

SUBURBAN DIALECTIC:

A Design for the Refabrication of Seattle's
Deteriorating Strip Corridors

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INTRODUCTION

The suburbs are the biggest American building project and allocation of resources in the past fifty years. The neighborhoods and towns of the suburbs ring our nation's cities and stretch from our interstate highways and arterials. Suburban neighborhoods are home to the majority of the United States' population. The suburbs represent a vision of living, realized by mass production, extreme logistical capability, and the promise of the American way of life.

Suburban development has been the preferred method of planning and building in the country since the late 1940's. The hegemony of the suburban lifestyle over the last half century has spawned a new American culture of its own. This new American culture, is in part a result of suburban infrastructure and building form.

Much of American Suburbia is due for a new layer of building and attention. Currently the suburban lifestyle is becoming less desirable. Many Americans are beginning to recognize that sprawl has undercut many of the benefits of suburban living. Also recognizing that the sheer quantity of construction in sprawling environments exacerbates the urgent challenges our society faces from, climate change, rising fuel prices,

water shortages and declining public health.

This thesis proposes possible alternatives to suburban sprawl. Specifically, this thesis investigates a design for the re-fabrication and adaptation of commercial strip developments and big box retail centers into nodal mixed use neighborhoods. The goal is to work from the inside out, creating new, rich, real town and city centers filled with amenities and activity, to replace underused antiquated strip and megastore amalgamations.

Over decades of the strip retail and megastore hegemony we are now saturated with vestiges of under performing, vacant, iterations. Strip retail centers are a result of and are symbolic of the ecologically oblivious, culturally void and socially alienating characteristics associated with American suburban sprawl. This thesis will address the need for a new layer of development and adaptation to be applied to the underused, failed, suburban, retail infrastructure in North Seattle.

The study of the refabrication of under performing retail centers along Aurora Avenue will be viewed through multiple 'lenses' of magnification, scale, and point of view. Starting with a large regional planning strategy, a city



and neighborhood plan, and finally the design of new buildings and the adaptation of the existing.

The first section defines the suburb by examining its history, physical characteristics, and ecological impact. The second section will describe a step by step process of best practice methods that are being used right now to transform retail strips into mixed use neighborhoods. This section will also discuss the social and political implications of instant and incremental changes to a place. The following sections will then define the site, program and design of a specific, new, building strategy for Aurora Avenue within a focused test area located at Aurora Avenue

North and North 130th Street. The design will work from the general to the specific describing a large masterplan as well as specific building and street types that could be expected in a new mixed use neighborhood.

THE SUBURBS :

History, Character and Challenges



Suburbs and The Strip

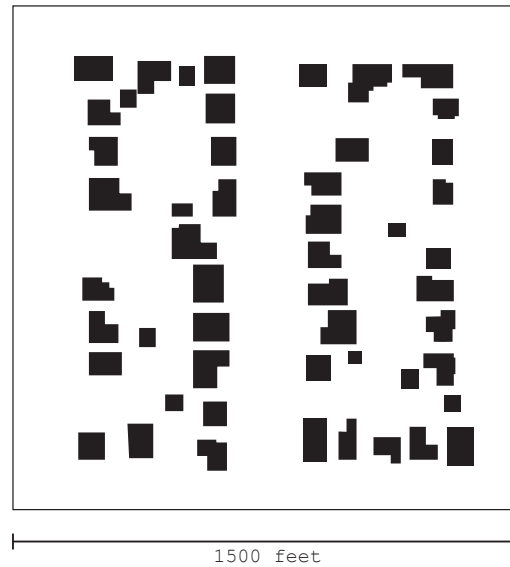
For the purpose of this document and thesis the terms *suburbs* and *suburban* will be defined primarily in terms of physical and spatial form rather than relating to any geopolitical boundaries or official designation. The physical and spatial characteristics of a suburb, as defined by this document, are as follows:

- Suburban form is low density and buildings are usually uniformly dispersed. Urban form is high density with more variety of localized higher density areas.
- Suburbs are auto oriented and auto dependent. Arterial streets are designed with traffic flow and efficiency in mind with little or no regard for pedestrian or bicycle amenities.

- Large 'super blocks' are the norm often being several times as large as urban blocks. Also, suburban streets are often organized with dead ends and culs-de-sac, while urban streets are organized with interconnected block systems.
- Suburban buildings are usually single use, residential, retail, commercial, or industrial. Urban buildings usually contain a range of uses.
- Suburban buildings are usually meant to be viewed 'in the round'; standalone buildings sit alone in a landscape.¹

By defining the suburbs using physical

Suburban Form:
North Seattle
N 127 Ave. and Evanston Ave. N



Urban Form:
Capitol Hill, Seattle
Broadway and E Union St.



Suburban vs. Urban

form as a metric it avoids existing stereotypes and preconceived notions about a place that confuses and slows the process of refabricating suburban environments. Many Seattle residents might think or speak pejoratively of suburban communities while their own neighborhood might meet every criteria of a suburb although its technically in Seattle. This document is only concerned with the physical form of the place.

It is difficult to picture the United States without thinking of the ubiquity of suburban form. Aside from the image of the single family home with a picket fence, the auto dependent retail strip, with its neon signs and parking lots, might be the most common image of the American suburb. The suburban retail strip, which will be referred to only as 'the strip',

has become the universal standard for suburban retail development. The strip can be characterize by low-slung commercial buildings, front parking lots, and tall, auto-oriented signs arrayed along wide thoroughfares extending from downtown to the suburbs and along interstate highway interchanges. Interestingly, the history of the strip is a relatively recent one. Strip commercial and retail development started in the 1960's; it matched the lifestyle and aesthetics of an auto dependent culture.² Early suburbs like Levittown are actually closer to the denser, walkable neighborhoods we are trying to design today. Levittown had smaller homes, averaging around eight homes per acre with sidewalks and usually centered on parks, schools, and public buildings. These bedroom suburbs were served by auto-dependent strip retail.³ As suburban development

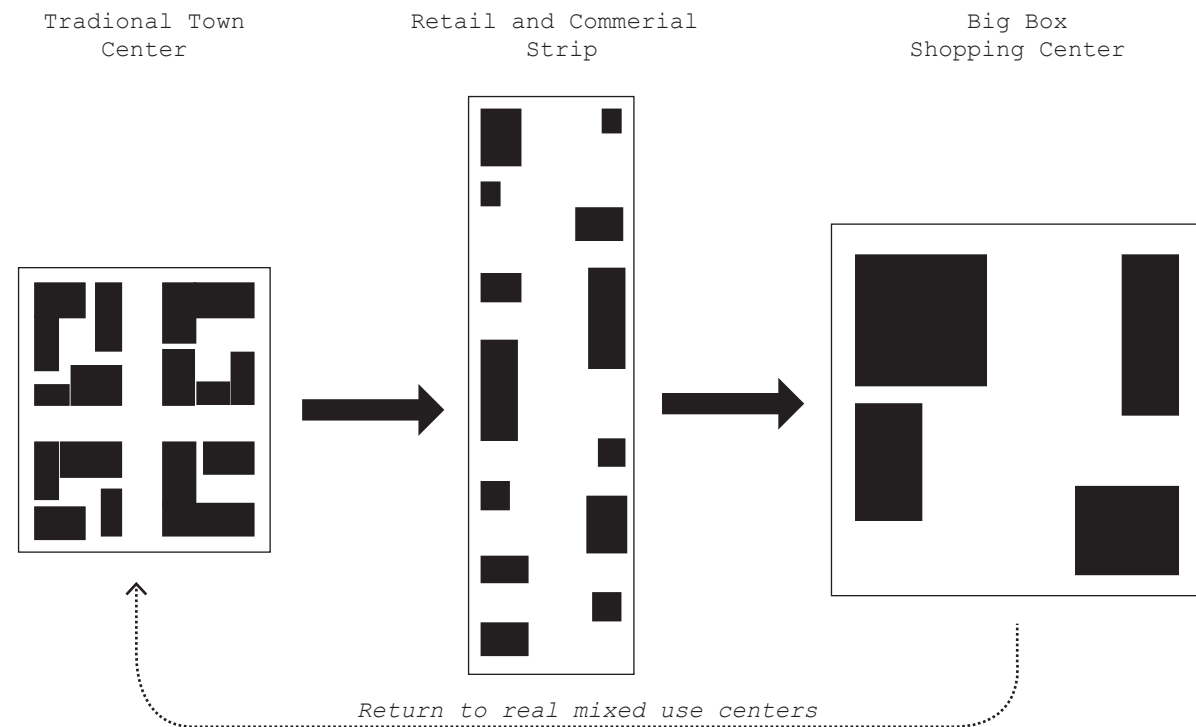
continued parcels and homes became larger, and they lost their centers. Suburbs became more dependent on the strip.

Strip development is often attributed to the free market. In fact, it was largely shaped by government actions in the 1950's and 1960's. Government subsidies in the form of the federal home mortgage program and the interstate highway system stimulated the movement of households from cities to the new suburbs, providing the market demand and the infrastructure for other uses to follow. In 1954, Congress created a massive subsidy for suburban commercial development by modifying the tax code to allow owners to depreciate new commercial buildings in seven years; in place of the long standing 40 year requirement. This accelerated depreciation sparked a 30-year construction boom in cheap strip commercial buildings, along with disincentives to maintain them. Favorable tax incentives continued until the Tax Reform Act of 1986. A glut of cheap retail remained for nearly a decade to follow. Additionally, zoning arranged in narrow strips, lining arterial thoroughfares led the way for cheap poorly planned development.⁴

Nationwide subsidy programs, roadway design standards, and zoning standards created successive waves of rapid suburban development resulting in the mass production and standardized appearance along commercial corridors. The standardized appearance of the strip can be characterized by the following traits.

- Free-standing stores surrounded by asphalt parking lots with many driveways, pole signs, and limited landscaping
- Signs that outdo the buildings in both size and character
- Buildings of modest or minimal visual distinctiveness
- Wide, multilane roadways edged with monolithic curb-gutter-and-sidewalk assemblies with narrow sidewalks and little or no curbside parking or pedestrian amenities; intersections with multi-phased signals that may have two or even three left-turn pockets, widening the crossing distance even more at busy intersections
- Long, undifferentiated corridors dominated by retail uses, with other commercial activities and various special uses such as schools, cemeteries, and hospitals mixed in.⁵

By the 1980's strip retail development was the preferred method causing the decline of traditional town centers. Many new suburban neighborhoods and towns do not have a traditional center, rather only the strip, a mall or both. While the strip enjoyed a reign as the preferred retail shopping experience into the 1990's it began to be undermined by a series of factors including the fickle nature of consumerism. Although some strips remain successful, currently the strip tends to have under performing retail stores and



generally do not work well as arterial thoroughfares. In such strips, vacancies are high, sales per square foot are low, and money to reinvest in aging structures is scarce.

Several factors have led to the decline and undermining of suburban strip retail. In many ways it is a compounding of external forces, internal flaws and a change of ideological perception by much of the population. The first main external factor that began to dismantle the strip retail hegemony was the construction of the highway interstate system. The interstate not only took the majority of the traffic off of the older routes and highways it also created large highly visible highway interchanges. These interchanges became perfect locations for a more nodal approach to regional and community retail for suburban

commuters. These interstate nodes became the perfect location for the massive 'category killer,' 'big box' retail giants starting in the 1980's. The big box retail clusters consist of large single-themed stores, like electronics, furniture, or bed and bath, intended to capture market share from smaller stores. The big box formats need large acreages at high-visibility and high-traffic locations. These changes led to a shift of the preferred form for suburban shopping center development from linear strip and mall to a nodal pattern of shopping centers.⁶ Just as the strip caused the decline of the traditional town center and the big box retail center caused the decline of the strip; currently 'life-style centers' which give the appearance of a traditional town center are taking business from both of their predecessors. Obviously, retail is a volatile market which is at

the whim of fashion, fad and an evolving public perception. The only way to avoid the boom and bust of suburban retail is to create true mixed use centers.

Most recently, environmental activists, urban planners, and transit supporters have united in their concern that strip development and big box amalgamations epitomize the unsustainability of suburban sprawl. The strip corridors' extensive parking lots and paved surfaces, long distances between stores, poor connectivity between uses, and low-density land coverage all discourage walking, bicycling, and transit use. The strip generates multiple single-purpose vehicle trips; increases use of and dependence on fossil fuels, and contributes to air pollution, increased storm water runoff, and depletion of water resources and wildlife habitat. Public perception is asking for a return to real town and city centers that promote more dense land use and transit and pedestrian oriented transportation options.

- 1 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. Print. (p.viii-X)
- 2 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28 (p.1)
- 3 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. (p.47)
- 4 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28(p.2)
- 5 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28(p.4)
- 6 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28(p.6)

(following pages) :
Elevations of vacant or under
used retail and big box stores on
Aurora Avenue between
N 130th Ave. and N 155th Ave.



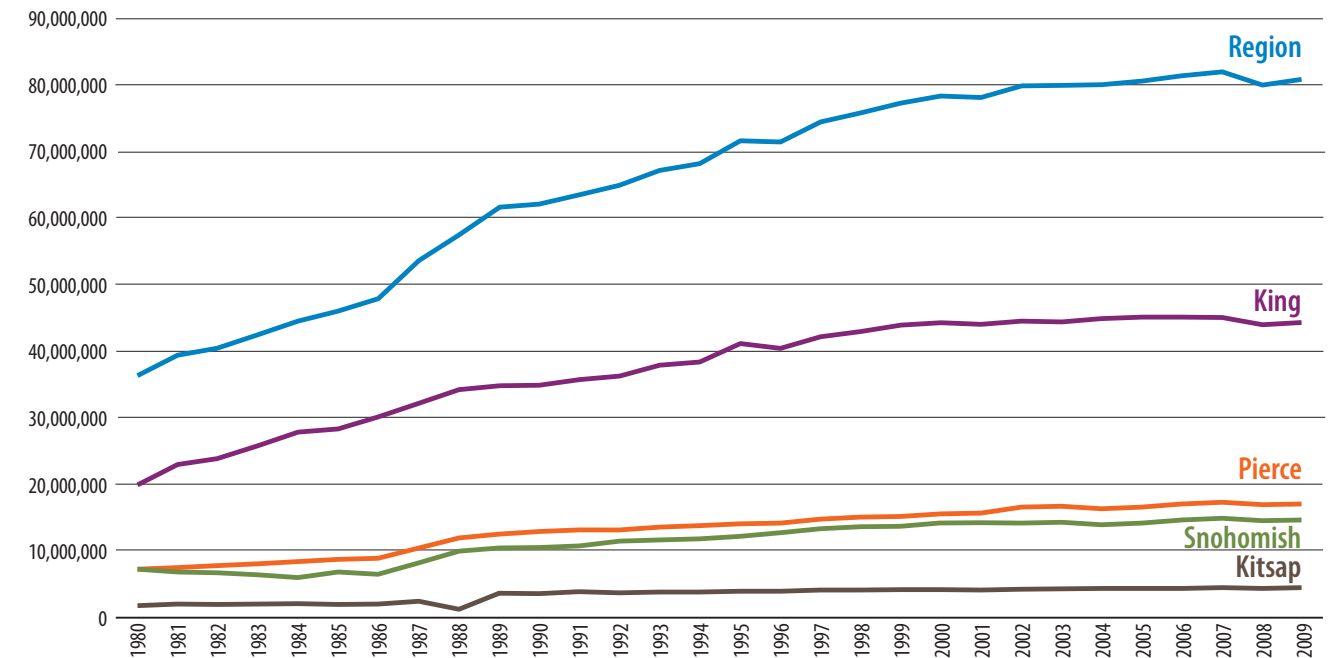
Washington State and Climate Change

Washington State is in an ideal position to be a catalyst and arbiter of change regarding greenhouse gas emissions (GHG) and its effect on global climate change. Unlike many regions, Washington's single largest source of carbon emission is motorized transportation. In 2010 motorized vehicular transportation made up 47% of carbon dioxide equivalent emissions statewide. The transportation emission rates have been on a steady increase for the past thirty five years. Comparatively, electrical power and the industrial sector has remained steady or in decline.¹ The metric used to study the vehicular carbon output for a region is vehicle miles traveled (VMT). VMT is used to quantify the total amount of driving on a region or county's roads. It does not qualify the miles traveled by defining the size or fuel efficiency of the vehicles or the origin and destination of the vehicles. VMT deals with data in the billions and is used to chart large overarching trends which describe a region's driving behaviors and its link to greenhouse gases. In the big picture it doesn't matter if you drive large 'gas guzzling' sports utility vehicle or an efficient small two door hatchback. To reduce GHG emissions on a regional scale VMT must be reduced for everyone.

