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Urban Open Spaces: Gateways to Urban Sustainability

A White Paper

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"Our collective perception of cities depends on the landscape of open spaces. They lace a city with their voids. . . City is not so much a construction as a landscape of open spaces."

Lawrence Halprin

"Great parks are the key to more livable towns and cities."

Fred Kent, President for Public Spaces

INTRODUCTION

This paper calls for a transformation of urban open spaces. Much attention has been paid to preserving land at the urban fringe, and to the negative effects of sprawl and its costs, but renaturalizing open spaces in the city itself continues to be overlooked as a strategy to make cities more sustainable, and more livable (Beatley, 2000). For urban residents, the creation, preservation and maintenance of open spaces as greened areas must be considered along with other essential services as we move into the 21st century. Unfortunately, such open spaces are too often the first budget item cut when there are tradeoffs to be made.

Open spaces – streets, alleyways, passageways, avenues, parking spaces, malls, leftover triangles, parks, playgrounds, waterfronts, railways, rooftops, and more -- are all places we use and which create the communal life we call "city" (Halprin, 1979:3). In the coming millennium these spaces must become deliberate pathways to creating a more sustainable city. The renaturalization of open spaces increases the amount of urban vegetation, enables increased groundwater recharge, creates habitat for indigenous fauna and flora, and increases shade and beauty, thereby improving localized environmental quality and social wellbeing, creating more economically viable neighborhoods. Together these form the fundamental components of sustainability and through deliberate restructuring of urban open-space systems our 21st century cities can be made far more habitable places.

American cities today are under competing pressures. Internally there is the ubiquitous pressure for economic growth, for adequate housing, transportation and services. Externally pressure exists to preserve land for habitat, endangered species, agriculture and/or beauty and recreation (Mandelker 1997). These land use pressures are interrelated, yet all too often land preservation strategies at the urban fringe are poorly – if at all – integrated with land planning

approaches for existing urbanized areas. Instead cities tend to be seen as largely devoid of natural systems and all the focus is on the fringe areas, creating a spatial division of labor on the landscape: cities as the domain of anthropocentric uses and infrastructure, the countryside where nature exists (Proctor and Pincetl, 1996).

Yet urban nature provides multiple benefits, including important human social benefits such as reduced fear and/or crime (Pincetl et al 2003, Conway, 2002; Kuo and Sullivan (a). 2001; Kuo and Sullivan (b), 2001; Kuo, Bacaicoa and Sullivan, 1998), as well as improved mental and physical health (Taylor et al. 2001a; Olds, 1987; Epstein et al. 1999). It enhances the desire for people to interact (Coley, 1997; Burgess et al. 1998), and improves environmental quality by providing natural ecosystems in the urban environment (Longcore et al, (under review); Daily and Ellison, 2002). Additionally, urban parks and open spaces contribute economic benefits such as increased property values (Crompton, 2001, Garvin, 2000, Leinberger and Berens 1997). Despite these substantial benefits, urban greenery has not fared well relative to development. For example, the numbers of trees in US cities declined 30 percent over the last 15 years, while paved surfaces increased by 20 percent (Gary Moll of American Forests, in Atkin, 2003). The relationship between growth as measured, in part by paved surfaces, and drought was documented in spring 2003, in a report jointly issued by the National Resources Defense Council, American Rivers, and Smart Growth America. “As overdevelopment washes more rain water away, instead of replenishing the water table, drought conditions get worse” (Deron Lovaas, Deputy Director, NRDC in Doggett 2002). In fact, Fayetteville, Arkansas, determined that by increasing its tree canopy from 27 percent to 40 percent, it could save up to $135 million on stormwater benefits alone (American Forests, 2003). Cities can be built and retrofitted to encourage water table replenishment through redesign of city open spaces, and save money too.

