isolated in a ring of green is less attractive and often unaffordable. The first decade of the 2000's was opposite to the last of the 1990's and the patterns continue today, as "rising land prices, environmental concerns, and economic insolvency cause scores of golf courses to close every year. According to the National Golf Foundation, golf course closings in the U.S. outnumbered openings from 2006 to 1008, with one hundred and six golf courses folding in 2008 alone."[4] Not only is the housing market shifting downward, so is the golfing industry.

Like the era of the car and mass produced houses, the era of the golf course has peaked in the United States. Over the last decade the number of golf courses and the number of players has dramatically declined. Currently, there are 15,753 courses in the United States, a decrease of299 courses in the past seven years and 157 of those in 2011 alone, according to the National Golf Foundation. Now, many are finding that the golf course in their backyard is bankrupt and the once manicured fairway behind their house has turned to weeds.


Figure C: Golf Club members taek down a tree

Mr. Kletter, one of the members at the Timberlake Country Club in Chapin, South Carolina, who bought the financially failing club, is finding his retirement to be different, than he expected. He explains, "As he planted a six-foot fern, "But the recession changed everything. The golf course was in danger of closing. It's not a golf community without a golf course. We had to do something."[5] Instead of just

watching their home values plummet, when the golf courses closes, members are pulling out checkbooks, weed whackers, chainsaws and shovels to keep the clubs alive and keep home values up. In the end, "we had to protect our lifestyle and investment."[6] The alternative, such as, "Northgate Golf Course, a top-rated layout in Reno, Nev., that closed in 2009, is now overgrown, more a home to bunnies than to bogeys,"[7] is unappealing to them. Those who live on the golf courses are interested in keeping property values high, for many of them it is an investment they can't afford to lose. The reality is the entity, in this case the golf course, which by association creates economic value to their homes, may soon have to take a different form.

It is estimated that 25.7 million people are still playing golf, but that is 4.3 million fewer than seven years ago, which means approximately one in eight players has left the game usually due to cost. Fewer people playing golf and fewer courses, means, "the vast swaths of land they leave behind can be attractive targets for mixed-use infill or community open space."[8] The acres of open space, often only surrounded by single family homes are opportunities for new places for people. Farms, new centers, more houses, and parks can all be built and add places for all members of the community, rather than for just those, who can pay. Various activities, types of commerce and business can be interwoven across the landscape, so that when money is tight people can adjust.

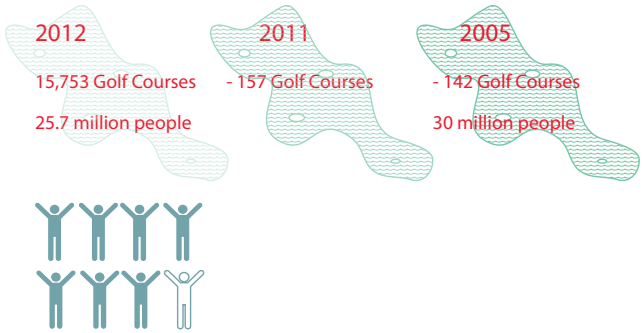


Figure D: Golfers numbers are decreasing

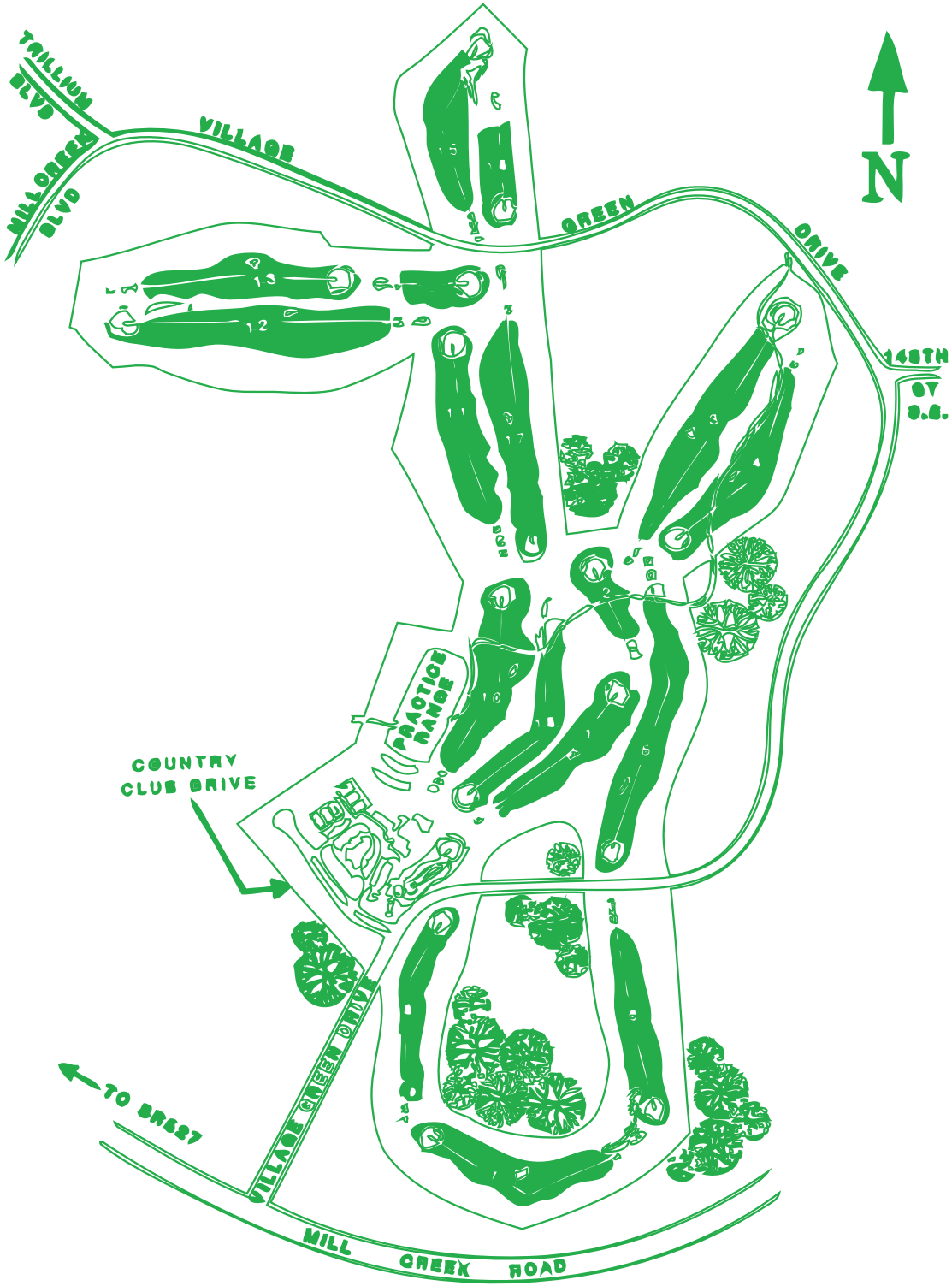


Figure E: Aerial of Mill Creek Golf Club
Mill Creek, WA
Figure F: Original Plan for Mill Creek Golf Club
Mill Creek, WA

8. Making a Future
Retrofiting Exisiting Conditions and Building a Center

While a portion of this project simply is about shedding light on the current challenges America faces, it is also about looking for methods to reorganize and reallocate resources. In part the aim is to make communities that increase quality of life and increase value not just in monetary form. Many of the adaptions are derived from noticing a void and adding what is missing to create a balanced and complete place. By recognizing that there are an abundance of single-family homes and qualities of suburban life people want to maintain, the design is a retrofit of suburbia.

At its essence the project is attempt to look at a solution to the suburban crisis that doesn't turn it into an urban condition or a demolish it all. Instead the project sits, theoretically, in the middle and looks at if a partially urban and partially rural condition is still possible, that is not urban agriculture. Can viable communities be built that respond to natural population growth rather than depend on an immediate artificial increase in density? Might the current texture of density in suburbia be able to support a sustainable community?

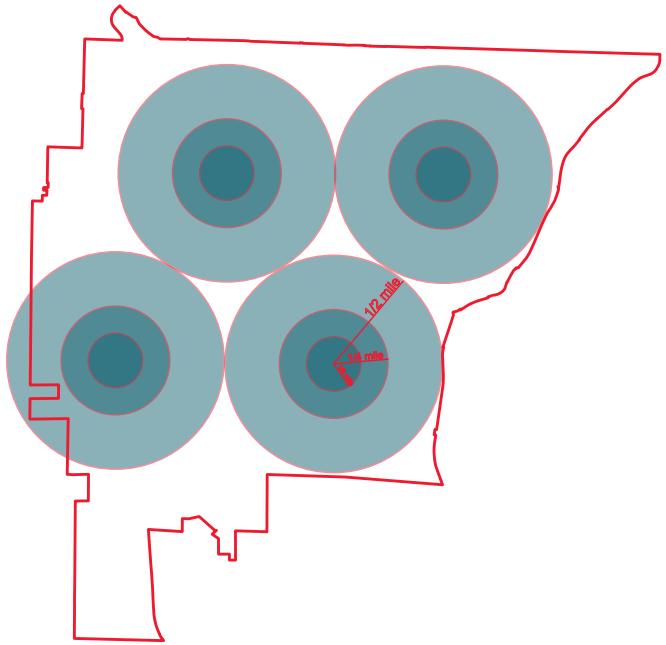
A main element of the design is to find and make a new center for Mill Creek that in Kunstler's

terms would be a place that people want to be in. By finding the center of the political boundaries and relocating civic and business activity here, greater accessibility and ease of use is increased. Analysis of the human scale leads to environments that are walkable and in turn this provides for a more flexible system and lifestyle that can support many types of transit, income levels and a larger range of people.

The scheme looks at designing for life as a series of layered systems rather than a flat image.

It is also concerned with a range of scales, from the human, to the car, to the region. Rather than have a particular scale dominate, all are valued and the moments of intersection become more interesting. The same approach is given to scales of time, recognizing that some systems made need to be implemented at a neighborhood wide scale and not changed for a generation and other alterations will be incremental and may change day to day. In either case, the value of the house, the road or the neighborhood is not fixed to stagnation or an associated value. The pace of change is not unnatural as it is connected directly to living. Alterations in the built environment respond to social and physical needs. If hundreds of years of habitation on the earth are any evidence this actually might improve quality of living and well-being, because a sense of place is created.