If Washington is to reduce climate changing GHG it must reduce VMT. The transportation sector creates 47% of the state's GHG emissions. GHG is directly correlated to VMT. 52% of the state's VMT happens in the central Puget Sound Region. The central Puget Sound region is comprised of King County, Pierce County, Snohomish County, and Kitsap

County. Of the region's average daily VMT (80.9 million in 2009), 54.8% occurs on King County roads, 21.2% in Pierce County, 18.4% in Snohomish County and 5.6% in Kitsap County. This thesis will focus on King County which experiences the most VMT and represents the high water mark for VMT in the state. These four counties make up 52% of the VMT while only containing 24% of the state's lane miles.² This means that most of the driving is experienced in the densest part of the state, resulting in congestion, poor air quality and stress on the states roadway infrastructure. For the past thirty years VMT has been on a dramatic increase and has only experienced four yearly declines, the most recent being a 2.4% decrease over 2007 due to the economic recession. Since 2007 VMT has increased between 1% and 2% yearly.³ While the overall daily and annual VMT can be characterized by a sizable and consistent increase, per capita VMT is much steadier, marked only by slight increases and decreases over a thirty year span.

Washington's increase in VMT is due to an expanding population not in driver's behavioral changes. The U.S. Global Change Research Program cites the Northwest's rapid development as one of the major causes of environmental stresses; ironically, the very natural beauty that attracts new residents may be diminished by increasing human activity. Consequences of the region's unchecked growth include loss of forests and wetlands, diminished salmon runs, and air pollution in urban environments. Washington State anticipates a growth in population of nearly 25 percent between 2010 and 2030. Future solutions

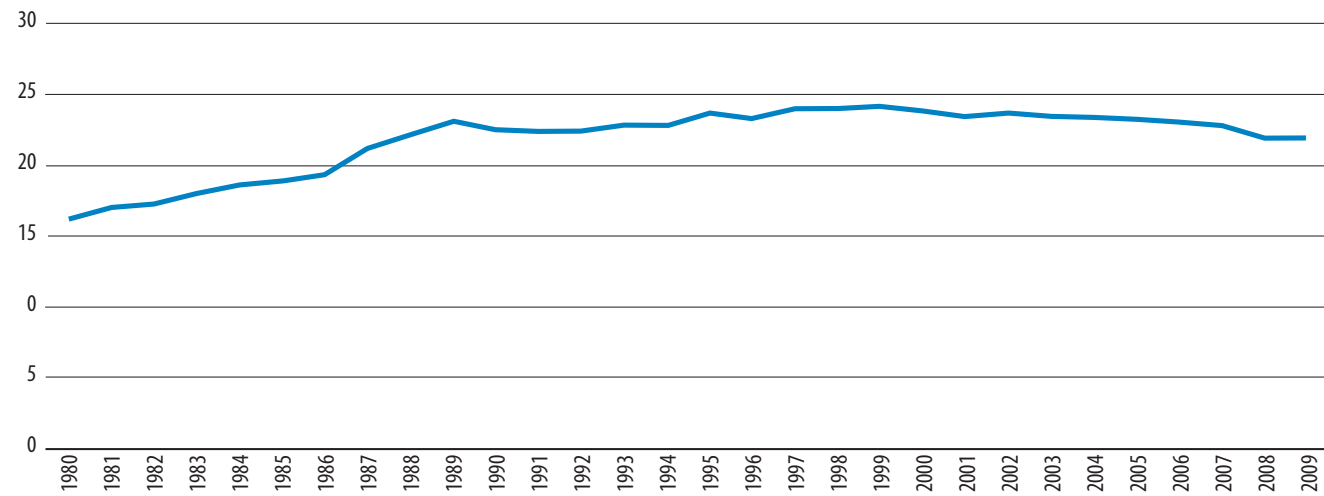


Daily VMT by County

for reducing GHG and VMT should focus on long term planning to address population growth. The legislature has responded to these projections by seeking to mitigate the environmental impacts of the additional population. One of the goals of the 1990 Growth Management Act, for example, is to encourage the use of efficient, multi-modal transportation systems. Furthermore, the State Environmental Planning Act, or SEPA, requires planning agencies to consider the long-term environmental impacts of comprehensive plans and transportation infrastructure construction and maintenance projects.⁴ Rather than restrict or discourage population growth, these acts accept growth estimates and seek to minimize the environmental impacts of that growth.

Over the past decade Washington has demonstrated a significant interest

in protecting the environment from the threat of a changing climate. In 2004, Governor Gary Locke joined the governors of Oregon and California in approving the West Coast Governors Global Warming Initiative. The initiative asked states to reduce greenhouse gas emissions, invest in clean energy technology, and reduce dependence on fossil fuels. Three years later, the governors of Arizona, California, New Mexico, and Oregon formed the Western Climate Initiative (WCI), which developed a multi-state registry to track and manage regional emissions. The governors of Montana and Utah and the premiers of British Columbia, Manitoba, Ontario, and Quebec, Canada, have since joined the WCI. In February of 2007, Governor Christine Gregoire issued Executive Order 07-02, which set benchmarks for statewide GHG emissions. These benchmarks are as follows:



Daily VMT Per-Capita

- by 2020, reduce GHG emissions to 1990 level.
- by 2035, reduce GHG emissions to 75 percent of 1990 levels, and
- by 2050, reduce GHG emissions to either 50 percent of 1990 levels or 70 percent of projected annual emissions for 2050, whichever was less.

These benchmarks were later adopted into legislation as RCW 70.235.020. Parallel benchmarks were set for VMT reduction under the assumption that VMT reduction correlates with reduction in GHG. These benchmarks were accepted into legislation as RCW 47.01.440.⁵

Washington's role in combating climate change has both environmental and economic dimensions. Washington's \$38 billion food and agriculture indus-

try represents 12 percent of the state's economy. The costs of more frequent wildfires, water conservation, loss of hydro-power revenues, droughts, temperature effects on dairy cattle, increased flooding, and higher public health costs would far outweigh the costs of any intervention.⁶

Washington's future requires real change, not only for an ideological commitment to environmental sustainability or for the purported enrichment of more interconnected urban living, but rather, it must change to simply honor these benchmarks as required by law. This is an exciting situation where the argument for reduction has already been made and accepted, the next step is implementation. In a study held by the state of Washington three methods for reducing VMT are noted.⁷

- Shift modes from the private car to transit, walking, or biking
- Increase vehicle occupancy in private cars and vanpools
- Travel less through telecommuting, combining trips, reducing the number of discretionary vehicle trips, and employing tools such as a compressed work week, pricing, and more compact land development, which enhances transit, biking and walking.

While there are many valid methods for reducing VMT this thesis will focus on 'shifting modes' and 'traveling less' as the primary methods for reducing VMT. Specifically, this thesis will focus on the development of compact, dense, transit oriented development as a method of reducing VMT. In densely settled transit oriented development (TOD) with pedestrian, bicycle, and transit facilities, travelers are provided with options for both short and long trips that do not involve driving alone. TOD addresses VMT and GHG reduction as a primary goal of the state of Washington.

1 Washington State Department of Transportation. *IMPACTS OF VMT REDUCTION STRATEGIES ON SELECTED AREAS AND GROUPS*. By, Carlson, Daniel and Howard, Zachary. December 2010. WA-RD 751.1 (p. 10)

2 Puget Sound Regional Council, . "Puget Sound Trends: NO T2 ." (October 2010): n. page. Web. <<http://www.psrc.org/assets/810/trend-t2.pdf>>. (p.1)

3 Puget Sound Regional Council, . "Puget Sound Trends: NO T2 ." (October 2010): n. page. Web. <<http://www.psrc.org/assets/810/trend-t2.pdf>>. (p.2)

4 Washington State Department of Transportation. *IMPACTS OF VMT REDUCTION STRATEGIES ON SELECTED AREAS AND GROUPS*. By, Carlson, Daniel and Howard, Zachary. December 2010. WA-RD 751.1 (p. 10)

5 Washington State Department of Transportation. *IMPACTS OF VMT REDUCTION STRATEGIES ON SELECTED AREAS AND GROUPS*. By, Carlson, Daniel and Howard, Zachary. December 2010. WA-RD 751.1 (p.3)

6 Washington State Department of Transportation. *IMPACTS OF VMT REDUCTION STRATEGIES ON SELECTED AREAS AND GROUPS*. By, Carlson, Daniel and Howard, Zachary. December 2010. WA-RD 751.1 (p. 4)

7 Washington State Department of Transportation. *IMPACTS OF VMT REDUCTION STRATEGIES ON SELECTED AREAS AND GROUPS*. By, Carlson, Daniel and Howard, Zachary. December 2010. WA-RD 751.1 (p. 13)

Puget Sound Regional Council, . "Puget Sound Trends: NO T2 ." (October 2010): n. page. Web. <<http://www.psrc.org/assets/810/trend-t2.pdf>>.

THE STRIP :

Refabricating the Commercial Strip: Techniques and Implications

This section will provide practical information and considerations for refabricating and rehabilitating suburban retail and commercial strips and big box store shopping centers. The previous section defined the suburban environment, provided a brief history of suburban retail infrastructure, and conveyed an argument for denser, multi-modal, environmentally conscience, and real town and city centers. The current section will work from the anticipated projection that the central Puget Sound region is due to grow in population by 25% by 2030 and that compact transit oriented development is an imperative to meet Washington state's benchmark goal of 50% greenhouse gas reduction by 2050. This guide will address the logistical issues and social and political considerations as how they apply to the Seattle area as well as similar sites in the rest of the country.

The information provided relies heavily on the work of new urbanists like Jane Jacobs, Kevin Lynch and by the planners Freedman Tung & Sasaki within their guide, *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. The theory has been synthesized and added to so that it is directly applicable to the commercial strip of Aurora Avenue and the communities of North Seattle and Shoreline, Washington. The EPA is concerned about greenhouse gas emissions and global climate change and the effect of a growing population of the country. The greyfields, large impermeable, paved, parking lots, of the United States may become the country's next most utilized land resource. Arthur C. Nelson, a

professor of planning at Virginia Tech's Metropolitan Institute, argues that on a national level,

"2.8 million acres of greyfields will become available and if only a quarter of them are redeveloped, they could supply half of the housing demand by 2030. With unmet demand for walkable urbanism already at 30%-40%...the challenge is to redesign the corridors housing all those greyfields into attractive, safe, walkable environments."¹

The following section attempts to understand the practical considerations for developing these greyfield sites. This section is described in four parts: incremental vs. instant architecture, the importance of public space, land use, and restructuring the right of way.

Designing For Instant Centers

There is no denying the charm and richness of old authentic city centers and traditional town main streets. Traditional city and town centers were built incrementally over time. The layering of building and the wear and traces of human interaction makes a place feel authentic and reminds the public of a shared history. It is a love for our old places which makes the general public wary of 'instant cities' and faux downtown-esque spaces. This is a common and often well-deserved critique of new TOD pop up neighborhoods and downtowns. However, this critique fails to balance the perceived negative effects of instant architecture with the benefits of instant cities and



Central Park West, 1890

instant public space. Currently, the imperative to increase density in our greyfield centers instead of sprawling into our greenfield periphery exceeds the capacity of incremental change. While individual infill and adaptive reuse projects in the suburbs are encouraged, standalone projects that work within the existing zoning and right of way patterns do not have enough critical mass to make the environmental and societal changes needed. Projects which take advantage of large greyfield sites, like shopping malls, strip malls, big box store shopping centers, and office parks, with sizes of 30-50 acres have the opportunity to make a larger impact. These impacts include:

- Reduce VMT and subsequent GHG emissions
- Reduce land consumption by rein-

vesting in the centers rather than looking for increasingly scarce new greenfield sites.

- Increase transit options
- Increase housing types and affordability.
- Increase public and civic spaces.²

In order to prevent phony reminiscent instant architecture it is important to view these new developments as a continuation of the history of the site, a new layer to be added to the old. Ellen Dunham-Jones and June Williamson note several rich neighborhoods filled with character that were, during their inception 'instant architecture', including, Boston's South End and Brooklyn's Brownstones. They also note the surprising pace that Manhattan was

developed, "the entire West Side of Manhattan was graded and rebuilt in one decade, 1885 to 1895...the trees have matured, adding varied light, shade and scale to the streets that might have initially appeared stark, monotonous, even faux."³ New suburban restructuring plans must take into account time and the gradual maturity of a place. The best way to do this might be to work with what exists not as scourge to be flattened and rebuilt but as resource to be embraced and exploited. Also if the place is to mature and rich must be sound. Good planning and high quality building stock will allow for changes and reinvestment over time.

Public Space

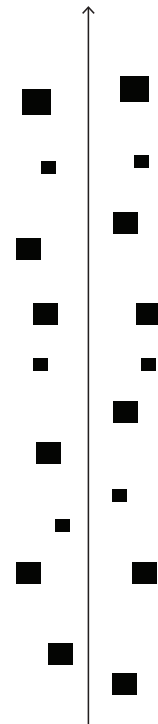
Our dense public spaces should cultivate a sense of civility. Aristotle called civility, "the art of living together well".⁴ Community, which emphasizes exclusivity and belongingness, can be cultivated almost anywhere. Civility however, is best cultivated in dense public spaces where people who are not necessarily like-minded must interact and share space. Philosopher Hannah Arendt defines 'the public' and describes the evolving nature of the public and private realm within, *The Human Condition*. The public as defined by Arendt constitutes the world itself aside from our own privately owned spaces. It is the world not of nature or landscape but of fabrication, "it is related, rather, to the human artifact, the fabrication of human hands, as well as to affairs which go on among those who inhabit the man-made world together."⁵ The public world, according to Arendt, both unites through

commonality and separates through social norms and boundaries; "as a table is located between those who sit around it; the world, like every in between, relates and separates men at the same time."⁶ The role of the public realm is to unite and to gather us together without "falling all over each other". *The Human Condition* was published in 1958, coinciding with the suburban building boom and the advent of the commercial strip. Although Arendt refers to the public realm in the context of modernity, and antiquity, she must also be responding to the erosion of real public space in the American landscape when she writes,

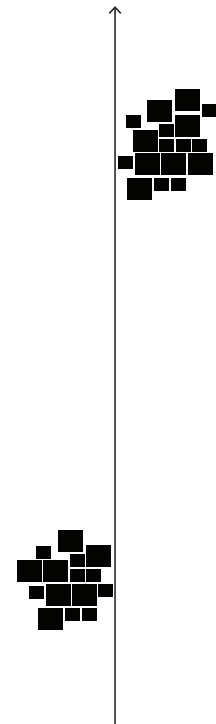
What makes mass society so difficult to bear is not the number of people involved, or at least not primarily, but the fact that the world between them has lost its power to gather them together, to relate and to separate them. The weirdness of this situation resembles a spiritualistic séance where a number of people gathered around a table might suddenly, through some magic trick, see the table vanish from their midst, so that two persons sitting opposite each other were no longer separated but also would be entirely unrelated to each other by anything tangible.⁷

Arendt notes that in antiquity the division between the public, the realm of politics and the social, and the private, the realm of the household and human nourishment, was distinct and clear. During the time of Aristotle there was a large gulf dividing these realms. Crossing this gulf demanded courage because only in the realm of the private was one only primarily concerned

STRIP



NODAL



with one's own life and survival.⁸ In contemporary life the divisions between public and private life have been diminished and blurred; largely because modern technology has allowed the public to master the necessities of sheer life. Having been freed of the household labor required for survival and sustenance, we have replaced private household labor with specialized jobs which exist in the political and social realm. In contemporary society one's job has taken the place of their public life. In the suburban environment it is common for the overworked public to, at the end of the day, tired from the rigor of their jobs, retreat straight home alone in the car to their privately owned spaces. There seems to be fewer and fewer in between public spaces for social and civil interaction.

The amenities of urban public life are precisely what compensate the residents of new centers for the loss of suburban private space. Public space is extremely important for creating real urban centers. 'Lifestyle centers' which are nothing more than a shopping mall designed to mimic the traditional town centers exist entirely on privately owned land. While these spaces are comfortable and may promote more trip linking, they cannot take the place of real publicly owned streets, squares and parks. They are private property with their own set of rules. Real public space is necessary for a functioning democracy. Public spaces and streets allow for a venue for protest, religious expression, celebration and dissidence which are generally not allowed on privately owned property.



