ENVIRONMENTAL EQUALITY:

PROVIDING NEARBY NATURE FOR EVERYONE

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Every person, regardless of race, ethnicity, income, or age, is entitled to live in a home, neighborhood, and city that supports wellness and good health. Public discussions about environment and health have changed over time. Early scientific studies about health risks in communities focused on the presence of toxins or reduced environmental quality (of air or water, for example). There are notorious incidents (such as the chemical waste dumping at Love Canal) that raised public awareness about the effects of harmful substances. Many organizations and agencies are now committed to *environmental justice*, that is, to avoid or correct the unequal distribution of facilities or conditions that may endanger human health.

More recently, aligning with the growing evidence about the benefits of having access to nearby nature, there is commitment to equal access to the environments that promote health, wellness, and well-being. More recent public health studies note the absence or inadequate presence of trees, parks and open spaces in underserved neighborhoods. Even the smallest bits of nature in the city can make a positive difference in every person's daily life. Several terms - *environmental equity, environmental equality, environmental justice, and distributive justice* - are used by agencies and organizations to also describe their commitment to

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Nature Sacred is a program of the TKF Foundation whose mission is to provide the opportunity for a deeper human experience by inspiring and supporting the creation of public greenspaces that offer temporary sanctuary, encourage reflection, provide solace and engender peace and well being.

providing parks, gardens, and open spaces to all city residents. This briefing, using the term *environmental equality*, examines the issues and benefits that are important to consider in community planning for green space.

Risks and Benefits

There are many factors that contribute to the challenged conditions of some urban communities. Having parks, gardens, and open spaces will not fully compensate for the social disservices of some places. Nonetheless, the experience of nature is now recognized as a major contributor to individual and community wellness. Research suggests that the positive effects of exposure to urban green spaces may be amplified in lower-income, urban communities.

- Experimental research concludes that poverty directly impedes cognitive function and that chronic poverty-related conditions can mentally exhaust individuals.[1] Multiple studies have found that even brief experiences of nearby nature can enhance cognitive abilities.[2]

- Urban forests and parks help to filter air pollution and reduce energy costs leading to significant economic value and health benefits to neighborhoods.[3]

- Crowding, noise pollution and the increased threat of crime in lower socio-economic, urban neighborhoods contributes to chronic mental and physical fatigue of residents.[4,5] Having trees and green space may improve lives. Nature's restorative effects help people cope with stressful situations, with possible effects on behavior.[6] In studies within public housing settings, there were fewer reports of personal and property crimes for buildings having greener surroundings.[7]

- In addition to physical environment benefits, resident participation in urban greening programs is associated with community empowerment and social cohesion.[12]

- Recent studies in several regions of the U.S. show green spaces may not be evenly distributed among urban populations.[8,9,10,11]

A History of Risk, Then Wellness

Concerns about environmental equality have evolved in recent years.[13] Once more focused on risks from toxins in the environment, there is now greater attention to the role of the built environment, including planning for parks and green space.

The environmental justice movement has long recognized the concerns of low-income communities and communities of color.[14] Research has called out past discrimination and ongoing injustice concerning the siting of industrial and other polluting facilities, toxic waste facilities, and delayed response of clean up programs. Studies point to inequitable exposure of people of color and the poor to environmental harms such as hazardous land uses (e.g. toxic waste storage and disposal facilities) and the inequitable application of environmental protection policies.[15,16]

Explicit research about environmental justice gained attention in the 1980s and is rooted in the civil rights movement. The Environmental Protection Agency has noted the disproportionate impacts of environmental hazards, working to remedy unhealthy risk situations.[17] In 1994 a U.S. presidential executive order required environmental justice initiatives, mostly addressing risk, to be included in every federal agency's mission.[18] A federal environmental justice update in 2012 requires agencies to not only abate or remove harm, but includes efforts to increase quality of life and opportunity.

