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Planning Policy and Landscape Architecture:
Street Design in Theory and Practice

by

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Report

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Abstract

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Recent trends in planning and landscape architecture are moving the two disciplines closer together, yet there persists a lack of awareness of each discipline to the other. Planning's roots in street design and landscape architecture's new theory of landscape urbanism, which focuses on infrastructure, provide common ground for a fruitful dialogue between the two – a dialogue that could have particular significance given the historical influence of design theory on streets and urban form. To investigate these relationships, this report considers the history of street design, landscape urbanism, the planning framework, and the implementation of street design in two cities, Colorado Springs and Austin. This report explores how planning and the new ideas of landscape urbanism in landscape architecture can mutually inform each other to address street design.

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Introduction

As a student of landscape architecture, I was often struck by the overlap between landscape architecture and planning and, perhaps even more so, by the lack of awareness of the two disciplines to each other, something I found particularly surprising as both are involved in shaping urban form. There is, however, increasing collaboration among practitioners, and emerging trends in both disciplines, may bring them closer together. Landscape architecture, previously focused primarily on site and form, is increasingly concerned with the process of city building, especially in the emerging trend of landscape urbanism. Meanwhile, planning, sometimes characterized as focused on issues of process, has developed a renewed interest in urban form, particularly one of the basic elements of urban form – the street.

Both disciplines, in fact, have particular relevancy to street design. Planning began as a discipline centered on streets, using street design to address issues of public health, social equity, and economic development. In current practice, planning regulations establish the basic spatial structure of the street by setting requirements for width, building setback, building height and so on. Meanwhile, landscape urbanism specifically addresses infrastructure as a critical area of activity. As an emerging design theory, it has the potential to greatly influence urban form, just as design theories and cultural ideas have historically shaped urban form. How, then, can planning and the new ideas of landscape urbanism in landscape architecture mutually inform each other to address street design?

Why is it important to consider street design in the context of planning and landscape architecture? Streets provide the basic structure of urban form, and their design through history narrates the story of the city. Streets and street patterns speak not only of technological changes in transportation, but also of notions of social equity, the environment, and the role of economic development. The street is at the intersection of ideas of public and private, of infrastructure and public space, of urban form and ecology.

All of these concepts are also embedded in planning and landscape urbanism. Planning objectives center on issues of the economy, the environment, and social equity, and landscape urbanism also focuses on these same issues in the concepts of infrastructure, ecology, and culture. Street design is then a way to focus the dialogue between landscape architecture and planning, while also highlighting their importance because of their potential impact on urban form.

To better understand how landscape urbanism and planning can come together to inform street design, two case studies will be presented. These case studies consider the planning tools that have been developed to improve street design, their implementation, and how landscape urbanism and planning together might apply in two diverse planning situations. The two cities studied exemplify two different planning environments which, in general terms, balance the public and private spheres differently; toward the private sector in the case of Colorado Springs and toward the public in the case of Austin. While both cities are trying to improve street design and have developed differing tools, they also demonstrate the constraints within which a design theory, such as landscape urbanism, must operate.

To explore the how landscape urbanism and planning can inform each other and street design, this report is organized into several chapters. To understand the potential importance of an emerging design theory, the first chapter considers the importance of street design and the role that cultural ideas and theories have played in shaping the street and urban form in general. Moving to the present, the next chapter considers a current theory in landscape architecture, where landscape urbanism's focus on infrastructure may be particularly relevant to street design. The planning framework in which landscape urbanism must operate is then discussed. To understand how street design is actually implemented, two case studies are presented: Colorado Springs, Colorado and Austin, Texas. Within each case study, the content and implementation of recently developed planning tools and programs with street design objectives are described. Finally, the lessons from these case studies are explored in the context of landscape urbanism and planning practice. By examining these case studies and considering the emerging trends

in landscape architecture and planning, this report hopes to consider how these two disciplines may together write the next chapter in the history of street design and urban form.

Chapter One: History of Street Design

Origins

While roads – derived from the Anglo-Saxon *ride* meaning passage from one place to another (Rykwert 1986) – have been around since the beginning of human settlements, Spiro Kostof (1992) asserts that the street is an invention. In fact, the word “street” derives from the Latin *sternere*, to pave, while the root of the word, *str*, is connected to construction (Rykwert 1986). Kostof attributes the first street to Khirokita, Cyprus around 6000-5000



Khirokita, Cyprus (Kostof 1992)

BC. Paved with limestone, it navigated the ascent of a hill and descended to a riverbank.

Many elements of contemporary streets can be found in the ancient past. The differentiation of streets began in Beycultan, Turkey (1900-1750 BC) where arterials differed from residential streets. Meanwhile, courtyards and lanes with a similar character could be found in Hacilar, Turkey (Kostof 1992), a pattern not dissimilar to the contemporary *woonerf*, a shared pedestrian-vehicular street popularized in the Netherlands. Features that we now associate with streets, such as the sidewalk, began to appear in ancient streets such as Kultepe, Turkey (2000-1900 BC). Ample sidewalks 12 feet wide were included along the 50-foot wide streets of the Etruscan city of Marzabotto, founded in the 5th century B.C. of what is now modern day Italy (Kostof 1992). Drainage was included in the Etruscan and ancient Greek streets (Kostof 1998). The Roman street prefigured the contemporary street with its elevated sidewalks, curbs, and layered construction method of flat stones, crushed stones, gravel, and coarse sand mixed with lime (Southworth 2003). An early example of uniform street facade can be found in the colonnaded avenues of 1st century BC Greek towns (Kostof 1991).

Clearly the basic elements of streets have been with us for quite some time. But these elements and many others combine to give character and identity not only to street

itself but to a city. In the words of Jane Jacobs, “Think of a city and what comes to mind? Its streets” (Fyfe 1998, 1). This is not surprising when considering that streets comprise 30-35% of the city surface (Wolf 1986) While Roman streets may have been a prototype of the contemporary street, we know intuitively that its character differs dramatically from many modern cities. The difference lies in its physical dimensions, geometry, adjoining facades, use, and its overall role in the urban fabric. These differences are not accidental and stem not only from obvious changes in transportation technology but also from different attitudes of the role of the street as a junction between the public and the private, ranging from the public interest in designing winding medieval streets as a defense against an invading enemy to designing broad modern streets as an efficient machine for the movement of private vehicles.

Public Meets Private

Indeed the development of the street itself has been linked to the evolution of the concepts of public and private. Levias (1986) notes that streets did not exist in the hunter/gatherer community where there were no strong boundaries between public and private, and villages were generally circular and worked as a unit for resources. Rectangular homes and the accompanying streets appear when the family and not the village becomes the unit of production. Religious and political leadership also develop and some linear streets may have historically indicated social organization and status according to placement along the street. “The emergence of the street seems to symbolize or express a gradual awareness of the separation of private and public, family and larger community... [it] is vital to the emergence of the city and of civilization” (Levias 1986, 230-232).

A medieval city wall in turn would indicate the unity of the larger community and the blending of public and private on the street where there was less division between the workplace and the home and between the workplace and the street. At the same time, streets began to become specialized, at first according to guild, while still retaining a mix of home and work, and later according to separated land use – residential, commercial, and entertainment (Levias 1986).

Communal Reflections

Streets and their larger patterns have historically reflected the larger communal framework. In Assyrian cities they became the object of planning as main streets were laid out in tandem with the formal arrangement of public complexes. Street patterns would indicate political and social order in the Roman grid, typically reserved for colonies and capitals and not for small provincial towns. The power of the empire can be seen in the construction practice of Roman towns in Gaul, which were built as *tabula rasa*, literally leveling the ground (Kostof 1991, 125). Other expressions of the public can be found in the recommendations of Vitruvius in the first century A.D., which advised for public health reasons that climatic conditions be considered when laying out streets and homes, orienting them to counter and not accentuate prevailing winds (Spirm 1984).

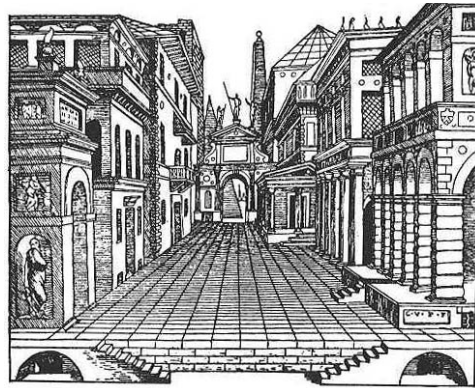
Street Design Regulation

Perhaps the most emblematic form of the negotiation between public and private is street design regulation. There is a long history of street design ordinances in various cultures. Muslim laws declared such street edicts as minimum widths and clearance of 10.5 feet, jointly owned cul-de-sacs, and no trees in right-of-way (Kostof 1991). Kostof (1992, 200) cites the “celebrated building codes of city states in medieval Tuscany” and describes the reclamation of streets and public places that had been appropriated by noble families for defensive wards as one of the principal tests of nascent self-governing city-states (1991). This new public focus reordered the Roman grid that had been lost by private encroachments (Kostof 1991). Since 1349, elected officials in Florence were responsible for keeping streets clear, ordering demolitions and enforcing design criteria. Streets once again became the basic unit of urban form, and “the primary requirement of a beautiful street was regularity – a smooth paved surface, a consistent slope, and linear clarity. Straightness was a virtue” (Kostof 1992, 213). Aesthetics, however, differed, and were codified accordingly: wide and straight in Florence, while curving in gothic Sienna (Kostof 1991).

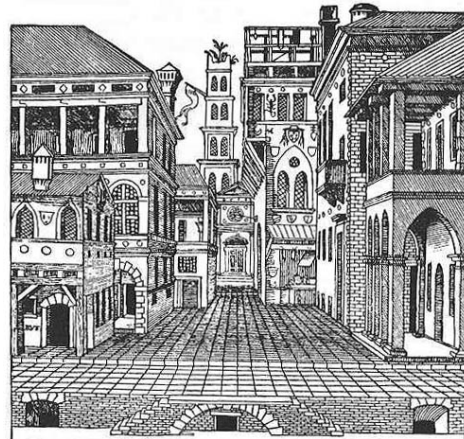
Regulations in the 18th and 19th centuries considered street elements that are commonly regulated today, but also others that have only recently come into focus in contemporary discussions of street design ordinances. There were regulations on signage in 1834 London, and in 1845 Paris, sidewalks became mandatory. In 1835 and 1855, Dusseldorf set minimum height requirements of two stories, contrasting with the contemporary focus on maximum height. Maximum height restrictions appeared in London but were associated with street dimensions: two stories on by-lanes and four stories on principal streets. Nuremberg set strict limits on ornamentation and required an undeviating building line. Continuous building lines requirements were also made in 1714 St Petersburg by Peter the Great, infractions of which were punishable by the rod; in 1683 Philadelphia by William Penn; and in colonial Williamsburg, Virginia (Kostof 1992).

Theatre of the Street

The early regulation of street design reveals the communal, social aspect of streets as a theatre of life. The identity and association of streets with human drama were particularly apparent in the Renaissance interpretations of Vitruvius' three street scenes



Tragic Scene (Vidler 1986)



Comic Scene (Vidler 1986)



Rustic Scene (Vidler 1986)

by Sebastiano Serlio, described as the tragic street, public buildings in the classical style; the comic street, residential buildings in a less formal and gothic style; and the satiric street, a rural path through the woods. Streets were seen as the stages for social life. Palladio literally transcribes Serlio's images 25 years later in the Teatro Olimpico in Vicenza: the stage is comprised of three streets through a combination of set and backdrop in a perspective tour de force – the street as theatre of life (Vidler 1986).

Accompanying this recognition of the social aspect of streets was an interest in designing the “set,” the theatrical backdrop that a street provided for everyday drama. Alberti classified streets inside and outside of town, recommending that city streets have uniform doorways and building heights with arcades or arches at crossing points and porticoes along major streets. Palladio repeated Alberti's classification and recommended that major rural roads be lined with trees, that streets be broad in the city for better ventilation and views, and that porticoes be provided for shelter. In essence, the tragic street was becoming specified (Vidler 1986). Vidler notes that the tragic street would become the preoccupation of planners and architects for the next three hundred years as a manifestation of the state, while the comic scene **Tragic Scene (Vidler 1986)** would be contained or transformed by planning. The rustic scene would emerge as the critique of the city in eighteenth century, the rallying stage for the transformation of the state during the Enlightenment through such figures as Rousseau, who would link the bucolic ideal to governing.

Street and the Ideal State

The urban environment and urban form have often been considered manifestations of the ideal state. Alberti “mirrored the perfection of the social state in the perfection of his architecture” (Vidler 1986, 35) through ordered geometric plans intended to reflect ordered perfect governance. Thomas Aquinas stated that “building cities is the duty of kings... communal existence makes it possible to extend help to one another, and to share mental tasks, with one person making discoveries in medicine and other in other things. But above all city living leads to virtuous living; cities are necessary for the virtuous life, which means the knowledge of God” (Kostof 1991, 110).

Street patterns also reflected the aesthetic values of the state; Alberti noted, “the principal ornament of a city is the orderly arrangement of streets, squares, and building according to their dignity and their function” (Kostof 1991, 131). This perception of the city as the diagram of an idea was also influenced by advancements in scientific surveying. They allowed detached study of the city as patterns whose elements could be idealized. It could be crafted as “ideal theatre environment in order to reflect the tempered dominion of the prince” (Kostof 1991, 224). The relationship of social order to the environment also came to be seen as reciprocal – surroundings could determine character and so changing the environment would change the state of mind, thus the princely preoccupations with city building and rational form (Vidler 1986).

Baroque and the French Pleasure Park

One of the models for bringing about a change in the environment and thus a healthier community was the French pleasure park. Laugier, a critic and historian, wrote in 1755 “Let the design of our parks serve as the plan for our towns” (Kostof 1991, 226). The French pleasure park with its accompanying hunting grounds was generally created on vast tracts of land for a single client. Ideal geometries were carved into the land and represented “the full play of Enlightenment reason on nature, the real site of the ideal city of philosophy” (Vidler 1986, 37). The tools for creating and maintaining gardens such as Le Notre’s Vaux le Vicomte were to be liberally applied metaphorically to the city: Paris was like an immense forest and that could be cut and pruned (Vidler 1986) with the street as the grand straight allée of the park-city. Just as a French park was the work of one supreme designer, the city could be re-made through consolidated power. One of the symbols of this absolute power would be the diagonal boulevard cutting across the grid, or in some cases maze, of the city. Kostof (1991) notes that European practitioners would commonly adopt the French perception of the equivalence of landscape architecture and urban design, and this belief would persist despite the introduction and popularity of the English garden in the second half of the 18th century.

Tree-Lined Boulevards

The transformation of the city from wild land into well-pruned and well-groomed park included a literal representative of the park – the tree. The tree-lined boulevard, however, is also a descendent of the tree lined city rampart, where trees were used to hide the precise edge of the city. A school of landscape designers specialized in the greening of ramparts during 19th century Netherlands. The boulevard’s close cousin, the avenue, originated in the country where roads were lined with tall trees “to distinguish them from the surrounding landscape of leafy forests, low hedges, and field of crops” (Kostof 1991, 249). When the medieval city wall of Paris was leveled, the tree-lined ramparts became public promenades, just as garden allees become the domain of pleasure carriages. Indeed, some allees literally extended out into the city, as did the predecessor of the Avenue des Champs-Elysees, the Avenue des Tuileries of the 1670s. While trees had been advocated by Palladio along major rural roads, the urban tree-lined avenue would become a standard of French urban design. By 1870 Paris would have 80,000 street trees provided by its own nurseries (Kostof 1991, 229).

Medical Metaphors

Pierre Patte developed a plan for Paris in 1765 that corresponded to the formal idea of the city as park in every detail, but it also introduced another metaphor – the ailing body and the surgeon. The Renaissance principles of design were based on the image of man in harmony with the universe; now the city was to be rebuilt in the image of man but one that was ailing and needed to be diagnosed and treated. In Patte’s plan this treatment would include the ideal street, complete with pedestrian and vehicular movement, sewage disposal, drainage, shelter, fresh water, and public amenities such as public conveniences and benches (Vidler 1986). The medicinal metaphor would become one of the city as both patient and cure for social ills transmuted to the scale of the citizen. “The city would then take on its rightful role as the site of health and its sustenance, and the street, the public room par excellence, would retrieve the civic and festive functions of a more natural age. The citizen would rise from his private sickbed

and join his liberated peers in procession” (Vidler 1986, 42). It was the eve of revolution and not just the French revolution, but in perceptions of the city and the street.

Return to the Countryside and Utopian Structures

Rousseau’s ideas were a variation of the Enlightenment belief that the environment does have an effect on character: the crowded, unsanitary conditions of urban streets necessitated a return to the country. These ideas were taken up by Ledoux, whose ideal town was set in the country with streets supplanted by rural paths connecting isolated buildings in the country. The portico then became the architectural equivalent of the street, mediating between rural path and public building (Vidler 1986).

Back in the city, Fourier proposed, the gallery street, not the portico, as the mediator for society. Providing connections throughout the city and protection from the elements, it was proposed as a utopian structure that would solve the social ills of the time, “a binding catalyst for the whole” (Vidler 1986). The theme of connection through infrastructure would evolve into a movement inspired by Henri Saint-Simon, not out of social reform motives, but primarily for the development of industry, although proposed infrastructure was not seen as strictly utilitarian. The series of roads and canals to be built across France were seen as public amenities: “their construction ought to be worked out in order to make them as pleasant as possible to travelers” and were to include artists’ homes and musicians: “the whole of France should become a superb English park, embellished with everything the fine arts can add to the beauties of nature” (Vidler 1986, 59). A complete drainage system was provided for the capital and a transportation connection made to Marseilles. The extension of the east-west axis through the city by cutting the city fabric resembled previous plans by Laugier and Patte but were primarily motivated by technical considerations, not aesthetic. The biological metaphor continued as advances were made in science, as seen through calls to provide Paris with lungs. In this vision of the city, the biological metaphor was not at odds with industry, but rather industry would power “the ‘new living city’ rising out of the morass of the old” with an invigorated populace promenading down the wide, arcaded, galleried tree-lined streets (Vidler 1986, 60).

Meanwhile in Great Britain, as early as the 1830s other design features were popularized with the introduction of avenues and boulevards with storm drains and sewers, paving, house numbering, mail boxes, and sidewalks (Kostof 1991). The link between the environment and moral character was drawn very closely with the work of Robert Owen, theorist, reformer, and industrialist. His proposals for model towns eliminated streets as well as alleyways and courtyards as a means of eliminating the vices associated with these places. Instead, the monastic precinct and college courts were the models for communities (Vidler 1986).

Conversely, James Silk Buckingham, another reformist and a member of the British Parliament, considered the street, in its idea form, in the context of a model town. His comprehensive proposal for Victoria included not only a detailed physical plan, but codes of behavior and municipal and cultural institutions that would all come together to treat social and personal ills. The most essential component consisted of nested streets that corresponded to class and use and were linked by diagonal avenues that lead to the public square. With no blind alleys or winding streets, there would be no place for criminal activity. The Victoria plan of 1849 played “a critical role in the formulation of Victorian urban ideals and the practice of reform” by bringing forth the ideal of a model, “a systematically conceived and synthetically designed structure for the sustenance of morality” (Vidler 1986, 67).

These utopian proposals were made against the backdrop of unsanitary urban conditions, which lead to cholera outbreaks and epidemics. Precincts and streets, indeed a particularly street type – narrow, dark streets – were linked to not only disease and illness but to a social class and eventually revolution. Were the streets the symptom or the cause of social ills? The myth that social ills could be cured by a rational plan and a reshaped environment was challenged by Engels, who put the blame squarely on the economics of the industrial system in his writings of 1845. His was “the first systematic attack on the Enlightenment vision of progress” and revealed that the environment alone was ineffectual at transforming the social order (Vidler 1986).

Revolt in the Streets

The street as a political space is perhaps most epitomized by the barricades used during the upheavals in Paris from the late 18th century to the mid 19th century and by the later work of Haussmann in the 1860s. The street was a symbol of control, thus the eruption of control over the street. Among the first acts of the French Revolution in 1789 was the sacking of the recently erected toll gates at the city walls. After first appearing during in the French Revolution in 1789, barricades blocked public streets in Paris in 1827 in celebration of the fall of Villele, a royalist active during the Bourbon Restoration, and again in 1830 were they were formed part of the theatre of protest. By 1832, the barricades were clearly used as a fortress, defining a boundary around almost a third of Paris where the residents that knew the labyrinth of streets could defend and ambush. In the revolution of 1848, the construction of barricades had become specialized as a small group of men skillfully designed and built even larger barricades that divided Paris in half along class lines (Vidler 1986).

Haussmann's Boulevards

Under Napoleon III, the many Enlightenment plans for a new Paris were taken in hand by Baron Haussmann. Haussmann advocated boulevards for public health, aesthetic, monumental, and above all strategic reasons, specifically the fear that the revolution that had barricaded the streets and brought the emperor to power could also unseat him. Urbanism would be the hope against revolution and poverty with the new boulevard as its agent, “the most urban product of the nineteenth century, and its final apotheosis; a tool of social, moral, and governmental progress; a monument to the ideal of a city as well as the site and provocation of its febrile economic life; a vista, a path of movement, a defense of order, a home for the alien crows of the urban landscape; the very epitome of social life as well as its implied critique” (Vidler 1986, 87).

This transformation was effected through new developments of photography and cartography that allowed for the visualization and mapping of the entire city (Vidler 1986), not unlike the influence of technological developments during the Renaissance. These technical accomplishments combined with the persuasiveness of the biological

metaphor of the surgeon – the need to remediate the areas of insurrection by cutting a large swath through areas of insurrection – to reshape the capital of an empire that required efficient service and infrastructure for commerce, industry, finance, and employment.