Real public space should be a primary concern when designing new centers. Compact urban living requires comfortable well designed public amenities to compensate for the loss of private suburban space, create social framework for civil living, and to support a venue for political dissidence and celebration.

Restructuring: Land Use

The primary strategy for restructuring the suburban retail and commercial strip is to reorganize the linear pattern of development into a series of compact, dense, localized development nodes to become new mixed-use neighborhood and city centers. Kevin Lynch defines a node within a city as, "strategic spots in a city into which an observer can enter, and which are the intensive foci to and

from which he is traveling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths."⁹ The first task should be to strategically and practically determine the best locations for these new city nodes. Traffic patterns, transit junctions, busy intersections, morning and evening commutes, and existing retail locations should help determine natural nodes along the strip that would be well suited for development. Although there may be many ideal or suitable locations for nodal centers research analysis should be completed to determine a hierarchy for city development. The amount of nodes is not limited to favorable possible sites; rather, it is limited to the amount of customers, users and residents.¹⁰ Freedman Tung & Sasaki describe a standard delineation

of commercial and retail centers.

- **Regional Centers:**

Trade area: a minimum of 150,000 households within 12 to 15 miles of the center.

Location: on an interstate highway interchange that provides a convenient junction between the communities that it serves.

Features: Currently regional centers are anchored by big department stores and increasingly include big-box and superstore retail. Often they include entertainment, restaurants and enough variety for comparison shopping.

- **City Centers:**

Trade area: 5- to 7-mile trade area containing a minimum of 30,000 to 50,000 households.

Location: convenient to the homes in the trade area.

Features: City centers are ideal locations for supermarkets, banks, and pharmacies but incorporate significantly fewer major anchors than regional centers. Many of them are built around civic or cultural anchors, another distinguishing factor from regional shopping centers. Mainstays include restaurants, shops, and entertainment venues oriented to a walkable street. Shops can offer a wide range of goods.

- **Neighborhood Centers:**

Trade area: at least 5,000 to 8,000 households.

Location: serve a collection of neighborhoods located within 1 or 2 miles of the center.

Features: Neighborhood centers located on particularly busy thoroughfares can make up for the lack of nearby homes by also catering to passing motorists. Currently, the most widely accepted format for a neighborhood retail center is anchored by a supermarket of up to 65,000 square feet with a pharmacy positioned at the opposite end and smaller shops and services in between.

- **Corner Stores:** occupy the smallest niche between the neighborhood centers within walking distance of homes too far from the nearest supermarket-anchored center or at intersections with sufficient drive by traffic.¹¹

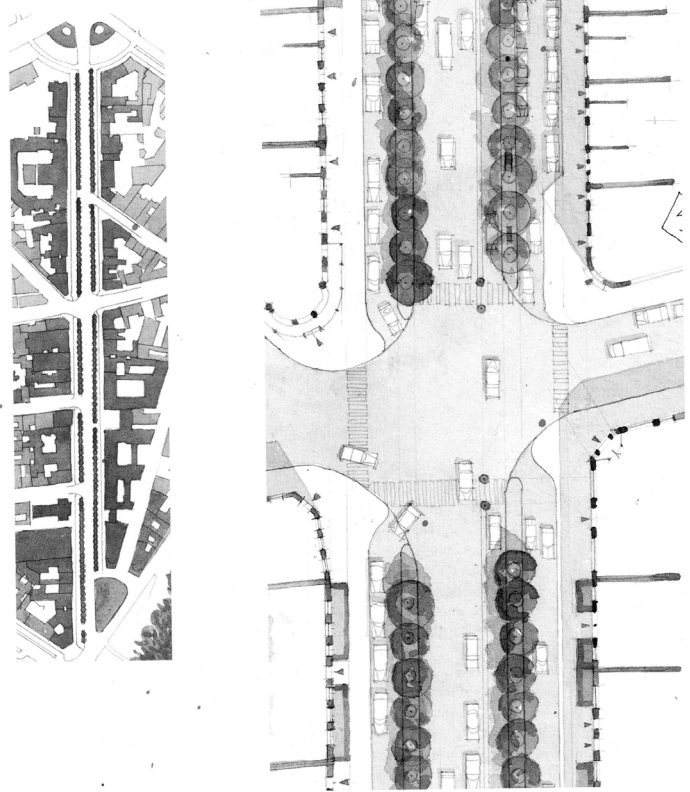
These categories represent a strict hierarchy which is difficult to achieve in a complex metropolitan area like the central Puget Sound region. Competing commercial corridors crisscross the region. The categories mentioned above represent a suggested base from which to begin planning and investigating the region, especially in terms of existing greyfield sites and their viability as a future node. Commercial strips cross freely through geographic boundaries and it is important to access a site's demographic



and physical characteristics rather than its geographical location. Too many nodes or continues development along the strip dilute investment and undermine the notion of a 'real center'.

Starting in the 1990's there has been a rise of 'lifestyle centers', single use, auto-oriented shopping centers served by large amounts of surface parking but designed in a way to mimic the traditional town center. Within these shopping centers walking between shops is encouraged with faux traditional streetscapes and comfortable pedestrian amenities but these centers rely almost exclusively on the automobile. While the lifestyle center might attempt to give the experience of a traditional town center the similarities don't go beyond first glance appearances.

The primary difference between lifestyle centers and actual town centers is that lifestyle centers have only one primary use; retail. For this reason it can be assumed that due to the changing preferences and whims of the retail market, lifestyle centers will eventually go the way of the retail strip and shopping mall, losing business and investment. The solution is to plan and develop the nodes as real mixed use centers. Within Jane Jacobs seminal work *Death and Life of Great American Cities*, Jacobs prescribes a mix of primary uses as a solution for creating vibrant cities and neighborhoods, "the district ... must serve more than one primary function; preferably, more than two."¹² Mixed-use districts that provide housing, offices, shops, and other services, attract a far wider range of people, while spreading out their



Avenue Montaigne

activities over longer periods of time. Consequently, the streets and sidewalks of mixed-use districts are more active and safer both day and night, while being less congested at peak periods.

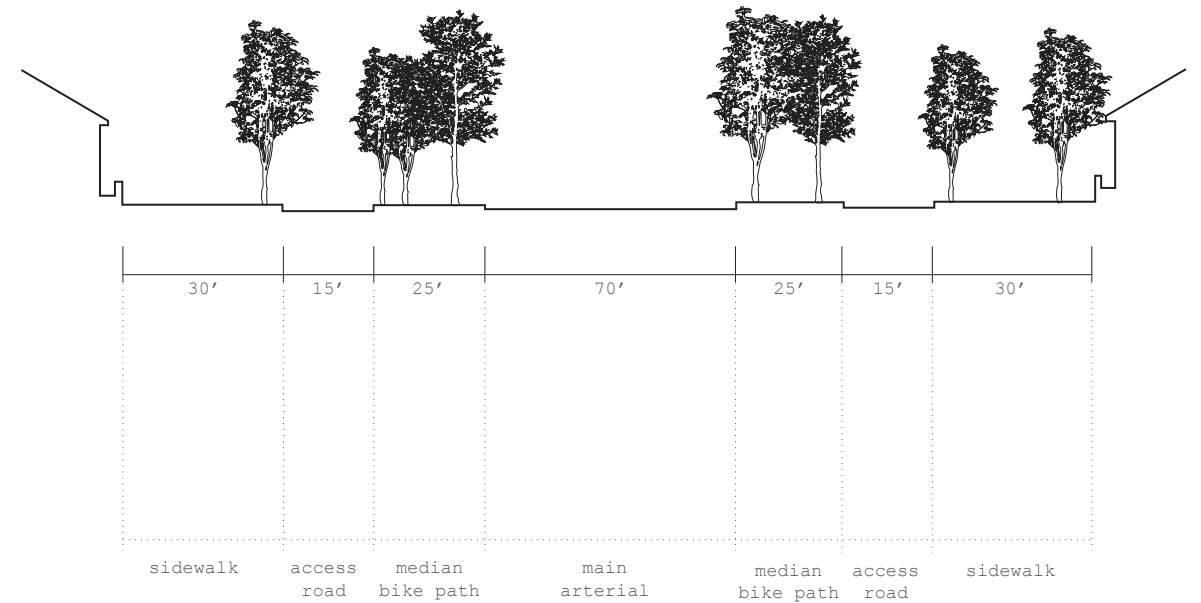
In addition to providing a mix of primary uses the center must provide transit options that take advantage of the dense compact character. These centers should be planned along an efficient mass transit line that is capable of handling the additional ridership of an increased population. Land use and transit options should work together.

Low-density communities present challenges for public transit. Effective public transit relies on a pattern of centers with density, activity, and mixed land uses at transit stops, along with safe, walkable streets connecting

to the surrounding ridership base.¹³

These main transit lines should also be part of a larger system of bicycling and pedestrian infrastructure. The high levels of density necessary for an effective transit strategy will also foster intensity and activity which will distinguish these nodes as distinctive landmark locations.

The organization and physical characteristics of the buildings and public space should cultivate street life. Small blocks with strong connections to adjacent neighborhoods will help facilitate critical pedestrian activity and shorter walking trips with more opportunity and choice in route. Long 'super blocks', which often occur in suburban environments, create barriers for pedestrians and limit the opportunity for different routes



Ocean Parkway Section

of travel and interactions. Jacobs describes how chance encounters and cross pollination can be thwarted when an area is organized with fewer streets and larger blocks, "They automatically sort people into paths that meet to infrequently, so that different uses very near each other geographically are, in practical effect, literally blocked off from one another."¹⁴ Suburban greyfield sites are often developed on vast land parcels. These large parcels offer a good opportunity to divide impervious superblocks into a series of smaller blocks. Additionally more and smaller blocks create more street frontage and surface area for shops, entrances, views and access.

Buildings should be oriented and designed to activate the street. Ground level should be reserved for shops, cafés, restaurants and communi-

ty uses. Surface parking lots and ground floor parking should never be planned for street frontage. Frequently placed doors, glazing, and exterior seating should be used to create a hospitable lively environment. Blank facades and large setbacks facing the sidewalk create a bleak, wasteland feel for the pedestrian. The buildings should frame the public space; create focal points for gathering and landmarks for navigation.

If possible existing buildings with good structural conditions should be preserved. Such buildings allow for a wider range of diversity for shops, residences, and workplaces. Older building stock, even from a defunct shopping infrastructure, can be adapted and supply more affordable locations for residences, shops, and places of work. Jacobs describes this type of existing building, "By old buildings I mean not museum

piece, not old buildings in excellent and expensive state of rehabilitation - although these make fine ingredients - but also a good lot of plain, ordinary, low value old buildings."¹⁵ This range of afford ability is essential for creating diversity in building use and demographics that will create distinctive real centers.

Restructuring: Right of Way

The size and character of the street has enormous influence over the quality of the built environment. To restore value to older strip corridors, the restructured pattern of land use should be paired with an improvement plan that redesigns the corridor's right of way to create a setting that supports the desired types of new development.¹⁶ Existing strip arterials usually are four to six lanes wide with a large shoulder and a center turning lane. These arterials vary in width but may be upwards of one hundred feet wide; making crossing impossible in most locations. Because of the rarity of cross streets on the commercial strip intersections are congested and crossing as a pedestrian is uncomfortable if not harrowing. Additionally, the commercial strip is used as an arterial and an access road to the unbroken development lining both sides of the street. For this reasons left and right turns are frequent resulting in congestion and reducing driver's safety. Although, commercial corridors have the size and speed limits of fast moving arterials they don't function as such; often becoming bogged down in congestions and frequent stops from stop lights and

access traffic. The interstate highways have taken the place of main travel arterials, leaving the commercial corridors viable for restructuring.

One possible configuration for combining the characteristics of a wide fast moving arterial with the needs of slower moving traffic and a protected pedestrian zone is the multi-way boulevard. The multi-way boulevard is a landscaped multi-lane road with series of higher speed center through lanes and slower access lanes on either side of the thoroughfare; these lanes are separated by planted medians. The slower access lanes are usually buffered with a planted tree lined median and street parking to give the sense that this is a completely different street environment from the fast moving thoroughfare. Multi-way boulevards can also be configured to include designated transit lanes and bike lanes. These boulevards remain wide but they break up and layer the street uses and provide good and protected amenities for pedestrians, bikers and transit users. The multi-way boulevard was a pre-automobile invention built on long, axial paths in European cities; prized for their grandeur and pleasant atmospheres. While many fabulous and functioning boulevards exist it has been a street type on decline due to modern traffic engineering and street classification.¹⁷ Despite this, the multi-way boulevard presents itself as being possibly the most optimal configuration for combining different street functions into one cohesive corridor. Allan Jacobs argues for a resurgence of the multi-way boulevard and derides the current ideology of traffic planning within *The Boulevard Book*,

Motorize vehicles have been given the right to dominate streets and thereby dominate public space, while pedestrians and people using non-motorized vehicles have been significantly removed from streets and, thereby, from public space. The use value of the street for local people has been usurped for the use of outsiders who are just passing through.¹⁸

If more density is to be brought to the commercial strip the new residents and users will require streets and sidewalks that allow for safe and pleasant use.

Although traffic patterns can be more complicated on multi-way boulevards a study conducted by Jacobs in *The Boulevard Book* finds them to be no more dangerous than similarly sized traditional intersections. By comparing Boulevards in the United States to other domestic streets of similar size Jacobs found that it cannot be said that Boulevards were less safe, "Some seem safer, some as safe, and some less."¹⁹ *The Boulevard Book* notes that Ocean Parkway, a multi-way boulevard in Brooklyn N.Y., despite having the most volume of traffic as all the streets study had nearly half of the accident rate of the traditional control streets.²⁰ When restructuring a existing commercial corridor as a multi-way boulevard steps should be taken to analysis traffic patterns and the physical characteristics of safe and successful boulevards as a repeatable example.

In addition to the restructuring of the main corridor arterial, close

attention should be paid to the character and organization of the connecting street network. A fine grain street network is essential for cultivating street life as well as for providing options for alternate and parallel routes. These alternate routes can improve local circulation for cars and pedestrians and can reduce congestion and the number of turn offs from the boulevard.²¹ Smaller block size, ample, gracious sidewalks with space enough for outdoor seating and plantings coupled with an engaging ground floor can foster an inviting streets and encourage more walking.