Acknowledging the positive role of parks and open spaces, researchers are now investigating the environmental justice implications of minimal access to urban parks and green space. Multiple studies find that low-income households are likely to be concentrated within "park-poor" neighborhoods.[19,20] Historical, social, and economic processes have affected parks and gardens distribution over the years, frequently putting specific cultural groups at a green space disadvantage.

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An Ethic for Community Planning

Equal availability and access to green space is not just a question for environmental justice researchers and equity advocates. *Planning for equitable distribution of urban green space is a community wide responsibility, and can contribute to the future health and success of urban communities.*

Parks History

The historic differences of use and purpose of public parks along lines of race and class has influenced the location and features of today's urban parks. For instance, larger landscaped and natural expanses were historically set aside in middle and upper class communities for leisure, social, and restorative activities. Meanwhile, disparately smaller, recreational parks were provided for the working classes or certain racial groups.[21] Today, local property tax revenue patterns, zoning decisions, and cultural stereotypes may uphold disparities in the amount and quality of parks green space across neighborhoods.[22] Though not universal, park inequality may be widespread, and is now uneven across not only class distinctions but along racial and disability indicators as well.[23,24]

Future Efforts

When considering urban planning and green resources, environmental equality refers to the fair distribution of outcomes, including burdens and opportunities.[25] Yet the use of the term often implies that all in a community should accept an equal burden of environmental pollution and degradation, rather than insisting on the elimination of harmful materials and improper disposal practices. Urban planners and community leaders increasingly endorse policies of both fairly distributed risks, and the right to an equal distribution of opportunities and wellness. Smart and ethical urban planning includes consciously equal distribution of environmental benefits, programs, and resources, including green space access, well-maintained vegetation, and community gardens.

Nature for Better Lives and Communities

Parks, trees, and open space have been appreciated for their aesthetic values for centuries. Going beyond the aesthetic values of nature, scientists of multiple disciplines have studied the contributions of nature experiences to human health, wellness, and therapy for more than four decades. Providing places for respite, recreation, and community connection, urban green spaces[a] have the potential to improve individual and community well-being and wellness in multiple ways.

Having neighborhood parks and nature settings is especially important in lower-income communities, where there may be higher rates of health disparities and chronic stress due to poverty, joblessness, and reduced education opportunity. Here are examples of benefits:

- Green space appears to fill in the gap in health inequalities. In one public health study, communities having low income and high levels of residential greenery had similar mortality rates to communities of higher socio-economic status. However when low income was associated with little surrounding green space, mortality rates were higher. People of lower income that are exposed to the greenest environments experience reduced health inequality.[26]

- Contact with natural environments promotes psychological restoration, enhanced mood, improved attention, and reduced stress and anxiety. [6,27,28] Life in urban places can present a person with many distractions and demands on attention. One must maintain focus to achieve goals and function productively. After prolonged effort to fend off distractions, a person's cognitive capabilities can become fatigued, leading to difficulties in concentration and irritability. Contact with green spaces has been shown to help one manage mental fatigue and restore the ability to concentrate.[29,30]

[a.] In this report 'green space' refers to urban landscapes, gardens, parks or any private or public spaces where natural elements (such as plants, soil, clean water or air, and even potted plants) are key components. Certain green spaces also provide opportunities for humans to interact with other people, companion animals (such as pets), and perhaps with urban wildlife.

- Urban environments often have high levels of noise pollution, including traffic noise, and sounds from other building users. Noise pollution contributes to elevated blood pressure, poor sustained attention, memory and concentration problems, sleep disturbances, modifications of social behavior, psychosocial stress-related symptoms, and emotional/motivational effects. Having access to quiet spaces can alleviate these health effects and lower dissatisfaction[31]. A green space can be an oasis of quiet. People respond to man-made and natural sounds differently; even if the decibel level of natural sounds (wind, water, birds) in a space is high, study subjects are less likely to rate that space as undesirable.[32]

- In a study of residents living in architecturally identical buildings, those with nearby vegetation were significantly more effective in managing more serious personal life challenges than their counterparts living in barren environments.[4]

- Studies have examined the effects of exposure to nature on positive emotion and ability to reflect on a life problem.[33] Participants in one study spent 15 minutes walking in a natural setting, a built setting, or watching videos of natural and built settings. Compared to virtual nature and built settings, exposure to natural settings was found to increase connectedness to nature, ability to direct attention, positive emotions, and ability to reflect on a life problem.

