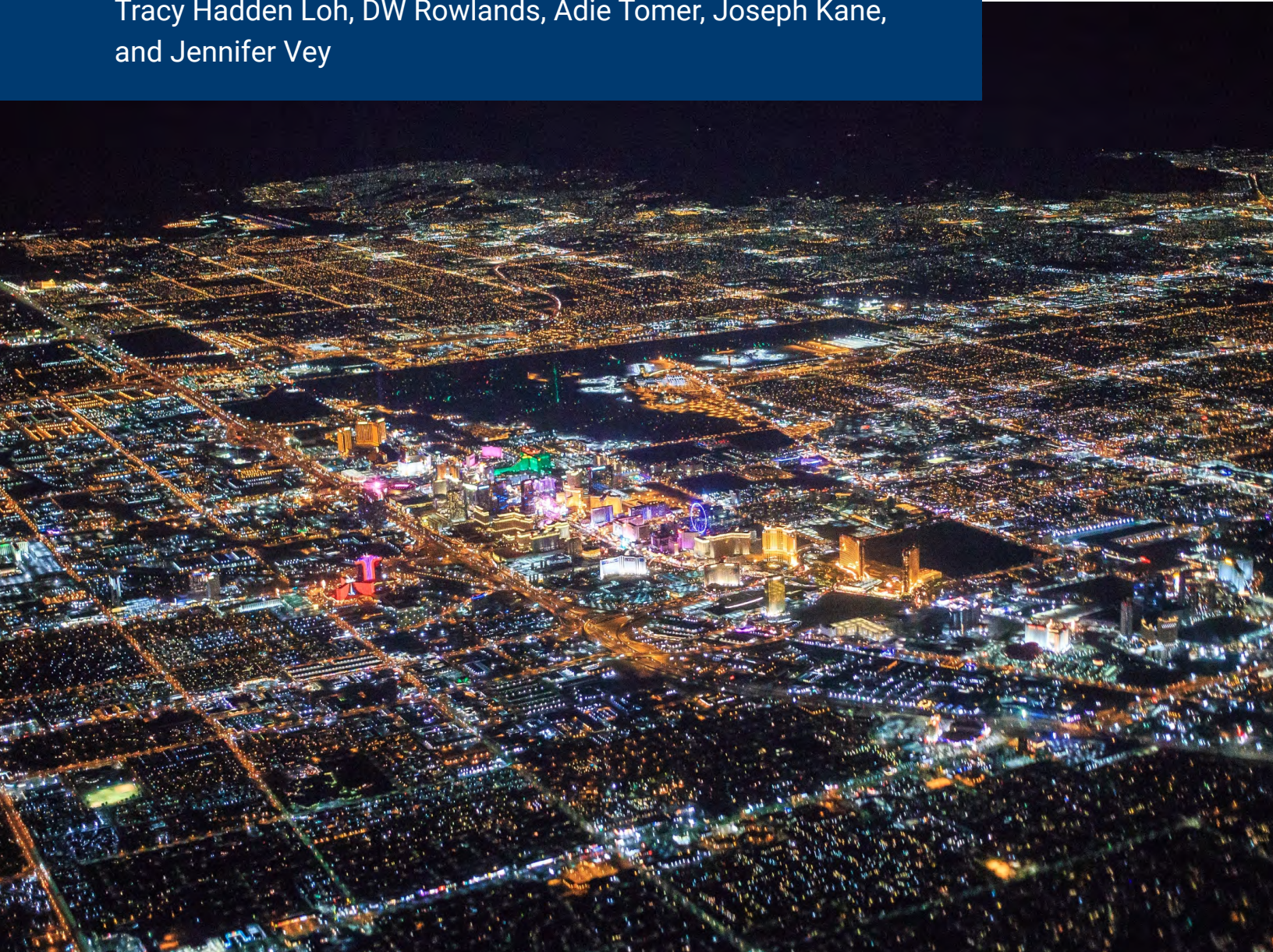


# MAPPING AMERICA'S ACTIVITY CENTERS:

THE BUILDING BLOCKS OF PROSPEROUS,  
EQUITABLE, AND SUSTAINABLE REGIONS

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## Introduction

As the saying goes, three things matter in real estate: location, location, location. Cities and metropolitan areas are built around assets such as transportation nodes, employment hubs, cultural attractions, political and religious institutions, and health facilities—all of which tend to cluster in specific locations. The ability to develop the places that concentrate these assets has always been a key ingredient to building productive and thriving metro areas.

But after decades of suburbanization, activity does not concentrate in the same ways it once did. Metropolitan areas are no longer structured along a linear continuum, fanning outward from a distinct downtown to edgeless suburbia to rural countryside dotted with a few town centers. They instead contain constellations of asset-rich places, typically surrounded by housing-only developments or a mix of residential and commercial sprawl.<sup>1</sup>

This long-standing concept of metropolitan geography as a line from a singular urban center to suburbs to farms—and conceiving of the suburbs as exclusively residential places—is no longer accurate in the age of American megaregions. Over time, the dispersion of assets and activities has stretched the distances between people and opportunity, often leading to greater economic and racial inequality.<sup>2</sup> More recently, the emergence of rapid telecommunications and a global pandemic have led to new uncertainties about what kinds of places will be in demand in the future.

At a time when economic and climate-related disruptions seem to come ever more frequently, it is easy to lose track of the fact that the built environment changes quite slowly. As such, industrial, cultural, and environmental shifts in the decades to come will primarily occur within existing places and alongside the infrastructure we've already created. But, as in

the past, the impacts of those shifts—for good and for ill—will still be influenced by the choices we make today regarding how and where we prioritize future investments.

All this makes it essential that the field of metropolitan development—particularly, practitioners and applied researchers—has a contemporary understanding of what people and the economy need from place, how those needs express themselves on the landscape, and how, then, the field should respond to them. In other words, we need to establish both a new map and a new vocabulary for American economic geography. One major obstacle is that there is no consistent scheme to compare where activity concentrates within metropolitan areas or what kinds of places—with what types of attributes—can best support shared prosperity and resilience.

In this report, we introduce a new methodology to locate and characterize activity centers: places within regions where economic, physical, social, and civic assets cluster at a clearly defined hyperlocal scale.<sup>3</sup> We present a typology of activity centers, map their locations within the 110 U.S. metropolitan statistical areas (MSAs) with at least 500,000 residents using census block groups, and analyze those centers to help planners, real estate professionals, and elected leaders better understand how and why they matter. We find that:

- **Metropolitan areas concentrate assets in activity centers.** Within the metropolitan areas in our study, activity centers occupy just 3% of all land, yet hold a far higher share of assets and their associated activities. For example, 40% of all private sector jobs locate within activity centers, and institutional assets—including college and university students, hospital beds, and major intercity transportation nodes—are almost exclusively found in these areas.

- **Metropolitan areas that concentrate jobs in activity centers are more productive.** Our analysis revealed a clear and positive relationship between activity center job density and productivity, as measured by gross metropolitan product (GMP) per worker. Every 1,000 jobs per square mile in a metro area's median activity center was associated with an additional \$1,723 in output per worker across the metro area.
- **Activity centers yield a value premium.** Activity centers have four times the commercial real estate assessed value relative to developed land area. For two-thirds of metro areas, housing near activity centers is worth a weighted average of 26% more. In three high-growth metro areas (Raleigh, N.C., Deltona, Fla., and the Washington, D.C. area) these housing premiums exceed 50%.
- **Activity centers are more accessible and inclusive.** The vast majority of metropolitan residents—in the vast majority of metro areas—live within 3 miles of an activity center, and this is even more true for people of color and low-income households.
- **Activity centers have more sustainable travel outcomes.** These areas are reachable by twice as many bus and train riders as other block groups. Activity centers themselves have higher walkability than their metro areas as a whole, which contributes to the fact that both commute and non-commute trips by car are shorter when starting in activity centers versus other places.

This paper represents a critical step in helping planners and other practitioners compare activity centers across different metro areas. In the process, the findings make the case to build on existing assets (both literally and figuratively) whenever possible, rather than prioritizing low-density and/or single-use development. It concludes by pointing to how leaders can use this information to advance transformative placemaking within activity centers—and by doing so, increase regional competitiveness, enhance sustainability and resilience, and improve the social and physical well-being of all metro area residents.<sup>4</sup>





## Why does the geography of activity matter?

Metropolitan areas are designed to support activity. They house an outsized share of the American population, and their industries generate an even greater share of economic output.<sup>5</sup> Metro areas are the sites for clusters of cultural assets, educational institutions, and government operations.<sup>6</sup> They are also logistics hubs for the country's trade in goods, and travel centers for tourists and businesspeople.<sup>7</sup> Data point after data point affirms how much economic and social activity concentrates in our most populated areas of the country.

Yet the shape of metropolitan activity is not consistent. Demands for industrial and commercial land, housing preferences among residents, consumer tastes for retail and recreational amenities, and even natural

topography are just some of the major factors that influence precisely *where* all those metropolitan activities take place.