Humans are social beings and a sense of place is created through, relationships, connections and interactions. The conceived efficiency, separation of activities and isolation of increase non-of-the-above and reduce choice. People living in Mill Creek have to get in the car to go to work, get a gallon of milk or visit a friend. Dead End streets and an arterial road system have further forced residents into set patterns and limited alternatives. The new central node provides space for a variety of activities, including but not limited to commerce, light industry, offices and farming. It becomes a network or system of many parts to support a dynamic lifestyle. The other advantage to a multi-tiered or layered system is that if parts of the system become weak it will not lead to an immediate demise of the entire system and there is the potential for the system to be greater than its parts.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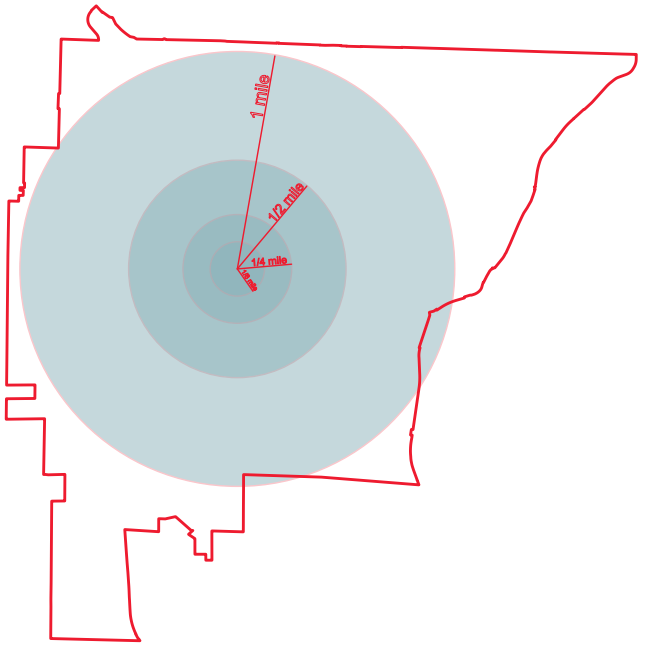
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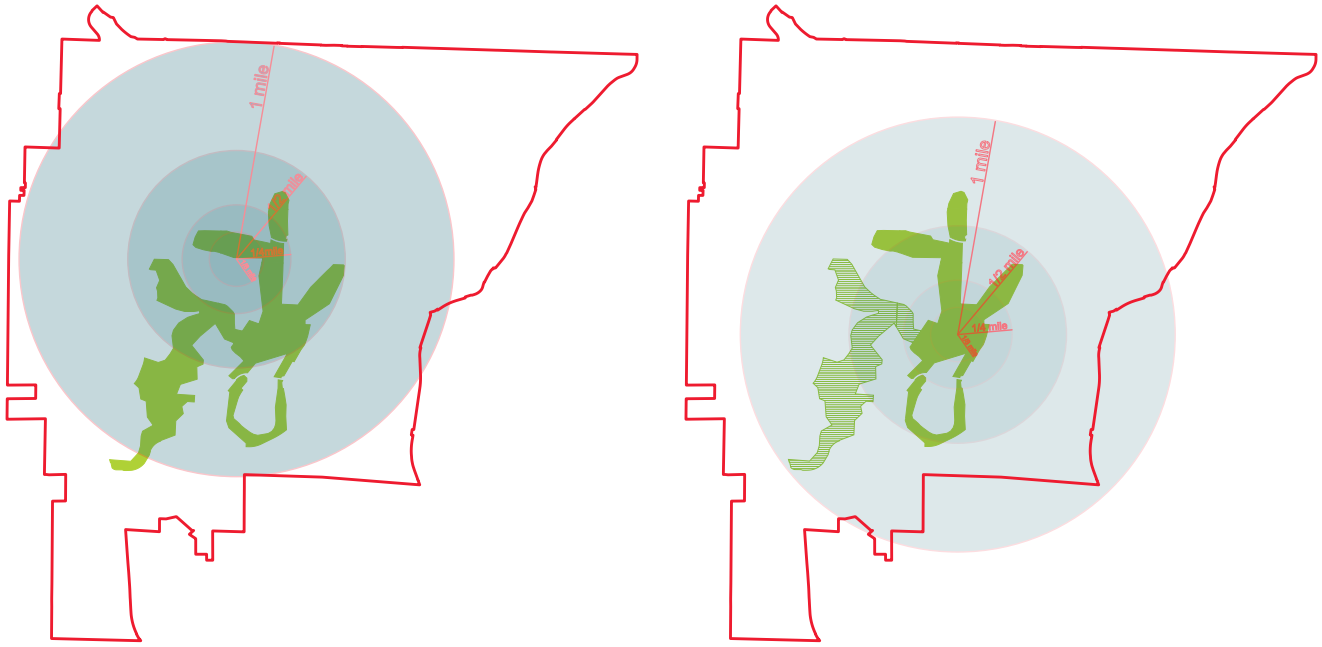