Paved with new macadam, lit with the latest design of gas light, carefully planned to separate pedestrian, stroller, loiterer, ambling service vehicle, and rushing carriage, planted with rows of trees to ensure shade in summer, provided with underground piping for rain water, sewage, and gas, cleaned with the aid of scientifically designed gutters, faced by the uniform height of the residences and stores of the *nouveau bourgeoisie*, and carefully sited to point toward a monument or vista as the object of civic pride or aesthetic pleasure, the boulevard of Haussmann was in effect the epitome and the condenser of Second Empire daily life: the modern artifact par excellence. (Vidler 1986, 94-95)

Standardized street detailing – benches, lamps, railings, paving drains – reinforced the city’s identity as uniformly governed. Considered from both the small and the large scales, the boulevard was conceptualized as an aesthetic entity that culminated visually in a monument or beautiful perspective. Boulevards cut through the city leading to redesigned picturesque parks and gardens, providing cultivated respite from the once wild forest called Paris (Vidler 1986).

While these changes had become codified as boulevard design in 1859 (Kostof 1991), by the 1870s they were not universally praised. Zola saw the surgeon’s cut as leaving Paris bleeding and prey to speculation that “tore asunder the entrails of the enormous city” (Vidler 1986, 97). Boudelaire lamented the loss of the street with its picturesque curves, supplanted by long, straight, wide, and cold boulevards – the “grand arteries.” While some found comfort in the anonymity of the new urbanity characterized by the boulevards, others decried its isolation, and a new metaphor would appear in portrayals of the boulevard – the desert. Zola lamented, “the avenue seemed unending. Hundreds of leagues of nothingness; the end of the road eluded him. The lanterns, lined up regularly spaced, with their short yellow flames, were the only life in this desert of death” (Vidler 1986, 100).

Despite Haussmann's wide boulevards, workers once again erected barricades across Paris during the brief government of the Commune in 1871. Most, however, did not equal the scale or solidity of 1848, and without a comprehensive strategy of defense, the embryonic barricades were ineffectual. Many thousands were put to death after this revolt, and every destroyed building was replaced with one in the same style. The fragments of urban utopianism and communitarian idealism disintegrated, and hopes for a new society returned to the countryside. William Morris and others repeated the call of Rousseau to return to nature, to abandon the city, and to fulfill the "dream where the great divides of mechanical civilization were closed, the inhuman isolation and fragmentation bound up in a world of natural unity" (Vidler 1986, 106). If cities were retained, at most they would be reserved as a place of work. This call would echo throughout the 20th century, but first a brief look at urban design developments in the US in the late 19th century.

Hausmann's American Counterpart: The City Beautiful Movement

Charles Mulford Robinson, the author of *Improvement of Towns and Cities* published in 1902, greatly influenced the City Beautiful movement of the 1890s and early 1900s. As its name indicates, the movement promoted the beautification of cities, particularly as a source of civic pride, through monumental construction of public buildings, civic centers, parks and boulevard systems, but it also advocated ordinary street improvements, paving, street furnishings and plantings (Southworth 2003). Its design images of classical buildings were widely disseminated through the Columbia Exposition in Chicago in 1893 (Campbell 2003), while Daniel Burnham's plan for Chicago demonstrated the scale at which physical planning could occur. While the movement has often been perceived as taking a purely aesthetic approach, Robinson also focused on the importance of neighborhood and practical considerations, particularly the impact of streets. He advocated the greening of cities through street planting in addition to parks and natural scenic areas. He wrote a comprehensive book on city street design, from platting to curbs and gutters, and expounded on the importance of the "consideration of the width and arrangement of streets...all currents of life, all the grades

of society, are intimately affected by the problems it includes. The joy and pain of urban existence, the comfort or hardship of it, its efficiency or failure are influenced by the wisdom or the thoughtlessness with which streets are platted” (Southworth 2003, 57-58).

The Garden City Movement and Modernism

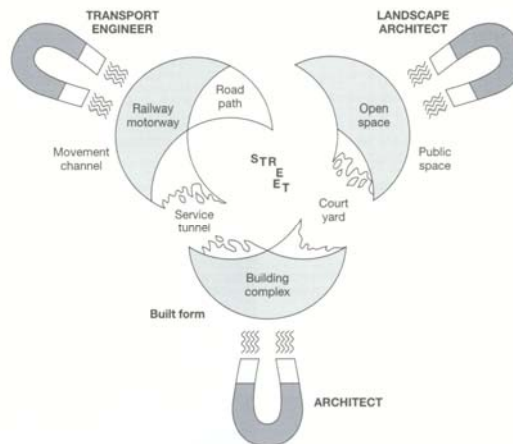
The tendency toward specialization wrought by the industrial revolution would deepen, but the dreams of a rural utopia would also persist, at least at the level of private individual or residence. These two strains – that of embracing the machine age and of escaping the city to pastoral life – would run through much of 20th century city building. Modernism would embrace the machine and specialization while the Garden City Movement would advocate healthful living in a garden setting. Both, however, would have elements of the other and each would lead to a particular street type.

The Garden City movement can be viewed as a continuation of social responses to urban disorder. In England, narrow lots that had originally allowed garden and animal space in the back of street frontage, known as burgage plots, were converted into hidden slums in the 19th century as tenements were built on garden plots behind fashionable residences. In New York City, the Tenement Housing Act of 1879, requiring minimal light and air, did not meet its intended purposes and instead resulted in 80% coverage of the narrow, deep lots with shafts allowing little ventilation and natural light (Kostof 1991). With such conditions, there was great interest in finding a new model, and Ebenezer Howard widely disseminated ideas of balancing the town with the country in his 1902 publication *Garden Cities of To-morrow*. These ideas would be championed by influential planners such as Raymond Unwin, who designed the Hampstead Garden suburb, an early example of the 20th century suburb. Unwin was also influenced by the work of Camillo Sitte, author of *City Planning According to Artistic Principles* 1889, which praised the architectural characteristics of medieval streets and discussed the need to consider the aesthetic and psychological aspects of the street and not only functional requirements (Lillebye 2001). He criticized the emerging standardization and formal, geometric urban patterns, considering informal, irregular patterns to be more in tune with human aspirations (Southworth 2003). Unwin noted the need for spatial enclosure and

visual variety (Kostof 1992) and detailed the typological significance of a variety of streets (Lillebye 2001).

The trend in typologies and specialization, accentuated by the industrial age, would find one expression in cities through the distinction and separation of residential and commercial/ manufacturing uses. As one New York City planner noted in 1870, the first was governed by topography while the latter was made straight for efficiency (Kostof 1991). If industry was a necessary evil, then cities were considered as reserves for work while the common man could receive the salutary benefits of a rural residence. With the focus on residential areas, certain elements that had been considered urban were employed. In the 1900s, boulevards connected parks in the periphery and became associated with genteel residential areas as part of boulevard/parkway systems. Correspondingly, street trees were considered features of residential areas rather than town centers (Kostof 1991). Specialization according to function, a hallmark of modernism, had found its way into the Garden City movement.

Modernism embraced specialization and called for design in which form followed function. In the case of the street, its function would be narrowly defined as facilitating vehicular transportation, and, thus, its design would be eventually ceded to the realm of engineering. The street's other functions as built form and open public space would no longer be considered as they, too, would be separated from the street, as the disciplines involved in their design, architecture and landscape architecture, also became specialized (Marshall 2005).



Modernism's division of the street (Marshall 2005)

One of the most outspoken critics against the very concept of streets was the architect Le Corbusier (1887-1965). “It is the street of the pedestrian of a thousand years ago, it is a relic of the centuries: it is a non-functioning, an obsolete organ. The street wears us out. It is altogether disgusting! Why, then, does it still exist? ...[The street] is in reality a sort of factory for producing speed traffic...We must create a type of street which shall be as well equipped in its way as a factory” (Gold 1998, 48). As in other eras, ideas about design reflected societal changes and advances in the sciences. Advances in the biological sciences that figured prominently in the public mind during the Enlightenment had given way to a fascination with mechanistic and engineering marvels – the street as a biological system had become the street as a machine for movement and speed.

Le Corbusier’s proposal for a new type of street was in essence a proposal to deconstruct the street into its functional components, isolating them into their own individual systems. The street would function as transportation corridors that facilitated high-speed travel. The building would no longer be tied to the street but could be divorced from the traditional building line and treated independently as an object. Pedestrians would circulate among these object/buildings in a garden setting separate from any vehicular traffic. This particular aspect, the transformation of urban places into tranquil precincts, oddly echoed the return to the country made by early theorists. Le Corbusier’s intent was in fact to transform “the city into a green park in which the inhabitants would live in a natural and healthful setting that at the same time would accommodate the automobile” (Ellis 1986, 117).

Many US cities exhibit qualities of both the garden city and modernism: specialized, high speed highways, buildings that sit as objects in the landscape, the suburban equivalent of the idyllic countryside, winding suburban streets that are distant cousins of picturesque lanes. With the focus on the automobile, with rare exception, the separate pedestrian circulation was lost. The proliferation of this model was encouraged through national standards and guidelines.

Standardization

The first impetus of standards in the US was actually to control speculative developers. The 1932 President's Conference proposed detailed regulations for street design that specified such items as the right-of-way (60 feet even then), road width (only 24 feet), sidewalks (4-6 feet), setbacks, block length, and even tree species. The Federal Housing Administration, established in 1934, had an enormous influence in perpetuating standards as it provided financial assistance and mortgage insurance for millions of homes. It was also run by real estate and banking representatives sympathetic to the development community. Establishing standards supported established builders and enabled them to construct on a large scale. Initial guidelines and principles gained in specificity, and while some statements read as recommendations only, the reach and financial power of the FHA would make them standards. By 1946, curvilinear, cul-de-sac, and court streets were strongly favored, while gridiron patterns were discouraged. When localities were given the power to write their own subdivision rules, many opted to adopt FHA standards (Southworth 2003).

Other organizations would influence street standards over the years. The Urban Land Institute, a nonprofit research group for the building and real estate community, advocated narrower streets, primarily for cost considerations. The National Association of Home Builders questioned the need to design all streets to the same standards and recommended a street typology. A flawed but influential study by the Institute of Transportation Engineers (ITE) would advance this cause by citing higher accident rates for grids patterns over cul-de-sac, T-section patterns. The 1965 ITE standards listed quantifiable standards but also stated the importance of variety and improvement. Despite this provision, the standards have been widely used by local agencies and public works departments (Southworth 2003).

New Urbanism

Criticism of the singular functional approach to streets has come from many corners over the years. Jane Jacobs' influential book, *The Life and Death of Great American Cities*, eloquently described the multifunctional role of the neighborhood street.

Numerous studies and articles have been published that link the singular, functional approach to streets and land use to a sprawling development pattern with its attendant environmental problems, increased transportation demands, and deterioration in quality of life. One response to these issues has been the development of New Urbanism. New Urbanism first espoused a return to traditional street and building patterns, which included such features as narrower streets, a mix of uses, a pedestrian orientation, and harmonious design of building and spaces. Originally associated stylistically to traditional forms, it has since broadened to include a variety of architectural forms. The multi-functional role of the street, particularly as public space, is central to New Urbanism, and its precepts have been translated into mixed use development and traditional neighborhood development zoning ordinances in many communities throughout the country.

Green Streets

The increase in awareness of the relationship between ecological systems and urban patterns has also prompted the emergence of Green Streets. These streets generally place particular emphasis on the ecological functions of the street. Stormwater quality and quantity are addressed not through engineered systems, such as curb and gutter configurations and concrete detention filtration systems, but through bioswales, wet ponds, and pervious paving. By grounding streets in the local landscape, Green Street concepts also improve habitat, provide unique street identity, and offer an aesthetic experience of the street. By becoming more localized, Green Streets are also inherently more connected to the larger ecosystem and landscape. One of the innovators in Green Streets has been Portland, Oregon, which has published a design manual detailing principles and construction guidelines for green street features (Green Streets 2002).

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Spiro Kostof (1992) remarks that the balance between public and private is culturally defined and changes over time, and corresponding the street, as the intersection between public and private has also changed over time. As a fundamental element of urban form, the street has shaped cities, and its design has expressed military, political, economic, social, technological, and environmental beliefs. It has tacked between singular, utilitarian approaches and multi-functional, aesthetic treatments. At the beginning of a new millennium, what beliefs and theories will shape the design of the street?

Chapter Two: Landscape Urbanism

As cities consider the role of streets in shaping the overall life of the city, one question that might be posed is why look to current landscape architecture theory. An obvious reply is that landscape architects are frequently involved in not only designing streetscapes but also developing plans for new streets in new developments. Landscape architects are trained in the practical matters of topography, drainage, road construction, detailing for street tree planting, and so on, but not necessarily the overall impact of a new development on a city's transportation network, watershed health, service levels, and so on. Planners are trained to consider the impacts of a development proposal and the long term, general welfare of a community. But this is changing. The impact of design, whether in reinvigorating a downtown or moving toward sustainability, has become a standard topic of discussion among planners. As planners consider design standards, landscape architects are looking at the larger impact of their work on a community and the environment and are particularly influenced by scientific developments in landscape ecology. Ever more frequently, these efforts by both planners and landscape architects are made in a collaborative environment.

The principles of landscape design have been used in city planning in the past, particularly in the employment of streets as a tool for shaping the urban form. As previously mentioned, during 18th century France the city was regarded as a garden or hunting park, with Paris figuring as the wild forest that needed to be tamed by cutting wide boulevards and providing order, reflecting the formality and considerable control exercised over nature to create the French pleasure park. Here the garden or park is seen as metaphor for the city, just as many other metaphors have been employed since, though this comparison did contribute to the literal greening of Paris through street trees. While some critics have remarked that some of current landscape theory rises only to the level of metaphor in application, there have been more literal unions of city planning and landscape architecture.

In the not so distant past, landscape architecture and modern city planning were synonymous in the figure of Frederick Law Olmsted. Practicing in the mid to late 19th century, Olmsted is considered a father figure in both disciplines. Perhaps his most celebrated work is New York City's Central Park, but his other very well-known projects include Chicago's Riverside suburb, Brooklyn's Prospect Park, and the Back Bay Fens in Boston, as well as many others. His firm continued under the direction of his son and nephew, proposing and designing parks, parkway systems, and developments for many cities across the US. The Back Bay Fens project in Boston, in particular, has been a very influential project and continues as a model for landscape architecture, exemplifying some of the principles of landscape urbanism. The project was designed to function as infrastructure, addressing drainage and sewage issues; as ecological intervention, working with the natural system of tidal flats; and as recreational area, incorporating multi-modal trails that tied into a greenway system.

Ian McHarg is another figure studied in both landscape architecture and planning history. His advocacy of the environment in the 1960s and 70s – articulated in many television appearances and in his popular book, *Design with Nature* – was very influential in both disciplines and in the development of the environmental movement. His system of overlaying representations of various ecological systems is still in use today in both disciplines through its modern incarnation as Geographic Information Systems.

Planning and landscape architecture have intertwined before, and one of the most prominent theories, or perhaps trend, currently in landscape architecture that may follow in that direction is landscape urbanism. Clearly, the name alone alludes to a union of both landscape architecture and city planning. Landscape urbanism focuses on the urban spaces frequently forgotten by the design community: the interstitial spaces between buildings, vacant and abandoned areas, and infrastructure – streets. Charles Waldheim, who first coined the term landscape urbanism, notes, “Contemporary landscape urbanism practices recommend the use of infrastructural systems and the public landscapes they engender as the very ordering mechanisms of the urban field itself, shaping and shifting the organization of urban settlement and its inevitably indeterminate economic, political,

and social futures” (Waldheim 2006, 39). This statement refers to several ideas threading through discussions of the theory: a focus on process and correspondingly, the ever-shifting nature of urban form and use, a recognition of the many players involved in determining urban form, a focus on the temporal aspect always present in any landscape architecture project, and the vital role of infrastructure. These ideas parallel and correlate to others in planning: a focus on good process when establishing policy, particularly as policy shifts with changing populations and goals; a focus on participatory planning that includes all stakeholders; the long-range focus of planning; and the very definitive role infrastructure plays in growth and quality of life.

Several issues frequently rise to the surface in discussions of landscape urbanism: ecological processes, social and cultural needs, and infrastructure. Many writers on the topic discuss the relationships between these areas and achieving, ideally, a hybridization that responds and adapts over space and time. Folded into the discussions of ecology is its inherent capacity to localize (Weller 2006) and provide identity, while recognizing its functional capacity can potentially provide the structure of urban form. This strategy is an “an attempt to make the necessities of dealing with human impact a part of the making and generation of urban landscapes” (Mossop 2006, p. 171).

Before continuing, a few notes on the position of landscape urbanism may be useful. While landscape urbanism is frequently referred to as an emerging and even prominent theory in landscape architecture, some see it, not as a theory, but as a tool for innovation in design practice (Shannon 2006, 145), and others refer to it as an emerging discipline (Shane 2006, 59). This is particularly the case with Charles Waldheim, who established a graduate option in landscape urbanism at the University of Illinois at Chicago (Shane 2003, 4). Landscape urbanism in this respect is seen as discipline that can remedy the oversights of both planning and landscape architecture.

No doubt there is gap between the two professions of landscape architecture and planning, as planners with no training in design try to provide design guidance to neighborhoods developing neighborhood design guidelines and landscape architects with no training in planning plan major additions to municipalities. Richard Weller (2006, 71)

has remarked on the differences in scale and attitude between environmental planning, or landscape planning, and landscape design, “terms which stereotypically signify science and art, respectively. In common parlance, planning concerns infrastructure (both mechanical systems and land-use designation...design is perceived and practiced as the rarefied production of highly wrought objects... design sacrifices the scale and instrumentality of its agency, whereas that which planning gains in scale and efficacy it inversely loses in artful intent.” Elizabeth Mossop (2006, 169) also points to the schism in scale at which environmental planning and design typically operate, regional and individual site respectively, as leading to a failure to engage urbanism. Weller notes, “landscape urbanism warrants serious discussion because it alone seems theoretically prepared and practically capable of collapsing the divide between planning and design” (Weller 2006, 71).

Charles Reed (2006) looks at the changes in the economic and political conditions that affect both sides of the divide when realizing public works. Noting changes that are very well known to the planning community but which affect design as well – decentralization, deregulation, privatization, mobility, and flexibility – he describes the dynamic, adaptive, and tactical nature of projects networks, infrastructural frameworks, and management structures. This new context and the complexity of public works “move beyond a capacity for disciplinary distinction and isolation” (Reed 2006, 270) and necessitate new modes of practice.

Within the literature of landscape urbanism are calls for greater interdisciplinary collaboration, but occasionally, a certain competitive self-importance seeps through from some authors: “[there is the] potential for landscape architecture to supplant architecture, urban design, and urban planning as design disciplines responsible for reordering post-industrial urban sites” (Waldheim 2006, 46). Waldheim (2006, 39) also lambastes planning in particular on occasion, decrying its “ineffectual enclaves of policy, procedure, and public therapy,” and betraying a certain level of misunderstanding of the goals and framework of planning, ironically in areas that landscape urbanism has incorporated into its general approach. Nevertheless, Waldheim (2006, 51), later

commenting on recent large scale projects, notes that their “scale and significance demand professional expertise at the intersections of ecology and engineering, social policy and political process.” Landscape architects, planners, and other professionals will undoubtedly continue to work and collaborate with greater frequency and intensity as interdisciplinary work becomes increasingly the norm in almost all fields of a postmodern world.

History of theory

“The origins of landscape urbanism can be traced to postmodern critiques of modernist architecture and planning” (Waldheim 2006, 37). As the problems with urban sprawl became increasingly manifest and cities grappled with deserted urban cores in a post-industrial economy, one question posed was “how should once mighty cities shrink and recede back into the landscape?” (Shane 2006, 58).

One response came in the form of a conference and exhibition in 1997, organized by Charles Waldheim, entitled “landscape urbanism.” Referring to the changes in urban form, from the vertical to the horizontal (Waldheim 2006, 37) and from architectural form to landscape, the term would also be used to describe the leftover voids of the decentralizing city – the interstitial spaces. This conceptualization of city making was influenced by James Corner, Waldheim’s professor at the University of Pennsylvania. Corner emphasizes the processes that shape urban form and views the “voids as ‘constructions’ produced by an industrial logic and as reserves of ‘indeterminacy,’ places of potential action” (Shane 2003, 3). This view emphasizes strategy, an open-ended system rather than a particular form, and design for adaptability.

Ecology and Landscape Urbanism

Not unlike urban theories in other eras, landscape urbanism reflects changes in scientific understanding in particular landscape ecology. Landscape ecology was first coined in Germany in 1939 by Carl Troll and was an established discipline by 1980. It is the study of relationships, particularly the spatial and temporal aspects, between landscape and ecological processes, including those caused or influenced by man,

whether landscape or process. Landscape urbanism's focus on process and open-endedness can readily be traced to ecology's study of process and its shift to an open-ended system model. Thriving systems exhibit qualities of adaptation, appropriation, and flexibility (Reed 2006) – terms and concepts also gaining coinage in landscape urbanism. Tools used in landscape ecology, such as aerial photography and GIS, have also been adopted by landscape urbanists such as James Corner (Shane 2003) and are now regularly used by landscape architecture students.

