The Lake City Commons

A catalytic approach for generating urban coherence

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Abstract

The Lake City Commons: A catalytic approach for generating urban coherence

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This thesis explores the role of urban design in generating coherence within urban systems and in facilitating urban growth as informed by an investigation of systems theory and the urban catalyst concept. The quality of coherence, in regards to systems, refers to the ability to continuously regenerate and evolve, brought about by an integration of distinct elements to form a whole greater than the sum of the parts. In coherent systems, the parts are maintained, discarded and removed to maintain a dynamic balance of the whole.

Concerns are growing over resource scarcity, climate change, social and economic inequality, and the realization that many man-made environments are lacking the qualities that make them livable, healthy and safe. The prioritization of the automobile has resulted in a lack of pedestrian infrastructure and the neglect of the pedestrian environment. As a result, many cities are pursuing planning strategies that reduce dependency on the automobile and the negative effects of sprawl.

The neighborhood of Lake City, in northeast Seattle, was planned and built around the use of the automobile, and is now seeking to intentionally shift typologies to a pedestrian-oriented urban village. The existing urban structure

does not provide a basis which to integrate pedestrian elements. Shifting urban growth patterns from car- to pedestrian-oriented development requires a transformation of the urban structure; urban structure is a result of the processes which shape the city. Through intervention processes such as the catalyst approach, urban design intervenes in the existing urban system and redirects network operation and urban processes to transform the overall urban structure. Urban design does not directly create coherence, but supports the complex processes and relationships that generate the urban structure from which it may emerge.

The proposed strategy explores the use of an urban catalyst to generate a network of social infrastructure that supports pedestrian elements, transforming the urban structure of Lake City; doing so integrates movement and social interaction, which facilitates the emergence of a coherent urban system.

The lessons learned from this investigation are transferable to other urban areas of similar typology to Lake City, as well as to other processes within urban systems that require intervention to obtain desired results.

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To

My loving family,

My good-looking friends,

And the days of sunshine with Catilin & Rita,

Without whom

This thesis

May have been completed

A few quarters earlier.

x

chapter 1

Introduction

Introduction

Seattle introduced the Urban Village Element into the City's Comprehensive Plan as a strategy to direct growth into designated centers within existing neighborhoods. The approach aimed to maximize infrastructure investment and reduce reliance on cars by increasing the intensity of jobs, housing, and services in selected areas (City of Seattle 2005).

Growth strategies such as these are largely a response to concerns and threats of resource scarcity, climate change, inequality, and the realization that man-made environments are lacking qualities that make them livable, healthy, and safe. Prioritizing the automobile has resulted in development patterns that require a constant input of resources to continue to function. Growth strategies, such as being implemented in Seattle, aim to reduce auto dependency and limit sprawl in favor of pedestrian- and transit-oriented development.

An area in the neighborhood of Lake City in northeast Seattle was designated as a Hub Urban Village in 2005 (City of Seattle 2005). Existing development patterns are typical of post-World War II neighborhoods that were planned and built as car-oriented environments. The prioritization of vehicular circulation has resulted in a segregated and dispersed land use pattern that requires a hierarchy of streets and arterials favoring speed and volume over access and interaction. In Lake City, a two-block strip of pedestrian-scaled storefronts gives way to low densities of commercial development along a major arterial, segregated from residential uses, and dependent on car access. Buildings are set back from the streets, amid large parking lots. The neighborhood operates at the scale and speed of the car; and, the pedestrian environment was largely neglected and ignored, resulting in a lack of sidewalks, pedestrian infrastructure, and a void of human activity at the street level.

The City of Seattle uses zoning and design guidelines to focus growth and ensure that new development in the hub urban villages is pedestrian-oriented. However, neighborhoods and cities are self-organizing and evolving, and emerge from the many forces that interact to shape them; the dynamic of these forces is complex, making it difficult to assert control through top-down planning. The present day form and function of urban environments is a result of historical patterns of movement, activity, and regulatory actions. In this way, neighborhoods and cities may be seen as living systems that emerge, evolve and grow.

The quality of coherence refers to the dynamic nature and ability of a system to grow, change, and evolve over time, adding and replacing elements as needed to retain its functions, remain healthy, and react to changes in context (Capra 1982). To achieve this, all of the components which comprise a system need to be integrated in terms of their relationships with one another. This requires the basis of a structure to which new elements can be integrated and existing elements may adapt (Capra 1982).

Urban environments are defined by their transportation networks (Alexander 1987). By designating the neighborhood center in Lake City as a hub urban village, the City seeks to intentionally redirect the urban structure from a large-scale, car-oriented commercial strip to a small-scale, pedestrian-oriented

Figure 1. The car-oriented structure of Lake City Way. Photo by author.

neighborhood center. As it exists, Lake City, along with many American cities and neighborhoods, is not a coherent urban system. The urban structure is dominated by the use of the automobile, reflected in the layout of buildings set back from the streets and "empty" land dedicated to parking. This urban structure does not provide a basis which to easily integrate pedestrian elements. Therefore, transforming the structure of Lake City to generate a coherent neighborhood requires creating and integrating a network that supports pedestrian movement and access.

This thesis seeks to understand the role of urban design in generating coherence within urban systems and in facilitating urban growth. Through an investigation of urban design based on creative systems theory and the urban catalyst approach, this thesis explores the role of urban design to intervene in the existing urban fabric as to change the direction of growth patterns, network operation, and urban processes.

Figure 2. Pedestrian-scale of the neighborhood center. Photo by author.

The proposed strategy explores the use of urban catalysts to intervene in current processes and ignite the change in urban structure in Lake City. Urban catalysts are projects intended to create momentum and drive subsequent development (Attoe and Logan 1989), as to positively influence future growth and evolution of urban areas. The concept of urban catalysts demonstrates the potential of urban design to ignite the generation of an integrated pedestrian network from which a coherent neighborhood may emerge. In doing so, the existing urban structure of Lake City may begin to transform from being car-dominated to an integrated system of human-scale networks. This thesis stresses the dynamic nature of the urban

environment as a living system, and as such states that it is crucial to generate coherence in urban systems that can generate the ability to adapt and change their contexts over time. This topic is relevant to contemporary planning in that the typology of auto-dominated urban form is giving way to multi-modal and pedestrian-oriented development. Many post-war neighborhoods look for strategies to reduce dependency on private automobile use, but realize the existing structure was built for vehicles and does not support a shift in mode use. The underlying structure of these areas must be transformed not by imposing external forces, but from within the system itself. In this way, exploring approaches to regenerate the urban fabric and create coherence in our urban environments will become increasingly important to fix the fragmentation, isolation, and resource-dependent patterns of our urban areas.

Figure 3. Lack of pedestrian environment and infrastructure. Photo by author.

Questions & Methodology

Urban design involves both process and product, and works at multiple scales to manipulate the built environment and the processes that shape it over time. Urban design is concerned with features of the built environment that are not necessarily confined to individual properties, and that exist in the public and private realm. It is thus driven in part by those principles that create coherence across urban environments (E. Sternberg 2000) and allow urban systems to evolve and adapt as conditions change. Urban coherence is both compositional, in terms of the visual dimension and spatial arrangement, and functional, in terms of interrelated processes.

OBJECTIVES

An urban catalyst has an intended effect of stimulating regeneration of the spatial structure of its context. The objective of this thesis is to explore the "urban catalyst" concept as an approach for igniting the transformation of the urban structure in Lake City in order to generate coherence. The urban catalyst concept is examined first as a theoretical framework for understanding how urban design can shape cities as living systems; it is then tested through the development of potential design strategies for the Pierre properties in the neighborhood center of Lake City, Seattle. The objectives of this thesis are to:

- Identify opportunities and obstacles affecting coherence in Lake City through an understanding of neighborhood context;
- Ignite the change in the urban structure of Lake City through the intervention of catalyst projects on the Pierre properties in order to generate coherence; and
- Explore the transferability of the approach and methods used for other urban areas of similar typology to Lake City.

RESEARCH QUESTIONS

In doing so, this thesis aims to answer the following questions in the context of Lake City:

- What prevents or disrupts coherence in the built environment?
- What contributes to or generates coherence in the built environment?
- How can the design of individual projects transcend property boundaries to positively shape the urban environment?
- How can the urban catalyst concept inform urban design strategies, in regards to increasing coherence across property boundaries?
- What role does urban design play in the development of catalytic effects of projects, and how can urban design processes be deliberate about fostering catalytic effects?

The development of an urban catalysts strives to achieve an achievable, authentic response to context and begin a catalytic process of regenerating coherence in the neighborhood. This thesis presents findings on the validity, value, and limitations of urban catalysts as an approach to increasing coherence in the built environment.

METHODOLOGY

Developing a design strategy requires detailed understanding of context to tease out relevant opportunities. The process began with an investigation of the context of the Lake City neighborhood.

The proposed design strategy is informed by a literature review of creative systems and catalysts in the urban context. An understanding of creative systems and the quality of coherence was translated into a framework through which to view the complexity, function, and growth of urban environments, and provided the foundation for exploring the quality of coherence as it relates to urban systems and the networks that define them.

Although a number of projects boast catalytic effects, the discussion of catalysts within the planning and design discourse is limited. Most projects which claim catalytic effects do not provide data or evidence that there was in fact a stimulating effect. A review of the limited literature on catalysts, mostly as theory, provided an approach for urban design to intervene in urban processes in order to shape the urban context by igniting the transformation of urban structure.

Through the examination of the literature, crafting of a design strategy, and evaluation of its application, this thesis presents an understanding of cities as living and creative systems. This framework provides the lens to uncover challenges and opportunities associated with this view, as well as through which to explore urban design methods and approaches.

The following chapters detail the findings of the neighborhood analysis, literature review, and the formation of a design objectives and design strategy, which is applied and tested on a study site in Lake City.

Process

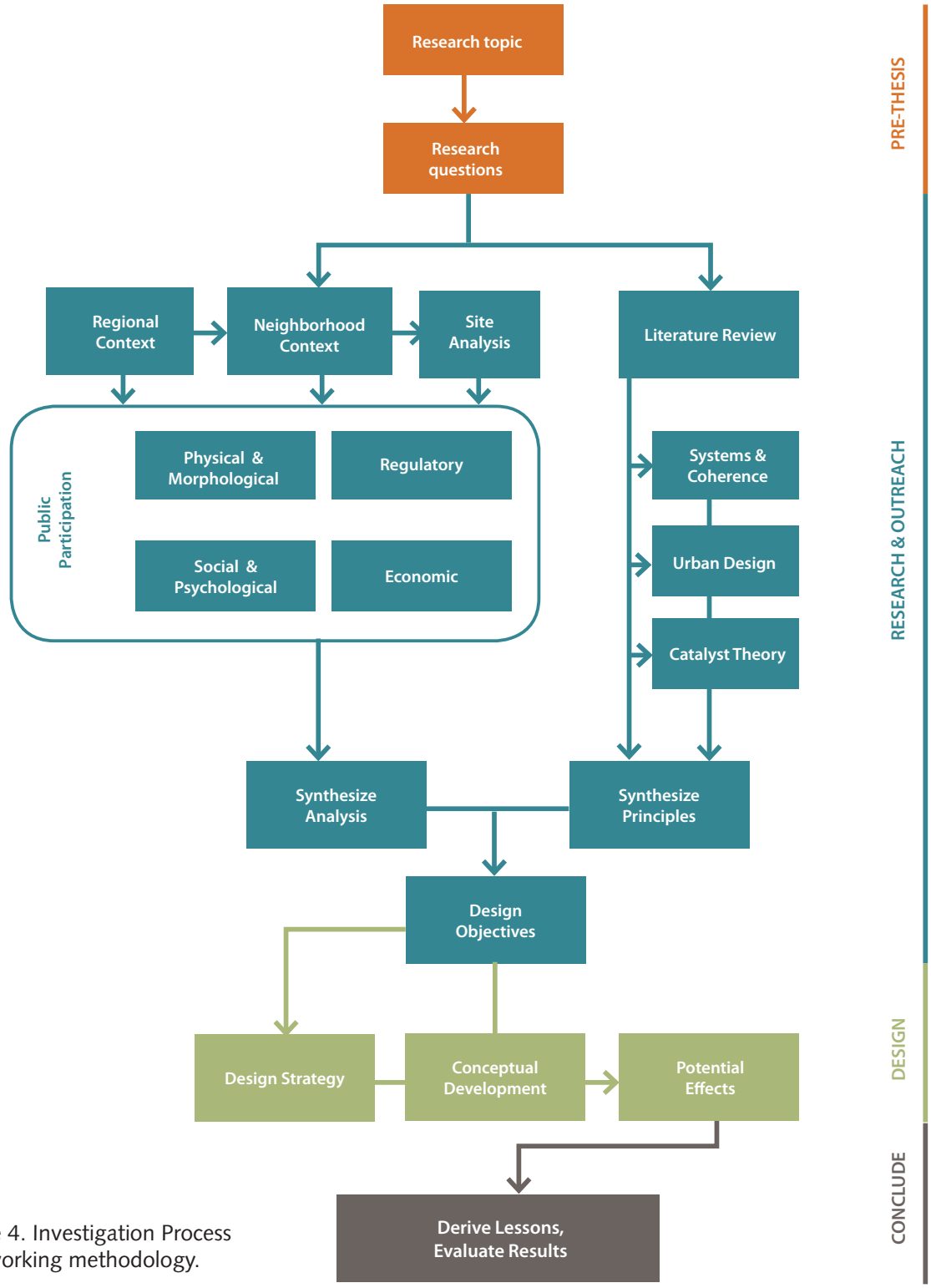


Figure 4. Investigation Process and working methodology.

chapter 2

Lake City: Neighborhood Context

Background

PROJECT OVERVIEW

For many years, Lake City was has been known as "Auto Row", shaped in particular by the development and expansion of Pierre Auto businesses along the corridor between NE 113th and NE 127th. The Pierre Auto businesses have been a mainstay of Lake City since 1947, and helped Lake City become a regional destination for auto-sales and services with its presence on Lake City Way.

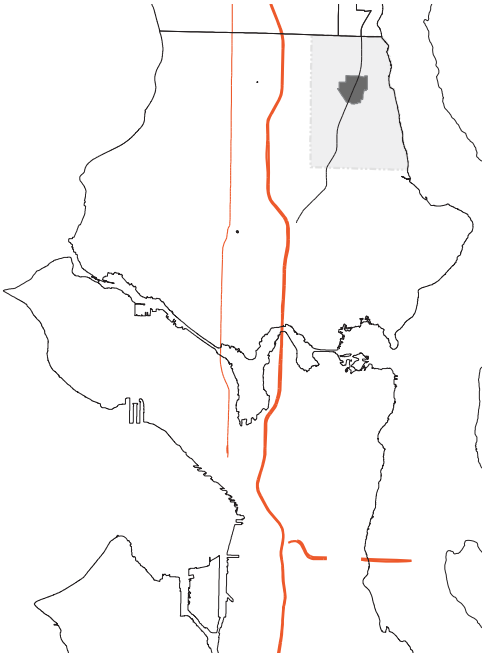


Figure 5. Lake City neighborhood boundary and HUV. Data souce: City of Seattle

After 60 years, the Pierre Properties, LLC announced their intentions to begin considering redevelopment of their properties along Lake City Way. Due to the size of the properties and their advantageous location on Lake City Way and near the neighborhood center, the Pierre family seeks to capitalize upon this unique opportunity to help shape the future of Lake City.

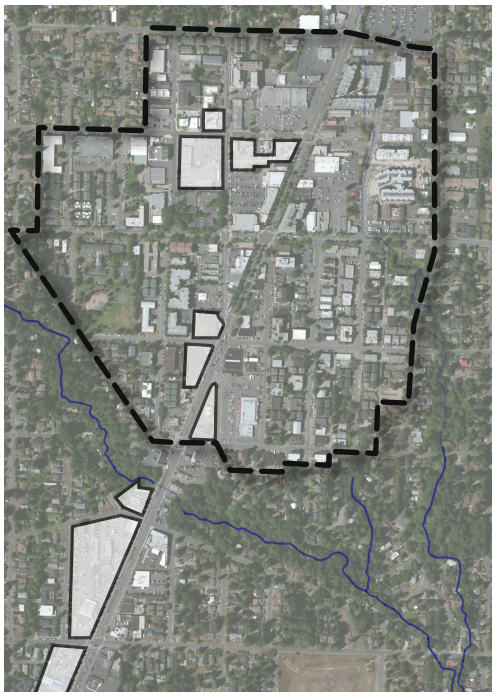


Figure 6. Pierre Owned Properties in Lake City. Data souce: City of Seattle

THE LAKE CITY VISIONING PROJECT

In early 2012, Pierre Properties LLC sought a consultant associated with

the University of Washington to work closely with the residents, businesses, and organizations in Lake City to help develop design concepts for the properties.

I was one of four graduate interns hired to organize and run a "visioning" workshop for the community in May of 2012. The workshop was the first major public participation event of The Lake City Visioning Project. The goal was to have residents discuss ideas about community assets and opportunities, and focus on the Pierre properties as key pieces to the change that the community envisioned. The workshop results demonstrated a rich spectrum of ideas about the future of the community from which we distilled goals and principles to guide future development on the Pierre Properties.

This thesis builds the work done by UW students and public input from Lake City residents over the course of the Visioning Project. The purpose of this thesis is to explore an alternative approach to developing an urban design strategy for redeveloping the Pierre properties.

Before crafting a design strategy, it is crucial to understand the context and conditions of the neighborhood. The following neighborhood analysis focuses on those factors that provide insight on how the neighborhood is changing and includes an overview of the following contextual elements:

- Land uses & activities
- Physical environment
- Social and cultural factors
- Economic climate
- Regulations

Neighborhood Overview

Lake City is an urban neighborhood of Seattle, Washington. It is located in the northeast corner of Seattle, approximately 8 miles from downtown, bounded by Lake Washington and the municipal boundary.

HISTORIC CONTEXT

Lake City grew as a small farming community after the area was logged and a wagon road was built from Seattle to Bothell around 1870 (Wilma 2001). A train station on the Seattle, Lake Shore & Eastern Railroad was established at the foot of present-day 115th Street, which was known as "Lake"(Wilma 2001). The first plat, in 1906, was filed as "Lake City" (Wilma 2001).

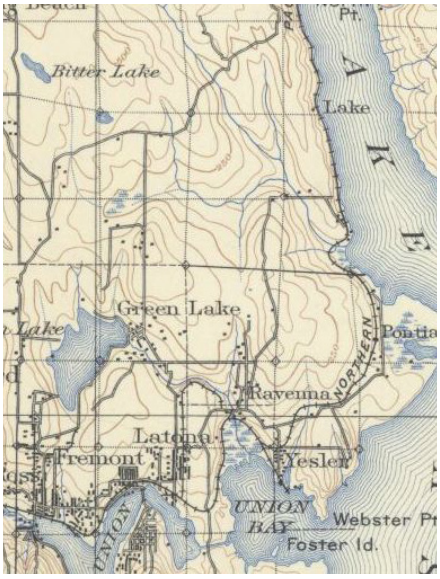


Figure 7. Lake City area in 1895.
Source: UW Special Collections

The wagon road was surfaced in 1913 from Ravenna to Bothell. After Lake City was annexed and I-5 was constructed, the origin of the route shifted north to Roosevelt, and was renamed Lake City Way (Wilma 2001). The route of Lake City Way as it exists today varies from the original corridor through the area, but remains the feature along which Lake City has developed.

Many early communities in Seattle grew up around trolley stops, but the timing of the rise of Lake City during greater access to the automobile caused commerce to develop along the corridor, instead of a cluster. Lake City was outlying area of Seattle, accessed primarily by vehicle.

Prohibition in 1916 created a market for speakeasies, especially in the unincorporated areas of King County, such as the Lake City area. Joe's Hot

Lunches had no lunch counter, but it did have bootleg whiskey hidden inside the tree stumps in the yard; the Jolly Rodger had a tower from which a watchman could spot approaching police (Wilma 2001). After Prohibition was repealed, taverns and clubs flourished.

With increasing access to automobiles, the farmland in Lake City was platted, and many young families moved in to single family homes after WWII. When Lake City was incorporated in 1949, it was the fourth largest community in the state. Five years later, it was annexed by Seattle with a promise by the City to provide sidewalks (Wilma 2001).

The construction of Aurora Ave/ Highway 99 in 1927 and I-5 in 1967, as well as the opening of Northgate Mall in 1950, created competition for Lake City and pulled traffic, residents, and consumers from the area.

What was once a small outlying community of Seattle is growing and and is transitioning into an urban village within the City boundaries. This impacts and implications of this transition are further explored in the current planning context.