Moreover, the American public has shown widespread support for open space preservation. In 2002, 75 percent of all local and state conservation-related ballot measures passed, generating $10 billion in conservation-related funding across the nation (LandVote 2002, TPL and Land Trust Alliance). Despite these obvious signs of public support for increased environmental protection and amenities, green planning and renaturalization of urban spaces continue to be relegated to second tier concerns, with conventional economic development usually put in first place and the potential of cities themselves to contribute to conservation improvements is neglected. This shows a lack of

fiscal understanding of the measurable economic benefits – as well as environmental ones -- open spaces and parks do contribute.

To situate the need for a new approach to urban open spaces, we begin with a brief history of urban parks in the US and the current evolution of demographic changes in a number of large American cities, as well as environmental and economic changes. We then discuss some promising examples of new open space approaches and describe a research project that examined the potential environmental, social and economic benefits of a new sustainability approach to urban open space for Los Angeles.

Evolving Development of Urban Open Space

Urban parks and open spaces in the U.S. have been a part of town planning in varied and inconsistent ways. For example in the Hispanic Southwest, plazas were part of city designs, and in the French influenced South, park squares were integrated into neighborhoods. But for those new towns that were plotted on the grid pattern in much of the West, and for the rapidly urbanizing cities of the East, parks and public open spaces were afterthoughts. Granted that prior to the growth of large metropolitan areas in the United States there was little need for dedicated urban open space, still the Hispanic and French tradition included it as a matter of course, as did some of the early New England villages. But by the mid 1800s deplorable living conditions, including the rising incidence of epidemics and inadequate sanitation infrastructure in growing Eastern cities, raised concerns about urban residents' limited access to clean air and nature. Park advocates argued for the creation of parks to counter the unhealthy physical aspects of the city (Young, 1995). The primary impetus for this earliest urban park creation and its subsequent pastoral design was as an antidote to the city environment itself. Hence these earliest city parks emphasized the provision of access to clean air and nature.

Early targets for park use were male workers and residents in need of respite from the conditions of urban life (Young, 1995). During this time the creation of urban parks also became a mark of cosmopolitanism. Between 1800-1850, for example, the development of New York City's Central Park was seen as way not only to foster order among disorderly classes of society, but also to highlight the sophistication of the city's elite (Rosenzweig and Blackmar, 1992). New York City was becoming a world-class city, and the creation of a world-class park was seen as a way to demonstrate the existence of local culture and refinement.

In practice, social reformers led the urban park development process more than any other group. Though Frederick Law Olmsted had been part of the movement to provide parks for social and humanitarian reasons, he also developed sophisticated naturalistic designs wherein parks also provided natural services such as water purification, for example (Spirn, 1996). But park development was quickly dominated by social reform objectives, and the potential fusion between ecological services and human benefits was eclipsed. Reformers believed 'parks could engender a better society' (Young, 1995). By the turn of the century during the period of the City Beautiful Movement, desirable park users were expanded to include women and children. Social reform park advocates, concerned with the disorderly leisure behavior of lower classes and immigrants, were physical determinists who believed that park design (and activities) could socialize and educate the poor into proper behavior and citizenship (Pincetl, forthcoming; Cranz, 1982). Urban parks became smaller and were situated proximate to tenement housing in order to better serve this audience. Their design typically incorporated play equipment, structured play seen as a method to deter youth crime (Young, 1995). Park design integrating environmental services was marginalized.

In general, however, local officials themselves did not actively encourage the development of urban parks. This reticence was due to a combination of financial and political concerns. Municipal officials in Los Angeles were reluctant to remove taxable, developable land from the tax rolls even when the land was donated. (Pincetl, forthcoming). Dedicated park space in Chicago, for example, prior to the late 1800s was similarly the result not of municipal efforts but of donations of small plots of land by private individuals (Cranz 1982: 26). Elsewhere park sites were focused on areas without other economically competitive uses: "…when the choice of available land was actually made, considerations of landscape, cross-ventilation, view, access, circulation and topography, although not insignificant, were ultimately secondary to economic and political expediency" (ibid: 30). Discussions regarding whether to develop the treeless and rocky Central Park site, or forested Jones Wood near tenements, in the long run favored Central Park, despite its distance from the urban population and lack of natural amenities. Review of New York Senate reports suggests financial interests prevailed in this instance (ibid: 31).