Ecology and culture

Landscape ecology not only provides a scientific basis for landscape architecture, but also leads to discussions of culture, providing a new conceptual image of landscape. Landscape ecology considers temporal and spatial relationships across a landscape, regardless of agency. This necessarily includes natural and cultural systems, which in landscape urbanism means the possibility to conflate “culture and nature into a hybrid weave” (Weller 2006, 77). Because ecology is grounded in the local and the specific – the geology, the topography, the rivers and lakes, the climate – it is also aligned with issues of cultural identity and authenticity. Ecological and cultural histories for many cities are often deeply intertwined. Landscape becomes a source for local authenticity, but not merely as an aesthetic source. By rooting landscape urbanism in landscape ecology, it reveals the structural force of landscape in cultural identity. The issue of aesthetics then naturally grows out of the conjunction of culture and science in landscape ecology as it “implicitly leads to questions of meaning and value, questions of art... [creating] an association of ecology with creativity...long overdue” (Weller 2006, 74-5). Culture and nature are unified in ecology, offering a philosophical and practical framework for addressing the city (Weller 2006).

The framework of landscape urbanism also addresses the multi-culturalism of the post-modern era. Pollak (2006) notes that landscape urbanism's focus on process and change over time, which emerges from landscape ecology, also leads to a consideration of different groups. She remarks on recent projects that are simultaneously “natural” and social that form public spaces that allow differences among users to exist.

Infrastructure in Landscape Urbanism

The question of scale, an important concept in landscape ecology, continues to be discussed in landscape urbanism. Linda Pollak (2006, 129) remarks, “scale is an issue inherent in all urban landscapes that is barely addressed in design theory or practice.” As previously mentioned, the scalar differences at which, stereotypically, planning and landscape architecture have operated have provided the fertile ground in which landscape urbanism has developed. However, at the 2002 conference on landscape urbanism at the University of Pennsylvania, the interstitial and small-scale strategies of the participants were questioned (Shane 2006). Infrastructure is one response to the criticism of small-scale focus, according to Stan Allen; “he outlines an ‘infrastructural urbanism’ that is strategic, operates at large scales, and is made physical/material when it encounters the local” (Reed 2006, 281). Large scale, infrastructure projects, such as the redevelopment of a Barcelona highway system into a multi-functional public space serving cultural and transportation needs, have broadened the scalar range of landscape urbanism (Shane 2003).

The shift toward infrastructure as a major focus of design intention in landscape architecture is significant but not completely unprecedented. There is a history of parkway design in landscape architecture, beginning with Olmsted. Additionally, landscape architects have often been hired to essentially hide mechanical infrastructure or indicate where it should not be altogether. (Weller 2006) Ideas, however, of what constitutes infrastructure are changing, as Reed notes (2006) in the new climate of decentralization, with one definition specifying it as anything that is an “engineer of change..., every aspect of the technology of rational administration that routinizes life, action, and property within larger... organizations.” As definitions open up, landscape urbanism is primed to also lend its interpretation of infrastructure as landscape. Infrastructure and its integration into public space has now become a key strategy of landscape urbanism (Waldheim 2006, 45). Several articles in the recently published *The Landscape Urbanism Reader* explicitly refer to infrastructure and its components, ranging from highways to asphalt. While designers have engaged the driver’s point of

view, with many examples of scenic drives and parkways in landscape architecture's portfolio, Mossop (2006, 174) encourages designers to more comprehensively understand the scalar range of roads across the landscape and as an integral element of the urban fabric. This means considering "mundane parking facilities, difficult spaces under elevated roads, complex transit interchanges, and landscapes generated by waste processes" (Mossop 2006, 171).

Jacqueline Tatom (2006, 181) narrows in on highways and once again the potential for integration among disciplines through landscape urbanism, naming civil engineering and architecture as well. She reiterates the familiar calls to move beyond the singular functionalism of modernism to the multi-functional, emphasizing public space possibilities and citing several historical examples that once again demonstrate the union of design and planning and of natural and man-made. The Parisian boulevard, a precursor to the highway as a high-speed/high volume traffic channel, was "conceived three-dimensionally as public places," emphasizing continuity with the urban fabric. Olmsted's system of parkways and parks in Boston, known as the Emerald Necklace, achieved scalar modality through its range of local identity as well as regional comprehensiveness, containing diverse urban and natural elements. She notes that these and other examples were part of urban renovation programs in which there was a broad public mandate to address urban ills (Tatom 2006, 184).

Pierre Belanger points out the potential of considering in a new light the dominant infrastructure material – asphalt. Like streets themselves, its ubiquity has made it invisible, escaping the designer's attention. He remarks, "The contemporary discourse on landscape urbanism suggests that ongoing attention to the seemingly banal surfaces of urban operation is a crucial cultural task" (Belanger 2006, 260).

Weller notes that within landscape urbanism is a willingness to reconsider the banal. He cites the design work of West 8 whose most important threads are "such apparently uninteresting things as traffic laws and the civil code" (Weller 2006, 81). He traces this to datascares, "the visual representations of all the measurable forces that may influence the work of the architect or even steer or regulate it," as explained by Bart

Lootsma. Early examples of representing forces at work on a site can be found in the work of Ian McHarg, who popularized techniques for visualizing and overlaying the various ecological systems (geologic, hydrologic, and son on) at work at a site, and the all inclusive nature of landscape ecology, which considers cultural forces at work in a system. This reveals yet another commonality between the current practices in landscape architecture and planning – comprehensive initial conditions analysis. Weller (2006, 81) describes, “datascaping actively embraces restrictions and regulations.”

Bridging the Divide

Perhaps one of the most intriguing and rich ideas of landscape urbanism is the union of infrastructure and ecology into a culturally significant framework that responds to changing conditions over time. The potential to go beyond metaphor, where earlier analogies between the city and nature stopped, opens up many possibilities for the backbone of urban form, the street, and correspondingly for future urban form. It is “one of the implicit advantages of landscape urbanism: the conflation, integration, and fluid exchange between (natural) environmental and (engineered) infrastructural system” (Waldheim 2006, 43). Weller (2006, 73) goes one step further, noting “landscape itself is a medium through which all ecological transactions must pass: it is the infrastructure of the future and therefore of structural rather than (or as well as) scenic significance.” Redefining landscape as infrastructure also has the potential to completely change how structures in general are built at many scales, from buildings to sewers – green roofs and wetland sewage treatment preview the possibilities. “If we think of landscape as an infrastructure which underlies other urban systems, rather than equating it with nature or ecology we have a much more workable conceptual framework for designing urban systems” (Mossop 2006, 176).

Landscape urbanism’s formulation of landscape infrastructure can define the basis for urban development, preserving natural systems and regional cultures. Many examples at various scales have been cited as examples of ecology, culture, and infrastructure simultaneously at work in urban landscapes. Victoria Park in Sydney uses swales in the road system for stormwater treatment. Smaller scale projects include

establishing street trees and wetland areas in neighborhood parks, and daylighting streams. The Emerald Necklace, an early example, intertwines infrastructure, water engineering, scenic landscapes, and urban planning. Canberra, Australia demonstrates a strong relationship between city form and the natural landscape structure (Mossop 2006). The Cinturon in Barcelona has a distinct formal identity in which the scaling up and programming of interchanges includes parks and other public services and spaces (Tatom 2006). At the other end of the street scale are the *woonerfs* in the Netherlands (Mossop 2006, 174), residential streets designed not with the transportation channel as the primary and only function, but as public spaces first that also happen to accommodate traffic flow and parking.

Room to grow

As an evolving theory/trend, landscape urbanism is certainly subject to criticism – whether in areas not yet fully considered or in its application. Shane points out that there is not yet enough understanding of the urbanism in landscape urbanism, noting that it “does not yet begin to address the issue of urban morphologies or the emergence of settlement patterns over time,” linking this deficiency to its inception as a solution to urban shrinkage in cities such as Detroit rather than growth (Shane 2006, 63). There have also been questions about the role of landscape urbanism in the context of the growing appeal of higher density and new urbanism, despite dismissals on the basis of form by Corner and others (Shane 2006).

The imprecision about process in the discussions of indeterminacy may also be problematic. Mossop notes, “One of the characteristics of systems that are trying to work with natural processes is the ideas of their development over time, and the formal outcomes of projects that rely on process are difficult to predict, in a way that is often unacceptable to public agencies and other clients” (Mossop 2006, 171). The public’s hesitation may be overcome, particularly with the growing awareness of ecological processes acting over time as in the case of global warming. However, imprecision about process may lead to a disregard of the framework in which processes act and its consequences. While the outcome of a public meeting may be unknown, the framework

in which the process takes place can significantly affect the results. So in landscape urbanism, what does process actually mean? Some have critiqued the reliance on description of ecological processes in some landscape urbanists' proposals – description appears to amount to projected realization without enough consideration of the parameters of those processes and the management that may be required.

One of the dangers of the imprecision in discussions of process, lumping all processes together into a biological format, is the reduction of ecology into a metaphor. Alan Berger's (2006) characterizes the unused, leftover areas of cities as inherent to the organism of the city. While it is useful to call attention to the inherent waste generation of any city, it seems almost irresponsible to call brownfields and other areas inevitable because of an inherent, "genetically" coded process, thereby hiding the real decisions and policies, or lack thereof, that lead to their creation. Kevin Lynch noted that the city is not an organism, but is created by people for people (Kostof 1991). People can change their minds and their behavior.

The imprecision about process may also bleed into general analysis. Weller (2006, 82) notes, "Much landscape architecture, while paying lip service to site analysis data, does not in fact work with the data carefully enough and allow it to come forcefully to the surface." This may be masked with through the visualization of data through datascaping and a tendency to lean on graphic representation, a tendency that Weller ascribes to Corner. Weller's suggestion is to utilize McHarg's data-driven yet deterministic approach and Corner's understanding of the power of representation and "conjoin McHarg and Corner and ground both" (Weller 2006, 77).

The process of visioning in planning may provide some clues to teasing out particulars of process and indeterminacy. The focus on visioning in planning, particularly as applied to master plans also has a corollary in landscape urbanism. Referring to previous approaches to master planning, Weller (2006, 83) remarks, "Instead of master plans, which guide the arrow of time to a fixed point, landscape urbanists, while cognizant of the whole, make partial interventions, strategic moves which might incite loops of non-linear change throughout a system. Perhaps then here is a clue for

how planning's pretences to the whole and design's preoccupation with parts can come together in a more finely tuned and instrumental landscape architecture." Visioning provides a structure that allows a master plan to adapt to new conditions. As landscape urbanism looks to build in adaptability, to allow indeterminacy, one question might be what is the underlying structure or mechanisms that allow adaptability, whether ecologically or culturally. Correspondingly, what are the relationships of these underlying structures and mechanisms to form?

Perhaps some of the most interesting design projects are actually tied to very determinant forms. Gas Works Park is an old gasification plant transformed into a public park. Duisburg Nord creates a fascinating juxtaposition of industrial and natural processes through the re-use of industrial areas as park areas. Even the appeal of the New York City High-Line project, headed by James Corner's firm, lies in the repurposing of an old rail line. Other common examples include the transformation of warehouses into residential lofts and restaurants, old residences into professional offices and restaurants. In all of these cases, the form can very much be identified with the previous function, a very modernist concept. One question for landscape urbanism might be is what permitted the adaptation of these sites if it was not the form? And what does this mean for infrastructure? A simple case in point is a parking lot: utilities placed under the drive aisles increase the likelihood that the parking areas can later be developed. If indeterminacy means adaptability, then perhaps more structure is actually needed. In the case of streets, wide right-of-ways are typically mandated precisely because of indeterminacy – the potential need to someday widen the road. But the spatial form of the street may then be sacrificed. Perhaps the question of indeterminacy then must also be cast in terms of multi-functionalism as well.

While there are still many questions under discussion in landscape urbanism, it continues to evolve with significant potential to provide a framework for collaboration among many urban professionals, most notably planning and landscape architecture. Reed (2006, 282-283) outlines four trends in current context of city building: 1) blurring of distinctions between traditional fields of practice, 2) appropriation of infrastructural

strategies and ecological tactics for new civic programs, 3) activation of multiple, overlapping networks and dynamic coalitions of constituencies, and 4) catalytic and responsive operations, referring to open-ended nature of systems. “Landscape urbanism – as a set of ideas and frameworks – lays new ground for design and urbanistic practices: performance-based, research-oriented, logistics-focused, networked. Here, the design practitioner is re-cast as urbanistic system-builder, whose interests now encompass the research, framing, design, and implementation of expansive new public works and civic infrastructures... these emergent conditions are poised to transform traditional design practices and the roles of those working in the public realm” (Reed 2006, 283).

Chapter Three: Planning Framework

Both planning and landscape urbanism consider the open-ended and the adaptable. How then does planning and landscape architecture, under the framework of landscape urbanism, relate to streets? Streets deal with the myriad intersections of public and private, infrastructure and public space, urban form and ecology. Street patterns speak not only of transportation networks, but the skeleton of urban form and accompanying forms of equity. History demonstrates that streets are directly tied to issues of public health and social equity, and planning as a discipline grew out of efforts to address these issues using street design as a primary tool. Planning and street design have both changed over the last century, responding to new theories and cultural concepts. Considering the objectives of planning and current directions in planning may help to understand how landscape urbanism and planning might produce a fruitful dialogue that improves street design. Just as landscape architecture has begun to incorporate many conditions and concepts present in planning, such as participatory methods, planning has also seen a resurgence in the consideration of design and urban form. As interdisciplinary work increases among professionals involved in shaping urban form, the planning framework provides the context for implementation of the emerging ideas of landscape urbanism.

A consideration of the basic objectives of planning can reveal how planning and landscape urbanism can relate and potentially complement each other. Campbell and Fainstein (2003) describe planners as essentially working in the negotiated territory between democracy and capitalism, between the tensions of the public and the private. This description has a familiar ring; the street has been described as balance between the public and the private (Levias 1986; Kostof 1992). This tension can be traced to the “property contradiction” in which the private ownership and control of land is at odds with the social aspect of land. The private sector resists government intrusion but at the same time needs the government to socialize control of the land – for example, building and coordinating infrastructure, helping to provide affordable housing, and coping with

externalities (Campbell & Feinsein 2003, 84). These examples reveal three major goals of planning: economic development, social justice, and environmental protection. (Interestingly, echoes of these objectives can be heard in landscape urbanism with its focus on infrastructure, a driver for economic development; culture, a component of equity issues; and ecology, a lens for dealing with environmental externalities.) Capitalism and democracy have separate agendas for land, “and the role of planning is to maintain the balance between the two” (Campbell & Feinsein 2003, 84). Planning can be described as moving between capitalism and democracy, promoting capitalism through economic development and growth and intervening when the marketplace does not provide democratic goals of equity or consider the effects on the environment, which must support both. Infrastructure becomes a key function of planning and it demonstrates the dominant tension of the capitalist-democratic society. As Kostof (1992) notes, streets directly manifest this tension between public and private interests, between access and control.

In this balancing act of planning, both at the level of the city and the street, the most important principle is a belief in the public interest. In fact, the American Planning Association (APA) lists the first of 13 Ethical Principles of Planning as, “*Serve the public interest*. The primary obligation of planners and public planning officials is to serve the public interest” (Lucy 2003, 416). This principle manifests itself as several important concerns for planners: “equal protection and equal opportunity, public space, and a sense of civic community and social responsibility” (Campbell & Fainstein 2003, 13). The following twelve principles include several common codes of professional conduct, but also reflect some of the changes that have occurred in the discipline over the last hundred years. Questions over the meaning of the public interest would also be instrumental in major shifts in the profession, and streets, as both an object and a tool for reaching planning objectives, would be scrutinized according to how the public interest was served through their design. Planning’s central focus on the public interest provides a different lens from landscape urbanism from which street design is evaluated.

Planning History

Planning as discipline has its roots in street design initiatives. The formative years of modern city planning are traditionally considered to have begun in the late 1800s -1910 with the garden city movement, the City Beautiful movement, and public health reforms. As previously noted, these movements all considered the urban form, including the street, as a basis for urban reform. Planning emerged “as the 20th century response to 19th century industrial city... an eclectic blend of design, civil engineering, local politics, community organization, and social justice” (Campbell & Fainstein 2003, 5). From 1910-1945, the practice of planning was to consider itself a discipline through institutionalization and professionalization. During this period, the rational model of planning emerges, characterized by the comprehensive plan and an unswerving confidence in the role of science – a hallmark of modernism. The era from 1945 on is generally characterized as a period of standardization, crisis, and diversification. The efficacy of comprehensive planning and the nature of the public interest were questioned. Did comprehensive planning presuppose one common public interest, and was the public interest actually addressed or were only powerful interests really served? These questions arising from such debacles as urban revitalization, in which entire neighborhoods were torn down, led to the development of incremental planning, advocacy planning, equity planning, and strategic planning (Campbell & Fainstein 2003). As will be discussed, the case studies presented in this report demonstrate elements of these planning types in the development and implementation of street design planning tools.

The relationship between the history of planning and the history of street design are inter-related, and streets and infrastructure show up throughout planning history. Perry (2003) describes the early years of planning as centered on the master plan, responsive to corporate capitalism but also challenging the excess of privatism (145-146). In the 1920s, master planning was replaced by highway and subdivision planning. As modernist planning evolved, it was focused on the production of commodities and the accompanying importance of infrastructure. A singular view of the public interest left

“little leeway for chaos and indeterminacy” (Beauregard 2003, 113), and similarly the transportation function of streets was held paramount. Beauregard notes that with the tendency to favor economic growth over welfare, by the 1960s, physical planning was challenged by diversification into social planning. Planning became more managerial; transformed from “highly visible vision and reform to relatively invisible and institutional tactics and regulation” (Perry 147). As modernist planning began to come apart, Beauregard notes a “peculiar form of nonplanning in which planners participate in individual projects, often attempting to temper the most egregious negative externalities, while failing to place these projects into any broader framework of urban development” (115). As the effects of individual projects have combined to produce the consequences of sprawl, planners have returned to physical planning as well as comprehensive planning but with a new appreciation of role of democratic processes and the multiplicity of the public interest. This has translated into a renewed focus on streets and its multifunctional role in the city.

Street Design and Planning History

The history of planning contains all the elements of the history of street design; this is no surprise as streets are an integral part and the formative structure of the urban phenomena. Streets were first the principal tool to effect urban reforms. The standardization of the street is just one of standardizations to take place in planning during modernism. The singular functional view of the street parallels the unitary view of the public interest in the heyday of comprehensive planning. Elements of the street form became unhooked from one another, resembling a similar process in which the different goals of planning becoming separated into different kinds of planning – environmental, equity, economic development. With the resurgence of efforts to unify and reconstitute the street form, there have also emerged a variety of planning projects and proposals that seek to satisfy multiple goals in planning. These similarities in the history of street design and planning point out the general sweep of historical attitudes manifesting in different arenas. As will be discussed, ideas that now thread through

discussions of new directions in planning are also present in landscape urbanism and have the potential to become manifest in street design.

Tensions and Constraints in Planning

The preceding retrospective on planning reveals several tensions and questions of how to ground planning. While planning is historically tied to place, another alternative to the place-based model is one based on flows and processes in which the city/region is a phenomenon and planning is a human activity (Campbell & Fainstein 2003). Correspondingly, Perry (2003) defines planning as the act of making space, not only physical space but social space where planning exists in the tension between “the lived space and the abstract space of society”. Defining place as process and process as space may bridge the two foci of planning – the divide between object, land-use and environment, and process, decision-making. The roles of site and process are also similarly discussed in landscape urbanism in which landscape is considered in terms of process.

Changes in process were effected in planning to reflect post modernism’s emphasis on the multiplicity of the public interest as voiced by a heterogeneous public (Campbell & Fainstein 2003). Communicative planning positioned the planning professional as a mediator between these many voices, with participatory planning providing the forum. This role has been absorbed into the field, becoming the APA’s second ethical principle, “support citizen participation in planning” (Lucy 2003, 416). In some instances, the design community also addresses participatory design, though citizen participation does not play the central role it does in planning. As some critics have noted (Lucy 2003; Fainstein 2003), the dispassionate impartial role in participatory planning can sometimes be at odds with another ethical principle, that of advocating for disadvantaged persons. Juggling these two concerns also appears in the two case studies presented in this report.

To move toward an ideal social-spatial arrangement, planners must navigate, manage, and balance these tensions within political and economic constraints. While planners may have a vision they do necessarily have the power to effectuate it, not unlike

designers, and generally require the backing of private investment and political leadership. Concerns with project phasing, funding availability, and long-term maintenance in design projects also indicate similar implementation issues in landscape architecture. Indeed, these same concerns are regularly addressed in planning.

There is a need for both comprehensive and incremental planning in that they consider different scales of time. A planning commission often acts one rezoning case at a time, and without a guiding policy, a comprehensive plan, to guide these incremental decisions, there can be unintended consequences for decisions that seem appropriate at the time by satisfying all the parties present. The two sides of the property contradiction are, after all, mutually connected and point to the need for a unifying set of principles. Comprehensive planning, with its new pluralistic sense, has returned, but its effectiveness is very much dependent on other mechanisms supporting it, specifically legal. This leaves the question of how a plan and planning can be pluralistic and adaptable but also far-seeing and unequivocal about rights. While landscape urbanism also considers adaptability and even plurality of use, the issue of legal rights does not need to be directly addressed, but it is a fundamental concern for planning and one that any street design initiative must consider.

One of the laments of planning from the design community has been that through industrialization a belief has developed “that standardization is the ultimate expression of democracy” (Mossop 2006, 171). As Marshall has noted, standardization has offered a screen from legal liability, but it is also a tool for equity. Planners must work within a legal framework, indeed there is whole body of planning law. Some basic precepts include the differentiation between legislative and administrative decisions. Elected officials must act on the public’s behalf and perform a legislative function. In carrying out policy set by legislators, administrators, as un-elected officials, must have guidelines for making their decisions. This is a legal requirement for what are termed quasi-judicial decisions. A measurable standard makes policy clear and avoids the pitfalls of ambiguous legislation haphazardly applied by administrators. This may mean that a design standard which calls for façade articulation is transformed into a requirement that

the façade changes every so many feet by so many feet. A sidewalk requirement generally does not state that there should be enough room for pedestrian traffic, but that sidewalks measure so many feet wide. This is not to say that every standard must be quantifiable, but it is a concern for cities, particularly with recent legal decisions that increasingly require cities to quantify the basis for requests made of the private sector for the public interest, particularly if they are made in an ad hoc manner.