These factors have helped create a wide-ranging economic geography across metropolitan America. Some metro areas use far less land than others. For example, metropolitan Philadelphia has 2.5% more residents than metropolitan Atlanta, but the latter covers 88.6% more land.<sup>8</sup> Meanwhile, even within the same metro area, it's common to find completely different forms supporting the same kinds of land uses: Chicago's automobile-oriented suburbs function far differently than the older neighborhoods within a mile or two of the Loop, the city's famous central business district, even though both support residential,

commercial, and recreational activities.<sup>9</sup> It's understood that the same activities will look different in places with different geographies.

The geographic variability of metropolitan activity, then, has major implications for how metro areas operate, the practitioners who guide their development, and the residents and businesses who call these places home.

Existing research demonstrates some of these implications. For one, the shape of activity directly impacts local and even state **fiscal conditions**. Depending on tax policies, the location and density of industries will determine which local governments collect income, sales, and property tax revenues and the relative collection potential per acre. There are similar tax concerns for municipalities that host major nonprofit institutions like hospitals or universities, which may attract sizable activity but generate reduced tax revenues. On the other side of the ledger, metropolitan geography influences the price tag associated with providing municipal infrastructure. The costs to build and maintain highways aren't the same as commuter rail or sidewalks, and public water utilities or private energy and broadband companies will have different investment needs based on the density of development. Finally, patterns of concentration and/or dispersion impact the size and viability of markets, which affects employers and retailers in terms of their costs, revenue potential, and ultimately, the payroll and sales taxes they generate.

The geography of economic activity also directly impacts the **industrial competitiveness** of a metro area. Economists have long studied the power of agglomeration—the tendency of similar or complementary firms to locate in close physical proximity—to generate positive economic returns to the impacted firms and the surrounding area.<sup>10</sup> Concentrating activity within certain neighborhoods can produce greater economic value by facilitating collaborative research that yields new products and services; it also lowers costs by facilitating the sharing of inputs like freight needs or access to a common

labor pool.<sup>11</sup> Density and proximity can also generate more innovation: A 2017 Brookings report showed that, on a per-student basis, research universities located in the downtowns of the 100 largest U.S. cities received 120% more patents and spun off 70% more startups than research universities located in smaller towns, suburbs, or rural areas.<sup>12</sup>

**Environmental conditions**, too, are affected by the spatial patterns of activity. Sprawling neighborhoods and metro areas tend to generate higher vehicle miles traveled per person than higher-density areas, leading to more greenhouse gas emissions and more dangerous transportation systems.<sup>13</sup> Moreover, buildings that are further apart and lower in height tend to use more energy per person.<sup>14</sup> Low-density, auto-centric development patterns are also associated with other negative ecological impacts, including greater stormwater runoff from impervious surfaces and loss of natural habitats from urban land development.<sup>15</sup>

Put all this together, and it is clear that where and how development occurs has a profound influence on **economic equity and inclusion**. Fiscally stable regions can invest more in public goods—from schools to parks—that benefit children and families. More economically competitive regions grow and attract jobs requiring varying skills and educational levels; when those jobs are more proximate to where people live, transportation costs—the second-highest expense for many households—are lower.<sup>16</sup> And more sustainable regions are less prone to the health, safety, and economic impacts of environmental disasters and climate change, to which low-income neighborhoods and people are most vulnerable.

The extent to which internal geography can influence metropolitan areas' prosperity, resilience, and equity underscores the need to take a fresh look at how and where activity is located within them—and identify the regional **activity centers** where economic, physical, social, and civic assets most cluster and connect.





## What are activity centers?

While their spatial patterns of activity vary considerably, on the whole, the vast majority of space in U.S. metropolitan areas is characterized by low-intensity, segregated land uses. Today, only one in 12 people work within 2 kilometers (~1.25 miles) of their residence; only one in nine jobs are in central business districts (CBDs); and just one in seven jobs are in sub-centers outside CBDs. Three in four jobs are outside of employment centers altogether.<sup>17</sup>

Yet amid all this dispersion are places where large, diverse mixes of assets concentrate. These clusters vary in size and shape and play different roles in their respective regional economies.<sup>18</sup> For example, industrial and manufacturing activities still cluster around freight infrastructure.<sup>19</sup> Public administration offices are still concentrated in downtowns.<sup>20</sup> And as the knowledge economy has grown in size and dominance, access to specialized talent, the transfer of tacit knowledge, and increased productivity from knowledge spillovers have led to the increasing concentration of finance, technology, and research-intensive jobs not only in certain metropolitan areas (e.g., San Francisco), but in specific neighborhoods

within them.<sup>21</sup> Together, these industry hubs are creating increasingly “polycentric” regional landscapes—an evolving form of development that stands in contrast to the edgeless cities that dominated the end of the 20th century.

Over the years, planning practitioners and researchers have made numerous efforts to identify and understand these concentrations, and in some cases, map their locations.<sup>22</sup> However, these planning exercises have largely been based on a very narrow definition of the activity that takes place within regional clusters—essentially limiting it to sleeping (mapped as housing) and working (mapped as jobs). This is a reductive way of valuing how people spend their time—and one which gives a very distorted picture of the spatial pattern of Americans’ activity. In 2019, full-time employed adults spent an average of 16.7 hours per week doing activities in places other than work and home, while adults paid part-time or not at all spent over 20 hours a week on these activities.<sup>23</sup>

Data availability on some types of activity and comparability of measures of centrality have also

restricted the existing literature. Thus, most studies limit analyses to one or a small sample of metropolitan areas and sub-areas. For example, the U.S. census is a reliable public source of information about the location of housing at a hyperlocal scale. Prior to 2010, however, the census did not include hyperlocal job data—thus, past research on the economic geography produced by the suburbanization of jobs sometimes used absolute thresholds of commercial real estate square footage to define places. For example, in “Edge City: Life on the New Frontier,” author Joel Garreau argued that “density is back” in the form of suburban employment centers with at least 1 million square feet of office space.<sup>24</sup> In “Edgeless Cities: Exploring the Elusive Metropolis,” author Robert E. Lang countered by observing that the nature of sprawl is such that if you draw a big enough boundary, you can catch enough square footage to have *something*—if not enough to constitute a true *somewhere*.<sup>25</sup> Christopher B. Leinberger’s “The Option of Urbanism: Investing in a New American Dream” reframed this debate about scale and geography by distinguishing between walkable and driveable built environments, which can be found in both metro cores and at metro fringes, defined as the ends of a range of floor-to-area ratios.<sup>26</sup>

In order to understand the role of place in the contemporary United States, we need to focus on specific job sectors that do cluster, and then look beyond production to include consumption, housing, and other economic and social dimensions that affect people’s time, travel, and location decisions.

## OUR METHODOLOGY

In this report, we identify block groups containing existing **activity centers** using a simple and replicable methodology for combining multiple diverse data sources on the locations of activities and assets. Comparable across metropolitan areas, this approach provides a more standardized and comprehensive way to understand the local geography of activity than previous efforts. For this analysis, we identified five categories of assets that can contribute to an area being an activity center: community, tourism, consumption, institutional, and economic (Table 1). The full set of data sources that we used to identify these assets are provided in Appendix A.

To cope with the fact that the quantity and variety of data available vary by asset category, our approach to measuring the presence of assets was structured by the following general principles:

1. The presence of more measures in one category does not mean that there are more assets in the category, or that the category is more important.
2. Each asset category carries equal weight—the normative value judgement is in defining the categories, not in juxtaposing them.
3. An “asset mix” implies a meaningful concentration of at least two different categories of assets.
4. What quantity constitutes a “meaningful concentration” is relative to each metropolitan area, and not an absolute standard that holds constant across all metropolitan areas.

We chose a set of variables, shown in Table 1, to measure the presence of each of our five asset categories. Each category is treated equally in the identification of activity centers. Still, it is important to keep in mind that our asset measures are based on national datasets to enable a comparison of metro areas, and thus are limited in scope. Any local study of activity centers in a single metro area should involve coordination with local governments, community members, and residents on the ground to identify additional assets—such as neighborhood groups, local business networks, or arts and cultural organizations—that national data won’t capture.

In order to identify activity centers, we aggregated assets into 2020 census block groups and calculated densities based on developed land area to account for block groups that contain large undeveloped areas.<sup>27</sup> We then calculated each block group’s location quotient for each asset by dividing the block group’s asset density by the overall metro area density of that variable. Next, to create category scores, we summed the location quotients for each block group by asset category. Finally, we ranked block groups by their percentile values within the metro area for the summed asset category variables. This process was repeated in all 110 metro areas.

