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Stuck in Traffic: For Greater Miami to Become a Leading Startup Hub, Better Mobility Is a Must

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MIAMI URBAN FUTURE INITIATIVE

The Miami Urban Future Initiative is a joint effort between the Creative Class Group and Florida International University's College of Communication, Architecture + The Arts (CARTA) to develop new research and insights for building a stronger, more innovative, and more inclusive economy in Greater Miami. The initiative engages top thinkers and researchers from across the region and the world to combine their knowledge with that of the region's business leaders, economic development practitioners, and other key stakeholders. Its efforts are made possible thanks to generous funding from the John S. and James L. Knight Foundation.

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INTRODUCTION

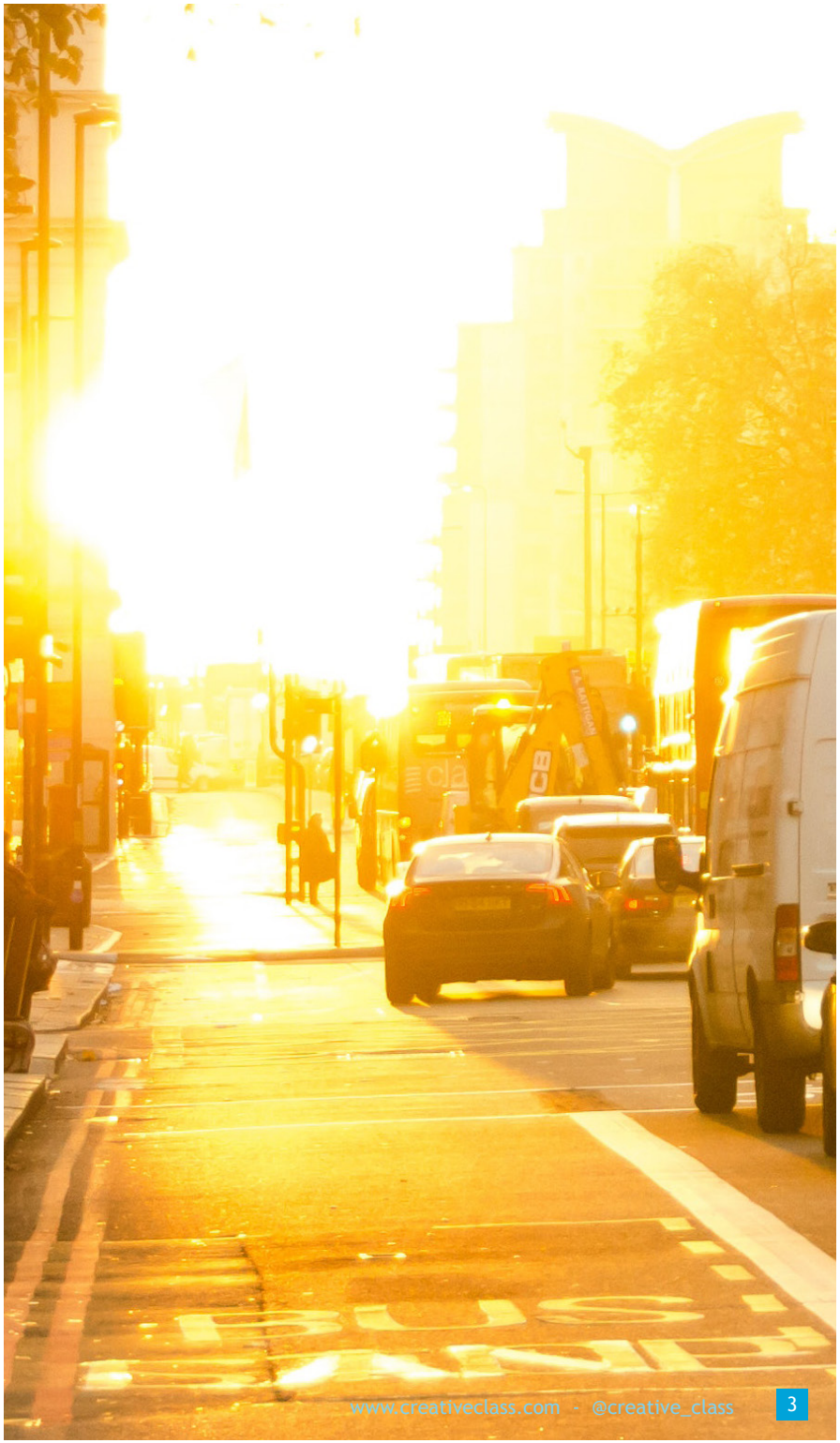
The world is abuzz with talk of a mobility revolution. This encompasses new modes of transportation, from ride sharing and electric cars to bike sharing, scooters, and even self-driving cars. But how much of that is hype, and how much is reality? In Greater Miami—as in much of rest of the country—the vast majority of people still depend on their cars to get around.