- Experiencing nature had a powerful influence on the rehabilitation potential of people who are greatly affected by a crisis.[34] In one study individuals who had many experiences of nature were less affected by their crisis than those who have few such experiences. The rehabilitative effect of nature is tied to its function as an enriched environment. During stays in natural settings an interaction takes place between sensory stimulation, emotions and

logical thought—an interaction that leads to a new orientation and new ways of seeing one's self and one's resources.

• For children, nature experiences can potentially encourage imagination and creativity, support feelings of self-worth, aid cognitive and intellectual development, enhance ability to concentrate and exercise self-discipline, and encourage positive social relationship.[35,36]

• The availability of community gardens and tree planting can be important to minority and ethnic groups, by creating places for culturally significant gardens and planting – strengthening a sense of community and tradition.[37]

• Ethnographic research of recent Southern California immigrants from India, Vietnam, Indonesia, Philippines, Iran, China and Taiwan found that home gardens provided religious or meditation space, supported identity continuity, enabled cultural cuisine, provided ethnomedicine materials, provoked a sense of environmental nostalgia for their home countries while enabling new connections to place, and provided family memorial space for intergenerational linkages.[38]

• Participation in an urban greening program was found to be associated with improved community empowerment and social cohesion.[12]

Parks Inequities

Green spaces include tree-lined streets, community gardens, green belts, and other natural features. The distribution of parks has been a particular focus of recent studies. For instance, larger green spaces provide multiple spaces for greater health benefit, but large parks appear to be less prevalent in more deprived neighborhoods.[39] Such findings may be typical of the distribution of other green spaces.

Public health agencies and park advocates recommend park access within half a mile of every home, considered a walkable distance, to counter obesity and associated chronic disease.[11,40,41]

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The Trust for Public Land's ParkScore program raises the bar, stipulating that the half-mile walk should be entirely within the public road network and uninterrupted by physical barriers such as highways, rivers, train tracks or fences.[42] Studies in multiple cities indicate that there are racial, ethnic, and socio-economic disparities in access to, quality, and size of parks.[8,10,43,44] Here are additional research findings:

- Parks are not evenly distributed among urban populations. For instance, in the early 2000s, only 33% of residents in Los Angeles lived within a ¼ mile of a park, compared to 97% in Boston and 91% in New York.[11] In park-deprived L.A., low-income areas and neighborhoods of color have lower levels of park access per capita compared to predominantly Caucasian neighborhoods.[8]

- In the United States, park benefits accrue disproportionately to Caucasian and affluent residents who enjoy superior park access, whereas people of color have more limited access to park space, make fewer visits to urban open spaces, and use parks spaces differently.[45,46,47]

- Higher population densities of urban neighborhoods and persons per park acre can cause congestion and overuse. In a Baltimore study, areas with higher counts of persons per park acre were more frequently found in predominately African American neighborhoods versus Caucasian neighborhoods.[48]

Smart, Sustainable Green Spaces Planning

Local governments and community leaders are working to improve the distribution of nearby nature amenities across their cities and towns. When planning for green spaces in a community, collaborating with potential users and residents is important for sustainable community green space systems.

Shared Perceptions

There are some shared perceptions and expectations about nature. Majora Carter, a community activist for change that she calls 'greening the ghetto', observes that *We all want beautiful healthy spaces, regardless of the color of our skin*.[49] When given a choice, people prefer natural environments (particularly those with water features, larger trees, intact vegetation, or appropriate human influence) to built environments, regardless of nationality or culture.[50,51]

Diverse Preferences and Use

Research also indicates some differences between ethnic and cultural groups concerning their preferences for nature experiences. Park-use patterns, recreation setting preference, and constraints on park use do vary by race and ethnicity.[52,53] It is important to recognize that culturally-dominant ideals of nature often are expressed in park planning and design, potentially overlooking preferences of minority users.[22] In addition, planning for an inclusive, community-minded green space also requires considering park users with mobility and accessibility needs.