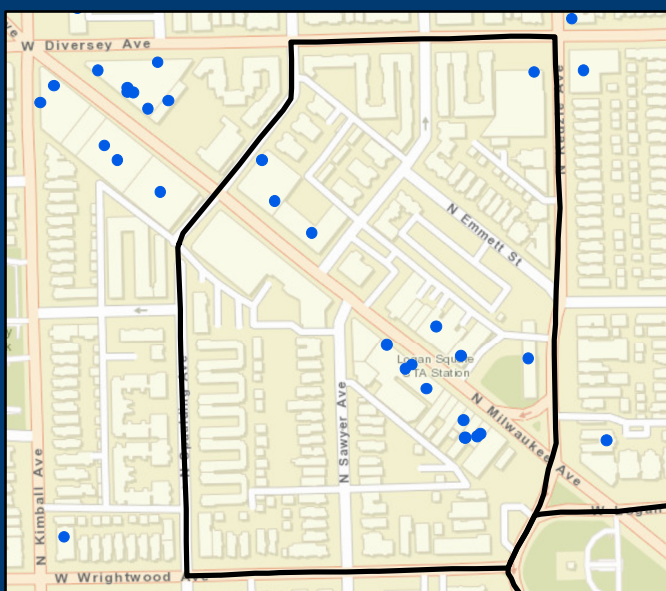


Our methodology identifies three distinct types of centers, defined in Table 2. We code block groups above the 98th percentile for two or more of the five asset classes as **primary centers**. These places contain the largest and most diverse mix of assets in their metro areas and are likely active for the longest portions of each day. We classify block groups between the 95th and 98th percentiles for two or more of the five asset classes as **secondary centers**. These centers—which often include historic villages and towns, early streetcar suburbs, and many urban neighborhoods—typically have a mix of assets including shops, rental housing, and government

facilities. Finally, we classify those block groups above the 98th percentile for only one of the five asset classes as **monocenters**—locations where one particular type of land use (like an industrial park, a big mall, or an airport) operates at a higher concentration.<sup>28</sup> It is important to note that block groups were treated separately throughout this process, with center type calculated independently for each block group. As a result, larger activity clusters such as major central business districts are in many cases identified as multiple activity centers.

## BOX 1

# Retail in a Chicago block group



This block group on the Milwaukee Avenue commercial corridor in Chicago contains 15 stores in a developed land area of 0.03 square miles, for a density of 466 stores per square mile. The average block group in the Chicago metro area has 60 stores per square mile of developed area, so the retail location quotient for the block group is  $466 / 60 = 7.76$ . This is added to the location quotients for the other consumption variables to produce an overall value higher than 98.5% of block groups in the metro area. This block group qualifies as a consumption monocenter, as none of its other category scores are above 95%.

**SOURCE:** SafeGraph 2019 Points of Interest Basemap Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

From this analysis, we found that every one of the 110 metro areas studied has at least one primary center, one secondary center, and one monocenter. Primary centers are consistently the least numerous of the three activity center types; on average, only 1.5% of all

block groups in the 110 metro areas met our criteria. The average number of monocenters (4% of block groups) and secondary centers (3.1% of block groups) are at least twice as large.

TABLE 1

### List of activity center assets and variables

Asset Category	Variables Measured
Community	Population density
	Presence of public libraries
	Density of places of worship
	Density of historic sites
	Density of parks
Tourism	Presence of major sports stadiums
	Density of hotels and motels
	Density of casinos and museums
Consumption	Density of restaurants
	Density of retail establishments
	Density of medical offices
	Presence of post office
	Density of retail jobs
Institutional	Count of college student and staff
	Count of hospital beds
	Count of state government buildings
	Square feet of federal office space
	Presence of airports and intercity rail stations
Economic	Density of tradable jobs

SOURCE: Brookings analysis

TABLE 2

### Activity center assets types

	High complexity	Low complexity
High-scale concentration	Primary centers > 98th percentile in two asset types	Monocenters > 98th percentile in one asset type
	Secondary centers > 95th percentile in two asset types	Most Metropolitan Development

SOURCE: Brookings analysis



## BOX 2

# Mapping a Diversity of Activity Centers: Dallas-Fort Worth

Attempting to locate which places are primary centers, secondary centers, and monocenters may challenge deeply held assumptions about places' relative strengths and needs—often pinpointing neighborhoods that even residents may not often consider an activity center in their home region.

For example, consider primary centers, secondary centers, and monocenters in the Dallas-Fort Worth metropolitan area (Figure 1).<sup>29</sup> The urban cores—the downtowns of Dallas and Fort Worth—stand out as primary centers, but this category also includes a range of other places, such as the long-neglected Fair Park area on the south side of Dallas, the suburban center of Arlington (anchored by the University of Texas at Arlington campus), and a successful suburban retrofit project in Plano known as Legacy Town Center.

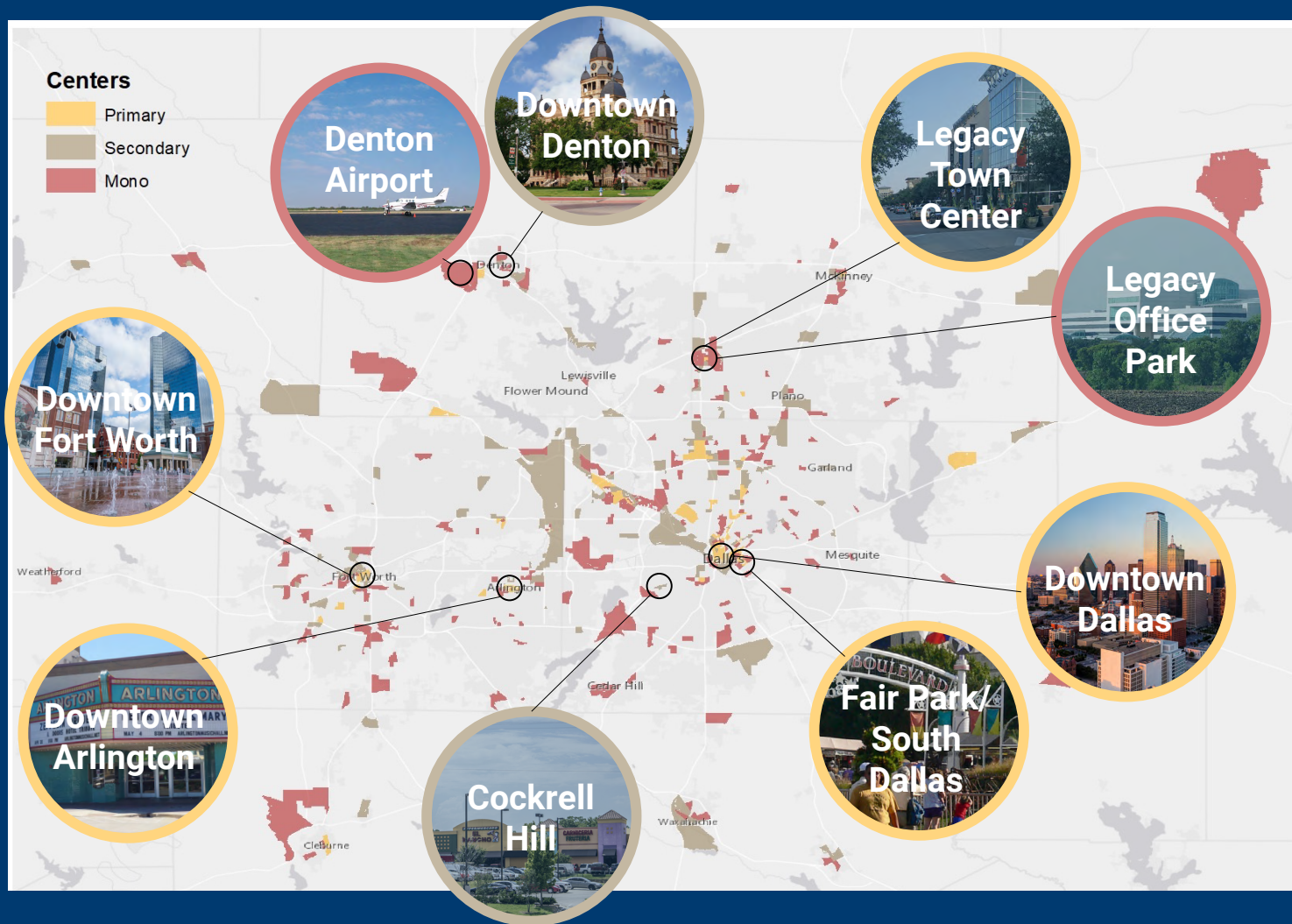
A look at Plano also helps distinguish primary centers from monocenters. The core of Plano's Legacy Town Center contains a dense mix of uses, and is thus a primary center—but it is surrounded by monocenters like Legacy Office Park. The case of Denton, the county seat of Denton County, is also illustrative: There is a primary center anchored around the University of North Texas campus, but downtown Denton is a secondary

center, while the nearby municipal airport is a monocenter. Another example of a secondary center is Cockrell Hill, a majority-Latino or Hispanic community whose motto is "A little city with a big future." This could well be the case, as this analysis suggests that Cockrell Hill contains a sizable collection of assets.

Each of these places is characterized by different sets of assets and, like any community, each has its own unique set of challenges and opportunities. Downtown Dallas, for example, is the biggest employment center in the region, but has relatively high office vacancy. Fair Park has a high density of local businesses, but a long history of racial segregation means neighbors from other parts of the city may never have been there other than to attend the state fair. And in Arlington, one of the largest U.S. cities with no transit system, leaders may struggle to fully maximize downtown's wealth of assets if all residents and workers can't access them. In each of these communities, public, private, and civic organizations—together with community residents, business owners, and other stakeholders—must work with one another to determine the kinds of transformative placemaking strategies and investments that best meet their specific needs and aspirations.