While early efforts at urban park development emerged largely from social concerns, today there is growing understanding of the valuable role of parks in redevelopment and economic development plans. Pittsburgh has been including parks in its redevelopment projects --

incorporating housing, offices, and restaurants with a marina, and restoring a stream adjacent to new housing (Harnik, 2000: 92-93). Portland's Pioneer Courthouse Square, completed in the 1970s, converted a downtown highway to parkspace as part of a larger project to develop housing, a marina, and shops (ibid: 115-116). The downtown financial district park at Post Office Square, Boston (1.7 acres), replaced a parking structure (which was put underground), and includes an outdoor café (ibid: 35). In Columbus, Indiana, Mill Race Park, located at the west end of downtown, is an anchor to the city's revitalization efforts. The Park was been conceived to remediate longstanding toxic contamination problems, to provide a range of recreational opportunities, as well as to introduce a wetlands interpretative area (Fader in Garvin and Berens, 1997:134-145). Shreveport, Louisiana, has redeveloped Riverfront Park to provide for tourism, to spur new housing development, and to support the legalization of riverfront gambling (Mulvihill, 1997:186-195.)

These examples demonstrate that urban open spaces are being recognized as providing multiple functions, and that recreation or traditional passive leisure activities are not the only uses that parks can serve. Art parks are yet another example of new thinking, setting in motion a move toward using private land for more public functions, making places that act as living laboratories for experimental learning through a multitude of interdisciplinary activities for community members (Jacob and Brenson, 1996: 150).

Despite the evolution of contemporary open spaces and parks, there is more to be done. Parks themselves are under valued for their potential ecological contributions and too often subject to budget cuts in times of fiscal retrenchment. They also represent a fraction of the urban open spaces that can be used for human leisure activities, as well as the renaturalization of cities. Streets can become linear parks, urban heat island mitigators and urban habitat refuges for birds, insects and other animals. Alleyways can become groundwater recharge ribbons as well as providing alternative safe passageways for pedestrians. Sliver pieces of neglected land can be sources of aesthetic pleasure and places to reintroduce native plants. Examples and possibilities abound when open space is redefined.

Urban Spaces – Beyond Recreation and Single Functionality

The shift toward parks as primarily recreational over the course of the 20th century has resulted in a diminution of the understanding of their importance as elements of nature in the city and their potential multiple functions. Additionally, the exclusive focus on parks as public open

space where the city provides access to nature, has also served to relieve other urban open spaces of any responsibility to provide nature, natural functions, become spaces for sociability, or even beauty. Parks *and* open spaces are vital components of making cities sustainable, in the broadest sense of the term. They can and do offer a wide range of mental and physical health benefits while providing environmental amelioration, social opportunities, and economic benefits both to the local economy and to area residents, that must be better acknowledged and integrated into planning. Well tree-lined streets attract birds and other fauna, significantly reduce stormwater runoff while mitigating air pollution and reducing the urban heat island effect, and make people feel comfortable and safe, encouraging shopping, strolling and sociability. Well tree-lined streets make for beautiful cities people remember and long for. Small accessible parks relieve the pressures of density, foster human interaction while providing natural ecosystem services if they are well planted. Greened traffic medians and leftover triangles convey civic caring and attention to quotidian quality of life in neighborhoods. As Halprin (1979) observed: Our collective perception of cities depends on the landscape of open spaces. Our sense of place, our dignity, our sense of identity and belonging derive from the quality of the urban fabric and the treatment of open spaces.

Mental and Physical Health Benefits

Increasingly sedentary lifestyles are creating serious health problems in the population (Centers for Disease Control, Kreyling, 2001; World Health Organization, 1997). Open spaces provide mental and physical health benefits, including varied opportunities for intense but short bursts of activity for youth, such as unstructured outdoor play with age mates (Epstein et al., 1999), low-intensity, long duration activities, such as walking, cycling, and gardening for adults, as well as mental relaxation. Studies have also shown that children's cognitive and affective development is positively associated with access and exposure to nature – nature helps children make sense of their world (Taylor, et al 2001a; Olds, 1987, 1997; Nabhan and Trimble, 1994; Mathews, 1992; Devries and Kohlberg, 1987). Youth who play in green play areas have less severe attention deficit disorder (ADD) symptoms than kids who play is less-green settings; and for youth with ADD, play in green settings reduces post-activity ADD behavior (Taylor et al., 2001b). Green space also provides mental health benefits.