Here are additional research findings about park use and non-use by various ethnic and racial groups that can be useful when developing green spaces planning and policy.

• The amount of time it takes to reach the park has a negative correlation with frequency of visits, but a positive correlation with length of stay.[54]

• For those not within walking distance from a green space, transportation can be a barrier. Public transit does not often provide access to regional recreational open spaces. Persons with low incomes and minorities may suffer disproportionately from the consequences of poor transportation and land-use decisions.[55]

• Parks numbers and siting are important, yet matching park amenities to use preferences may be more important than access.[56]

• Research points to significant variation in preferences for park attributes, frequency and nature of visits, and perceptions about parks among different racial and ethnic groups.[57] Studies have suggested, for instance, that African Americans tend to prefer developed recreation facilities over less managed, natural settings at parks.[46,58] Other studies show a difference in green space use for individual rather than group based activities. Caucasian visitors tend to use parks alone rather than in family or friend groups, as is more common among Hispanics.[59]

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- Cultural-specific park preference research suggests large shaded picnic areas, play equipment, water features, sanitary facilities and open-air vendors or cafes increase attractiveness of parks for Hispanic users.[60] Green spaces explicitly designed to support family and community activities fosters healthy and sustainable communities.

- Elders and those in retirement may have nature access needs distinct from their ethnic group, including both physical and psychological concerns. Intergenerational differences exist within an ethnic group and the difference in needs between one who is 65 and one is 75 may be stark. Additionally, older people in a deprived neighborhood may also have unique problems with regard to negotiating access to and within green spaces.[54,61,62]

Economic Challenges

There are many factors that contribute to inequities in the presence of nearby nature. Studies find that there are both economic causes and effects associated with parks investments in neighborhoods. Both positive and negative effects should be addressed in planning efforts.

- Neighborhoods near large tracts of open lands or parks are frequently unaffordable to low-income populations, reinforcing the trend of inequity in neighborhood green space.[63]

- Studies show that proximity to parks is correlated with increased property values.[64] Similarly, newly built parks in lower socio-economic neighborhoods can increase property values. Gentrification is a concern, as in some communities poorer people may move from their communities, as they can no longer afford higher living expenses and taxes.[65]

- In some regions funding, programing, maintenance, supervision, and quality of facilities are unevenly distributed among city parks and open spaces. Some grant programs that are intended to reduce disparities in city-park funding levels may have little effect on actual park spending in low-income communities.[66] If supported and used, a park provides the opportunity to improve and bring together a community, whereas an ignored, derelict park can provide a space of fear, crime, and waste, leading to greater public expenses for a local community.