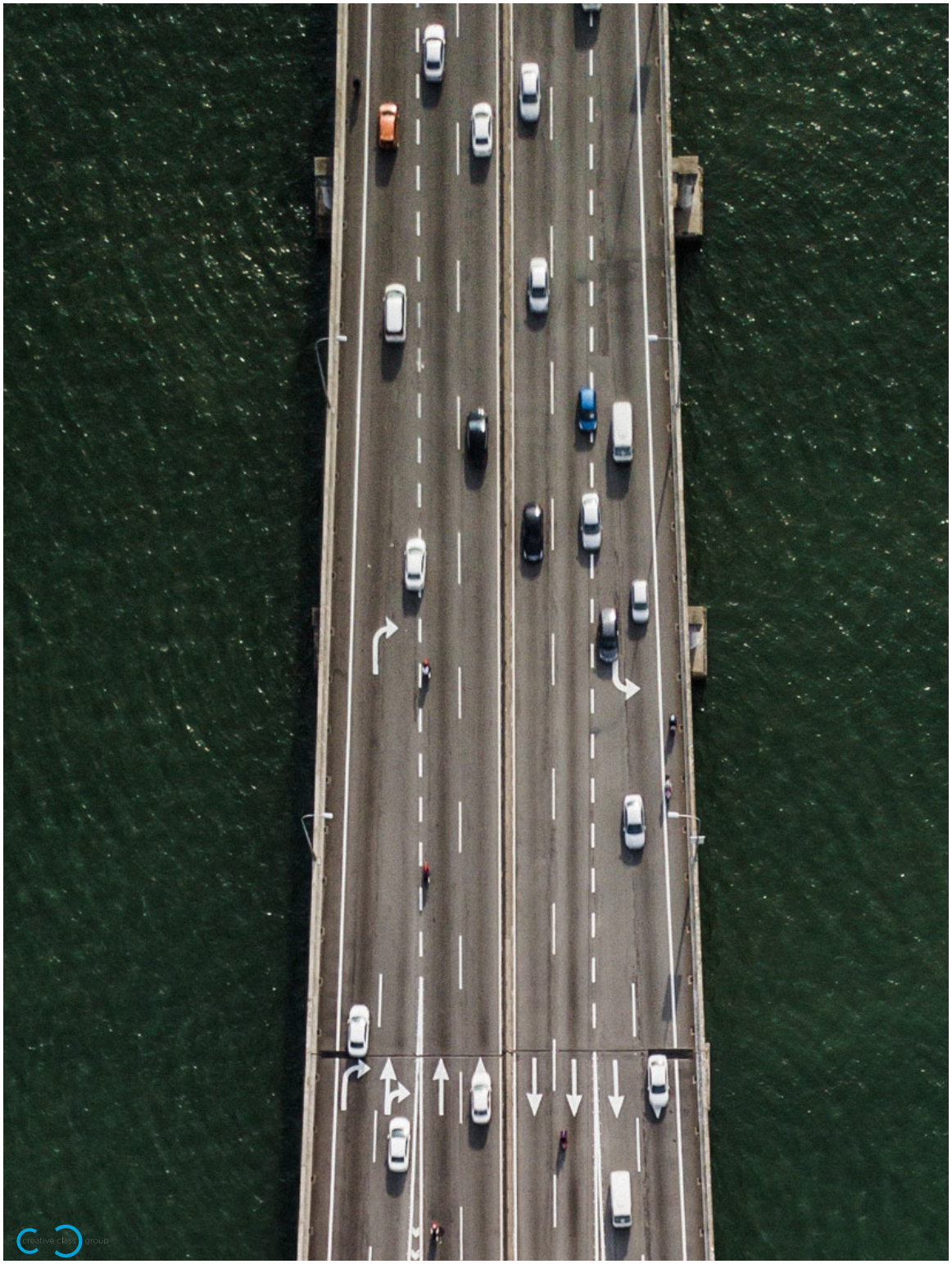
But there comes a point in the evolution of a city-region when the car is no longer an effective way to get around. When cities and regions are relatively small, roads can still flow, and the car remains a viable mechanism for mobility. But once a metro region hits the size of Greater Miami—the tri-county area encompassing Miami-Dade, Broward, and Palm Beach Counties—with more than five million people, traffic grinds to a halt, roads become congested, and the velocity of urban life slows down. There is simply not enough capacity for everyone in the region to get around in a car.

