Principle 2
Reserve Open Lands and Public Space

Principle 2
Reserve Open Lands and Public Space

Preserve and create parks and open space for community use, green connections, ecological systems, and adequate storm mitigation areas

GOALS

2A **Provide a variety of public open spaces and parks within an easy walking distance**

ACTION 1: Reserve adequate space for local, district, and regional parks in new development areas

ACTION 2: Develop parks with a range of uses, from active recreation to passive leisure for a full range of ages

ACTION 3: Preserve major natural features within the UGB connected with trails and bikeways

ACTION 4: Integrate natural and cultural attractions

2B **Provide human-scaled plazas, civic centers, and community services**

ACTION 5: Make accessible to people with disabilities and the elderly

ACTION 6: Size hardscape sections of parks and plazas to the level of reasonable use

2C **Preserve and enhance climate resilience with adequate storm management areas and fire zone buffers**

ACTION 7: Map growth and infill areas safe from sea level rise, storm surge, and fire hazards

ACTION 8: Enhance natural mitigation systems such as drainage ways, wetlands, and forestlands

ACTION 9: In urban areas, increase detention and infiltration at the building, street, and district level

ACTION 10: Mitigate urban heat island effects with green canopies and reflective surfaces

METRICS

2.1 **Distance to parks and civic clusters**

At least 80 percent of residential blocks should be located within 500 meters of neighborhood parks and civic clusters and within one kilometer of district parks or greenways

2.2 **Quantity of local and regional parks**

Reserve a minimum of 40 square meters of parks per capita to be distributed at a range of sizes from local pocket and neighborhood parks to regional recreation facilities and central parks for citywide use

RATIONALE AND CHALLENGES

Without enough public green space, high levels of density can make urban areas feel crowded and uncomfortable. Local parks are often the primary social and recreation space within neighborhoods. Regional parks and open space networks preserve the natural history, identity, and geography of a place while also preserving habitat, watersheds, and natural buffers. Moreover, as the rich-poor gap in many cities grows, attractive green space that is open to everyone will be vital to helping bridge class divides. As urban centers become denser and land becomes more expensive, shared spaces such as local and regional parks, plazas, schools, and community centers become more important to making a city livable and ecological.

With best practice, the local and the regional—as well as the recreational and the ecological—can be fused in a hierarchy of open space, corridors, parks, and plazas. At the largest scale, urban development boundaries can protect forestlands, farmlands, watersheds, drainageways, critical ecologies, and habitat. Within the urban zone, a network of green preserves can fuse ecological preservation and critical flood management systems with trails and recreational uses. Within the district and neighborhood, frequent parks, ballfields, plazas, and civic places add focus and livability to urban environments. When integrated, this combination of open space, active places, and natural systems should create the structure of a healthy city.
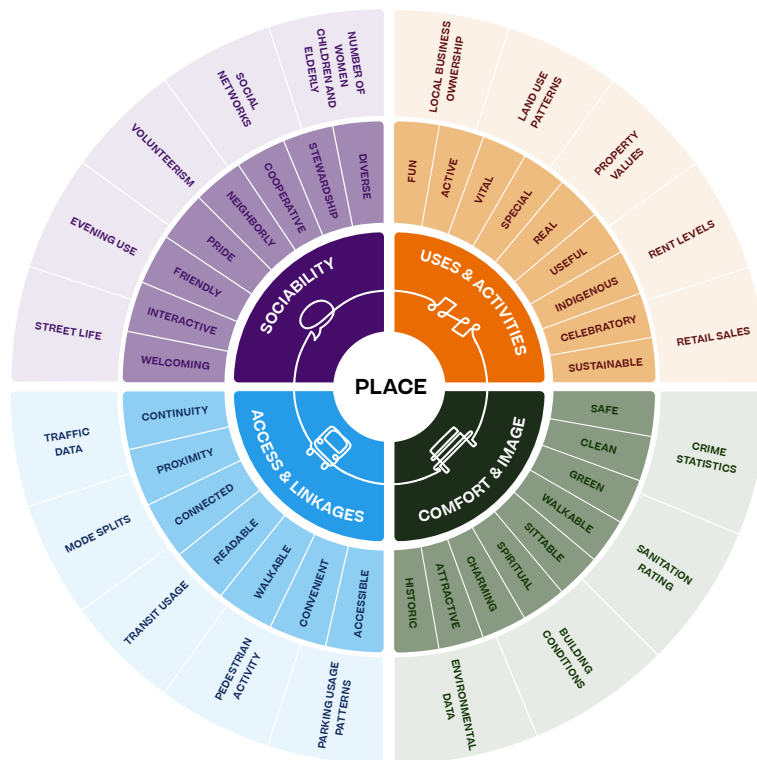

Figure P2-1: After a detailed study on public spaces, The Project for Public Spaces developed The Place Diagram, which identifies the four qualities successful spaces share. Good public spaces are: sociable, providing a place where people can meet each other; easily accessible; comfortable; and provide a variety of activities. (Source: Project for Public Spaces: https://www.pps.org/article/grplacefeat)

In the city, useful and environmental public spaces and civic clusters can bring economic and social vitality to any urban area. As architect and urban design consultant/professor Jan Gehl is known for saying, "First life, then spaces, then buildings. The other way around never works." Sadly, most urban development in cities has reversed this order; public spaces are considered an afterthought, rather than an integral part of urban life. Great public spaces allow a diverse group of people to come together, create economic vibrancy, and increase surrounding property values. Public spaces can give neighborhoods identity and a sense of place, which is vital for creating community and improving quality of life. Without local schools, child care centers, community centers, senior facilities, and clinics, neighborhoods lack key services and community connections.

