Mind the Gaps

Speculations on a Better Future for *All* of Houston

BY NICOLA SPRINGER

with data from the Rice University Shell Center for Sustainability's Houston Sustainability Indicators

Redraw the charts, trace the maps, shade between the lines…this was my way of making sense of all the data.

The data points come from Lester King, PhD, an urban planner and fellow at Rice University who has developed a set of sustainability indicators for Houston and has made the information available to the public along with an array of visualization tools. My hope is that these data can provide a baseline for thinking about the projects featured in this issue, projects that are just breaking ground or that are on the boards as speculative ideas for the near future.

In a conversation about Houston's future, I feel it imperative to understand where we are today. Is Houston affordable or not? Is it accessible or not? When it comes to quality of life is it equitable or not? In this introduction to the issue we ask these questions at a community level, even as we look across the entire city.

When this issue was proposed, we looked at projects in development today that help us imagine a day in the life of Houstonians 10, 20, 30 years from now—how will they rest and relax at home, how will they move through the city, what will their work environment look like, and where will they play? Before we speculate, let us deepen our understanding of the present.

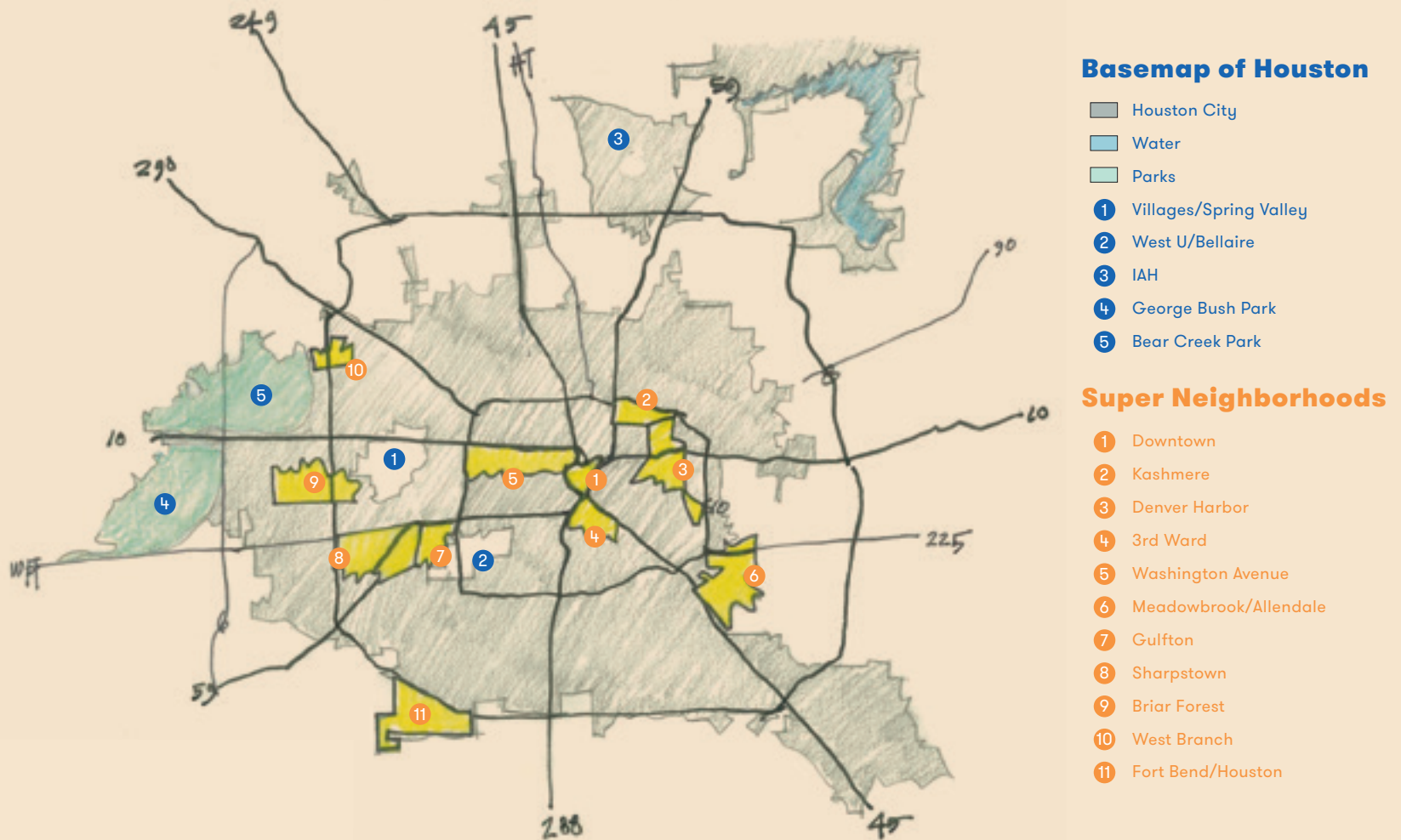This strategy to benchmark Houston by comparing across super-neighborhoods utilizing King's sustainability indicators was a huge undertaking and opened up more questions than I expected, but in the spirit of the speculation, as this issue goes to press, I will share where my tentative thoughts are on our present challenges and our future.

A Community-Level Analysis of Houston's Strengths and Weaknesses

In the last three years, Houston has topped a dizzying number of national lists, often in contradictory ways. We are touted as having the best job market and most inequality, the most diversity and worst segregation, the tastiest food and among the most food deserts, great affordability and skyrocketing costs. The remarkable population growth is a hard fact, except that some parts of town seem to depopulate before our eyes. Every city is complex, but this vast delta seems to encompass all possibilities, all at once.