FIGURE 1

## The Dallas-Fort Worth Metroplex has a Range of Activity Centers with Different Assets and Challenges



**SOURCE:** Authors' analysis





## Key findings from our activity center analysis

Using the methodology described above, we undertook a novel, comprehensive examination of how varying kinds of activity cluster in the U.S. metro areas. Through this work, we identified where activity centers are located (see [activity centers map](#)) and conducted analyses on these centers to understand how they function in their metropolitan economies. Consistent with what we already know about the benefits of density and proximity in the built environment, we found that activity centers do in fact advance greater prosperity, equity, and sustainability when compared to other neighborhood types.

### **FINDING 1: ACTIVITY CENTERS ARE MORE ACTIVE, CONTAINING AN OUTSIZED SHARE OF METROPOLITAN ASSETS**

Activity centers are a foundational building block of metropolitan America. Looking across the country's 110 most populated metro areas—each with at least

500,000 people—anywhere from 7% to 11% of all local block groups (which contain 6% to 18% of developed land) qualify as activity centers. Of course, due to the huge population range when comparing metro areas, the total number of activity centers within each metro area varies considerably. For example, metropolitan New York City includes over 1,100 activity centers, while Pensacola, Fla. has fewer than 30.

No matter the total count, activity centers consistently punch above their weight. In fact, across all 110 metro areas studied, activity centers host a far larger share of metropolitan economic activity and civic amenities than their share of developed land area would suggest. While our definition of activity centers as block groups with the highest concentrations of assets is partly responsible for this, the underlying methodology does not ordain or explain why some types of assets and activity are far more concentrated than others, as seen in Table 3. Likewise, some metro areas show far more concentration of all asset types than others do.



TABLE 3

## Share of assets in activity centers (weighted average shares)

	All Centers	Primary Centers	Secondary Centers	Monocenters
% of Block Groups	8.6%	1.5%	3.1%	4.0%
% of Land	3.1%	0.2%	1.1%	1.7%
% of Developed Land	10.8%	1.7%	4.2%	5.0%
% of Population	7.9%	1.4%	2.9%	3.6%
% of Private Sector Jobs	39.9%	14.3%	14.1%	11.4%
% of Business Services Jobs (NAICS 51-56)	54.6%	23.3%	17.7%	13.6%
% of Industrial Jobs (21-42 and 48-49)	30.0%	6.5%	12.4%	11.1%
% of Retail Jobs (NAICS 44-45 and 81)	26.7%	8.6%	11.0%	7.1%
% of Hospitality Jobs (NAICS 71-72)	38.5%	15.8%	13.6%	9.1%
% of Low-Income Jobs (< \$1,251 /mo.)	32.6%	10.7%	12.3%	9.6%
% of Mid-Income Jobs (\$1,251 – \$3,333/mo.)	34.4%	11.0%	13.2%	10.2%
% of High-Income Jobs (> \$3,333/mo.)	47.2%	18.4%	15.6%	13.2%
% of Commercial Real Estate Value	46.2%	21.9%	14.0%	10.3%
% of Public Libraries	32.8%	6.5%	14.9%	11.4%
% of Historical Sites	44.8%	20.2%	12.2%	12.4%
% of Museums	66.7%	26.8%	23.5%	16.4%
% of Post Offices	26.5%	6.0%	12.8%	7.7%
% of Federal Office Space	87.8%	49.6%	20.3%	17.9%
% of Hospital Beds	83.2%	23.5%	19.9%	39.8%
% of College Staff	90.8%	42.7%	18.2%	29.8%

**SOURCE:** Brookings analysis of Census Bureau, Department of Homeland Security, and SafeGraph data

**NOTE:** Percentages are calculated as aggregate shares over the 110 metro areas with at least 500,000 residents

Private sector jobs are emblematic of both the high degree of activity centers' concentration of assets and the large variation between metro areas. Overall, 40% of all private sector jobs locate within activity centers—a roughly 4-to-1 ratio between jobs and developed land area. The average jumps even higher when looking at business services jobs (54.6%), which are a major source of tradable services in every metropolitan economy. Activity centers host an outsized share of industrial jobs (30%) as well, even though these jobs often demand greater land area per worker than other sectors.<sup>30</sup>

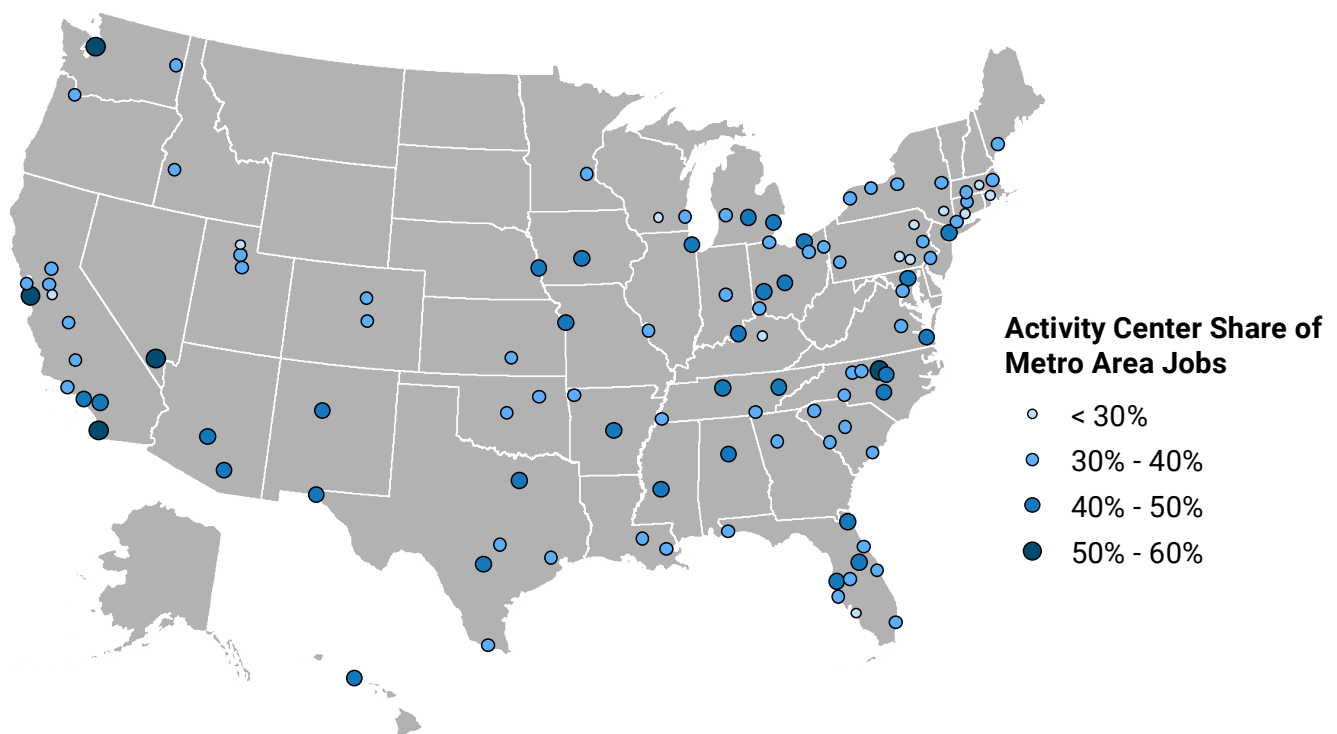
However, the concentration of jobs in activity centers varies substantially between metro areas (Figure 2). Five metro areas (Las Vegas; Durham, N.C.; San Jose, Calif.; San Diego; and Seattle) have over half of their jobs located in activity centers, while 12 metro areas have less than 30% of their jobs in activity centers. Notably, while the country's densest metro areas tend to have a relatively high share of their jobs in activity centers, the metro areas with the largest shares are mostly those that have sizable job concentrations that are not interspersed with residential population, and so consist of very large block groups (e.g., the Las Vegas Strip, Research Triangle Park).

Primary centers—the densest and most diverse type of activity center—take a notably different approach to job concentration. We find that they concentrate private sector jobs on a very small fraction of developed land, still with substantial variation between metro areas. On average across metro areas, primary centers host 14.3% of jobs on 1.7% of developed land area—a job share eight times the developed land share. But two

metro areas (New York and Boston) have over 30 times as large a share of jobs as developed land in their primary centers, while four (Lansing, Mich.; Fayetteville, Ark.; Cape Coral, Fla.; and Deltona, Fla.) have less than three times as large a share of jobs as developed land in their primary centers.

FIGURE 2

## Jobs are highly concentrated in activity centers



**SOURCE:** Brookings analysis of Longitudinal Employer-Household Dynamics data

Government services and other civic amenities are even more concentrated in activity centers than private sector employment is. Some institutional amenities such as federal offices, college and university students, hospital beds, and major intercity transportation nodes are almost exclusively found in activity centers (meaning rates over 90%), with disproportionately high rates within primary centers. Tourism assets such as museums and historical sites are also likely to be found in activity centers, while about one-third of public libraries locate in activity centers as well.