In hospital settings, patients show improved surgical recovery, better general health, and mental rejuvenation when they are provided with a window overlooking trees (Kaplan and Kaplan,

1989). Adults credit the comforting, predictable and focused patterns and rhythms of nature with easing the pain of difficult childhoods (Stephens, 1999). Additional documented benefits of nature, or green space, include reduced stress levels as a result of simply envisioning natural settings (Olds, 1987), reduced aggression and violence for residents of greened buildings (Kuo and Sullivan, (b) 2001), and decreased mental fatigue for public housing residents in relatively green surroundings (Kuo and Sullivan (a), 2001).

Environmental Remediation Value

As previously discussed, urban open spaces and parks are rarely considered for their environmental remediation value, or potential for such. Yet given the rate and pace of land development on the urban fringe, urban parks and open spaces may provide remarkable opportunities for revitalizing nature in cities themselves. For example, as Christine Alfsen-Norodom, coordinator of Columbia University and UNESCO's joint program on the biosphere and society remarks, cities already serve important ecological functions in unexpected places such as vacant lots and abandoned industrial sites. Wildlife is evident in such places, and much more can be achieved through intelligent creation and management of open spaces (Stille, 2002). Even small urban parks or a dense street tree canopy can serve as important sites for biological diversity if planted with suitable and bioregionally appropriate plant materials. Planter sized butterfly gardens, pocket park bird sanctuaries, insect and pollinator havens can be retrofitted into existing open spaces in the city. Such small habitats remain compatible with human use, but help alleviate some of the pressures of urbanization on habitat. They also provide more interesting places for humans themselves. This requires, however, changing the sterile template of generic park design that has become so prevalent coast to coast, and thinking beyond the park format toward the naturalization potential of open spaces generally.

It is also increasingly recognized that sprawl-style development, and the amount of paving in cities, contribute to drought and storm water management problems due to water being whisked away rather than reinfiltrated to recharge ground water tables. (Doggett 2002; Jehl 2002; Pierre 2002.) Parks and open spaces can be substantial contributors to mitigating these problems – trees are very effective at sequestering rainfall, and appropriately designed open spaces can serve as ground water recharge areas at the same time as they provide public open space. These benefits represent not only cost-savings to savvy municipalities, but also tangible benefits to residents in their everyday

lives (Longcore et al. (under review); Pincetl et al., 2003; Burgess et. al, 1988).

Policymakers and planners have begun to view ecosystems and their component parts as economically valuable assets. Economic analysis of nature's benefits, or the ways in which natural ecosystems support and enhance human life, led planners to restore New York City's natural water filtration system. New York city developed a plan for the 2,000 square mile crop-filled valleys and forested mountains blanketing the Catskill Delaware watershed that included undeveloped-land acquisition, septic system inspections and rehabilitation, urban and rural stormwater management through out, stream corridor protection, and other water quality enhancement planning and infrastructure requirements, rather than constructing a new artificial filtration plant (Daily and Ellison, 2002).