Many historic city centers have a rich history of vibrant public spaces: groups of elderly huddled around a game; families sitting on the stone steps outside a local shop or restaurant enjoying the evening, playing in a local park or watching their kids play; young couples eating and drinking in cafés. With the rise of subdivisions, superblocks and shopping centers, car-centric planning, and streets without human-scale, much of public life is now being pushed inside malls, gated communities, or disappearing altogether. What makes this trend worse is that the limited space that is devoted to public places is often not designed well for people and the human-scale. As American sociologist William H. Whyte observed, "It is difficult to design a space that will not attract people. What is remarkable is how often this has been accomplished."

Beyond the challenge of determining how much and where public space should be allocated lies another difficulty: ensuring that designers create lively and attractive public spaces. Planners and designers must consider each city's unique cultural and demographic situation. Gehl and Whyte did painstaking anthropological, statistical, and analytical work to understand how public spaces in Copenhagen and New York function. Local ethnographers, planners, and citizens can learn these lessons and do the same throughout the world. Public spaces must be designed for the specific user and function. For example, as a city's population ages, designing public spaces so the elderly has a place to exercise and stroll safely will become increasingly important.

These challenges and opportunities associated with public space are now universal and critical to the health of the city. The cost of preserving, purchasing, building, and maintaining the shared open space is as critical to the functioning of a city as its streets, utilities, and services. It is the foundation of a healthy community and, ultimately, the most efficient way of providing the social life that each human being thrives on. In low-income development areas, it is difficult—but critical—that open space be reserved prior to development. Many of today's developing cities face the extreme pressures of rapid urbanization, population growth, and increasing car ownership that threaten valuable open space and the public realm. In all conditions, critical environmental lands must be preserved as green infrastructure and biological resources. The cost benefits of blue and green infrastructure in terms of flood mitigation, aquifer preservation, and heat island effects alone are significant.

BENEFITS

ECONOMIC

Improves housing prices: For example, having a view of green space and proximity to water bodies in Beijing raised housing prices by 7.1 percent and 13.2 percent, respectively.[1]

Improves commercial real estate values: Public space improves economic vitality. Studies show that green spaces can increase the value of commercial office space and retail locations by seven percent or more.[2]

Saves costs on controlling rainwater runoff: Public green space helps to absorb rainwater runoff, thereby reducing the need for more expensive engineering approaches to guarding against flood risk.[3]

ENVIRONMENTAL

Decreases energy use in hot climates: Tree cover in green spaces can provide shade to limit the need for air conditioning on hot days. In addition to the direct benefits of shading, green space helps reduce the urban heat island effect. [4]

Increases flood resistance: Parks absorb storm runoff and reduce the risk of flooding and sewage overflows. In Beijing alone, public green spaces saved the government 1.38 billion RMB in rainwater control in 2009.[5]

Improves air quality: Urban green space can absorb carbon emissions and reduce harmful particles in the air, such as PM10 particles found in dust and smoke.[6]

SOCIAL

Improves physical health: Living near public green space has been linked to lower risks of health conditions such as high blood pressure and cardiovascular disease. Greenery also promotes healthy birth weight and increases life expectancy.[7]

Improves mental health: Green space has the benefit of increasing the feeling of wellbeing and reducing the risk of depression.[8]

Creates community cohesion: Well-designed green spaces near community facilities create places where a community finds common ground and people come to know one another.[9]

Kibera, Nairobi, Kenya

Kibera, a division and neighborhood of Nairobi, is the largest urban informal settlement in Africa. Named after the Nubian word for forest, Kibera originated as a settlement in the forests along the outskirts of Nairobi. It is the result of 20th-century British colonial government segregation efforts that forced non-Europeans to live in segregated "native" reserves in the hinterlands of the city, limiting the movement of natives and indentured workers.[10] As Nairobi's economy developed throughout the 20th century, Kibera attracted an increasing number of rural migrants and developed with no formal plan.

Kibera is a hyper-dense, multi-ethnic informal settlement with minimal basic services and access to community and recreational space. The community is challenged with overcrowding, extreme flooding, high rates of crime, and a lack of waste disposal and sanitation. As an unauthorized settlement, the neighborhood has been at risk of the typical "raze and replace" approach taken in upgrading informal settlements; however, a new model of renewal has steadily improved Kibera in the last decade.

Beginning in 2006, the Kounkuey Design Initiative (KDI), an international team of design, planning, and policy professionals, launched the collaborative Kibera Public Space Project (KPSP) to address Kibera's challenges.[11] Guided by local input, this project develops a network of community-designed and -managed public spaces that prioritize residents' key needs: flood prevention, sanitation, new business opportunities, and recreation. Since its founding, the KPSP has created and programmed numerous public sites including a community hall that serves as a gathering place, a school, and a place of worship featuring

a rooftop that captures rainwater for flood reduction and irrigation. Additional sites feature play spaces, toilet sheds, laundry facilities, and new, formal sewage connections that divert waste from the Ngong River. To address high rates of unemployment, KDI also conducts training for residents to establish small businesses and programming of the KPSP sites, creating revenue-generating activities.

KPSP sites are constructed through KDI's partnership with community-based organizations. While KDI analyzes potential sites and determines what infrastructure is needed and feasible, community-based organizations share the responsibility of construction and management of the sites. As for the determination of what services and infrastructure are included in these spaces, over 5,000 community members helped select the sites' purpose, resources, and design.[12]

This ongoing collaboration has developed over 11 public spaces and contributed to a formal development plan for Kibera.[13] KDI worked closely with Nairobi Metropolitan Services to advocate for the approval of the Kibera Special Planning Area that offers a reference framework and guidelines for developers and regulatory agencies in regard to the development control process and infrastructure provision for the planning area. KDI and KSPS will be involved in community engagement and mediation throughout the upgrading process.