While activity centers cluster economic and civic assets, they do not have particularly large total populations or population densities. Across all 110 metro areas, activity centers house less than 8% of the total population—falling short of their 10.8% of developed land. Considering their high density of other assets, many centers may be missing an opportunity to create more housing that puts people in closer proximity to jobs and amenities that can be accessed more easily without a car (as discussed in Finding 2).

## FINDING 2: ACTIVITY CENTERS ARE MORE PRODUCTIVE, WITH GREATER DENSITY LEADING TO HIGHER GROSS METROPOLITAN PRODUCT

A rich body of literature demonstrates that density-driven agglomeration of firms within an industry and across industries drives innovation.<sup>31</sup> Increased employment density, particularly of professional workers, also leads to higher productivity per worker and more knowledge exchanged between firms.<sup>32, 33</sup> Agglomeration delivers benefits at all spatial scales, from firms in the same building to industries spread across entire metropolitan areas.<sup>34</sup>

Activity centers, especially primary centers, are the places and the scale that promote this sort of agglomeration both within and between sectors—and, as a result, they support workers who are highly productive. Our analysis reveals that across all 110 metro areas, there is a clear and positive relationship between the density of jobs within activity centers and productivity, as measured by gross metropolitan

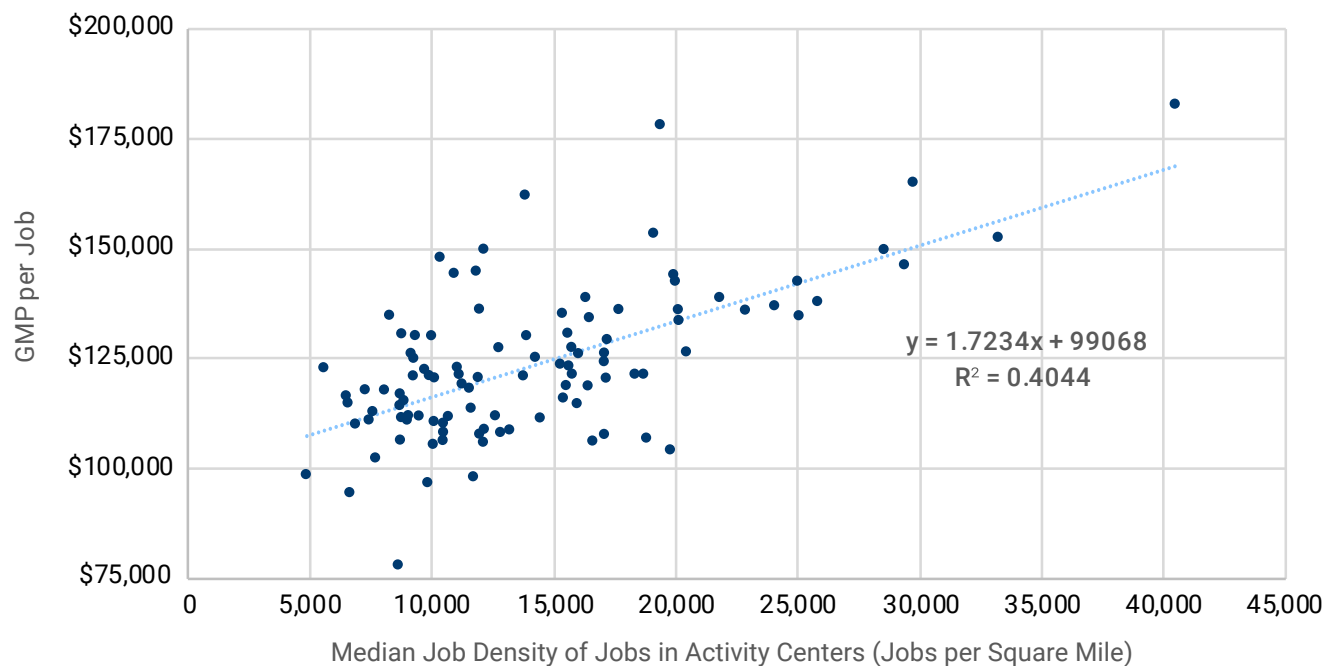
product (GMP) per worker. However, there are a small handful of metro areas that are extreme outliers relative to others in our analysis in terms of their high productivity and/or high average density of their activity centers. These seven metro areas—New York; Washington, D.C.; Boston; San Francisco; San Jose, Calif.; Honolulu; and Bridgeport, Conn.—are experiencing very different dynamics than most other U.S. metro areas, and thus were removed from this part of our analysis.

Focusing on the 103 other metro areas, we modeled the relationship between GMP per worker and activity center density using OLS regression. The full model results are in Appendix A. In our simple bivariate regression, this measure of activity center strength explains roughly 40% of the variation in GMP per worker. The model estimates that every additional 1,000 jobs per square mile in a metro area's median activity center is worth an additional \$1,723 in output per worker across the metro area. We visualize the relationship between these variables in Figure 3.

FIGURE 3

### Stronger activity centers are associated with higher productivity

US metro areas of > 500,000 residents\*



\*Excluding New York, Washington, Boston, San Francisco, San Jose (CA), Honolulu, and Bridgeport (CT)

**SOURCE:** Brookings analysis of ESMI and Longitudinal Employer-Household Dynamics data



The results presented here are a simplified and contrived model for the purpose of preliminary hypothesis testing and data exploration that do not constitute a full model of all variables that reasonably influence GMP per job. However, it is interesting to note that the correlation between activity center job density and productivity is stronger than productivity's univariate correlation with industrial sector composition (for example, share of tech jobs) or education (the share of adults with bachelor's degrees). Correlation is not causation, and changes to one of these variables does not necessarily lead to changes in the other. The strong relationship does, however, suggest regional economic development and infrastructure practitioners should consider what the potential benefits could be of locating more jobs within current activity centers.

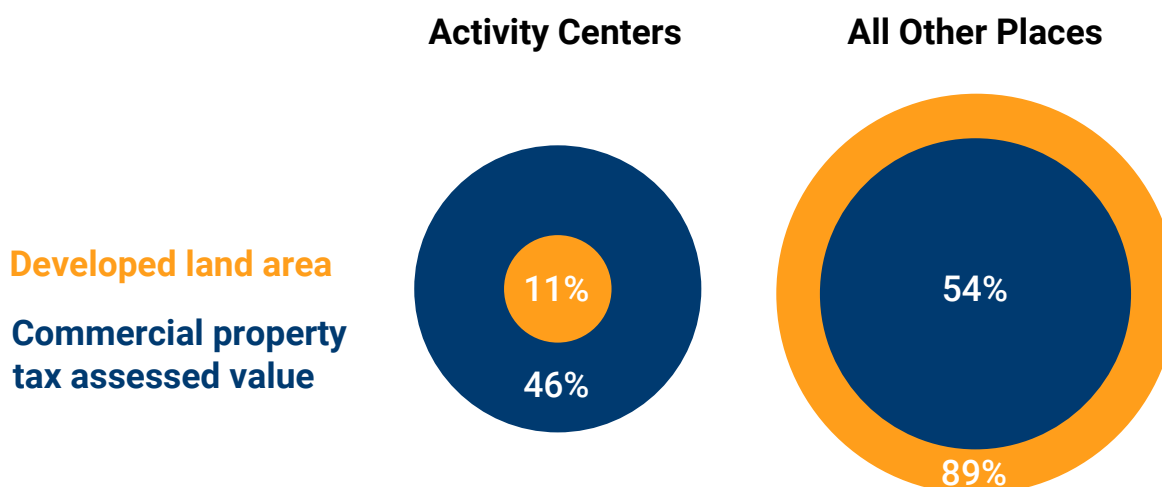
### FINDING 3: ACTIVITY CENTERS ARE MORE VALUABLE, WITH HIGHER COMMERCIAL AND RESIDENTIAL REAL ESTATE ASSESSMENTS

The concentration of so much economic and civic activity in activity centers is also reflected in commercial and residential real estate values.

We analyzed a national property database made available for research by Zillow, which included reasonably complete data for 45 of the metro areas analyzed in this report. By overlaying real property tax assessment data with activity centers, we were able to map which areas are producing what share of tax assessed value. We found that activity centers play a critical and outsized role in generating taxable value for jurisdictions. The weighted average share of office and retail commercial real estate value located in activity centers—46%—is over four times the weighted average share of their developed land area. All other places, on the other hand, generate value that is less than two-thirds their share of land area (Figure 4). Unsurprisingly, the very high share of assessed value in activity centers is comparable to their average share of metro area business services jobs (55%).<sup>35</sup> This suggests that the clustering of jobs is quite deliberate—firms must pay a premium to locate in activity centers, which is evidence that there is an economic benefit to doing so.

FIGURE 4

#### Activity centers play an outsized role in generating tax-assessable value for places



**SOURCE:** Brookings analysis of USGS National Land Cover Database and Zillow ZTRAX Data

The relationship between activity centers and home values is a bit more complex, because the conditions of housing markets vary dramatically between U.S. metropolitan regions in terms of population and housing inventory growth.<sup>36</sup> For slightly over one-third of the 45 metro areas in this portion of our analysis, residential assessed values per square foot are lower for homes within 1 mile of an activity center than all the other homes in their metro area. This group includes many legacy cities whose populations have declined in the post-industrial era, including Buffalo, N.Y., Cleveland, and Providence, R.I. However, for the other roughly two-thirds of metro areas in this sample, the assessed values of homes within 1 mile of an activity center are a weighted average of 26% higher. In three high-growth metro areas (Raleigh, N.C.; Deltona, Fla.; and the Washington, D.C. area) these housing premiums exceed 50%.