With this staggering complexity in mind, King selected ten super-neighborhood communities, one from each city council district. They loosely follow the four concentric rings of Houston—Downtown, Inner Loop, Between the Belts, and Beyond the Beltway. Houston was spatially carved up into 88 communities called super neighborhoods during the Mayor Lee Brown administration (1998-2004). These community designations were intended to offer a much-needed intermediary form of governance between neighborhood organizations (1,000 residents) and city council representatives (200,000 residents). Out of dozens of indicators we focused on those around the themes of quality of life, land use development, and socioeconomics, in the hope of painting a comprehensive, a truer, picture of what it means to live in these communities.

Downtown is a place of extremes. The numbers reflect the slow cycle of devolution and evolution

Basemap of Houston

- ▢ Houston City
- ▢ Water
- ▢ Parks
- ① Villages/Spring Valley
- ② West U/Bellaire
- ③ IAH
- ④ George Bush Park
- ⑤ Bear Creek Park

Super Neighborhoods

- ① Downtown
- ② Kashmere
- ③ Denver Harbor
- ④ 3rd Ward
- ⑤ Washington Avenue
- ⑥ Meadowbrook/Allendale
- ⑦ Gulfton
- ⑧ Sharpstown
- ⑨ Briar Forest
- ⑩ West Branch
- ⑪ Fort Bend/Houston

back into a cohesive urban district. It is perhaps the most difficult of all the communities to describe with numbers.

King writes that "[t]he Inner Loop area in Houston is the most clearly fragmented by income and affordability," and this in turns leads to the paradoxical situation in which "Houston is only truly affordable for the low to moderate income earners." How could Houston be more affordable to those with low incomes than to the rich? The technical definition of affordability for housing specialists is that 30 percent or less of a family's income is devoted to housing. If transportation costs are factored in with housing, which is especially important in a car-dependent city like Houston, the combined amount must be 46 percent or less of a family income to be considered affordable.

The Between the Belts area was the focus of a *Cite* special issue published in 2014 and guest edited by Susan Rogers. In the "beautiful periphery" between Loop 610 and Beltway 8, long stretches of 1970s garden apartments serve as de facto public housing. Rather than see the area as "blighted," Rogers

argues that renovated complexes and community centers, like the Baker-Ripley Neighborhood Center, are models for an urbanism that takes the strength of close-knit immigrant communities as its starting point. Communities like Kashmere Gardens, however, illustrate the dichotomy of a suburban layout with urban infrastructural and socio economic issues, and exemplify the need for tactical non-traditional strategies to solve these patterns of sub-development.

The two communities representing Houston near or Beyond the Beltways seem alike: low rates of poverty, cul-de-sacs, high but not extreme median incomes, affordable in terms of house values but unaffordable when transportation costs are considered. These are the "traditional suburbs" of the periphery. Or not. Once again, we see the fragmentation of Houston, though not as stark as inside Loop 610. At the Beltway, majority Anglo neighborhoods have better access to fresh food and parks and housing is more expensive than where their African-American counterparts live.

With this rudimentary overview of Houston— a city riven by class, race, and ethnic divides—how

do we respond? Can we imagine infrastructures that are seams instead of boundaries? Can we imagine a city where access to parks and fresh food does not require a huge housing cost premium? A city where transportation costs do not ruin our overall affordability? Where equal access will mean the chance at opportunity?

Big Data for Big Ideas
We live in a world where all of our information can be mined. Algorithms sift through data, tell us about what we want to wear, where we want to be, what we should buy, and how we should buy it. When it comes to how we are marketed to and how we spend our money, big business has figured out how to very effectively use this data to target and satisfy "our every need." How can we as architects, designers, and planners use data to create a more "fair" and healthier city?

The answers lie not just in the collection of the big data but with what you collect and, as Susan Rogers emphasizes, "what you do with it." How do you analyze the information, anticipate the greatest need, and, most importantly, make

THEME Jobs
SUBTHEME Land Use

Business Centers

1 Gulfgate
2 University of Houston
3 Downtown
4 Energy Corridor
5 Sharpstown
6 Medical Center
7 Galleria / Uptown
8 Northwest
9 Fairbanks
10 Memorial City
11 Greenspoint
12 Westchase
13 Sugar Land

Business Centers are defined primarily as places with a high density of jobs greater than 10 jobs per acre and with clusters of more than 10,000 jobs.

In 2010 there were 17 business centers, with Downtown, Galleria, and Texas Medical Center with the highest concentration of more than 75,000 jobs each.

Less than 25 percent of Houstonians live within one quarter mile of work, but on average one-third of the White population live within one-quarter mile of business centers.

Though Whites are about one-quarter of the population they hold 46 percent of the jobs, while African Americans and other racial groups are consistent with their population distribution, Hispanics are the exact opposite with 23.5 percent of the jobs while they are 44 percent of the population.