As planners assist in formulating policy that clearly defines equitable administration, there continually arises the tension between the long-term nature of planning work and responding to the changing desires of the electorate. A plan has no legal force unless it is adopted by elected officials, and once adopted, it cannot exclude the possibility of change by future elected officials. There is always the tension between envisioning the future, ever mindful of the accumulated effects of incremental decisions, and remaining adaptable and responsive to an ever changing public. Landscape urbanism's focus on adaptability and strategic moves is in tune with planning's mandate, revealing a potentially productive ground for dialogue.

New Directions

How can the myriad of tensions found in planning be navigated within the constraints of planning practice? Several authors have proposed new directions that concern both the object – land use and environment – and the process – decision-making – of the phenomenon known as the city. Many of these suggestions have already been embraced by the planning community.

John Friedman suggests several changes in process and disposition: from valuing efficiency to being normative, that is to be focused on democracy, inclusion, diversity, and other values; from allocating resources to innovating creative, focused solutions by mobilizing social, physical, and environmental resources; from maintaining a neutral stance to becoming political, that is understanding power and that change requires politics; from relying on expert knowledge to employing transactive methods, participatory processes that bring together expert and experiential understanding; and finally from perpetuating a closed, bureaucratic system to fostering one of social learning,

which requires openness, critical feedback, and adaptability and builds strong institutional memory. Many of these changes have already been integrated into current planning practice and are certainly echoed by other authors. Beauregard (2003) similarly advocates not only for greater participation and an abandonment of neutrality but specifies that planning's mediating role between capital, labor, and state should act as a countervailing power to capital. His recommendations on process also include its reintegration around the product of city-building, the built environment, but without the modernist ideas of a unitary plan and a city of property capital. This suggests that streets then, as the core element of the built environment, can be the focal point for addressing economic, environmental, and equity objectives comprehensively.

This renewed interest in the object of planning, the urban form, also emerges with Perry's proposed conceptual framework and similarly contains a more inclusive stance of process than the rational, modernist model of planning. He conceptualizes planning as space-making, both physical and abstract, as a social event that is both "the product and a producer of (social) space" (2003, 152) This open-ended, recursive nature posits all the multiple threads of planning – comprehensive, equity-oriented, regulatory, and so on – as acting simultaneously. Perry posits planning as "a spatial practice that ensures continuity and some form of cohesion but, because of its dialectical and contradictory nature, not coherence" (152). As a spatial practice, familiar concerns arise: context, connection, scale, and travel, in this case between the "lived" and the "abstract practice of design, strategy, policy, and regulation" (152). Planning then must always move between practical implementation and future projections. This particular formulation of planning as spatial opens planning to the language of design, creating space for a dialogue with landscape urbanism.

Complementing the concept of abstract and social space and its ties to physical space, Sandercock (2003) points out the importance of broadening the language of planning. She discusses the city of memory, urban landscapes as the repository of individual and collective memories; the city of desire, public space that offers opportunities to see and be seen; and the city of spirit, sites linked to identity and that

foster spontaneous creativity and festival. These are all topics that the language of design also addresses.

Perhaps the most familiar call for a renewed focus on urban form is New Urbanism. It, too, proposes that form become the locus for planning objectives, addressing environmental and social issues through a compact, pedestrian-friendly, diverse urban form that fosters community among its heterogeneous inhabitants. It has tremendous popular appeal and arguable has been more influential than communicative planning (Campbell & Fainstein 2003). Fainstein describes New Urbanism as a reaction to “market-driven development that destroys the spatial basis for community” (2003, 175). While praising its emphasis on public space, the work/living relationship, and environmental quality, she also critiques its unrealistic environmental determinism, warning that it runs the risk of modernism’s “persistent habit of privileging spatial forms over social processes” (183). While New Urbanist proposals generally include diverse housing types, this physical diversity does not necessarily translate into social diversity. Iris Young (2003) critiques the desire to promote community as a panacea for anti-urban growth. Discussing its philosophical underpinnings in liberalism and communitarianism, she remarks on the exclusionary tendencies of community as well as the problem of communities relating to each other. Reminiscent of Jane Jacobs, she describes city life as “the being together of strangers” and that the goal should be the affirmation of differences and not a unitary vision of community. Despite these critiques, Campbell and Fainstein remark, “If New Urbanism continues to head in the direction of being a big, tolerant movement that embraces ideas of regionalism, sustainable development, affordable housing, environmental justice, communitarianism, and anti-sprawl – and thus builds alliances with both environmental and community and social justice groups – then it could emerge as a flexible, dynamic planning idea of substance and endurance” (2003, 11). The question for landscape urbanism is how it can also comment on some of these issues, a question raised at the conference for landscape urbanism in 2002 (Shane, 2006).

Sustainability Framework

One concept that does not propose a particular urban form, but instead offers an overarching framework around which both planning process and product can be negotiated and evaluated is sustainability. Scott Campbell (2003) describes mediating the seemingly conflicting goals of planning by using sustainability as a measure for evaluating proposals and outcomes. He characterizes the tensions inherent in planning as three primary conflicts that arise from planning's three major and conflicting goals – environmental stewardship, economic development, and social equity. The conflicts between these three goals – the resource conflict, the property conflict, and the development conflict – can be graphically considered as the sides of a triangle with sustainability as the difficult balance in the middle.

Campbell (2003) describes the view of the city produced by the goals of economy, environment, and equity and their spatial correlations: highways, market areas, and commuter zones as economic space; greenways, river basins and ecological niches as ecological space; and communities, neighborhood organizations, and spaces of access and segregation as social space. He also details the interdependent relationships of these conflicts and goals. The property conflict arises from the pursuit of economic growth and social equity and is seated in the property contradiction previously discussed. This conflict defines the boundary between private interest and public good. The resource conflict develops from the economic growth and environmental protection goals in which reproduction and regeneration capacity is debated on both sides, be it natural or labor. This conflict figuratively, and occasionally literally, defines the boundary between the developed city and undeveloped wilderness. The development conflict results from the goals of environmental protection and social equity and is largely a product of the difficulties in resolving the property and resource conflicts. A typical example is the false choice between jobs or the environment, and it manifests the direct link to the environment that many jobs at the low end of the economic scale have. Landscape urbanism also echoes the planning goals of economy, environment, and equity through its focus on infrastructure, ecology, and culture. These elements, however, are not generally

discussed in terms of conflict but as acting simultaneously or in layers – not unlike the multifunctional role of streets, suggesting one way of potentially reframing the question of how to achieve the balance of sustainability.

Campbell (2003) points out that advocates for each of the three goals all have an “interactive relationship with nature” and that their differences lie in their conceptions of nature (441). He suggests that the solution is not choosing between anthropocentric and ecocentric views but recognizing the social evolution of ideas about nature. Sustainability becomes a unifying concept, which “defines a set of social priorities and articulates how society values the economy, the environment, and equity” (443).

Campbell warns against using a romanticized view of sustainability in the pre-industrial past. He notes that in past cultures sustainability was a necessity in the near term and does not necessarily inform contemporary choices of sustainability in the long term. Such views generally posit a closed cycle and neglect to consider past social inequity. Instead, sustainability becomes a goal and measure in an iterative, open-ended process that is conscious that sustainability in one area of the triangle does not ensure sustainability in another area. Sustainability also offers landscape urbanism a framework for balancing and evaluating its various concerns.

The planner’s role in the sustainability framework is “(1) to manage and resolve conflict and (2) to promote creative technical, architectural, and institutional solutions” (448). Addressing the first task includes employing conflict negotiation, popularized by communicative planning, and addressing the obstacle of language by acting as a translator for the various groups pursuing each of the three goals. The interdisciplinary nature of planning positions the planner well as translator. This translation activity should also address the need to integrate the spatial scales of social and natural phenomena. The second task can be addressed through a greater understanding of how cities, economies, and ecologies interact and by employing such tools as land-use design and control, the conceptual framework of bioregionalism, and technological improvement. Moving toward sustainability will require savvy use of both procedural and substantive tools, particularly in addressing NIMBYism and those who have no

interest in the resolution of a conflict. Campbell (2003) notes that planning's greatest area of influence is likely to be in the resolution of the development conflict, particularly through alliances between community development and environmental planners. This also positions landscape architecture, with its emphasis on the environment, to potentially contribute to the sustainability framework and landscape urbanism, in particular, through its equation of infrastructure with the environment. He remarks that sustainability is still a rather nebulous concept with much yet to be considered, but it does provide a promising framework for navigating the tensions and objectives of planning.

Planning and Landscape Urbanism

The boundaries of the planning practice frequently overlap with other related professionals. Planning theory is difficult to define in part because planning is generally a part of larger discussion on “the role of state in social and spatial transformation” (Campbell & Fainstein 2003, 2). Planning also borrows from multiple fields in both theory and practice – ranging from social and economic theories to conflict resolution techniques, statistical analysis, and geographic information system tools. In this, planning certainly resembles landscape architecture, which also assimilates tools and ideas of other fields, ranging from landscape ecology, geography, the arts, and, yes, also planning. Other professions concerned with the urban environment also borrow from other professions. Perhaps one of the distinguishing characteristics of planning is its central role of supporting the public interest. While it can be controversial and difficult to define, the encompassing and pluralistic nature of the term “the public interest” impels planning to consider the three major arenas at the intersection between democracy and capitalism – equity, environment, and economy. These three arenas exist in both physical and abstract space and addressing all three requires a focus on process and place, people and locality.

Sustainability offers one framework for balancing the sometimes competing and sometimes complimentary goals of social equity, environmental protection, and economic health. All three have relationships to nature and refocusing on place is one way to ground both the process and product of city building. New urbanism has certainly

demonstrated the galvanizing power of urban form as a focal point for planning issues. Such an outlook resonates with landscape ecology, which demonstrates that both flows and materials, process and location, combine to create place. Landscape urbanism, with its foundation in landscape ecology, offers a framework for using landscape ecology's insights in the urban interventions known as planning and landscape architecture.

Landscape urbanism's relationship to ecology, culture and infrastructure directly relate to the planning arenas of environment, equity, and economy. The ecology of landscape urbanism and the environmental protection of planning are intuitively related. The spatial arena for social equity is synonymous with that of culture: public space and neighborhoods. And infrastructure is a primary tool and driver of economic health and growth. The reconceptualization of landscape as infrastructure can be viewed as an act of translation that Campbell sees as a necessary move toward sustainability as well as a reframing of the concept of nature. Landscape ecology's inclusion of culture provides a bridge to unify the themes of creativity and ecology in landscape architecture and parallels similar calls for more holistic planning that recognizes the city of memory, desire, and spirit through a return to "questions of values, of meaning, and of the arts (rather than science) of city-building"(Sandercock 2003, 401).

Planning could be characterized as having focused on equity and economy and is now moving toward environment, while landscape architecture has its home in environment but is moving toward embracing issues of equity and economy, specifically culture and infrastructure. Similarly as planning focuses on form, landscape urbanism is focusing on process. In both disciplines, each concern informs the other, just as the two disciplines can inform one another. Both planning and landscape urbanism consider the open-ended and the adaptable.

Streets are the expressions of both the concerns of planning and landscape architecture. The street itself is negotiation of the public and the private and with it come the intersections of infrastructure and public space and of urban form and ecology. Street patterns establish the transportation network that provides the underlying structure for urban form and accompanying patterns of equity. Issues of public health and social

equity are historically linked to streets. Modern fragmented patterns not only have environmental costs but impact a city's ability to serve the underprivileged as well as hamper an awareness of others through physical isolation – a phenomena highlighted by the gated streets of closed communities within the city. Streets manifest abstract concepts in landscape urbanism and planning: those of economy and infrastructure, environment and ecology, and equity and culture.

Chapter Four: Street Design Elements

To investigate how practice aligns with theory and where landscape urbanism and planning practice can mutually inform each other to further street design, two case studies will be presented. They will consider the planning tools developed to create better street design and their implementation. These planning tools address some, and sometimes many, elements of street design, so a brief overview of these elements will first be given. All of these elements relate to issues of the public/private balance and elements of landscape urbanism and planning objectives of equity, economy, and ecology.

Street Dimensions: The width of the street establishes its basic spatial structure. A very wide street, no more what kind of traffic, vehicular or other wise, will feel quite different from narrow street. Street standards generally establish the paving width within a right-of-way width. As public land, any encroachments on the right-of-way are usually regulated or prohibited.

Build-to line/zone: A build-to line or zone provides the vertical component of the street's spatial structure. By requiring buildings to be placed along a specified line or zone, the wall of the street is established, creating an outdoor room. This dimension is typically specified from the edge of the right-of-way.

Building height: Building height puts a dimension on the street's vertical component, particularly if its accompanied by a build-to line, and establishes the height of the street wall. Particular combinations of street width and building height can greatly vary the spatial experience, and accordingly building height is sometimes tied to street width in street design standards. Frequently maximum heights are cited, which may or may not produce the desired spatial quality, depending on the market conditions and other factors.

Façade: Enlivening the street wall can be achieved through façade requirements, including façade articulation, glazing, and entrance requirements. Façade articulation creates visual variety, while glazing and entrances mediate between the outdoor and the indoor, while also creating visual variety.

Sidewalk: Sidewalk width will often vary according to design intent and expected pedestrian traffic. Wider sidewalks allow for street furniture, outdoor cafes, and other uses.

Bicycle facilities: To encourage multi-modal traffic, bicycle facilities may be specified as dimensioned bicycle lanes, a permitted use of the street, and as parking facilities. On-street lanes are preferred over separated trails as they keep cyclists within view of automobile drivers, thereby reducing surprise encounters at intersections.

Transit: Transit can be accommodated through pull out lanes, and street furniture and protective structures for waiting passengers. Dedicated infrastructure, such as rail tracks, can also be integrated into the street.

Street Furniture: Furnishing the street with benches, chairs, waste receptacles and so on allow this outdoor room to be occupied. These furnishings may sometimes come in the form of outdoor cafes, but providing additional public accommodations encourages use by all groups, and not just café goers.

Trees and Landscaping: Trees provide not only shade but also enliven the street through the play of light and shadow, the rustling of leaves, and the smell of organic, living things. They can also provide spatial definition as trunks and canopies form living columns and roofs. They are frequently used to separate pedestrian and vehicular traffic through specification of tree lawn widths.

Art: A work of art can provide a focal point for a room, outdoor or indoor. Art on the street speaks to the social nature of this public space. Art can also enliven the street, perhaps referring to local culture, civic identity, or provocative commentary. Incorporation of art into the streetscape also entertains the tantalizing possibility of the street itself as a functioning work of art.

Wayfinding/signage: Signage can become an opportunity to add aesthetic appeal to necessary functional items. Creative treatment, such as incorporation into light fixtures, can also reinforce a street's identity as well as provide necessary information.

Land Use: Activity on a street is crucially linked to land use. A mix of land uses stimulates a mix of people and encourages greater use of the street at more times of the

day. Strictly single-family residential use makes it more likely that the street will be active only during morning and evening rush hours, if at all.

Connectivity: Closely linked to land use is connectivity. Both vehicular and pedestrian connectivity are addressed by block length. Shorter block lengths allow more opportunities to connect with other streets. Just as building entrances on the street provide access points from indoor spaces, intersections provide access to the street from other outdoor rooms. Intersections also provide spatial variety. The hierarchy of street network also dictates the amount of connectivity, not only for vehicles, but particularly for pedestrian and transit mobility. Please refer to Stephen Marshall's *Streets & Patterns* for an in-depth discussion of this issue.

Ties to other programs/systems: A holistic approach to street design in which many elements of street design are considered offers an opportunity to tie streets to other planning goals, including equity. When land use is addressed, affordable housing can be incorporated, whether as a requirement or an incentive. Because streets also typically carry other infrastructure, they also offer the opportunity to address other environmental goals, as in the case of Green Streets.

Ideally, these street design elements come together to produce a public space that serves both public and private needs. Almost all elements are literally public, that is they fall within the public right-of-way. The build-to line, building height, and façade are typically in the private realm, but are also key to providing the spatial structure of the street. Similarly, most land uses are privately conducted, but this element has a long tradition of public regulation. Connectivity also straddles both realms by addressing access to private properties through public infrastructure. However, these distinctions of private and public are often not clear cut. For example, sidewalks and street trees may be public property but are frequently provided and sometimes maintained by the private sector. Indeed, the right-of-way itself is generally a requirement for the development of private property.

Similarly, all of these elements can be considered through the lens of particular planning objectives and landscape urbanism elements. The provision of multi-modal

facilities such as sidewalks, bicycle lanes, and transit addresses issues of equity, particularly for those without access to automobiles. Public street furniture also invites occupation of the street space by all and not just café goers. These elements touch upon questions of social interaction and culture – the equity-culture interface. Art is linked to culture, while trees clearly relate to issues of urban ecology. Land use and connectivity tie into economic, equity, and environmental planning objectives by defining types of economic activity, residential types, access between these types, and overall patterns of urban form that affect the natural environment. These distinctions are not exclusive and all street design elements can be discussed in terms of planning objectives.

Chapter Five: Colorado Springs Case Study

Colorado Springs has developed a number of planning tools to improve street design. In investigating the development and implementation of these tools, the private sector emerges as playing a crucial role. The city demonstrates a particular environment, described by some residents as one of “limited government and developer run,” in which planning and, correspondingly, improved street design initiatives must navigate. Planning tools to improve street design have had a mixed focus on both infill and greenfield development, but with most development occurring on greenfield sites. Both comprehensive and incremental planning have been employed with some mention of sustainability and a distinctly renewed interest in physical planning. The city’s experience with these planning models highlights the private element of the public-private intersection of the street and indicates one environment that landscape urbanism must consider in discussions of process and cultural and political space. It also illustrates opportunities for dialogue between planning and landscape architecture that focuses on street design.

Introduction

Colorado Springs is a growing city located along the scenic eastern foothills of the Rocky Mountains. In 2006, the population was estimated at 392,000 in a county numbering 576,000. The physical layout of the city varies from a grid network in the historic center to typical curvilinear suburbs that sprawl out to encompass a total area of 121,157 acres, of which 44,703 acres were vacant in 2006 (Comprehensive Report). Its economic base includes several military installations, including the Air Force Academy, high-tech companies, and a number of non-profit organizations with religious affiliations. The University of Colorado has an expanding campus at the northern end, while the small liberal arts Colorado College is located in a historic neighborhood north of downtown. The political climate leans conservative with some residents advocating limited government and others characterizing the city as developer-run.

The initial street pattern established by the town founders can be directly linked to the City Beautiful movement. Following the exhortations for wide avenues common in the late 19th century, avenues were platted at 100-140 feet wide. The landscaped medians are particularly identified for their historical value in an extensive on-line report, *Evolution of Historic Medians*. They predate the paving of the original streets, and both medians and eventual paving was controversial for reasons of funding and appearance. The initial paving costs were to be born by property owners and medians considered by some as interfering with business. Ultimately, both the paving and the medians were put in place to control dust and beautify the city. Costs for most of the paving was eventually split between property owners and tax payers through bonds, but not before a taxpayers association called for the failed repeal of the city's power to create improvement districts and the successful petition to require voter approval of bonds (*Evolution of Historic*).

Robinson, an influential figure in City Beautiful movement previously mentioned in this report, consulted with the city several times, including the submission of a "General Plan for the Improvement of Colorado Springs." He advocated landscaped medians not only for beautification but for cost savings in paving and maintenance. He also linked improvements to the image of the city as a travel destination. Strains of the rhetoric of the City Beautiful movement and modernism can be heard in the editorials and the position of the Civic League:

Paving... is but one of the many things which must be done if Colorado Springs is to keep up with the general march of municipal progress and make of itself a city beautiful. Intelligent civic improvement contemplates the city as a unit; lays out a scientific comprehensive plan, regardful of both present and future need and harmonizing beauty and utility.
(*Evolution of Historic*)

Interestingly, the need for a Comprehensive Plan was directly linked to street improvements. Leaping ahead to the 21st century, this appeal would resonate with planning efforts begun in 1997 that culminated with a new comprehensive plan adopted in 2001.

Comprehensive Plan

By its own description, the latest version of the Comprehensive Plan for the City of Colorado Springs, adopted March 27, 2001, departed significantly from previous plans with its attention to the physical aspect of growth and development. The city mayor, council, and city manager instituted an extensive public planning effort to develop a new 20-year plan. The new plan directed the city to consider new land use and transportation patterns including mixed-use, intermodal transportation facilities, infill redevelopment, and improved streetscapes through design guidelines. New awareness of alternative development patterns undoubtedly influenced the new objectives, but the plan also cites practical fiscal considerations: the passage of the tax limitation amendment to the state constitution known as TABOR as well as the phase out of a dedicated capital improvements sales tax in 1991 (CP Report 2001). Among the restrictions of TABOR is a requirement that all tax increases be put to the voters, a potentially significant restriction for what one planner describes as a “tax-averse community” that rarely floated general obligations bonds (Scanlon 2007).