1 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. (p.86)

2 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. (p.5)

3 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. (p.8)

4 Dunham-Jones, Ellen, and June Williamson. *Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs*. Hoboken, New Jersey: John Willey & Sons inc., 2009. (p.111)

5 Arendt, Hannah The Human Condition The University of Chicago Press: 1958. (p. 52)

6 Arendt, Hannah The Human Condition The University of Chicago Press: 1958. (p. 52)

7 Arendt, Hannah The Human Condition The University of Chicago Press: 1958. (p. 54)

8 Arendt, Hannah The Human Condition The University of Chicago Press: 1958. (p. 23)

9 Lynch, Kevin. *The Image of the City*, The MIT Press: 1960 (p.47)

1 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28 (p. 10)

11 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International

and Freedman Tung & Sasaki. Under work assignment 3-28 (p. 11)

12 Jacobs, Jane. Death and Life of Great American Cities Vantage Books, 1961 (p. 152)

13 Dittmar, H. and Ohland, G., ed., The New Transit Town. Island Press, 2004.

14 Jacobs, Jane. Death and Life of Great American Cities Vantage Books, 1961 (p. 181)

15 Jacobs, Jane. Death and Life of Great American Cities Vantage Books, 1961 (p. 187)

16 Freedman Tung & Sasaki, Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors. (p. 32)

17 Jacobs, Allan . Macdonald Elizabeth. Rofe` Yodan. The Boulevard Book: History Evolution, Design of Multiway Boulevards. The MIT Press: 2002. (p. 75)

18 Jacobs, Allan . Macdonald Elizabeth. Rofe` Yodan. The Boulevard Book: History Evolution, Design of Multiway Boulevards. The MIT Press: 2002. (p. 94)

19 Jacobs, Allan . Macdonald Elizabeth. Rofe` Yodan. The Boulevard Book: History Evolution, Design of Multiway Boulevards. The MIT Press: 2002. (p. 98)

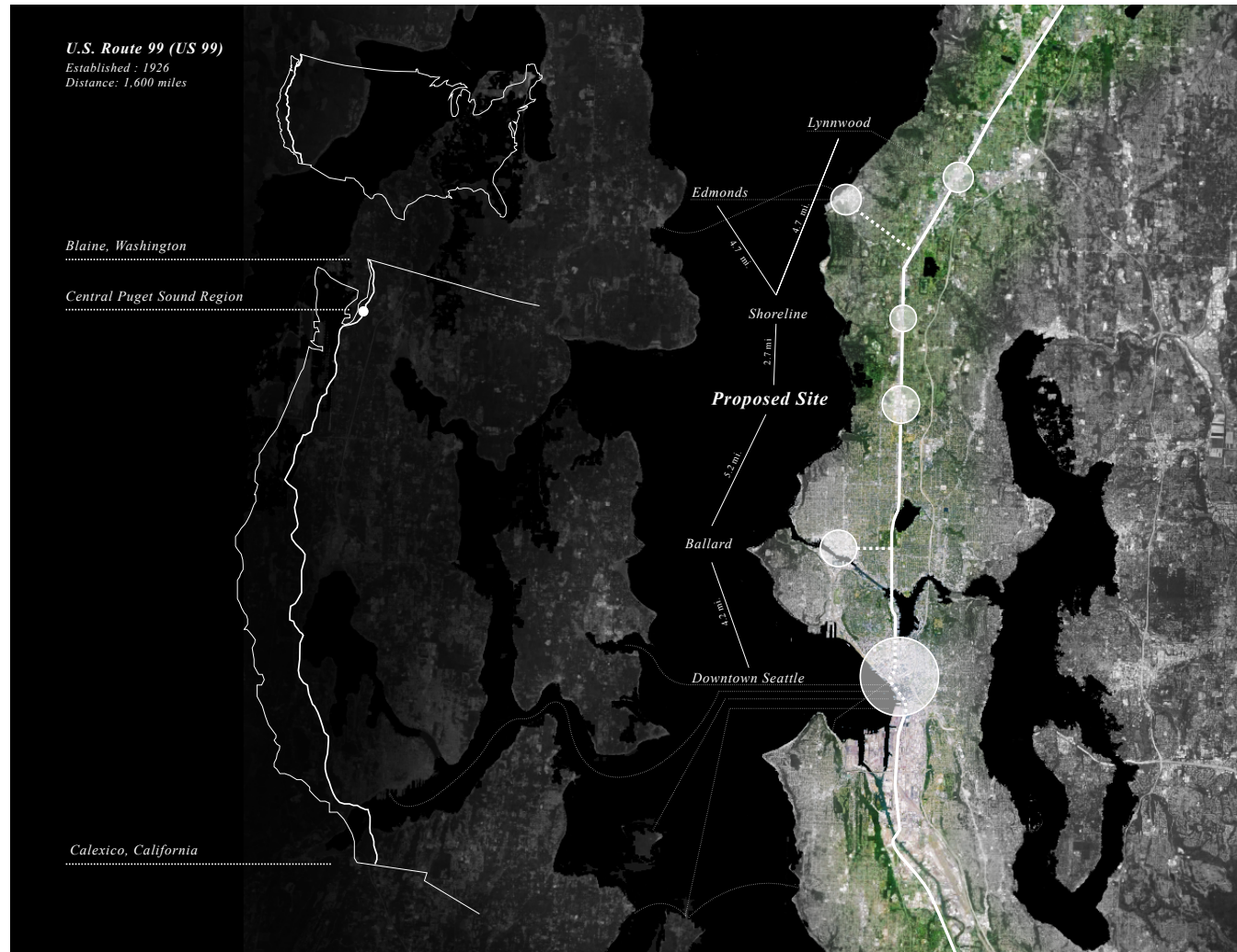
20 Jacobs, Allan . Macdonald Elizabeth. Rofe` Yodan. The Boulevard Book: History Evolution, Design of Multiway Boulevards. The MIT Press: 2002. (p. 98)

21 United States Environmental Protection Agency. *Restructuring the Commercial Strip: A Practical Guide for Planning the Revitalization of Deteriorating Strip Corridors*. By ICF International and Freedman Tung & Sasaki. Under work assignment 3-28 (p. 34)

AURORA AVENUE

A Design for a New Mixed Use Neighborhood

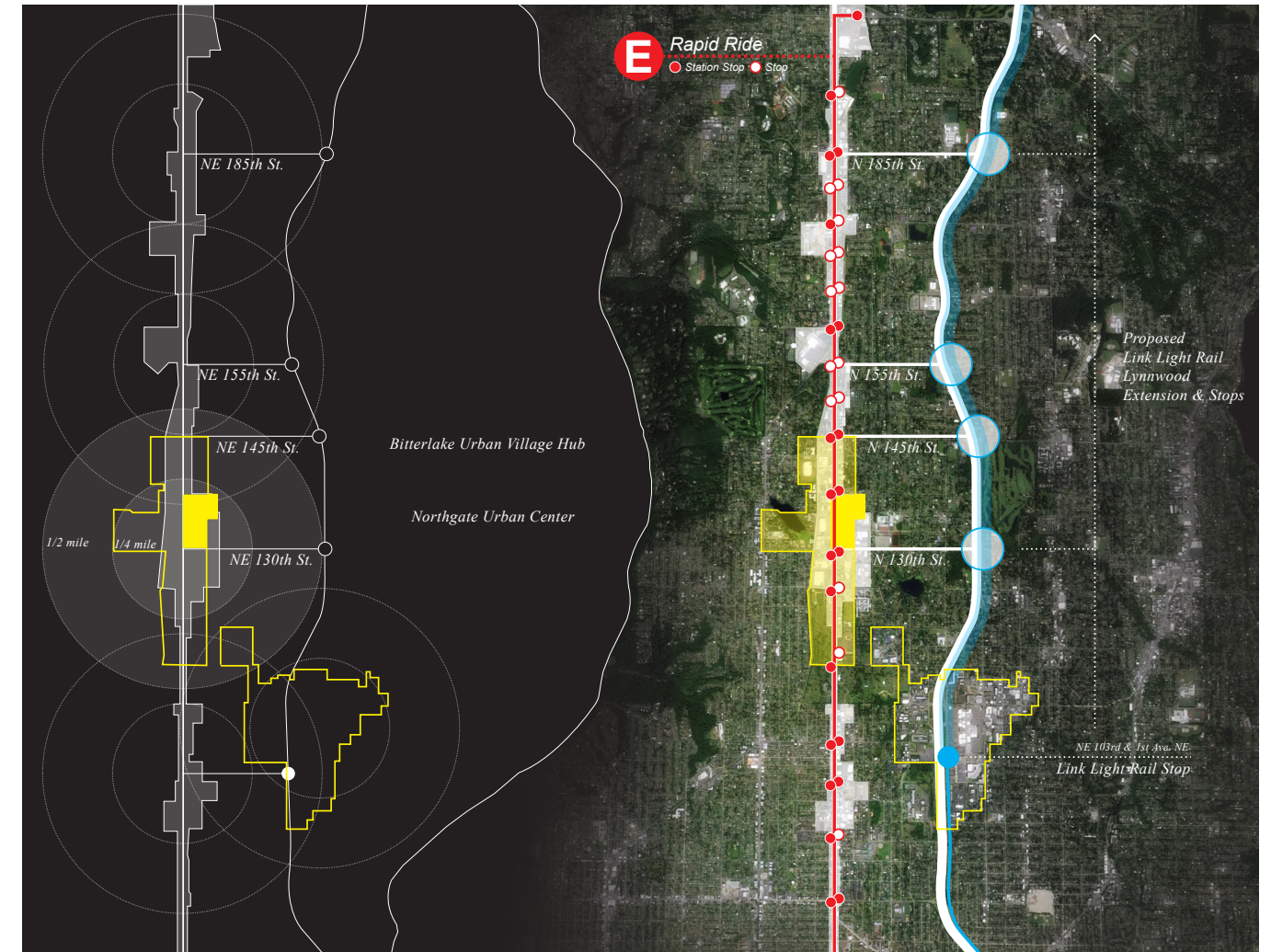




Site Conditions

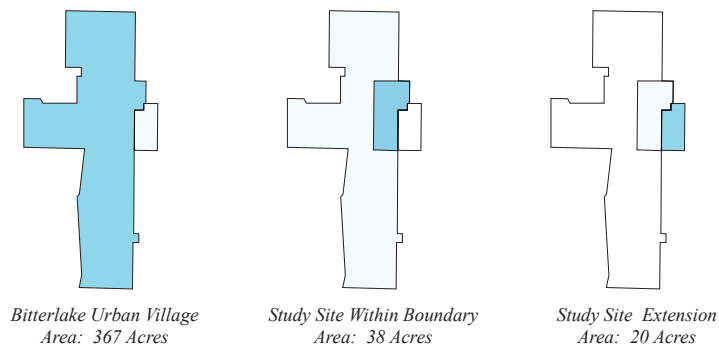
The site that was chosen to serve as a test area for the concepts noted in the first section is located in North Seattle on an underused often neglected commercial strip. The arterial is Aurora Avenue North. Aurora Avenue is a segment of the secondary highway, U.S. route 99. Route 99 was built in 1926 as the main north south highway connection on the west coast. It extends from its U.S. terminus in Blaine, Washington in the north and Calexico, California in the South. Route 99 continues both north and south into Canada and Mexico. Route 99 became relegated as a secondary highway after the construction of Interstate Highway 5.

Aurora Avenue connects most of the urban centers in the Puget Sounds region. Although it is not the preferred method for North South travel it has a more direct connections and is in closer proximity to most of the centers in the region and it is also in close proximity to ferry terminals and bridges that cross the Puget Sound connecting the Olympic Peninsula to remainder of the state. Aurora Avenue, route 99, is a underutilized piece of infrastructure which could be imagined as a new transit corridor for light rail or bus rapid transit.

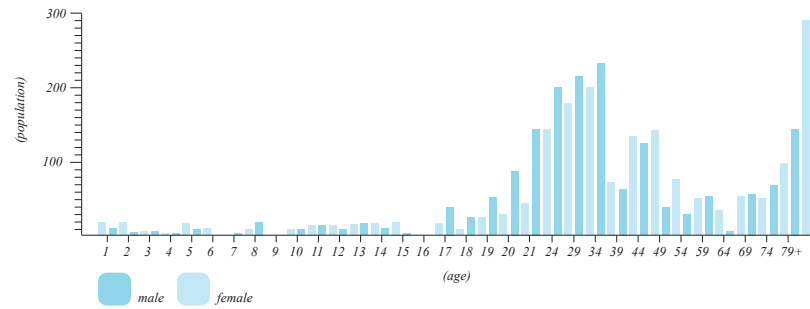


Specifically, the chosen test site is located at the intersection of Aurora Avenue North and North 130th Street. This intersection connects directly to Interstate Highway 5 by traveling east on North 130th Street for one half mile. The intersection of N 130th and I-5 is a proposed site for a future link light rail station. Currently, the final stop of the light rail system is located in Northgate at NE 103rd and 1st Ave. NE. The current southern terminus is the Seattle-Tacoma Airport. Sound Transit has proposed extending the line North to Lynnwood, WA and south to Tacoma, WA. Aurora Avenue is serviced by the

E line of Seattle's Bus Rapid Transit Service. There are two BRT station stops located on the site, one on the southern edge and one to the north. Bus Rapid Transit is a strong alternative to rail because it requires little infrastructure and with the addition of bus only lanes and technology which can manipulate the traffic light system it can swiftly transport people between centers. By strengthening the east west connections between these two systems Aurora Avenue could become a strong transit corridor and a residential hub to meet the demands of an expanding urban population.



Bitterlake Urban Village Total Population: 4,167



The city of Seattle has demarcated the study area and the area surrounding it as a 'Hub Urban Village'. Seattle's Department of Planning and Development (DPD) has described Hub Urban Villages as,

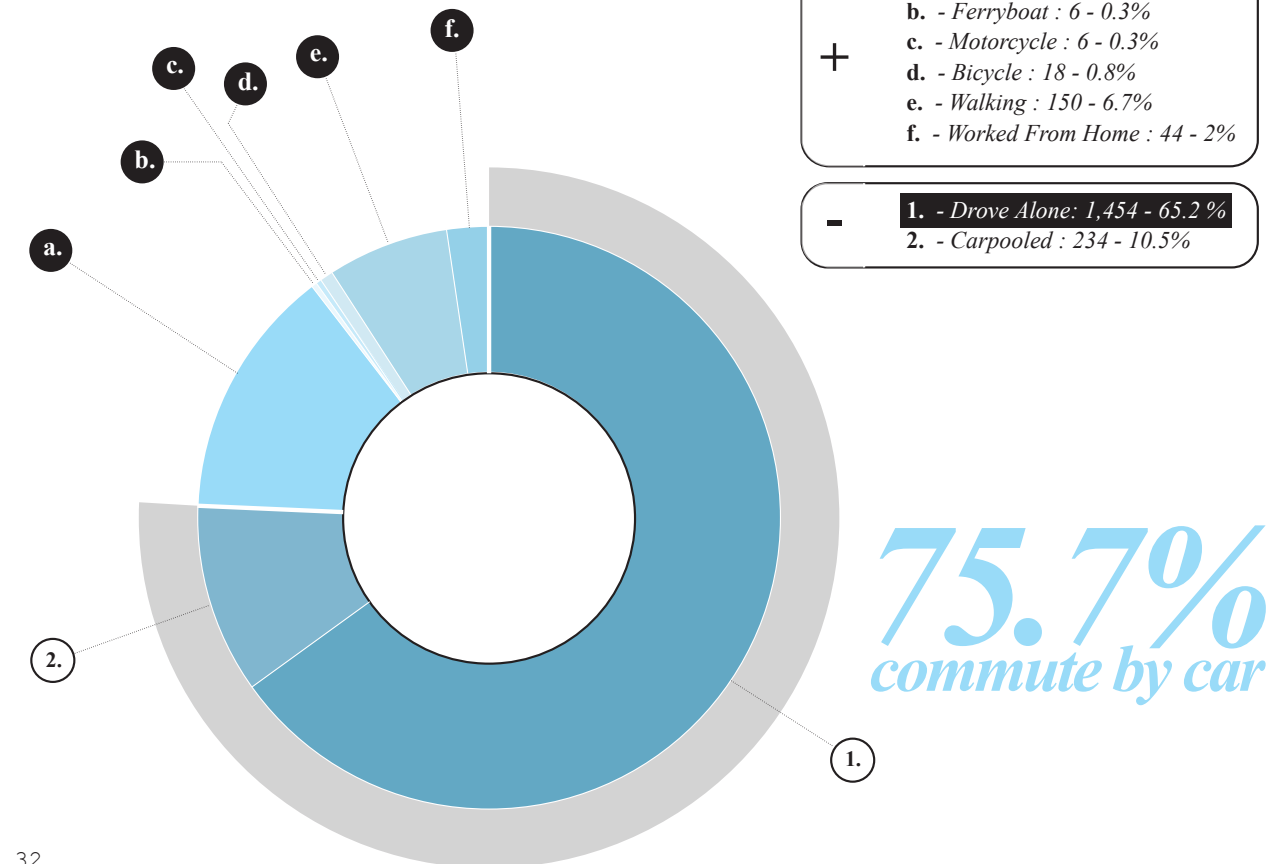
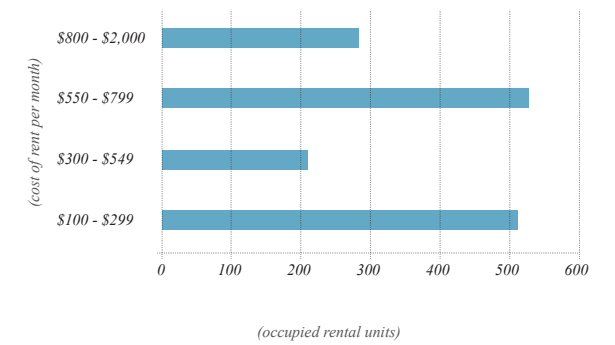
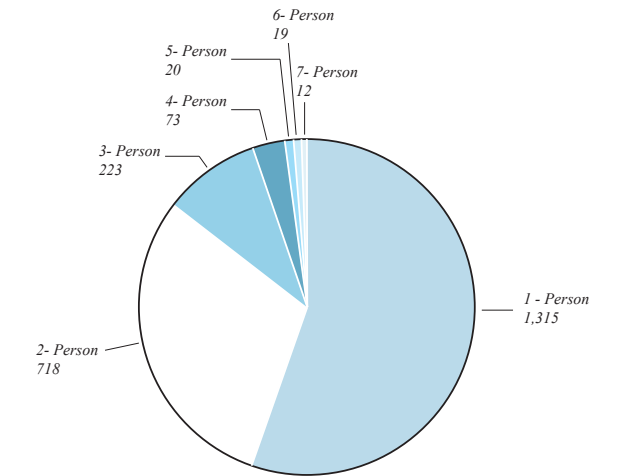
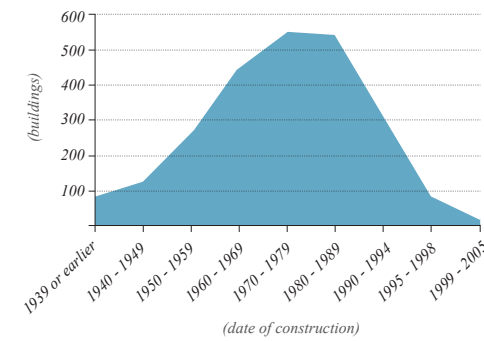
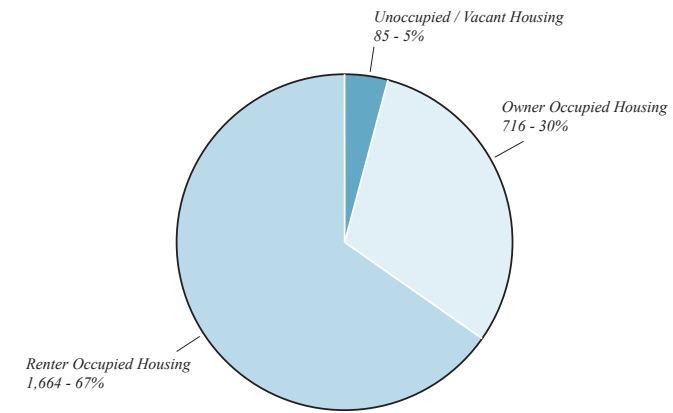
communities that provide a balance of housing and employment, generally at densities lower than those found in urban centers. These areas provide a focus of goods, services, and employment to communities that are not close to urban centers.¹