Indeed, the kind of traffic congestion Miami now has is an unyielding barrier to the region's innovative aspirations and economic competitiveness. Economic development in an innovative knowledge economy increasingly turns on the velocity at which people and ideas can circulate through cities. Time wasted in congestion is a deadweight economic loss. When a place gets too congested and clogged up, its innovative potential and economic capacity suffer.

Ultimately, the kinds of companies and talent Miami wants to attract—both startups and larger, more-established corporations—are locating in dense, transit-served urban environments where workers don't need a car: places like downtown San Francisco and New York City. Amazon's HQ2 reportedly bypassed Miami because of the city's car dependence and lack of an integrated transit system. Progressing beyond an overwhelmingly car-based system to one that also includes a balance of transit, bicycling, and walking to work is about mobility and more. It is fundamental to attracting talent, developing technology, building a state-of-the-art startup ecosystem, and bolstering the region's economic competitiveness.

This study, a product of the Miami Urban Future Initiative, takes a deep dive into mobility in Greater Miami. Using data from the U.S. Census American Community Survey and the traffic monitoring firm INRIX, we examine the current state of transportation, congestion, and commuting in Greater Miami, along with new opportunities to create a more sustainable and better-functioning transportation network.





KEY FINDINGS

- **Among large metros, Greater Miami has the 12th-worst traffic congestion in the country.** The average commuter loses more than 100 hours of productive time to congestion each year, and this costs the metro roughly $4 billion in lost economic output.
- **Greater Miami has the 13th-longest median commute time in the country.** The average commuter travels roughly 30 minutes each way.
- **Miami's future as a startup hub and global city hinges on moving beyond the car.** The world's leading startup hubs are in dense, transit-served urban areas. And the innovative companies and leading-edge global talent Miami needs to attract want to be able to live without a car.
- **Miami remains heavily dependent on the car.** More than three-quarters of Miami commuters drive alone to work. That's far more than in leading global cities like New York and leading startup hubs like San Francisco, where a much greater fraction of commuters use transit or bicycle or walk to work.
- **Just 3 percent of Miami commuters use public transit, and ridership is declining.** Compare that to nearly a fifth of San Franciscans and nearly a third of New Yorkers.
- **An even smaller fraction of Miami commuters walks or bicycles to work.** Just 1.5 percent of Miami commuters walk to work, and fewer than 1 percent bike to work—a shocking statistic for such a warm, sunny climate. Poor infrastructure and dangerous conditions are a powerful disincentive for walking and bicycling commuters. Worse, this phenomenon hurts the region's ability to compete for tech talent and sends a signal that Miami is not a major knowledge hub.

STUCK IN TRAFFIC

Traffic congestion is the slayer of great cities. Every major city faces a choke point: when the population rises above five or six million, cars no longer make sense as urban transportation. Cars clog the roads and stall the economy, limiting innovation and economic productivity. Greater Miami has crossed that threshold and is now beginning to see the impacts. If the status quo is maintained, traffic will only get worse.

Greater Miami has the 12th-worst traffic congestion in the nation. Drivers lose an average of 105 hours per year sitting in traffic, at an average cost of $1,470 per driver. That's similar to the rates of notoriously congested Atlanta and Houston. All told, Greater Miami loses $4 billion per year from traffic congestion, which amounts to 3 percent of the region's $120 billion in annual wages and salaries and 1.5 percent of its total economic output of $288 billion. In addition, idling cars add to air pollution. And, long commutes are associated with significant increases in both physical and mental health problems.