In Los Angeles, the nonprofit TreePeople is working with the County Department of Public Works, Watershed Management Division, Department of Water and Power, Regional Water Board, Recreation and Parks Department, Department of Sanitation, and elected leaders to create a natural flood control infrastructure that includes an urban forest as well as the retrofitting of open spaces for stormwater reinfiltration for Sun Valley, a suburb of Los Angeles. Sun Valley has had serious flooding problems for decades. It is an area that has been neglected by the city and is home to a largely Latino working class, with numerous trash dumps, auto dismantlers and recyclers. The planting of an urban forest will begin to remediate its neglect. A cost-benefit analysis demonstrated that the initial expenses of constructing conventional storm drain system would cost $42 million, while the natural infrastructure approach would cost approximately $100 million. However the natural systems approach is expected to generate between $400 and $500 million in benefits, including recaptured (rather than imported) water, the resolution of flooding problems, the creation of a shadier community, and the reduction of air pollution. Moreover, it will bring much needed attention to the existing open spaces, converting them from wasted and blighted areas to attractive amenities in their own right. Agencies that will ultimately benefit from this approach are contributing to the project's costs, including the regional Air Quality Management District and the municipal Department of Water and Power of the City of Los Angeles. The project will include retrofitting five local schools' open spaces to capture stormwater and contribute to the urban forest (Bustillo, 2003).

Social Benefits

Urban open spaces also provide social benefits. Open spaces, parks and informal green spaces provide opportunities for casual gathering of extended family or friends (Burgess et al, 1988). Landscaped open spaces, including trees, encourage socialization in poorer neighborhoods (Coley et al, 1997). David Fisher, Superintendent of the Minneapolis Park and Recreation Board characterizes park spaces as *community living rooms*: “A park is not just a place. It’s a philosophy. It’s a gathering place – the commons of the neighborhood” (Harnik, 2000: 62).

Increased urban greening has been linked to decreased crime and the perception of decreased risk of crime. Inner city residents are less fearful of spaces when they are landscaped with trees and grass, than when they are devoid of vegetation (Kuo, Bacaicoa and Sullivan, 1998). Recent evidence suggests crime is actually reduced with greening. Analysis of 98 inner city Chicago apartment buildings showed an inverse relationship between vegetation and reported crime: the greater the number of trees, the less the amount of crime. The authors posit that visibility-preserving greenery actually deters crime through increased resident surveillance (and use of space), and mitigated precursors to violence, including mental fatigue (Kuo, 2001; Kuo and Sullivan (a) & (b), 2001). Public housing residents appropriate outdoor space more frequently when they have a sense of safety, created by greenery, and hence there is more neighborhood cohesion (Brunson, Kuo and Sullivan, 2001).

Moreover, increasing access to green space, via increased urban green space, is an important component of creating a more equitable city. Studies have shown that there is a strong correlation between race and poverty and exposure to toxic hazards and pollution (Pastor et al., 2001; Boer et al, 1997; Hurley, 1995; Bullard, 1990; Commission for Racial Justice, 1987). Los Angeles, like many cities, has historically located undesirable uses in low-income minority neighborhoods characterized by limited political and financial resistance (Di Chiro, 1996; Fulton, 1997). Greater provision of parks and open spaces can help alleviate some of these effects. Greened spaces mitigate the urban heat island effect, which is an important contributor to smog, as well as filter smog and particulates. Greened spaces, planted with the appropriate plants, can serve as localized biofilters for polluted run-off and provide phytoremediation services for contaminated soils. But perhaps more importantly, greened spaces and parks connote caring. A city that has equitably distributed parks and open spaces, equitably maintained, is a city wherein justice and parity are important values. Parks and open spaces provide beauty and respite for every urban resident. In Los Angeles, for example, both

the Kerner Commission after the 1964 Watts riots, and the Christopher Commission, after the 1992 uprisings, reported residents' frustration with the lack of public open spaces in their neighborhoods. The desire for parks and their perceived importance by residents has been noted by numerous studies (Pincetl et al, 2003; Williams 1995; Burgess et al, 1988).

Economic Benefits

Similarly, the presence of parks and greened areas increases a city's attractiveness and land values. Greened neighborhoods have measurably higher property values relative to nongreened neighborhoods. One of the four primary goals of Olmsted and Vaux, the designers of Central Park, was to invest public money and land resources in a way so as to create real estate opportunities (Garvin, 2000). Further, proximity to, and views of, urban open or green space are linked to higher individual property values. Studies dating from the 1850s through the 1980s link increased property values to proximity to parks and other preserved natural areas (Leinberger and Berens, 1997: 27-28). Proximity to revitalized Bryant Park in New York City is described glowingly by one real estate broker as "the deal-clincher" (Berens, 1997: 54.) And it is not just vast urban green areas like Central Park that positively impact property values. In general, smaller (local), active-use parks have an even higher impact on the property values of abutting lands than larger (25-acre-plus) parks (Crompton, 2001).