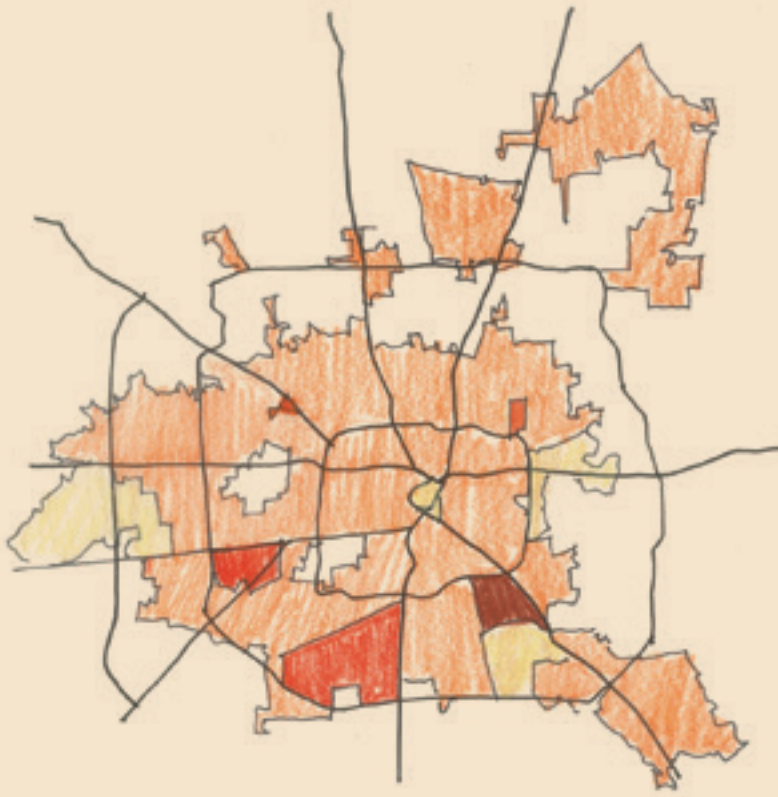THEME Social Demography

Map: Race and Ethnicity

The race and ethnicity percent composition of Houston is 43.8 percent Hispanic, 25.6 percent White, 23.1 percent Black, and 7.4 percent Other.

In 1980 the African-American population was almost half that of the White population, while most of the city's growth can be contributed to the growth of the Hispanic population, which has doubled since 1990.

■ Hispanic
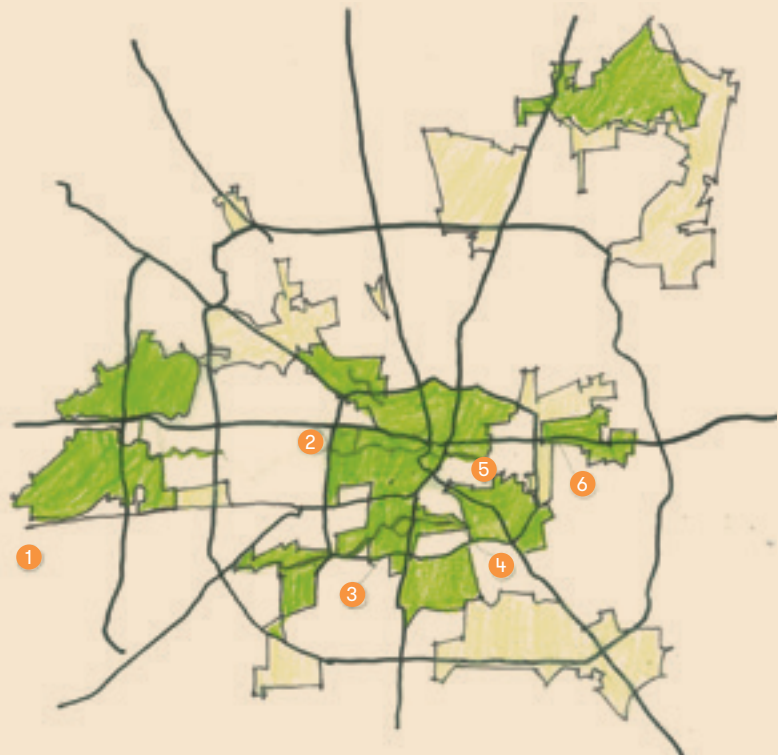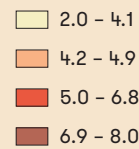■ Black
□ White
□ Mixed

THEME Atmosphere
SUBTHEME Air Quality
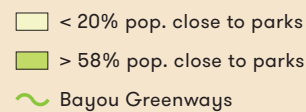
Map: Days Exceeding Standard Ozone

Houston is situated next to petrochemical plants, refineries, and one of the largest industrial ports in the country. Additionally, the extensive freeway system and large volume of cars contributes to the overall poor air quality. Houston is a non-attainment region as it exceeds standard ozone limits of 75 ppb.

- ☐ 2.0 – 4.1
- ☐ 4.2 – 4.9
- ☐ 5.0 – 6.8
- ☐ 6.9 – 8.0

THEME Livability
SUBTHEME Quality of Life

Map: Percent of Population Close to Parks

44 percent of Houston's population lives within one-quarter mile walking distance to parks; however more than half the population does not have access. The linearity of the bayou trails does not allow for larger scale communal and sports activities.

- ☐ < 20% pop. close to parks
- ☐ > 58% pop. close to parks
- ∿ Bayou Greenways

1 George Bush Park
2 Memorial Park
3 Hermann Park
4 Mac Gregor Park
5 Guswortham Park
6 Herman Brown park

the information relevant to policy makers and empowering to the communities that the information describes and defines?

We have a great success story for a big idea powered by big data. In proposing the Bayou Greenways, the Houston Parks Board made great use of data to show the benefits of hike-and-bike trails to a broad swath of people. In this issue, Albert Pope takes the rationale a step further, arguing that the Bayou Greenways will fundamentally shift the organization of the city because they are better suited to our polycentric city than the highway system. He rightfully urges us not to lose sight of the forest for the trees.

Small Data for Human-Scaled Design

Then again, Data with a big D must be customized (market oriented terminology), contextualized (as Susan Rogers describes), or humanized (my preference). We must attend to the leaves. If ordinary people have access to more and more fine-grained information down to their own block, will we see more bottom-up use of data?

Everyone wears their city differently. The potential of the Bayou Greenways will be realized if communities rich and poor, of every ethnic stripe, can reimagine the adjacent, under-utilized sites along the trails. Individual projects can perform what Jaime Lerner, Brazilian urban planner and former politician, calls "urban acupuncture."