Framework for Planning and Design

Social scientists working on parks planning in Los Angeles offer a model for understanding park features and use specific to community needs (Figure 1). Often, park planning focuses on facilities and built structures based on assumptions about neighborhoods or historic practices. The framework offers ideas and a process for evaluating the needs of users and integrating a park into the social structure of the local community. This flow of ideas can be used to examine the specific needs of a community during green space design.[19]
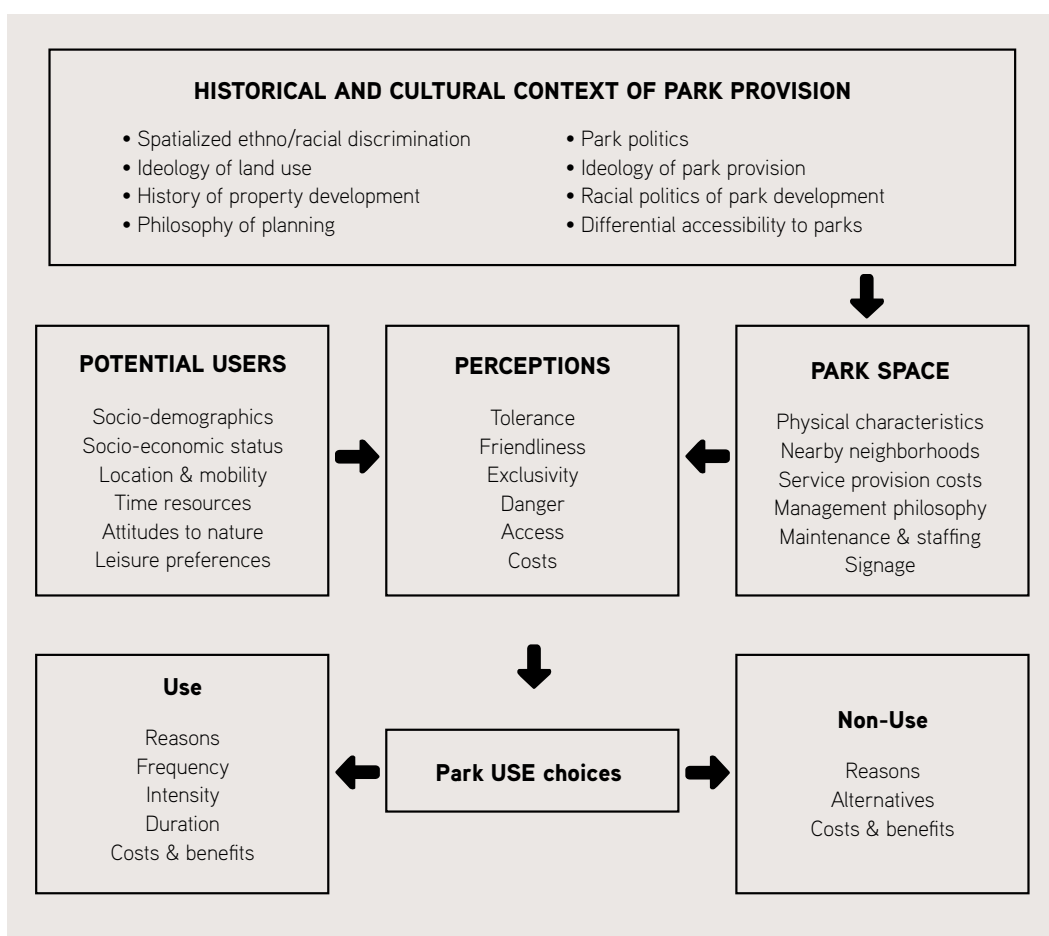

HISTORICAL AND CULTURAL CONTEXT OF PARK PROVISION

- Spatialized ethno/racial discrimination
- Ideology of land use
- History of property development
- Philosophy of planning
- Park politics
- Ideology of park provision
- Racial politics of park development
- Differential accessibility to parks

POTENTIAL USERS

Socio-demographics
Socio-economic status
Location & mobility
Time resources
Attitudes to nature
Leisure preferences

PERCEPTIONS

Tolerance
Friendliness
Exclusivity
Danger
Access
Costs

PARK SPACE

Physical characteristics
Nearby neighborhoods
Service provision costs
Management philosophy
Maintenance & staffing
Signage

Use

Reasons
Frequency
Intensity
Duration
Costs & benefits

Park USE choices

Non-Use

Reasons
Alternatives
Costs & benefits

Figure 1: Space, race, and park use considerations for parks planning (from Byrne and Wolch, 2009)

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Equitable Urban Green Space Planning Initiatives

Here are two examples of how parks, gardens, and green space can be planned for communities having little green space. At times a community recognizes the absence of nature, and works for change. At the other end of the scale a broader planning program for green spaces and sustainability provides a framework for future action.

Case Study: Irvington Peace Park in Baltimore, Maryland

In some places new parks are built from within. Irvington is a neighborhood of 5,600 residents in southwest Baltimore, about one square mile in area. Irvington experiences above average crime and violence, low education levels, and 22% of households are below the national poverty level. Nearly 90% of residents are African American.