**FINDING 4: ACTIVITY CENTERS ARE MORE ACCESSIBLE AND INCLUSIVE TO METRO AREA RESIDENTS**

Disproportionate amounts of people may not live within activity centers, but that does not mean activity centers are isolated. In fact, it's the exact opposite.

The vast majority of metropolitan residents—in the vast majority of metro areas—tend to live quite close to activity centers, affording most people relatively short-distance access to the economic and civic amenities housed within them. On average, over three-quarters of the population within the 110 metro areas live in block groups centered within 3 miles of any activity center (Table 4).<sup>37</sup> In only two of the metro areas—Birmingham, Ala. and Portland, Maine—does less than half of the population live within 3 miles of an activity center.

That kind of physical access puts most residents within hypothetical biking distance of at least one kind of activity center. Secondary centers and monocenters are especially accessible via the 3-mile distance threshold, which reflects the higher overall count of these places and their more frequent presence in suburbs. If the threshold is reduced to 1 mile—a proxy for walking distances—over one-third of the average metropolitan population is still within a short distance of an activity center (provided pedestrian-oriented infrastructure is in place). This short-distance accessibility is particularly beneficial for residents for whom commuting by car is economically prohibitive.

**TABLE 4**  
**Share of population living within 1 and 3 miles of any activity center, 110 metro areas (weighted average share)**

Geography	Population Within 1 Mile	Population Within 3 Miles
All Activity Centers	36.9%	76.9%
Primary Centers	9.3%	33.8%
Secondary Centers	20.1%	59.0%
Monocenters	27.2%	68.2%

**NOTE:** Percentages are calculated as aggregate shares over the 110 metro areas with at least 500,000 residents  
**SOURCE:** Brookings analysis of American Community Survey data



Activity centers are also especially accessible to a demographically diverse population (Table 5). Whether measured by the 1- or 3-mile thresholds, people of color are more likely to live near an activity center than

the white population. The results hold when looking at all three activity center types, with Black people consistently the most likely to live near each.

TABLE 5

**Share of population living within 1 and 3 miles of any activity center, 110 metro areas (weighted average share)**

	Total	White	Black	Latino or Hispanic	Asian American
<b>Within 1 Mile of</b>					
Any Activity Center	36.9%	32.3%	48.3%	43.7%	39.9%
Primary Centers	9.3%	9.2%	11.1%	9.7%	11.6%
Secondary Centers	20.1%	18.2%	23.7%	23.7%	23.6%
Monocenters	27.2%	23.0%	35.6%	33.0%	29.2%
<b>Within 3 Miles of</b>					
Any Activity Center	76.9%	71.7%	87.1%	84.0%	84.0%
Primary Centers	33.8%	30.3%	43.2%	38.7%	38.2%
Secondary Centers	59.0%	53.7%	68.5%	66.5%	66.7%
Monocenters	68.2%	62.1%	80.6%	75.8%	74.6%

**NOTE:** Percentages are calculated as aggregate shares over the 110 metro areas with at least 500,000 residents

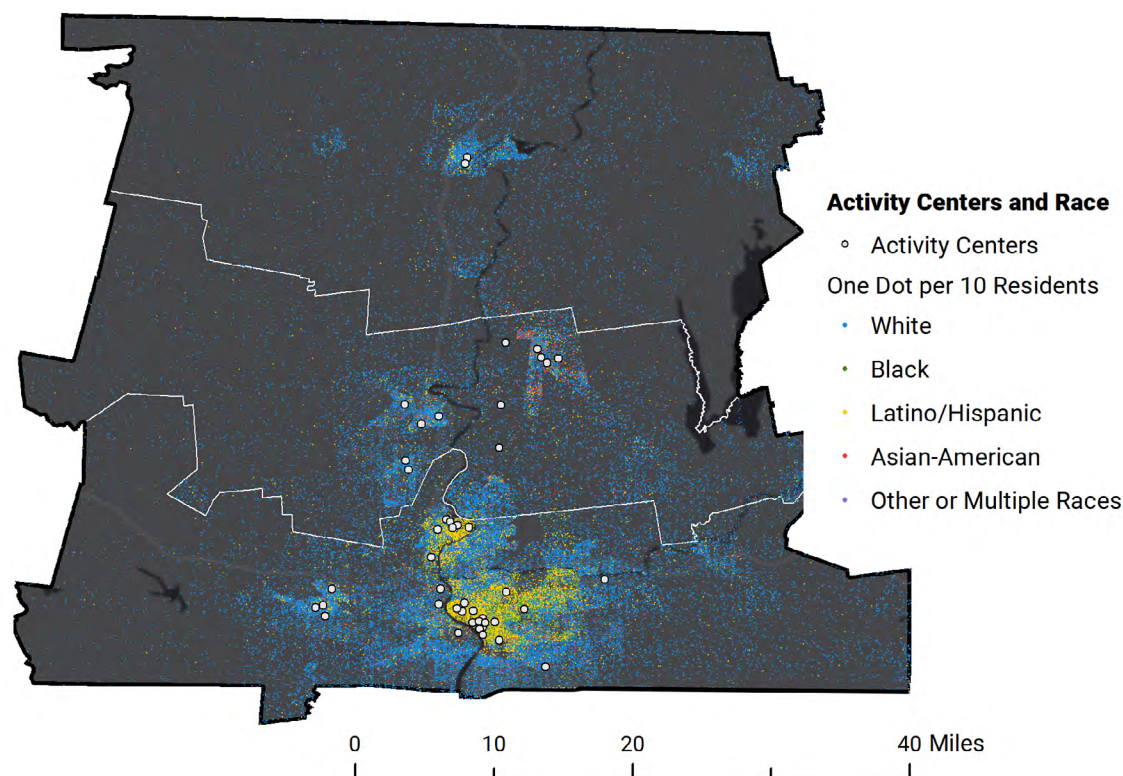
**SOURCE:** Brookings analysis of American Community Survey data

These demographic variations underscore the impacts of metropolitan spatial growth. Over the past 70 years, most U.S. metropolitan areas have seen a demographic divide form between their historic central cities and their suburban and exurban areas, with more of the white population moving to the latter relative to populations of color.<sup>38</sup>

Springfield, Mass. offers one of the more extreme examples of this difference (Figure 5). The central Massachusetts metro area is home to nearly 700,000 people, of which about one-third are people of color. About 66% of white residents live within 3 miles of any of the metro area's 45 activity centers. By contrast, 95% of Springfield's Black and Latino or Hispanic residents live within 3 miles of an activity center, as do 86% of Asian American residents.

FIGURE 5

## Black, Latino, and Asian American residents live closer to activity centers in Springfield, Mass.



**SOURCE:** Brookings analysis of 2020 Decennial Census data

Neighborhoods near activity centers differ not just in their racial demographics, but in their housing stock. Within 1 mile of activity centers, we find housing types are more varied and denser than in other block groups. While 58% of all housing units in the 110 metro areas are single-family detached homes (SFDHs), these units represent only 41% of homes within 1 mile of activity centers. Instead, the majority of housing immediately around activity centers is either multi-unit buildings with at least 10 units or “missing middle” stock, which includes attached single-family dwellings and buildings with two to nine housing units. The share of non-SFDH housing is even bigger within 1 mile of primary centers, where 87% of all housing units fall into the large multi-unit or missing middle categories. The presence of more varied housing types—including ones that allow for lower housing prices and reduce car dependence—near asset concentrations makes activity centers more inclusive by allowing a more diverse population easy access to jobs and other assets.

New Orleans exemplifies this kind of varied housing geography and inclusive outcome. About 62% of the metro area’s roughly 560,000 housing units are SFDHs—a few percentage points higher than the average across the 110 metro areas studied. However, for block groups with centroids within 1 mile of an activity center centroid, the SFDH share drops to 47%. The share of row houses and apartments in buildings with fewer than 10 units jumps 11 percentage points higher than the metropolitan average, and the share of larger multi-units jumps 8 percentage points higher. This is evident on a map of New Orleans’ urban core, where the neighborhoods serving as activity centers are dominated by non-SFDH housing types (Figure 6).