The volunteer-driven campaign to build a new Big Brothers Big Sisters headquarters is transforming just such a site along Buffalo Bayou. Matthew Johnson's interview of its designer, Tei Carpenter, shows how a highly fragmented site is being inflected into a meeting point for those who serve and are served by the organization's laudable mission.

Also in this issue, Victoria Ludwin considers the Houston Needs a Swimming Hole campaign, which may be sited along a bayou. That effort shows how crowdfunding has added a new tool for changing the built environment. Even as big private donors and government funding remain essential to capital-intensive projects, small donations through Indiegogo and Kickstarter are upending business as usual.

Kinder Baumgardner ponders the probable and profound impact of autonomous cars on the landscape, connecting a "multiverse of bubbles," accelerating fragmentation and stratification as well as connection and collectivity.
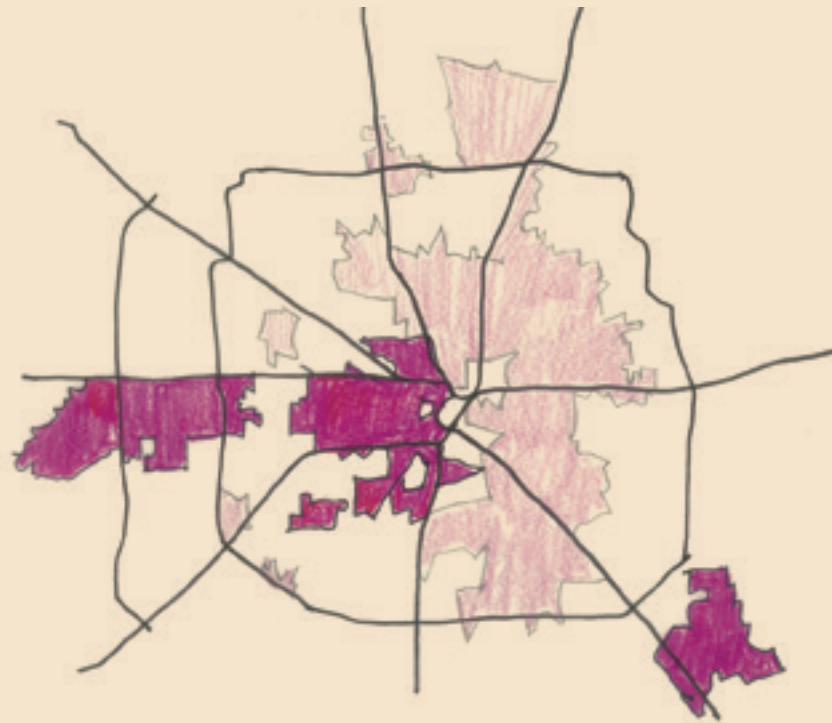
When Allyn West digs into the tiny house movement in Texas, he comes out as skeptical about their workability in an urban environment

THEME   Social Demography
SUBTHEME   Education
Master's degree

Map: Percent Population with Master's Degrees

51.5 percent of the persons over 25 years in Houston have some level of degree after high school. Those with master's degrees are concentrated.

☐ 0 – 2.5%
☐ 2.5 – 12.6%
■ 12.7 – 22.5%

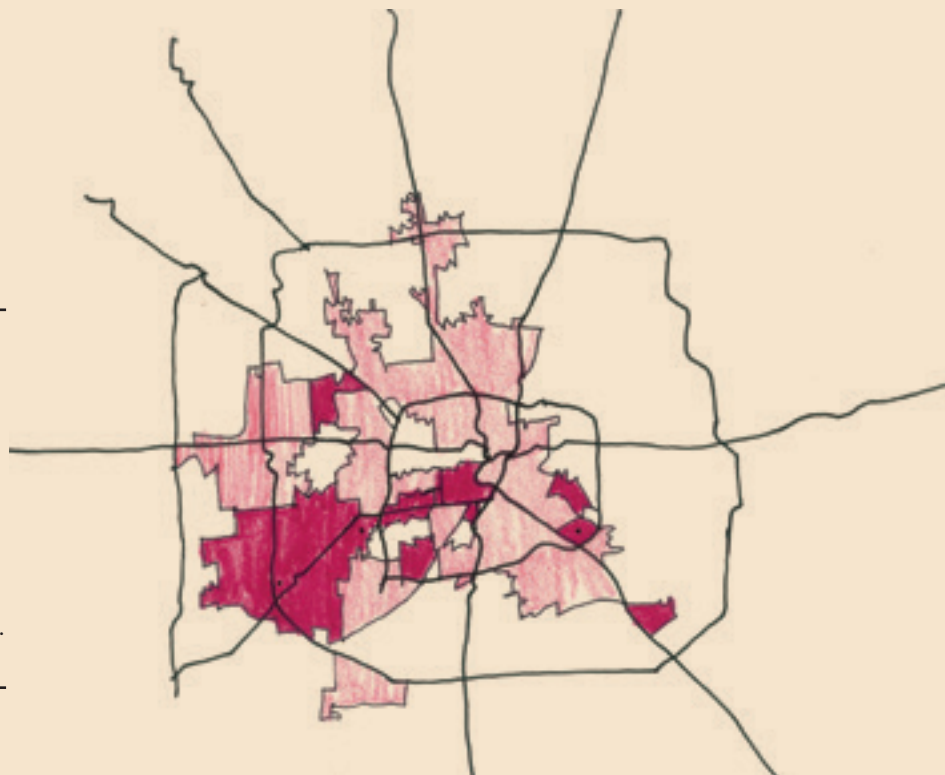THEME   Social Demography
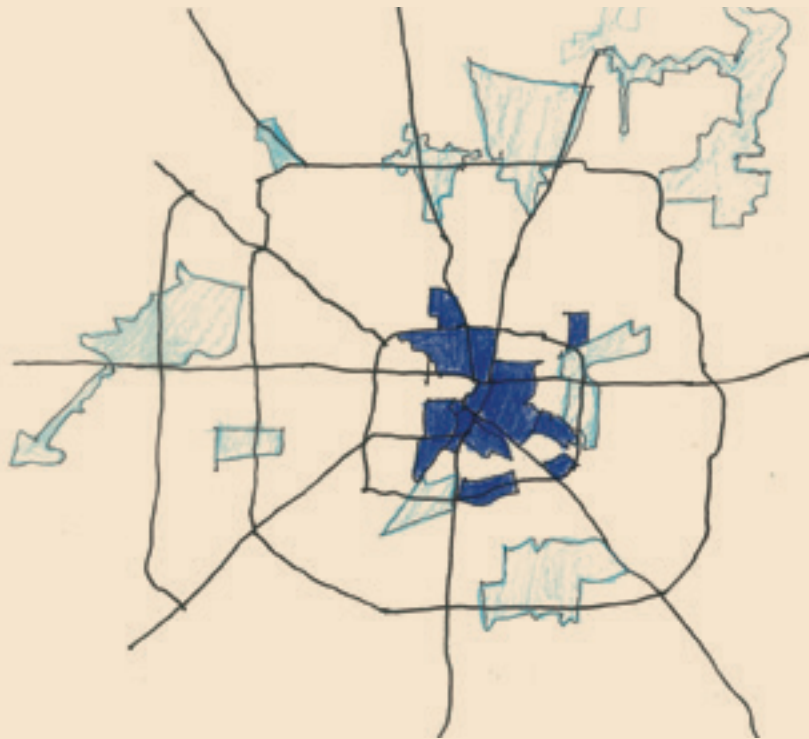SUBTHEME   Population Growth