Quite a number of objectives listed in the Comprehensive Plan relate to street design, whether as street pattern, adjoining land uses, or streetscape. The following is a sampling from the Land Use, Transportation, and Community Character Appearance chapters:

Sample Objectives and Strategies from the Colorado Springs Comprehensive Plan
Objective: Develop A Land Use Pattern That Preserves the City’s Natural Environment, Livability, and Sense of Community
Objective: Develop a Mix of Interdependent, Compatible, and Mutually Supportive Land Uses
Strategy: Promote a Mixed Land Use Pattern
Objective: Meet the Housing Needs of All Segments of the Community
Strategy: Design Pedestrian Friendly Environments
Strategy: Establish Standards for Mixed-Use Neighborhoods
Objective: Encourage Infill and Redevelopment
Strategy: Establish Design Guidelines and a Review Process that Support Infill and Redevelopment
Policy: Transportation System and Land Use Pattern (mutually supportive)
Strategy: Improve Pedestrian and Transit Opportunities

Objective: Maintain Livability Strategy: Roadway Beautification Strategy: Streetscape and Neighborhood Creation and Preservation Strategy: Improve Mobility Options Objective: Quality Designed Streets Strategy: Develop Streetscape Design Standards

One significant component of the Comprehensive Plan is the chapter on implementation. Since its adoption, each year an annual report is produced gauging the extent to which the plan's goals are being fulfilled. A discussion of these reports follows summaries of the planning tools and projects developed to meet Comprehensive Plan objectives.

Traditional Neighborhood Development Ordinance

The first zoning district created to meet Comprehensive Plan goals was the Traditional Neighborhood Development (TND) Ordinance. Work began during the plan's development in September 1999. The TND Policies, Standards, and Guidelines document was completed in September 2002 and adopted the following month. Its goals are to produce pre-World War II residential development patterns, which incorporate a variety of housing types in a pedestrian-oriented network of streets that connect to commercial areas and open space. The TND guidebook provides standards and guidelines for: land use, architecture and design, streetscapes, and streets.

The two major components of the land use standards are two relatively straightforward rules for use allocation and proximity. Using a three-tier system of small (2-39.9 acres), medium (40-79.9 acres), and large sites (80 acres or larger), the standards state percentage requirements of gross acreage according to site size for the following uses: single-family (50-30%), multi-family (5-15%), open space (5-15%), and civic/commercial uses (0-5%). Eighty percent of all dwelling units must be within one-quarter mile of open space or civic or commercial center. Apart from recommended density and open space acreage, the land use guidelines are generally qualitative statements encouraging transit, historic preservation, and other design considerations.

Architectural standards for single-family address lighting (fully shielded), lot coverage (60%), the inclusion of porches, and other design details. Architectural standards for all other uses require street-orientation for entrances, commercial/civic uses on the first floor of parking structures, 50% transparency for first floor commercial uses, and other design details. The guidelines address such issues as façade articulation, parking requirements, and material use.

There are eight streetscape standards, including required build-to lines or zones and six-foot wide tree lawns along all streets, planted with trees at a maximum of 30 feet on center. Streetscape guidelines recommend street furniture, transit accommodations, and external pedestrian and bicycle connectivity.

The TND street standards are the most extensive standards in the ordinance. The typology of TND streets consists of a parkway, boulevard, avenue, main street, neighborhood street, lane, non-residential alley, and residential alley. The comprehensive standards vary according to street type and regulate the following: building height, build-to zones, right-of-way, paving width, median width, tree lawn widths, sidewalk width, block length, parking allowances, and allowable connections with other TND street types. Street sections and streetscape plans are included for each type. Alleys are required in a neighborhood center and pedestrian and vehicular connectivity throughout the development must be provided. The paving width of a TND lane or street, from 22-26 feet, is significantly less than the paving width required for a typical residential street, 34 feet.

Implementation

To date only one development has the TND zoning designation, the Gold Hills Mesa Urban Renewal project. Gold Hills is currently in the development phase with pre-sales already underway. Tim Scanlon, a planner that helped develop the TND standards, did note that another development, Spring Creek, for the most part follows the TND standards but is officially designated a PUD. Spring Creek's developer worked with the city to develop the TND standards (Scanlon 2007).

Another project instrumental to the formation of the TND standards is the Lowell Redevelopment Project, an urban renewal area. The Lowell project centered on the restoration of the historic Lowell Elementary School, built in 1891 (Urban Redevelopment). The project preceded the TND standards and Scanlon (2007)



describes it as a test case for TND. It (Lowell Redevelopment project) incorporates residential, retail, office and other commercial uses. The pre-existing streets were laid out according to City Beautiful movement standards, that is very wide but with wide landscaped medians. Additional streets approximated the TND standards (Scanlon).

Scanlon believes that the limited use of TND is related to the availability of another zoning ordinance, the small-lot PUD, which also allows skinny streets and small lots. No mixed housing types or mixed uses are required and there are generally fewer standards. A discussion of this zoning district follows.

Small-lot PUD Ordinance

The Small-lot PUD ordinance was approved in 2005, two and half years after the adoption of the TND ordinance. The impetus for its development, city planner Tim Scanlon believes, was developer pressure for an easier and cheaper alternative to TND. Rick O'Connor (2007), another city planner involved in the development of TND zoning, notes that several projects that approximate the Small-lot PUD were submitted prior to the zoning's adoption and that the developer community requested a process that would not require the negotiation of typical standards such as narrower streets, smaller lots, and so on.

Small-lot PUD (SLP) allows the creation of single-family lots averaging less than 6,000 square feet, which may have a greenway or street orientation. Accordingly, there are two street types, access streets for use with greenway-oriented units and the standard

residential street for street-oriented units with a recommended six-foot tree lawn and one tree per unit. The Small-lot PUD criteria do not contain many of the requirements found in TND. There are no mixed-use or mixed-housing type requirements; however, common open space is required and greenways may count toward that requirement. Additionally, there are some criteria addressing pedestrian connectivity.

Access streets should have a 30-foot right-of-way with an additional five-foot utility easement on either side and a paving width of 22 feet. Sidewalks are not required if direct sidewalk access is provided from each unit to the greenway sidewalk. Block lengths should be limited to 800 feet with a loop configuration encouraged. Tim Scanlon (2007) noted that intersection requirements and turning radii were initially based on TND standards but the fire department pushed for changes to allow access for larger fire-fighting equipment. Garage setbacks should be a minimum of 20 feet to allow for additional parking. If alternate parking is provided, this setback may be reduced to eight to ten feet. No parking is permitted on access streets, requiring separate visitor parking bays within 200 feet of the units they serve. Dead-end streets are discouraged but permitted. Please refer to Table 1 for the SLP street standards.

Implementation

According to Rick O'Connor (2007), the Small-lot PUD designation has been used perhaps twice since its adoption in 2005, noting that there were four to five projects that roughly approximated the SLP criteria prior to its adoption. These developments have principally used street-oriented units primarily because the builder (principally Richmond Homes/MDC) was familiar with this type. Classic Homes has also built some greenway units that O'Connor thought were of good quality, and they are considering another project with a mix of greenway/street oriented units. Overall, O'Connor is disappointed with the Small-lot PUDs built to date, which is perhaps not surprising given the promise of TND zoning, which he had assisted in formulating.

Mixed-Use Development Design Manual

The Mixed Use Development Design Manual was adopted in September of 2003, a year after TND had been adopted. Work began on its formulation in 2001 at the same time that the new Comprehensive Plan, from which it sprang, was adopted. In fact, the introduction to the manual states, “mixed use development emerged as one of the foundations of the City’s new 2001 Comprehensive Plan.” The thrust of the manual is a pedestrian orientation with more emphasis on commercial activities than in TND. The standards in the manual are generally organized into land use, design standards, and street/infrastructure standards. To encourage the use of Mixed Use, incentives include longer vesting rights, a fast-track review process, and a longer term of approval for concept plans.

The land use standards vary according to the type of mixed use district, of which there are three that vary according to size and intent: Mixed Use Neighborhood Center (MU-NC, maximum 10 acres), Mixed Use Commercial Center (MU-CC, minimum 10 acres), and Mixed Use Regional/Employment Center (MU-R/EC, minimum 50 acres). Neighborhood centers must include two principle use types – residential, retail, office, and other commercial – while commercial and regional centers must include at least three. All centers must include residential.

The majority of design standards apply to all mixed use development, while only three vary according to center type: minimum FAR (0-0.25), minimum residential density (0-8 units per acre), maximum bldg height (35-65 feet with exceptions for centers in older areas). General design standards are fairly comprehensive with additional guidelines provided for each element. Build-to line requirements vary, ranging from 0-25 feet, according to street type and in some cases ground floor use, with the higher maximums for residential ground floor use and for higher traffic flow streets. Block length is generally limited to 600 feet maximum with additional requirements for pedestrian passthroughs for block faces longer than 400 feet. At least one building entrance must be oriented toward the street. There are specific standards for building placement in order to create spatially defined streets and open areas as well as standards

for façade articulation. Standards address vehicular and pedestrian connectivity both externally and within a development. Centers must have at least two on-site amenities, defined generally as a plaza, park, arcade, water feature, public art, or other focal feature. Also delimited are maximum off-street parking limits and surface parking placement with accompanying landscaping requirements. Bicycle facilities must be included, and transit, lighting, and signage considerations are also required. Street trees must be placed at least one every 30 feet, and transition standards address adjacency to existing land uses of varying density and intensity.

Similar to TND, the mixed use standards establish a typology of streets: six-lane parkway, four-lane parkway, entry spine, collector, local street, and alley. Not only traffic studies must be conducted, but pedestrian assessments as well. Sidewalks are required, varying in minimum width from six to eight feet. Right-of-way dimensions do not appear to be appreciably different from the typical street standards; however, paving widths do appear to be reduced and tree lawns are required, ranging from eight to twelve feet. Please refer to Table 1 for a summary of the mixed use street standards.

Implementation

Since the Mixed Use Development Design Manual was adopted in 2003, no project has yet utilized its zoning designation. Tim Scanlon (2007), a contributing planner to the standards, attributes this to the availability of PUD zoning. Shortly before the mixed use zoning standards were completed, the assistant city manager directed the team to create a PUD ordinance that would allow mixed use. It was adopted in November 2003 and appears to require that the mixed use design standards be followed for any proposed PUD with mixed use. As for the incentives, Scanlon explained that a Rapid Response Team responded to requests for quick development review if certain criteria were met, but he felt that these criteria were routinely waived.

Currently there is one PUD undergoing development review that utilizes mixed use and indeed is advertised as a mixed use project. The Colorado Crossing project has long been in the works and will be located at the intersection of two major arterials at the northern edge of the city, an area experiencing dramatic growth, particularly in the up-

scale residential market. It will incorporate retail, office, and residential uses as well as hotel and water park (Laden 2006). The intention of the project is to create a downtown, urban feel in a live, work, play environment (Bainbridge 2006). The developer, Jannie Richardson, is actively locally and had gotten the idea



Proposed plaza (Colorado Crossing)

for the project after traveling the country and seeing other mixed use developments, according to Patricia Parish (2007), the planner who initially handled the development review. She noted that the architects working with Richardson are also very familiar with mixed use. Parish attributes the project's PUD designation to Richardson's familiarity with it; the Mixed Use zoning had only recently been adopted at the time of rezoning.

Andrea Barlow (2007), the planner currently overseeing the development review, stated that the project design guidelines have been submitted and that they follow the mixed-use design guidelines. However, the street cross sections, which were recently submitted, appear to have caused some confusion as to whether the mixed-use standards are indeed standards or merely guidelines. Traffic engineering has interpreted them as standards while land development review reads them as guidelines. The code in fact states, "A proposed MU development of a PUD plan shall comply with the permitted uses and the design standards and guidelines found in part 7 of this article," the mixed use standards, but later code statements appear to permit alternative compliance (CSprings Code). A meeting to resolve the dispute is expected to take place on April 13, 2007.

Another item that has been under negotiation is a sales-tax rebate for the project. According to December 2006 article, Richardson claims the incentive is needed to secure financing, though the city has rarely, if ever, given such rebates (Laden 2006).

Richardson does appear to be dedicated to mixed-use principles, noting the novelty of such a development for Colorado Springs in news articles (Laden, Bainbridge). Indeed, there appears to be great market reception to mixed use projects, as noted by Colorado Crossings designer. A survey conducted by the real estate community reported that 28% of respondents have developed mixed-use projects in 2006 with 52% expecting to develop such projects this year, though not necessarily with a residential component. A Houston designer working on the Austin Triangle project remarked, “Mixed use is hot hot hot right now” (Cassidy 2007).

As for other mixed use projects in Colorado Springs, Tim Scanlon (2007) believes that some projects along the developing north-south arterial, Powers Boulevard, may incorporate mixed-use principles if not the actual zoning designation.

Urban Renewal and Designated Redevelopment Corridor Areas

The 2001 Comprehensive Plan states that infill and redevelopment should be encouraged, and accompanying design guidelines and a review process that supports such projects should be established. To achieve these objectives, several urban renewal areas have been declared through the Colorado Springs Urban Renewal Authority: Gold Hills Mesa, the Lowell neighborhood, Southwest Downtown, and North Nevada. Gold



(Southwest Downtown Project)

Hills Mesa is former gold mill that is being redeveloped as a TND, as previously discussed. Similarly, the Lowell Redevelopment project has been completed using TND principles. The Southwest Downtown Project concept plan calls for a mixed use development that strongly ties into the recently completed Confluence Park (also called America the Beautiful park), located along Monument Creek and tying into an evolving

greenbelt system. The North Nevada project is adjacent to a major highway as well as a local campus of the University of Colorado. The concept plan submitted as part of the Urban Renewal Plan indicates several districts of mixed-used neighborhood retail; a civic, cultural, arts and entertainment district, a commercial retail and lifestyle center, a research and development district; and a primarily landscaped gateway district. The Urban Renewal Plan also cites a number of objectives listed in the 2001 Comprehensive Plan.

Designated Redevelopment Corridor and Area (DRCA) is another tool used to fulfill the comprehensive plan's stated objectives of infill and redevelopment. These corridors are targeted for public investment and building permits along the corridor are tracked annually. Eight areas have been identified, including North Nevada Avenue, which extends farther south beyond the urban renewal area. The North Nevada Corridor Improvement Plan, published in February 2006, calls for widening in some sections, the addition of medians, an on-street bicycle lane, and sidewalks in the many areas that do not have them. Recommendations for street furniture, lighting, signage, landscaping, and public art were also included. The city plans to incorporate these and other elements into a design manual.

Implementation

Of the Urban Renewal areas listed, only the Gold Hills Mesa project appears to be progressing as planned, apart from the already completed Lowell project. The Southwest Downtown project is stalled and Tim Scanlon (2007) does not believe that the development community will take advantage to the tax-increment financing until several years from now. Its initial failed efforts, which included a convention center that was turned down by the voters, appears to be linked to perceptions that long-time local businesses were being pushed out to make room for high-income residents. It is unclear at this point how the area will be redeveloped. According to James Mayerl (2007), a planner involved in the North Nevada Urban Renewal project, the current development plans are essentially for a shopping center and nothing more. Costco and Lowes are planning to locate there in a typical big box configuration, and the Urban Renewal

Authority, in general, is not interested in doing a mixed use project. Scanlon (2007) remarked that an opportunity was lost when the city council did not require that all urban renewal areas incorporate TND or Mixed Use designations.

The North Nevada Corridor Improvement Plan, as of its early 2006 publication, stated that there was no funding currently to pursue the plan. Building permits in DRCAs are issued each year, but no accompanying design guidelines have been developed (Scanlon 2007). The lack of design standards and guidelines is noted in most of the annual Comprehensive Plan Reports. However, Patricia Parish (2007), a planner involved with the reports, remarked that design standards for townhome projects will likely be developed this year and that meetings with stakeholders have begun.

Intermodal Transportation Plan and Complete Streets

The Intermodal Transportation Plan (ITP) compiles several transportation plans under a set of common goals, including supporting the objectives of the Comprehensive Plan. It was developed from October 1996 to April 1999 and adopted in June 1999 with several adjustments made as a result of the 2001 Comprehensive Plan. Its primary planning goals are: mobility, livability, intermodalism, and implementation – listing specific recommendations for transit, bicycle, and pedestrian elements. These include establishing a regional transit system, adding more bicycle facilities, and reviewing sidewalk standards as well as funding a pedestrian mobility and access study.

The 2006 Comprehensive Plan Report noted that in December 2005 the city council approved a Complete Streets policy, “which directs the construction or reconstruction of roadways to include appropriate improvements for walking, bicycling, and transit use” (49). The Report’s evaluation of the Comprehensive Plan stated a move away from major initiatives, such as the Mixed Use zoning district, to more modest measures, such as updates to the subdivision and traffic engineering design manuals, to achieve plan objectives. A discussion of the annual reports follows later.

Implementation

Progress is being made toward ITP objectives. The city transit authority has been reorganized as the Pikes Peak Regional Transportation Authority with funding from 1% sales tax approved by voters. Additional bicycle lane miles are tracked each year and are “keeping pace with the population” (CP Report 2006). (This might suggest, however, that overall levels of service are not actually increasing).

The Pedestrian Assessment is underway, and a GIS-based inventory of pedestrian facilities is being finalized, according to Kristin Bennett (2007), a planner involved in the project. She also notes that a draft of the updated Street Design Standards has also been produced and proposes significant changes for pedestrian facilities. Sidewalk width is proposed to increase to five or six feet from the current standard of four feet. Tree lawn width may also be adjusted, primarily to accommodate utilities underneath, but this change should also allow for a larger clear zone on sidewalks. Sidewalks, generally detached from the roadway, will be required on all streets, apart from freeways and expressways, where previously they were not required on some streets, such as industrial collector streets. Major street reconstructions add sidewalks if they were not previously included, but general road improvement projects do not have the funding to include sidewalk construction, a situation that is expected to be addressed by the forthcoming pedestrian plan. Bennett noted that sidewalk construction has been tied to parcel development, which results in gaps when a parcel is left undeveloped. The city does have the ability to compel property owners of undeveloped lots to install sidewalks for safety reasons, a provision the city has used on occasion. As of 2005, capital maintenance of sidewalks is the responsibility of the city (Bennett 2007). One significant proposed requirement that will enhance connectivity is a maximum block length of 600 feet (Willcher 2007).

Downtown Streetscape Program

The Downtown Streetscape program is a collaboration between the City of Colorado Springs and the Downtown Partnership, an advocacy group for downtown businesses. The program has its roots in the Downtown Action Plan, produced through a

stakeholder planning process and adopted by the city in 1992. The focus of the plan was downtown revitalization, with an improved streetscape as one tool among the many recommended for achieving this goal. The plan detailed specific improvements, such as wider sidewalks, the use of higher quality materials, and the addition of street furniture and street lights. According to Beth Cozley (2007), the Director of the Downtown Partnership, no action was taken by the city to implement the plan until a downtown business improvement district – initially only two blocks large – was created in 1994. With the required funding mechanism for the maintenance of improvements, the district was able to press the city to move forward with improvements for a couple of blocks through bond funding. Subsequent blocks were improved through a parking enterprise, a mechanism for dedicating revenue streams, in this case from parking meters and city parking garages. Currently, a five-year capital plan is in place to complete projected downtown streetscape improvements.



Colorado Springs (Downtown Streetscape)

The actual streetscape plan was developed from the general principals laid out in the Downtown Action Plan through the cooperative efforts of the downtown business district (now managed by the Downtown Partnership), the city, and consultants. The streetscape plan has been so widely accepted that in some instances where businesses are redeveloping property in areas not yet undergoing planned improvements, property owners have obtained the specifications from the city to match already improved downtown streetscapes. Cozley (2007) cites the new El Paso County Courthouse as an example of property owners voluntarily extending the streetscape design concept.

A program affiliated with the Downtown Streetscape project is Art on the Streets. This program was included as a concept in the Downtown Action Plan and then initiated by the Downtown Partnership. The partnership located funding sources and potential

downtown display locations for art works installed on an annual basis. A few pieces each year are purchased by the Downtown Partnership and then donated to the city. The city's Art Commission was involved in the initial determination of display locations and must also annually approve works selected by the Downtown Partnership. The work(s) selected for purchase must also be approved by the commission. Cozley characterizes the relationship between the two groups as sometimes antagonistic in which threatened vetoes of art work by the commission are countered with proposed appeals to the city council, with whom the Downtown Partnership has far better a relationship, Cozley notes. She believes the Downtown Partnership would gladly turn over the administration of Art on the Streets to the Art Commission if it were under different leadership. The Art Commission did predate the formation of the Downtown Partnership but did not have the relationships to potential funders to initiate such a program, according to Cozley. Since a reorganization of the commission, they have expanded their purview and administer programs beyond the downtown to include the airport and other sites, a much needed service Cozley remarked.

Implementation

The streetscape plan for downtown may change as more redevelopment takes place in and around the downtown. At least one private developer who is constructing a LEED certified building, designed by a well known "green" architect, has suggested that the current streetscape plan could be improved. The property is just outside the core business district but is intended to tie into the current streetscape plan. Cozley describes this as a potential test case that will establish the streetscape plan as a standard, with other improvements that go beyond the minimum permitted upon approval by the Downtown Partnership.

While the Art on the Streets program continues to produce annual shows, the history of the program reflects the complicated relationship between business groups, individual city officials, and the city as a governing body. The Downtown Action Plan is currently being considered for revision as a response to planning initiatives carried out by the Downtown Partnership after a hard-fought but failed effort to create a downtown

convention center. The organization refocused their efforts two years ago by conducting a workshop, with the assistance of best-practices consultants, that included city staff and officials and the private sector. Several key ideas emerged from the workshop: the need for downtown residential uses, the utility of a downtown development authority for public-private projects, and the need to create a new downtown plan, which was offered by the vice-mayor.