The Potential for Urban Green Space – Los Angeles Case Study

Global warming, loss of biodiversity, and concern about urban sprawl have increased interest in current planning trends such as smart growth and new urbanism, which focus on the urban fringe. Older urban neighborhoods are seldom the focus of efforts to integrate nature into the urban fabric, yet they offer opportunities for participatory, cost-effective, environmentally sustainable substitutes for traditional urban infrastructure (Pincetl et al., 2003). The University of Southern California Sustainable Cities Program received funding from the J. Randolph Haynes and Dora Haynes Foundation for a study to develop sustainable land use practices in the older inner core area of Los Angeles. The study area is a 2.2-square-mile area in the Vermont/Western Corridor, 5 miles northwest of downtown Los Angeles. The neighborhood is approximately three times denser than the city average, or about 36 residents per acre. The housing stock is 90 percent multifamily rental. Approximately 25 percent of the resident adults have not completed high school. Sixty percent of the residents are foreign-born, including enclaves of Thais, Koreans, Filipinos, Armenians, Russians

and Central Americans. The area has no neighborhood parks, community swimming pools, or recreation centers (Pincetl et al., 2003). Researchers employed several methods, including focus groups, economic analysis, geographic information systems, and socio-economic analysis to assess existing open space resources, attitudes about urban parks and open spaces, and usership patterns, as well as equity analysis.

The research provides a case study for how planners can reconceive open spaces in already developed neighborhoods. Admittedly, Los Angeles, one of the most park poor cities in the nation (Harnik, 2000) seems to be a counterintuitive example for the focus of this work. A geographically large city, with a diverse and growing youthful immigrant population and surprisingly high densities, it is traditionally not viewed for its potential as an ecological model.

To analyze the relationship between income, ethnicity, and urban park space in Los Angeles, a geographic information system program (GIS) was used to map locations of parks and recreation facilities which was overlaid by census-derived ethnicity and socioeconomic patterns. Using a 1/4-mile accessibility buffer zone, researchers determined that low-income, minority populations have disproportionately less park space in absolute terms relative to more affluent areas in L.A. and that those that do exist are beyond 1/4-mile accessibility for many. And while the city overall is quite park poor, recent Los Angeles park bond funding has not corrected this inequity. Predominantly Latino neighborhoods have 0.6 acres of parks per 1,000 population; predominantly African American neighborhoods have 1.7 acres of parks per 1,000; and predominantly white neighborhoods have 31.8 acres of parks per 1,000 population (Wolch et al, 2002). Moreover, a survey of Los Angeles parks indicated that those parks located in inner city neighborhoods were less clean, and less well-maintained than parks in more affluent, San Fernando Valley neighborhoods (Loukaitou-Sideris and Stieglitz, 2001.)

The GIS analysis of residential housing transactions indicated that residential greening bears a measurable positive impact on single-family housing price. An hedonic price model was developed, and utilized to estimate the relationship between green space and real estate value. In the study area, an 11 percent increase in the amount of green space within a 500-foot radius of the house resulted in a 1.5 percent increase (approximately $3,440) in expected sale price. Additional property tax revenues from increased home values were estimated the offset the cost of implementing this increase in green space (the size of a 1/3 acre park) in 15 years (Conway, 2002)