A city study in 2009 described how inequitable spatial distribution of parks in relation to race and ethnicity was an expression of urban environmental inequality.[48] Irvington residents had no place to relax in nature and no shared public place.

Change can come as a city partners with grassroots organizations and supports the hard work of community members. A community association worked with the city to condemn an abandoned lot, remove a derelict house, and clean up junk and weeds. The ongoing project, originally funded by the TKF Foundation, has become the Irvington Peace Park.

After gaining access for public use, the space was deeded to a nearby church. In 2004 design plans began to form with input from neighborhood children and the help of a landscape designer. The green space now has fruit trees, a TKF bench, tree stump stools, raised beds, a wooden platform for art performance, peace flags, and a native plant garden.

This and similar projects often struggle to achieve planning that can foster inclusion in a healthy way for all. The site originally included a labyrinth but the stones used to line the walkway were removed because community members were reconfiguring them into gang signs or potentially dangerous play structures. Other challenges of a community may be reflected in parks design; the Irvington

site includes a memorial flowerbed dedicated to friends and family members lost to neighborhood violence.

As one resident commented, "An urge for peace and beauty is something all souls need". Activities in the park are dedicated to peace. In the summer of 2013, during a mini-art camp, children went out of the park to ask friends and family members about their hopes for themselves, their families, their community, and the world. The children then wrote these prayers and wishes onto ribbons and tied them to branches on a tree. In the spring of 2014 community members gathered to plant in the memorial garden, have family photos taken outside, interact with wildlife with a visiting falconer, and make more prayer ribbons to adorn the park trees. Community members are in the process of expanding plans for the park site and other nearby lands, integrating space for respite and healing, growing food, supporting biodiversity, and providing job skill development for local young people.

Case Study: Biophilic Cities

In other places environmental equality is imbedded within broader planning initiatives. The Biophilic City concept puts nature first in design, planning and management. It supports equitable human contact with nature, and integrates the environmental services and economic values provided by nature and natural systems. Such cities are full of all types of nature, large and small, planned or conserved; all residents have opportunities to feel, see and experience nearby nature.

Biophilia is a theory about how humans are hard-wired to respond to nature. As the human species evolved people were dependent on nature for life itself – food, water, shelter, and other needs. We evolved in response to and in cooperation with the natural world and its processes, as opposed to the increasingly mechanized world we inhabit. This idea may explain the surge of recent studies that indicate people need frequent contact with nature and other forms of life to be well and healthy.

Nature is central to the everyday life and assumptions of a biophilic city's governance, leadership, and populace. Timothy Beatley, author and director of the global Biophilic City Network, states, "A biophilic city is not just about its physical conditions or natural setting, and it is not just about green design and ecological interventions - it is just as much about a city's underlying biophilic spirit and sensibilities, about its funding priorities, and about the

importance placed on support for programs that entice urbanites to learn more about the nature around them…"[67].

Biophilic city planners incorporate nature into the design of every new project, and work to restore or repair what is considered native or sustainable. Now in development are indicators and metrics that can be used to measure or promote specific planning and design practices. The indicators include infrastructure, resident behaviors and lifestyles, building practices and patterns, and the dynamics of governance, including attitudes, knowledge, and institutions.

Conclusion

Research shows that experiences of city trees, parks, and gardens can aid with attention restoration and stress reduction; buffer risks of urban pollution, noise and violence; contribute to positive emotions; and can promote social engagement and social support (among neighbors, friends, family, and members of local organizations). Studies show a positive relationship between access to everyday natural environments and people's actual and perceived state of mental, physical, and social health.[68] Research also suggests that these positive effects may be amplified in lower-income, urban communities where residents encounter particularly difficult challenges.

This briefing about environmental equality examines the issues and possible outcomes when green spaces are included in smart and ethical urban planning. Historically inequitable urban planning decisions can persist in our cities today. Urban green spaces provide multiple health and wellness resources for coping with stressful environments. Including user needs and green space in city planning contributes to community buy-in and long-term sustainability.

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