This site has been vetted by the city

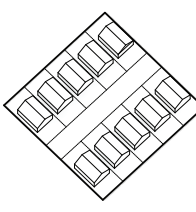
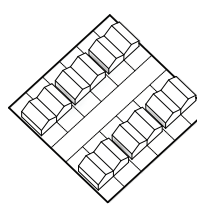
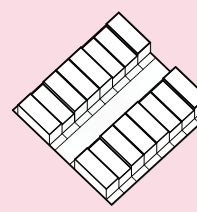
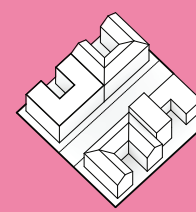
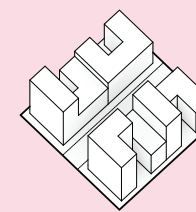
¹Seattle Department of Planning and Development, "Seattle's Comprehensive Plan Towards a Sustainable Seattle." http://www.seattle.gov/DPD/cs/groups/pan/@pan/documents/web_iformational/dpdd016610.pdf.

as a good location for development sits largely untouched.

Currently, Bitterlake Urban Hub has a low population. This is due to the fact that most of the area is characterized by under performing or vacant big box stores, strip retail centers and car sales lots. Of the people that do live in the area most, 75%, drive to work. At the moment there is a lack of good infrastructure to facilitate multi-modal means of transportation.



Levels Of Density

VERY LOW	LOW	MEDIUM	MEDIUM HIGH	HIGH
Single Family Detached 1 - 2 Story Wood Framing	Semi - Detached With In-Law Unit 2-3 Story Wood Framing	Front Loaded Row Houses 3 Story Wood Framing	Midrise Stacked Apartments Below 8 Story Wood Framing Over Concrete Podium	Highrise Stacked Apartments Above 8 Story Concrete / Steel Frame
 0 - 10 DU/AC	 10 - 20 DU/AC	 20 - 30 DU/AC	 30 - 75 DU/AC	 75+ DU/AC

Target Average Density
65 Dwelling Units Per Acre

Density and Program

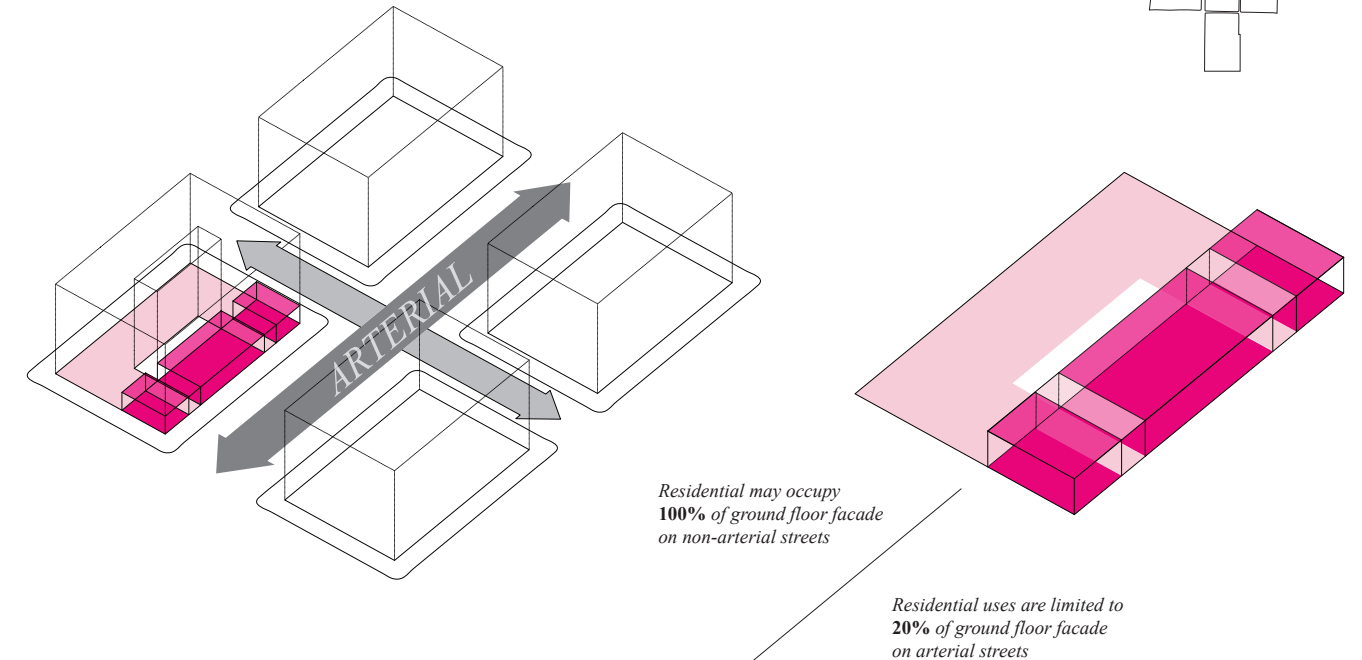
When trying to determine the character and level of density that could be placed on this site, densities of traditional neighborhoods like the North End in Boston Massachusetts were considered. The North End is regarded as a good example of a traditional American mixed-use urban neighborhood due to its vibrant culture, street life, and access to public space. The North End and neighborhoods like it were observed to have densities of between 50-80 dwelling units per acre. For this test site a middle ground of 65 dwelling units per acre was used as a starting point.

The next question that needed to be answered was, what type of residential building stock traditionally supports densities of 65 du/acre? Mid-rise apartment blocks, row houses, and high rise apartments were the most fitting traditional residential building types that could support this level of density.

Finally, the building code for the site was analyzed to understand programmatic and spatial constraints set by the city of Seattle.

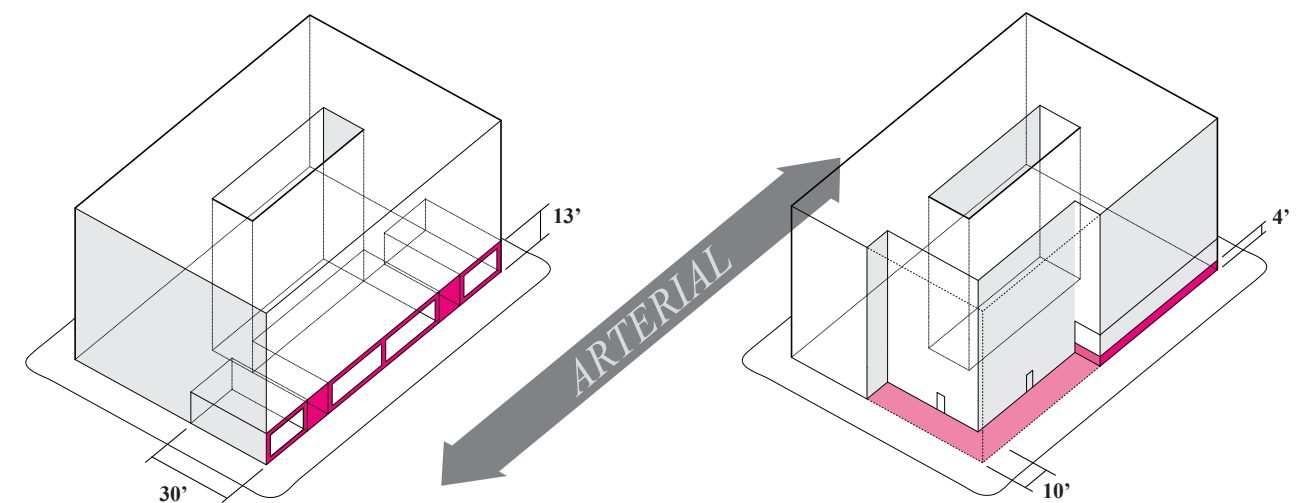
Street Level Uses (Zone C1 : Commercial 1 - Same as NC1)

Non-residential uses required at street level on arterial streets.
Residential uses are limited to 20% of the facade on arterials, but may occupy 100% of facade on non-arterials



Street Level Non - Residential Design (See NC1 in Bitter Lake Overlay)

Transparency required for 60% of a street facing facade.
Non-residential uses at street level must have an average depth of 30' and minimum height of 13'



Street Level Residential Design (See NC1 in Bitter Lake Overlay)

Must contain at least one visually prominent pedestrian entry for residential uses. Dwelling units must be at least 4' above or 10' back, from a sidewalk, unless in a conversion from non-residential to residential.



RESIDENTIAL

NON - RESIDENTIAL

With a starting point of 65 du/ acre and the size of the site the aim of the design was to provide 2,408 new dwelling units. The Program was divided into residential and non-residential uses. It was important to have the bulk of the program be used for living so that this new neighborhood could support a large enough population to support the other uses. While the neighborhood should attract people from surrounding areas it should also be self sustaining.

A mix of one, two, and three bedroom dwelling units was chosen to attract different types of people to the neighborhood, families as well as single

people. Portions of the dwelling units were denoted as having the possibility of containing live/work units. This typology of having office or studio space associated with typical residential building stock creates a mix of uses through the course of a day and responds to remote digital work environments which are continually becoming more prevalent.

Finally, studies were made to make qualitative decisions about the arrangement, height, bulk and connections the new neighborhood should have.