The Downtown Partnership began to pursue these ideas and formed a committee to develop what would become the Imagine Downtown plan. It should be noted that several key city officials are members of the Downtown Partnership; the head of the transportation committee is also the director of the city's parking enterprise, while the head of the street character committee is also the city's planning director, Bill Healy. He assisted the Imagine Downtown committee, headed by the president of Colorado College and the vice mayor, to develop a planning process for the new plan. The Imagine Downtown plan is now the governing document for the Downtown Partnership and has been adopted by the city as the plan of development for the newly created Downtown Development Authority. However, it is not, as Cozley noted, the new master plan for downtown and has not yet replaced the Downtown Action Plan. It must go through what Cozley describes as a rigorous process to be adopted as such, despite careful attention to follow public meeting requirements, such as advertising meetings, posting public notices, documenting meeting attendees, and so on. Cozley remarked that this process has rankled some city planners, but believes the participation of key city officials in the process and the assistance of the Bill Healy will shepherd it through a process in which it will be melded with the previous Downtown Action Plan. She admits that the Imagine Downtown plan is not a land use plan but probably does resemble Healy's characterization of it as a visioning document. She noted that it does contain street design concepts that could be translated into design standards. Healy's committee has been characterizing downtown streets and blocks (Imagine Downtown) as preparation for the formulation of form-based code – one of the recommendations of the 2006 Comprehensive Plan review.

Comprehensive Plan Implementation

As previously noted, Comprehensive Plan Reports measure to what degree the plan's objectives are met each year. Each year's report is itself increasingly more comprehensive. The 2003 report primarily listed quantitative indicators associated with objectives and evaluated the usefulness of those indicators. The 2004 report also included qualitative information and specifically linked the Comprehensive Plan objectives to those in the Strategic Plan, the city's five-year implementation document. It also specifically noted which objectives were being met and which were not and observed that the same single-use, auto-oriented land use pattern had remained largely unchanged. The 2005 report included for the first time a lengthy notice of the advisory nature of the Comprehensive Plan, but also remarked that it is "the only officially adopted planning document that strives to coordinate the characteristics and consequences of land development within the city" (5). Once again remarking on the persistence of the same land use pattern, it attributed the rare use of TND and mixed use to the lack of their promotion in annexation and master planning processes and the sheer amount of available land, roughly a third of the city's acreage. Several recommendations made have as yet remained only recommendations: the development of design standards for big-box, infill redevelopment, and downtown; a revision of subdivision code for connectivity requirements; and the incorporation of affordable housing with TND and mixed-use. The 2006 report reiterated the advisory notice of the 2005 report. As previously discussed, it suggested that more modest efforts be made to achieve Comprehensive Plan objectives, including revision of the Subdivision Policy and Traffic Engineering Manual. This project is, in fact, underway with draft proposals in the review process.

In reviewing the annual Comprehensive Plan Reports, there is a sense that the Comprehensive Plan no longer has the guiding force it initially had. Tim Scanlon (2007) confirmed this observation and attributed it to the change in city manager, mayor, and city council members who had all been involved in its development. He explained that the mayor had reached term limitations, and several city council members ran for the

mayor's post, requiring them to relinquish their positions on city council and resulting in a significant turnover on the council. According to Scanlon, the new council members are not invested in the Comprehensive Plan, not having participated in its development, while the current city manager is not as skilled as the previous one. He remarked that they are generally focused on other infrastructure issues, specifically the city's new stormwater enterprise and the development of infrastructure to transport water some 40 miles from the Pueblo Reservoir where the city has water rights. Despite the extensive public involvement and the task force's insistence on concrete implementation measures, there does not appear to be a culture of regarding the Comprehensive Plan as a guiding document, particularly when considering that the Comprehensive Planning department was dissolved in the mid 1990s by the assistant city manager.

Analysis

Recent planning in Colorado Springs illustrates a variety of approaches to both street design and planning in general. These range from a focus on specific street elements to a holistic approach and from incremental to comprehensive planning, with each having a varying range of success. The most comprehensive treatment of street design elements are the TND and Mixed Use zoning ordinances. They consider many of the elements of street design elements and establish the basic spatial structure of the street through standards for street width, build-to lines and zones, and building heights. The TND standards establish both minimum and maximum building heights and associate them with street width. While the Mixed Use standards only establish maximum heights, given the greater use intensity and density, maximum standards may be sufficient. Both the TND and Mixed Use criteria address building façade elements. The TND standards are fairly minimal, requiring principally that one entrance is oriented to the street and that glazing occupy 50% of the façade, while façade articulation and other design details remain only guidelines. The Mixed Use standards specifically require façade articulation every 30 feet, but only recommend transparency along with a fairly detailed list of guidelines.

Both sets of standards address multi-modal facilities and connectivity. While sidewalks are not particularly wide, ranging from five to eight feet, the connectivity requirements do promote a pedestrian-orientation, particularly the TND requirement that varying land uses be placed within a quarter mile of each other and the Mixed Use requirement for pedestrian passthroughs for long block faces. Connectivity is further enhanced by limited block sizes. While bicycle and transit facilities are only addressed as TND guidelines, Mixed Use addresses them as standards. Street furniture is only recommended and not required, but street trees are standard. Public art is optional in Mixed Use, but this issue has the potential to be addressed through the city's Art on the Streets program. Land use requirements are relatively straightforward for both zoning designations, with TND decidedly oriented toward residential use, required for roughly half a site, and Mixed Use favoring office and commercial, demanding only 10% residential. The street typologies all recognize the differing street character associated with hierarchical functional classification.

So with most street design elements addressed in the TND and Mixed Use standards, the questions remains why have them been used so infrequently? While this author has not made an exhaustive review of TND tools, the TND criteria, particularly the standards, do not appear to be overly complicated. The Mixed Use standards are certainly more detailed, but considering their orientation toward revenue generating uses, this is perhaps justified. The city does not seem to have put them in the context of the larger land development review scheme. With the availability of other more lenient zoning categories, particularly the Small-lot PUD, the cost savings of narrower streets are gained without the complications of other requirements, although there are perhaps some gains in pedestrian connectivity. But even here, disassociating the sidewalk to a greenway reduces the street to vehicular corridor. The incentives offered do not appear to be meaningful. Perhaps the most discouraging aspect is the lack of support from city officials. The unintended consequences of term-limits have translated into a lack of continuity, despite public involvement in formulating the initial impetus for the TND and Mixed Use tools. It appears that the private sector may be in a position to make more

headway, and if Colorado Crossing is a financial success, than mixed use developments are likely to become more common. The city should be careful in how it decides to interpret its own ordinances; otherwise, the Mixed Used design standards may go the way of the Small-Lot PUD, the story of which appears to confirm characterizations of the city as developer-run. This is not to say that developer initiatives are necessarily negative. Tim Scanlon (2007) remarked that the improved streetscapes of the Briargate area, a moderately priced newer subdivision, were voluntarily built by developer – because street design has economic value.

Certainly the history of the Downtown Streetscape program demonstrates the catalyzing power of the business community. It seems clear that the business community spearheaded the program and enlisted the city in its efforts, or more precisely key city officials. This story, too, lends credence to the perception that the approach to government in Colorado Springs is one of limited government. It does seem troubling that key planning activities are assumed by private organizations and not in a consultant capacity; lobbyists writing legislation comes to mind. But this is perhaps too harsh a characterization as city staff and elected officials were involved in the development of the plans and programs. The subtext may be that the funding for planning activities was not available from the city, while an outside organization valued such efforts. Clearly improved streetscapes were important and valuable and were achieved through a public-private partnership.

The current efforts to update the city’s general street standards demonstrate the utility of both a comprehensive and incremental approach. The impetus for the project derives from the Comprehensive Plan, while the incremental approach will more likely address at least some elements of improved street design city-wide, particularly in developing areas, of which there are many. While these changes will not address important land use issues or even establish a three dimensional spatial structure, they do begin to establish a structure for multi-modal connectivity.

Colorado Springs’ recent history with street design initiatives illustrates several of the recent trends in planning. Its embracement of comprehensive planning coincides with

a focus on urban form to achieve planning objectives, as suggested by Beauregard (2003). Developed with significant public participation, as recommended by Lucy's (2003), its 2001 Comprehensive Plan noted that the central role of urban form was a significant departure from previous plans. This focus on physical planning translated into a more comprehensive treatment of the street in its early efforts to develop new zoning districts such as Traditional Neighborhood Development, a New Urbanist approach. These initiatives, however, have not yet had the hoped for success because there did not appear to be a comprehensive appraisal of the political and administrative context in which these tools could be used. Other zoning classifications were made available with the "all the benefits but not the costs," as Tim Scanlon noted (2007). Incentives were ineffectual because of an inaccurate appraisal of their value and of the tension between public and private interests. Perry's characterization of planning as producing both abstract, social space and physical space would be useful for Colorado Springs, suggesting a mapping of the political space that's needed to support new infrastructure and new street design. The downtown streetscape program is a case in point in which the private sector provides agency. A sustainability framework would bring a perspective that balances economic, environmental, and equity objectives and focuses some of the issues that have hampered wider success; for example, the downtown renewal efforts in which equity issues did not appear to have been sufficiently addressed. Steps in this direction appear in the latest Comprehensive Plan Report (2006), which recommends that links to affordable housing be considered for TND and Mixed Use zoning.

For Colorado Springs, incremental and comprehensive approaches seem to have an inverse relationship to scale. The most comprehensive approach to street design, TND and Mixed Use, are at the most limited scale, while the more incremental approach in which only a few elements are addressed, the current revision of the street standards, appears will have the widest applicability across the city. Landscape urbanism grapples with the question of scale and the role of strategic moves to establish a framework for adaptability. One question for Colorado Springs from a landscape urbanism point of view might be when streets are considered as an entire landscape, what are the strategic

street design elements needed in an incremental approach and where are the most strategic areas in the landscape of the city that a comprehensive treatment would have the most value.

There are also opportunities for landscape urbanism to address some of the city's current concerns. Landscape urbanism's equation of infrastructure with landscape could mean prospects to develop multifunctional streets that address its current issues with stormwater drainage. Funding issues have led to the current development of a stormwater enterprise. These issues illustrates the property conflict between economy and equity; newer subdivisions use special district financing for infrastructure construction and maintenance, requiring this funding to remain within the district while older infrastructure predating the creation of special districts does not have a revenue stream. Ultimately all of this infrastructure must tie together. A more comprehensive approach with a landscape urbanist point of view might suggest that stormwater could be considered at one of its origins, the street. Streets could be designed to minimize traditional engineered stormwater infrastructure using the green streets concepts. Landscape and infrastructure become synonymous and the environment becomes a tool for alleviating an economy/equity conflict. Even the city's concern with future water sources could be addressed from a landscape urbanist approach to infrastructure. Implementing such approaches would likely require both incremental and comprehensive planning with some drainage issues addressed through a reappraisal of curb and gutter design while more ambitious water collection and delivery infrastructure require a wider scope, each potentially applied at different scales with incremental and comprehensive results.

The case of Colorado Springs highlights the role of the private sector in the implementation of improved street design, particularly if there is not sustained support from public planning efforts and elected officials. Process is key to the production of space, as landscape urbanism and new planning directions point out, and Colorado Springs illustrates one variation of the public-private interface in which public process provided the seed for improved street design, but private initiatives have been the key

cultivators. Improved street design is on its way, even in a “limited government, developer-run” city; the key to increasing the pace may be greater public-private partnering, not unlike a key characteristic of the street – a space defined by the public-private intersection.

Chapter Six: Austin Case Study

Like Colorado Springs, Austin has developed and implemented a number of planning tools to improve street design. The planning environment is considerably different, however, with many civic organizations involved in initiatives that involve street design. The city has been particularly focused on infill development with several projects underway that have significant public participation. Its experience with comprehensive and incremental planning has also differed from Colorado Springs, and sustainability appears to play a larger role in its most recently developed street design planning tools. The degree of public involvement in Austin represents a greater emphasis on the public component of the metaphorical public-private model of the street, and correspondingly, the city, represents a different environment to be considered by landscape urbanism and ideas of process and of cultural and political space. Despite differences in planning environment, the city's street design initiatives also illustrate current planning trends and opportunities for planning and landscape urbanism to inform each other and street design.

Introduction

Austin has a number of streets that figure in the city's popular imagination as destinations: "the Drag," the retail strip on Guadalupe Street across from the University of Texas; 6th Street, the stretch of entertainment venues from Congress to I-35; South Congress, an eclectic mix of restaurants, vintage shops, bars and other uses south of Riverside Drive. These streets are a part of the grid system that began with the original 1839 plat of a 14-block grid (Kearl). Like other US cities, this grid system is surrounded in many areas by the curvilinear hierarchical streets of post-WWII suburbs.

Unlike Colorado Springs, Austin does not have a recent comprehensive plan; it has actually eclipsed the twenty-year planning horizon of its last comprehensive plan, the Austin Tomorrow Plan adopted in 1979. A new plan with extensive public outreach was formulated in 1985 but was never adopted by the city council. This has been attributed to turnover in the city council at the time and heavy developer lobbying against the plan.

As a response to the failed comprehensive plan effort, the Citizens' Planning Committee was formed in 1996 (Audit report 2006) and its recommendations are cited as the source for several planning efforts, including corridor planning. Without an officially adopted comprehensive plan, the public basis for new policies comes from a variety of sources such as the regional planning effort, Envision Central Texas; the Smart Growth initiative, a response in part to public concern for air and water quality and the need to redirect growth patterns; redevelopment projects such as the Robert Mueller Municipal Airport (RMMA) and the Triangle, whose current form were essentially spearheaded by neighborhoods; the success of mixed-use, downtown redevelopment; voter approval of commuter rail; and the active participation of local groups and individuals in planning related efforts. Many of the new planning initiatives directly address street design, either components of it or in its entirety.

The planning tools used to effect improved street design that are discussed in this case study can generally be grouped into two categories: zoning districts/general design standards and specific corridor planning/streetscaping programs. Those in the first group include three ordinances: Design Standards and Mixed Use, Transit Oriented Development, and Traditional Neighborhood Development. Those in the second group include three initiatives: corridor planning, the 2222 Corridor Study, and the Great Streets program with some discussion of affiliated programs.

Design Standards and Mixed Use Ordinance

Perhaps the most wide-reaching street-design planning tool developed to date is the recently adopted Design Standards- Vertical Mixed Use Ordinance. It went into effect January 13, 2007 with the Vertical Mixed Use portion currently undergoing an opt-in/opt-out phase covered later in this report. It began as a resolution in February 2004 with the authorization to establish a task force for its development as a result of "issues raised in land development cases involving large retail establishments" (General Questions, 1). The resolution also stated that Austin "had among the lowest design standards of communities in the Central Texas region, and that national retailers routinely construct elsewhere (oftentimes in response to more rigorous design standards) stores

with higher design standards than the stores they construct in Austin” (General Questions, 1). Adopted in August 2006, the resulting ordinance principally applies to commercial and mixed use properties according to roadway classification. Areas with separate planning efforts that consider design guidelines appear to be exempted, including downtown where the Great Streets program applies, the university area overlay, the RMMA project, current and future transit station planning areas, and traditional neighborhood districts.

The roadway classification used in the Design Standards is not based on functional classification, traffic flow rates, but primarily according to geographic location. These road types are:

- Core Transit Corridors – including current and future transit lines
- Internal Circulation Routes – streets within a development
- Highways – freeways, parkways, expressways, and frontage roads as designated by the Metropolitan Transportation Plan
- Urban Roadways – all roadways inside the urban roadway boundary except Core Transit and Highways.
- Hill Country Roadway – determined according to the Hill Country Roadway Ordinance (enacted primarily to preserve the rural nature of these roadways (2222 Report)), and include RM 2222, and Southwest Parkway
- Suburban Roadways – roads outside the urban roadway boundary and not Core Transit, Hill Country Roadway, or Highway.

Ordinance requirements are grouped into three categories: site development standards, building design standards, and mixed use with each standard indicating application according to 1) roadway type and 2) zoning district, use, parcel size or other condition. (Please see Table 2 for summary.) The site development standards contain perhaps the most significant requirements affecting overall street appearance by setting standards for sidewalks, building placement and frontage, block length, vehicular and pedestrian connectivity, and street trees. It also discusses parking reductions, exterior lighting, screening of equipment and utilities, and open space and pedestrian amenities.

The intent of the standards in fact is to develop a pedestrian friendly environment (Questions, Article 2). The building design standards further enhance street design through façade requirements. The mixed use section focuses on mixed use within one building, clarifying use requirements as well as offering affordable housing incentives through density bonuses and other perks. The standards range from the most to the least demanding according to roadway type, moving from Core Transit to Suburban to Hill Country and Highway respectively.

Site standards require at minimum fifteen-foot sidewalks for core transit corridors and twelve-foot sidewalks for urban and suburban roadways. These requirements apply whether or not there is enough available right-of-way. Required clear zones, areas reserved for pedestrian traffic, vary from five to seven feet minimum width according to overall width of the sidewalks and are generally adjacent to the building. The remaining area is reserved for street trees, furniture, lights, hydrants, and other similar elements. Supplemental zones for outdoor seating are also available with some restrictions, including a maximum width of 20 feet with some allowances up to 30 feet. Internal circulation routes must also include sidewalks on both sides, but no width is specified, which likely means they must follow previous standards. Sidewalks are generally required for almost all new streets according to the Transportation Criteria Manual and vary in width according to functional classification, four for local streets up to six feet for major arterials. Street trees are required every 30 feet on center at the most for Core Transit and Internal roadways; otherwise, they are optional.

Buildings frontage requirements address the minimum amount of a building that must be built up to the clear zone, or supplemental zone if used, and vary from 40% for Urban Roadways to 75% for Core Transit. The longer side of a building must be along Internal roads. Surface parking lots are prohibited from fronting the street along Core Transit and Internal roads, while they are permitted along urban roadways if the buildings are Vertical Mixed Use or have at least 60% frontage along the clear zone. In such cases, they require a landscape buffer along the street as well as shading from the sidewalk to the principal entrance. Surface parking lots fronting streets are discouraged but not

prohibited along Suburban Roadways. All roadways require at least one customer entrance be located along the street with some exceptions that have additional requirements.

The Connectivity section requires that block dimensions be limited to 660 feet by 330 feet on sites five acres or larger in all zoning districts for Core Transit and Urban Roadways and non-residential district when fronting a Suburban, Highway, or Hill Country. Vehicular connectivity – that is streets must connect to adjacent public or private streets – and pedestrian and bicycle connections to adjacent public sidewalks and streets are required for sites three acres or larger and in the case of sites with surface parking fronting the road (Suburban, Hill Country, and Highway) regardless of acreage. These same developments must also choose two options – or three options when surface parking amounts to more than 125% of the parking requirements – from a palette of eight. These options include: pedestrian and bicycle connections to parkland, solar power shading devices in surface parking lots, pedestrian connections to residential developments, placement of internal utility lines under drive aisles (as opposed to parking spaces), curb cuts not more than every 330 feet, concrete or pervious paving on at least 50% of surface parking, shower facilities, and sidewalk shading over 100% of building façades.

The Site standards also discuss parking reductions and screening of equipment and utilities. Lighting requirements include the use of fully shielded and full cut-off light fixtures. For sites five acres or larger regardless of zoning, two percent of the net site area must be set aside as open space, which may include playgrounds and plazas.

Building Design standards are generally comprised of glazing requirements and a choice of building design elements. For the most part, glazing with a visible transmittance of 0.6 or more (it can be seen through) is required on the first and second floors for 40% and 25% of the surface area, respectively. One design option must also be incorporated from a list of fourteen options, or in case of trademarked building designs or other design criteria, more options must be included. The design options generally refer to green building, linear stores, façade articulation, primary entrance design, roof design,

building materials, improved glazing, neighborhood design guidelines, sustainable roofs, solar power, and vertical mixed use buildings.

The final section of the ordinance details mixed use zoning districts, specifically the use of Vertical Mixed Use (VMU) buildings. It functions as overlay for commercially zoned properties, with the exception of historic properties, along Core Transit Corridors. Otherwise, it may be combined with a base district, which generally defines allowable uses. Additional retail uses are listed for office districts. VMU buildings must have at least 75% commercial use along the frontage of the principal street. Zoning standards from the base district may be relaxed when some affordable housing is provided. These incentives include exceptions to minimum site area, required setbacks, maximum floor area ratios (FARs) and building coverage, and a reduction by as much as 40% of the off-street parking requirements. These density and parking bonuses require that 10% of owner occupied or rental units be offered to households at or below (from 80-100%) the median household income for Austin. The incentives as well as the office/retail mix of uses, however, do not immediately go into effect. The task force that developed the ordinance felt it was important to involve neighborhoods in the process (Adams 2007). A one-time opt-out/opt-in process is currently underway which allows neighborhood associations and planning teams to recommend or reject these elements of the ordinance for individual properties or their planning area in general. Recommendations may also adjust affordability levels to as low as 60% and extend VMU zoning to properties currently zoned residential. Final approval rests with the city council. This process began on March 5, 2007 and continues until June 4, 2007, with the council deciding within 45 days afterwards.

Implementation

Since the Design Standards and Mixed Use ordinance went into effect on January 13, 2007, there has been some grumbling from developers regarding the Design Standards portion, but currently no ground swell of resistance has developed to push for changes or repeal by the city council, according to George Adams, the Division Manager for Urban Design. He does not expect that the public at large will react either positively

or negatively until projects are actually built. The VMU portion is likely to be a mixed bag with some neighborhoods being very receptive to the density and parking bonuses and the office-retail mix and others electing to not adopt those aspects at all. Given that mixed use buildings that roughly approximate the standards laid out in the ordinance are already in development or have been built, Adams expects that VMU buildings will likely continue to be built even without these incentives but will be depend on the specific location and the financial makeup of a project. In some cases, the bonuses may make or break a project.