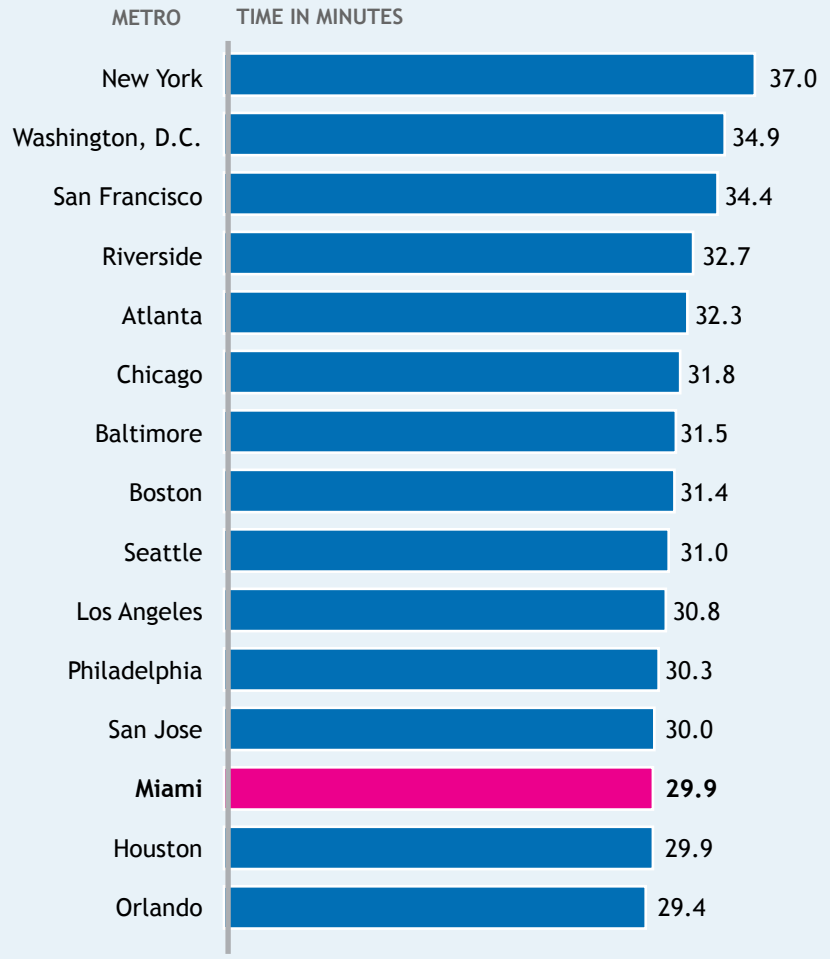
Table 1: U.S. Metros: INRIX 2018 Global Traffic Scorecard

U.S. Rank	Global Rank	Metro	Annual Hours Lost in Congestion	Cost of Congestion (per Driver)	Cost of Congestion (per City in Billions)
1	8	Boston	164	$2,291	$4.1
2	19	Washington, D.C.	155	$2,161	$4.6
3	23	Chicago	138	$1,920	$6.2
4	40	New York	133	$1,859	$9.5
5	47	Los Angeles	128	$1,788	$9.3
6	58	Seattle	138	$1,932	$2.9
7	59	Pittsburgh	127	$1,776	$1.2
8	65	San Francisco	116	$1,624	$3.4
9	69	Philadelphia	112	$1,568	$3.3
10	70	Portland	116	$1,625	$1.4
11	71	Atlanta	108	$1,505	$3.5
12	**73**	**Miami**	**105**	**$1,470**	**$4.0**
13	77	Houston	98	$1,365	$3.8
14	84	Austin	104	$1,452	$1.2
15	88	Baltimore	94	$1,315	$1.3

Source: INRIX Global Traffic Scorecard 2018

Greater Miami has the 13th-longest commute time among all large metros, at half an hour for a one-way commute. That's similar to Houston and San Jose and considerably higher than the national average.