Figure 8. 12500 block of Lake City Way in 1948. Source: seattlepi

PLANNING CONTEXT

Regulatory

Growth as a Hub Urban Village

The main node of commercial and civic activity is centered around Lake City Way and 125th NE, which functions as the neighborhood center. The approximate ¼ mile from this intersection is designated by the City of Seattle as a Hub Urban Village (HUV). This designation is at the conjunction of five sub-areas: Matthews Beach, Meadowbrooks, Victory Heights, Cedar Park, and Olympic Hills (Figure 9).

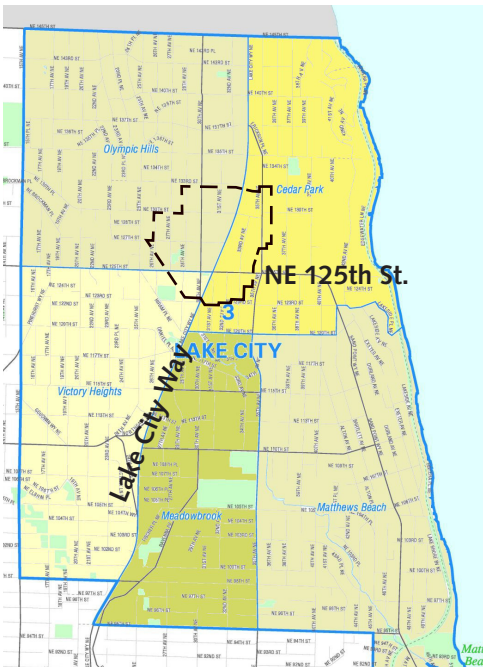


Figure 9. Lake City Neighborhood Sub Areas and HUV. Source: Seattle City Clerk's Neighborhood Map Atlas; http://clerk.ci.seattle.wa.us

Seattle's comprehensive plan sets 20-year growth targets (Figure 10) for the HUV as part of an effort by the city to direct growth to areas that can accommodate higher concentrations of employment and housing. The growth targets indicating the potential for building additional capacity. Lake City has been growing steadily, reaching 58% of its growth target as of April 2014.

This indicates that additional growth is still expected, which will increaese the density of housing and employement of Lake City, primarily within the HUV. As there is relatively little vacant land, most development will either be infill or redevelopment.

Lake City Hub Urban Village Growth Target Information		
	Households	Jobs
2004	1,920	1,510
2024 target	+900	+650
% of target*	58%	no data

*as of April 9, 2014

Figure 10. Lake City HUV growth targets. Source: seattle.gov

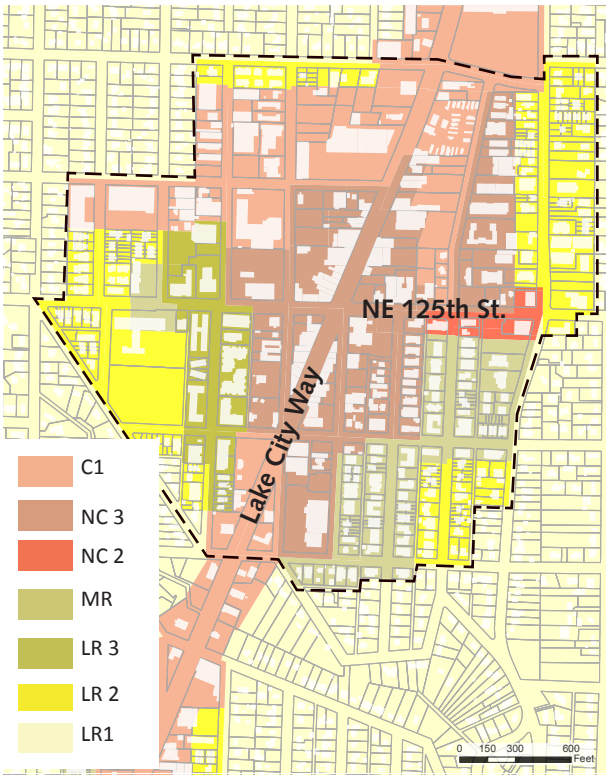


Figure 11. Zoning designations in Lake City HUV. Data Source: City of Seattle.

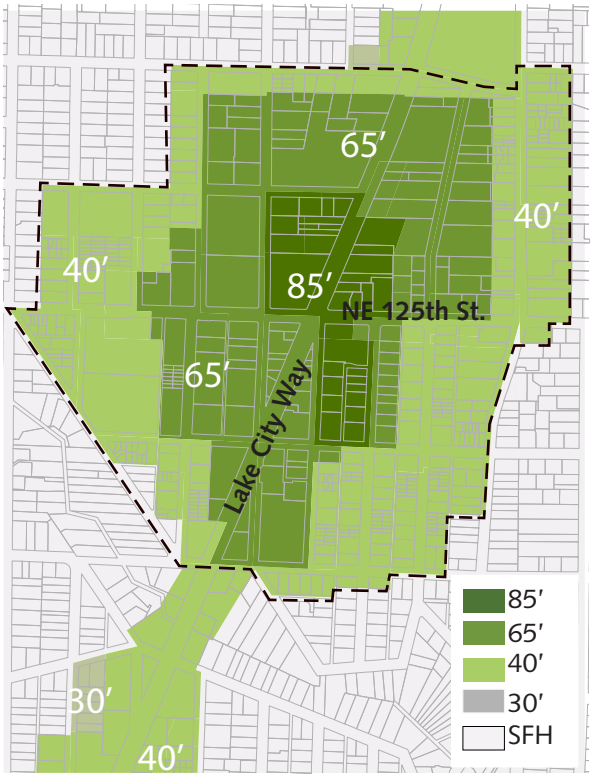


Figure 12. Building height restrictions in Lake City HUV. Data Source: City of Seattle.

Zoning & Density

Zoning in the HUV reflects the City's goal of increasing density and focusing growth within this area, and the nature of intended growth.

Commercial zoining along Lake City Way and NE 125th is neighborhood commercial. Developments within this zoning must be pedestrian-oriented, and may be single or mixed-use, and are intended to serve the larger neighborhood. This zoning reinforces strengthening of the of the current conditions in the neighborhood center, and expanding the pedestrian-oriented areas.

Commercial zoning outside of the neighborhood center is primarily C1, which allows auto-oriented retail and services that have provide parking lots.

Midrise and low-rise residential has been zoned, allowing multi-family developments up to the specified height limit, generally 40′-60′as show in Figure 8. Denser residential development will require space for parking to serve an increase of residents.

Physical Environment

Land Uses

A significant amount of commercial activity is auto-related, including sales, showrooms, and services. Auto-related businesses define the character of Lake City Way from NE 9th Street to NE 120th Street. Other businesses in this stretch are mainly auto-oriented commercial with drive-thrus and parking lots. The agglomeration of auto-related business on Lake City Way have made it a citywide and even regional destination for car sales and services.

From NE 120th Street to NE 127th, Lake City Way functions as a main street for its residents. This is the neighborhood center of Lake City, and has a diverse array of small shops and restaurants that line the street. Bartells, Kaffeklatsch and Elliot Bay Brewing are the more popular attractions and create a draw along this section of the street. Fred Meyer, Grocery Outlet and Value Village, anchor the north end of the core.

The "civic core" lies Just west of Lake City Way between NE125th St and

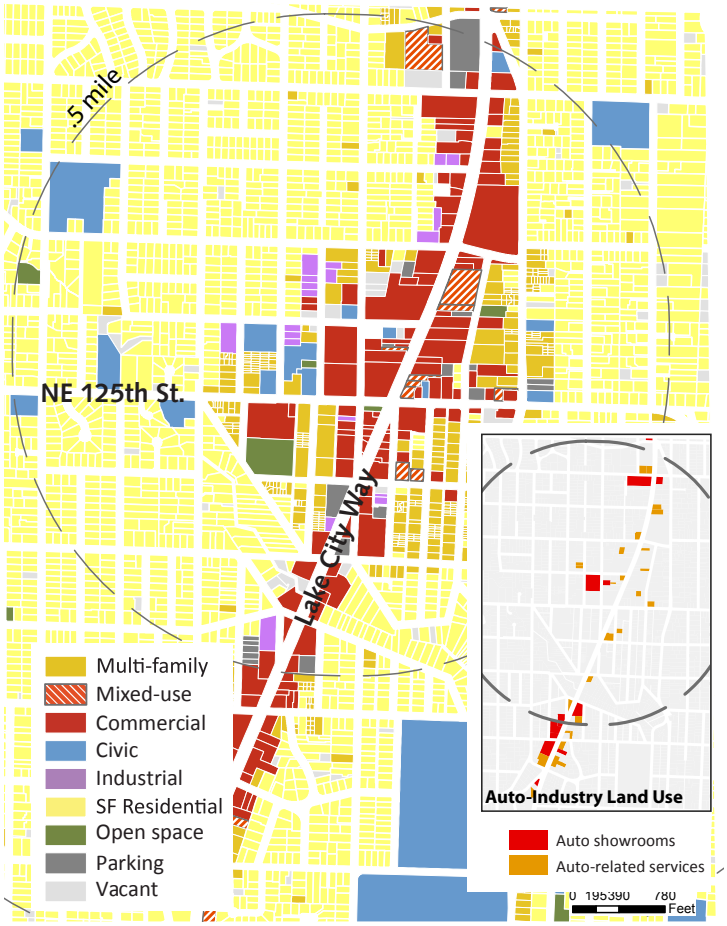


Figure 13. Land uses in Lake City. Data Source: City of Seattle.

NE127th Street, and includes the library, Albert Davis Park, Community Center, and Neighborhood Services Center.

Most of the commercial and retail activity in Lake City is within the HUV; outside of the HUV it is located directly along Lake City Way. The surrounding areas are mainly residential (Figure 13).

Morphological

The morphology of Lake City, and in particular the neighborhood center, is defined by the interruption of the regular grid by Lake City Way. Blocks are oriented north-south, and are approximately 600′ by 300′.

Although Lake City Way was built before the grid, little manipulation was done to accommodate the diagonal roadway, resulting in non-rectilinear "blocks" and sharply angled intersections. This form is especially evident in within the HUV.

The morphology of Lake City is typical of post-war neighborhoods built to operate via the automobile: distances from residences to to a cluster of services are relatively long by foot, but accessible by car.

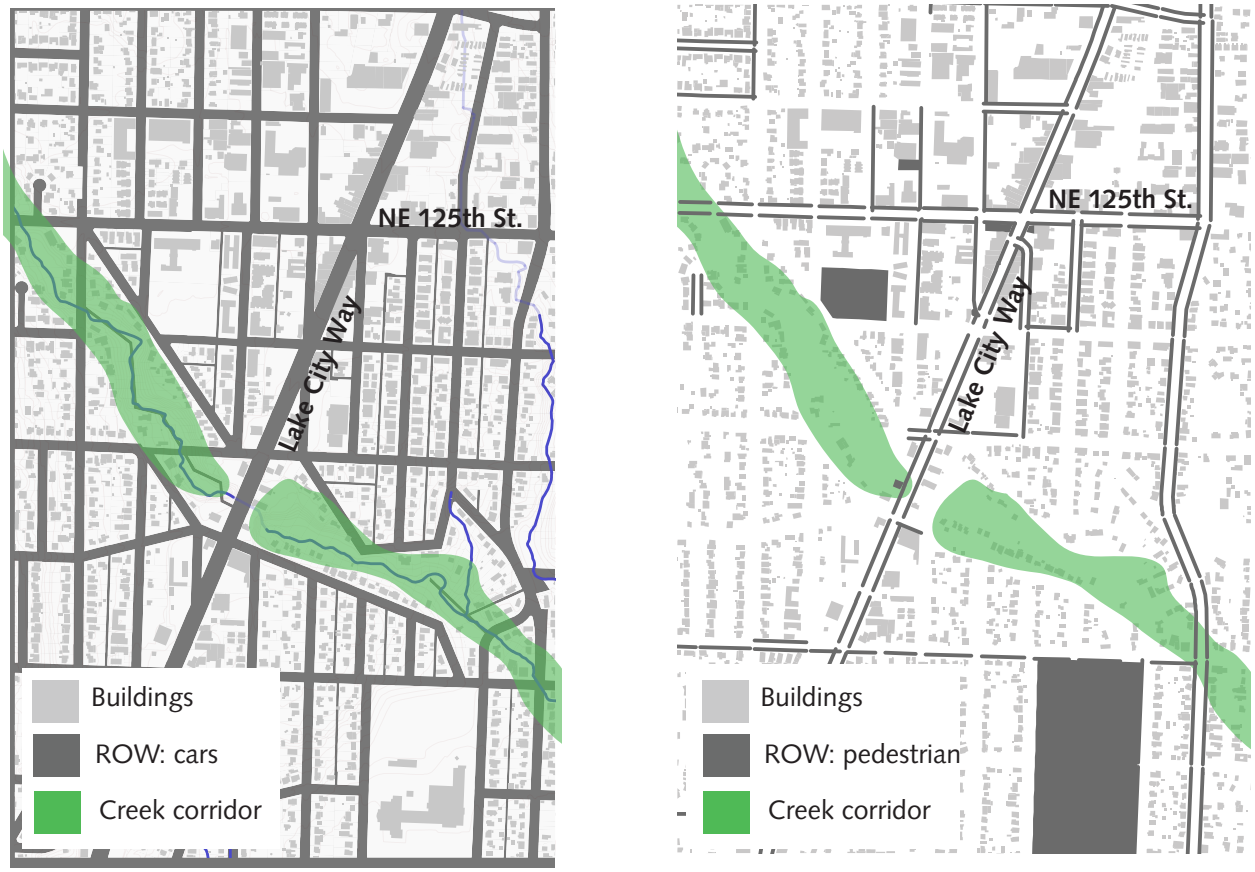


Figure 14. Public ROW dedicated to cars; Public ROW and publicly owned land dedicated to pedestrians. Lake City Way disrupts the street grid, creating non-rectalinear block and angled intersections. Steep topography around Thornton Creek limits the number of crossings points. These factors, along with its designation of as a state highway result in a heavy flow of traffic on Lake City Way, splitting the neighborhood core. The primary mode of movement in Lake City is the car, demonstrated by the abundance land provide for vehicular travel and the lack of pedestrian infrastructure.

Scale and Character

The scale of the built environment within the neighborhood center, between NE 123rd and NE 127th on Lake City Way, is largely pedestrian-oriented. One to three story buildings are built to the sidewalk and there are traffic calming measures, street trees, sidewalks, and crosswalks.

To the north and the south of the neighborhood center, development is car-oriented: large, low buildings are set behind large parking lots. There are sidewalks along Lake City Way, but they are in poor condition and not buffered from traffic.

A rezone in 1973 (Figure 15) combined smaller parcels to allow large commercial development and areas for large parking lots. The "main street" character of small individual buildings and storefronts is giving way to wider and larger development.

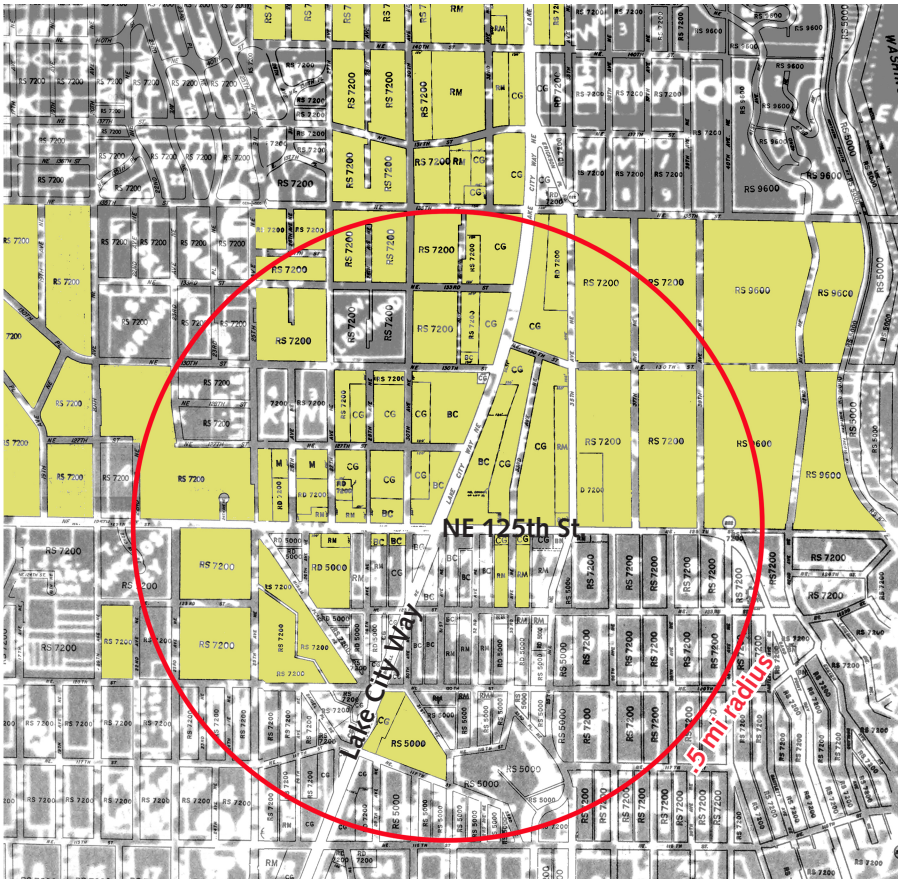
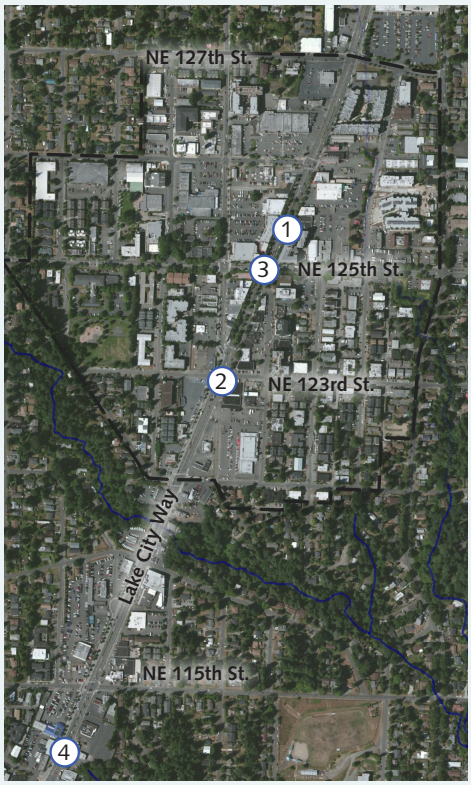


Figure 15. 1973 rezone. A rezone in 1973 combined multiple smaller parcels, allowing big-box stores and large parking lots. Source: City of Seattle.

The pedestrian-oriented neighborhood center.

Taller new development off Lake City Way, behind one story buildings.



The 100% corner at NE 125th and Lake City Way. New pedestrian-oriented development, from 1-6 stories.

Auto-oriented commercial district. South of the neighborhood center, many sidewalks are unimproved, and pedestrian crossings along Lake City Way are limited.

Figure 16. Scale and character along Lake City Way. Source: photos by author; aerial map by Bing Maps

Transportation

Lake City Way is Washington State Highway 522, which is a regional connector from I-5 near Roosevelt to Bothell and beyond. The roadway is wide and heavily used, carrying four lanes of high-volume traffic through the neighborhood center. For much of its path through the neighborhood, Lake City Way does not relate to the function of the buildings and uses that it passes—they operate at different scales. The width and speed of the roadway seem to contradict attempts to increasing pedestrian connectivity. The manner of operation of this roadway signals the dominance of the vehicle in the neighborhood and the separation of pedestrian and vehicular networks.

Bus routes that have stops within the HUV and along Lake City Way provide transportation north to Jackson Park and Wedgewood; south to the University District, First Hill, and downtown; east to Bellevue; and west to Northgate.

Lake City The neighborhood center is split by Lake City Way, creating a barrier for pedestrians moving east and west. In addition, Thornton Creek runs through a narrow and deep ravine just south of the HUV, limiting crossings to a few points.