Figure A: Walking Circles and Finding Center in Mill Creek, WA

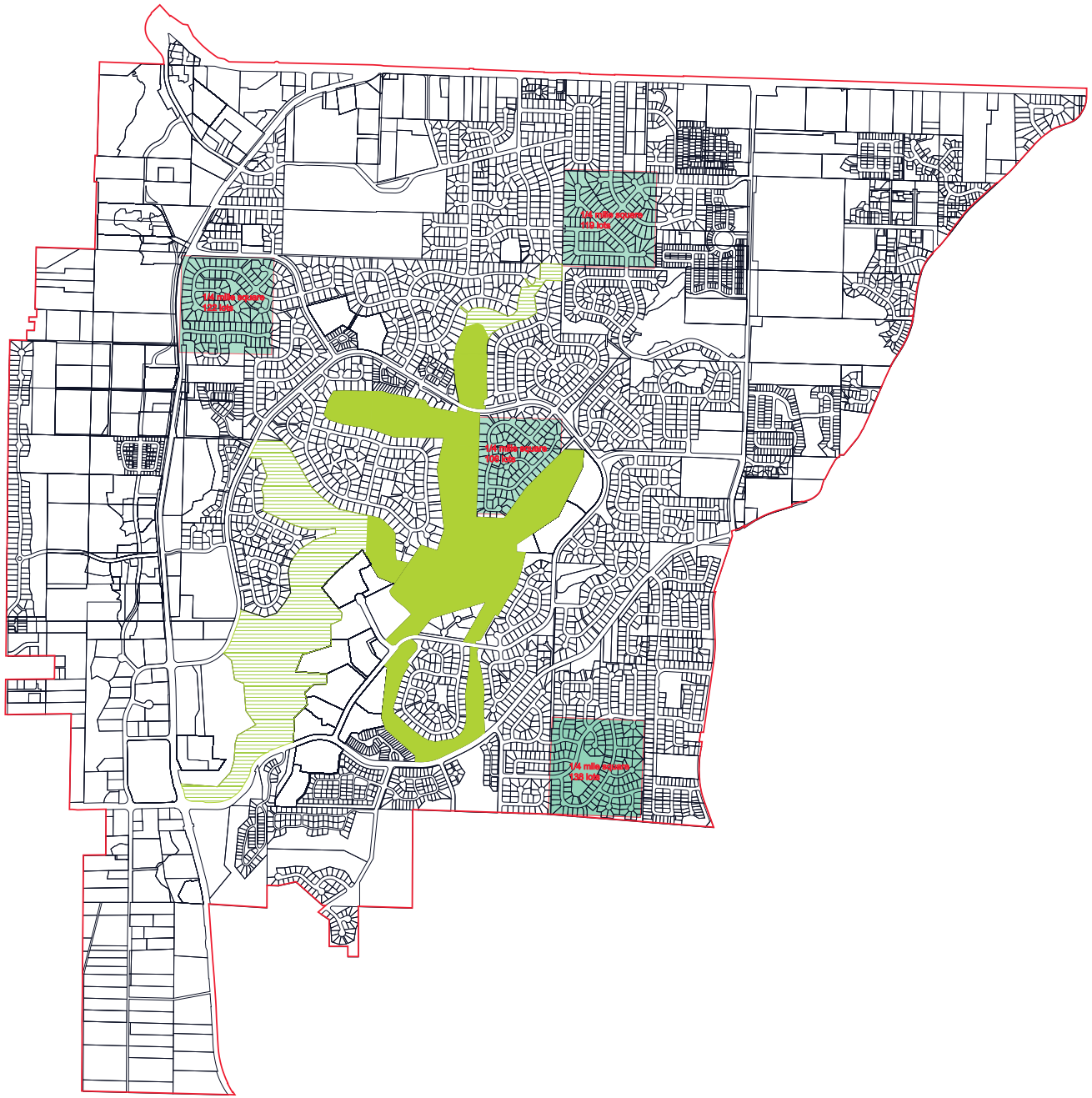


Figure B: Sampling of the number of lots in quarter mile areas in Mill Creek, WA

Figure C: New Road Network of streets that connect

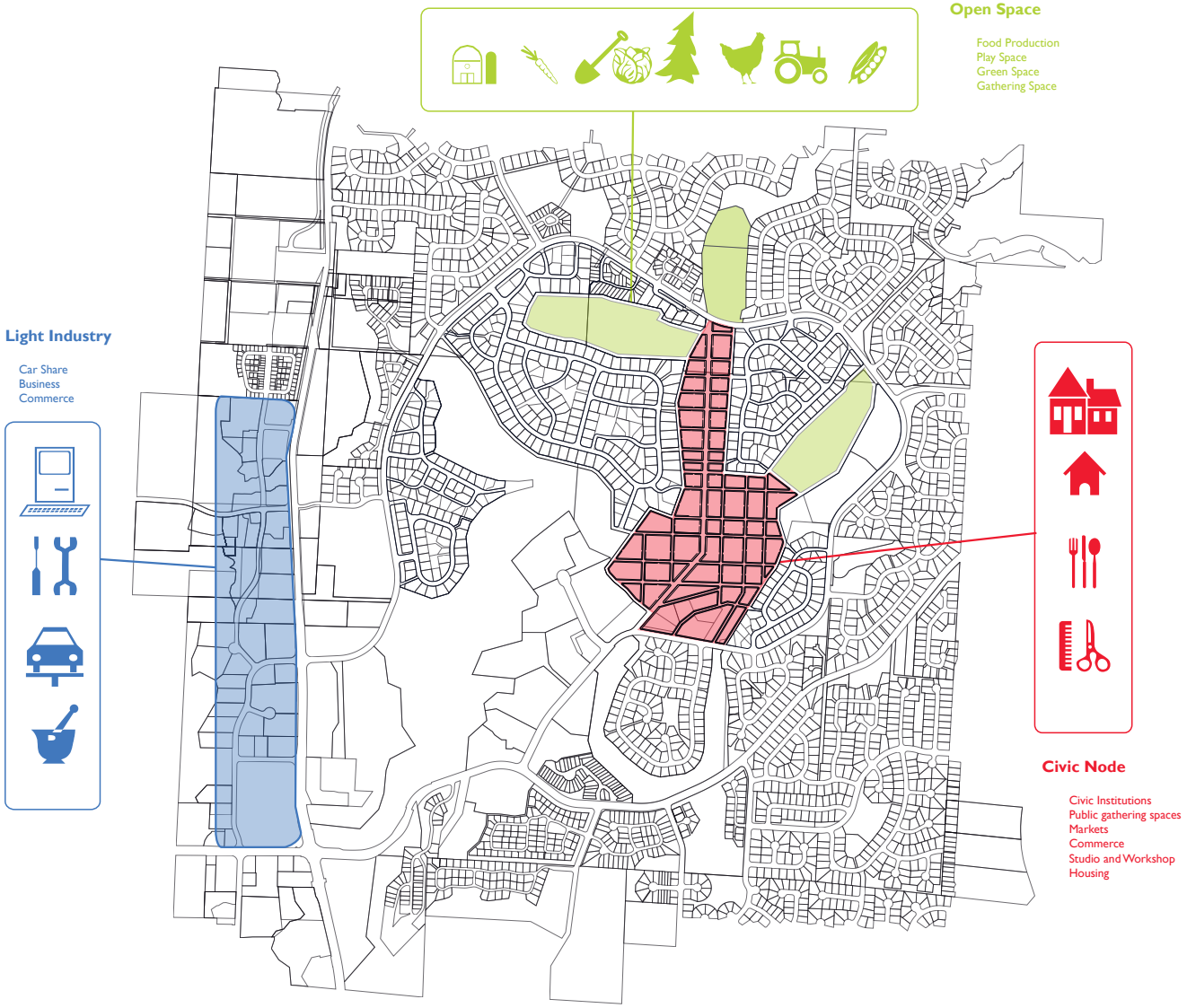


Figure D: New Program Areas that allow for greater flexibility and range of uses

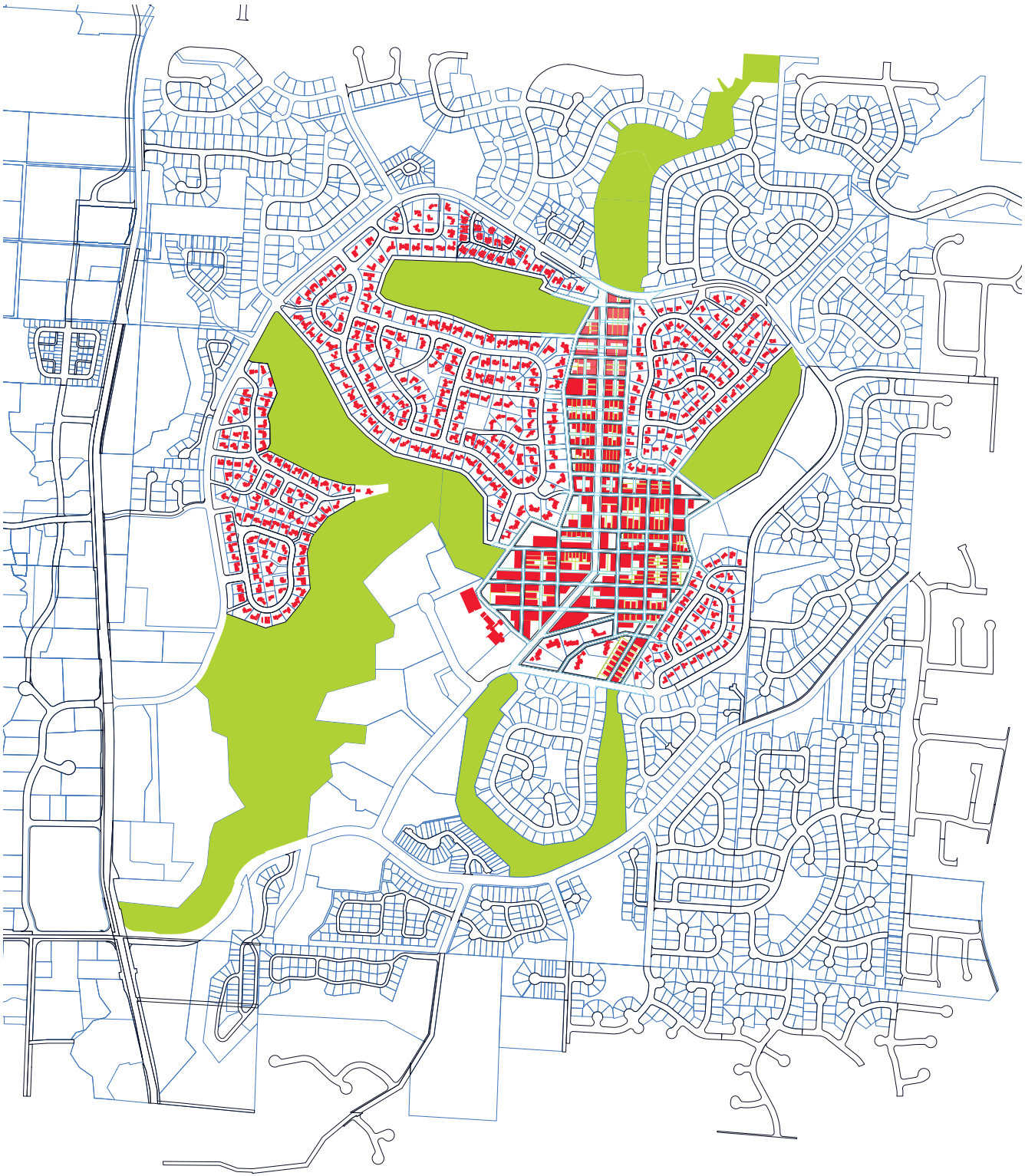


Figure E: New Node, a central place of activity for Mill Creek

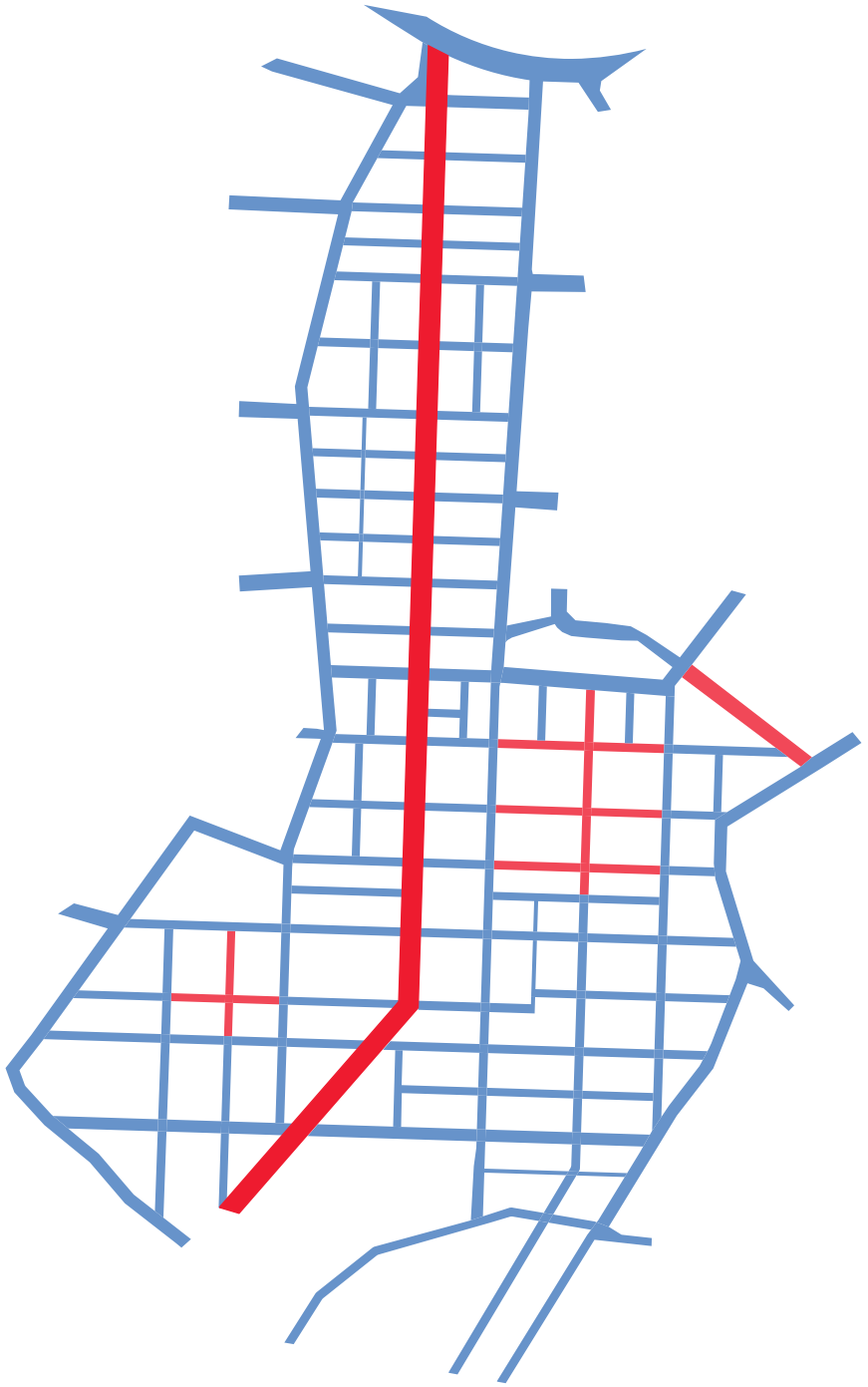


Figure F: Street Grid that provide connections and a heirachical system

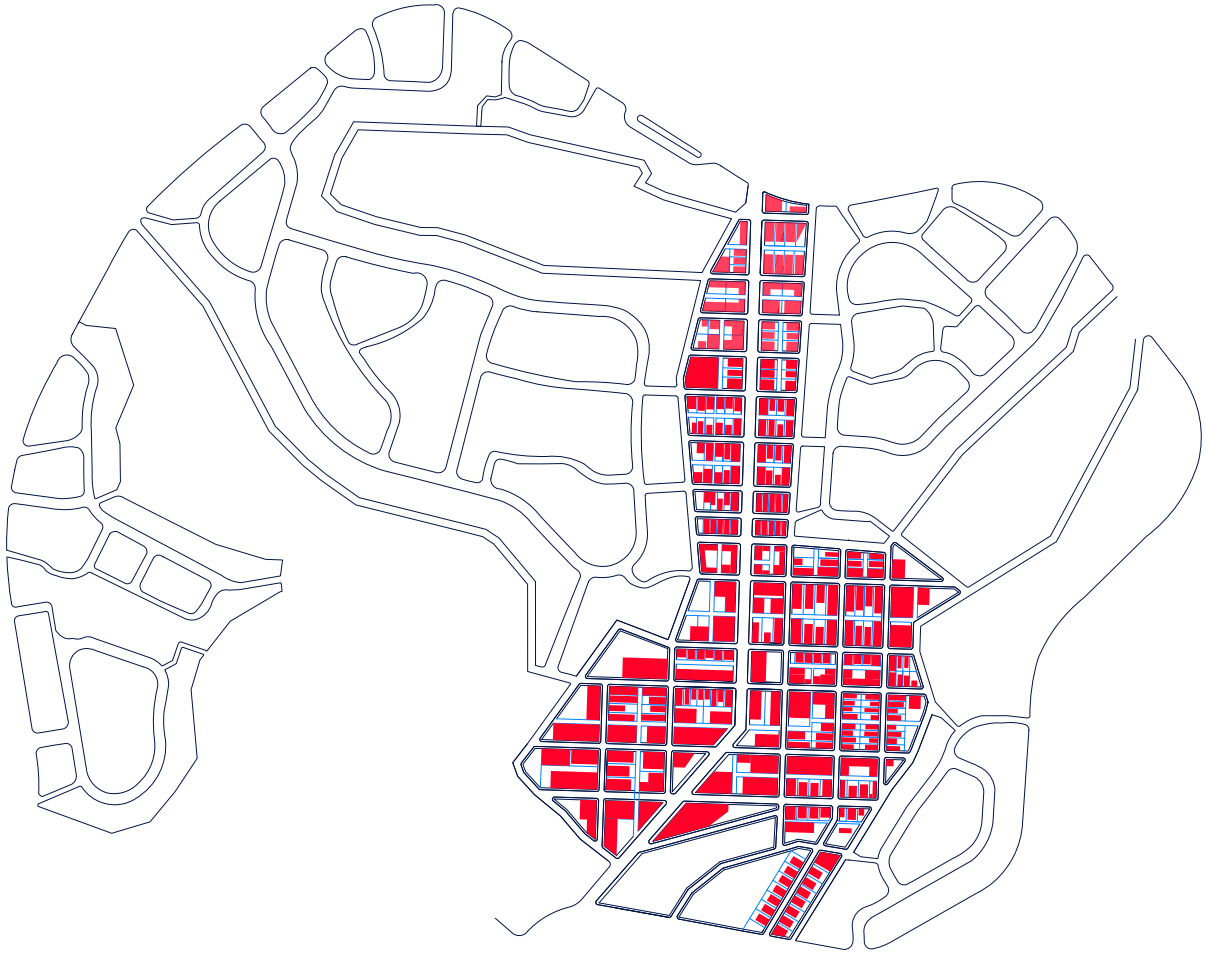


Figure G: Block system that is formed from starting with a 250 foot square block grid and then is adjusted to connect to streets in surrounding housing area for greatest accessibility

II. Roads

A major feature of suburban communities is cul-de-sacs and roads that dead end. Mill Creek has no lack of these. Cul-de-sacs abound and each subdivision has only one entrance. A series of collector and arterial roads lead everyone from their home on a cul-de-sac to the freeway and into the nearby cities of Everett and Seattle. The current road layout causes a heavy reliance on the automobile, leads to indirect routes to destinations and endless hours in the car.

By cutting through the cul-de-sacs new connections are made and trip times decreased. The cul-de-sac becomes a street rather than a dead end. By creating more direct paths out of homes and to places, the hope is that less time will be spent getting from place to place and more time will be spent enjoying places. It also increases street frontage and gives houses more opportunity to have a face on the street. As the car becomes less and less economically feasible, a fluid street grid that is easily walkable and takes people to their destination will become increasing desirable.

III. Zoning

The separation of activities and implementation of single-use zoning has increased the need and cost of the transportation of goods, services and people. Doing away with zoning that isolates elements of daily lives allows for the overlap of activities and greater flexibility. In the new centrally located node recreation, housing, light industry, food production and commerce can all be integrated. In this new system, heavy, chemical dominant industry may not be allowed next to a house or a kid's park, but a chicken coop can occupy a yard, or a bike shop can be in the same building as a bar and a woodshop can be set up in a garage. The new zoning takes a cue from the mixed use buildings developed in Seattle and Portland in recent years. Flexibility in zoning is also important, as it needs to be adjustable based on changing needs of daily life.

In what was just a town center with shopping and food is now space for a car share, light industry and office spaces as well. In the Central nodes, civic Institutions, markets, public spaces and work spaces are available. The housing is still primarily residential, but what that entails is a much wider set of programs as workspaces, cafes, gardens and chicken coops are allowed.

IV. Houses

Many single-family houses are composed of a kitchen, formal living room, family room, master bedroom, master bath, additional bedrooms, bathrooms and an atrium or front entrance. As much of the house is designed for living as is designed for show. Much effort goes into building for the presentation of a lifestyle type rather than building for living. The house doesn't need to be designed purely on function nor does it need to be completely about a façade, there is a balance between the two. A house ought to both fill the basic needs of its inhabitants, such as a place to sleep, cook and gather as well as be a place; the people, who live there like and want to call home. The purpose of a house is after all to be a home for people to live in.