Figure P2-2: A design workshop for Anwa Junior Academy was held with students. (Source: KDI)

Figure P2-4: Formerly a crime-ridden and dumping site, this KPSP site now features a play area, sanitation block, and pedestrian bridge while providing programming space for a community-run youth group and a baby care collective. (Source: KDI)

Figure P2-3: This KPSP site includes a public sanitation block with rainwater capture to irrigate crops, waste collection, and composting for floriculture operations. (Source: KDI)

Figure P2-5: A gathering space complete with a playground, shaded seating, and community space built under the Community Responsive Adaptation to Flooding research project reduces flood risk. (Source: KDI)

GOAL 2A:
Provide a variety of public open spaces and parks within an easy walking distance

Parks, plazas, and other open space, like greenways and ecological preserves, should form a central feature of neighborhoods and urban districts. They should be distributed evenly with well-connected paths to ensure quick and convenient access. Pedestrian and bicycle-only streets can provide a safe way for residents to reach these destinations. These auto-free streets also serve as important open space, since their quiet and safe nature will make them conducive to relaxation and leisure activities.

A city needs public open spaces at different scales—smaller, more intimate neighborhood parks, as well as large, flexible open spaces that are good for community gatherings, such as concerts, festivals, and other events. Public spaces can also form the connective tissue of cities. According to Gehl, public life in good quality spaces is an important part of a full life. Therefore, it is important to provide a variety of gathering places accommodating a diversity of uses—both active and passive—where citizens can interact and come together.

Providing such destinations within short distances connected by paths that are pedestrian friendly will inject liveliness to the city. Creating a range and hierarchy of public spaces—small parks, plazas, regional open space, buffers, trunk greens—will ensure that all types of users, from those who want a place for contemplation to those intending to engage in activities, are accommodated.

ACTION 2.A.1:
Reserve adequate space for local, district, and regional parks in new development areas

Especially in areas planned for new growth, designating adequate open space is key to the future wellbeing of residents. Region parks should be sized and located in central locations that potentially connect easily to trail/bike systems in buffer and ecological corridors. Finally, local neighborhood parks should be required to be easily accessible within an 800-meter radius throughout residential areas.
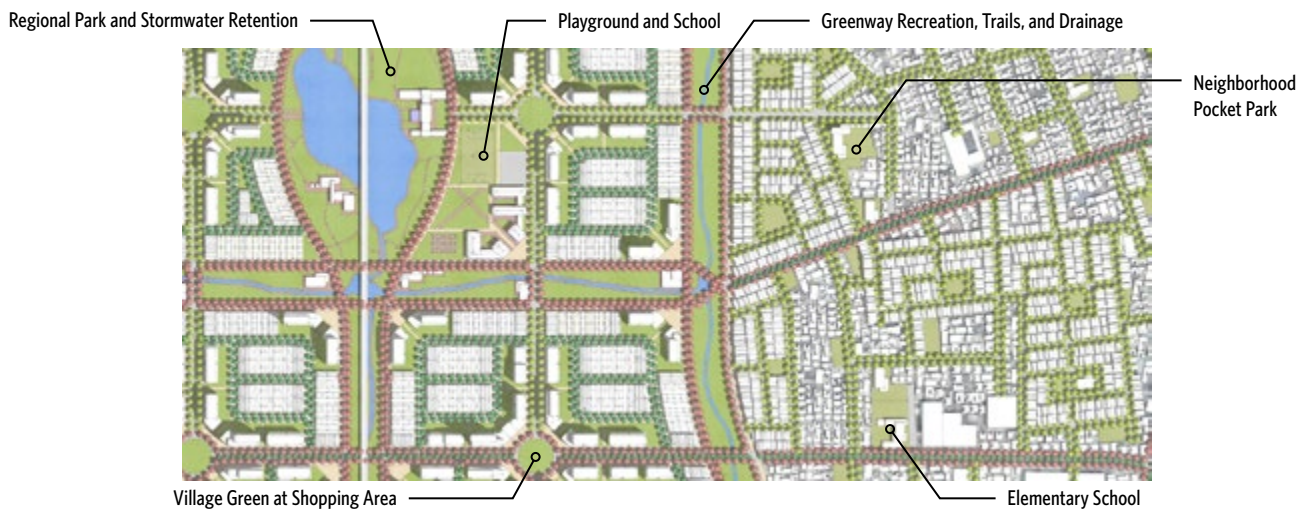
Regional Park and Stormwater Retention — Playground and School — Greenway Recreation, Trails, and Drainage

Neighborhood Pocket Park

Village Green at Shopping Area — Elementary School

Figure P2-6: A World Bank study for Ho Chi Minh City proposed recommendations for sustainable urban growth amid the challenges of a fast-growing population and resilience. The study's ecological recommendations proposed new growth areas, parks, greenways, open spaces, and regional parks that total a minimum of 25 percent of gross site area and the restoration and preservation of 90 percent of compromised streams and drainageways. (Source: HDR | Calthorpe)

ACTION 2.A.2:

Develop parks with a range of uses, from active recreation to passive leisure, for a full range of ages

Parks serve many functions depending on location and scale. Local neighborhood parks should provide for small gatherings, passive uses, children's play, and general exercise. Large community parks should provide quiet green areas for relaxing as well as a variety of sports venues. Major gathering areas along with jogging and hiking trails should be incorporated. Each community should be engaged in programming the space with special and unique uses tailored to the place. In all parks, the needs of families, the elderly, and children should be considered. The key to a great park is a strategic location for all to sit and people watch. The simple pleasure of resting in a beautiful location and watching the activities of others is one of the most important aspects of public space.

ACTION 2.A.3:

Preserve major natural features within the UGB connected with trails and bikeways

Major natural features such as lakes, rivers, streams, wetlands, steep slopes, ecological habitat, and scenic ridgelines should be preserved with the UGB. These 'backbone' or 'trunk' open space systems preserve the natural and geographic character of a region while they create ecological habitats and resilience. For example, adequate setbacks along waterways can reduce risk of flooding and preservation, while the expansion of wetlands can enhance stormwater detention and building limits on steep slopes can avoid danger of slides and property damage. Development should be limited in areas subject to extreme fire hazard or flooding.