Transit Oriented Development Ordinance

In November 2004, Austin voters approved commuter rail service from Austin to Leander. Capital Metro, the transit authority, will run the 32 miles of rail that is scheduled to begin service in late 2008. A resolution to form a task force to develop the Transit Oriented Development (TOD) Ordinance was passed in July 2004 and the resulting ordinance was adopted in May 2005. Its primary objective is to plan for the integration of land use with transit, including pedestrian and street connectivity as well as general street design considerations. The TOD Guidebook developed by the city lists many of the plans and initiatives that provide the public basis for more compact, mixed-use, and pedestrian friendly development as exemplified by TOD. These mirror the plans previously discussed in this case study.

The TOD plan consists of two phases. The first phase, already completed, consisted of determining the districts and the district types around, initially, five future rail stations and one rapid bus station. Two additional bus station districts and a commuter rail station were added in 2006. Phase I also identified the zone typology that governs the intensity and scale of development within a district, created the current TOD overlay zoning district and the future base district, and established the planning process. Four TOD district typologies were developed, each with increasing densities: neighborhood center, town center, regional center, and downtown. Each TOD district is comprised of three zones that also progressively vary in density: gateway within 300-500 feet of the station platform; midway with predominately residential but some office and

retail; and transition, which, as its name suggests, transitions development to be compatible with surrounding development.

Phase II is currently underway and is essentially the development of specific TOD district plans through planning processes with the respective stakeholders. Once Station Area Plans are adopted they become the base zoning district and replace the interim overlay. Station Area Plans will include design standards, development goals, housing affordability analysis, and feasibility review. The current interim overlay regulates allowable uses within each zone and includes maximum front and street side yard setbacks of 15 feet and minimum setbacks of 10 feet unless the underlying zoning setback requirements are less. No surface parking areas are allowed between the building and lot line.

Implementation

As previously noted, Phase I of the TOD planning effort has been completed. The primary planning consultant chosen to head the Station Area Planning processes is Parsons Brinckerhoff and Douglas, Inc. Market assessments will be conducted by Economic Research Associates, while the affordable housing analyses will be created by Diana McIver & Associates. Station Area Plans for the first group were to begin in January of 2007 and should be completed by the fall. All plans for the current designated TOD districts are slated for completion by late 2008 when commuter rail service is expected to begin (Station Area Planning).

Traditional Neighborhood Development Ordinance

The Traditional Neighborhood Development (TND) Ordinance was approved by the city council in 1997. Its focus is also compact, mixed use, pedestrian-oriented development, primarily through combinations of designated area types consisting of mixed residential with a range of housing types, higher density residential and retail termed neighborhood center, workshop area and employment center, and a transitional residential area called neighborhood edge. A TND must include at least one neighborhood center and one mixed residential area. Unlike the Design Standards and

VMU ordinance and the current interim regulations for TOD, the TND ordinance also defines specific street cross-sections that differ from Austin's standard functional street sections. There are also significant requirements on the location of each area to promote pedestrian accessibility.

Design standards are established by each area type: neighborhood center, mixed residential, neighborhood edge, and workshop area and employment center. With regard to street profile, the maximum setbacks in the neighborhood center are five feet with mixed residential varying from 10-15 feet for maximum setback. Road standards generally do not allow dead ends. Block dimensions are set at a maximum of 600 by 300 feet with exceptions for topography that allow up to 1000 by 400 feet with additional pedestrian access requirement. Street standards are made according to functional classification, ranging from Neighborhood Center Alley to Neighborhood Center Boulevard and Mixed Residential Alley to Mixed Residential Boulevards. The right-of-way and paving standards are all less than the usual standards used outside of TND. Sidewalk widths in mixed residential does not essentially differ, 4 feet, while in the neighborhood center they are significantly wider, eight to nine feet compared to six feet in non TND standards (though this appears to have been increased along some roadway types according to the recently adopted Design Standards and VMU ordinance). Please refer to Tables 2 for specific roadway dimensional standards.

Twenty percent of the gross area of a development must be set aside as open space with at least one public square in the neighborhood center. Greenbelts are not permitted behind dwellings with exceptions for topography and other circumstances. Ninety percent of the lots within a mixed residential area must be within 600 feet of open space. Similarly 90% of mixed residential lots must be within 2,000 feet of a neighborhood center boundary.

Landscaping standards specify that street trees are placed at the most 30 feet on center with grouping allowed in areas of concentrated retail. Median trees, required only along boulevards, must be placed 20 feet on center. No more than 40% of street trees can be comprised of a single species.

Architectural guidelines include consistent cornice line for attached buildings, pitched or gabled roof in mixed residential areas and articulated stories and facades. Fifty percent of the façade on the ground floor in commercial uses must meet transparency requirements. Buildings must generally have a street orientation and height and massing requirements are relative, that is no more than twice that of building adjacent or across the street. While maximum height requirements are established in all area types, the only minimum requirement appears to be around a neighborhood square, set at two stories.

Implementation

To date only one development has used the TND zoning designation since its adoption in 1997, Pioneer Hill in northeast Austin. It consists of a mix of housing types, offices, a shopping center, and general industrial. The city is described as having “tried for more than four years to persuade a developer to build a TND” (270-acre project 2003) when Millburn Homes proposed a 270-acre development at Dessau Road, south of Parmer and North of Rundberg in August of 2002. Millburn has already built two TNDs, the Cedar Park Town Center and Highland Park in Plugerville. In December of 2003 the development was approved but not without 37 variances, including on the site limitation of 250 acres, \$5 million in incentives, and annexation of a portion of the property in 2005, which allowed for the extension of city services. Since its approval, the project did win a merit award in 2005 from the Texas chapter of American Society of Landscape Architecture. While Millburn Homes admits that TNDs can be more expensive to build than the typical subdivision, “TND’s appeal to consumers can make up for the added expense” (270-acre project 2003). Austin does not plan to offer incentives for future TNDs (270-acre project 2003).

Corridor Planning

The Citizens’ Planning Committee, composed of city residents and city staff, recommended corridor planning in 1997 as a tool to connect transportation and land use (Corridor Planning Guidebook). The Transportation, Planning, and Sustainability

department, now reorganized, initiated a corridor planning process for commercial corridors in particular, focusing on their integration with the surrounding neighborhoods and city. They identified 35 candidate corridors and developed a planning process with an accompanying guidebook in the first phase. The second phase consisted of a pilot corridor, East 7th Street from I-35 to 183.

The Corridor Planning Guidebook (2001) details the background for the initiative, specifically listing it as a tool against sprawl through the considerations of mixed use and transit friendly characteristics. Intended for corridors between one and two and a half miles long, the guidebook provides a framework for the planning process and includes discussions on: team organization; stakeholder input; plan components, including urban design concepts, environmental impact, rezoning and design standards, and funding strategy; multi-modal transportation analysis; interpretation of data; visioning; redevelopment strategy; integration with neighborhood planning; and plan adoption. It also lists the five corridor typologies – town center, main street, neighborhood village, gateway, and new urban corridors in newly developing areas – initially used in categorizing candidate corridors.

The guidebook describes the intended integration of corridor planning with other planning efforts, specifying the selection of corridors to undergo the planning process as a combination of ongoing neighborhood planning and capital improvement capacity. Corridor planning was to be coordinated with neighborhood planning, an officially adopted city policy. Ultimately, if specific recommendation in corridor plans were not supported by the neighborhood planning team, then the corridor plan would need to be revised. In the case of an existing neighborhood plan, it would be amended according to the corridor plan as long as it was supported by the neighborhood planning team. The Utility Coordination Committee would facilitate discussions with city staff regarding infrastructure facilities early in the planning process. Similar to neighborhood plans, approved corridor plans would be amended to the Austin Tomorrow plan.

The East 7th Street Corridor Planning Team was formed in 2001 and produced a plan in 2002 that proposed improvements that included continuous sidewalks, street trees,

medians, and organized signage and way finding. The plan goals centered on safety, appearance, code compliance, and revitalization. Most recommendations focused on streetscaping to meet multiple goals, i.e., the addition of tall trees to change the spatial perception of the width of the road, thereby reducing traffic speeds, and similarly landscaped medians that would improve both the street's aesthetic appeal and safety. It also recommended that design should focus on the history and culture of the area, particularly in the historic residential portion of the street.

Implementation

The East 7th Street Corridor Improvement Project appears to be underway. A February 2004 newsletter informed stakeholders that the engineering design phase had been initiated. However, this newsletter appears to be the only one produced out of an intended four issues. Later in 2004, voters approved the commuter rail project, which resulted in the inclusion of East 7th Street at the boundary of the TOD planning area for the Saltillo Plaza station. Funding for streetscaping design services appears to have moved forward according to an August 10, 2006 council agenda item approving the disbursement of funds to the Urban Design Group. George Adams (2007) commented that the East 7th Corridor Plan essentially only considered the right-of-way and did not make recommendations for land use or the development of design standards.

Since this pilot plan, the city council has yet to officially adopt corridor planning as a policy tool. However, an RFQ (Request for Quote) has been made for a planning team to lead efforts to reshape East Riverside at the request of the neighborhood planning team. The RFQ roughly approximates the Corridor Planning Guidebook but is not as detailed, and the actual planning process used will depend on the selection among the proposals submitted. Adams (2007) noted that there does appear to be interest in corridor planning among council members, but the future of corridor planning will likely depend on the process and outcome of the East Riverside effort.

2222 Corridor Study

Prior to the Corridor Planning effort, the 2222 Corridor Study was conducted by the Land Design Studio for the city of Austin and the results published in June 2002. It analyzed the build out potential along FM 2222 under current regulations, particularly in the hill country, and proposed changes to current ordinances as well as new tools to manage growth. The process used to produce the study appears to have included general public participation as one component but was not a stakeholder driven project from beginning to end, from analysis to recommendations. The results of an internet survey in November 2001, entitled “Community Vision Survey Results,” are included as a chapter in the study and present demographic data as well as preferences for development patterns as chosen by participants from a visual palette of development styles. The results of the survey do appear to support one of the primary recommendations of the study – the development of town center zoning district.

The analysis of the corridor describes the increasing traffic congestion along 2222 and cites the development pattern of low density, single use, and street hierarchy as the major culprits. It also considers the effects of previous improvements, principally widening the corridor, as having only intensified the problem. Local traffic statistics are contextualized with nationwide sprawl statistics and with the need to respond to Clean Air Act violations by the city, which put federal transportation funding at risk. Citing other growth management efforts such as the Smart Growth program, it points out the need to manage corridor development given the numerous large tracts privately held and with grandfathered development entitlements. Analogizing development and traffic flow to watersheds, the study points to programs that capture stormwater on site before it enters waterways as a model for similarly “capturing” traffic demands within a development in the form of mixed-use town centers.

The study delves into the regulatory environment that promotes the current land use pattern along the corridor. It specifically names the Comprehensive Watershed Ordinance, the Hill Country Ordinance, and the Balcones Canyonlands Conservation Plan as encouraging growth patterns by setting impervious cover limits across the board,

setting FAR and building height limitations, and prohibiting connectivity between relatively adjacent developments. Concentrating development in specific areas while preserving habitat and recharge zones becomes virtually impossible because of the near impossibility of reaching the critical mass needed to support a town center. To solve this dilemma the study proposes that effective impervious cover be considered across several tracts rather than tract by tract. It also suggests that a system to trade development rights and a conservation fund be implemented to more coherently create habitat areas. Finally, it details the specifics of proposed Town Center Planned Unit Development Ordinance that uses “the traditional street as the unifying element” (4.5). The characteristics of such a zoning ordinance include: integrated mixed use, compact density, street and block development patterns, public urban space, building edges that define the street space, on-street parking that acts as a pedestrian buffer with off-street parking structures, a network of connecting streets, and narrow streets with wide sidewalks. Density bonuses are proposed as possible incentives with the need to provide specific objectives and performance-based criteria in order to evaluate proposals.

Implementation

Despite periodic discussion at city council regarding the town center development, George Adams (2007) reports that no action has been taken thus far to develop the zoning ordinance or pursue the other recommendations of the report. He verified that the thrust of urban design, street design, and development initiatives has been primarily in the urban core.

Great Streets and Downtown Projects

In 1996 the Downtown Austin Alliance, a coalition of business owners proposing downtown revitalization, adopted the concept of Great Streets as a framework for transforming “the public right-of-ways into great spaces” (Downtown Great). This led to voter approval of \$5 million in bonds for the Great Streets program later that year. The city council’s 1997 Design Initiative called for the drafting of downtown design guidelines by the Austin Design Commission, which were adopted by the city council in

2000. The Downtown Design Guidelines lay out visioning principles for the downtown as well as detailed guidelines for area, streetscapes, plazas and open areas, and buildings. A team was selected to develop the Great Streets Master Plan, which uses as a basis the values enumerated in the Downtown Design Guidelines – sense of history, unique character, authenticity, safety, diversity, humane character, density, economic vitality, and civic art.

The Great Streets project coordinated public involvement, several advising consultants, and parallel transportation and parking studies. The project team developed six design principles for the master plan: manage congestion, balanced/active streets, streets as places, interactive streets, pride of place, and public art. These principles were used to address the various elements of a streetscape, from multi-modal facilities to street trees and furniture, as well as lighting, signage, and public art. Various combinations of these elements form the street typology identified in the master plan: pedestrian dominant, mixed mode, rapid transit, bicycle and local access, commuter street, and commuter boulevard. The Great Streets Master Plan provides sections and plans of each street type and identifies a proposed network of these typologies in the downtown area. The plan was presented in 2002 and the street standards produced are now part of the Great Streets Development Program.

Typically, required sidewalk improvements must be made at the property owner's expense. The Great Streets Development Program is an incentive program that provides financial assistance to both public and private developers that go beyond standard requirements and meet the Great Streets standards. Funding is in the form of reimbursement for streetscape improvements with funding levels dependent on priority level as determined by a list of criteria that includes proximity to transit, bike routes, high pedestrian activity, as well as other considerations. Each priority level has a dollar cap of reimbursement per square foot of sidewalk, ranging from a low priority rate of \$10 per square foot of sidewalk to \$18 per square foot for high priority projects. The Great Streets Parking Meter Revenue Fund was established in 1996 and is the dedicated revenue stream for the program, averaging about \$400,000 per year. Only projects within

the Central Business District are eligible for the program and must present a streetscape plan.

It should be noted that uses such as an outdoor café are subject to an annual fee for the use of public right-of-way. While an outdoor café may increase the priority level funding, the right-of-way fee is mandated by the Sidewalk Ordinance. Temporary seating with six tables or less is subject to a nominal annual fee of \$200. Larger cafes and any permanent structure are subject to a fee schedule based on square footage and a percentage of the appraised property value: 10% for surface use, 5% for below surface use, and 7.5% for above surface use. Permanent structures include stairs, trench drains for roof drainage, pedestrian walkways between buildings, private electrical conduits, underground tunnel, fence, and balconies that encroach on right-of-way. Landscaping, including above-grade planters, however, are exempted and are only charged an application fee (§ 14-11-43 ANNUAL FEE). Fees collected go into the city's general fund. The Sidewalk Ordinance and its fee schedule are commiserate with similar ordinances in San Antonio and Dallas (Halm 2007).

Art in Public Places is an affiliated program that addresses the art component of the Great Streets Master Plan. The program predates Great Streets, beginning in 1985, and established a 1% appropriation of construction budgets. In 2002, the \$200,000 cap was removed, the rate was increased to 2%, and street and streetscape projects were added to the list of possible public art locations, which ranged from parks to civic buildings. An outgrowth of the program is the Downtown Arts Master Plan, which is currently under staff review. It will provide “a framework, guidelines, and an action plan for cultural vitality and public art” (Downtown Report 2007).

Other street related efforts in the downtown include the 11th and 12th Streets Community Redevelopment Project, the East Sixth Street Improvement District, and the Lance Armstrong Bikeway. The 11th and 12th Streets Community Redevelopment Project is an urban renewal project that envisions these streets as destinations with 11th Street oriented toward visitors from throughout the metro area as well as local residents through entertainment and office uses and 12th Street defined as a mixed-use, small scale, live-

work environment. The East Sixth Street Public Improvement District will assess a tax on businesses along the street to fund proposed services that include physical improvements such as sidewalks, signage, and gateway features as well marketing and other services. Finally, the Lance Armstrong Bikeway is a planned six-mile bike route that will run from 183 through downtown to the Deep Eddy pool, connecting trail and street and including an Art in Public Places component (Downtown Report 2007).

Implementation

The Great Street program is considered a semi-core activity for the Urban Design Division of the Neighborhood Planning and Zoning Department. Data on the number of block faces with Great Streets improvements planned and implemented is tracked and posted each year as an e-performance measure available to the public. Humberto Rey (2007), the Great Streets Development Program coordinator, characterizes the program as very successful. He remarked that the reimbursement rate is usually not sufficient to cover all streetscape improvements made, but that the amount can roughly total \$100,000 per block face and when combined with the economic benefits of an attractive streetscape is generally a sufficient incentive to attract the major developers. In fact, he wasn't aware of any major developer that wasn't participating in the program, though he noted that of late many have not gone through the reimbursement process but rather have included Great Streets standards as part of the requirements for increased density allowances. Some smaller developers may not be participating in the program because they are not aware of the program or because of their focus on interior design. Rey didn't consider this a problem as the majority of streetscapes were being captured through the major developers.

Business on streets which are part of a Capital Improvement Project, such as the Second Street District and the Cesar Chavez Two-Way Conversion Project, need not participate in the program as the city basically funds the Great Streets improvements. These streets are selected generally because of their importance in the Great Streets Master Plan, as pedestrian spine in the case of Second Street and or as gateway commuter boulevard with its accompanying esplanade in the case of Cesar Chavez (Rey 2007).

For participating developers, there has not been any discussion of increasing the reimbursement rates, which would require other funding sources, or any discussion around changing the Great Streets standards. Developers who participate in the program also “buy into” the standards, and Rey has not yet come across a case in which there was a request to change the standards. The only issues with the standards that Rey was aware of were the occasional conflicts with underground street utilities that affect the placement of landscaping and light poles. He remarked any above ground planters downtown probably resulted from a conflict with underground utilities, but noted that these utilities may eventually be moved as part of upgrade projects. Ultimately, Rey also gauged the success of the program by the countless number of requests to participate from developers outside the program boundaries, varying from east of I-35 to west of Lamar. He was not aware of any efforts to expand the program.

Each approved streetscape plan must also be accompanied by a license agreement with the city for use of the right-of-way. This may entail an agreement to maintain street trees or in the case of an outdoor café, an additional annual fee as previously noted. Andy Halm (2007) of the Right-of-Way Management Office remarked that he was not aware of any cases in which the annual fee was prohibitive to streetscape proposals, but also noted that he generally disseminated information on right-of-way requirements, including the fee schedule, early on in project formulation and that he probably wouldn't be notified of changes to streetscape proposals due to fee requirements. No fee exceptions are made for private use of permanent public right-of-ways.

There may be some changes to the sidewalk ordinance pending action by the state on changes to the TABC rules. Currently alcohol must be served in a closed space, which means an outdoor café space may not be interrupted by a pedestrian traffic aisle, prohibiting a configuration of tables under a tree lawn separated from tables near a building. There is current state legislation which may change this rule. Other changes under consideration include raising the number of tables constituting temporary use of the right-of-way from the currently allowed six and changing permit duration from one year

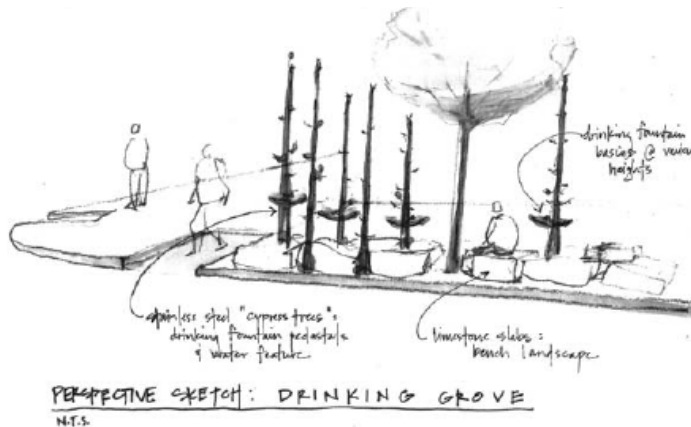
to every two or three years in order to reduce the paperwork load. Halm (2007) was not aware of proposals to change the fee structure.

Two current Capital Improvement Projects (CIP) downtown incorporate the Great Streets standards and Art in Public Places (AIPP). Phase I, the CIP portion, of the Second Street District Streetscape Improvement Project has been completed and Phase II will include the addition of paving patterns that evoke a meandering dry stream bed.



2nd Street paving installation (Downtown Report)

Paving installations at the corners of the “river” streets as well as two water features that evoke springs will celebrate the role of individual rivers and springs that have shaped the history and culture of Austin. An



2nd Street Spring Installation (Downtown Report)

artist has also been chosen to incorporate work into the Cesar Chavez Two-Way Conversion Project, a project that includes a 32’ wide esplanade along the southern edge of the street along Town Lake, a double row of trees, and access points to the Town Lake trail and the new Town Lake Park under construction. Other AIPP projects include a South Congress Streetscape Improvement Project and the Lance Armstrong Bikeway. In fact, the current focus of the program is implementation through street and streetscape improvement projects.

The quarterly Downtown Report and a webpage assimilating the current downtown projects, Downtown Redevelopment, keep stakeholders and the public at large

abreast of ongoing efforts. One effort currently underway which may tie the various programs and plans for downtown together is the Downtown Austin Plan. ROMA Design Group was selected in October 2006 as the consultant assisting in the development of a 20-year plan that integrates the Downtown Neighborhood Plan and TOD Convention Center Station area planning, FAR standards, height standards with procedures for modification, transit considerations, affordable housing, and a program for the sale and development of government-owned land. The scope of work is currently under negotiation (Downtown Redevelopment).