The research also quantified the stream of benefits urban green space provides for the environment, and for the local economy. Choosing three representative sub study areas in the 2.2-square mile neighborhood, researchers calculated the benefits provided by using natural systems for this section of urban Los Angeles, including stormwater runoff reduction, carbon sequestration, air pollution removal, energy conservation, and wildlife benefits, using CITYGreen. This geographic information system was developed by the non-profit, American Forests. Aerial photographs and site surveys provided site feature data, which were then digitized into the program. By means of internal formulae, the program then calculated the monetary value of existing environmental benefits, including air pollution removal, carbon storage, stormwater reduction and sequestration, and energy savings. CITYGreen was then used to develop two alternate neighborhood greening scenarios, one conservative and one aggressive, to model the financial benefits that would be derived from increased ecosystem services. For the purposes of this case study, researchers increased the tree cover canopy on existing open spaces. The calculations indicated reduced stormwater runoff reduction benefits at $275 per cubic foot of potential avoided stormwater infrastructure costs, a reduction of residential energy bills by10-20%, and measurable air pollution mitigation due to the increased tree canopy. (Pincetl et al, 2003; Longcore et al, (under review)).

Focus group results indicated a sort of desperation for green space. Of the eight focus groups conducted, the first queried professionals from local institutions regarding attitudes towards nature in the area. A set of three focus groups of residents from each of three sub study areas in the neighborhood was queried for attitudes to nature, as well as open space and park usage patterns. Researchers then presented the CITYgreen program to focus group participants at a community environmental educational forum, as well as the concept of nature's services and scenarios for greening their specific sub areas utilizing existing open spaces. A second round of three focus groups with these same respondents after the community environmental education forum focused on understanding the CITYGreen program, responses to proposed greening scenarios, and generating ideas for increased neighborhood greening. The participants were 50-60 percent Latino, with the remainder Armenian, white, and African American. They were evenly divided in terms of gender, with an average age of 35-40 years. Focus group participants expressed a desire for relatively free-form urban green spaces– street trees for shade for pedestrians, and trees to sit under, informal parks to relax in (on vacant parcels, sliver lots) – and they repeatedly mentioned the need for accessible

park space for children, from toddlers to teens. A youth focus group was conducted with 16 high school seniors (5 females, 11 males, 94 percent Latino) living in or near the study area and attending a local high school. The youth focus group showed that urban teens' also shared pragmatic interest in local greening and parks. (Pincetl et al, 2003; Gearin and Kahle, (under review))

Most residents participating felt local open space opportunities were virtually nil, and that limited transportation options made accessing parks difficult. All participants were very enthusiastic regarding the greening scenarios of local open spaces that were presented, which varied from a modest increase in street tree-planting to more ambitious linear street parks along the tradition of the Dutch Woonerf, as well as the creation of small parks on available open spaces. Youth focus group participants also felt deprived of urban greenery and accessible open space, and expressed interest for multiple use open spaces for socializing, playing, and relaxing. Youth participants generated innovative yet realistic and feasible urban greening options for their neighborhood – transforming a graffiti-covered abandoned rail tunnel into a park; planting alleyways to create a linear garden; and even stepping up maintenance at existing parks rather than creating new ones. Discussions in both adult and youth focus groups demonstrated a need for park, open space and recreation policies to evolve to meet the changing character of the city, and the need to improve the quality of daily life spaces – tree-lined streets, pedestrian corridors, and beautification of existing hangouts. Concerns focused on long-term maintenance and safety, as well as the apparent absence of political will (Pincetl et al, 2003; Gearin and Kahle, (under review)).

Focus group results indicated that these residents are unlikely to achieve even the greening levels of wealthier communities without assistance from planners and key decision-makers. Residents – largely immigrant and low income -- simply lack the local leadership, political capacity, and time and money to positively influence the planning and policy-making process (Pincetl, (under review)).

What was manifest was a widespread desire for, and appreciation of, urban green space. The research showed that urban immigrant populations consider local green spaces a vital part of their daily lives. For today's American cities that are increasingly the home of low-income residents and large populations of immigrants, parks and open spaces can become a means to strengthen the social fabric and satisfy a range of cultural, environmental, social and recreational needs. And these amenities will also mean more attractive cities to counterbalance suburban flight and growth. They

may provide a means to repopulate central cities with a mix of residents with a range of incomes and ethnicities drawn together by a vital, living network of open spaces.