Figure P2-7: Central Park transformed Denver's Stapleton Airport into a mixed-use, sustainable community featuring 80 acres of regional open space that preserves and showcases the area's natural environment while providing space for both active and passive recreation within a short walk of residents' homes. (Source: HDR)

ACTION 2.A.4:
Integrate natural and cultural attractions

Important historic and natural features should be highlighted in community parks. Integrating restaurants and cafés with the park experience can increase vibrancy as well as improve economic vitality. Other additions, such as gardens, sports fields, and tables for games, can also help parks build community and a sense of place. Engaging the surrounding community in developing parks is a great way to provide meaningful features that reflect the character of the neighborhood.

Figure P2-8: The 38-acre Central Park located in Chesterfield, Missouri connects valuable public and private amenities to provide a contiguous recreational cultural and learning experience. The park includes interpretive trails, a riparian corridor with pathways, a lake boat house, playgrounds, tennis courts, and a 4,000-seat amphitheater with fixed and lawn seating that frequently hosts events in the warm months. (Source: HDR)

GOAL 2B:
Provide human-scaled plazas, civic centers, and community services

Civic amenities form an integral part of a city's open space network and should be easily accessed from parks and auto-free streets. Civic nodes (i.e., civic center and other community services like cultural, sports, and educational facilities) should be distributed throughout the community and clustered together to ensure that they maintain a neighborhood scale.

Size and distance play a critical role in determining human scale and social interaction. In Cities for People, Gehl emphasizes how different distances affect the nature of human interactions. We can identify humans at a distance of 300 to 500 meters; at 100 meters we recognize movement and body language; at 50 to 75 meters we are able to recognize a person, and at 22 to 25 meters, we can read facial expression. Those 100-meter and 25-meter spans that Gehl refers to as the "social field of vision" are critical dimensions from a design perspective while determining human-scale. The 100-meter distance is reflected in the size of many notable squares and plazas in Europe that are smaller than 10,000m². In fact, most are smaller than 8,000m². This parameter is a good starting point to designing plazas that are human scale and foster vibrant social interactions.

Figure P2-9: Children cool off from the summer heat by enjoying a human-scaled plaza with water features in Atlanta, Georgia. (Source: HDR)

Figure P2-10: This intimate public space in Copenhagen, Denmark also serves as an outdoor dining space for local restaurants. (Source: © La Citta Vita. CC BY-SA 2.0. Downloaded from: https://www.flickr.com/photos/la-citta-vita/4764826278)

Figure P2-11: All age groups enjoy the Rouse Town Center in Australia, which complements the surrounding retail and residential community. The plaza is scaled to encourage a variety of social interactions. (Source: HDR)

Figure P2-12: Ed Square, Edmondson Park, New South Wales, Australia, contains a human-scaled, geometric-inspired plaza. (Source: HDR)

ACTION 2.B.5:
Make accessible to people with disabilities and the elderly

All public space including plazas must be designed to be inclusive and accommodate the needs of its citizens including the disabled, elderly, and children. Public space must be accessible from sidewalks and streets so they are welcoming to all. Accessibility ramps, railings, benches and other amenities must be provided for the benefit of those who are physically challenged. It is also highly desirable that public open spaces be located adjacent to community facilities such as local shops, schools, and child care so that they can be easily enjoyed as part of people's daily routines.

Figure P2-13: The Crown Fountain at Millennium Park in Chicago, Illinois is easily accessible for all residents and visitors, including the elderly and physically challenged. (Source: Paralyzed Veterans of America)

ACTION 2.B.6:
Size hardscape sections of parks and plazas to the level of reasonable use

Sometimes hardscape sections of parks and plazas dominate large swaths of space. This is not conducive to designing for the human-scale. Parks and plazas should have publicly accessible green space as much as possible. A lack of greenery in urban environments can make high levels of population density feel uncomfortable. There are also a host of other benefits to green space such as flood control, cleaner air, shade, and other health benefits. The size of a space can also determine the quality of a human interaction. According to Jan Gehl's "social field of vision," 100 meters is about the correct distance where two people can still see each other in motion. More intimate human interactions take place between seven and zero meters. This range should be a guide for public space designers when designing small-scaled, people-oriented areas in larger plazas or parks.

Figure P2-14: Historic Fourth Ward Park, Atlanta, Georgia, uniquely integrates appropriately sized hardscape pathways into the natural landscape. (Source: HDR)

GOAL 2C:
Preserve and enhance climate resilience with adequate storm management areas, blue/green networks, and fire zone buffers

Urban growth must accommodate challenging new realities as climate change increases average global temperatures, intensifies peak storm events, raises sea levels, and expands flood zones. Climate adaptation and mitigation systems must be developed that balance ecological strategies and urban design approaches with engineered systems. Above all, safe, high ground areas must be prioritized for all new urban development. For example, in hot wet climate zones, shoreline areas and lowland flood-prone areas in deltas should be mapped as well as vulnerable areas protected from new development. Similar mapping and protection must be applied to fire hazard areas and key riparian corridors essential for peak storm water conveyance.

Existing development can be protected with perimeters of multiuse open space barriers engineered as dikes. Within these low ground protected areas, blue/green networks of drainageways, detention areas, and public open space should be retrofitted to mitigate peak storm events. Existing streams and drainageways should be protected and enhanced with riparian edge treatments and trail systems.

In hot dry climate zones, fire protection becomes a central challenge. Once again, metropolitan form is key as high fire zone areas need to be protected from new development through urban growth boundaries, limited utility services, and zoning controls. Regional design for climate resilience not only protects existing communities and directs new growth to safe areas, it provides the structure for metropolitan greenbelts and critical open space for all.