Table 2: Large Metros with the Longest Median Commute Time



Source: U.S. Census American Community Survey 2017

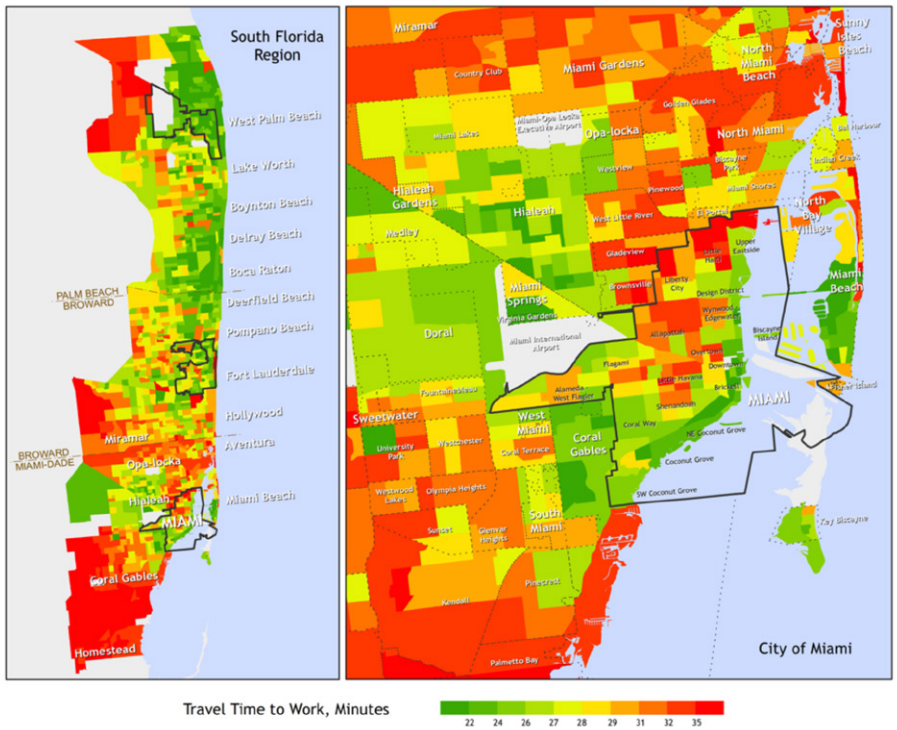
Note: U.S. average is 26.9 minutes; lowest three large metros: Grand Rapids (21.5), Rochester (21.6), and Buffalo (21.8)

STUCK IN TRAFFIC (CONTINUED)