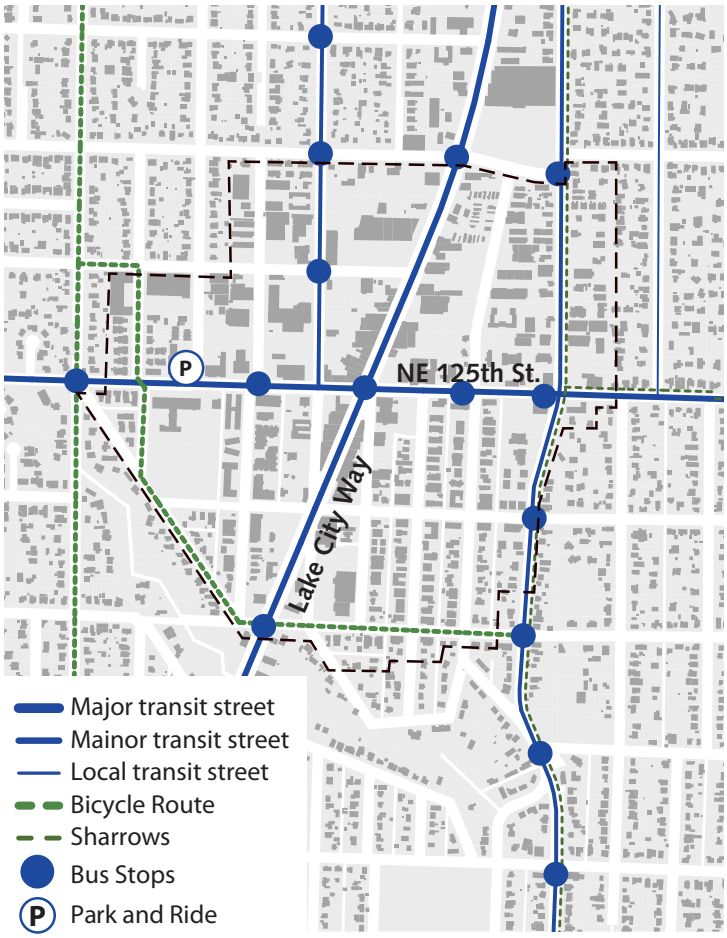


Figure 17. Bus and Bicyle Routes. Data Source: City of Seattle, King County Metro.

A Link Light Rail stop is planned for Northgate, approximately 1.5 miles away. No plans currently exist for permanent connections, other than bus routes, through Lake City to this connect to the new station.

Cultural and Social Environment

Households & Growth

The population of Lake City grew approximately 1% from 1990 to 2000, and 0.5% from 2000 to 2010. The total population in 2010 was approximately 23,000. Although growth overall slowed, growth within the HUV is noticeable: the density of units per acre has increased substantially from 2000 to 2010 (Figure 18).

Renter-occupied housing units are increasing at a rate of 13.6%, which is significantly faster than owner-occupied housing at 4.3%. Increased rental housing is a a dominant factor in the type of growth Lake City is experiencing.

As shown in Figure 18, there is still potential for increasing density in the HUV, as demonstrated by the block groups with relatively low densities.

	1990	2000	2010	% 90-00	% 00-10
Population	19483	21748	22975	1.06%	0.55%
Households	8844	9753	10627	0.89%	0.86%
Housing Units	9188	10062	11445	0.82%	1.30%
Owner Occupied Housing Units	4479	4863	5073	0.74%	4.30%
Renter Occupied Housing Units	4366	4891	5554	1.05%	13.60%

Figure 19. Population & Household Growth, 1MR.
Data Source: City of Seattle, US Census.

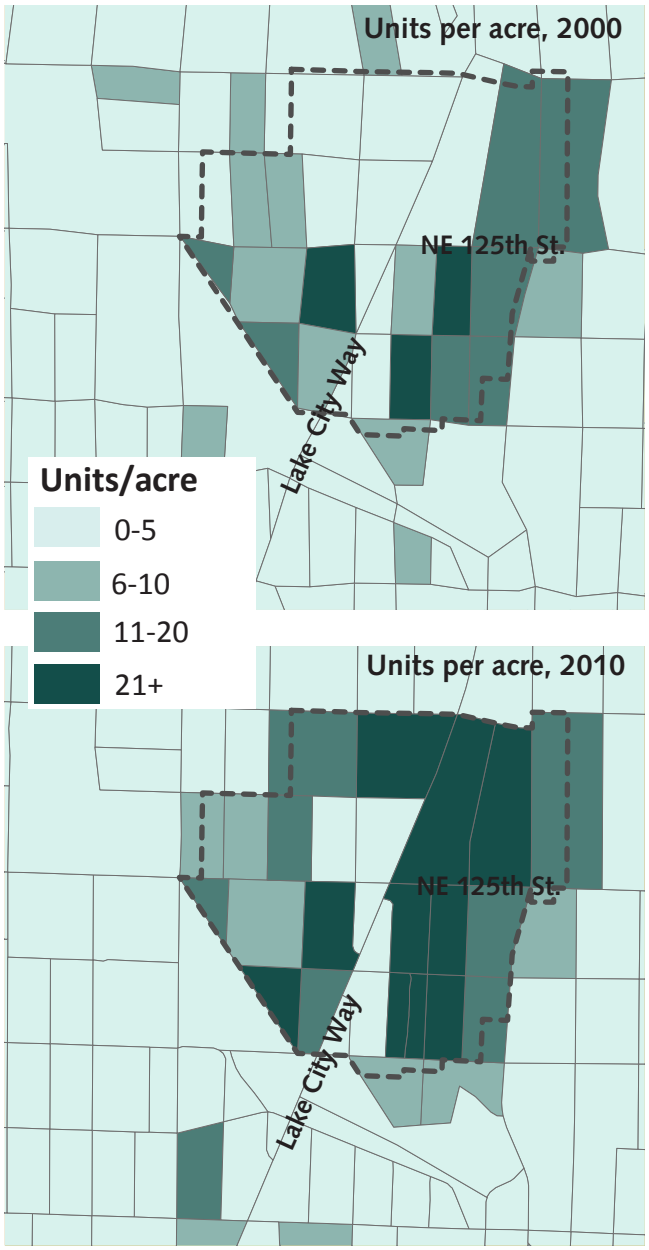


Figure 18. Density of Units; 2000, 2010.
Data Source: City of Seattle, US Census.

Changing Population

In 2010, Lake City had a higher percentage of the population under 18 and similar percentages of population from 18-64 and over 65.

	Under 18	18-64	65+
Pop. Age Seattle	15%	74%	11%
Pop. Age LC 1MR	19%	69%	12%

Figure 20. Population by Age in Seattle and Lake City, 2010. Data Source: City of Seattle, US Census.

However, the composition of residents in Lake City is shifting. there are fewer people per block under the age of 18 as well as over the age of 65 (Figure 21). This data indicates that the percentage of the population between the ages of 18-64 is getting larger, and that percentage-wise, there are fewer families with children. A smaller percentage of those over the age of 65 could indicate that there are few opportunities to age in place, or that households of this age are either moving out of the area, or not moving to the area.

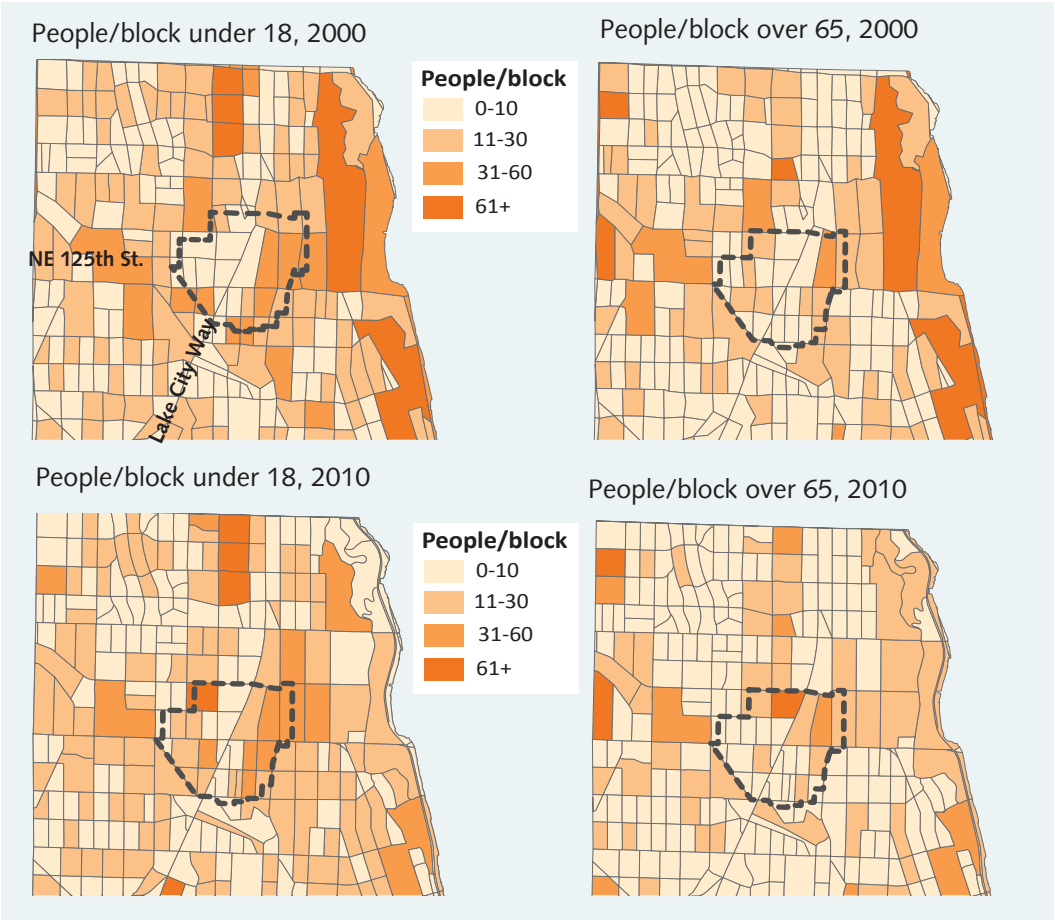


Figure 21. Change in Young and Old Population. Data Source: City of Seattle, US Census.

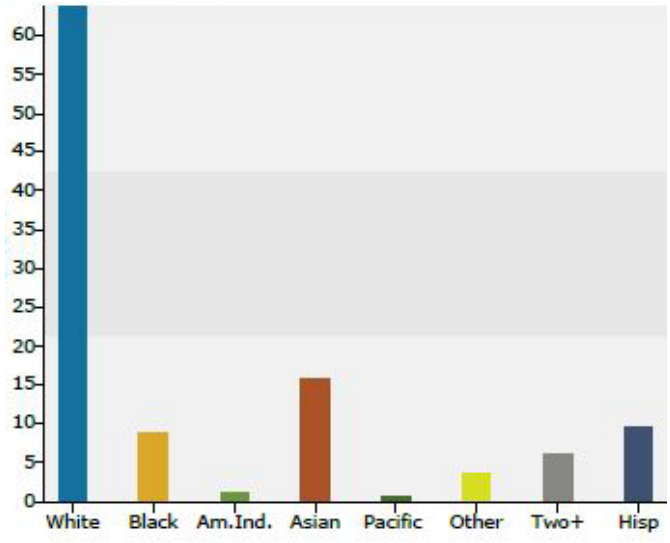


Figure 22. Percent Population by Race 2012; 1MR. Source: ESRI BAO.

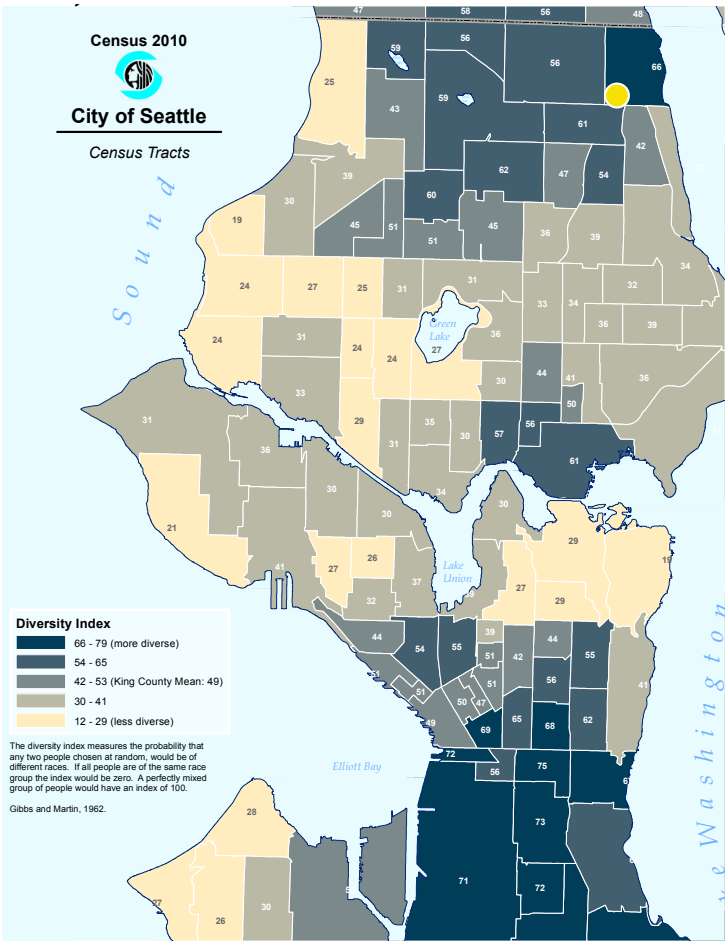


Figure 23. Diversity Index. Source: City of Seattle.

Diversity

Lake City has emerged as one of the more diverse neighborhoods in North Seattle (Figure 23) and is expected to rise in the coming years (ESRI BAO). As expressed during the public participation process, residents value this diversity as an asset to the community, as it strengthens the identity and vitality of the neighborhood. Residents wished to retain and welcome a diversity of resident within the community by advocating for a variety of services, housing types, commercial and community spaces to foster interaction and economic opportunities.

Crime

Residents of Lake City expressed concern over public safety at public participation events. The data shows that while crime rates are moderately high, the majority of crimes are non-violent. Most of the concern residents had were over nuisance crimes in the neighborhood core, such as panhandling, driniking in public, drug use, loitering, and vagrancy.

Due to the highly visible nature of nuisance crimes, it is likely that the perceived safety in the neighborhood core is lower than the data refelcts. However, this perception is a critical factor in generating activity and creating a desirable neighborhood.

A visible homeless population resides in Lake City, adding to the lack of perceived safety.

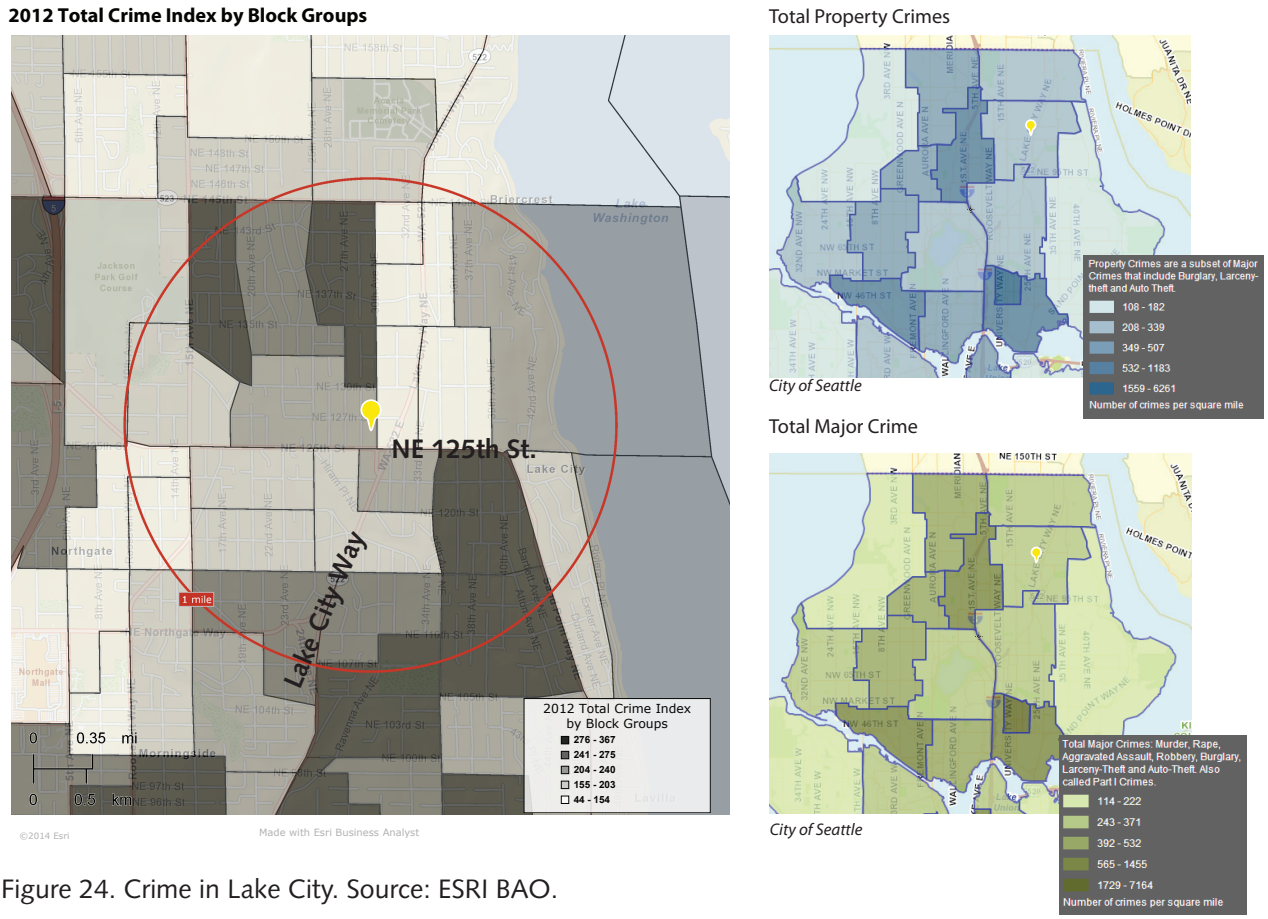


Figure 24. Crime in Lake City. Source: ESRI BAO.

Economic Environment

Income & Educational Attainment

Lake City has a lower median income and per capita income than for Seattle overall (Figure 25, 26). Levels of income are generally lower near the neighborhood center and along the Lake City Way corridor, as shown in Figure 27. Lower incomes are indicative of a lower amount of disposable income and potential consumer spending.

Educational attainment beyond high school is slightly lower in Lake City than in Seattle overall.

Population 25+ by years educational attainment		
	1MR	**Seattle**
High School GED	17%	12%
Associate's Degree	8%	8%
Bachelor's	27%	33%
Master's or higher	19%	23%

Figure 25. Educational attainment Source: ESRI BAO.

Household Snapshot 2010		
	1MR	**Seattle**
Avg. HH Size	2.14	2.06
Median HH Income	$46,974	$67,100
Per capita income	$29,645	$39,886
HH with children	22.3%	8.7%

Figure 26. Household Snapshot. Source: ESRI BAO.

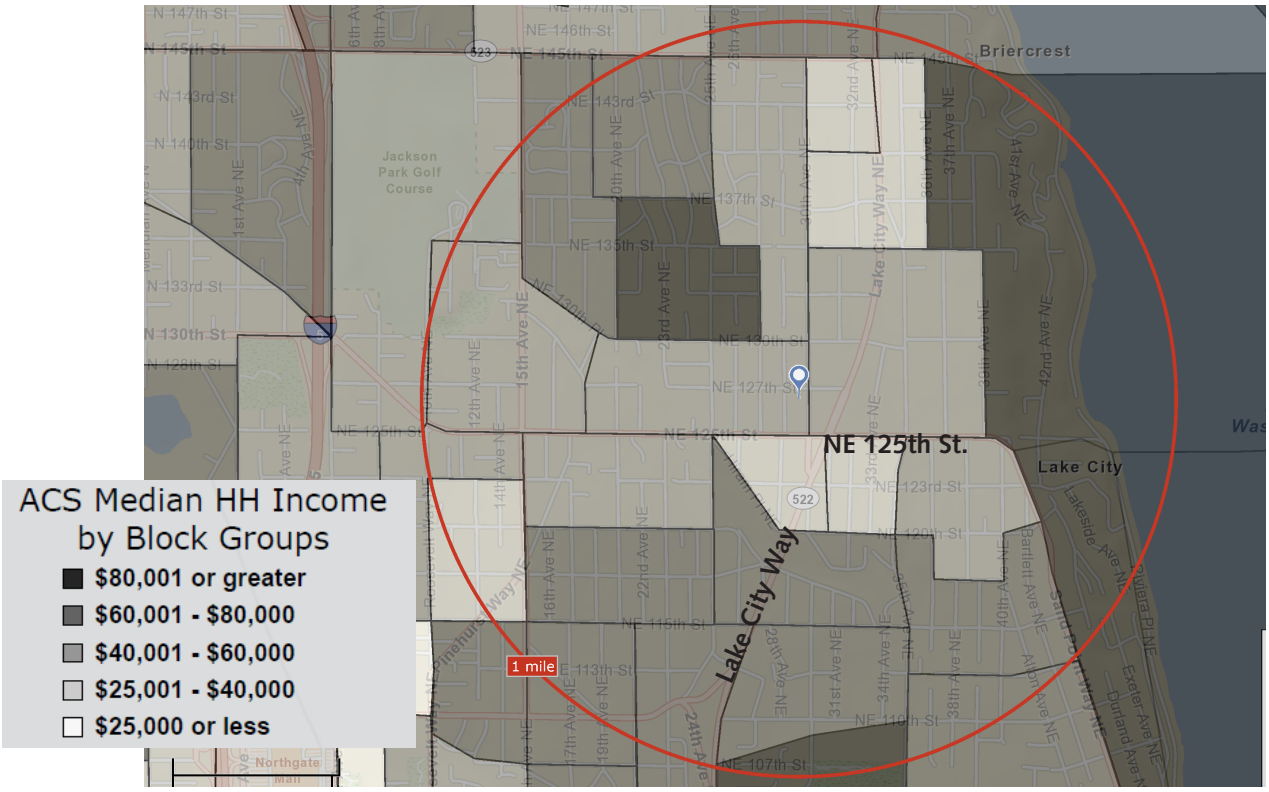


Figure 27. Median household income, 2005-2009 ACS. Source: ESRI BAO.