Hopefully the elements of a house will be dynamic, in order to be adjustable to changes in lifestyle and need. If a house can adjust to housing the addition of children, the need to produce food or a home business, it will last longer and suite human needs. The ability to adjust one's environment also evokes a sense of pride and ownership.

Explore the cul-de-sacs of suburbia and you see wide empty streets, cars parked on paved aprons and garages filled with bikes, kayaks, tools, and storage. There is usually a backyard and a small front lawn, but a huge portion of a lot is a paved apron which extends to the street. The house is often centered and pushes out, nearly to the lot lines on either side, while being set back from the street edge. Reduction in car usage, due to economic changes and the fact that daily needs are now meet in the central node, so less

travel is needed, opens up a huge portion of land that was once given over to the car. This space can be used for many indoor and outdoor uses, such as woodworking, offices, separate housing units and growing spaces. A new coffee shop or T-shirt design shop could spring up in a garage and the upper floor could be a rental apartment and in ten years when grandparents want to move in they could take over the space. This method also allows for all sizes and types of spaces to coexist in the same area so it truly is multi-use.

The sequence of diagrams shows three different garage and house relationships. The first condition is when the garage is separate from the house, the second is when the garage is embedded and often the story above houses bedrooms and the third type is when the garage is adjacent to the house. The first column illustrates the existing relationship between apron, garage and house. The second column shows the addition of work or studio space, the third column shows increasing living space and the forth column shows adding green and farm space. All of the alterations seek to make the house lot a more flexible, vibrant and engaged place.

V. Streets

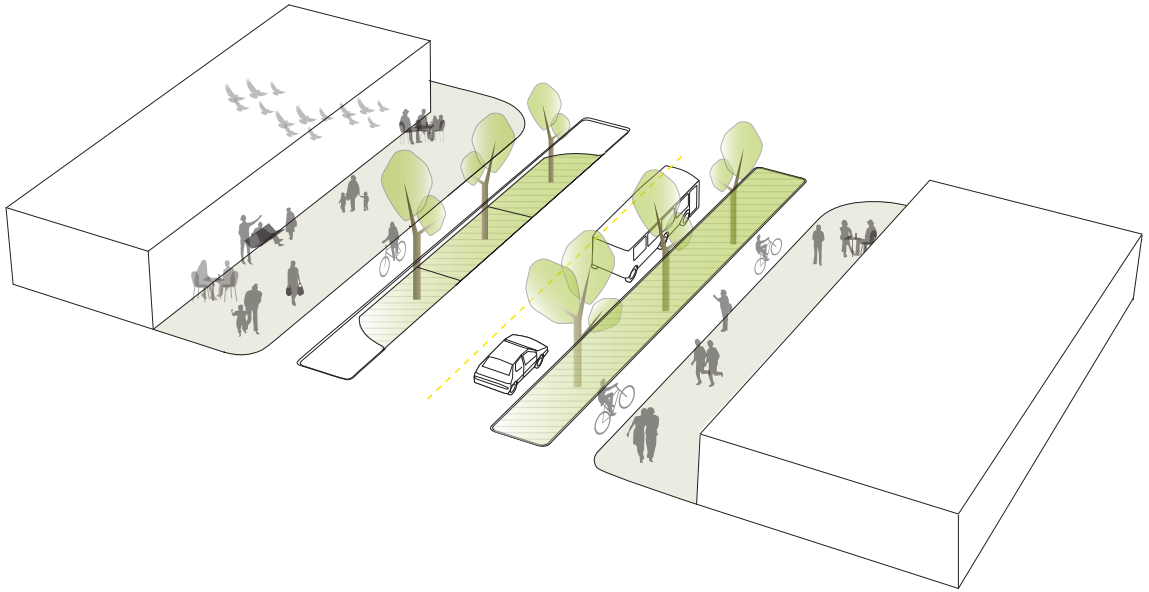
The vast stretches of pavement that cover a disproportionate amount of the land serve as paths for cars to take people from house to work to market and back. Isolated in metal boxes for hours driving on roads and sitting at traffic lights, the streets can't offer any civic life nor increase connections between people. The design makes an effort to get people out of cars and onto the streets, using bikes, carts and feet to move about. Today, the average American household has more than two cars and the average commute is nearly half an hour. Although, cars will not immediately be removed from the system, the thought is that eventually they will and other systems such as trains, pods and bikes will become more prevalent. Thus the project, through increased availability of alternative modes of transit, decreased distance between destinations and less necessity to drive seeks to reduce the average to one car per house. If daily activities don't involve car travel the amount of time, resources, money and energy that goes into car transport can

greatly by reduced.