Figure P2-15: The Sanlihe River Corridor in Chinas's Hebei Province uses landscape to revive and construct Qian'an City's infrastructure, helping to reduce pollution, provide opportunity for urban land development, and serve ecological functions. It covers approximately 135 hectares, stretches 13.4 kilometers, and varies between 100 to 300 meters wide. Preserving and enhancing such assets is key to a city's ecological health. (Source: Turenscape)

ACTION 2.C.7:

Map growth and infill areas safe from sea level rise, storm surge and fire hazards

While global areas of higher incomes typically have complete GIS databases delineating hazard areas and potent zoning to control development, developing economies too often lack up-to-date data and land-use authority to control development. Informal settlements oftentimes gravitate to unsafe areas, which place the poor in harm's way. The result: those with the least resources must cope with catastrophic events. In addition to basic mapping and land-use controls, sophisticated storm event modeling is lacking for many regions as well as advanced forecasting tools related to accelerating climate change conditions.
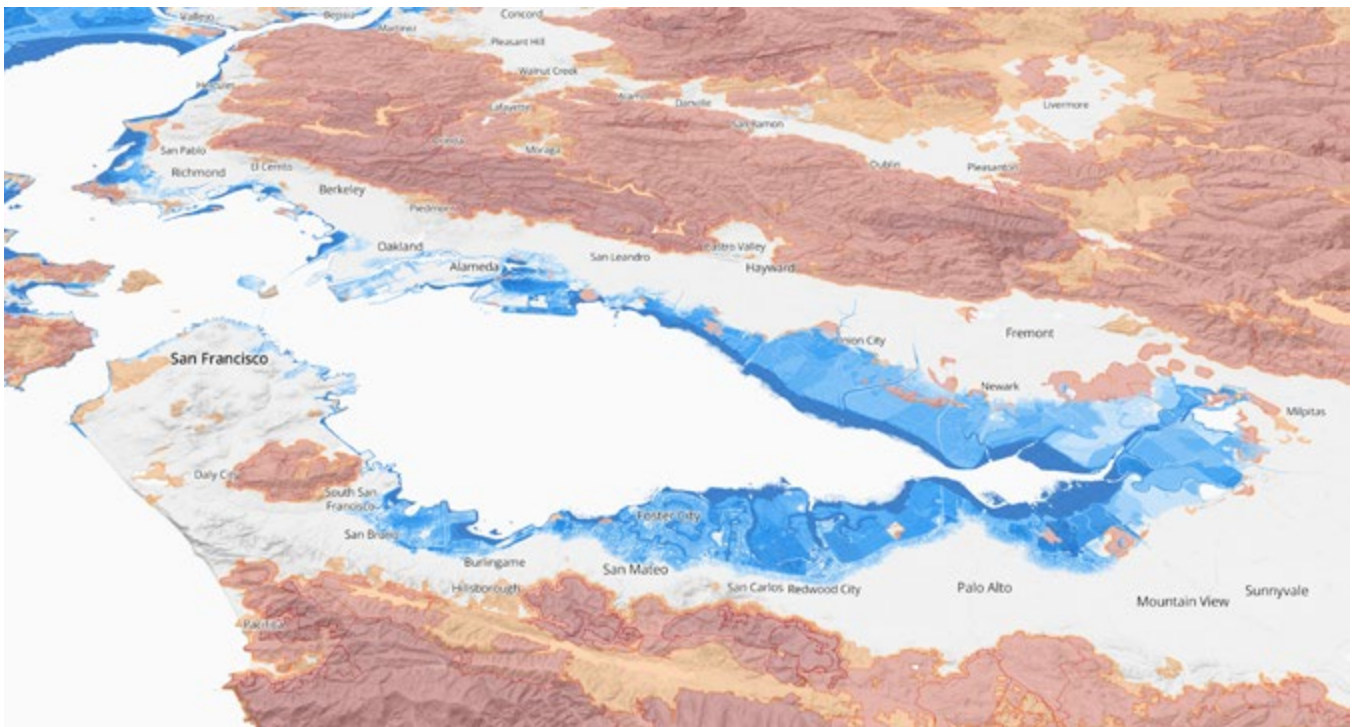

Figure P2-16: Areas affected by sea level rise, storm surge and fire hazards were mapped to identify safe development sites for a study in the San Francisco Bay Area. (Source: UrbanFootprint)

ACTION 2.C.8:
Enhance natural mitigation systems such as drainageways, wetlands, and forestlands

Blue/green networks surround and crisscross all urban environments. Critical river and stream drainageways must be preserved and maintained if they are to play a central role in regional resilience. Adequate setbacks, buffer areas, and wetland preservation are key open space elements for stormwater management as well as for healthy ecological systems integrated in the urban environment. GIS mapping of all waterways and their environs needs to precede urban development. Preservation of waterways as riparian corridors rather than concrete channelization should be preferred. Finally, maintenance of drainageways, especially in the face of solid waste mismanagement, is key to their function for conveyance in peak storm events.

ACTION 2.C.9:
In urban areas, increase detention and infiltration at the building, street, and district level.

Reducing urban runoff is key to mitigating peak storm events by reducing local impervious surfaces. Many techniques are available, from permeable pavement to green roofs and bioswales along streets. Larger open space areas along with constructed infiltration basins and wetlands are also important opportunities. All strategies can combine to produce a greener environment, one providing greater amenities to residents and that can help reduce heat island effects. Sometimes called 'sponge city,' the blue/green infrastructure can help define the urban landscape in many positive ways.

Figure P2-17: Bishan Park in Singapore is a good example of an ecological corridor that has been used to solve flooding problems as well as provide an important recreational asset. (Source: © Pagadolashophouse. CC-BY-SA-3.0.)