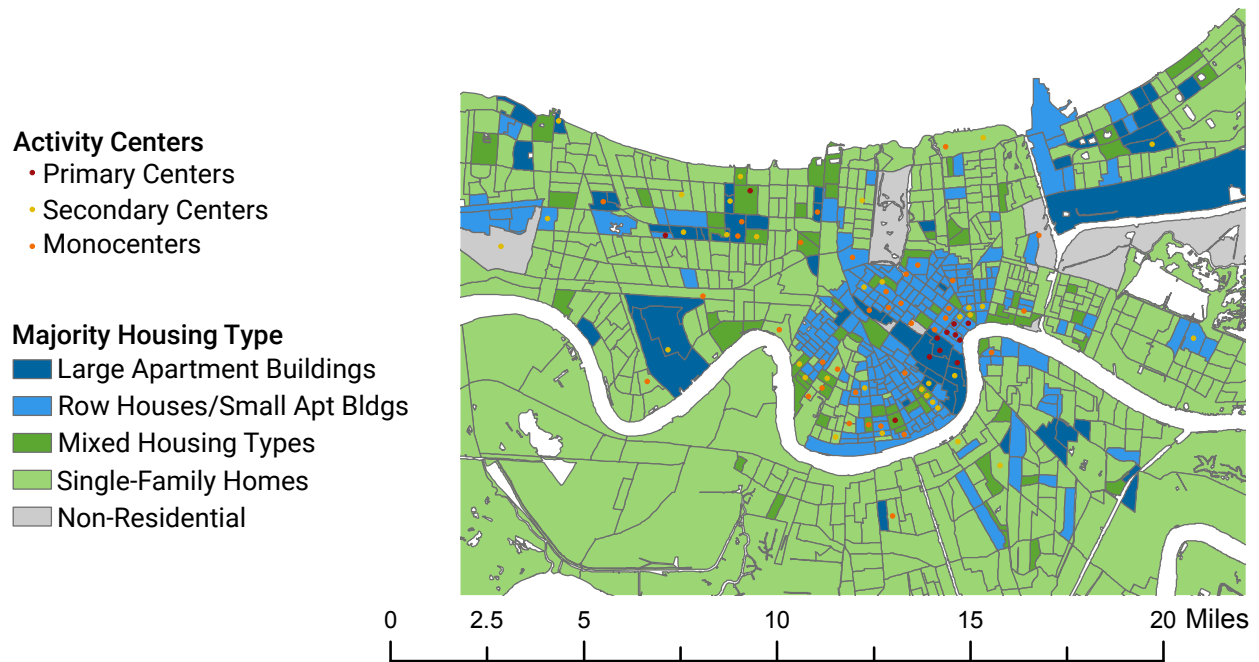
This diverse housing stock is reflected in the incomes of households that are able to live near activity centers in New Orleans (Table 6). The lowest-income households are the most likely to live near activity centers relative to both the population as a whole and especially the highest-income households.



FIGURE 6

## In metropolitan New Orleans, a higher share of “missing middle” housing and multi-unit buildings can be found near activity centers.

Activity centers and majority housing type of block groups



**SOURCE:** Brookings analysis of American Community Survey data

TABLE 6

## Share of New Orleans metro population near activity centers, by distance and household income

	All Households	Household Income < \$25,000	Household Income \$25,000-\$50,000	Household Income \$50,000-\$100,000	Household Income > \$100,000
Share Within 1 Mile	39.9%	42.6%	40.1%	37.1%	40.0%
Share Within 3 Miles	76.3%	79.1%	78.4%	73.7%	74.5%

**NOTE:** Percentages are calculated as aggregate shares over the 110 metro areas with at least 500,000 residents

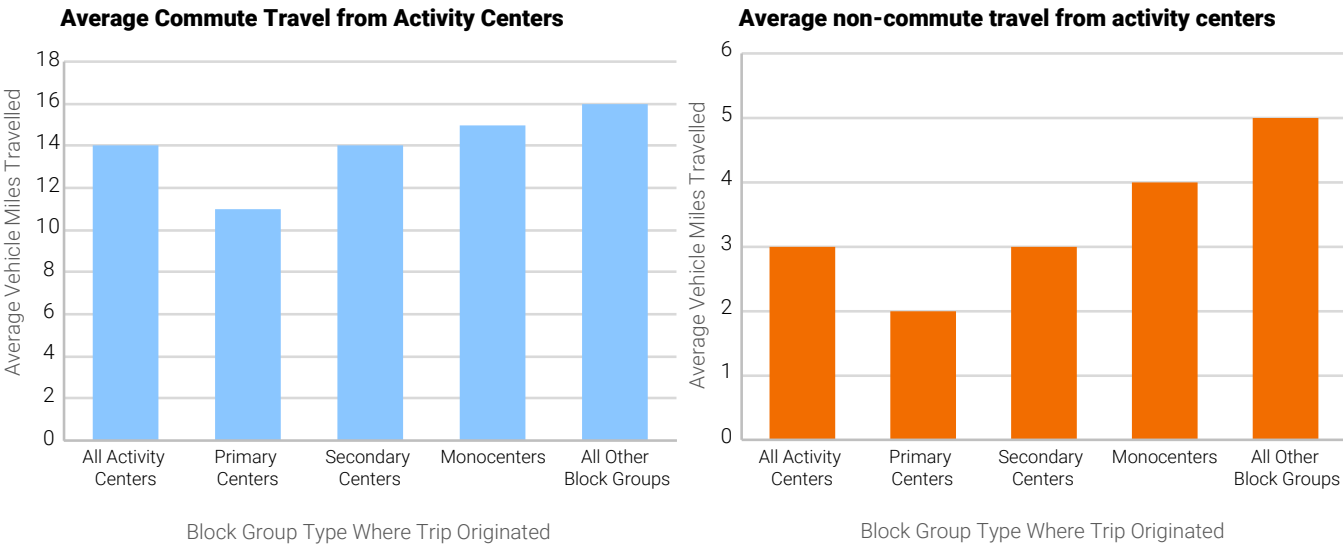
**SOURCE:** Brookings analysis of 2019 American Community Survey data

**FINDING 5: ACTIVITY CENTERS HAVE MORE SUSTAINABLE TRAVEL OUTCOMES, WITH LESS DRIVING AND MORE WALKING AND BIKING**

Activity centers are typically the most regionally connected block groups in a metropolitan area. When counting the number of metropolitan workers that can reach a block group within a 45-minute car commute, activity centers are more accessible than other block groups in 108 of 110 metro areas. A business located in an activity center can be reached by 33% more drivers than a business located outside one. The advantage is even larger when studying 45-minute transit commutes; activity centers are reachable by over 100% more bus and train riders than other block groups. Simply put, regional transportation infrastructure runs through activity centers.

Activity centers’ accessibility and activity mix yield shorter average commuting trips by car for residents of those activity centers (Figure 7). Commute trips by car, which tend to be a worker’s longest daily trips, are 14% shorter in activity centers versus other places. Meanwhile, non-commute vehicle trips are 29% shorter when starting in activity centers. The net effect is 17.1% lower greenhouse gas emissions per traveler via their driving habits. These data points suggest that enabling more people to live and/or work in activity centers could lead to smaller carbon footprints across metropolitan America.

**FIGURE 7**  
**Activity centers produce less driving**  
US metro areas of > 500,000 residents



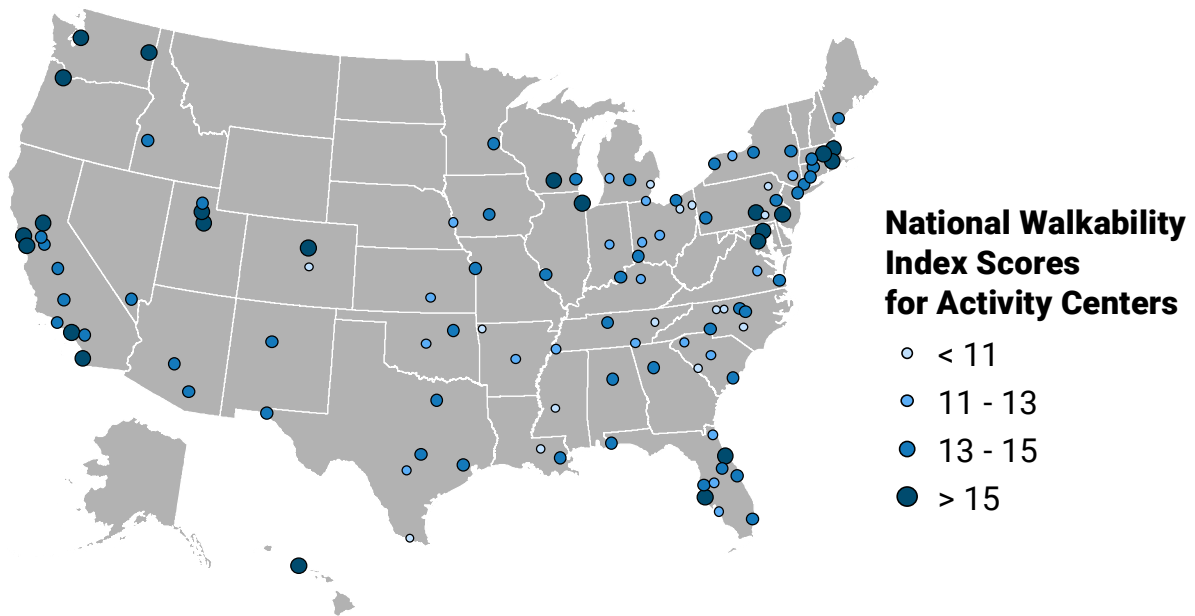
**SOURCE:** Brookings analysis of EPA Smart Location Database data

In addition to being more accessible to residents and workers throughout metropolitan areas, activity centers' denser development patterns and mixes of uses make them more walkable, bikeable, and transit-friendly, especially compared to block groups characterized by more auto-centric land use patterns and greater dispersal of assets and activity. The Environmental Protection Agency's National Walkability Index (NWI) rates the walkability of block groups on a scale from 1 (least walkable) to 20 (most walkable) based on street network connectivity, accessibility to public transportation, density, and mixture of land

uses. Activity centers have an average NWI score of 13.4, compared to 10.3 in all other block groups. Primary centers are the most walkable (15.3), followed by secondary centers (13.7) and monocenters (12.4). Many of the most walkable activity centers (by metro area average) are found in the country's largest western metro areas, including Seattle (16.1), Portland, Ore. (16.0), San Francisco (15.9), and Salt Lake City (15.5). By contrast, activity centers in many southern metro areas, including Fayetteville, N.C. and Baton Rouge, La., have average walkability scores around 8 (Figure 8).