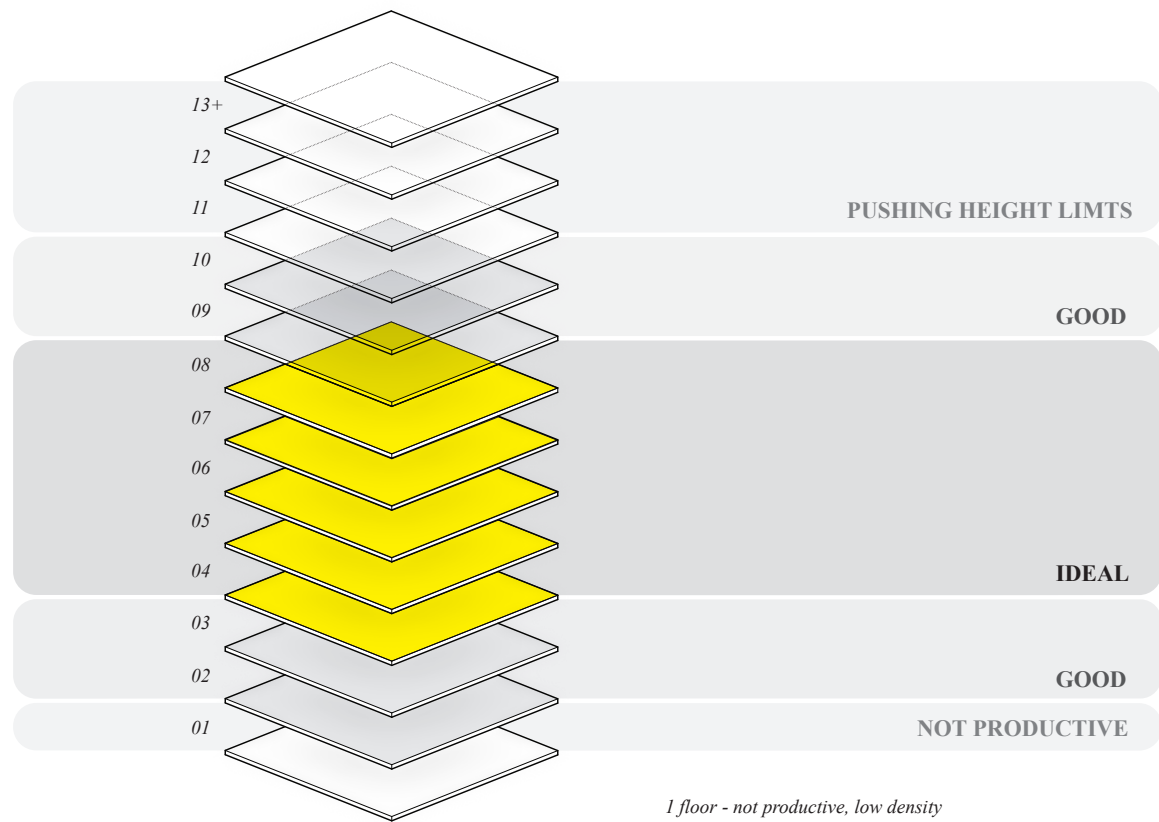
RESIDENTIAL

65 du / Acre = 2408 dwelling units

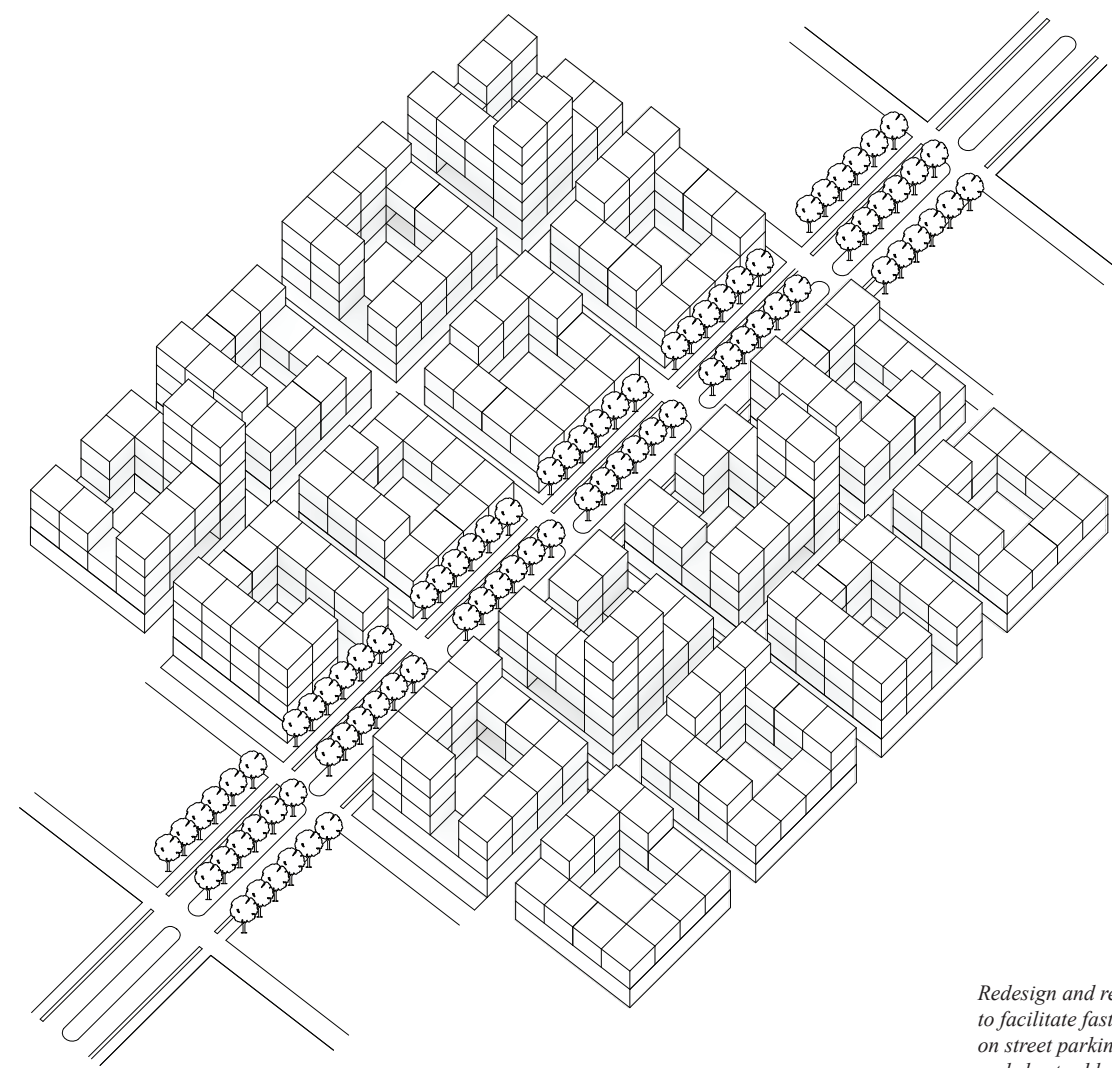
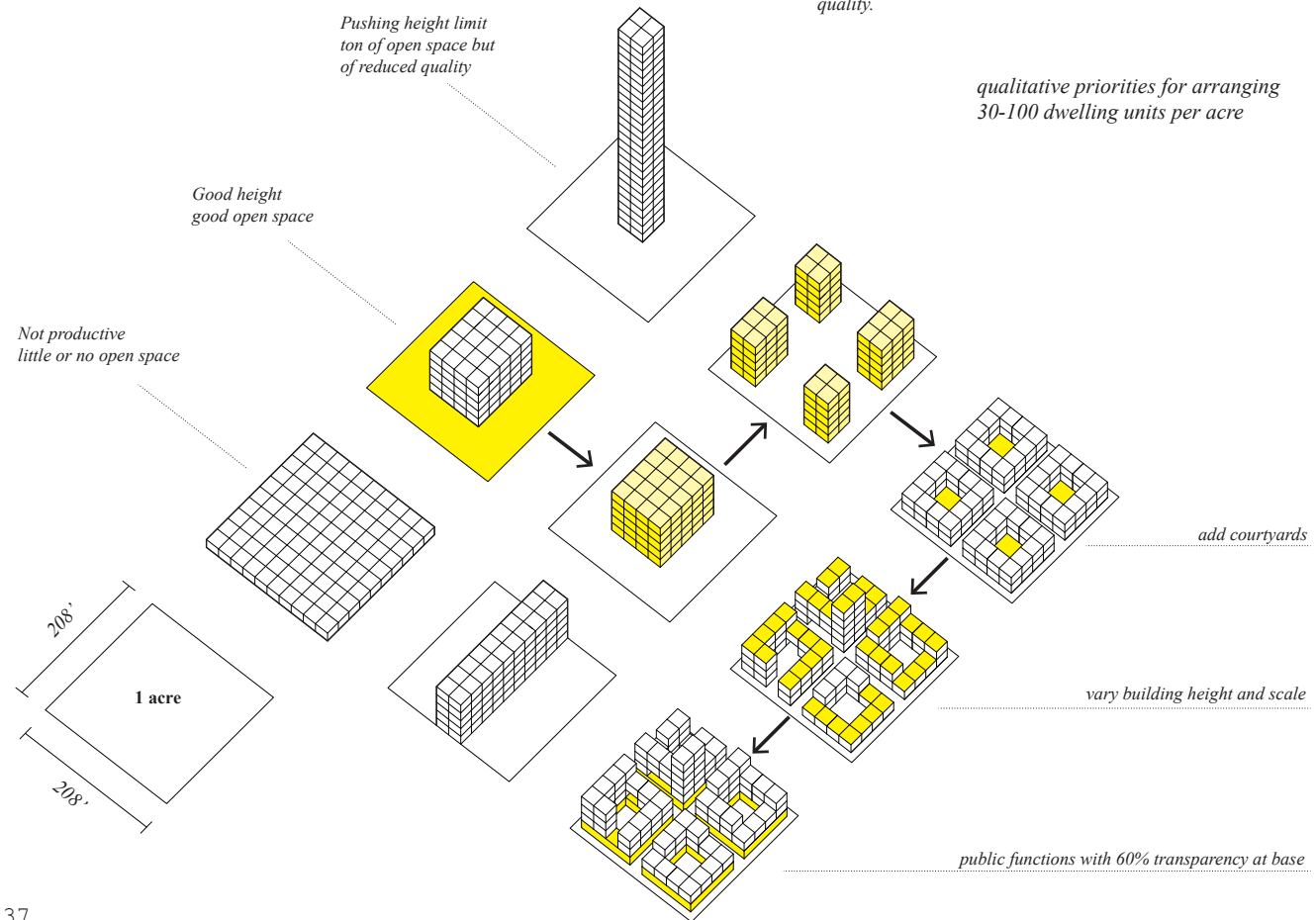
			S.F. / Unit	NSF
1- Bedroom / Studio / Student		50% = 1204 du		
	Standard	50% = 602 du	600 s.f.	361,200
	Live / Work/ Artist's	50% = 602 du	800 s.f.	481,600
2 - Bedroom		20% = 481 du		
	Standard	70% = 366 du	900 s.f.	329,400
	Live/Work/ Artist's	30% = 115 du	1,200 s.f.	138,000
3 - Bedroom		20% = 481 du		
	Standard	90% = 432 du	1,400 s.f.	604,800
	Live/Work/ Artist's	10% = 49 du	1,800 s.f.	88,200
Senior		10% = 240 du	500 s.f.	120,000
Total:		2,408 du		2,123,200
			30% Circulation (.42 multiplier)	891,744
			NOSF (Net Occupiable SF)	3,014,944
			10% Mechanical (.11 multiplier)	331,644
			2% Exterior Walls (.02 multiplier)	60,298
			GSF	3,406,886

NON-RESIDENTIAL

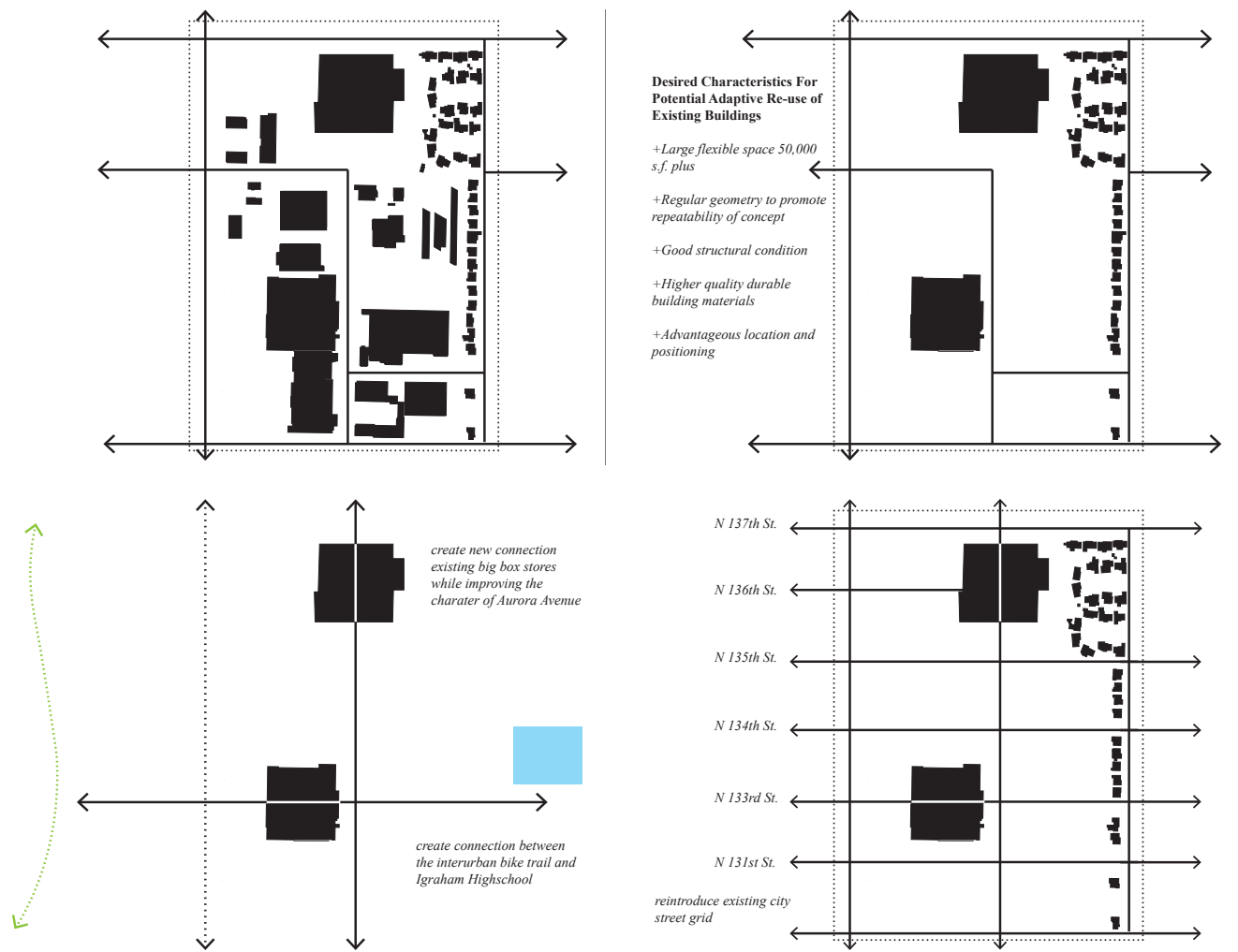
Commercial / Office		300,000
	15% Circulation (.16 multiplier)	4,800
	NOSF (Net Occupiable SF)	304,800
	10% Mechanical (.11 multiplier)	33,528
	2% Exterior Walls (.02 multiplier)	6,096
	GSF	344,424
Commercial / Retail		200,000
	15% Circulation (.16 multiplier)	32,000
	NOSF (Net Occupiable SF)	232,000
	10% Mechanical (.11 multiplier)	25,520
	2% Exterior Walls (.02 multiplier)	4,640
	GSF	262,160
Civic / Institutional		150,000
	30% Circulation (.42 multiplier)	63,000
	NOSF (Net Occupiable SF)	213,000
	10% Mechanical (.11 multiplier)	23,430
	2% Exterior Walls (.02 multiplier)	4,260
	GSF	240,690



1 floor - not productive, low density
 2-3 floors - good density, doesn't maximize site potential
 4-8 floors - ideal density, good spatial quality
 9-10 floors - high density, starts to impact spatial and street character
 11+ floors - high density, impacts spatial, street, and living quality.



Redesign and restructure right of way to facilitate fast and slow moving traffic, on street parking, pedestrians, bicycles, and shorter blocks



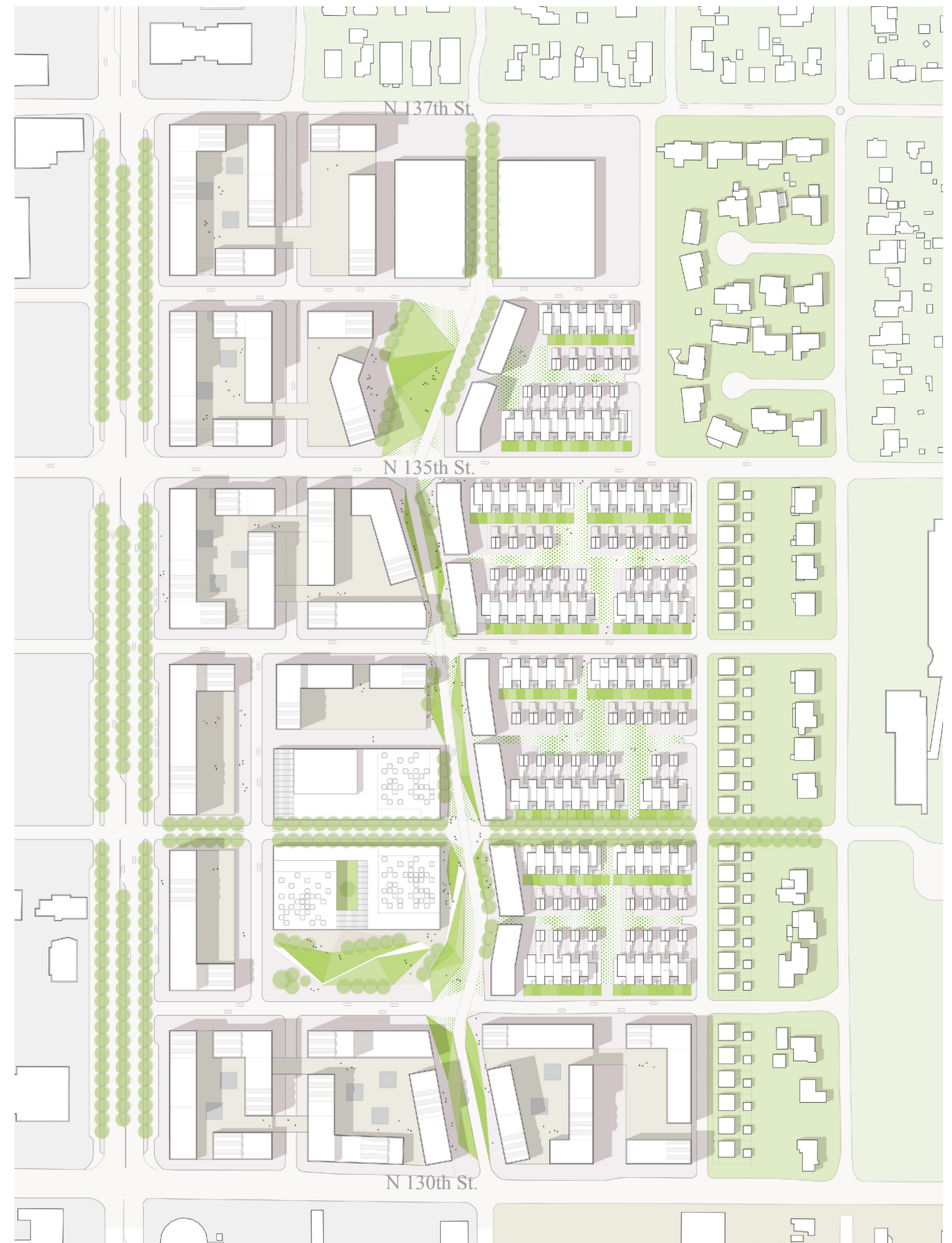
Study Area Masterplan and New Typologies

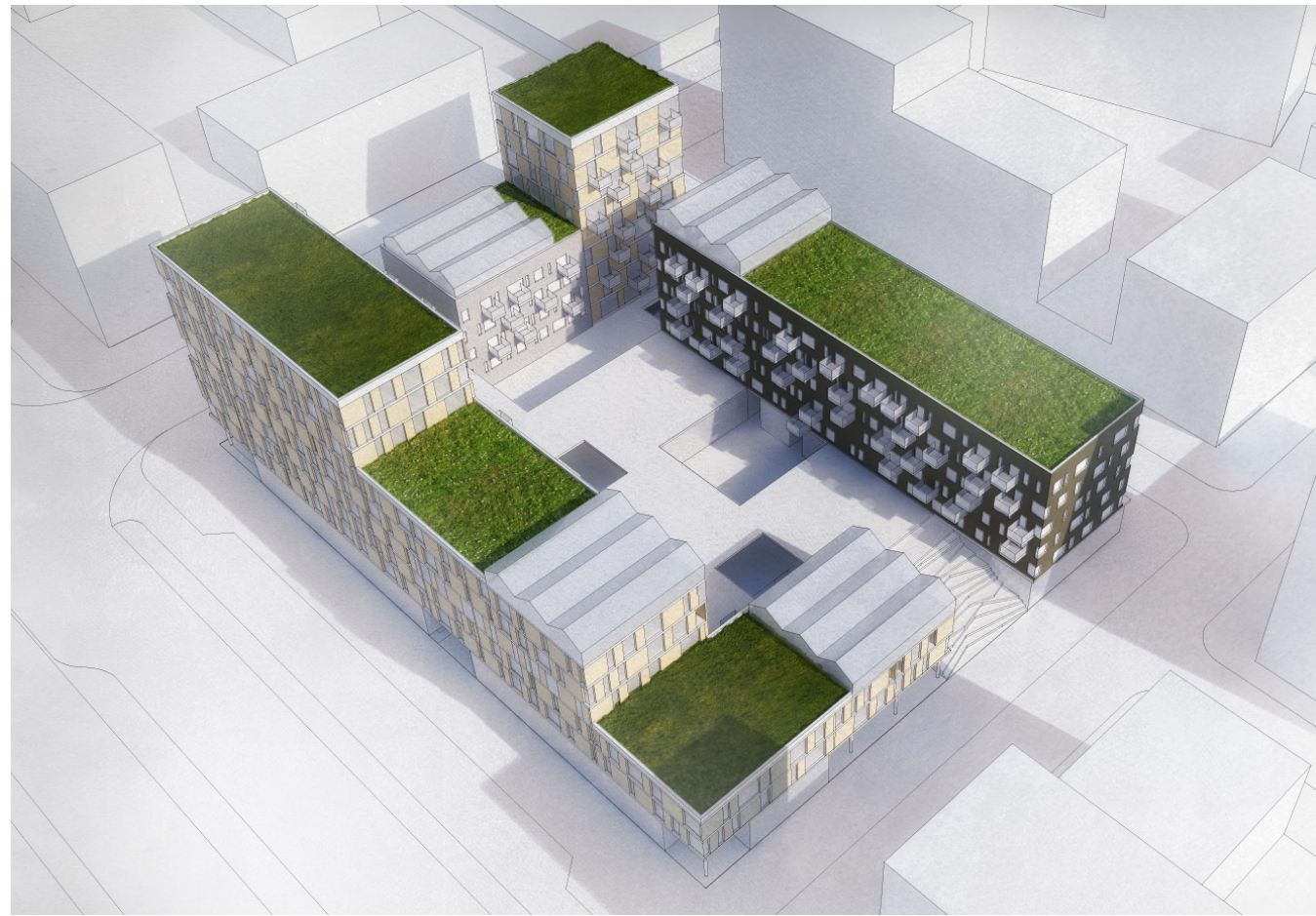
To begin designing the existing buildings and streets were researched and analyzed. The majority of the existing building stock on the site can be characterized as stand alone box stores, warehouses, strip retail centers, and single family residences. The single family homes were protected as a priority. Very few public streets existed on the site, the ones that did were used to access loading points for the retail and commercial buildings.