Green Infrastructure Practices

Permeable Pavement | Surface Infiltration & Filtration

Green Roofs | Manfactured Treatment Devices

Rainwater Harvesting | Subsurface Infiltration

Large-Scale Green Infrastructure Practices

Basins

Constructed Wetlands

Figure P2-18: Practices for retail/office, residential, and existing industrial land use (Port Authority of New York New Jersey Green Infrastructure Design Manual)

ACTION 2.C.10:
Mitigate urban heat island effects with green canopies and reflective surfaces

Increased temperatures driven by climate change have contributed to the heat island effect, a phenomenon exacerbated by urbanization. Heat-absorbing man-made surfaces, less green space, and eroding tree canopy cause cities to be warmer than nearby rural areas. Construction materials such as asphalt and dark roofing play an important role in heat island intensity due to their greater ability to absorb and retain heat. The same with urban patterns such as street layout, building form, height, density, and the amount of impermeable surfaces, which affect wind direction and air circulation.[34] Mitigations include expanded street trees, heavy plant canopies in open space areas, and light reflective roofing materials.
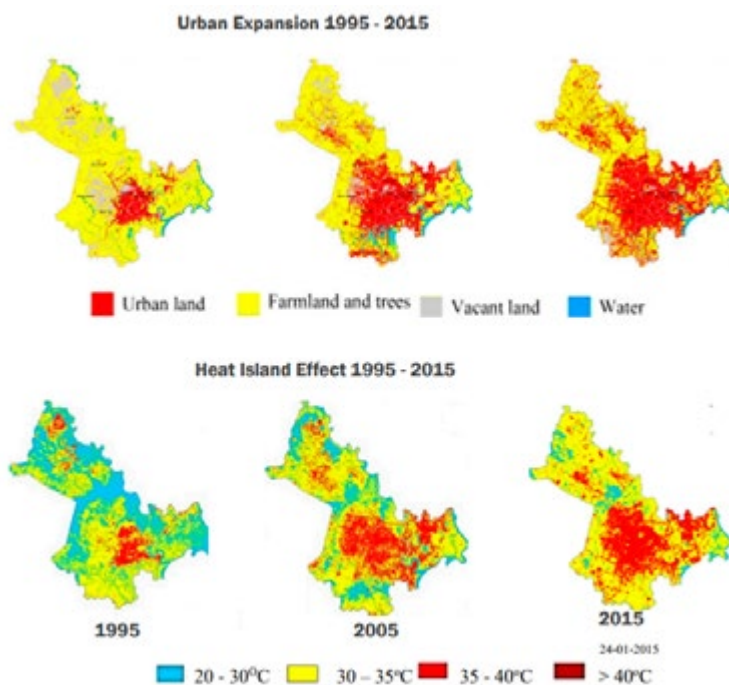

Figure P2-19: Ho Chi Minh City's urban expansion and corresponding increase in temperature from 1995 to 2015. (Source: Urban Thermal Environment and Heat Island in Ho Chi Minh City, Vietnam from Remote Sensing Data; Preprints 2017, 2017010129 (doi: 10.20944/preprints201701.0129.v1). CC BY 4.0. Downloaded from: https://www.preprints.org/manuscript/201701.0129/v1)

METRIC 2.1:
Distance to Parks and Civic Clusters

At least 80 percent of residential blocks should be located within 500 meters of neighborhood parks and civic clusters and within one kilometer of district parks or greenways

For public spaces to be used, they must be accessible. Residential areas should have walking or biking access to high-quality public space. Having a neighborhood park can also create a sense of community between nearby residents, a quality now often lost in China with superblock residences that often house thousands of people. Neighborhood parks can also contribute to the quality of a mixed-use development; public spaces close to commercial areas can encourage people to stay longer and also enjoy recreational activities.

Figure P2-20: This vibrant park concept for the Zhangma District Plan, Jinan, China provides easy access and features regional level attractions for visitors and residents. (Source: HDR | Calthorpe)

Figure P2-21: The open space and park plan for the Zhuhai North TOD Plan, China ensures that the majority of residential blocks are located within 500 meters of neighborhood parks and one kilometer of major parks. (Source: HDR | Calthorpe)

LEGEND:

- Greenspace
- Pedestrian Streets
- Water
- Blocks
- Piers
- Inter-City Rail
- Boundary
- 500m Radii

METRIC 2.2:
Quantity of Local and Regional Parks

Reserve a minimum of 40 square meters of parks per capita to be distributed at a range of sizes from local pocket and neighborhood parks to regional recreation facilities and central parks for citywide use

Cities, districts and neighborhoods should have a range of active parks—some local and other larger parks sized for major gathering, civic events, and recreation. At least 40m² per capita is a global minimum average as studies of existing parkland ratios demonstrate. It is important to have local parks and plazas within walking distance and scaled for community use. Too often hardscape plazas are too large and feel empty and foreboding.

Likewise, local parks are stronger neighborhood destinations if they maintain a human-scale. The distance one can recognize someone is about 50 to 75 meters, so urban plazas should be scaled to no more than 4,000m². Neighborhood parks should average around 10,000m² as this size accommodates most uses appropriate for passive and active local open space.

Larger civic areas and community recreation parks should be larger, accommodating a range of uses and gatherings for special events, sports, and performances. In most cases, these larger parks should be broken into smaller spaces that mix greens, recreation areas and hardscape in ways that support multiple uses. In addition to active parks, additional open lands should be set aside to preserve key habitat and riparian ecologies along with drainage and detention areas, especially in regions with significant storm and flooding challenges. The area per capita for such ecological areas is region- and climate-dependent.