Map: Population Density

Houston is the 25th most densely populated among the 63 largest cities in the country.

Average annual growth rate projection for each year between 2010 and 2020 is 1.42 percent.

The most densely populated areas have the highest population growth.

☐ 3,360–6,179 people/sqmile
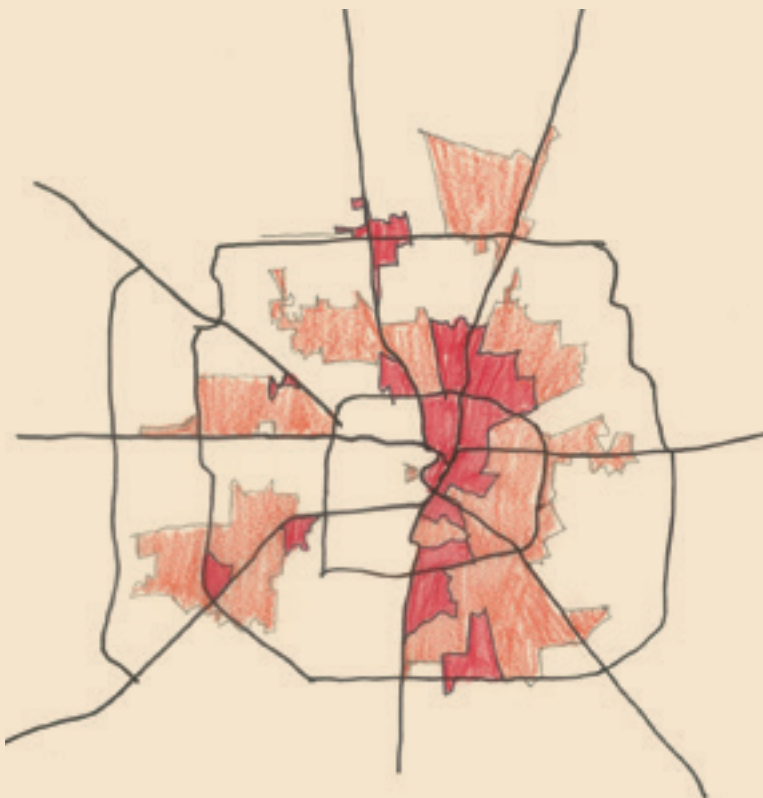■ 6,180–15,520

THEME Transportation
SUBTHEME Access

Map: Intersections per Square Mile

68.5 percent of Houston is within one-quarter mile of a bus stop.

Houstonians have moderate access to transit stops that are within walking distance for most areas in the city; however, poor street connectivity means neighborhoods tend to be separated from places of work and schools.

- □ 12–40 intersections / sq mile
- □ 40–100
- ■ 100–300

as he is provoked into thinking about urban living rooms and a new type of modular living.

In our technological fantasies, we imagine a dramatic transformation of cities through big data that will: 1) enable governments to create the large-scale infrastructural solutions, in a sensitive manner, where they are needed most; and 2) empower a groundswell of small actions—ordinary people using social media, crowdfunding, and tactical urbanism—to improve their neighborhoods in small-scale ways. We dream that this marriage of the big and small will support resilience, greater equality, and local identities within the framework of a "late capitalist" economy.

I worry, however, that those who would benefit the most do not have a computer to access Indiegogo or a credit card to pay into it. Some of our least wealthy communities are our most culturally urban in their rest and play, but these areas are infrastructurally non-urban.

King's sustainability indicators tap into a quality of life matrix that begins to get us beyond the traditional engineering aspects of city building. However, bigger data—even when it is publicly available—does not mean a bigger voice for communities.

Nonetheless, we have reason to be cautiously optimistic. The data are getting closer and closer to mapping the real issues that affect quality of life. If we ask the right questions, we can reveal the most opportune connections between infrastructural and human issues. Public Health Analysts have utilized this information to better understand chronic diseases like diabetes, and they are among the best allies of urbanists.