Competition

Most of the customer base is likely to be residents within the surrounding community, as most of the retail is aimed at neighborhood service. However, major retailer anchors in the area--Fred Meyer, Grocery Outlet, Bartells, and Value Village--may draw in from a larger area than the 1MR. The diverse cluster of small shops and restaurants facilitates multi-purpose shopping.

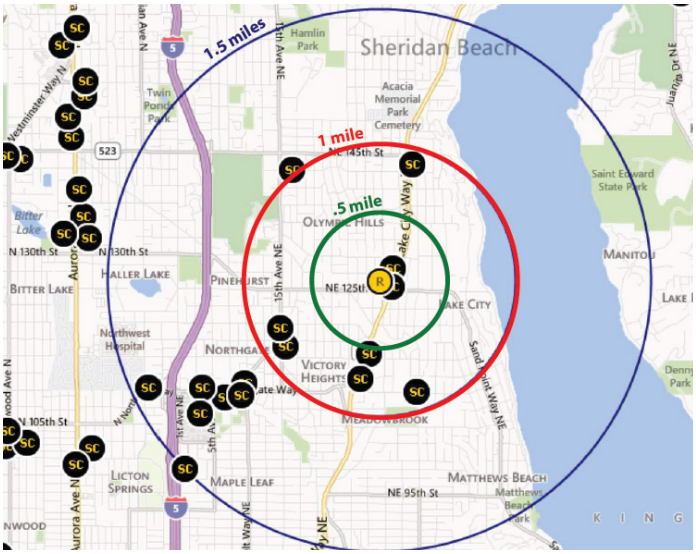


Figure 28. Nearby shopping centers. Source: Costar.

The agglomeration of auto-related businesses may provide somewhat of a regional draw, though to what extent customers may make multi-purpose trips is unknown.

The data shows that automobile dealers, grocery stores, used merchandise stores, and limited-service eating places have retail surplus in the 1MR. This is due to the presence of the Pierre auto businesses, big box stores, and the agglomeration of small eateries along LCW.

The proximity of Northgate creates heavy competition for some retail types in Lake City, as do nearby neighborhood center and small shopping centers. The data shows large retail gaps in department stores and general merchandise, as well as electronic, clothing and furniture stores; these "leakages" may be going to the Northgate shopping center.

	Retail Gap		Leakage Factor
Department Stores	$	17,886,111	100
Other General Merchandise	$	26,509,039	96.8
Electronic Shopping & Mail-Order	$	21,672,936	92.7
Furniture Store	$	3,126,430	86.7
Clothing Store	$	8,993,331	68.1
Bldg Material & Supplies Dealers	$	5,545,584	65.5
Office Supplies	$	2,141,382	58.6
Electronics & Appliance Stores	$	2,897,462	42.6
Sporting Goods/Hobby/Musical	$	1,909,647	29.4
Full Service Restaurants	$	3,764,018	16.7
Gasoline Station	$	5,187,139	14.5
Health & Personal Care Store	$	2,449,046	8

Figure 29. Retail Gap. Source: Costar.

SUMMARY

Lake City is growing and will continue to grow, primarily within the HUV designated area. The neighborhood analysis uncovered key planning issues and opportunities that will likely drive the nature of growth in Lake City:

- Increase in density. Most new growth is being directed to the HUV through zoning increases in capacity. As density in this area grows, it is likely to support more services within the neighborhood core.
- A diverse and changing population. Lake City is made up of a diverse population in race, ethnicity, income level, and educational attainment. In addition, the makeup of the population is changing. Redevelopment needs to suit the current and future residents of the neighborhood.
- Mobility. Increasing density will put more people withing walking distance of public transit, as well as everyday neighborhood services. An increase in population may also increase the number of cars in the area, which could result in congestion, unless strategies to reduce or mitigate automobile use are used, such as increasing public transit and walkability, and
- Limited opportunity for growth. The amount of land within the HUV is limited, as are building heights. Thus, unless zoning is revisited, there is a limited capacity to growth in the HUV. Additionally, nearby commercial competition influences the type and size of potentially profitable businesses in Lake City. Land values, which are relatively low compared to other areas in Seattle, may not be able make large development or underground/structured parking profitable, but have likely contributed to much of the growth thus far due to lower rents and home prices.
- The changing nature of Lake City and Lake City Way. Regulations

and growth goals put in place by the City (as a response to the Growth Management Act) are attempting to create an "urban village" in Lake City by changing how the neighborhood operates. Additionally, Lake City Way, which is a state highway, has undergone improvements to improve the "main street" function in the neighborhood core.

IMPLICATIONS

As demonstrated by the neighborhood overview, the typology of Lake City is changing. It is this transition from a car-oriented residential neighborhood to an urban village that provides the backdrop and motivation from which to craft a design strategy for the redevelopment of the Pierre properties.

chapter 3

Literature Review: Coherence & Catalysts

Coherence

SYSTEMS VIEW

The systems view looks at the world as a holistic and intrinsically dynamic unit; the parts which comprise this unit are interrelated and are understood not as distinct entities, but in terms of their interactions (Capra 1982). This approach requires an awareness of the interrelatedness and interdependence of elements. The systems view is concerned with the relationships among the many distinct parts that together create a unified whole greater than the sum of its parts; in doing so, a dynamic and system emerges, with the ability to self-organize and evolve (Capra 1982).

Systems are integrated wholes created by the interaction of their distinct parts. Because the parts are integrated, the system cannot be reduced to basic units. The distinct elements which make up a system have no meaning or function as isolated objects (Capra 1982); only through interconnections and correlations can they be defined and understood. Attempting to reduce the complexity of a system into basic units leads to a fragmented view and incomplete understanding of the system. The systems approach allows the viewer to see how elements relate to each other, and with what significance. The relationships and interactions between the parts become more important than the parts themselves. Thus, systems are comprised of the interactions and relationships of interconnected networks.

Capra (1982) refers to systems as "living", encapsulating the dynamic properties of movement, interaction, and transformation; it is within this context that systems must be understood. Systems are intrinsically dynamic, as are the relationships which define them. No elements are static: even at the level of the particle, movement is constant. Thus, the relationship that any element has with any other is dynamic (Capra 1982).

Systems are comprised of subsystems, which are both parts of the larger whole, and are wholes made of parts. Varying levels of complex relationships are part of a multi-level structure (Capra 1982) in which systems are embedded in other systems. Each level is not separate, but is integrated and connected with others. The web of relationships is non-linear, indicating a high level of complexity. This structure is a result of the processes which form systems, and allow systems to self-organize as to achieve a dynamic balance at each level (Capra 1982). So although systems are not static, they are stable, allowing for variation and flexibility as conditions change. Systems survive by continuously adapting or integrating new components and discarding those that do not integrate (Capra 1982). Crucial to this point is that large-scale order does not dominate; instead, small-scale order is the foundation of large-scale order. The nature of this bottom-up structure allows for self-organization and emergence of a large-scale structure. The individual elements that comprise a system may have little resemblance other parts; disparate elements can be integral parts of the same system. Systems comprised of a variety of elements are able to form a more diverse set of interactions and networks, making them generally more adept to evolving and self-regulating (Capra 1982).

The quality of *coherence,* in regards to systems, refers to the ability to continuously regenerate and evolve, brought about by an integration of distinct elements to form a whole greater than the sum of the parts. In coherent systems, the parts are maintained, discarded and removed to maintain a dynamic balance of the whole. Coherence describes not the objects themselves, but the manner of integration and interaction between elements. Elements are integrated that adhere to organizing conditions without destructive effects to the system or to other elements are (Salingaros 2000), and those which do not integrate are discarded. The properties of a system do not reside in any particular part, but rather exist in the dynamic interactions between these parts.

Coherence should not, however, be mistaken for harmony. Harmony indicates a level of agreement, or congruent arrangement of parts, which stresses the similarities of separate, but related, parts. Harmony is used to describe elements fitting together, or joining, in a pleasing manner. Coherence, on the other hand, does not necessarily imply a pleasing arrangement, but a overall sense of logical interconnection and sense of understandability (Merriam-Webster 2012). Coherence does not rely on the similarity of objects, but instead achieves overarching unity and balance through the interaction and integration of many distinct elements.

The properties of coherence as informed by the systems view are transferrable to urban design, which will provide the basis for further investigation.

URBAN COHERENCE

Urban Paradigms

Cities are complex systems, composed of numerous interrelationships at many scales that create a dynamic network with many variables. Many urban thinkers have likened the city to an organism but not provided a scientific basis for this comparison; an understanding of the systems approach provides a comprehensive framework for viewing cities as living systems. There are many systems and sub-systems within the urban environment, from regions to blocks and specific buildings, as well as varying levels of transportation networks. Cities grow and shrink; their form is flexible, and they are unpredictable. All of the distinct elements in a city—buildings, sidewalks, bricks, highways, and people—are continuously changing and moving, yet remain integrated and connected, and are parts of a larger whole.

However, urban planning theory has not always approached urban environments as complex systems, but as machines that could be controlled, built, and managed. Cartesian world-views and reductionist scientific methods have

proved to be limited when dealing with urban issues, resulting most notably in Le Corbusier's machine city. These approaches sought to isolate urban issues in order to "solve" them as discrete entities. Addressing urban problems in isolation causes other problems over time, as it ignores the many relationships and connections that define its function within the larger urban fabric. The failure of these approaches is evident in the large-scale urban renewal efforts that wiped fine-grained neighborhoods in favor of elevated super-highways, tried to clear slums by building public housing projects, and built isolated towers in "parks" that became unsafe and eventually torn down.

To illustrate the importance of acknowledging the complexity of urban environments, consider the Situs Theory. This is an economic concept that evaluates and guides management of urban land development based on analyzing a site's context, referred to as the "total urban environment" (Fanning 2005). This context includes the economy, social and institutional structure, physical characteristics and morphological patterns, as well as the psychological reaction of people to these environmental factors. The theory is concerned with the relationships of a particular site at a particular time, to all of the other sites around it. Sites that have a high number and high quality of linkages, or relationships, are ranked with having a higher potential for productivity (Fanning 2005). A site is defined by its potential linkages, thus viewed in isolation, it has no value.

In addition, market forces affect the ability of cities to function as living systems. Karl Polanyi (1957) introduced what he considered to be a major paradox: maintaining the market without destroying "the human and natural substance of society." The commodification of urban lands has had a degrading effect on the human experience (E. Sternberg 2000) and ability of cities to function as coherent systems.

To commodify a good is to make it tradeable on the markets, making it effective at equalizing supply and

demand. However, Polanyi held that this commodification, when extended to the natural environment and—this is Sternberg's case—to urban lands, results in a loss of overall quality and functionality. As land is subdivided and sold off, individual property owners make decisions, often informed by the market and their own self-interests, as to how the land is used. The aggregation of these decisions has a negative result on existing interrelationships that are not limited by artificial boundaries such as property lines. Thus, the "whole" may suffer from the decisions made by individuals on individual pieces.

These forces have resulted in fragmentation in the urban landscape. Fragmentation refers to the breaking apart or separation of parts, resulting in pieces or urban fabric that are isolated from the system. Fragmented pieces may be separated physically, by breaks or obstacles in the urban fabric or natural systems, thus reducing functionality and connectivity.

Fragmentation is also experienced, either as a result of spatial separation, or due to a lack of perceived or visual coherence in the urban landscape (Salingaros 2001). Fragmentation prevents the parts from becoming or being conceptualized or functioning as part of the whole. The forces that create fragmentation remain a reality of our urban environments, and continue to be a challenge for urban planning and design. Cities and urban neighborhoods are not often planned or constructed as a whole; the city is built incrementally by individual decisions, and is largely influenced by other forces.

The reaction to the view and results of treating cities as machines and the fragmentation of the urban fabric was led by urban thinkers who were concerned the reduction of complex relationships within the urban system. Jane Jacobs (1961) argued that cities have a high degree of "organized complexity"; this organization relates to Lynch's "legibility" (1960), to Bacon's "continuity of experience" (1974), and to Cullen's "art of relationship that weaves together all elements" (1961). These concepts are driven by the idea of coherence

(Sternberg 2000). They argued that complexity of urban environments does not imply incomprehensibility nor that it requires abstraction or simplification; rather, it should be viewed more as a positive reflection, a trait akin to "rich" or "diverse". These thinkers saw the need to integrate principles of urban form across property lines in order to create a more coherent urban environment.

Coherent Cities

The systems approach allows us to take a holistic view of the city, in that it is a complex system with interconnected components that is also part of a larger system; in this sense, it is continually interacting with the greater physical and social environment. Coherent implies that the parts of the city are fully integrated into the whole, and that it functions as a continuously evolving unit. Thus, a coherent city is "healthy" in that it is dynamic and can respond to stress and externalities without being severely damaged. A coherent city is balanced, not in equilibrium, but in a flexible state of constant fluctuation (Capra 1982). A coherent, "healthy", city is able to function autonomously and also fit within the larger context. Coherence allows cities to adapt and evolve over time because they retain what works, and integrate changes into the system, combining the existing coherent parts with emergent realities. Coherent cities are adaptable, and "can reflect a living, concrete substance in the present while remaining capable of open adaptation in the future" (Lynch 1960).

Coherence in the built environment can be viewed in terms of functional structure and visual composition. Functional structure deals with processes in the city, particularly the spatial pattern of movement, the distribution of land uses, and the services that maintain them. Visual composition refers to the urban layout, which deals with the arrangement of buildings and spaces, the relationship of urban elements to each other, and the perception of a conceptual relationship of these elements to form a whole.

There are many elements that go into the building of cities at a range of scales: at a large scale, roads, buildings, paths, parking, and green space; at smaller scales, benches, concrete, bricks, plants, and signs. One of the key goals of urban design is to manipulate form and arrange urban elements in a functional and compositional structure. Visual and compositional coherence occurs when each scale relates to many different scales. Similarly, functional coherence is achieved when relationships of elements at varying scales function together to create something more and different than the sum of their parts (Capra 1982, Kasprisin 2011, Cullen 2007). In the case of the built environment, many of these elements require human interaction to be complete (Salingaros 2000, Jacobs 1961).

The two sides of coherence, function and composition, are linked and dependent upon each other, yet are often approached separately, resulting in a negative impact on the overall coherence of our cities. Functional issues are often dominant in the formation of urban fabric. This is especially evident in the functional priority often given to vehicles: movement across large areas of segregated land uses is addressed by implementing a hierarchy of streets in which arterials are designed for high speeds and volumes (Salingaros 2000) by limiting access points. This strategy separates movement from access, cutting street off from their surroundings, leading to a lack of integration between movement and social interaction.

Jane Jacobs (1961) and others wrote extensively on the failures of modernist design, based on the difference in urban structure of pre- and post-war cities, and the inability of post-war cities to generate street life and social activity in the public realm. Modernist planning took a mechanistic outlook toward city-building, using linear and rational methods to approach issues as discrete instances. This approach thereby reduced complexity and connectivity by separating networks and types of elements by the means of freeways and monofunctional

zoning. Jacobs and other organiscits—Bacon, Lynch, Cullen—held that the success of the many elements of a city to become a whole depended on the ability of these elements to generate coherence (E. Sternberg 2000). Large scale coherence, at the level of a city, occurs when every other element within the system relates (Salingaros 2000).

To achieve coherence in the built environment, it is crucial that urban design simultaneously addresses the emerging patterns in compositional and functional structures, adapting as necessary to provide opportunities for integrating urban elements. By restoring access and integrating movement and social interaction, post-war cities can begin to transform their failing urban structure (Jacobs 1961).

The Role of Urban Design

Urban design is an ambiguous term that encompasses a complex matrix of spatial and functional characteristics and elements. It is the purpose of this thesis to focus on those aspects of urban design that relate to identification and utilization of catalysts to intervene in the emergence of spatial structure of Lake City in order to generate coherence.

The role of an urban designer, at the most basic level, is to shape physical aspects of human settlements (E. Sternberg 2000). Urban design is concerned with two major components: the physical built environment, and the impacts on the people that inhabit them.

The use of "places" is common in urban design, and refers to the idea that the human experience of space results in a perceived meaning of form. Place is a social construct, reflecting a basic desire to relate to and find meaning in the spaces we occupy (Relph 1976). Urban environments are experienced by humans as we move through space and thus across property boundaries: we experience the built environment, and any given project, from a multitude of angles and through a series of experiences, which all contribute to the urban whole. Humans connect with their

surroundings, and thus relate to other elements in the system, at a small scale (Salingaros 2000). Our relationship with the built environment has the power to evoke positive or negative subconscious responses based on the human instinct to discern potential dangers or benefits in our environment (Salingaros 2000).

Urban design is thus inherently concerned with the needs and desires of humans and human interaction with the environment. This involves both the physical and spatial dimension as well as the social and perceptual dimensions: the urban environment must be designed to accommodate human anatomy, movement, and senses, as well as how it is perceived.

A major challenge in urban design is acknowledging the social, physical, and economic complexities of urban life. Complexity is based in context, the circumstances that form the "setting and terms of which something can be fully understood and assessed" (Merriam-Webster. com 2014). Context is the reality of the existing physical form, culture, and time (Kasprisin 2011). Urban design that is conceptualized outside of these realities are too idealistic and are unlikely to be meaningful, and more importantly, unlikely to come to fruition. Urban design is grounded in "real life and the physics of that reality" (Kasprisin 2011) and thus must understand the complexities of that reality to achieve its purpose. Although there is a limit to the amount of information one can handle, it is crucial for the designer to acknowledge, interpret, and address these complexities to achieve quality urban design (Kasprisin 2011).

Additionally, successful development of the built environment requires the understanding and response to contextual factors that influence urban form; these sources may be cultural, regulatory, or economic. Urban designers operate in an environment that is driven by complex relationships, and translates these relationships into physical reality (Kasprisin 2011). To this end, embracing complexity, and thus the

city as a system, can lead to a more comprehensive understanding of the forces that shape urban form and how urban design can affect these forces.

Time is an inherent aspect of complexity. Change is constant and inevitable. Urban environments are dynamic systems, continuously shaped by technology, culture, and economics. Human needs and desires, markets, culture and politics all change. In this way, context, meaning, and function evolve over time. Kasprisin refers to these as emergent realities (Kasprisin 2011). Thus, urban design must not only consider complexities as they exist in the present, but how they existed in the past, and how they might exist in the future.

Urban design refers to both the process through which we shape and manage the built environment and the spatial products that result within the built environment. Urban designers are concerned with both the process and the product of this process. Urban design is a non-linear, creative problem-solving process through which solutions or products result. It is a process that "translates the complex dimensions and relationships of urban meaning and functionality into physical compositions" (Kasprisin 2011). The generation of ideas and concepts is fundamental to the design process. These ideas are generated through analytical and creative means. An analysis of the contextual elements, principles, and relationships provides knowledge of urban meaning and functionality (Kasprisin 2011, Cuthbert 2003). This knowledge is used to inform the creation of ideas. Kasprisin argues that this process requires "play", which results in exploration and discovery through the manipulation of elements, principles and relationships. As soon as ideas and concepts are created, they are tested, evaluated, altered or advanced in order to fulfill functional and organizational relationships. Thus, urban design is the process through which the quality of life is improved (Inam 2010) and through which humans create built environments that represent their values. As a

process, urban design shapes the form of the city as a living system.

The products of the urban design process—concepts, ideas, or physical objects—are the "solution" to the design problem. Thus, urban design can refer to the qualities of elements in the built environment, as well as how these elements relate to one another (Carmona and Tiesdell 2007) (Inam 2010) (Kasprisin 2011) This includes such elements as buildings, plazas, and street layouts, as well as how humans relate to the building, and how the building relates to the street. Urban design is then the physical expression of the needs and desires of the humans who create it, reflecting their relationship to the larger system.

Urban design is a process and a product that occur simultaneously and are inherently connected. By acknowledging this, urban designers may transcend the constraints of individual projects to consider the quality of the whole built environment as a coherent, complex system. Approached in this context, urban design is able to consider each individual piece in terms of its relationship to other elements and to the whole through meaning and function.