CONCLUSION

Open spaces and parks are the key to more sustainable towns and cities. They contribute to improved environmental conditions, social well-being, equity and health, and to economic vitality. Taking advantage of the spaces provided by alleyways, streets, passageways, avenues, parking spaces, malls, leftover triangles, parks, playgrounds, waterfronts, railways, rooftops, and more, to measurably increase natural services within the city itself, will help to reduce urban impacts on surrounding lands, and on the global environment. Utilizing existing open spaces to introduce natural services can also create ways to increase greater access to greened spaces throughout the city, even in the densest neighborhoods – often the areas with the highest numbers of poor people of color (Fulton et al 2001). Moreover people are more likely to walk when there are tree-lined streets, improving their physical health, and sense of well-being. Good landscaping increases sociability and reduces crime. Greened and landscaped neighborhoods command greater prices than those that are not. And the process of changeover to green infrastructure also creates skilled, long-term employment: arborists, horticulturists, biologists, environmental quality monitors and so forth.

Despite this range of laudable goals, small urban parks, vegetated open spaces, the substitution of permeable surfaces for permeable ones, and creation of ground water recharge areas remain difficult to implement. Partly this is due to insufficient knowledge about the multiple advantages of this approach to urban infrastructure, partly it is a question of short-term costs versus longer term benefits, and finally, and perhaps most difficult, is the challenge of institutional change. In the research project on the dense urban neighborhood in Los Angeles, The Urban Land Institute engaged in a one-day study workshop to bring private sector experience and expertise to bear on the obstacles to implementing a nature's service approach. Unanimously, the participants pointed to the institutional obstacles as the most difficult to surmount: "[T]he approval process for greening projects is far too complex" and needs to be streamlined. They concluded that such a new approach required vision and political will, more than any technological innovation, and/or additional funds (ULI, Los Angeles, 2003).

All cities refurbish their infrastructure over time. Embedding a nature's services approach in this infrastructure renewal can lead to substantial changes in the urban environment. It will take

time, will and leadership, but gradually cities can transform themselves. Planners have an important role to play in this change. Too often open spaces are the domain of other departments or agencies and not integrated into the larger vision and planning of the city. Specialization has led to the neglect of an integrated approach to urban areas wherein the ecological, social and economic aspects of cities are considered as mutually reinforcing and interdependent. Open spaces and parks are one pathway that begins to bring all the elements of city making together. Redesigning them from a sustainability framework will require understanding cities as containing often unrecognized natural processes that provide us with an alternative basis for their evolution and form (Hough, 1995:6) and explicit policies and programs to revitalize those processes. In so doing, cities will lighten their impacts on the larger context, and provide significant amenities for the residents as well.

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Urban green spaces can be a comprehensive tool for long term pro-tection of environmental sustainability through improving the quality of life and air quality, increasing property value due to their amenity and aesthetic characteristics, and reducing the energy costs of cooling buildings. Urban green spaces also can provide ecosystem services in which the recreation and relaxation facilities are especially available to urban dwellers and tourists too. To confirm the multiple roles played by green spaces, certain level of qualitative im-provements and distribution of green spaces within the urb... Generally considered open to the public, urban open spaces are sometimes privately owned. Some examples of such places include higher education campuses, neighborhood/community parks/gardens, and institutional or corporate grounds. These areas still function to provide "aesthetic and psychological relief from urban development".[5] Nevertheless, most commonly the term is used to reference spaces that are public and "green". Benefits. The benefits that urban open space provides to citizens can be broken into three basic forms; recreation, ecology, and aesthetic value. Recrea Open access. Urban Planet. Knowledge towards Sustainable Cities.Â Urban Transformations to Sustainability. Edited by Thomas Elmqvist, Stockholm Resilience Centre, Xuemei Bai, Australian National University, Canberra, Niki Frantzeskaki, Corrie Griffith, Arizona State University, David Maddox, Timon McPhearson, New School University, New York, Susan Parnell, University of Cape Town, Patricia Romero-Lankao, National Center for Atmospheric Research, Boulder, Colorado, David Simon, Chalmers University of Technology, Gothenberg, Mark Watkins, Arizona State University.