We hope you will join the conversation online at OffCite.org and on social media.
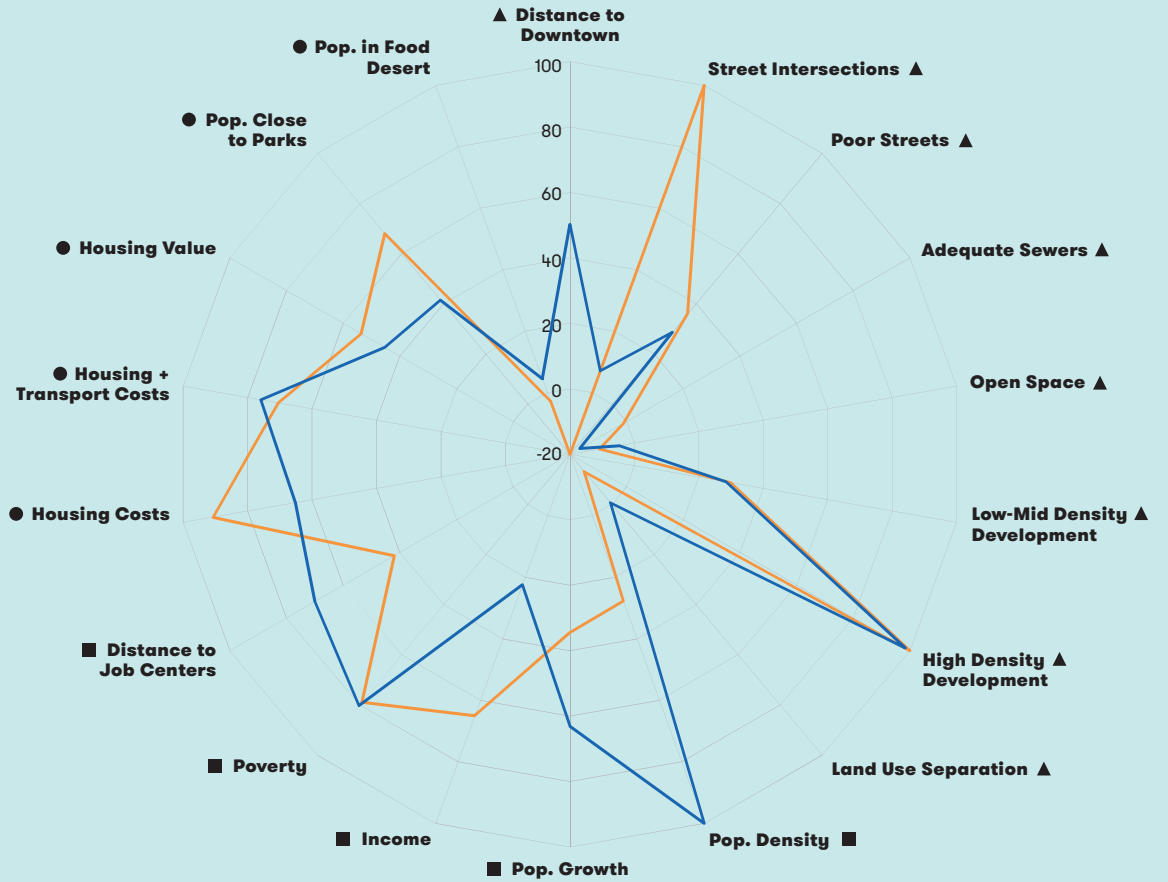

THEME Poverty
SUBTHEME Poverty Level

Map: Poverty Rate

High poverty rates lead to development of social cultures, which by necessity favor private survival needs over involvement in public affairs. This suggests that public facilities, such as schools, parks, sidewalks, streets, and neighborhood businesses will suffer from neglect due to pervasive poverty. Reduction in poverty rates is important because it helps households become self-sufficient. Access to good jobs, good schools, and shopping does not occur in poor neighborhoods.

The poverty rate in 2010 was higher than it was in 1990 and 2000.

- ■ > 30% Poverty
- □ > 20% Poverty

READERS CAN VISIT
HoustonCommunitySustainability.org
to analyze more data on Houston and its communities, using the visualization tools developed by Lester King.
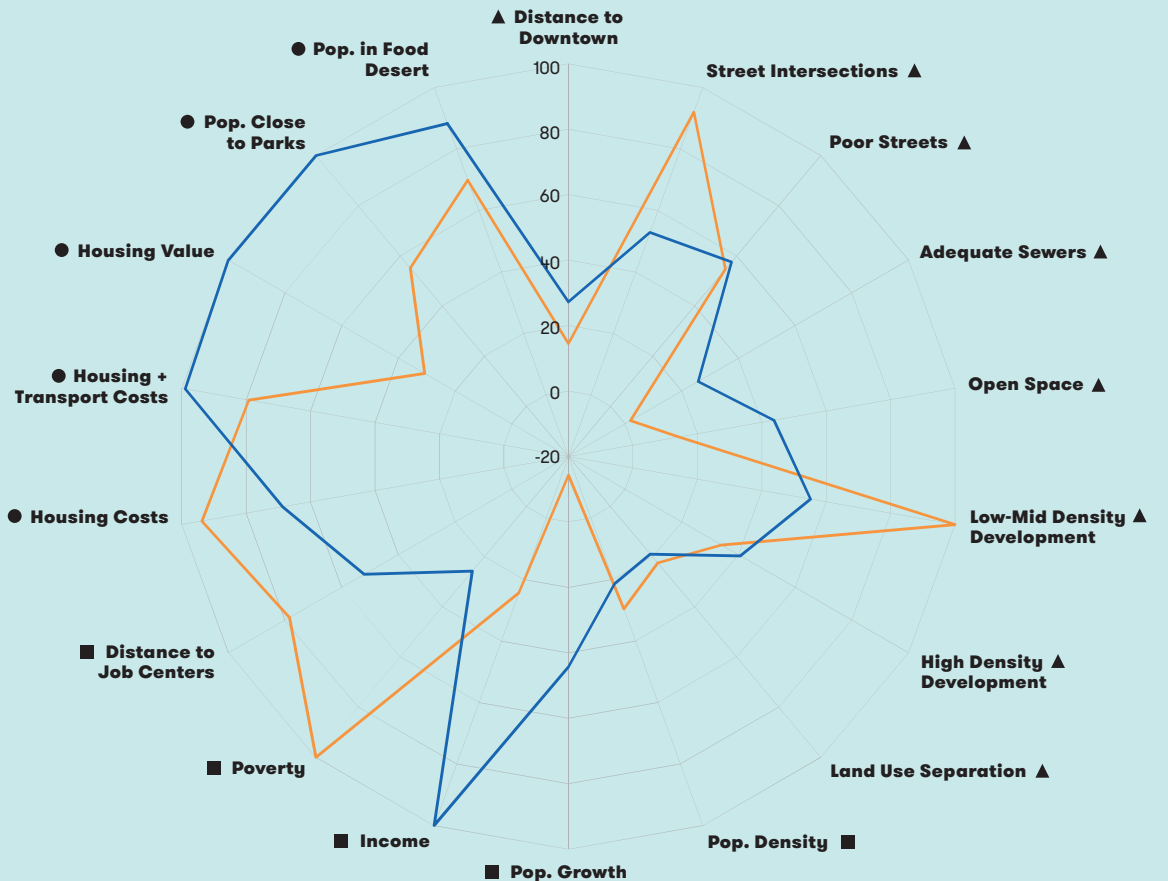
Gulfton, Downtown: Islands of Density