Urban Design & Urban Structure

It is the role of urban design to ignite, create or reinforce an underlying structure, or composition, to which urban elements can be organized and integrated. This organization does not imply a rigid structure. Systems are dynamic, and their forms are flexible.

Reassembling urban fragments provides an opportunity to add value to the urban experience. Strategies to restructure fragments can be addressed in urban design by creating urban structure for which the fragments may be reassembled to be integrated back into the whole. Fragments cannot simply be lumped back together, because there is no integration or coherence. Fragments must be reassembled by organizing the different, and often conflicting, elements into an integrated system.

Nikos A. Salingaros (2006) presents laws for organizing elements based on geometric principles and applies them to structural order in urban environments; this paper extends these rules to urban design to address functional and compositional coherence.

Elements in a system are linked through, coupling, or pairing, of complementary or contrasting elements. A linkage is created when an elements reinforces another. In terms of visual and compositional structure, coupling is achieved visually through contrasting geometric form or pattern. Functionally, elements provide complementary or reinforcing functions for another element. Elements must have either contrasting or complementary characteristics (either in function or form), and when coupled, this grouping has an element of completeness to it. Objects being next to each other puts them close in proximity, but this is not in itself enough to create a compelling linkage. In the urban environment, simply aligning to a grid does not necessarily integrate the elements in a city. Coupling does not inherently occur by elements that share an edge. Two buildings next to each other may remain disconnected. In a coherent system, elements are all interconnected so that each element affects all other elements in some manner (Salingaros 2000). If an urban element is removed to no effect on other elements, it has failed to couple and thus to integrate.

In addition, a diversity of elements is beneficial; the greater the diversity, the greater chance that a given element may couple with another (Salingaros 2004). While this principle supports a mix of uses and diverse buildings types, it is important to understand that elements that are radically disproportionate may fail to couple. Similarly, empty spaces do not couple, as they contain no, or little, information (Salingaros 2000). This idea explains the failure of modernist towers set in open spaces, as well as the principle that open and green spaces should be "activated" by other urban elements at their edges.

Cities are large-scale systems assembled from coupled units at different scales; a coherent system may emerge when all elements are related to one another in a meaningful way, from the small-scale to the large scale. Urban design can seek structure at a small scale to provide a foundation for coherence at a larger scale. This approach reflects the nature of systems. A top-down approach, where the largest elements are implemented first, prevents order at the small-scale from emerging. This idea is especially pertinent as elements that contribute and define the human-scaled or pedestrian environment are largely lacking in many contemporary cities. Visual coherence requires pedestrian-scaled details that can be experienced and understood at the small scale. Functional coherence at the smallest scale requires short-scale connections between complementary uses.

A city has distinct interacting networks at different scales, which must connect to each other to function. Small-scale order is connected to large-scale order through intermediate scales, which result from the coupling and linking of various sub-systems. Some elements may act as intermediary connections by coupling other elements to each other (Salingaros 2000), highlighting the need to recognize and understand the secondary functions elements have in connecting the urban fabric. This refers to the multi-level organization of systems, in which coherence requires an underlying organization by which the system may be comprehend and understood. Visual composition uses principles of complex ordering to achieve coherence; functional coherence requires that sub-systems and networks are integrated. In both cases, isolation of elements prevents a coherent large-scale order.

Generating Coherence through Connectivity

The processes that comprise a system establish its form (Capra 1982); similarly, transportation networks define the form and structure of a city (Alexander 1987). The physical patterns of movement, or connections, between elements in the city are thus the foundation for generating functional coherence in the urban environment.

A city is a network of paths which connect every node in a city to every other node, either directly or indirectly. As with coupling, there are multiple scales of networks. The more fine-grained a transportation system is, the more alternative routes exist; likewise, streamlined transportation networks offer fewer options. Salingaros uses "diffusion through capillary channels" to describe the ideal fine-grained network. Diffusion works to create more integrated and efficient networks that connect many different types of nodes.

Coherence at a neighborhood level implies a level connectivity between nodes that allows the area to behave somewhat self-sufficiently (Salingaros 2004). Land uses must be connected to other complementary land uses in order to continue to function. For example, residential areas connect to business districts, but have little motivation to connect to other residential areas. Without connections between complementary land uses, pieces of the city become fragmented.

Cities are experienced at the pedestrian level, thus is it crucial to address coherence and connectivity at this scale. A coherent city at the pedestrian scale requires a connected and diffused network of pedestrian-oriented elements and spaces that tie the urban fabric together.

In many cities, as in Lake City, open space is disconnected from the pedestrian network. Green spaces are often opportunistic, and open spaces are a result of land remaining after the construction of buildings and car infrastructure. Thus, these spaces are disconnected. A pedestrian network is achievable through the introduction of nodes and pathways. As Salingaros states:

> "Urban life requires a connected network of pedestrian urban spaces…a multiplicity of pedestrian paths is harbored and protected by open and semi-enclosed urban spaces. One cannot exist without the other. The network of urban space coincides with and supports the network of pedestrian paths." (Salingaros 2004)

To generate coherency, networks must first be integrated at all scales. Vehicular networks and pedestrian networks require distinct characteristics, yet the urban structure of many neighborhoods only supports vehicular movement. Pedestrians require small-scale connections (Salingaros 2000), which in many post-war cities and neighborhoods is difficult to accommodate due to the rigidity of the grid. Cities today often prioritize car connections, favoring the rectilinear grid. Pedestrians and cars are pushed to the edges of blocks, and the block pattern is not filled up, but built as empty spaces and scattered building masses.

Roadways are optimized for vehicle transportation, even though (at least) two distinct networks—cars and pedestrians—are allocated to the city right-of-way The creation of superblocks and lack of permeability along streets has resulted in the neglect and elimination of human scaled elements and connections from the urban fabric, and of the forces that support a pedestrian-oriented city (Salingaros, 2004).

Thus, it is necessary to create new pedestrian elements, on a small scales, that generate a pedestrian-scaled networks transforming the structure of the existing car-oriented urban fabric.

Top-down planning should not be concerned with creating specific patterns, but with guiding an underlying structure that allows networks can generate themselves. Bottom-up growth—that is, growth that is driven by the actions of individual urban forces at small scales—is well-equipped to create short-scale connections. Top-down planning encourages or requires these connections and guides the manner of their implementation, yet must be flexible as to allow individual property owners, developers, and designers to respond, enhance, and connect to the network based on the context of their site.

Scale & Scope

The built environment continues to change through redevelopment or decay regardless of the involvement of urban designers. The urban design

process is intended to guide these changes and improve the quality of what is built. Urban environments are shaped by social, economic, and temporal factors; they are complex and constantly changing.

Urban design operates within a realm that is constrained by these forces and must also interact with them. Carmona and Tiesdell (2007) include this dimension in their discussion of urban design in the final clause, "than would otherwise be built." They acknowledge the multiple forces that shape the built environment, and argue that urban design must be approached with an explicit knowledge about why cities are the way they are and how they function—in short, about the operation of the city as a system. Urban designers must understand the complexities and realities of these constraints to effectively intervene in the city-building process.

This point becomes especially critical when considering that urban designers are tasked with shaping the built environment at a scale much larger than individual projects. Although they often deal with elements at a small scale—such as street furniture, street trees, or setbacks on buildings—designers are concerned with how these elements function and influence the human experience across entire districts and cities. Urban design seeks to make intervene in the "organized complexity" (Jacobs 1961) of cities by achieving some degree of coherence in the built environment, both within the public realm and on private property (Sternberg 2000).

The concept of coherence provides a framework from which to design strategies for Lake City. It is now the task of this paper to demonstrate how to influence the generation of coherence, through the natural growth and wholeness that the market undermines (E. Sternberg 2000), across the property boundaries through catalytic design. This paper explores an urban design approach that works within the constraints, and uses them as an opportunity to produce coherent urban environments that fix the integrity and function of

the built environment. The concept and theory of the urban catalyst is utilized as an approach to igniting change via the development of individual projects.

Urban Catalysts

In their work, *American Urban Architecture: Catalysts in the Design of Cities* (1989), Wayne Attoe and Donn Logan define an urban catalyst as an "urban element that is shaped by the city and then in turn shapes its context. " The purpose and intent of the catalyst is the "incremental, continuous regeneration of the urban fabric"(Attoe & Logan, 1989). The idea of urban catalysts has been conceptualized and applied to urban design theory in a variety of manners, which is explored to understand the purpose and function and how this concept can be utilized in Lake City.

The word catalysis stems from the Greek *katalusis*, meaning to "dissolve" or "loosen" (Merriam-Webster.com 2014). Berzelius, one of the founders of modern chemistry, coined the term in 1836 to describe the process that occurs when a chemical agent accelerates a reaction without becoming altered itself (Wisniak 2010): the chemical agent is the catalyst. The contemporary definition of catalyst, "an agent that provokes or speeds significant change or action" (Merriam-Webster.com 2014), reflects the use of the term beyond the scientific realm. A catalyst, by this definition, may refer to any substance or event that causes change without itself being altered beyond recognition; the catalyst is thus a tool for activating or increasing the speed of reactions.

The concept of catalysts is transferrable to urban environments. Urban catalysts are elements, often projects, that stimulate changes in the built environment. The term is often applied to the built environment in reference to a particular project, the parameters of what constitutes an urban catalyst are obtuse. The growing discourse in the planning world of "revitalization" and "regeneration" has popularized the notion of the urban catalyst as a starting point for these strategies. However, in many cases, the labeling of a project as an urban catalyst may be no more than a marketing slogan, and the project may have little to

no real impact on the surrounding urban fabric. For this reason, and understanding of context it critical to the implementation of an effective urban catalyst.

Juliet Davis (2009) looks to a number of urban thinkers to examine how the term catalyst has been translated into discussions of urban development. She begins with Aldo Rossi (1982), who briefly discusses the concept of "catalysts" in reference to "primary elements" of a city in his work, T*he Architecture of the City*. He makes the case for catalysts as physical, constructed "artifacts", and that although these artifacts may be more or less permanent in the city scape, they are capable of "accelerating the process", thus behaving as a catalyst for urbanization. He realizes, however, that catalysts may also come in the form of temporal events, as these often lend importance or meaning to a particular place, or urban artifact. Rossi points out that these primary elements may be catalysts in incremental development as well as in redevelopment, as the form and function of primary elements change over time. Through his brief discussion, Rossi focuses on the importance of physical and event-based catalysts in speeding up or igniting change in urban landscapes, be it positive or negative.

In her book, *The Life and Death of Great American Cities*, Jane Jacobs criticizes the urban renewal projects of Modernist planning for attempting to force change in urban environments. Planners failed to understand the complexity of spatial, social, and economic processes that produce rich and vibrant urban places, and instead imposed their own visions on the landscape, resulting in what she calls a "blight of dullness". While planners sought to "solve" urban problems through massive physical redevelopment schemes, Jacobs argued that understanding the intricate urban processes allows one to identify potential catalysts for change. Jacobs stresses that these catalysts can be the starting point for developing process-driven objectives. She acknowledges that catalysts need not be physical, and that they need not be large. Instead, a catalyst may

be a subtle component found in the everyday processes that happen in cities, and it may be something small. A catalyst, to be effective, must be able to integrate with the existing urban environment as well as alter it.

A group of researchers and activists, team Urban Catalyst, explores and develops concepts and models for development based on the idea that urban use, not urban design, is the "gateway" to successful cities (Davis 2009). They focus on the potential of temporary uses as the catalyst for transforming and regenerating urban areas. They view urban development in terms of activities, programs and networks as opposed to the construction of buildings. This view, and the focus on temporary use, allows them to transform what already exists in cities and work towards repurposing spaces. They hold that continuous regeneration requires spaces where unanticipated uses can be located (Davis 2009). These temporary uses provide insight into local networks, which may then become catalysts for future development or activities.

The literature on catalysts is remarkably limited considering the numerous claims of projects to stimulate the revitalization of their neighborhoods or districts. It is likely that these projects either fail to achieve the intended catalytic effects, or that the effects are unable to be measured or quantified. In any case, the most notable and enduring work on urban catalysts is that of Wayne Attoe and Donn Logan (1989).They focus on the catalytic potential of architecture and urban design in revitalization efforts, but acknowledge that a catalyst may be economic, political, or social. They make the distinction between spillover effects, which are unintentional, and the urban catalyst.

An urban catalyst is purposeful and strategic; it is intended to ignite subsequent incremental development and to influence the quality of its surroundings. It is not an isolated end product, but part of a larger process that occurs at the scale of a neighborhood or city (Attoe and Logan 1989). Similar to other works presented here, Attoe and Logan

stress that an understanding of context is critical to the success of a catalyst. A catalyst works within the existing context, interacting with existing elements, to influence urban form.

In this way, a catalyst may be introduced into a system to intervene and stimulate change within the system. In the context of Lake City, an urban catalyst can be introduced to transform the urban structure.

The authors develop a process and define the characteristics which explain how urban elements can be strategically located and designed to invigorate the continual regeneration of the urban fabric. This aspect is especially critical to the project at hand, as it is exactly this quality of regeneration which is needed to transform the urban structure of Lake City.

Urban catalyst must be designed to influence their context by interacting with existing it, not by imposing a "preordained ideal." It subsumes many of the ideas of urban catalysts presented from other urban thinkers, and addresses coping with complexity and building off the unique and existing circumstances found in each city.

The Urban Catalyst Theory is ultimately concerned with how to ignite catalytic processes within existing systems, in which one catalysts lends impetus to others, thus aiming to influence the urban environment across property boundaries. For this reason, the Attoe and Logan's Urban Catalyst Theory is further explored as an urban design approach by which to intervene and redirect the processes which form the

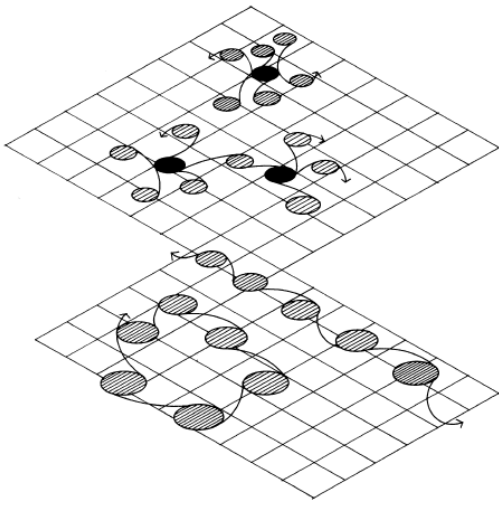


Figure 30. Diagram of catalytic reactions. One catalyst may spur several other nearby catalysts, start a chain reaction, or a combination of both. Source: Attoe & Logan, 1989.

urban structure of Lake City.

CATALYTIC DESIGN PRINCIPLES

Attoe and Logan argue that European-based design models, such as functionalism, humanism, systemic, and formalism, have largely failed to translate in the United States. The values incorporated in these theories are valid, but the theories are not fitted to the context of the American city. Catalytic theory does not rely on a final vision or prescribed character; rather, it focuses on uncovering and capturing the catalytic potential of targeted efforts. The approach avoids the downfalls of 1950's urban renewal, as well as the potentially haphazard result of random urban interventions that do not lead to quality, and "whole" urban environments.

Catalysts are directed efforts, intended not as an end point, but as an "element that inspire subsequent development" (Attoe and Logan 1989). A catalyst is an element, introduced into a system, that changes or alters the processes that shape that system. In the urban context, catalysts ignite a "sequence of limited, achievable visions, each with the power to kindle and condition other achievable visions" (Attoe and Logan 1989). The focus of catalytic theory relates to systems theory in that it is concerned with the interaction of existing and new elements, and how this relationship can spur growth that fits within, and emerges from, contextual factors. Attoe and Logan focus primarily on physical interventions based in architecture and are cognizant that each project must respond to its particular context.

Based on a series of case studies, Attoe and Logan identify characteristics of catalytic design, discussed below. The catalytic characteristics are used to inform an urban design approach that ignites a the transformation of the urban structure in Lake City by creating an intervening urban catalyst.

- **The new element modifies the elements around it.** This is the primary function of a catalyst, to ignite change in the environment

around it. A catalyst causes a (positive) reaction. The catalyst may provide the starting point for new urban amenity, in this case, a pedestrian network. It may connect fragments. It may capitalize upon exiting characteristics, introduce a typology, or encourage compatible functions. An urban catalyst has the potential to influence future development and form in a variety of ways; this is its essential function, and critical for the transformation of the urban structure in Lake City.

- **Existing elements are enhanced in positive ways.** A catalyst need not remove existing elements to introduce new ones, but can build on what is existing. This may be done by restoring or refurbishing buildings with redeeming qualities, or by introducing elements that are complementary to these qualities. Value can be found in the existing urban fabric, even if fragmented or deteriorating; catalyst have the ability to capitalize upon these opportunities and use them to achieve authentic design strategies.
- **The reaction is contained, and does not damage its context.** It is critical to limit and guide the catalytic reaction; failing to do so may result in a disruption of the urban fabric. Systems will discard elements that do not integrate; catalysts must ignite change from within, but in positive ways. Because catalysts have the power to unleash a flood of redevelopment and investment as land values rise, the power to contain the reaction is often in the hands of other developers and landowners. Design cues in the catalyst project can help to guide subsequent design and set a precedent for respecting the urban fabric and what the community values.
- **A positive reaction requires an understanding of context.** Crucial to the previous two characteristics, as well as to urban design as discussed previously, is a thorough understanding of a catalyst's context. To create a successful catalyst, one must understand the many factors that shape the urban environment as well as how

the catalyst may then affect these factors. Failure to do so may lead to a project that imposes on the urban fabric, rather than one that integrates with it. In addition, understanding the unique context of a project allows the designer to discover features or elements that create an opportunity for a catalytic reaction.

- **Catalytic reactions are not the same.** As discussed earlier, each city, and site, has a unique context, and thus each catalyst is different, and produces different results. "The catalyst is shaped by its context", and thus the approach each catalyst takes should be a response its particular situation. In the context of Lake City
- **Catalytic design is strategic.** Catalytic design is strategic, based on long term goals or aspirations; it is thus more likely to produce quality results than opportunistic, or short-term thinking. Catalytic reactions do not warrant a master plan, as they do not provide enough flexibility to respond to the volatility of cities. Instead, acknowledging the challenges of complexity, commodification, and emergent realities, the Catalyst Theory calls for a flexibly strategy that relies on the sequencing of development as to better respond to these challenges.
- **A catalytic reaction creates a product better than the sum of the ingredients.** Although catalysts are often individual projects, they are designed to integrate and reinforce the urban fabric and urban systems. Catalysts are designed to add value to the overall built environment, not just through increased land value, but through connectivity, coherence, and defragmentation of the urban fabric; this is the objective, but it is not guaranteed.
- **The catalyst can remain identifiable.** Although integrated into the urban fabric, a catalyst is still an individual element. The diversity of individual projects contributes to the character and identity of cities.

Based on the literature, the use of the term "catalyst" does not refer

to a prescribed process or design, but rather the intended effect of a project beyond the immediate spillover effects—an urban catalyst has the power to ignite subsequent development. However, simply unleashing a catalytic process has no certain outcomes. An urban catalyst—and this is Attoe and Logan's point—also guides subsequent development.

Municipalities may use zoning, ordinances, or design guidelines to achieve this, but the extent is limited. Individual catalyst projects can assert some degree of implicit control through design concepts, and site design. Implementing a design concept that has significance beyond one site may guide the design and programs implemented in other redevelopments (Attoe and Logan 1989). For example, designating an art district or civic center within a city may attract complementary uses. Delineating a network or anchors may work to persuade future development to continue or connect to the network. Implicit control can be achieved when a project expresses particular values or commitment to design elements, which become "hooks" or "links" (Attoe and Logan 1989). Subsequent projects can latch on to these elements across property boundaries. Creating "hooks" can begin to generate urban coherence if they are strong enough to warrant a response from other projects.

The approach presented by Attoe and Logan is designed to remain flexible and provides a framework for projects to realize their goals. There is no set typology or scale to an urban catalyst, and is adaptable to a variety of project types in a variety of contexts. A successful urban catalyst does, however, require an understanding of the context as the forces that shape the urban environment, and in turn the forces that the catalyst is seeking to influence. They admit that the theory is incomplete, and that their work is meant to provide a starting point for exploring the potential power of catalytic design.

Sternberg (2000) has taken their ideas further, looking at specific design strategies often used in catalytic

design. He argues that a catalyst must be "forcefully designed and positioned" so that it will influence the forms and motives of planners and designers in future development. To do this, a catalyst can or needs to be designed to initiate movement. A catalyst may function as an anchor among complementary uses, strategically place entrances and exits, and start a chain reaction of short pedestrian links (E. Sternberg 2002).