New York, New York, USA

Population: 8,622,698 [14]
2030 forecast: 8,821,027 [15]
Size: 782 km² [16]

PLANYC 2030: PARK WITHIN 10-MINUTE WALK FOR EVERY NEW YORKER

PlaNYC 2030 is a comprehensive sustainability plan announced on Earth Day 2007 as a multi-agency strategy to enhance resilience and adapt to climate change. The plan encompasses 127 initiatives addressing 10 goals aiming to reduce citywide greenhouse gas emissions by 30 percent, thus achieving the cleanest air quality of any major U.S. city. A main feature of PlaNYC 2030 is setting the target of assuring 85 percent of New Yorkers have access to a park within a 10-minute walk from their home until 2030.

Under PlaNYC 2030, large public investments in destination parks such as Fresh Kills or Brooklyn Bridge Park were made. An additional innovative segment of PlaNYC 2030 was increasing activity in under-used spaces, with a special focus on underserved, low-income areas. Many of these initiatives help capture multiple social and environmental benefits beyond the 10-minute park access.

Four notable strategies include: the Schoolyards to Playgrounds program extending environmental performance and usable activity time on hundreds of school properties; Million Trees NYC, which increased tree canopy cover from 20.9 to 24 percent within eight years; GreenStreets projects replacing asphalt with pervious green surfaces to treat stormwater and increase leaf coverage; and the Green Infrastructure Stormwater Management Initiative which, among others, enabled the founding of Brooklyn Grange, the world's largest rooftop farm, capturing stormwater on a one-acre industrial building and reducing combined sewer overflow (CSO) events during heavy rainfall.[17] [18] These projects solve infrastructural deficits exacerbated by climate change, while creating green, active community spaces that positively impact residents' health indicators. Many of these projects were directed toward lower-income neighborhoods in Brooklyn and the Bronx, which suffered from lack of open spaces for decades.

In 2007, 73 percent of New York's residents lived within 10 minutes of a park.[19] By 2017, almost a million people gained new access to green space in their neighborhood, reaching 81.5 percent of the city's population that now gain benefits in health and stronger social cohesion while increasing climate resilience through additional shade, stormwater capture, and carbon sequestration.[20]

Areas Within a 10-Minute Walk of a Park

AREA WITHIN 10-MINUTE WALK OF PARK IN 2007
AREA WITHIN 10-MINUTE WALK ADDED SINCE 2007
AREA NOT WITHIN 10-MINUTE WALK OF PARK
LANDFILLS, AIRPORTS & AREAS EXCLUDED FROM ANALYSIS

Figure P2-22: PlaNYC 2030 Park Access Map: orange added since 2007, gray lacks park within 10-minute walk. (Source: City of New York; acccessed: http://www.nyc.gov/html/planyc/downloads/pdf/publications/planyc_2011_planyc_full_report)pdf)

Figure P2-23: Schoolyards to Playgrounds site in Flushing, New York. (Source: Maddalena Polletta/Courtesy of Trust for Public Land)

Medellin, Antioquia Province, Colombia

Population: 2,508,452 [21]
2030 Forecast: 4,500,000 [22]
Size: 382 km² [23]

TRANSFORMATIVE PHYSICAL INFRASTRUCTURE AS INCLUSIVE SOCIAL INFRASTRUCTURE

After years of tumultuous cartel violence in the streets of Medellín, the city sought social cohesion and empowerment of civil participation. With a coalition of partners, the city engaged in revitalizing its mountainside low-income, informal neighborhoods and advance community development through Integral Urban Projects (PUI).[24] The strategy capitalized on an active, local network of professionals, architects, and community organizers that articulated a vision for improvements in infrastructure, mobility, parks, and public facilities. The vision called for a network of active community places around infrastructure investments, while increasing economic opportunities for residents. Cable-car plazas became markets and viewpoints. Pedestrian stairways and public escalators became canvases for street art. Over 20 water storage tanks named Articulated Units of Life (UVA - Unidades de Vida Articulada) were redesigned and opened as plazas or playgrounds with water elements for families.[25] These infrastructure opportunities were built as high-quality spaces with unique, award-winning architecture to enhance local identity and encourage trust in the government.[26]

A uniquely remarkable aspect of the "public first" culture-changing strategy was a network of 10 library parks aimed at making libraries the center of cultural and social development. Between 2004 and 2011, the City of Medellín planned and opened 10 library parks, designed collaboratively with a forum of representatives from government institution, non-governmental organizations, international organizations, community organizations, social movements and universities.[27][28][29] The community was very involved in every

Figure P2-24: Biblioteca España, Medellín, Colombia (Source: SajoR, CC BY-SA 2.5)

aspect of the project—from problem diagnosis to concept formulation, execution and post-occupancy—to ensure a sense of belonging while gaining public support and long-term stewardship. Diverting profits from the local, city-owned power utility, the city was able to fund unique buildings through a public-private partnership, avoiding dependency on inconsistent state funding.[30]

The multi-use approach, coupled with a hyper-local participatory process, enabled Medellín to sustain a positive social and economic outlook and public approval. Feelings of safety and the local economy continue to grow, creating an urban culture change that goes beyond an individual neighborhood, an architectural whim, or the kindness of a single political leader.

Figure P2-25: View of Plaza Botero and the Rafael Uribe Uribe Palace of Culture, in the centre of Medellín, Colombia. (Source: Sebastian Reategui, CC0)

Figure P2-26: Street art in public stairways: Graffiti in Comuna 13 San Javier, Medellín, Colombia (Source: Bernard Gagnon, CC BY-SA 4.0)

Jinan, Shandong Province, China

Population: 5,514,000[31]
2030 forecast: 6,546,00 [32]
Size: 10,247 km² (prefecture-level and sub-provincial city)

RECONNECTING A CITY TO ITS NATURAL CHARACTER

Jinan, the "Spring City," is the capital of the Shandong province and a major city in eastern China. The city's recent regional study serves as a great example of integrating strong connections to regional green and open space in plans for future development. Nestled between the Yellow River and Taishan Mountain, Jinan features an abundance of water due to the mountain's stormwater that runs into streams, aquifers, and the city's famous springs. These natural features and connections to nature are strong symbols of the region's cultural history. In an otherwise dry and flat region, Jinan historically attracted poets, nobles, and scholars and, with the only large mountain in the flat northern China plain, it served as a royal ritual location for ancient emperors.