The statistics for the three super neighborhoods with the greatest population density are striking for their similarities and differences. Gulfton has the greatest density, even though it is located outside Loop 610. The low number of street intersections in Gulfton is a defining challenge for its immigrant, transit-using population, meaning that pedestrians must walk long distances along the edges of megablocks. Downtown has the third highest median house price but the third lowest combined housing and transportation cost. You pay to be where you want to be.

— Downtown
— Gulftown

Radar Charts

These 18 indicators represent quality of life, land development, and socio-economics. The data are normalized across the selected super-neighborhoods so that you see where each community stands relative to the others as opposed to the raw value. Houston is complex, and so are these data.
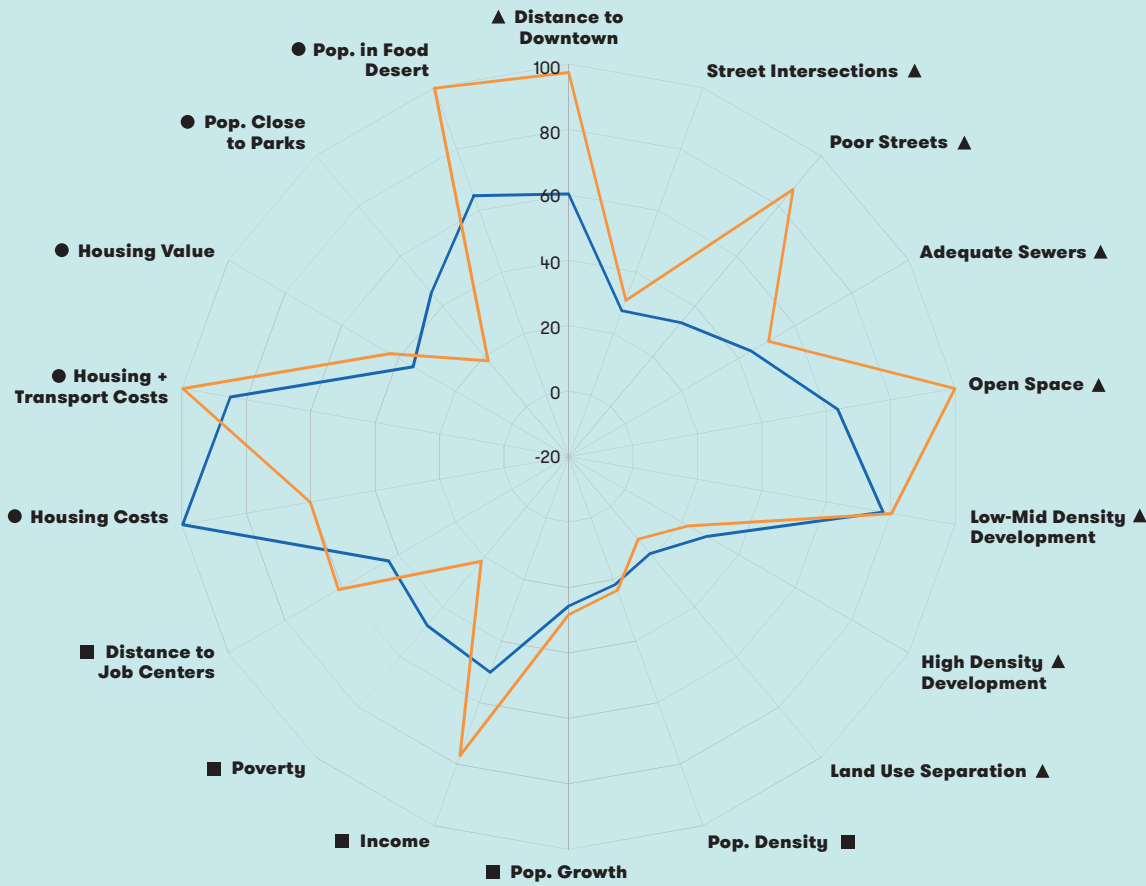
Inner Loop: Washington Avenue and Third Ward

Several quality of life measures—access to parks and food deserts in particular—show gaps between these Inner Loop areas. Third Ward is a historic African-American neighborhood while Washington Avenue Coalition/Memorial Park transitioned from mixed to predominantly White. The latter spend nearly 50 percent of their income on housing and transportation, which is not surprising when you consider the median house value is over $300,000.