A catalyst has the power to stimulate change within a system; likewise, an urban catalyst has the power to stimulate change within an urban system. The urban catalyst is an idea approach for igniting change: through a series of catalytic design interventions, a pedestrian network can begin to emerge and transform the urban structure of Lake City.

The principles of catalytic design are used to inform a design strategy and design a catalyst that stimulates and guides the transformation of Lake City as part of the process of generating coherence in Lake City.

Urban Design Concerns

The catalyst theory requires that a catalyst is shaped by its context, and in turn, shapes its context. To fully understand how to create a catalytic reaction in Lake City, we must first understand the context into which it will be integrated. It is in the light of this argument this paper briefly explores additional characteristics of urban design that frame an understanding of the project context for Lake City.

AUTHENTICITY

The notions of genus loci and sense of place are well-known in the design and planning professions. Although some consider the appropriate use of these terms to be confused (Jive and Larkham), this paper will use "sense of place" to refer to the general idea that a place has some amount of unique quality which makes it special, and that this uniqueness may be identified, understood and communicated (Garnham 1985). The concept of place, as presented by Edward Relph, is based on his exploration of the human experience of space, and how we derive meaning from places based on our experiences: places are those that have the power to conjure images, emotions, and reactions from us; they may hold different meanings for each individual or community, based on their experiences and perceptions.

Places may be experienced either authentically or inauthentically (Relph 1976) or to some degree along a spectrum. An authentic sense of place, as Relph writes, is "a direct and genuine experience of the entire complex of the identity of places-not mediated and distorted through… how that experience should be, nor following stereotyped conventions" (Relph 1976). Many, including Relph, argue that an authentic sense of place is being replaced by placelessness, "the casual eradication of distinctive places and the making of standardized landscapes that results from an insensitivity to the significance of place" (Relph 1976). The reality of this concept in the United States is made clear in James

Knustler's book, Geography of Nowhere. Knustler writes extensively on the influence of the grid, suburban sprawl, automobiles, and pop culture on creating a monoculture of towns and neighborhoods across the country. This placelessness, argues Relph is due to kitsch, an uncritical acceptance of mass values, and technique, the goal of efficiency and the standardization of methods. The result of placelessness is an inauthentic, or less authentic, experience of place.

A major challenge to urban design is that the intention of "creating" or "enhancing" a sense of place may result in an inauthentic experience. Urban design approaches based on idealized built environments or satisfying a set of design guidelines may end up creating nondescript end results, for example, New Urbanism. The movement has been largely criticized for creating new places that are idealized to the point of losing meaning: architectural form is based on an interpretation and recreation of the past which has become somewhat superficial in application, lacks originality, and is done for the purpose of making money (E. Sternberg 2000). Many theorist suggest that a sense of place cannot be created by outside forces, such as is often attempted with professional intervention (Assi 2000). Although approaches such as these may result in a place with identifiable character, it is the people, individuals and society, that integrate these features, through their value systems, to form a sense of place. Urban designers can instead seek to improve the conditions under which users experience a space, and allow a sense of place to emerge (Jive and Larkham 2003). Doing so requires an understanding of the existing character and communities and the ability to draw inspiration from what exists without mimicking, copying, or relying on kitsch. Authentic urban design requires creativity and the respect for local distinctiveness. Authentic urban design requires creativity and the ability to not just

recreate the past, but bridge the past and future though the gradual changes in the built environment as an expression of culture (Assi 2000) and sense of place.

RELEVANCE

There is an abundance of literature and methodology written on effectively engaging citizens and communities (CITE SOME). Instead, it is the purpose of this section to highlight the importance of citizen involvement, because without an understanding of the people and communities urban design is for, it is unlikely that the result will be of relevance, have meaning, or contribute to an identity. A project that is not relevant may have detrimental effects on the urban experience and the quality of life of residents. Successful places support and facilitate the activities of people, and as such the design of these spaces is be informed by an awareness of how people use them. Authentic urban design reflects the needs and desires of the residents, and seeks to express their values in the built environment.

Physical planning cannot in and of itself create a sense of community; as communities already exist. Communities define themselves, and urban design can intervene by creating spaces for this to happen (Madanipour 2006). Through the community, spaces become places. Places that create opportunity for social interaction such as squares, plazas, and commons have the ability to change with the community and become places for democracy, demonstration, and civic functions.

ACHIEVABLE

All realizable urban design proposals are obliged to recognize the power of economic forces if they seek to shape the urban environment. Cities are driven by a market economy, and the development of the urban fabric is means of making profits (Harvey 1989). Projects must be viable in the sense that the size and scope of a project is manageable, and that

there is adequate funding, time, and resources to be implement it. Urban design operates in a system largely driven by developers and finance; projects must be economically viable, and are nonetheless still susceptible to volatility in the market.

Private interests are generally concerned with marketability, demand, and profits; public interests are largely concerned with providing public benefit (Attoe and Logan 1989). Partnerships between public and private interests have the ability to balance their goals, resulting in projects that are concerned with the overall urban fabric and that can find adequate funding in a reasonable period of time. For this reason, public-private partnerships may be especially suited mechanisms for approaching and implementing catalytic design, and especially catalytic design focused on coherence.

The urban design concerns presented here are relevant to the project at hand: the Pierre's have indicated the desire to leave a legacy to the community by striving for quality design that can only be accomplished by a thorough understanding of the context of the neighborhood and its residents. Thus, the design strategy must address not only these concerns, but also seek to generate coherence throughout the neighborhood via the design and development of only a few individual sites.

chapter 4

Design Development: A proposal for the Lake City Commons

Design Proposal: Lake City Commons

INTRODUCTION & RECAP

The objective of this thesis is to demonstrate and test the urban catalyst approach as an urban design strategy for igniting the transformation of urban structure in Lake City. Although the neighborhood boasts a diversity of amenities and services, they are largely disconnected at the pedestrian level. The priority given to the automobile has resulted in a neglect of the pedestrian environment, with the exception of Lake City Way from NE 123rd to NE 127th.

One might argues that as redevelopment occurs, sidewalks will built. There are two major flaws with this. First, complete redevelopment of the neighborhood core is would likely take a long period of time. Second, this approach would not necessarily transform the structure of the neighborhood. Land uses may remain segregated, and development patterns that separate set buildings apart from pedestrian access may not change. A strategy is needed that integrates pedestrian elements into the urban structure.

The literature review provides the theoretical framework that supports the design process and methodology in this study, particularly that of the urban catalysts. Before engaging in the deign proposal, it is useful to review the topics covered thus far.

- Systems are complex, whole units that are greater than the sum of their parts; they are defined by the multiple levels of dynamic relationships formed by these parts
- Coherence is the quality of wholeness of a system; it occurs when all of the parts are integrated into a system, and refers to the health and dynamic balance in the system that gives it the ability to regenerate, evolve, and maintain its functions.
- Catalysts are shaped by their environment, and in turn shape that environment by influencing and lending impetus to surrounding development;

successful catalytic design requires an understanding of context and builds on relevant emergent realities within the system.

- Urban design shapes the human environment and experience, and works within a field constrained by economics, commodification, and fragmentation of the built environment. Urban design seeks to craft solutions to these problems with design principles that transcend property boundaries, and that are relevant, authentic, and achievable responses to existing and emergent conditions.

PROJECT VISION

The proposed design strategy seeks to transform the urban structure of the neighborhood through the vision and integration of a human-scaled, spatial network generated from a series of urban catalysts. The strategy introduces new elements that connect to existing elements in order to form intermediary connections and begin the formation of a pedestrian network. The use of catalysts provides impetus to the continual generation and evolution of the network.

It is the goal of this strategy to ultimately transform the urban structure of Lake City in order to support new pedestrian-oriented movement and elements. The strategy utilizes an urban catalyst to initiate the transformation, which provides flexibility to the site-specific details and programming for the final design and program of the site. The design of the catalysts will focus on urban spaces as social infrastructure in order to integrate movement and social interaction.

SOCIAL INFRASTRUCTURE

The traditional public social space—the town square or commons—is generally a significant designated open space near the center of a city or town. This proposed strategy uses the concept of the central commons as a central public space. However, instead of one central space created as a top-down approach, the commons is generated from pieces created throughout the neighborhood. The pieces cannot simply be scattered; this results in a series of disconnected fragments. It is crucial that these pieces be integrated into a network, which then influences the structure of the overall neighborhood. The town square generates long-range movement towards one place and this strategy aims at generating short-range movement on a diffused network that connects many places to each other.

The proposed strategy generates network of social infrastructure through a series of catalysts. The network consists of pedestrian nodes and linkages, which together create the Lake City Commons. This concept incorporates all public space under a single goal which provides impetus and identity to the expansion of the network. More importantly, this strategy allows for a network that is flexible and can continuously evolve through a self-organizing process.

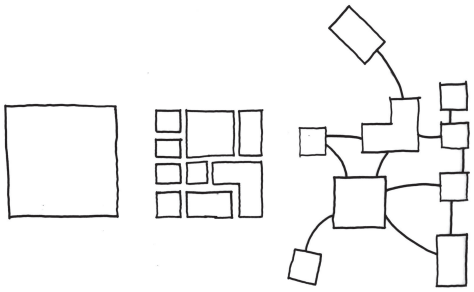


Figure 31. The Commons. The Commons is generated in pieces throughout the community so that each one may serve a unique purpose relevant to its context. Linkages between the pieces form a network of social infrastructure. By author.

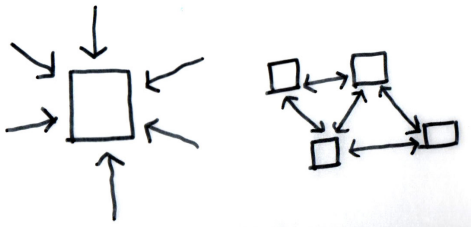


Figure 32. Movement to The Commons. A traditional town square directs all movement to one cenral location. The Commons creates movement among multiple nodes along the corridor. By author.

Plaza & fountain. Souce: jim.henderson

Parklet. Source: Mark Hogan

Partially covered walkway, plaza, & shopping node. Source: author

Figure 33. Social infrastructure typologies. Social infrastructure may be privately or publibly owned; indoors or outdoors; or be a pathway or a node.

Covered walkway. Source: jim.henderson

Public Lobby. Source: jim.henderson

Typologies

Social infrastructure refers to a variety of public open spaces, either publicly or privately owned. Social infrastructure may be indoors or outdoors, and may be a node or a path. Some examples include:

- arcade
- plaza
- playground
- gardens
- viewing decks
- interactive water features
- public lobby
- exhibit space
- sidewalk widening
- through block passages
- elevated plazas, upper story decks
- open pedestrian areas
- covered or enclosed plazas
- restaurants, cafes, and cafeterias
- civic institutions such as libraries, community centers, recreation centers or playfields

GENERATING A NETWORK

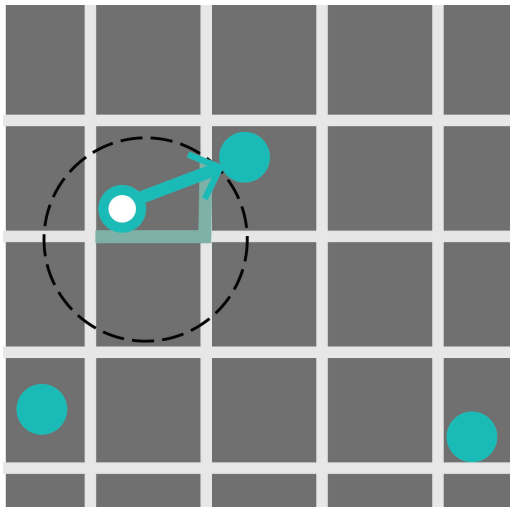
The process begins with identifying an existing social infrastructure node. Next, an opportunity site,

at a prominent location and that is relatively close to the existing node, is identified. Opportunity site are those that are currently in consideration for redevelopment, are underutilized, or have the potential for infill. The opportunity site needs to be within a reasonable walking distance of the existing node. Preferably, some visibility from the existing node to the opportunity site exists, so that pedestrians can obtain a sense of distance from one to the other.

At the opportunity site, a catalyst, as a typology of social infrastructure, is implemented to create a new node. These nodes enable exchange between public and private activities, and provide public open spaces both indoors and outdoors. Short-range connections are organized around the nodes, and connect to other nodes as they emerge. Pathways may need to connect from both nodes to meet. These pathways are then integrated into the urban fabric, and begin the formation of a fine-grained pedestrian-oriented network, to which additional pedestrian elements may be integrated along.

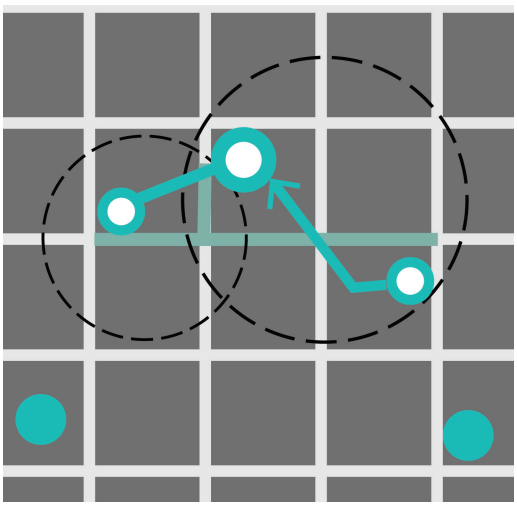
The strategy utilizes a bottom-up design approach for integrating the pedestrian environment into the neighborhood through a flexible underlying structure. Incremental growth of the network is driven by the actions of individuals on individual properties. The strategy is suited to take advantage of the realities of land ownership and land use decisions.

As redevelopment occurs, individuals can add a node or link of the Lake City Commons at their own discretion, depending on site context. Each design decision is made at the level of the site and within the bounds of the property, limiting the physical interventions to short-range connections within the immediate context of the site, and allowing for a variety of individual and authentic design responses. In addition, design decisions made at this level are more capable of focusing on the details of the pedestrian environment, and allow for better integration of the pedestrian environment in a manner that is relevant to the project and is a viable option. The network is structured yet flexible and is adaptable to specific site conditions.



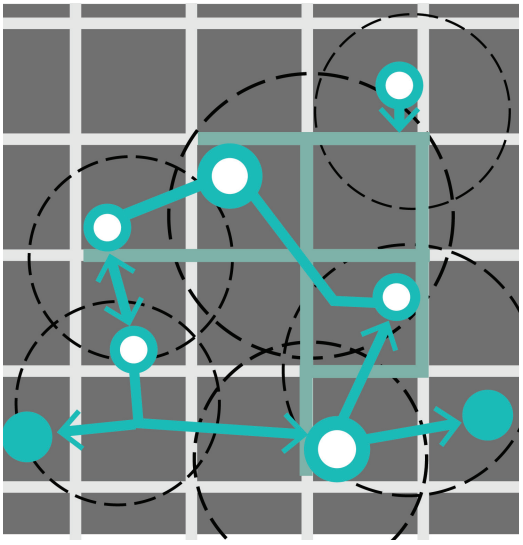
Phase 1. Identify catalyst site.

The process begins with identifying existing nodes and creating a catalyst which can begin to generate connections.



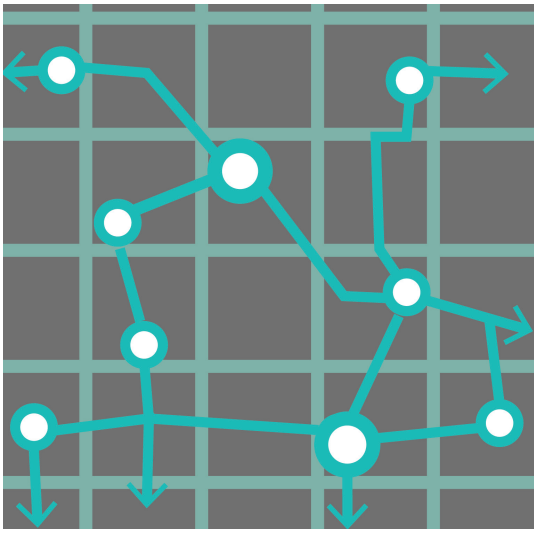
Phase 2. Create nodes & links.

The catalysts provide impetus for nearby projects to generate short-range connections to it. As connections are made, exiting nodes become catalysts.



Phase 3. Expand the social infrastructure.

Redevelopment and infill creates catalysts that continue the incremental expansion of the social infrastructure.



Phase 4. Transform the urban structure.

The network expands until eventually, a network of social infrastructure creates a structure for pedestrian elements to be integrated. From this network, a coherent urban system may emerge.

Figure 34. Connecting the Commons.
Diagrams by author.

In addition, the strategy differs from most open space networks in that the purpose is to integrate people and pedestrian-scaled social spaces into the urban environment as opposed to an ecological approach. Social spaces may include green or natural space, but it is not the foundation of the network.

INITIATING THE PROCESS

The urban catalyst approach provides an appropriate strategy for initiating and continuing the generation of a social infrastructure network. The key to the strategy is that each node or connection becomes a catalyst for another node or connection. Although individual property owners only have full control within their property boundaries, design decisions for each node or link are made that provide impetus and influence the decisions of surrounding properties. The Lake City Commons allows for a hierarchy of catalytic nodes depending on the context of a given site.

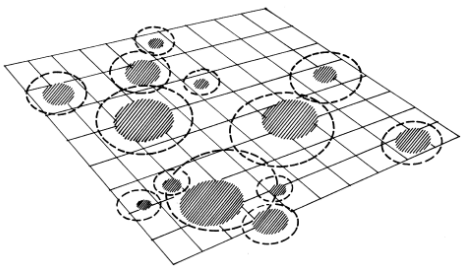


Figure 35. Catalyst have varying ranges of influence. Source: Wayne & Attoe 1989.

Macro catalysts. These sites are primary nodes that generate a high volume of activity or linkages that connect primary nodes. Macro catalysts have a stronger or wider range of influence, so that potential linkages may be longer range and remain effective. These catalysts are the top tier of social infrastructure and function as central features or critical connections to surrounding uses.

Micro catalysts. These catalysts may be smaller sites or have a shorter range of influence. However, minor catalysts are critical for creating short-range linkages which together create a diffused pedestrian network.

SITE SELECTION

The most prominent nodes in Lake City are the civic core, containing the library and community center, and the two-block strip of pedestrian-oriented retail. A grouping of Pierre properties is located between these two nodes marked as 1 and 2 in Figure 36, and are in relatively prominent locations. The sites are currently under consideration for redevelopment, and so fit the criteria for catalyst opportunity sites.

Figure 36. Opportunity sites for macro and micro catalysts.

Due to the size and adjacency to the civic core, site 1 will be designed as a macro catalyst. Site 2 offers opportunities to strengthen the connection from the civic core all the way to Lake City Way.

Site 3, not owned by the Pierres, will be included in the design of the macro catalyst to explore potential benefits of creating partnerships in the redevelopment process and the design of an urban catalyst.

CATALYST OBJECTIVES

This study explores the design of these sites as macro and micro catalysts that connect the commercial and civic functions through a series of nodes and linkages that create the starting point from which the social infrastructure network can expand throughout the neighborhood.

The catalysts is designed to achieve the following objectives, based in the literature and on site context.

- Initiate the social infrastructure network;
- Connect "fragments" that are

currently difficult for pedestrians to access

- Stimulate opportunities on nearby sites to "add" to the network;
- Fit within and enhance the surrounding context, yet improve its character and function; and
- Provide impetus to surrounding future development.

The design of the opportunity sites is aimed at stimulating subsequent development of the social infrastructure network. The design and methodology address organizational and functional relationships of the site, that is, both urban form and urban program, to influence coherence. Following the design proposal, the study explores how the catalytic reaction might progress on additional sites as redevelopment continues and the social infrastructure network expands.

DESIGN METHOD

The following methodology is utilized to create a flexible framework for designing and developing a given catalyst site. The method requires designating spaces for social infrastructure and defining the pedestrian environment first, to create structure on the small scale. After this, building form is established that responds to the layout and orientation of the social infrastructure.

1. **Context analysis**. Analysis of the site and its surrounding area provides a necessary understanding of the unique conditions and context of the project.
2. **Conceptual design.** Based on the analysis, craft a design strategy that creates opportunities for movement through and around the site by linking existing nodes. This creates the framework for the design of the site.
3. **Designate social infrastructure.** Determine if additional social infrastructure nodes may be necessary to create short-range linkages. Site additional nodes in locations that to create "hooks" , or that optimize connections on site and influence potential connections off-site.
4. **Create form-based building envelopes.** Use the conceptual

COMMUNITY DESIGN OBJECTIVES

In addition to catalytic design principles, the design approach seeks to address concerns and opportunities expressed by the residents of Lake City. These general goals and design principles are based on input from residents at through public outreach.