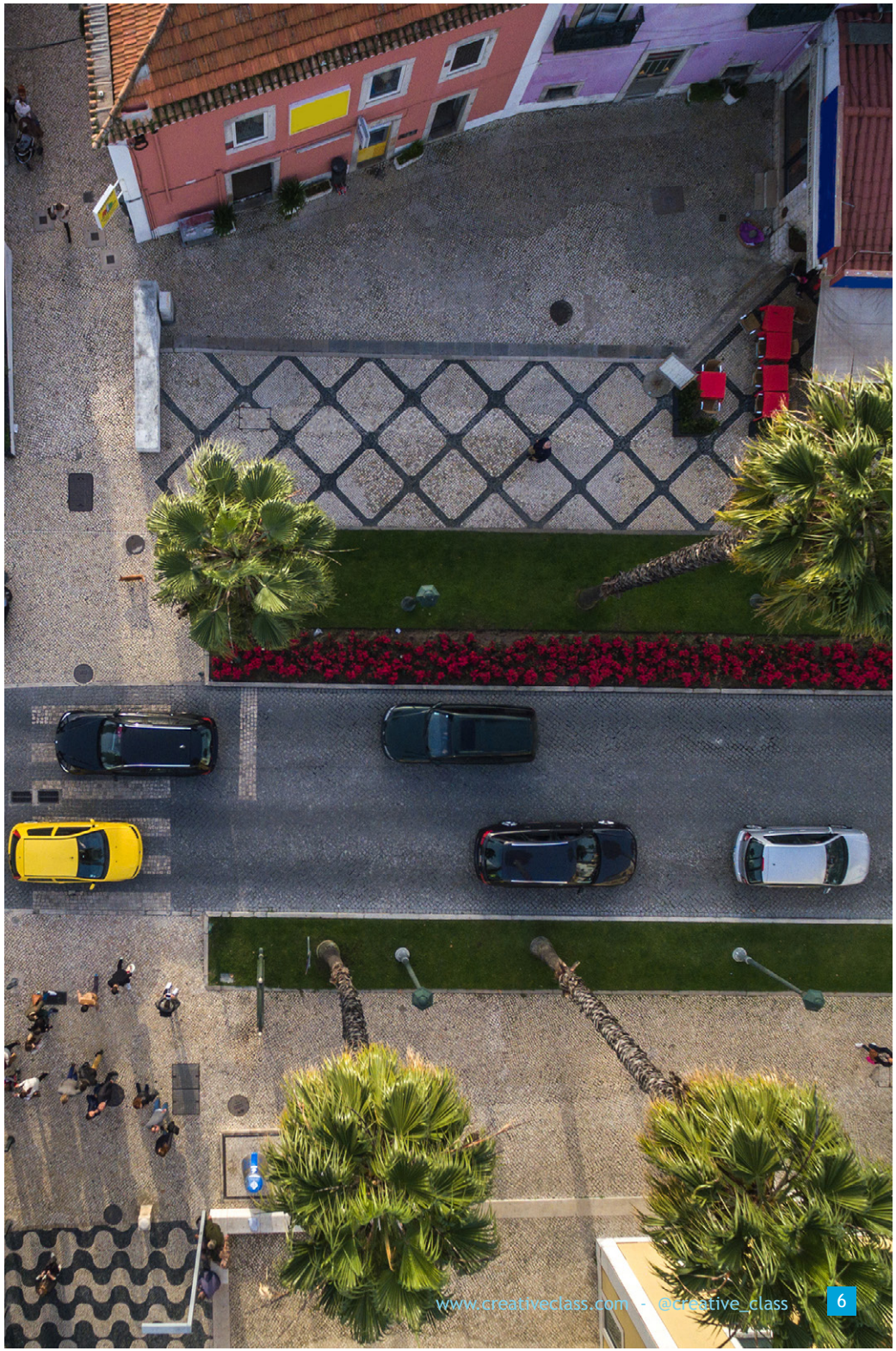
The geography of commute time in Greater Miami is largely related to how far workers live from major job centers. Neighborhoods near downtown Miami and Coral Gables tend to have commutes of less than 30 minutes, as shown in green on the map below. Along the coast from Fort Lauderdale to West Palm Beach, commutes are also fairly short—less than 22 minutes in most of Boca Raton and West Palm Beach proper. Far-out suburbs and exurbs tend to have commutes longer than 35 minutes, as shown in red on the map. This is partly the consequence of the region's lower wages (stemming from its heavy dependence on low-wage service jobs) and housing affordability issues, which push families farther and farther out—a consequence of a drive-till-you-qualify housing market.

Proximity to major job centers is not the only factor in commute time. Some of the poorest, inner city Miami neighborhoods and nearby low-income suburbs have relatively long commutes due to a disconnect between where people work versus where they can afford to live, leaving many to endure long bus commutes.

Figure 1: Miami: Median Commute Time



Source: U.S. Census American Community Survey 2017



A REGION OF DRIVERS

Miami is a region of drivers who are extraordinarily dependent on the car.

Nearly eight in 10 (78.4 percent) commuters in Greater Miami drive alone in their cars to work. That's a bit higher than the U.S. average (76.4 percent) and about in the middle (23rd) of the 53 large metros over one million people. It's similar to Sunbelt metros like Las Vegas and Riverside, CA, as well as midwestern metros like Minneapolis-St. Paul and Pittsburgh.