After making a list of priorities, based on size, shape, age, construction type, and quality, two big box stores met the criteria for adaptive

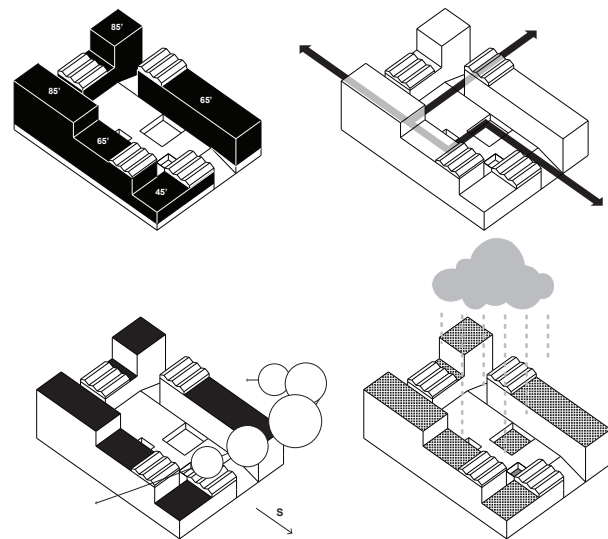
re-use. The large existing K-Mart store to the south and the Sam's Club store to the north.

New connections were developed linking Ingraham High School to the east to the Interurban bike trail to the west, as well as, a central north south connection linking the two adaptive re-use projects. Following that the existing city street grid was reintroduced to create access and permeability to the new neighborhood. Finally, new building stock was filled into the street grid as a gradient in scale and density moving from Aurora Ave. into the existing neighborhood.





View of the Courtyard Apartment Blocks

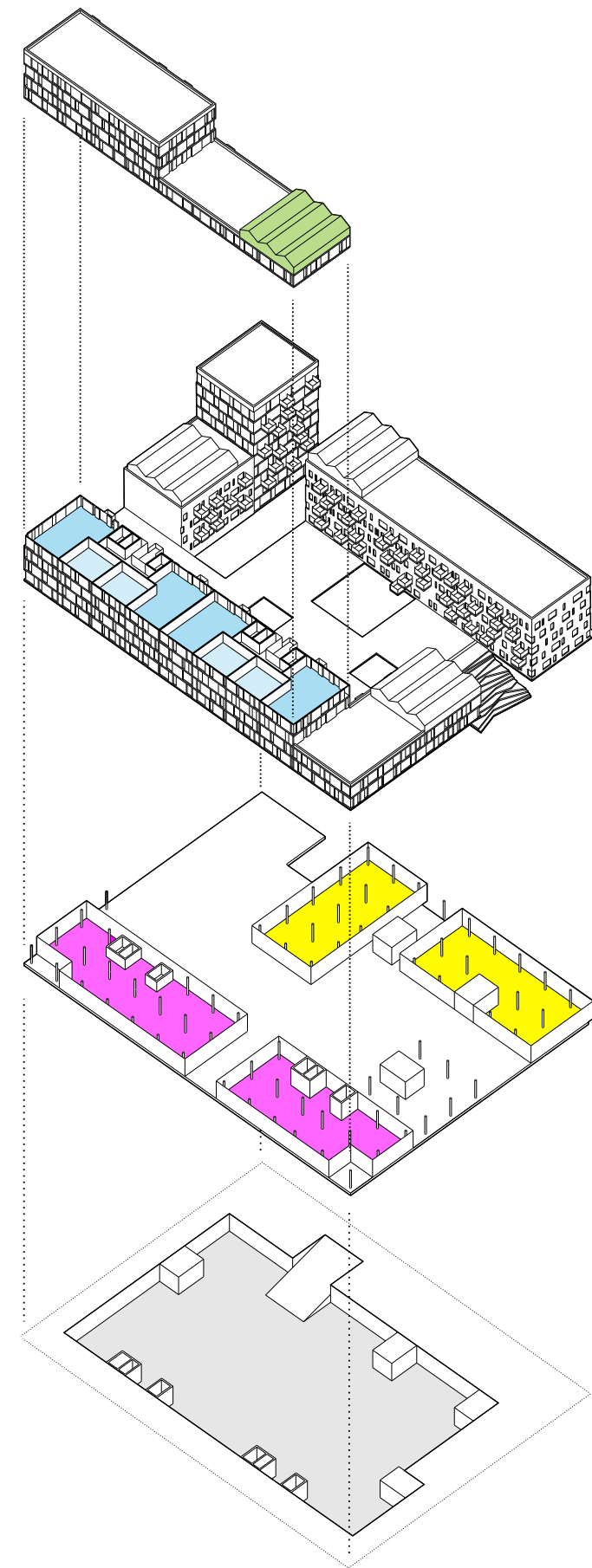


Functional Diagrams

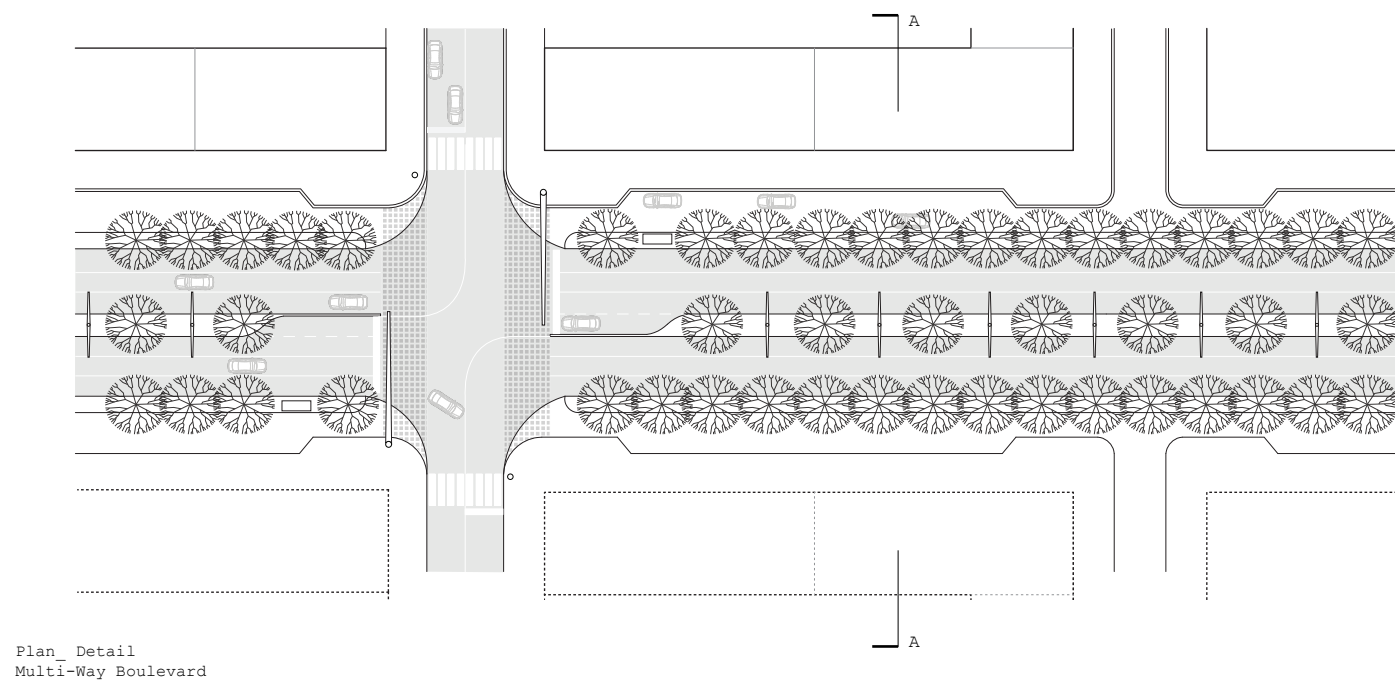
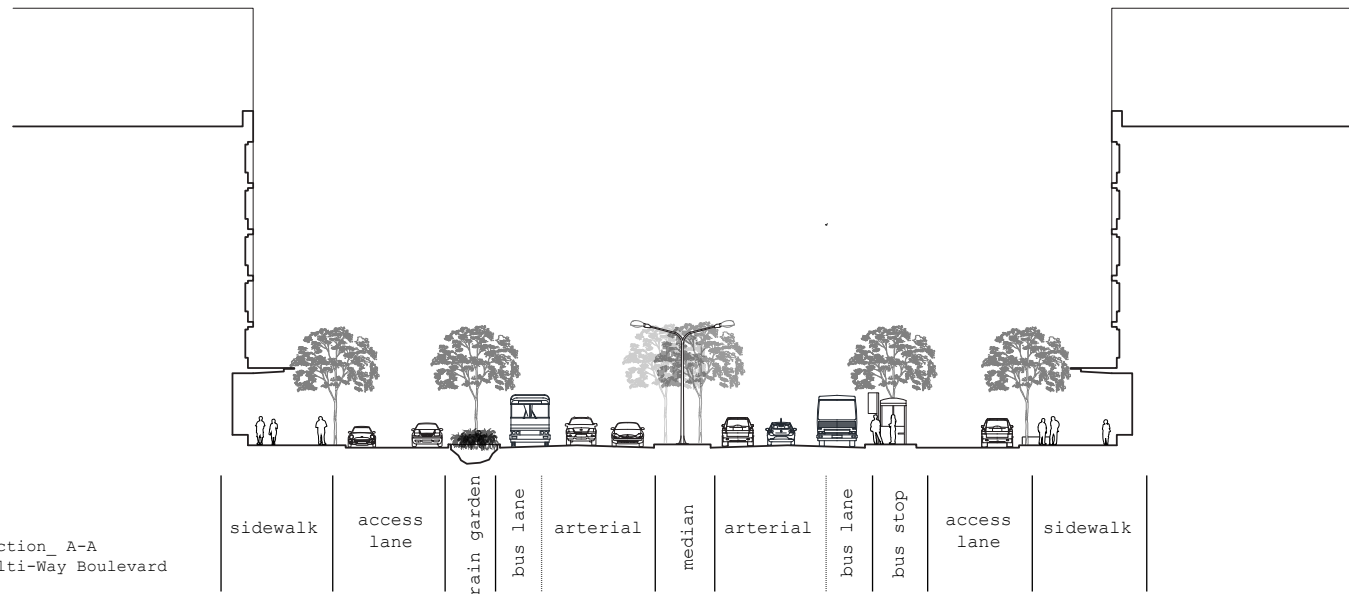
The master plan consists of knitting together of three different city block types. The first type is the courtyard apartment block which occupies the busiest edges of the site. The courtyard apartment consists of a concrete plinth of retail and commercial space on top of parking with two, five or eight residential floors above.

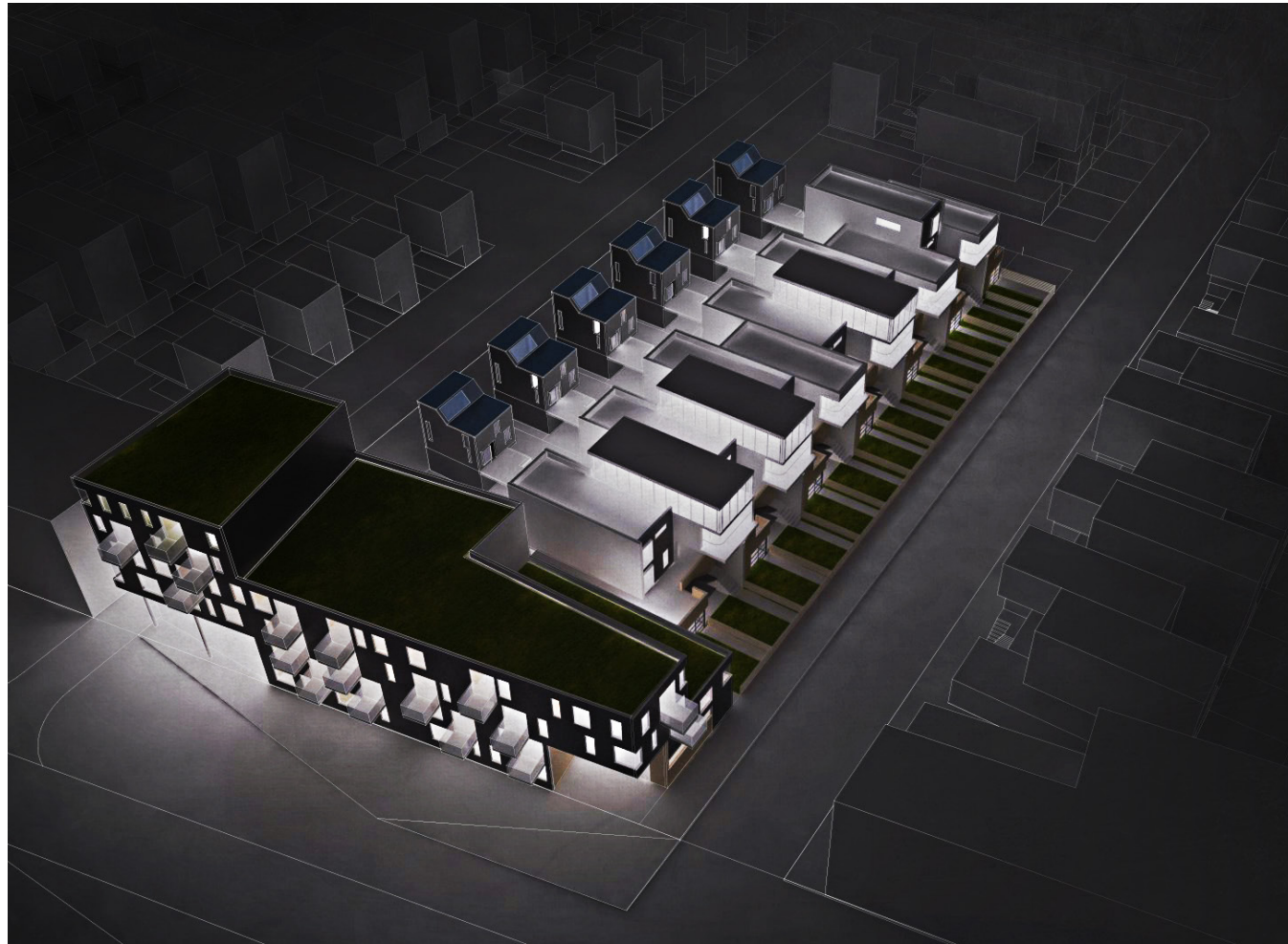
The height and mass of the cross laminated timber apartment blocks was varied and broken down to respond to solar access, physical access and visual street presence. Planted roof terraces are oriented to the south and can be used for waste water mitigation as well as garden and leisure spaces.