Jinan conducted a regional study to inform its future development under the goal of balancing the region's growth and development needs with its connections to nature. This plan seeks to address the increasing development pressure that is threatening Jinan's environment and infrastructure as development sprawls away from the riverbanks to avoid flooding risks and spreads into the mountains, reducing ecologically sensitive areas and valuable aquifers.

The study first mapped environmental features and constraints, identifying those important ecological assets that Jinan wanted to preserve. From this, Jinan designated 'Eco Corridors,' an interconnected system of preservation zones and buffers between communities that maintain riparian connections and drainage patterns, protect habitats for local flora and fauna, and create natural boundaries between industry and communities.[33] Further assessments of existing conditions also indicated that land along and south of the river that is vacant or under-utilized, due to prior flood concerns, is a prime spot for future development and a new regional parkway thanks to Jinan's continuous investment in hydrological engineering.

The findings of the study led to a new vision for Jinan, the Yellow River District, and the Yellow River Parkway. The proposed district is a compact development along the river and immediately adjacent to the existing downtown with clear connections to its natural assets through a parkway. The Yellow River Parkway is a regional green parkway that features pedestrian and bike trails along the former levee roads and access to open space within the lush and spacious flood buffers. The envisioned network of parks showcases the city's history and arts as well as its natural beauty, with new linkages to open space and trails for recreation.

The strategies applied in this regional study could reorient Jinan's development for a more sustainable future. The study provides a future plan in which the city's development is planned around green space and ecological preservation, allowing for greater access to open space, sustainable growth, and a clear reconnection to the city's unique natural character.
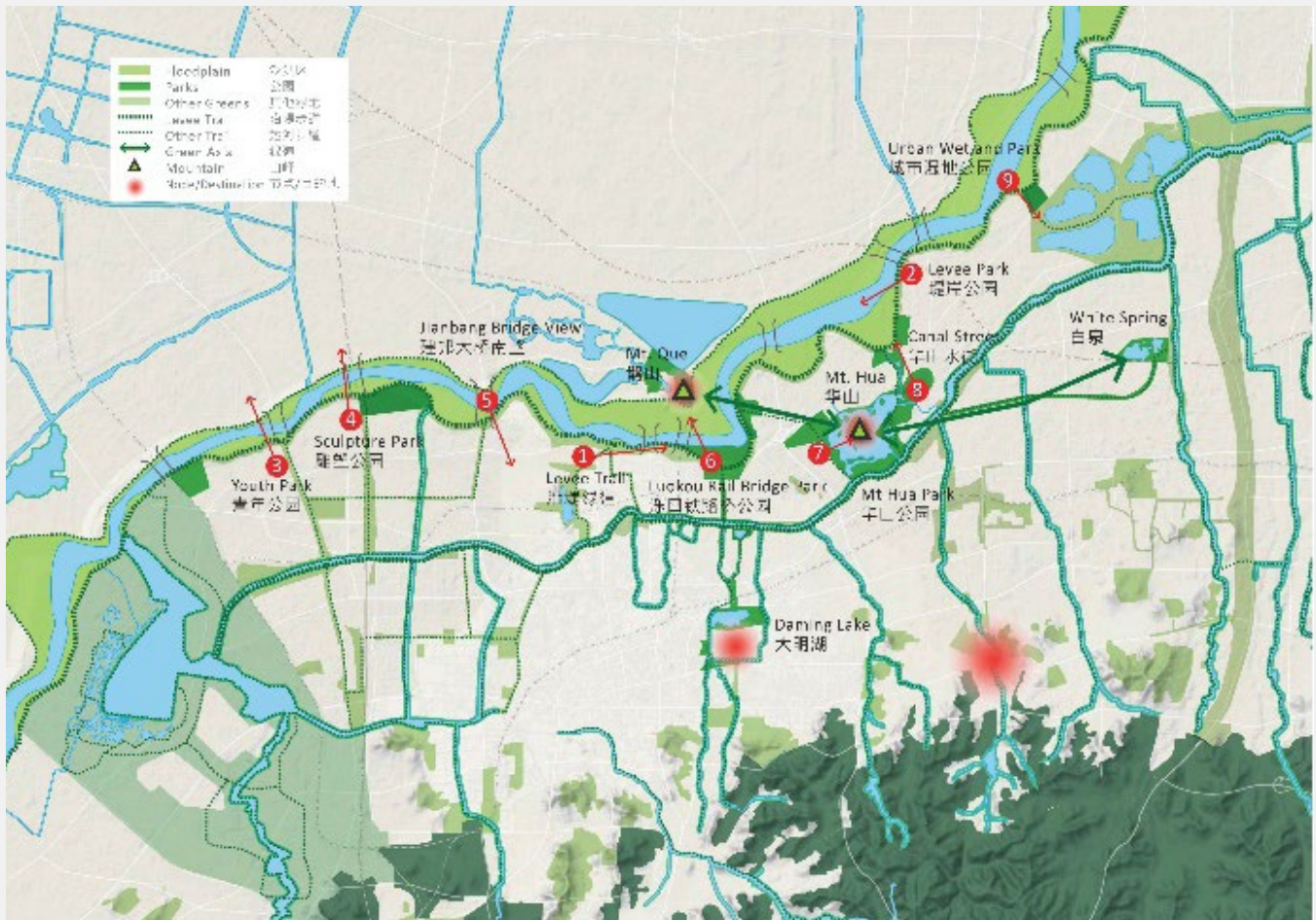
Figure P2-27: Jinan Regional City Plan's network of green spaces along the Yellow River (Source: HDR | Calthorpe)

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