In this design the street becomes a place and is a space for many modes of transport and activity. Room is provided for walkers, bikers, drivers, cart pushers and mopeds. Sidewalks have spaces for trees and café tables. Separate lanes are designated for un-motorized travel and there is a huge reduction in parking spaces, which now become places for trees, gardens, sitting and other impromptu activities. Rather than just implement one street type the design calls for a range of street types to create variation and fill different needs. Alleys are for smaller carts and back gardens, whereas the Main Street is for many modes of transit and street fairs.

VI. Open Spaces

Open spaces, which were once, parking spaces, lawns or golf course can become parks, playgrounds, gardens, farms or simply public space for gathering. By opening up the allowable uses in these spaces and turning some pavement to green space a much larger variety of uses are possible within one area. It means that food can be grown next to houses and kids can walk to the nearby playground. It allows for more accessible activities for the population, who is unable to drive and reduces transportation costs for those, who can. An increase in not only number of open spaces, but dispersion, will expand not only access but quality. Open spaces can also provide for greater variation in landscape textures and connecting the series of open spaces greats a whole that is far greater and more useful than just its isolated parts.



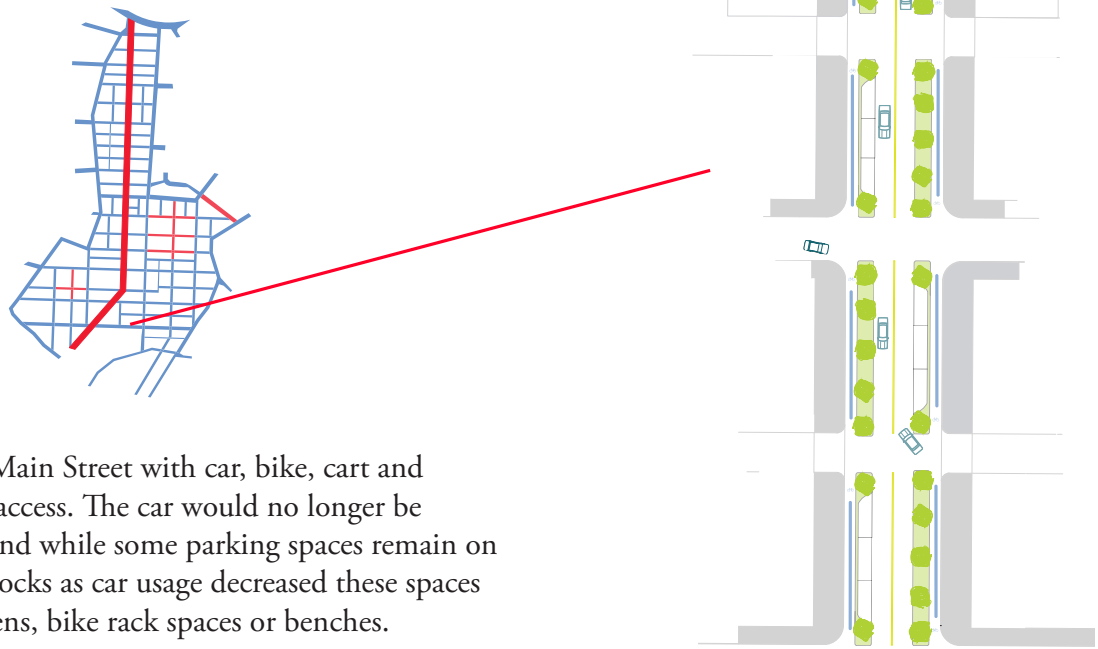
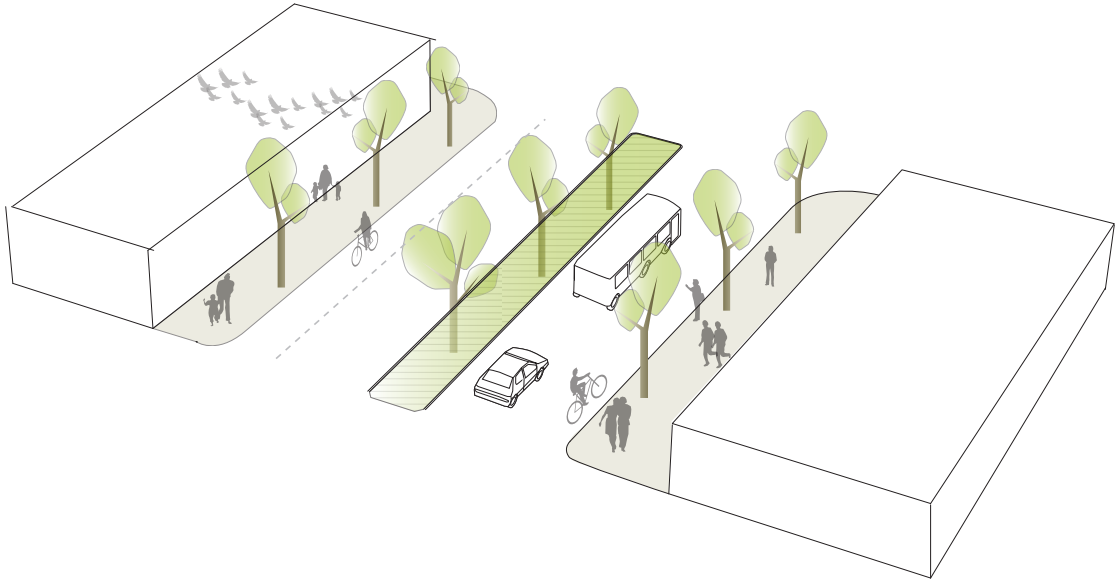
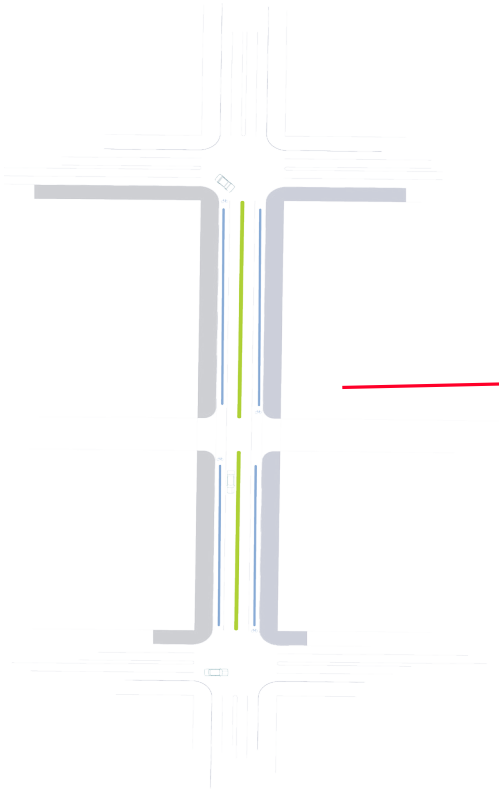


Figure H: Main Street with car, bike, cart and pedestrian access. The car would no longer be dominate and while some parking spaces remain on alternate blocks as car usage decreased these spaces could gardens, bike rack spaces or benches.





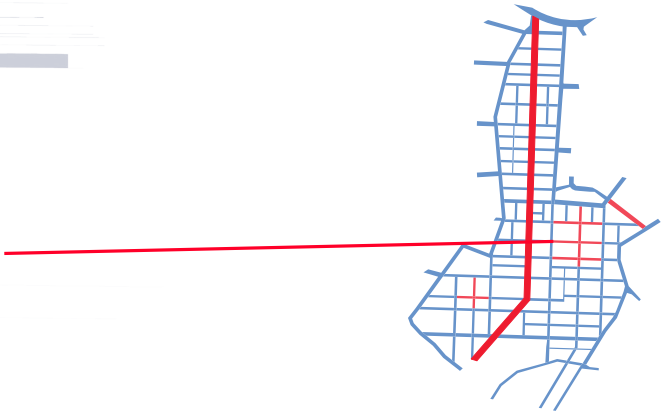


Figure I: Secondary Street with car, bike, cart and pedestrian access. Like Main Street this street becomes a space for many activities, but no space is provided for parking.

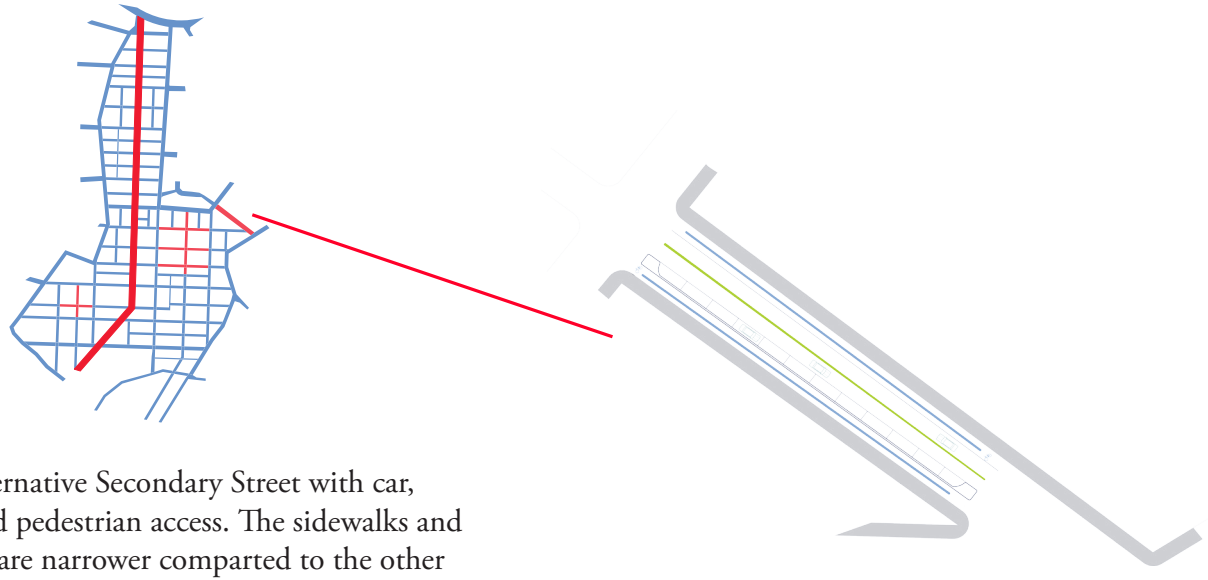


Figure J: Alternative Secondary Street with car, bike, cart and pedestrian access. The sidewalks and green spaces are narrower comparted to the other secondary street condition to fit into tighter spaces and provide a street type for more function based needs.