**FIGURE 8**

**Activity centers are generally more walkable than other metropolitan area block groups, but not in all metros.**



**SOURCE:** Brookings analysis of EPA National Walkability Index

In addition to shorter driving trips, activity centers produce more commuting by foot, bicycle, transit, and carpool. Roughly 28% of commuters living within 1 mile of an activity center do not commute by driving alone—a higher rate than the 21% average among all residents within the 110 metro areas. For commuters living within 1 mile of a primary center, the share of commuters who do not commute by driving alone rises to 37%. Table 7 reports these estimated shares

as well as the weighted average estimates for the 10 U.S. metro areas with the highest rates of commuters who do not commute by driving alone. Relatedly, about 60% of all households without access to a vehicle ("zero-vehicle households") live within 1 mile of activity centers. The walkable designs and strong transit connections—plus the clustering of similar neighborhoods—clearly build neighborhoods more conducive to not driving.



TABLE 7

## Share of commuters who do not drive alone

Rank	Metro Area	Metro-Wide	Within 1 Mile of Activity Center	Within 1 Mile of Primary Center
1	New York-Newark-Jersey City, NY-NJ-PA	48%	68%	86%
2	San Francisco-Oakland-Berkeley, CA	38%	50%	70%
3	Urban Honolulu, HI	33%	39%	46%
4	Washington-Arlington-Alexandria, DC-VA-MD-WV	30%	44%	61%
5	Boston-Cambridge-Newton, MA-NH	30%	47%	63%
6	Seattle-Tacoma-Bellevue, WA	28%	40%	55%
7	Chicago-Naperville-Elgin, IL-IN-WI	26%	38%	58%
8	Portland-Vancouver-Hillsboro, OR-WA	24%	33%	42%
9	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	24%	37%	55%
10	Bridgeport-Stamford-Norwalk, CT	23%	28%	35%

**SOURCE:** Brookings analysis of EPA Smart Location Database



## Implications for practice

The findings from this analysis show that, on average, activity centers bring numerous benefits to America's metropolitan areas—making a strong case for why regional leaders should prioritize investments that support these centers' continued growth and development. But real estate and infrastructure alone do not create good places. Public, private, civic, and community stakeholders must collaborate to advance transformative placemaking policies and practices that ensure activity centers are connected, vibrant, and inclusive, regardless of their starting point.<sup>39</sup> Findings from this analysis have several implications for leaders working toward these ends.

### **IMPLICATION 1: NURTURING A PRODUCTIVE, INNOVATIVE ECONOMIC ECOSYSTEM**

Our findings demonstrate that cities and regions that want to strengthen their economies should invest in their existing activity centers, especially their primary centers. Our analysis reveals a nexus between the density of jobs in activity centers and productivity per worker, meaning that metro areas with higher concentrations of jobs in activity centers reap thousands of dollars per person every year in additional productivity relative to their less-dense peers. This solution is low-hanging fruit for lower-density metro areas, which are the vast majority.

The rise in telework due to the COVID-19 pandemic has caused many to question whether the relationship between place and productivity will endure, or whether new technologies like videoconferencing and cloud computing will enable workers and firms to boost productivity without physical proximity. However, we already know that jobs are just one type of asset that historically concentrates in activity centers, and that people have many other reasons for coming together that matter economically and that directly contribute to the value proposition of activity centers.

There remains a strong case that economic development practitioners and planners need to support investments in infrastructure and placemaking that increase activity center density, promote connection and collaboration among businesses and workers within activity centers, and provide stronger ties to businesses and workers elsewhere in the region. Depending on the specific assets and needs of an activity center, this could mean supporting the development of business incubators that advance research commercialization and entrepreneurship, incentivizing the infill of vacant lots (including surface parking lots), investing in improvements to commercial corridors (from sidewalks to street lighting), or creating and activating public spaces to bring more people (and more patrons) to these areas.<sup>40</sup>

## **IMPLICATION 2: SUPPORTING AN ACCESSIBLE, FLEXIBLE, AND SUSTAINABLE BUILT ENVIRONMENT**

The differences in travel modes and distances between people living or working in activity centers versus other places make it clear: Activity centers could promote more sustainable development. Activity centers are often the most accessible neighborhoods in every metropolitan area, particularly when traveling by car or mass transit. We also know most metropolitan residents live within a short distance of at least one activity center, which can make walking and bicycling viable alternatives to other travel modes. Planners at the municipal, metropolitan, and state levels can use these geographic conditions to their advantage. Failing to build more diverse housing types within and near activity centers is a missed opportunity. Residential neighborhoods would also benefit from safe pedestrian and cycling connections to their closest activity centers, which may require roadway improvements to promote safer cycling and walking within activity centers and corridors flowing into them. Meanwhile, connections between activity centers—most of which do not involve traditional downtowns—are ideal places to focus on higher-speed bicycle and transit alignments.

Planners and their development partners should also consider how the design of activity centers can influence the overall environmental performance of a region. With a greater variety of modal options—namely, bicycle, pedestrian, and transit infrastructure—activity centers can help reduce greenhouse gas emissions and mitigate short- and long-term climate impacts. The availability of electric vehicle charging infrastructure should also be a consideration to better manage transportation emissions. When it comes to land use, the design of buildings matters too—greater density combined with greater weatherization and other improvements can reduce emissions and overall energy burdens.<sup>41</sup> Public parks, tree cover, and other green spaces can deliver a range of direct benefits to neighborhoods and entire regions as well, including reduced stormwater runoff, better air quality, and fewer urban heat islands.<sup>42</sup>

## **IMPLICATION 3: FOSTERING AN INCLUSIVE AND EQUITABLE SOCIAL ENVIRONMENT**

Since low-income and racial minority groups tend to live in areas with higher accessibility to activity centers, efforts to focus development in these areas have strong potential to benefit these groups. This is true for both activity centers whose assets have long been unrecognized and undervalued, as well as for exclusive, high-investment centers whose benefits to date may not be widespread. In either case, the wrong kinds of strategies, employed without community input, can decrease affordability and/or spur changes that can physically or culturally displace existing residents and business owners.<sup>43</sup> It is therefore vital that efforts to target investment and densification in activity centers include increases to the housing stock in the vicinity of these centers, as well as do-no-harm programs and policies, such as community land trusts and tenant protections, to extend some stability in a context of change.

## **IMPLICATION 4: ENCOURAGING A LOCALLY ORGANIZED CIVIC INFRASTRUCTURE**

As our findings illustrate, America's emerging economic geography is one of polycentric megaregions, where jobs, people, and amenities concentrate at key nodes in both historic urban cores and suburbs. But these new patterns, marked by the growth of activity centers, require sophisticated governance beyond what a typical general purpose local government can or should provide. Place-based ("hyperlocal") governance structures—from community land trusts to business improvement districts to neighborhood councils—can provide activity center stakeholders a structure through which to share ideas, voice concerns, advocate for investments, and co-design strategies with others both inside and outside activity center boundaries toward the economic, environmental, and social equity outcomes described above. Local leaders need to look to new models and innovations that could help such organizations grow and evolve to effectively serve more people in more activity centers.<sup>44</sup>





## Conclusion and areas for future research

The novel identification of activity centers discussed here pushes practitioners to think more expansively about the kinds of assets that cluster, as well as how to best document where that clustering actually occurs in U.S. metro areas. More than that, the deep analysis of these centers demonstrates why such documentation matters—confirming and expanding upon decades of research on the economic, social, and environmental benefits of density and mixing of uses relative to dispersal and segregation.

But the important role activity centers play in the economic geography of metro areas is much too large for a single report to fully investigate. In future research, we hope to further examine the role of the largest, densest, and most significant primary

centers: major city downtowns. At the other end of the spectrum, we hypothesize that the use of areal units smaller than block groups will allow an analysis of activity centers in rural and smaller metro areas. We also hope to extend our analysis of activity centers by analyzing their role in travel behavior, including public transportation usage; and, once post-Covid data is available, to repeat our analysis to study how the pandemic has changed the economic geography of American metro areas.

These are just some of the ways that we, and perhaps others, can further explore the data and its implications. In the meantime, we hope that regional leaders will find value in this work and use it to inform their future planning.

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