Apartment block exploded axonometric

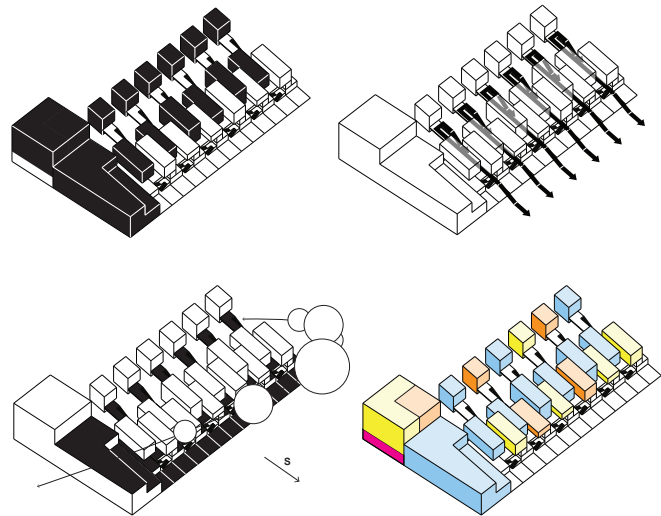


- greenhouse
- residential
- office
- retail
- parking





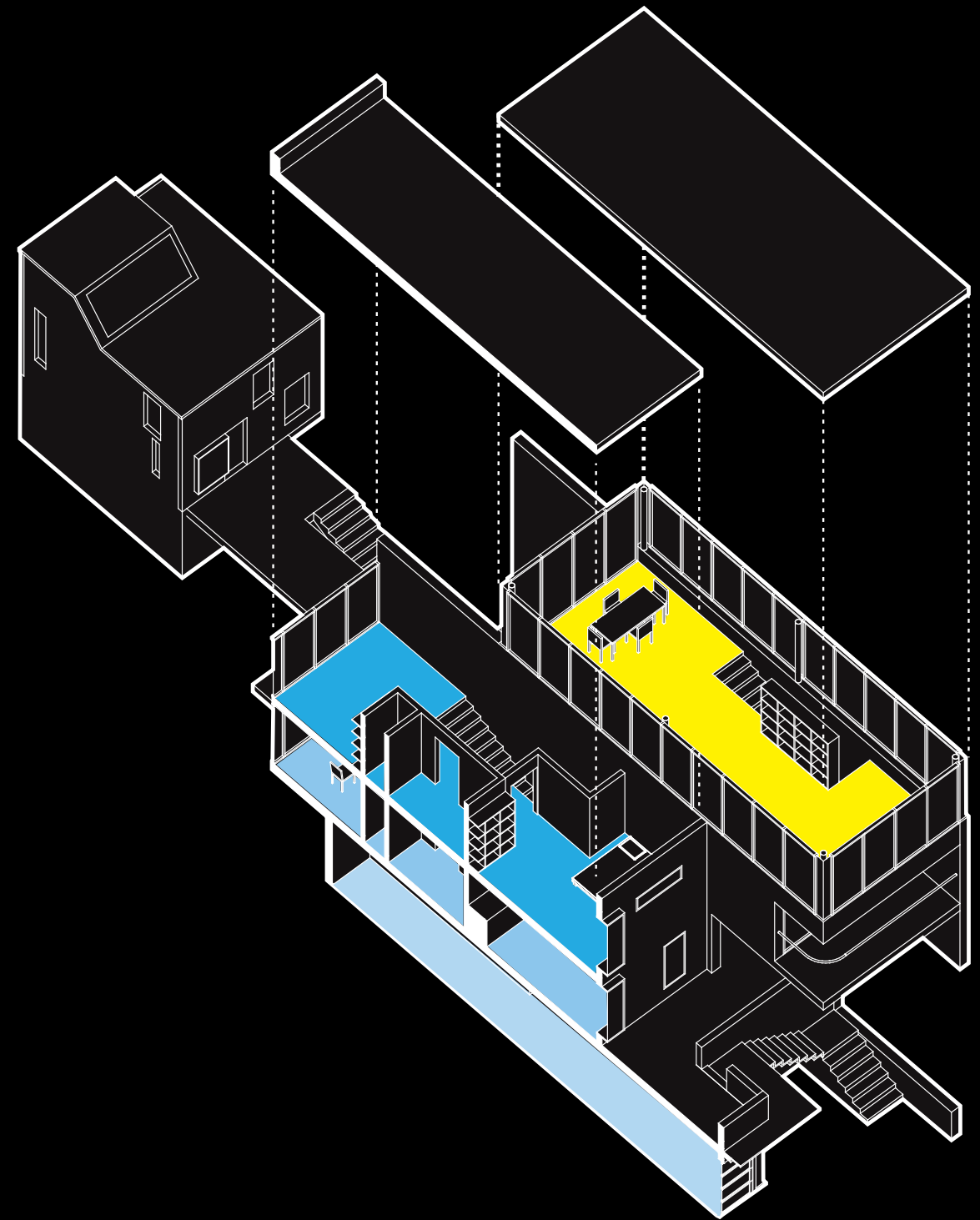
View of the Live/Work Blocks



Functional Diagrams

The second block type combines live work row houses, with traditional apartment buildings and accessory dwelling units. The row houses are based on the dimensions of traditional buildings of the same type but they are shift to create terraces and to allow light in from more area on the facade. Every row house has a south facing garden alternating between facing the street and facing the alley.

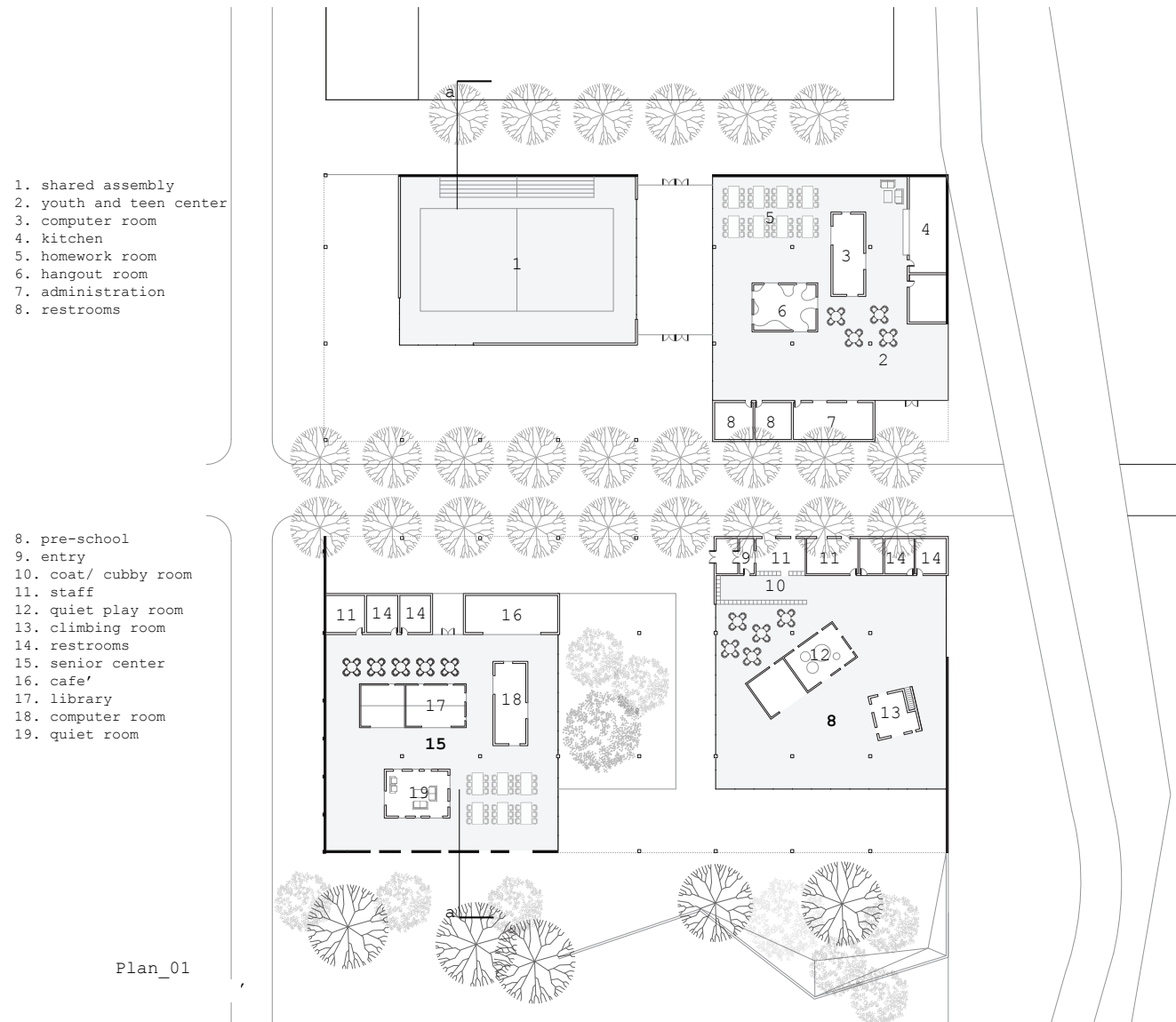
Accessory dwelling units are combined with covered parking in storage facing the alley for more residential, office or studio space. These units are connected by a pathway on the second floor.



Row house and ADU Exploded Axonometric



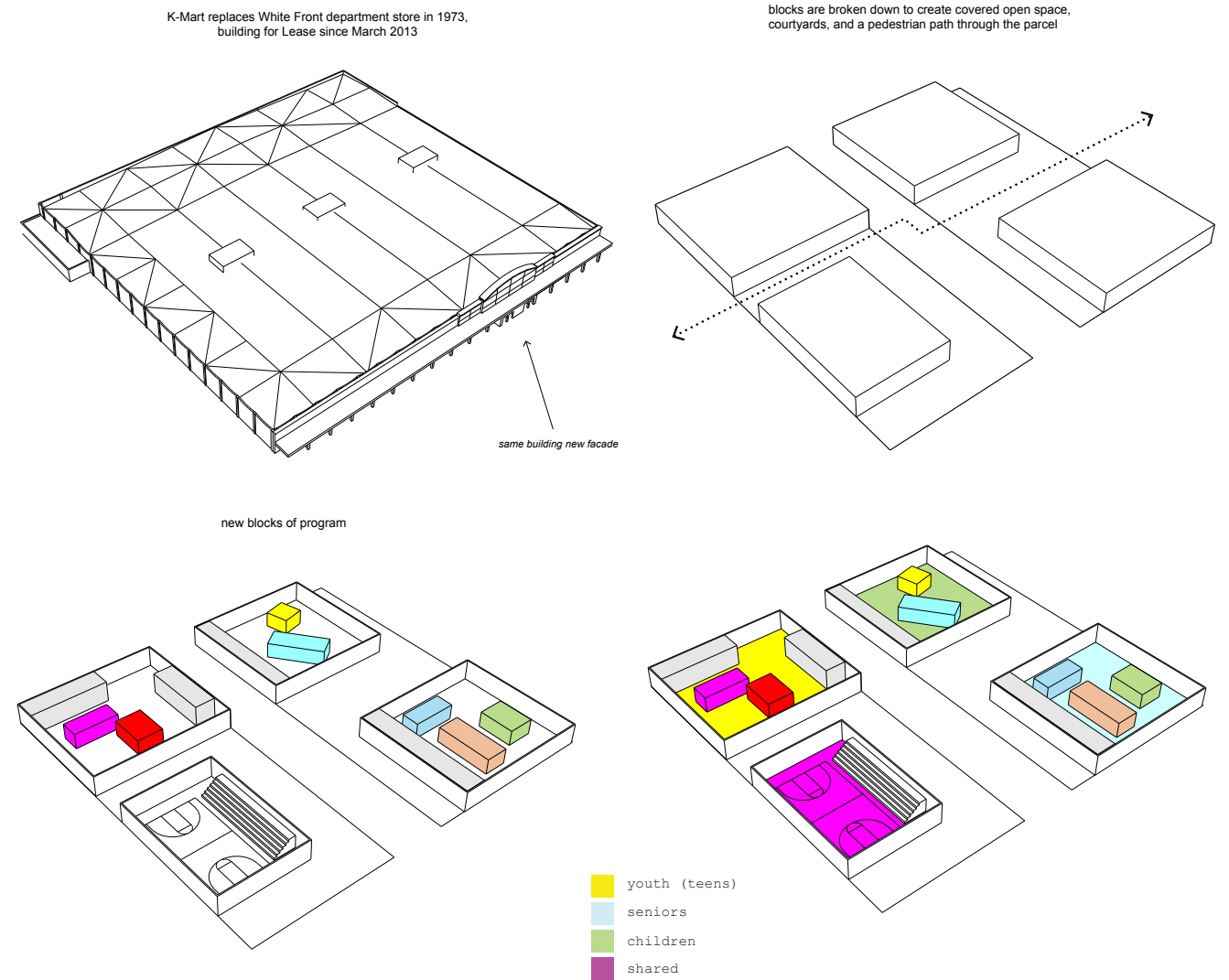
View of woonerf looking north



The final block type is the adaptive re-use of the existing big box stores to serve civic and institutional functions. As an example the existing K-Mart has been re-imagined as community center, with space and services for seniors, children and teens. Currently there are 800 units of senior housing located adjacent to the site with no amenities near by. By combining the seniors with the child care the two populations can help and enliven each

other. The remainder of the K-mart is used for an after school center to serve Ingraham High School and the entire community. As well as a flexible space to be used by all groups.

Covered outdoor space is left unprogrammed for general community use. Farmers markets, performance, outdoor athletics and leisure, and other demonstrations could happen within this space



Section A-A



View of K-Mart adaptive re-use

Future Applications and Lessons

Technically the scheme for the test area located at Aurora Avenue North and North 130th Street met the criteria expressed in the previous sections. It had in total 2,500 dwelling units which exceeded the initial target of 2,408 units which was derived from a desire to have an average of 65 du/acre. Density is an important discussion and metric for evaluating the project. The intent was to create mixed use neighborhoods to absorb the future housing needs of the increasing expanding urban population of Seattle. By creating dense neighborhoods on greyfield site along a transit corridor the hope is that it would increase public transit ridership and reduce vehicular travel and ownership.

King County has a legislative mandate to reduce greenhouse gas emissions by 50% of their 1990's levels by 2050. With 47% of GHG emissions coming from vehicular transportation real strategies for limiting excessive vehicular transportation must be developed.

In addition to meeting the density targets for the site the scheme also addressed qualitative and social implications associated with neighborhood planning. New infrastructure in the way of new roads, right of way improvements, and new open public space were created. This infrastructure provides the bones for the new Bitterlake neighborhood. By reintroducing the street city street grid it immediately changes the scale, connectivity and permeability of the site. Additionally new open spaces the 're-green' the greyfield sites

adding public park space and ground permeability for waste water mitigation.

The inclusion of the central big box adaptive re-use components attempts to give the new neighborhood a heart. By reusing the K-Mart as a cultural building it leaves traces of the past character of the site. In this way it is a building up of layers on the site rather than a completely clean slate.

The drawback of the design is its scale. The result of an intentional choice to choose one distinct test site is the stark contrast between the new and the old. The design for the new Bitterlake neighborhood resembles a dense island in a sea of asphalt. In reality neighborhoods do not act in this way. Edges are less defined and do not obey strict Cartesian grids. Rather, they spread out and knit together often gently tapering off until a new set of site conditions picks up again. For this design to work it must be applied and analyzed within a wider context.

One possible way of considering this design is as a series of fabrics which make up one square of a quilt. The true system could only be fully realized when multiple squares are knit together. That is to say that site is still an important factor. This square of the quilt could not be directly used again on another site. It would not match the site conditions. Although the same fabrics and stitches could be used to create a new square which matches its site conditions. There could be no universal system which would work in every situation.



View of K-Mart adaptive re-use, new 're-greened' courtyard



View of K-Mart adaptive re-use, pre-school