— Greater Third Ward
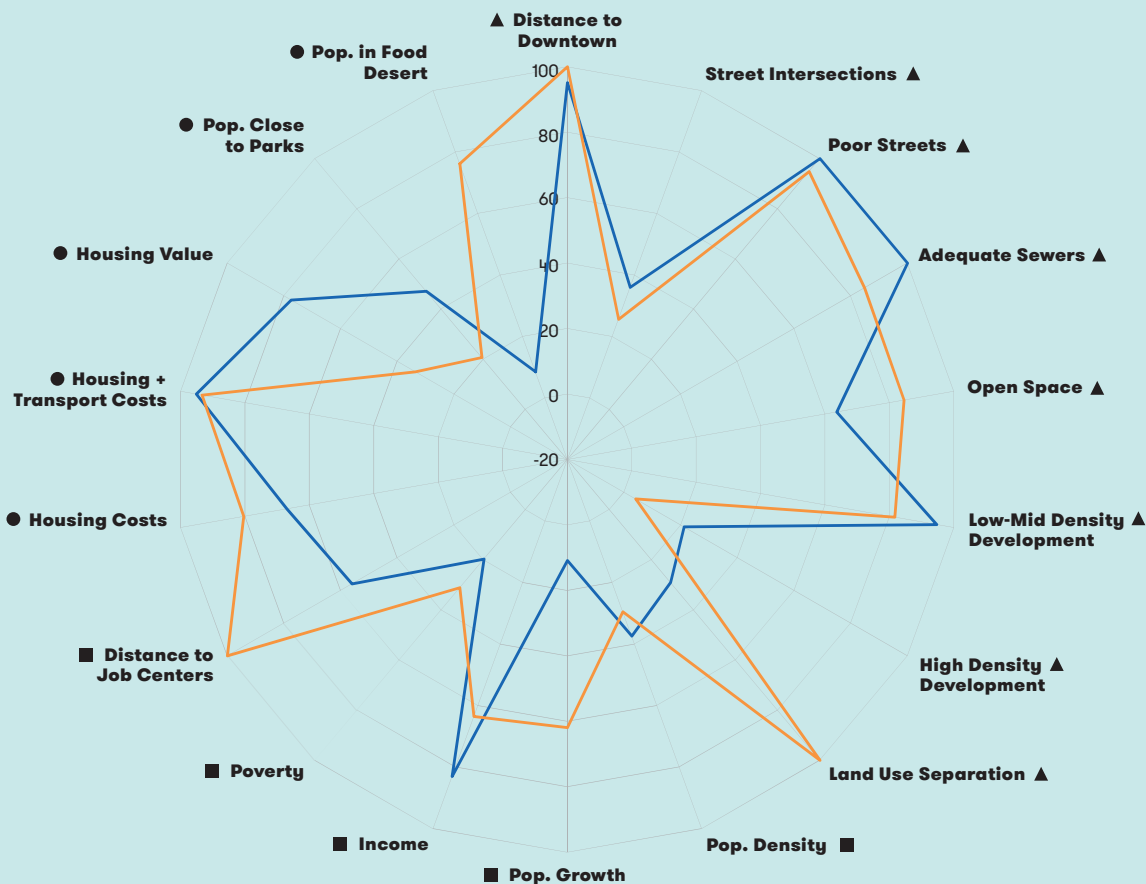— Washington Avenue Coalition/ Memorial Park

Between the Belts: Westbranch and Meadowbrook/Allendale

These majority Hispanic areas between Loop 610 and Beltway 8 represent a quiet, new normal. They face challenges and have assets to build on. Meadowbrook/ Allendale is home to a landfill and half of the golf course designated to become the Houston Botanic Gardens. Residents in these median- to lower-income super neighborhoods contend with high transportation costs eating away income in one case and high housing costs in the other.

— Westbranch
— Meadowbrook/Allendale

● **Quality of Life**
Housing Costs • Housing + Transport Costs
Housing Value • Pop. Close to Parks
Pop. in Food Desert

▲ **Land Development**
Street Intersections • Distance to Downtown
Poor Streets • Adequate Sewers • Open Space
Low-Mid Density • High Density • Land Use Mix

■ **Socio Economics**
Pop. Density • Pop. Growth • Income
Poverty • Distance to Job Centers

Beyond the Beltway: Briar Forest and Fort Bend/Houston

Though the edges of Houston are relatively similar—cul-de-sacs and middle-class families—the predominantly White residents of Briar Forest pay more for their homes while the predominantly African-American Fort Bend/Houston super neighborhood is a food desert, and has a low mix of land uses.

— Briar Forest Area
— Fort Bend/Houston

Land Development Cont.: Low-Mid Density Development–U.S. Geological Survey. (2011). National Land Cover Database Resources.; High Density Development–U.S. Geological Survey. (2011). National Land Cover Database Resources.; Land Use Mix–U.S. Geological Survey. (2011). National Land Cover Database Resources. **Socio Economics:** Population Density–US Decennial Census 2010; Population Growth–US Decennial Census 2010; Race/ Ethnicity–US Decennial Census 2010; Income–US Decennial Census 2010; Poverty–US Decennial Census 2010; Distance to Job Centers–US Department of Commerce, LEHD 2012; Business Centers–US Department of Commerce, LEHD 2012; Ozone–Texas Commission on Environmental Quality, Air Quality Index, 2010.; Masters Degrees–US Decennial Census 2010.