- **Clarify & strengthen community identity.** Enhance existing community character, and create an identity that unifies the corridor.
- **Support a diverse community** with a variety of housing, commercial, and economic opportunities in a livable community.
- **Build density** to support economic vitality. Broaden the customer base needed to support and attract more local, unique businesses.
- **Value historic character** by reflecting the unique history of Lake City's transformation from a car-oriented town to an urban neighborhood.
- **Improve public safety.** Use thoughtful design and appropriate siting of uses to increase the perception and reality of personal safety.
- **Build interconnected transportation networks.** Create a safe and pleasant experience for all modes of transportation.

social infrastructure to define building envelopes. Designate areas where social infrastructure is suitable for integrating into buildings.

5. **Test and evaluate.** Explore potential site plans to test design intent and flexibility. Explore potential uses, programming, and partnerships that may add impetus to the catalytic design.

Site Context

OVERVIEW

Location

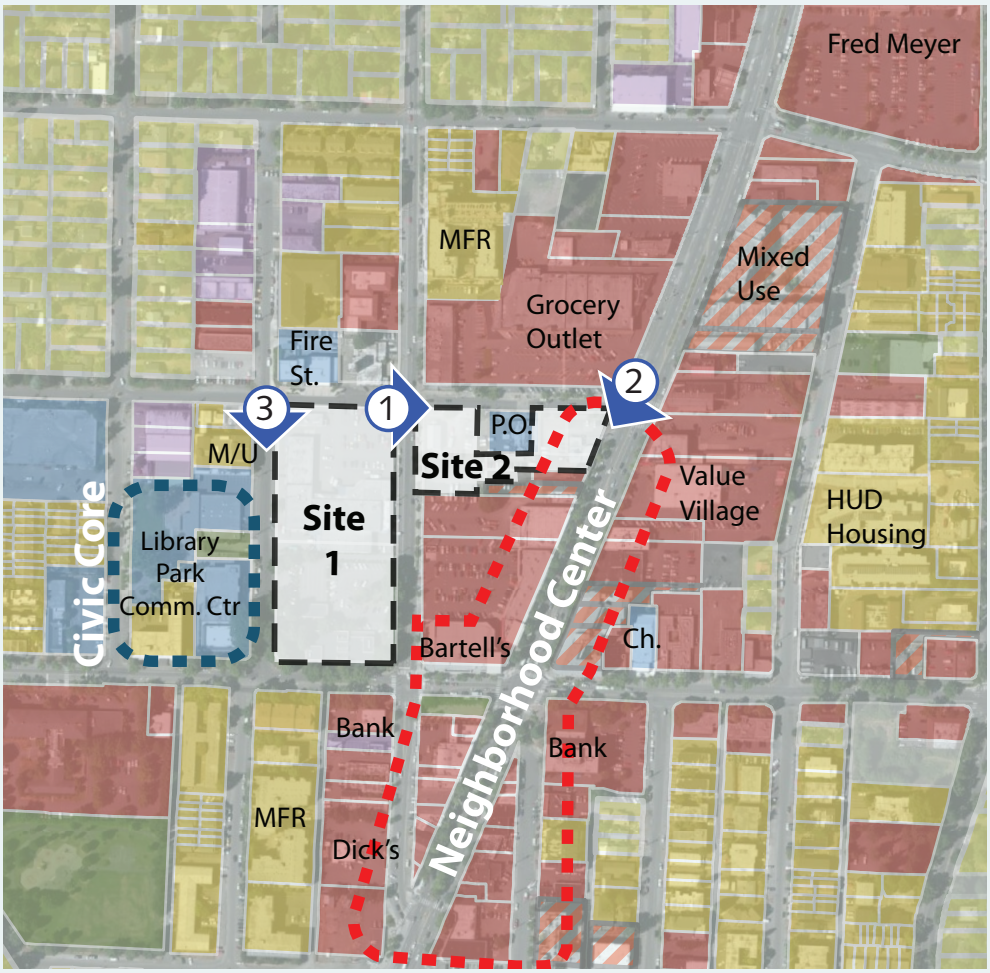
The catalyst sites are located on NE 125th Street near Lake City Way and the pedestrian-oriented neighborhood center within the Hub Urban Village. The sites lies between the stores and restaurants on Lake City Way and the library and civic center.

Land Uses

Key activities around the site include the library and civic center, a variety of shops and restaurants on Lake City Way, and relatively recent multi-family housing developments including a HUD public housing project. The parking lot to the east of site 1 serves the businesses on Lake City Way. A fire station is across the street to the north of site 1. Although some new developments have increased the density of residents in the immediate area, many underutlilzed parcels and parking lots remain.

Physical Character

The physical character along Lake City Way is relatively pleasant as it has wide sidewalks, street trees, and a human-scale street frontage. However, the sites are characterized by low, wide buildings, set back and separated from the street by parking lots. Sidewalk access is inconsistent and lacking, and there are few pedestrian amenities. The south half of site 1 has several mature trees with wide canopies and some open green space. Overall, the area immediately west of the shops on Lake City Way feels like the "backs" of buildings, and is in rather poor condition.



Looking east on NE 127th. Vacated buildings and parking lots.

Looking southwest on LCW. Service center and parking lot on a prominent corner.

Looking south on 30th Ave NE towards the library. New development overlooks an unimproved street and service center.

Figure 37. Site context: land uses and character.

EXISTING SOCIAL INFRASTRUCTURE

Lake City currently has established social infrastructure nodes which will provide the foundation of the network.

1- Albert Davis Park
2 - Library
3 - Community Center
4 - Elliot Bay Brewing and Kaffeeklatsch
5 - Corner plaza
6 - Mini Park
7 - Park at HUD housing
8 - Mini plaza
9 - Park

Figure 38. Existing social infrastructure in neighborhood core. Source: photos by author; map by Bing Maps

Catalyst and Site Design

CONCEPT & DESIGN OBJECTIVES

The location of the sites between the pedestrian-oriented commercial district and civic center provides an opportunity to connect and integrate the districts through intermediary catalytic social infrastructure nodes. These catalytic nodes are linked by short-scale connections and are activated by movement from the commercial district on Lake City Way to the civic center. In addition, integrating these districts into one aims to reorient and expand the neighborhood center west of Lake City Way and create more opportunities for social infrastructure. The new neighborhood center is a dense, walkable center that serves the residents of Lake City.

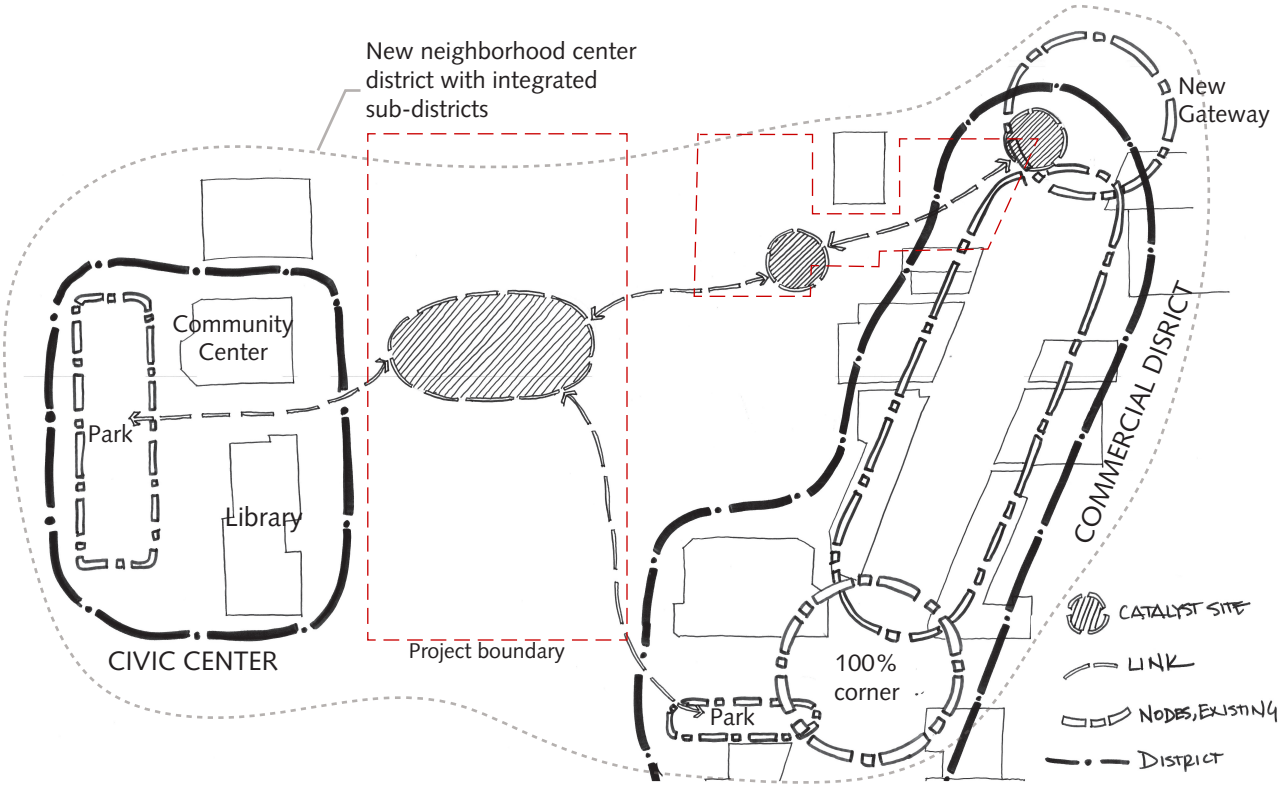


Figure 39. Catalyst concept of nodes and linkages. Existing nodes within distinct districts are connected through nodes and links on the Pierre properties. The catalysts become necessary intermediary links through "empty" space.

SOCIAL INFRASTRUCTURE: LINKS & NODES

Based on the conceptual layout of catalysts, the social infrastructure is defined in terms of connections and nodes. Defining the social infrastructure before the building footprints created a framework for the site design that ensures pedestrian-scale elements in the network are designated, yet allows for flexibility in building form. The typologies of these nodes and linkages are not defined, providing the opportunity for property owners, developers, and designers to make decisions based on the desired programming for the site.

The social infrastructure is located and orineted in a way that is intended to influence adjacent properties (hatched). In some cases, the design of nodes is intended to "spillover" property boundaries.

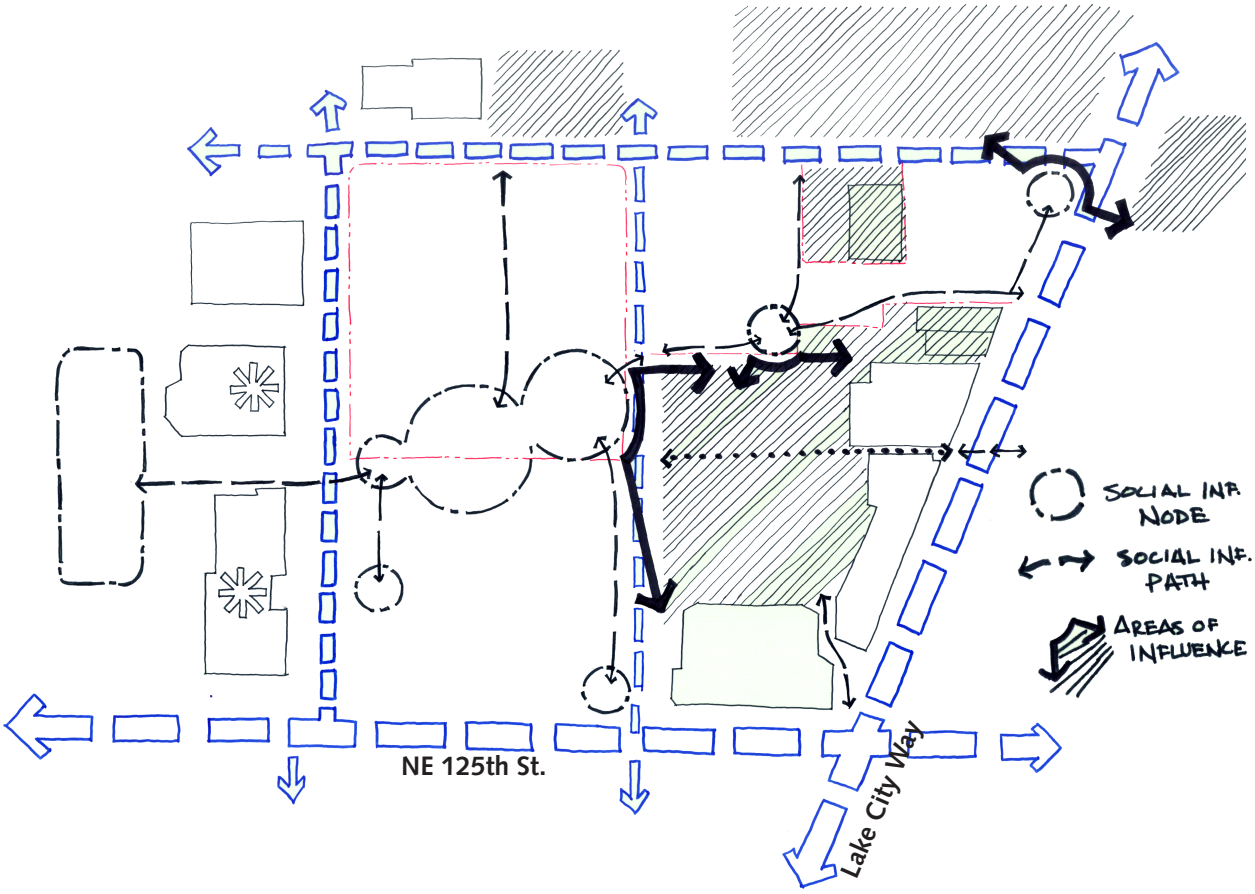
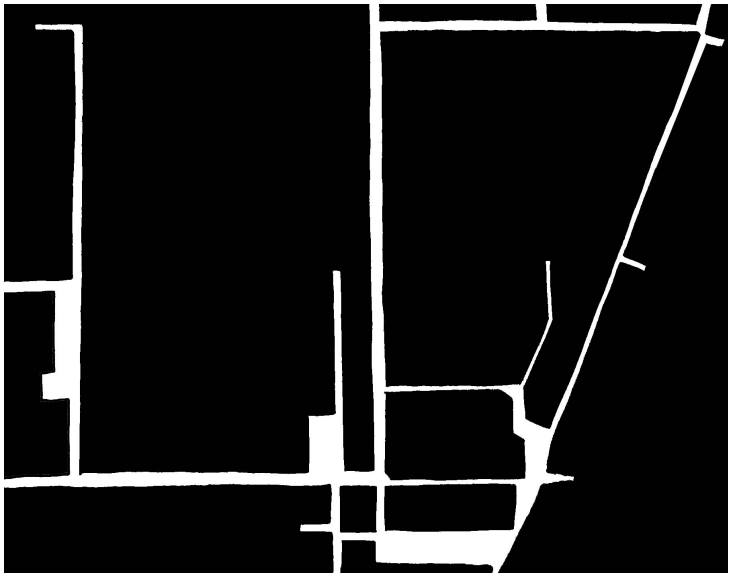


Figure 40. Conceptual diagram of social infrastructure: nodes, connections, and intended influence. The spatial layout and function of social infrastructure nodes and links, as catalysts, is intended to influence adjacent properties.

FORM BASED BUILDING ENVELOPES

Based on the conceptual nodes and links, areas are designated as social infrastructure. The nodes and links begin to form a network of social infrastructure to which buildings are then designed around. Defining the social infrastructure space first ensures that it will not be neglected or put in as"leftover" spaces that are not integrated with building form or program. In addition, first defining the social infrastructure reflects the value and importance of the pedestrian network within the neighborhood.



Before intervention: a lack of social infrastructure nodes and linkages

After intervention: nodes and links begin to form a network of social infrastructure.

Figure 41. Network of designated social infrastructure before and after. Determining the spaces for social infrastructure is done first so that buildings may be designed to integrate with the spaces, as oppose to "leftover" or empty space occuring in between buildings.

Next, building complementary buildng form is defined based on the designated social infrastructure. Social infrastructure spaces are defined to be outdoors, or have the option of being enclosed (hatched). The form of the building envelopes responds to the surrounding context and social infrastructure spaces by limiting heights and stepping down at the edges and along streets to enhance the pedestrian experience. Limiting height (by requiring setbacks) is especially critical along Lake City Way to retain the "main street" character; it also provides opportunities for upper level open space. Within these forms, architects and designers have freedom to program and design the spaces and buildings. Wide stepbacks are also used adjacent to outdoor social infrastructure spaces as to minimize shading and create a comfortable sense of enclosure.

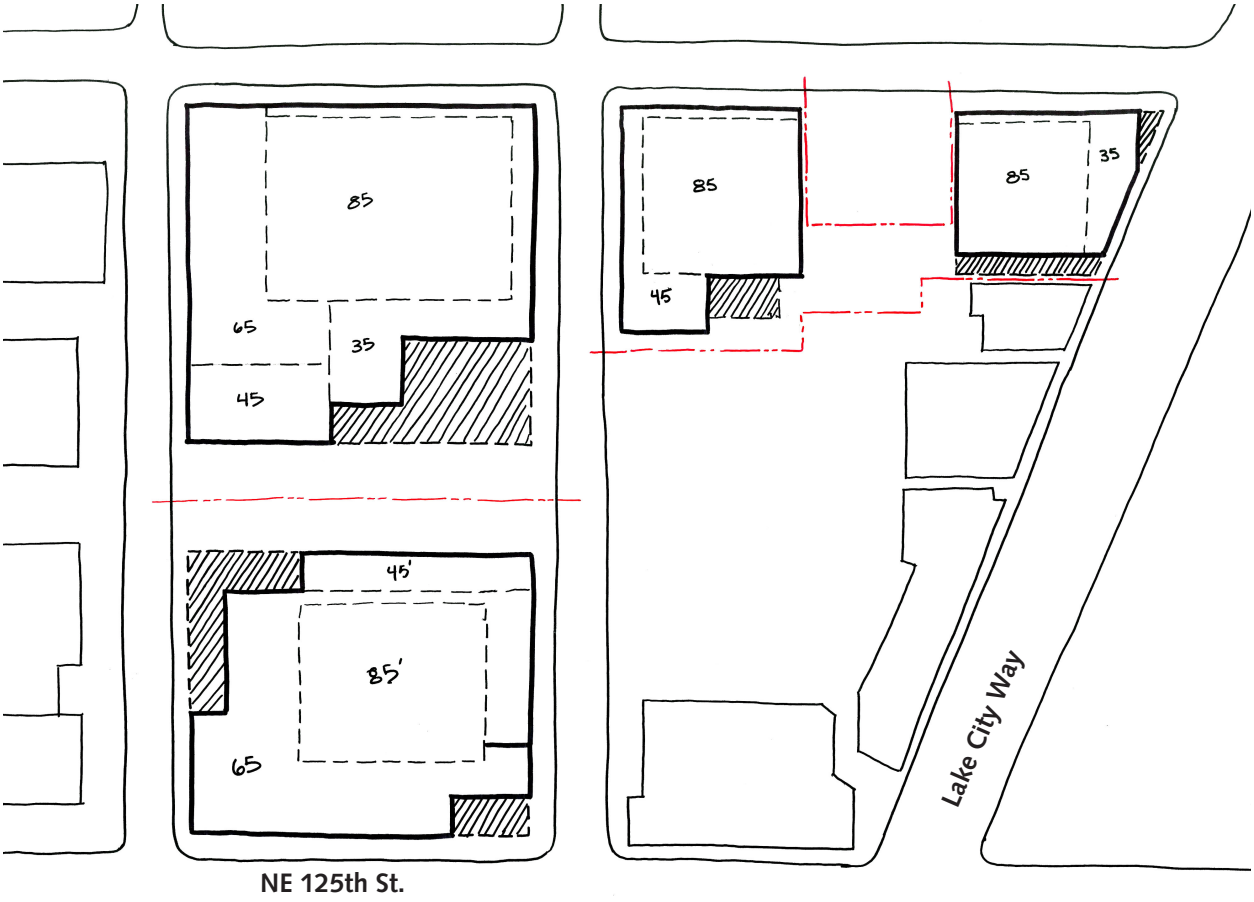


Figure 42. Plan view building envelope. Designated height limits respond to layout of social infrastructure. Social infrastructure that may be integrated indoors or outdoors is hatched; ares for outdoor pathways or nodes are excluded from the building envelopes. Building envelopes are designed to respond to social spaces, and provide transitions in height as well as visual interest.

The designated building envelope does not define the form of a building, but encourages urban design and the architecture of buildings to respond to the pedestrian elements. Figure 38 shows the designated social spaces, the maximum buildout allowed on each site, and how buildings form steps down to these spaces to provide enclosure at a human-scale.