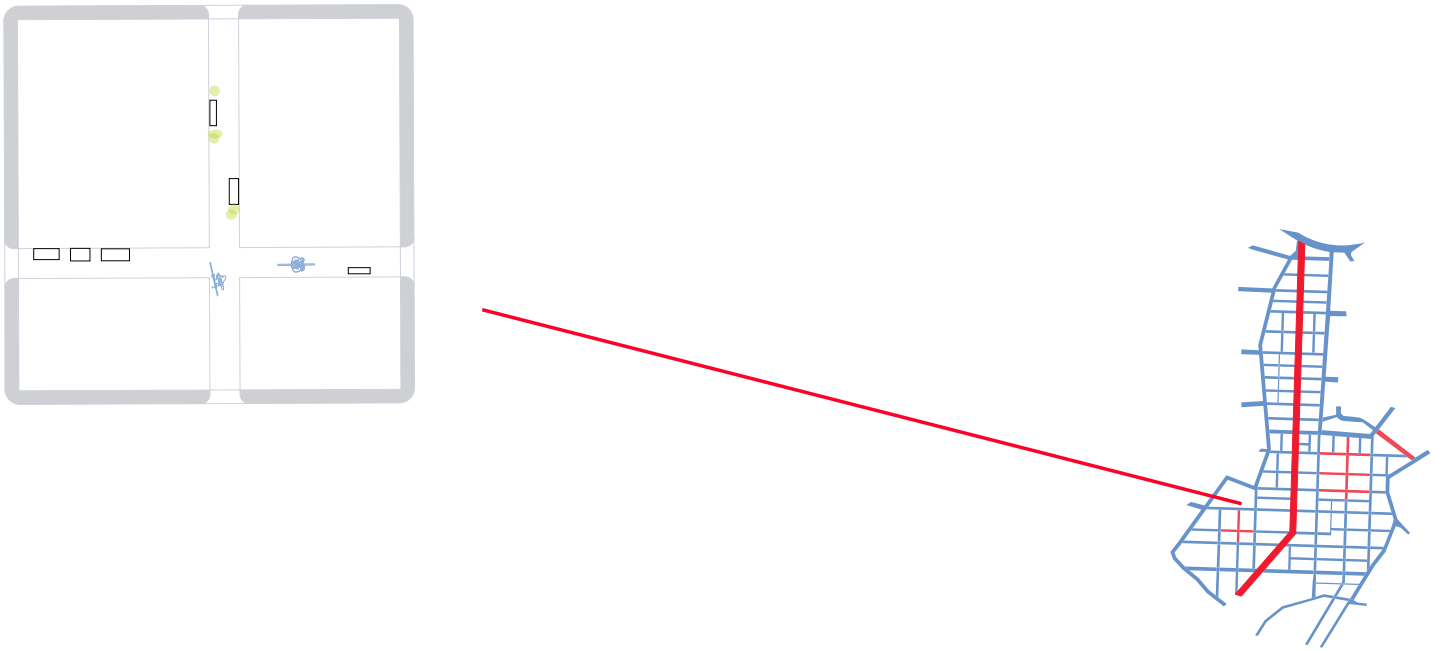


Figure K: Alleys are designed for bikes, pedestrians and delivery access. Alleys will also be spaces for work, kitchen gardens and other needs as users see fit. They serve the funcion of accesibility to buildings and as semi-public spaces.

Seperate

Lot 1
Lot 18,000 sqft
House 3,480 sqft
Garage 748 sqft
Apron 2,522 sqft

Embedded

Lot 2
Lot 17,336 sqft
House 3,130 sqft
Garage 1,070 sqft
Apron 2,721 sqft

Adjacent

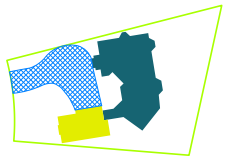
Lot 3
Lot 14,636 sqft
House 2,794 sqft
Garage 927 sqft
Apron 2,149 sqft

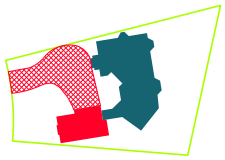
Existing House and Garage

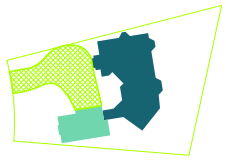
Work/Studio Space Added

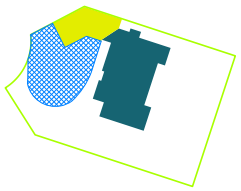
Living Space Added

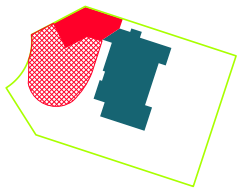
Green/Farm Space Added

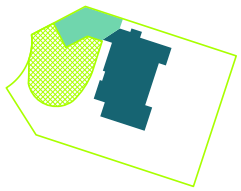


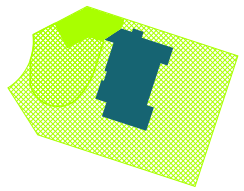


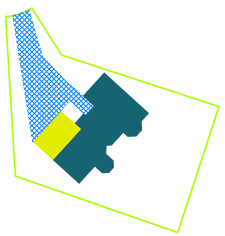


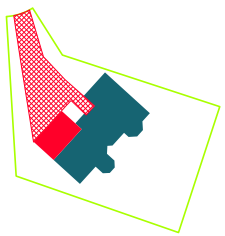


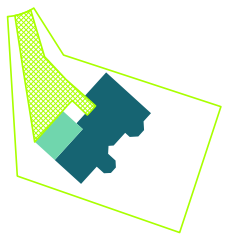












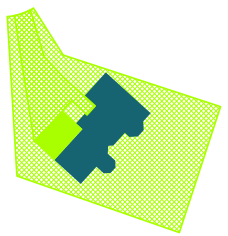


Figure L: House Conversions and Forming New spaces in exisitng typology

Figure M: Public Spaces and Streets with a sense of Place

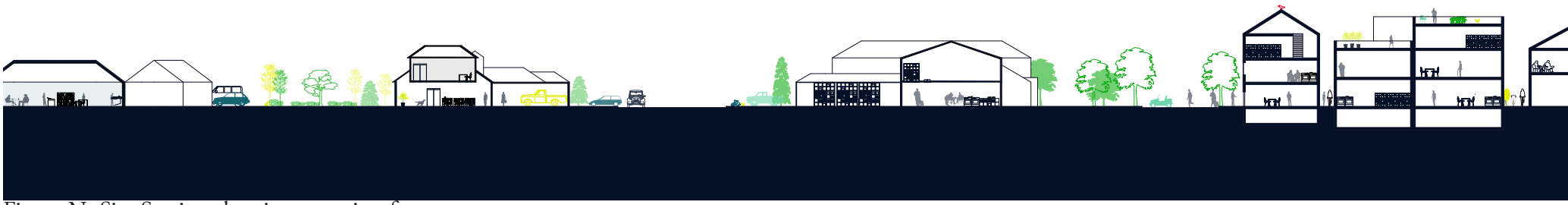


Figure N: Site Section showing transtion from existing suburban, car dominated environment to new node that supports the neighborhood by providing spaces for the needs and activities of daily life to the new suburban housing model that suites more people with more types of housing, choices of transit and programs.