Table 3: Large Metros with the Lowest Share of Workers Who Drive Alone to Work

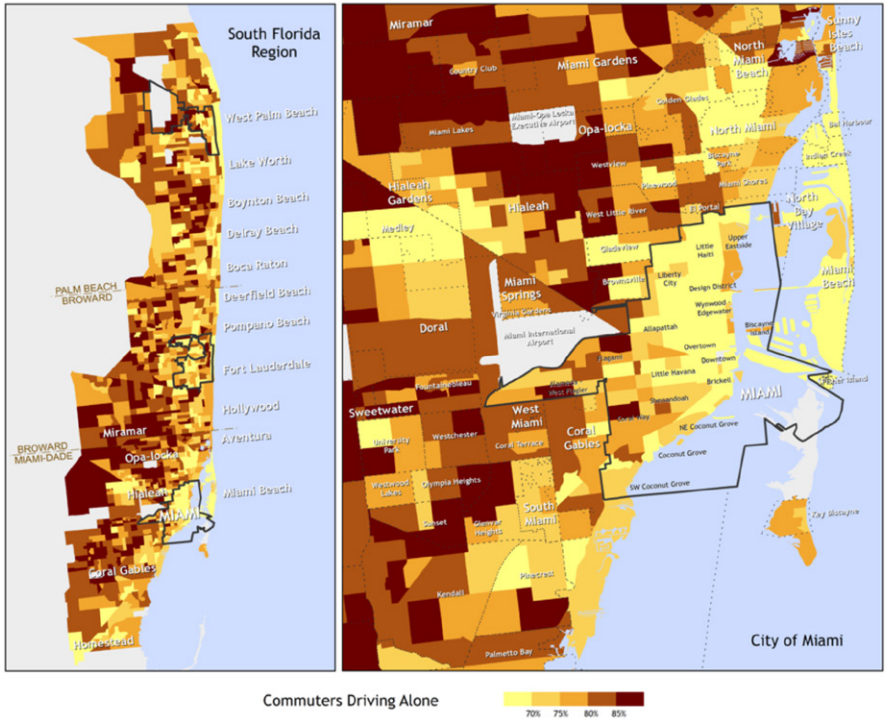
Rank	Metro	Share of Workers
25	Riverside	78.9%
24	Las Vegas	78.9%
23	**Miami**	**78.4%**
22	New Orleans	78.3%
21	Minneapolis-St. Paul	77.5%
20	Pittsburgh	77.2%
19	Tucson	77.1%
18	Sacramento	76.8%
17	Atlanta	76.7%
16	Austin	76.6%
15	Baltimore	76.4%
14	San Diego	76.3%
13	Phoenix	76.2%
12	Los Angeles	75.4%
11	Salt Lake City	75.3%
10	Denver	75.2%
9	San Jose	74.1%
8	Philadelphia	73.1%
7	Portland	70.1%
6	Chicago	70.0%
5	Seattle	67.6%
4	Boston	66.6%
3	Washington, D.C.	66.4%
2	San Francisco	57.0%
1	New York	50.1%

Source: U.S. Census American Community Survey 2017

Note: U.S. average is 76.4%; highest three large metros: Memphis (85.2%), Detroit (84.3%), and Birmingham (84.3%)

Not surprisingly, commuters are more likely to drive alone to work in the region's deep inland suburbs like Miramar and Kendall West, shown in dark brown on the map below. As a general rule, the closer people live to major job centers—most of which are located close to the coast—the less likely they are to drive alone to work. In most of Miami proper and Miami Beach, fewer than 70 percent of people drive alone to work.

Figure 2: Miami: Driving Alone to Work



Source: U.S. Census American Community Survey 2017

CARPOOLING

Carpooling is an alternative to driving alone to work that helps alleviate congestion and mitigate driving costs. Fewer than 10 percent of Greater Miami commuters drive to work via carpool. That ranks right in the middle of the pack, 25th of 53 large metros, and slightly above the national average.

Table 4: Metros with the Highest Share of Workers Who Carpool

Rank	Metro	Share of Workers
1	Riverside	11.4%
2	Phoenix	11.3%
3	Salt Lake City	11.2%
4	San Jose	10.8%
5	Seattle	10.5%
6	San Antonio	10.4%
7	Houston	10.0%
8	Grand Rapids	9.9%
9	San Francisco	9.8%
10	Oklahoma City	9.7%
11	Orlando	9.7%
12	Tucson	9.7%
13	Atlanta	9.7%
14	Dallas-Fort Worth	9.6%
15	Los Angeles	9.6%
16	Nashville	9.5%
17	Sacramento	9.4%
18	New Orleans	9.3%
19	Austin	9.3%
20	Birmingham	9.2%
21	Las Vegas	9.2%
22	Portland	9.2%
23	Washington, D.C.	9.2%
24	Providence	9.1%
25	**Miami**	**9.0%**