Figure 43. Axon of building envelope. The envelope responds to social infrastructure by stepping down to create transitions

Potential Catalytic Effects

Potential catalystic effects, based on the method, process, and design results of the catalyst site, are explored. The social infrastructure network must emerge from the context and urban forces in Lake City, not as a top-down master plan. The catalysts on the study sites, in double hatch in Figure 47, start the catalytic reaction in the neighborhood by connecting the civic core with the commercial activity on Lake City Way. The macro catalyst provides a prominent, multi-nodal social space that supports activity around it and creates movement to the site. The macro catalysts generate the series of short linkages that connects the macro catalyst to Lake City Way.

Existing nodes act as catalysts as other sites begin to generate social infrastructure nodes and linkages that connect them. Catalysts sites provide impetus to redevelopment at other nearby sites, as the distances to link social infrastructure becomes shorter. In addition, social infrastructure and redevelopment is likely to raise land value, stimulating a chain reaction of redevelopment. Establishing the foundation of the social infrastructure network will help to ensure that as redevelopment projects occur, they are able to incorporate pedestrian elements as the urban structure transforms.

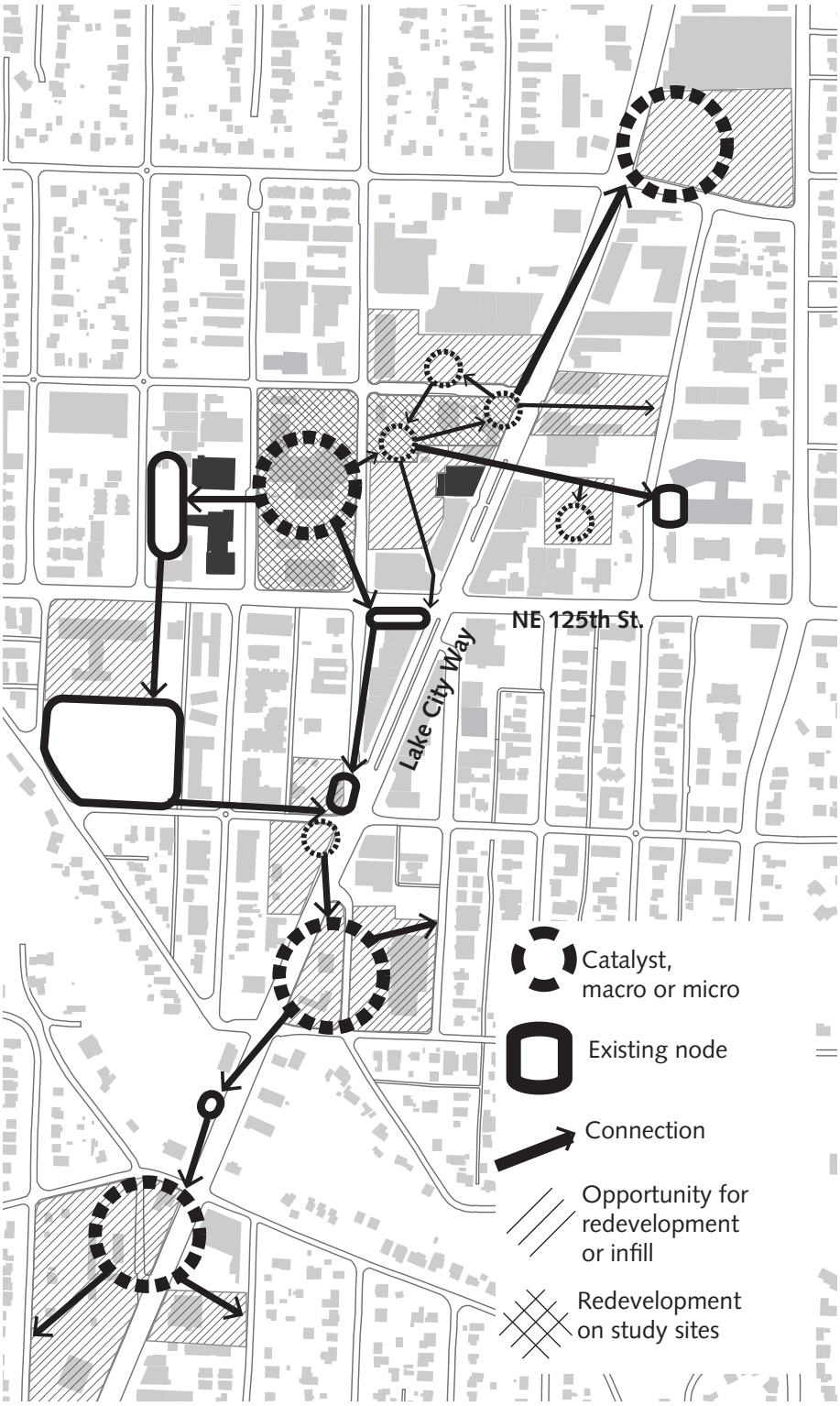
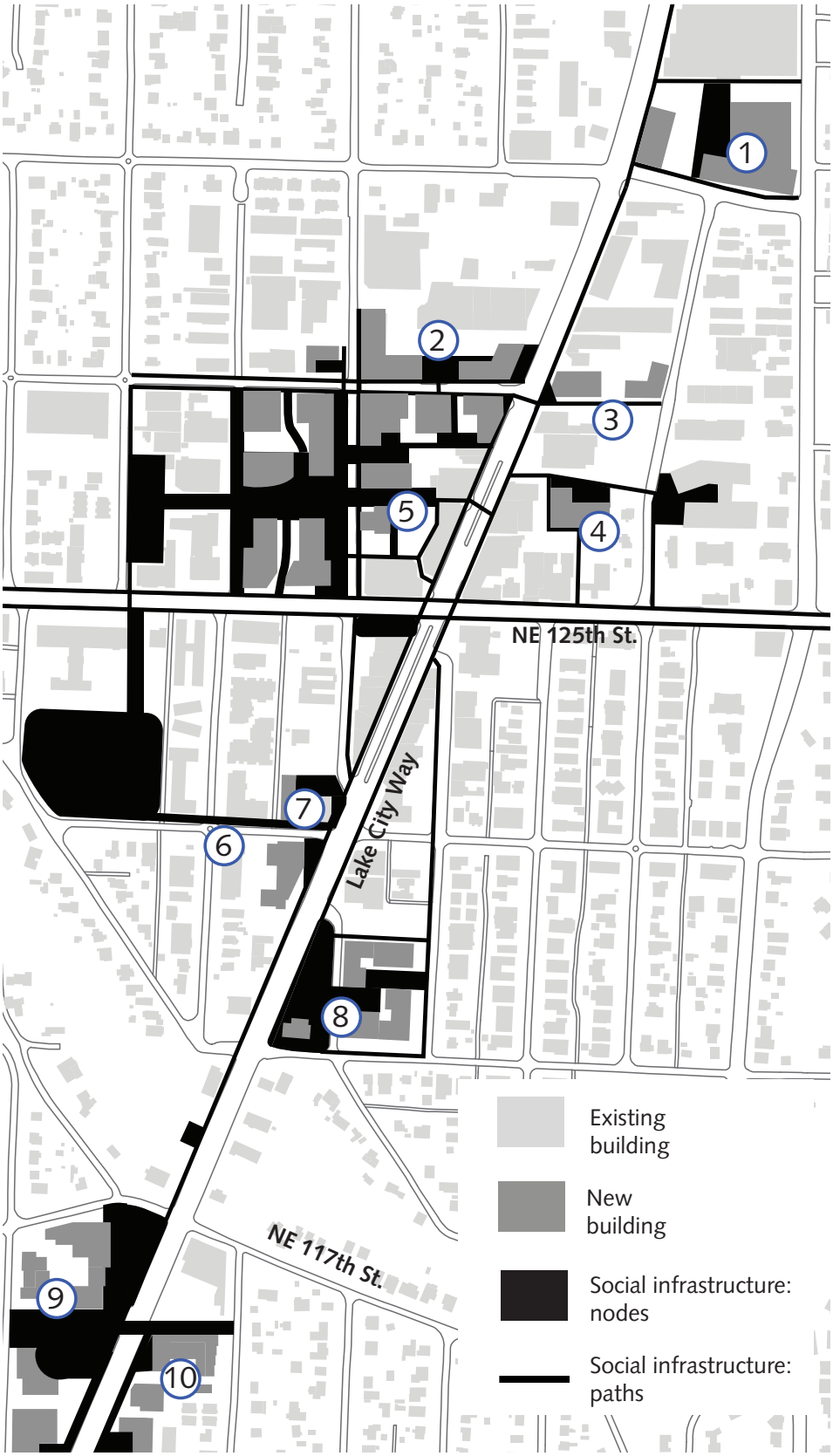


Figure 44. Potential catalytic effects. Each catalyst, as a social infrastructure node, provides impetus for the next catalyst. New catalysts may either forge connections to existing nodes, or provide inpetus for other nodes to connect with it. Catalysts (and existing nodes as catalysts) mayignite the redevelopment of underutilized land (in single hatch) and allow to build on the connections forming around it.

The Emerging Social Infrastructure Network

The catalytic effects of social infrastructure is extrapolated into a potential outcome of redevelopment and resulting social infrastructure network. As redevelopment occurs, it is likely that new sidewalks will be incorporated as part of this network. However, emphasizing nodes and connections through blocks generates a network that transforms the urban structure of Lake City. Instead of being restricted to sidewalks, pedestrians may travel from node to node, along pedestrian-scaled pathways.

The catalysts redirect the processes, in this case integrating movement and social interaction, that shape the neigborhood. In this way, the urban structure is transformed, and generates the ability to integrate pedestrian elements so that they become part of the essential function of the neighborhood. From this transformation, the once car-oriented neighborhood may begin to emerge as a coherent urban village, able to grow, evolve, and self-organize as conditions in the urban environment change.



1. Infill in Fred Meyer parking lot
2. Infill in Grocery Outlet parking lot, redevelop strip-commercial building
3. Redevelopment and through-block passage
4. Infill in church parking lot, through-block passage to public housing
5. Infill in Bartell's parking lot; small-scale retail and commercial to extend "main street" shopping district; integrated with multiple pedestrian nodes
6. Greenway connecting existing park to nodes along Lake City Way
7. Node near Dick's to build on existing conditions
8. Redevelopment; large social infrastructure node at prominent location; through-block pathway
9. Redevelopment; large social infrastructure node at prominent location; through-block pathway
10. Redevelopment; through-block pathway

Figure 45. Possible outcome of catalytic effects on social infrastructure network.

chapter 5

Results: Discussion & Recommendations

Discussion

RESULTS

The main objective of this thesis was to develop an urban design strategy utilizing the urban catalyst approach to redevelop key Pierre properties that would ignite the generation of urban coherence in Lake City. It is for this reason that this thesis investigates the strategy of generating a social infrastructure network to initiate the transformation of the urban structure of Lake City, allowing a coherent urban system to emerge. The proposed design strategy focuses on reintegrating people through the process of creating a pedestrian-oriented network of social spaces, referred to as the Lake City Commons.

The following statements reflect the lessons learned in developing and testing the proposed urban design strategy.

Viewing cities as systems embraces an understanding of complex relationships that comprise context, and better equips urban design to approach intervening in these relationships and/or processes.

The proposed strategy is based on the emerging conditions and context of the Lake City neighborhood as a car-oriented residential neighborhood with a small, park-and-walk center that stretches only two blocks along a longer, less dense commercial corridor. The City has designated the area for expanding capacity to become a more dense, pedestrian-oriented urban village in the coming years. However, existing land patterns do not support a pedestrian environment, as land uses are largely separated, and existing pedestrian amenities and social infrastructure is not connected or integrated into a pedestrian-network. Because sidewalks are largely lacking in Lake City, the opportunity exists to integrate the pedestrian realm in a more meaningful and functional way than simply lining blocks with sidewalks, which does not provide an intermediate element to link the scales. In order to integrate the

pedestrian environment in Lake City, the urban structure must be transformed.

The design concerns highlight the need for the network of social infrastructure to be authentic responses to the needs of the residents. The perception and reality of a moderately high level of nuisance crimes requires design that addresses safety by activating the public realm. In addition, the integration of social infrastructure must be done in a way that allows projects to remain viable. This may limit the size, nature, and program of social infrastructure nodes and connections, but may also prove to add value to and impetus to potential redevelopment projects.

Urban design cannot create a coherent urban system from the top-down; instead, it can support and encourage the processes that allow or stimulate a coherent urban system to emerge.

The social infrastructure network is generated at the level of the individual site. The proposed design strategy takes advantage of commodification, the fragmentation of urban lands, and the complexity of city-building by generating a flexible underlying pedestrian-oriented network to which individual sites can connect to and integrate with each other and with the public realm. The proposal relies on individual decisions at the level of the site or project to determine how to best connect or add to the network, providing flexibility in the physical manifestation of the network, and allowing it to be generated from the urban forces that shape the neighborhood.

Many cities utilize regulatory design guidelines that provide minimums for addressing the relationship of buildings to the street level, but do little to encourage the integration of the public realm across property boundaries. Some cities, such as Seattle, provide incentives for privately-owned public social spaces,

but only in dense downtown areas. This approach is relatively effective at the site level, but does not address the connecting, or relationship, of these nodes into an integrated network. In areas outside of the downtown pedestrians and cars remain pushed to the edges of blocks, and the block pattern is not filled up, but built as empty spaces and scattered building masses. Thus, the pedestrian-realm remains separated from the bulk of urban lands.

In addition, these approaches rely on top-down structure and organization. However, coherent systems are not created, but emerge. In the same way, coherent urban environments must emerge from the processes that form them, particularly, transportation systems. The proposed strategy starts at the small scale, as to

Urban catalysts are effective urban design approaches to intervening in the processes that shape the system.

Viewing urban environments as systems allows for a deeper understanding of how urban design can intervene in city-building, as well as the limits of it to do so. Although Attoe and Logan focus on the architectural aspects of catalysts to revitalize cities, the concept is easily transferrable to urban design in this context. The stimulating effects of urban catalysts are used in this thesis to intentionally redirect development processes and patterns to achieve a desired result.

Although site design is limited to boundaries, the use and design of urban catalysts as urban design approach can affect overall urban structure; however, the direct control over these effects is limited, and thus the results may be probable, but uncertain.

In theory, the strategy is effective; however, the decisions of others are always uncertain. The strategy asserts a degree of implicit control to improve the probability that a given project will integrate social infrastructure, but embraces uncertainty in terms of what and how a site will be designed.

In attempting to account for the complexities and many forces that affect decisions made in the built environment, a degree of control is asserted through the concept of the Commons and specific design of the catalyst site. Initiating the Commons provides a concept that others may grasp hold of and demonstrates the value placed in the pedestrian and public realm, thus providing impetus to surrounding redevelopment projects to follow suit. The catalyst site was designed to include "hooks", or spaces and design that allow and encourage adjacent properties to connect and integrate with.

The proposed strategy embraces uncertainty for the design of individual sites, as this avoids the monotony produced by standardization and regulations; this uncertainty forces an exploration and understanding of the unique context to which each specific node or path of social infrastructure must be designed to. Uncertainty allows urban design to be sensitive to emerging qualities and build with change in mind, and to adapt the qualities of the network as conditions change. This method guides, but does not completely control design on individual properties. Examples are given on typologies of social spaces and a method is provided on how to integrate them into the site design; however, the human-scaled design of these elements is ultimately up to the architect, designer, or landscape architect; this may not achieve the end of creating a quality pedestrian environment on each site, but may also result in a more rich, diverse pedestrian environment than prescribed methods.

CONCERNS & LIMITATION

Like all urban elements, the integration of the pedestrian network into the function of the city requires the activation of people. Thus, the specific and successful design of pedestrian spaces is critical to the function of the system as a whole.

As is documented in the work of William Whyte's The Social Life of Small Urban Spaces (1980), successful social spaces have a variety of elements such as moveable seating, food, ledges, steps, sunshine or shade, and elements that create movement and transition from the street. This last component is critical, as an intermediary relationships are needed to link the small, pedestrian-scaled spaces of sidewalks and plazas to the larger-scale of buildings. These nodes are part of the social infrastructure, referred to as active uses, and encourage movement into and within spaces. Pedestrian-scaled spaces designed without active uses are unlikely to be integrated into the network of social infrastructure.

A major limitation to implementing the design strategy proposed here in any other location is the initial catalyst site. The catalyst approach requires a property owner to have the motivation to start a catalytic reaction; the Pierre family has the desire to leave a lasting legacy for the neighborhood and recognizes that timing of their redevelopment and the potential impacts can set an example for future projects. Thus, the catalyst approach is relevant and achievable for Lake City. In other locations, and even on other properties in Lake City, a more powerful, or economic-related motivation may be necessary.

DESIGN RECOMMENDATIONS

The following recommendations for the redevelopment of the Pierre properties within the study site are based on the findings of this thesis.

- Prioritize social infrastructure. When designing sites, follow the proposed methodology to let the social spaces define the form and movement through the sites.
- Focus on small-scale design details. The successful integration of the pedestrian-netowrk into the neighborhood system requires activation by people. Concentrate on the details at the pedestrian-level to ensure active, comforting space.
- Include "hooks". Design the sites as to provide impetus for adjacent sites to continue or connect to.

Doing so will encourage the integration of social infrastructure across property boundaries.

- Activate social infrastructure. Through the thoughtful placement and design of social infrastructure, a high level of perceived and actual safety is achieved through pedestrian-activation.

The following are actions that the Pierres and the community can take to ensure a quality network of social infrastructure that is integrated into the existing neighborhood structure.

- Take an active approach. Instead of witnessing redevelopment in the neighborhood, the Pierres and residents should take an active approach in advocating the network of social infrastructure.
- Negotiate incentives. In order encourage the generation of a social infrastructure network, the Pierres and residents should work with the City to negotiate potential incentives for redevelopment projects to integrate social infrastructure.
- Include the community in the design of social infrastructure. To encourage redevelopment project to respect the community's goals and vision, it is important that residents have a level of ownership. In addition, including the community in the design of spaces helps to ensure that they are appropriate and relevant.
- Explore partnerships. Partnerships between adjacent property owners to connect and integrate social infrastructure across property boundaries. Explore partnerships with public or non-profit entities that support or enhance the generation of social infrastructure. Examples include educational institutions, the YMCA, expanding the community center, and the P-Patch program.
- Explore programming options. Particular programming options may enhance the or create social spaces. Examples include: a public market, business incubators, food hubs, art galleries, performance and studio spaces.

ADDITIONAL RESEARCH & NEXT STEPS

How can the ideas and concepts presented here inform urban design policy? The City is currently crafting an Urban Design Framework for the neighborhood center of Lake City. While this provides one opportunity to set down goals and guidelines for future development, further exploration and concrete examples on how the concepts and methods presented here can be translated into urban design policy is needed.

How can the "success" of urban catalyst projects be determined? The relative success of projects is often measured in terms of profit or longevity of the project itself. However, as one of the main objectives of an urban catalyst is to influence the development of other projects, a method or set of criteria for measuring the "success" of its influence should be developed.

What typologies design elements are influential in catalytic design? **Including** "hooks" in catalytic design to influence the design of surrounding sites may be better understood through an exploration of case studies that help to inform a method for defining typologies and measuring their influence on design.

Is there a critical distance necessary for joining social infrastructure nodes? Criteria for locating opportunity sites may include finding appropriate distances and determining other critical factors, such as sightlines, wayfinding, and creating predictability.

CONCLUSION

Through the investigation of the living systems approach, urban design, and urban catalysts, this thesis has explored the concept of coherence as it applies to cities and urban areas. Cities, as living systems, are dynamic wholes made up of the relationships between all of their components. "Healthy" systems are coherent, meaning they have the ability to maintain a dynamic balance that allows them to adapt to emerging conditions by integrating new elements and discarding those that are irrelevant or harmful. A

coherent system is one in which all elements are connected to form an integrated whole: all pieces contribute to the function and meaning of the unit through dynamic relationships. Coherence in this manner is the ability and capacity to continuously evolve and renew.

The importance of generating coherent cities will become increasingly important as threats of social inequity and climate change continue to grow and travel patterns change: coherent cities are able to self-organize, adapt and transform. The living systems approach embraces the complexity of the urban environment, instead of attempting to reduce it into pieces; doing so would disassociate an element from its functional relationships with other elements, thus stripping it of meaning.

Networks and elements need to be integrated for the city to function as a whole unit comprising of sub-units, and also as part of a larger unit. The nature of the complexity and organic growth of cities prevents a coherent city from being designed or built from the top down; for this reason it is crucial that urban design seeks to understand the complex relationships in the urban environment, as it is the context of these emergent qualities that frame the parameters of urban design. Thus, urban design should not seek to create coherence, but instead support the processes and relationships that generate coherence, and that connect and integrate people to cities we inhabit.

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