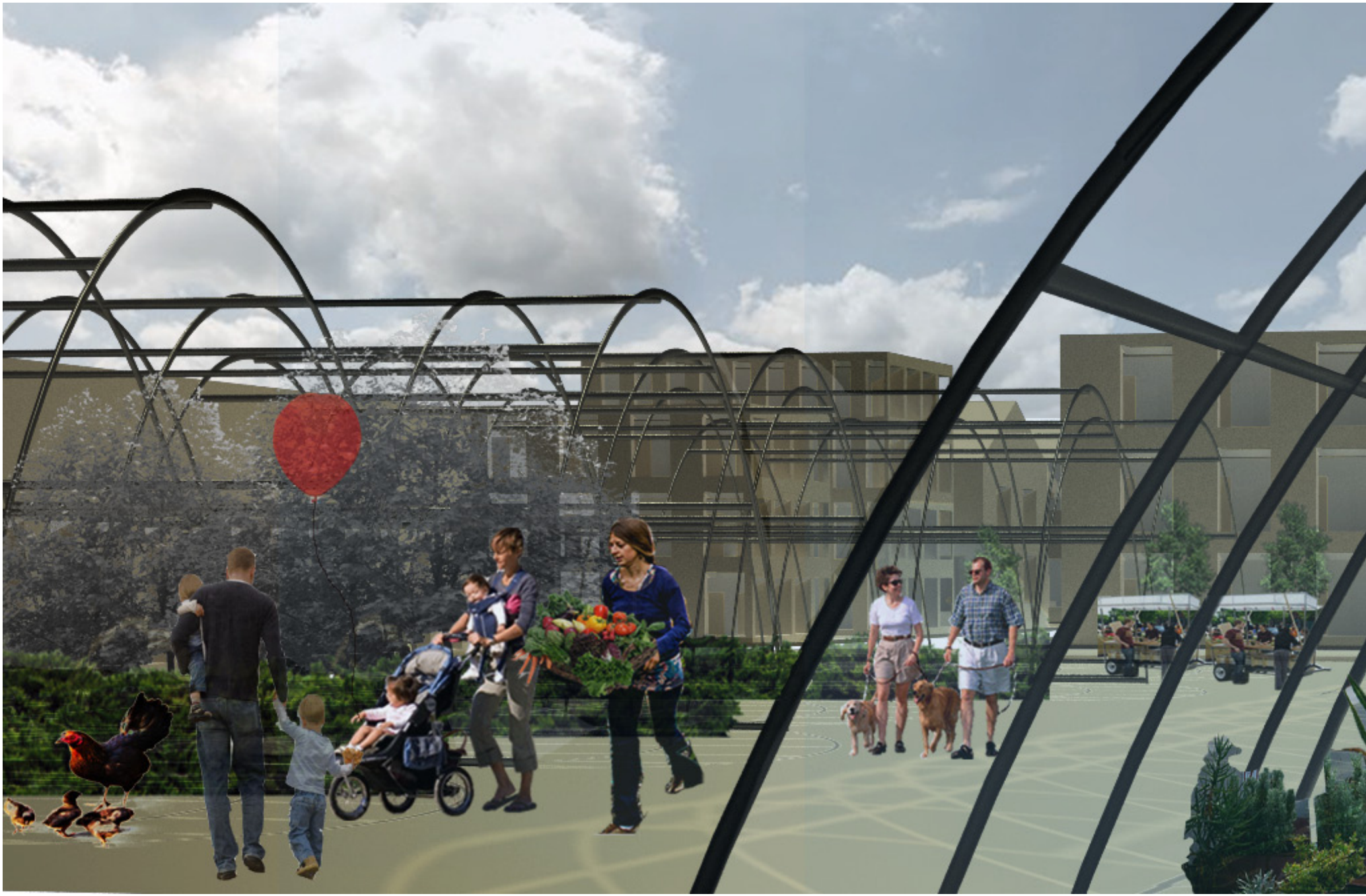


Figure O: Public, Street, Growing and Livign Spaces merge into one place.

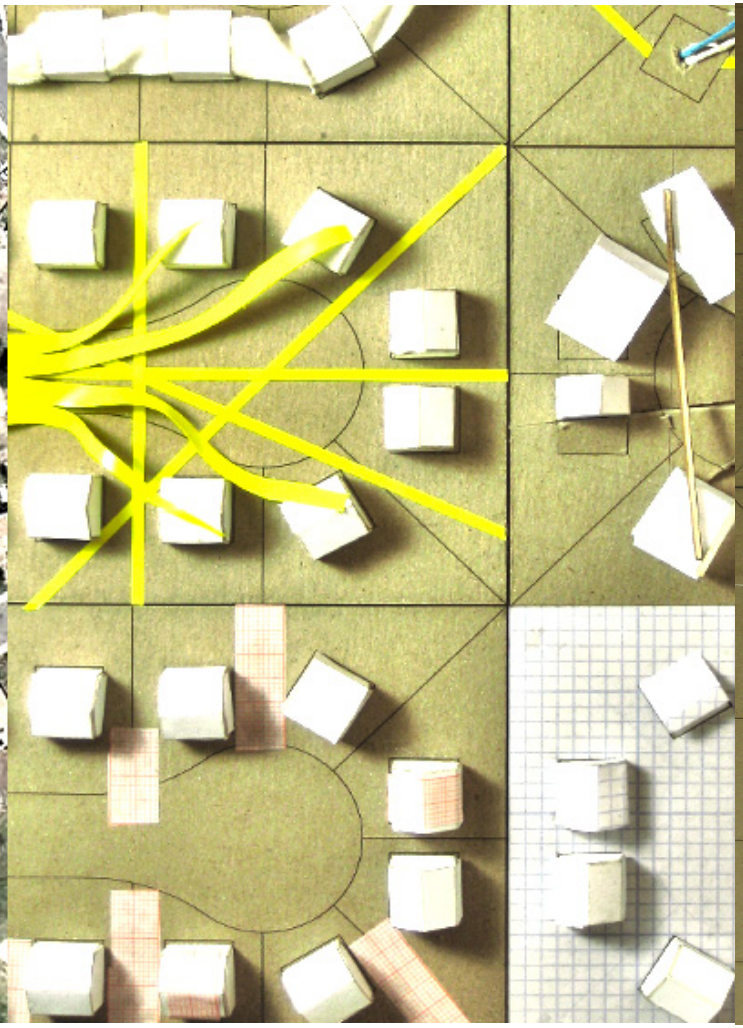
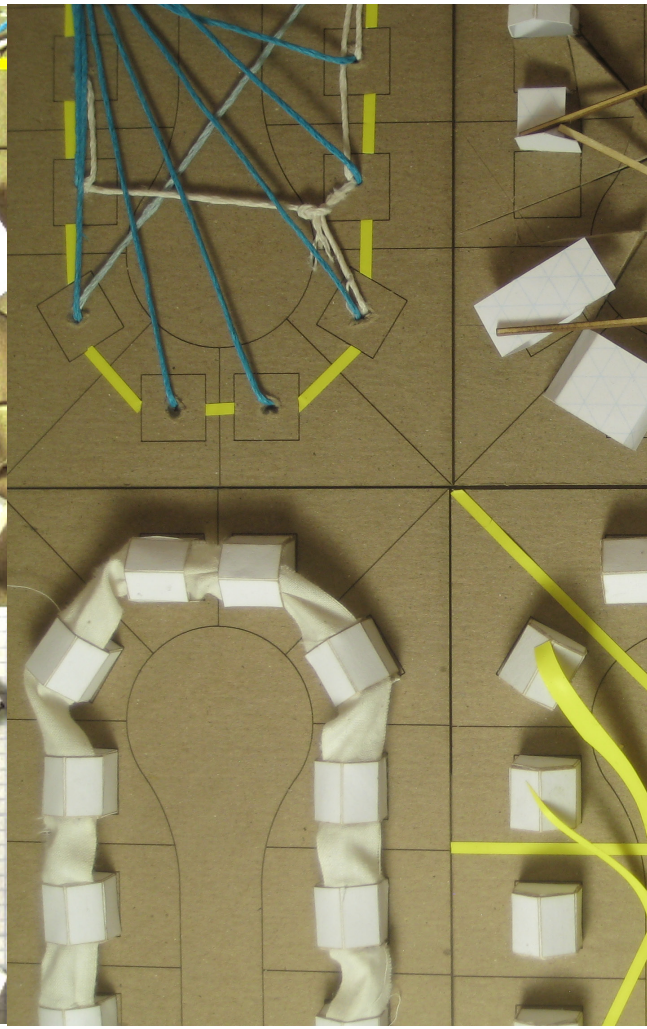
9. Final Thoughts

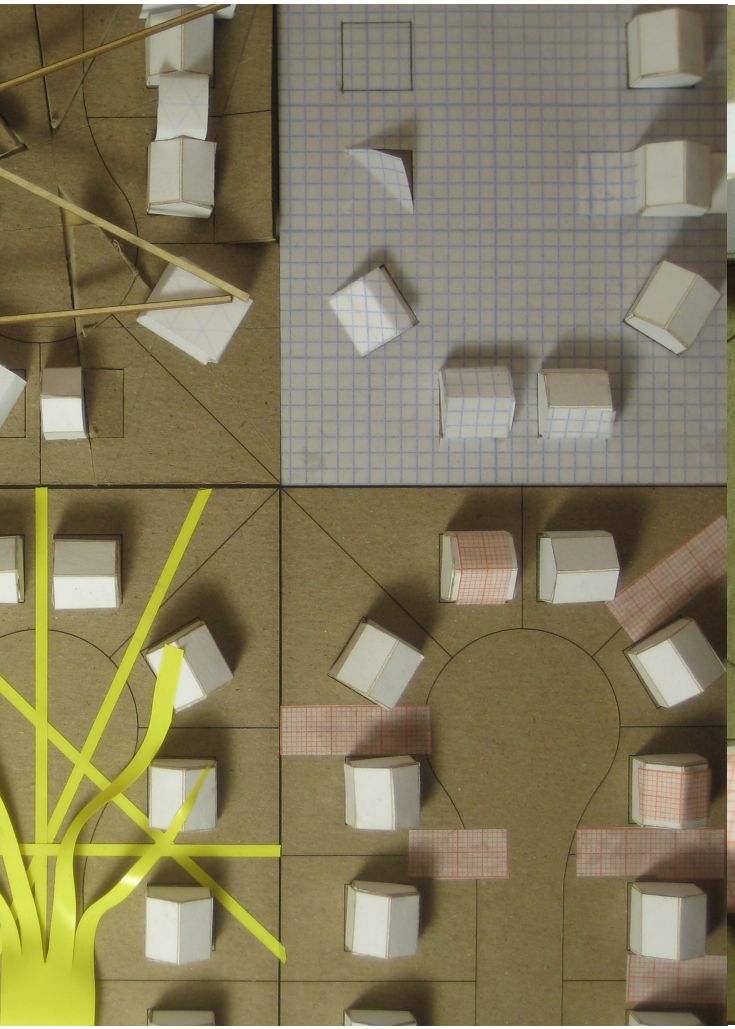
This project began with an investigation into the current conditions of American Suburban life and attempted to bring the activities of daily life in closer proximity to reduce the time people spend in cars, cost of life and energy usage without elimination the quiet and green yards Americans seek. The project also looked to improve quality of life and ask design to produce spaces that more closely fit life. In one sense it is about Mill Creek, WA and a golf course community, but in another sense it is about a solution that can be applied to many places as places quite like Mill Creek can be found all across the country.