Analysis

Similar to Colorado Springs, Austin has also developed a number of planning tools to improve street design, ranging from new zoning districts to design standards, both required and voluntary. The public basis for these tools has not come from one overarching plan, but rather many participatory processes that have reiterated the public's interest in improving the city's streets. This in turn appears to be enabling Austin to institute stricter standards with broader applicability as compared to those of Colorado Springs. However, without a comprehensive plan, the city's multiple efforts may result in conflicting recommendations or even exhaust public enthusiasm for planning processes. Promising tools like corridor planning are also not given the force of an adopted plan.

Cultural and political process shape the tools used for creating the space of the street, and the first use of corridor planning, initiated by the planning department, produced street design that focused on the public component of the street, the right-of-way. A more comprehensive use of corridor planning currently underway on Riverside was initiated by neighborhood planning, which does have the force of council adoption behind it and represents a stronger public-private collaboration. This would indicate that a more comprehensive process allows more comprehensive design. Process in landscape urbanism has typically centered on ecological and sometimes planning processes. The language of landscape urbanism might suggest that placing corridor planning in a spatial

context that is analogized to strategic ecological processes may bolster its position as a strategic planning process.

Many of the tools Austin employs appear to consider the street as a spatial whole with a particular character and identity. This perhaps is related to an already existing culture of identifying certain streets as destinations. The Design Standards ordinance, the Great Streets Master Plan, and the TND standards all address street typology, while Corridor Planning allows stakeholders to develop a street's character. Because Austin's street design efforts concentrate on remaking existing streets, there are fewer opportunities to specify overall street dimensions. However, the Design Standards and Mixed Use ordinance, like the TND standards and the TOD overlay, does specify the vertical component of the street space through build-to line requirements and façade specifications. While no minimum requirements for building heights appear to be given, maximum requirements may establish the spatial proportions of streets given market demands for density. Considerable attention is paid to façade details in the Vertical Mixed Use and the TND standards.

Virtually all of the Austin planning tools mentioned here foster a pedestrian orientation in some manner or another, from the spacious and spatially differentiated sidewalks in the Design Standards to the requirements for walkable distances between land uses in TND. Multi-modal connectivity is also promoted through maximum TND and Design Standard block sizes, TOD zone typologies, and Corridor Planning processes. No doubt the greatest stride toward multi-modal streets was voter approval of commuter rail, and Austin appears to be following up on this opportunity through design standards for Core Transit Corridors and Station Area planning.

Several of Austin's programs target specific elements of street design, specifically the Lance Armstrong Bikeway and Art in Public Places. The coordination of these programs, however, with other street design efforts can potentially leverage what they have to offer. By incorporating Art in Public Places as a component of a capital improvement project that re-envision a street as a space, the street has the tantalizing possibility of become itself a work of art. Similarly, the incorporation of the Lance

Armstrong Bikeway, which also has an Art in Public Places component, into a Great Streets typology could potentially provide one thread that brings a part of Great Streets to another part of Austin while conveying other Austin characteristics into the downtown, weaving the disparate areas of the city together.

Because the Design Standards and Mixed Use ordinance applies across zoning districts to address commercial uses, it can potentially have a significant impact on land use mix, although this will depend on the results of the opt-in/opt-out process. The standards directly address economic considerations and environmental issues tangentially through the promotion of density and the options to include to green building, green roofs, and solar power. Economic and equity concerns are linked through the affordable housing incentives, but this link is weakened by the opportunity for neighborhoods opt-out, thus, demonstrating the regular comprise planning must make between a communicative role and an advocacy role. These elements in the Design Standards and Mixed Use ordinance illustrate the sustainability triangle in which a design proposition that addresses environmental issues such as sprawl also addresses equity issues that must be balanced against economic issues. This balancing occurs through incentives and choice and indicates the balance that must be struck between the public and private, both in the physical layout of the street and in process of creating that street.

The implementation of Vertical Mixed Use also exemplifies the tension between two objectives of planning: supporting public participation and advocating for the disadvantaged. While the ordinance provides incentives to include affordable housing, the opt-in/opt-out process currently underway allows neighborhoods to recommend prohibitions, alterations, or allowances for the use of these incentives. These constraints and tensions are considerations for landscape urbanism's developing ideas of process and culture. Equally, the framework of landscape ecology provided by landscape urbanism can reframe the spatial implications of the opt-in/opt-out process, posing in landscape ecological terms the question of how might the patches and islands of affordable housing interact with the street "ecology." This kind of application of an ecological framework to

the urban phenomenon has already occurred with the investigation of such concepts as the resiliency of cities.

The Design Standards and Mixed Use ordinance also demonstrate an interesting mix of requirements and incentives that indicate a different balance in the relationship between the city and the development community, the public and the private sector as it were, than the one found in Colorado Springs. The Great Streets program also demonstrates this mix of incentives and requirements, with the required right-of-way fees illustrating the legal framework of planning. The no exceptions rule to private use of public right-of-way, despite Austin's promotion of active and visually interesting streets (encouraging sidewalk cafes and façade articulation through balconies), reveal the constraints of planning and the balance that must be made between providing equal treatment and promoting objectives in the public interest.

In the balance between infill development and greenfield development, Austin has clearly chosen to way in on the infill side. Certainly the amount of downtown development underway demonstrates the success of this approach, but it has not precluded the continuation of sprawling patterns as discussed in the 2222 Corridor Study. The availability of TND zoning has had some success in addressing these development patterns, at least for 270 acres, and the market may yet drive continued use of this zoning classification. However, the 2222 Corridor Study does reveal the problems of an incremental approach when specific goals are targeted without contextualizing them in the larger picture of planning goals. Current and future streets in Austin's greenfield areas will eventually become infill areas, and there is a smaller arsenal of tools to improve street design once the infrastructure is built. No doubt the new Design Standards will mitigate these effects to some extent.

Landscape urbanism's view of landscape as infrastructure would also emphasize the connected nature of Austin's greenfield and infill areas and highlight the need for a comprehensive approach with strategic planning. As the 2222 study pointed out, ordinances with singular, specific goals have not accounted for combined consequences. A mapping of the forces acting on an area according to landscape urbanism principles

might reveal not just crucial ecological processes but political and cultural processes as well. Austin's focus on infill and street design through neighborhood planning leaves those areas with no existing neighborhoods prone to typical single-use development that are blind to its multiple adverse consequences, including air and water quality that affect all of the Austin area. A landscape urbanism approach reveals the need for a strategic intervention, such as town center zoning, in both the physical and abstract space of planning. Without it, the future of outer Austin appears predetermined with little room for adaptability.

Austin's Design Standards, however, do establish a framework for adaptability. While they specify more requirements for streets than previous standards, they actually establish a structure that allows streets to be adapted to variety of uses and particularly transportation modes. Greater structure means the streets can adapt from vehicular transportation modes to a pedestrian orientation, thereby enlarging the arena of possible land uses. Similarly, the option to place utilities under the drive aisles in parking lots, rather than the parking spaces, provides the structure for future redevelopment of the parking lot, creating greater adaptability. These examples of structure leading to adaptability can be instructive to landscape urbanism in its discussions of what it means to design for indeterminacy.

After many years of working toward improved street design, Austin appears to have reached the critical mass needed to implement plans. Looking back, the efforts of downtown planning appear to have incubated street design programs. With the tangible, physical reality of commuter rail, street design planning is now extending out into the rest of Austin, perhaps not unlike the way in which the promise of physical changes in the environment, in the guise of New Urbanism, has galvanized the planning field in recent years. Austin has tacked back and forth between incremental and comprehensive planning; the proposed Downtown plan strikes a move toward cohesion and comprehensiveness, a move that warrants replication on a city-wide level.

Planning tools, such as comprehensive planning, and landscape urbanism's ecological point of view can both potentially further street design in Austin. Already, a

more holistic approach is evident in the new Design Standards, in which the array of planning objectives – economy, environment, and equity – are addressed by specific provisions such as affordable housing and green building. Thus far, however, these provisions are only optional, and landscape urbanism offers another perspective and the language and framework of landscape ecology to reframe how the questions of equity and environment may play out in the current planning process. Landscape urbanism can also offer another perspective that can bolster the position of corridor planning. Likewise, Austin’s planning tools are instructive for landscape urbanism, demonstrating the constraints within which planning must operate, as in the standard schedule for assessing fees for use of the right-of-way. Planning also offers clues to landscape urbanism’s unresolved issues of indeterminacy and infrastructure, as exemplified in the Design Standards treatment of utility placement under drive aisles in parking lots to allow for future development, thereby creating greater adaptability.

Chapter Seven: Conclusion – theory and practice

Landscape architecture and planning both considerably overlap each other and each has much to offer the other discipline. The emerging theory of landscape urbanism and its ideas on infrastructure, ecology, and culture specifically relate to planning concerns in economy, environment, and equity. While landscape urbanism is moving toward issues of process in city building, planning is moving toward issues of form. Because both substantially address infrastructure and because streets are a critical element of the urban form, street design provides a significant focal point for a fruitful dialogue between the two disciplines.

Planning has its roots in street design. It addressed concerns for public health, the environment, social equity, and economic development by reshaping streets and consequently urban form. Planning's use of streets as a tool to remake the city were influenced by cultural ideas and design theories, which was in keeping with a long history of theory manifesting itself in the built environment. The history of street design illustrates how cultural ideas and design theories inform the built environment, from ideas of the ideal state shaping a Renaissance town to modernism's legacy of disassociated elements structuring twentieth century cities. The street grew out of a differentiation between the public and the private, and its history charts the culturally defined balance between public and private. It negotiates the intersections of infrastructure and public space and of urban form and ecology.

Given the influence of design theory on street design and urban form and planning's critical role in shaping the street, new theories from the design community, such as landscape urbanism, may significantly influence street design and planning. Additionally, as landscape urbanism begins to consider planning related issues, planning can also speak to concerns in this developing theory. Landscape urbanism's origins in landscape ecology offer a rich framework for considering urban issues. Because landscape ecology comprehensively considers the roles and processes of natural and man-made forces when studying a landscape, natural or urban, it offers a seamless view

point between elements of the urban form that sometimes appear to be in conflict. Landscape ecology's focus on processes at work in a landscape has also informed landscape urbanism's similar focus on processes, ecological or otherwise, that shape urban form. Because landscape ecology includes human elements and forces in its study of landscape, landscape urbanism brings together questions of science and culture, questions which then address a renewed focus on infrastructure. Landscape urbanism is positioned to impact street design through its focus on infrastructure, ecology, and culture, especially as graduates of landscape architecture programs, schooled in the precepts of landscape urbanism, collaborate with planners and others involved city-making.

As landscape urbanism moves to issues of process, planning has moved increasingly toward issues of form. It is fundamentally concerned with serving the public interest from which flow three general planning objectives: economy, environment, and equity. While planning has moved between comprehensive and incremental planning within ever present political and legal constraints, new trends in planning call for these objectives to be served by centering on the built form. The effectiveness of such a strategy has already been demonstrated by the widespread appeal of New Urbanism, which directly addresses street design. Other new directions in planning suggest that planning should be conceptualized as a spatial practice, addressing both physical and abstract space. This opens up planning to the language of design, creating an opportunity for increased dialogue with landscape architecture and the ideas and language of landscape urbanism. Similarly, suggestions that planning should more directly address cultural issues – the cities of memory, desire, and spirit – align with landscape urbanism's focus on culture. The concept of sustainability addresses the relationships and conflicts between planning's three objectives of economy, environment, and ecology, proposing that sustainability can provide a framework for balancing these objectives. This concept also provides interesting groundwork for a dialogue between planning and landscape architecture as landscape urbanism formulates similar areas of concern that are often in synonymy rather than in conflict.

The trends in planning and landscape architecture leave a fertile ground for cross fertilization between the two disciplines, which can produce a fruitful conversation centered on street design. The two case studies of street design demonstrate planning trends already at work: both cities have focused planning objectives around the street and built form, as found in New Urbanism planning tools, and have incorporated cultural concerns through the incorporation of art in public places. Austin and Colorado Springs also present opportunities for landscape urbanism and new directions in planning to inform each other and jointly enhance efforts to improve street design and urban form. These opportunities include combining landscape urbanism with the conceptualization of planning as a spatial practice, joining landscape urbanism with the concept of sustainability, using landscape urbanism's approach to mapping and scale to flesh out strategic planning tools, and in general bringing landscape urbanism's expertise with form and the environment to planning's triad of objectives (economy, environment, and equity) and renewed interest in form. Conversely, planning also can inform the still evolving theory of landscape urbanism by bringing its expertise in process and its focus on equity and economic issues to landscape urbanism's own expanding discussions of, not only ecological processes, but social and urban processes and its focus on infrastructure and culture. The two case studies also demonstrate some of the constraints of planning that landscape urbanism will need to consider as it moves toward planning related issues.

As previously discussed, the two case studies illustrate new directions in planning already at work in differing planning environments. Colorado Springs exemplifies a planning environment weighted toward the private sector, which has played a crucial role in improvements to street design. Austin illustrates a greater degree of public involvement and support of street design. Each city also illustrates differing approaches to incremental and comprehensive planning with varying results, while both demonstrate the call by planning theorists to focus planning objectives around urban form, particularly street design. One new planning framework, sustainability, is alluded to in Colorado Springs' plans but is most evident in Austin's most recent planning tools for improved

street design, particularly the recently passed Design Standards and Mixed Use ordinance. Both Colorado Springs and Austin illustrate variations in cultural and political space and variations in process – variations that must be considered by landscape urbanism as it expands its focus from not only ecological processes but to cultural and political processes.

Also previously remarked upon, one opportunity presented by the case studies for landscape urbanism and planning is to jointly address street design is the union of landscape urbanism concepts with the conceptualization of planning as a spatial practice. This formulation of planning opens the discipline to the language of design, with considerations for scale and context for example. Such a conceptualization of planning highlights the possibility for landscape urbanism to offer another viewpoint and framework for mapping cultural and political space, teasing out the differences between such planning environments as Colorado Springs and Austin. Landscape urbanism's emphasis on process and open-endedness leads it to consider the processes and realities of urban space-making that planning regularly contends with. It offers the reciprocal possibility of ecological concepts to reframe planning tools and concepts. This may lead to such questions as what is the infrastructure supporting political space and how does it relate to physical urban space? In the case of Colorado Springs, the state establishes certain avenues for funding within which the city must operate, directly affecting relationships with the private sector, an ecology as it were, within which different cultures must interact to ultimately produce, say, a downtown streetscape.

Another significant opportunity presented by the case studies is the combination of sustainability and landscape urbanism. Landscape urbanism can provide a particular lens for viewing the three points of the sustainability triangle: environmental goals as seen through landscape ecology, economic objectives fulfilled through an infrastructure perspective, and equity ambitions informed by culture. Correspondingly, sustainability offers landscape urbanism a conceptual device for balancing the ideas of ecology, infrastructure, and culture. In the context of the case studies, Austin's Design Standards and Mixed Use standards address all the three points of the sustainability triangle, and a

pairing with landscape urbanism might provide a three-dimensional continuum for understanding how these policies shape the landscape. What happens at the intersections of different street typologies? How will patches and islands of affordable housing interact with the street “ecology”?

While sustainability provides planning with a framework for balancing the conflicts arising between environment, equity, and economy, landscape urbanism offers the particularly provocative concept of landscape as the unifying matrix on which all urban operations are made: landscape becomes infrastructure, and the street is the environment. This concept reframes the sustainability question of balance. Economy and environment are equated instead of in conflict. Colorado Springs offers a potential application of this concept. Its funding problems with stormwater infrastructure can at least be partially addressed by focusing on environmental objectives, by equating landscape with infrastructure and using the landscape itself as stormwater infrastructure, transforming engineered streets into green streets. The landscape matrix also invites weaving building systems into street systems, with green roofs potentially becoming part of stormwater infrastructure and policy. Austin’s Design Standards begins to consider the environmental element of sustainability by offering the options of green roofs, green building, and solar parking devices in its Design Standards, but landscape urbanism could significantly expand this component.

The Colorado Springs and Austin case studies also suggest that landscape urbanism’s approach to mapping, scale, and strategic interventions can augment strategic planning in combination with comprehensive and incremental planning. Mapping not only environmental forces but regulatory forces at work in Austin’s hill country reveals unintended consequences of separate, specific planning objectives. The perspective of a continuous landscape matrix also highlights the connectivity between Austin’s greenfield and infill areas and the need for a comprehensive view that employs strategic tools, such town center zoning. By drawing on the language of landscape urbanism and the analogy of ecological processes, corridor planning in Austin might also be placed in a spatial context, and its position strengthened as a strategic process. (Such an application of

landscape ecology to the urban phenomena is not unprecedented; the discussion of the resiliency of cities is one example of a landscape ecology concept applied to an urban context.) Colorado Springs' recent turn to incrementally addressing street design by considering a limited number of street design elements at a large scale could potentially benefit from landscape urbanism's point of view on questions of scale and strategic moves that inform adaptability, suggesting the strategic design elements needed in an incremental approach and the most strategic areas to apply the city's more comprehensive street design tools.

In both case studies, planning tools and programs envision streets as places – despite differences in their origin, make-up, and application – and landscape architecture's long experience with form and the environment can further enhance this renewed focus on urban form. The success of New Urbanism demonstrates the advantages of focusing on physical form, and as these and other cities focus revitalization efforts on streets, they become a method of fleshing out the goals of sustainability and landscape urbanism. Revitalization efforts have also been centering on environmental features: Town Lake, an early example, and recently Waller Creek in Austin and Monument Creek and Confluence Park in Colorado Springs. These environmental features provided the early infrastructure for these cities, just as many cities developed around similar landscape elements, substantiating landscape urbanism's definition of landscape as infrastructure. The revitalization of both streets and environmental features offer a potential synergy to unify infrastructure and ecology, just as prescribed by landscape urbanism, while the prism of sustainability can call out the equity-culture component.

The two case studies demonstrate the constraints of planning that landscape urbanism will need to consider as it begins to consider planning related issues. Austin's opt-in/opt-out process for its Mixed Use standards – which allows neighborhoods to participate in the application of street design standards that may result in an uneven distribution of affordable housing – illustrates the compromises between communicative planning and equity planning. Despite the objectives of the Great Streets program and

the Design Standards ordinance to promote particular uses and features, the standardized fee schedule for *all* uses of the public right-of-way in Austin illustrates the tension between legal requirements to unequivocally address rights while also promoting specific elements that serve the public interest. The explicitness of some of Austin's street design tools, such as the Design Standards and TND zoning, also express the tension between promoting adaptability and the need to provide clear guidance when administrators apply ordinances. Both case studies demonstrate the need to be aware of the political and cultural space in which any street design theory or initiative must operate.

Aside from an awareness of the constraints of working within a planning framework, landscape urbanism can also draw on planning as it grapples with indeterminacy and infrastructure. Austin's Design Standards lists the placement of utilities under the drive aisles of parking lots, as opposed to parking spaces, as one option for meeting required criteria, thus providing a structure for future redevelopment and greater adaptability. The Design Standards also require more, rather than less, structure to accommodate future development. Build-to lines and the spatial differentiation of sidewalks, for example, allow the street to be adapted to both pedestrian and vehicular traffic, which in turn allows a greater variety of uses and groups. In the case of South Congress, the one streetscape element that could be agreed upon by the neighborhood and business owners, the lights, could not be put in because of the underground electrical infrastructure. These examples indicate the crucial role of infrastructure in adaptability and suggest that more structure, rather than less, is needed to promote adaptability. Discussions of infrastructure also cannot escape the inevitable hierarchy that will develop, even in a grid network of streets because all networks will eventually connect to the highly functional hierarchy of interstate highway systems. As landscape urbanism turns to infrastructure, questions of hierarchy and structure will likely need to be addressed when designing for adaptability and indeterminacy

Bringing planning and landscape urbanism together can offer points of view that reframe urban questions, which may open up novel and fruitful conversations that are expressed in street design. Planning offers a focus on the public interest, with such

frameworks as sustainability balancing the various objectives that define public interest. Landscape urbanism offers a point of view that reframes the conflicts between those planning objectives; landscape is infrastructure, thereby moving economy and environment into harmony rather than conflict. As landscape architecture moves to questions of process beyond the ecological, planning offers lessons in public process and addresses issues of cultural and political space. Correspondingly, landscape urbanism offers ecological frameworks for mapping cultural and political space. As planning moves to questions of form, landscape urbanism offers new ways to conceptualize the built environment and the street, a basic element of urban form, in which the built form encompasses the natural environment. Both landscape urbanism and planning respond to needs for adaptability and must negotiate how strategy and underlying frameworks allow for that adaptability. Planning, through its development of participatory processes as well as several planning tools that consider the requirements for adaptability, can inform landscape urbanism's discussions of indeterminacy. Streets – as the object of landscapes concepts of ecology, infrastructure, and culture and as the physical focal point for economic, environmental, and equity objectives in planning – become the expression of the dialogue between landscape architecture and planning, just as streets have historically expressed design theory and planning practice.

As the elements of street design are put back together again after their disassociation by modernism, the various disciplines that focused on these elements are also coming back together to collaboratively build the city. Ecology now teaches us that the city is also no longer separate from its environment and never was, nor are the ideas and theories that guide the urban phenomena separate. Given the historical influence of planning and design theory on street form, a dialogue between landscape architecture and planning is more than warranted. These case studies illustrate just a few ways in which street design is implemented and the opportunities for planning and landscape architecture to mutually inform each other and jointly address street design in the unfolding phenomena of urban form. Together planning and landscape architecture can write an innovative and exciting chapter in the ongoing history of streets and urban form.

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Vita

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