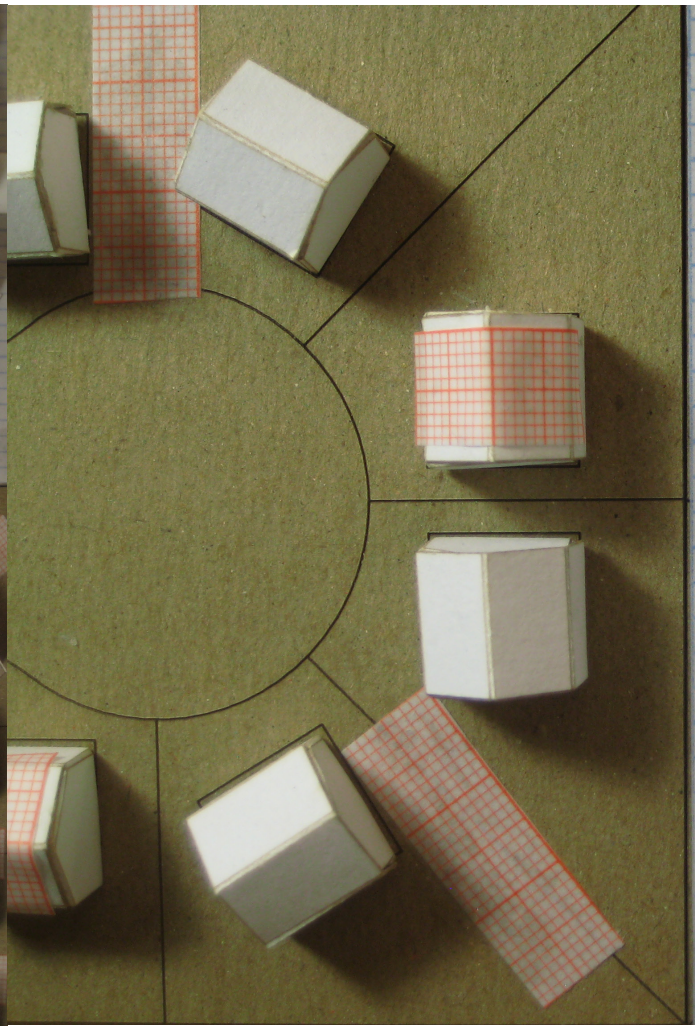
In terms of design, there is a much in the way of future inquiry. Further investigation of more precisely, the programmatic needs are for the central node and what are the types of spaces that will best fit. How the new built environment fits into and interacts with the existing built environment could be explored more. What shape does the street that runs around the perimeter of the node take. There are also

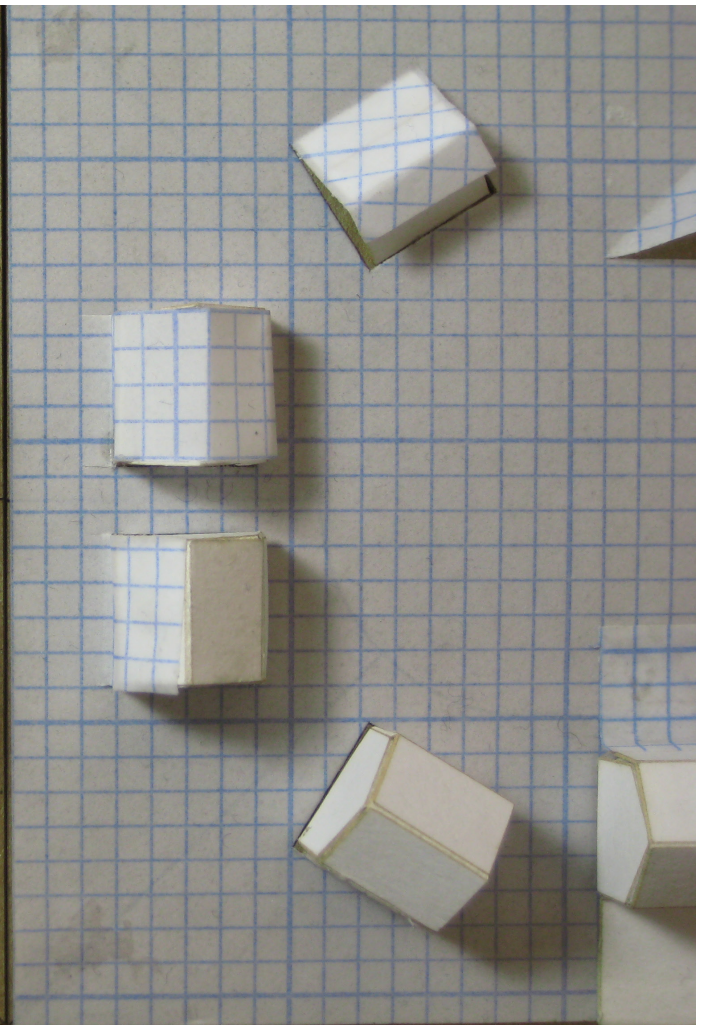
issues of what will daily life look like in five, ten or twenty years. Will more Americans be working from home and will children be walking to school? In terms of how goods, services and people are moved, will there simply be less as energy and environment costs rise or will new technologies fill in. Perhaps the form the system takes will respond to the form of the good that is being distributed rather than the method of transport. Perhaps instead of systems that are designed to give each person the same thing, they will be designed to respond to need and use.

Many aspects of American life are in flux – the economy, housing, the job market and the environment and rather than apply methods the past it is time for the construction of new methods. In particular, it is time to rethink what the American Dream is, what actually creates value and what constitutes quality of life. In the end this thesis is merely the start of the journey. Investigating a place that is by many considered a pinnacle or embodiment of an ideal community development, raises the question of what truly is valuable and how is the American population going to live and engage in the activities of daily life, when no longer propped up by financing and refinancing? In the end methods that are not founded in finance, and image; but in work, invention and reality will be what succeed. Now it is time to go and design them and shape what the next American Dream looks like.







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Appenix A
United States Census Data

USA Population 2011 (estimate)	311,591,917
Population 2010	308,745,538
Population 2000	281,421,906
Population percent change 2000 to 2010	9.7%
Mean travel time to work (minutes) workers age 16+ 2006-2010	25.2
Housing Units, 2010	131,704,730
Homeownership rate, 2006-2010	66.6%
Housing Units in multi-unit Structures, percent, 2006-2010	25.9%
Households 2006-2010	114,235,996
persons per household, 2006-2010	2.59
Per Capita money income in past 12 months (2010 dollars)	$27,334
Median Household income 2006-2010	$51,914
Persons below poverty level, percent, 2006-2010	13.8%
Land area in square miles, 2010	3,531,905.43
Persons per square mile, 2010	87.4

United States
Housing Occupancy

Total Housing units	131,791,065	
Occupied housing units	114,567,419	
Vacant Housing units	17,223,646	
Homeowner vacancy rate	2.5	
Rental Vacancy rate	8.2	

Units in Structure		percent
Total Housing Units	131,791,065	
1-unit, detached	80,965,705	61,4%
1-unit, attached	7,661,929	5.8%
2 units	5,049,247	3.8%
3 or 4 units	5,847,804	4.4%
5 to 9 units	6,338,380	4.8%
10 to 19 units	5,930,810	4.5%
20 or more units	11,250,236	8.5%
mobile home	8,636,728	6.6%
Boat, RV, van, etc.	110,226	0.1%

YEAR STRUCTURE BUILT		percent
Total Housing Units	131,791,065	
Built 2005 orlater	8,007,633	6.1%
Built 2000 to 2004	11,549,564	8.8%
Built 1990 to 1999	18,302,121	13.9%
Built 1980 to 1989	18,408,424	14.0%
Built 1970 to 1979	21,105,659	16.0%
Built 1960 to 1969	14,692,127	11.1%
Built 1950 to 1959	14,428,826	10.9%
Built 1940 to 1949	7,304,410	5,5%
Built 1939 and earlier	17,992,301	13.7%

WA	WA	USA
population, 2011 estimate	6,830,038	311,591,917
population, 2010	6,724,540	308,745,538
population percent change 2000 to 2010	14.1%	9.7%
population 2000	5,894,121	281,421,906

mean travel to work time (minutes), workers age 16+ 2006-2010	25.4	25.2
Housing Units, 2010	2,885,677	131,704,730
Homeownership rate, 2006-2010	64.8%	66.6%
Housing units in multi-unit structures, percent 2006-2010	25.9%	25.9%
Per Capita money income in past 12 months (2010 dollars) 2006-2010	$285,400	$188,400
Households, 2006-2010	2,577,375	114,235,996
Persons per household, 2006-2010	2.49	2.59
Persons below poverty level, percent, 2006-2010	12.1%	13.8%

WA		
Land Area in square miles, 2010	66,455.52	3,531,905.43
Persons per square mile, 2010	101.2	87.4

WA State Employment

population 16 years and over	5,186,380
In labor force	3,432,213
civilian labor force	3,380,744
employed	3,124,821
unemployed	255,923
Armed Forces	51,469
Not in Labor Force	1,754,167

Commuting to Work

Workers 16 and over	3,093,824
car, truck or van ¨C drive alone	2,237,676
car, truck or van ¨C carpooled	357,409
Public Transportation (excluding taxi)	171,774
Walked	107,515
Other Means	62,723
Worked at home	156,277

Mean travel time to work (minutes) 25.4

Occupation

Civilian employed population 16 years and over	3,124,821
Management, business, science, and arts occupations	1,183,415
Service occupations	517,817
Sales and Office Occupations	751,182
Natural Resources, construction, and maintenance occupations	321,440
Production, transportation, and material moving occupations	350,967

	Mill Creek	Washington
Population, 2010	18,244	6,724,540
Population, percent change 2000 to 2010	58.3%	14.1%
Population, 2000	11,525	5,894,121
Persons under 5, 2010	5.7%	6.5%
Persons under 18, 2010	23.3%	23.5%
Persons 65 and over, 2010	12.5%	12.3%
Female persons, 2010	51.4%	50.2%
mean travel time to work (minutes) 2006-2010	28.1	25.4
Housing Units, 2010	7,923	2,885,677
Homeownership rate, 2006-2010	64.1%	64.8%
Housing Units in multi-unit structures, percent, 2006-2010	34.6%	25.9%
Median value of owner-occupied housing units, 2006-2010	$446,600	$285,400
Households, 2006-2010	7,137	2,577,375
Persons per household, 2006-2010	2.43	2.49
Per capita money income in past 12 months (2010 dollars) 2006-2010	$40,815	$29,733
Median household income 2006-2010	$86,461	$57,244
Persons below poverty level, percent, 2006-2010	5.9%	12.1%
Land area in square miles, 2010	4.67	66,455.52
Persons per square mile, 2010	3,906.6	101.2