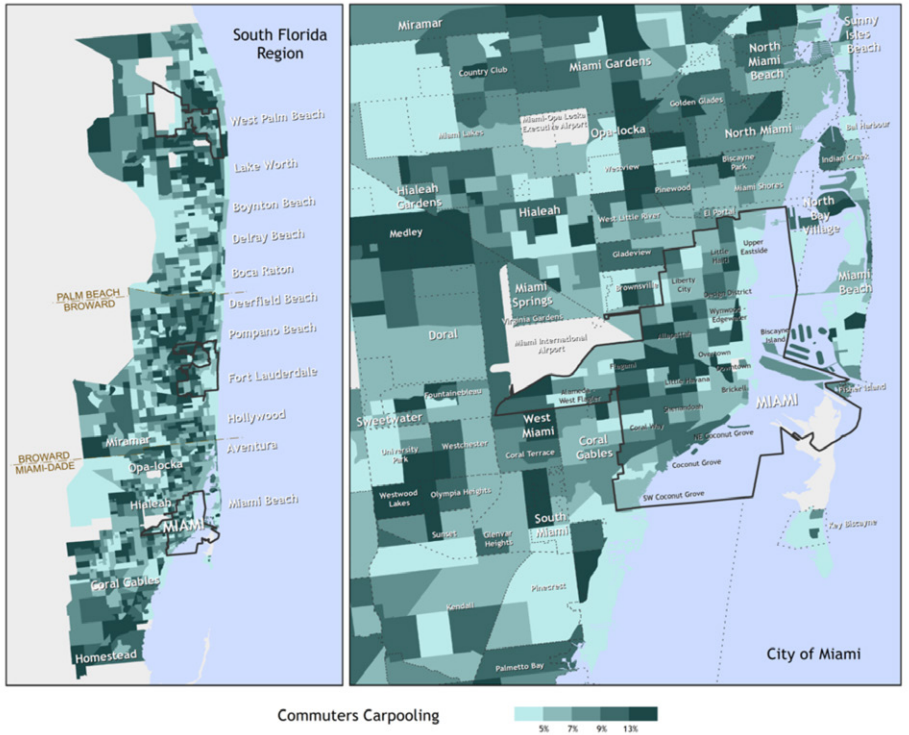
Source: U.S. Census American Community Survey 2017

Note: U.S. average is 8.9%; lowest 3 metros: New York (6.3%), Buffalo (7.0%), and St. Louis (7.0%)

CARPOOLING (CONTINUED)

Geographically, carpoolers are distributed fairly evenly throughout the region, although carpooling tends to be more common in suburbs, as shown in dark blue on the map below. A higher proportion of people carpool in the environs of Fort Lauderdale and West Palm Beach than around Miami, although the central neighborhoods of all three of the metro's major cities have fairly low rates of carpooling.

Figure 3: Miami: Carpooling to Work



Source: U.S. Census American Community Survey 2017

Car dependency is more than just a transportation issue—it's also a talent attraction and economic development issue. Research on startup ecosystems has shown a clear migration of successful firms from "nerdistans"—office parks surrounded by parking—to dense, dynamic, transit-accessible downtowns. The most important tech clusters today are no longer the suburban nerdistans of Silicon Valley or the Route 128 beltway in suburban Boston but rather areas like downtown San Francisco and Lower Manhattan. Globally, too, startups and innovative companies are clustering in the largest, densest, and most transit-accessible cities, including Beijing, Shanghai, Berlin, and London.

DECLINING PUBLIC TRANSIT USE

Public transit use in Miami is low, and it is declining. Just 3 percent of Greater Miami commuters take public transit to work, which is well behind the nation's leading and most transit-served regions. It lags considerably below the national rate of 5 percent. And, it is 10 times less than the New York metro, five times less than San Francisco, and three times less than Boston, Washington, D.C., Chicago, and Seattle.

Table 5: Large Metros with the Highest Share of Workers Who Take Public Transit to Work

Rank	Metro	Share of Workers
20	Atlanta	3.1%
19	**Miami**	**3.1%**
18	Salt Lake City	3.2%
17	Milwaukee	3.2%
16	Las Vegas	3.3%
15	Buffalo	3.4%
14	Denver	4.4%
13	San Jose	4.7%
12	Los Angeles	4.8%
11	Minneapolis	4.8%
10	Pittsburgh	5.7%
9	Portland	6.3%
8	Baltimore	6.8%
7	Philadelphia	9.0%
6	Seattle	10.1%
5	Chicago	12.3%
4	Washington, D.C.	12.8%
3	Boston	13.4%
2	San Francisco	17.4%
1	New York	31.0%

Source: U.S. Census American Community Survey 2017

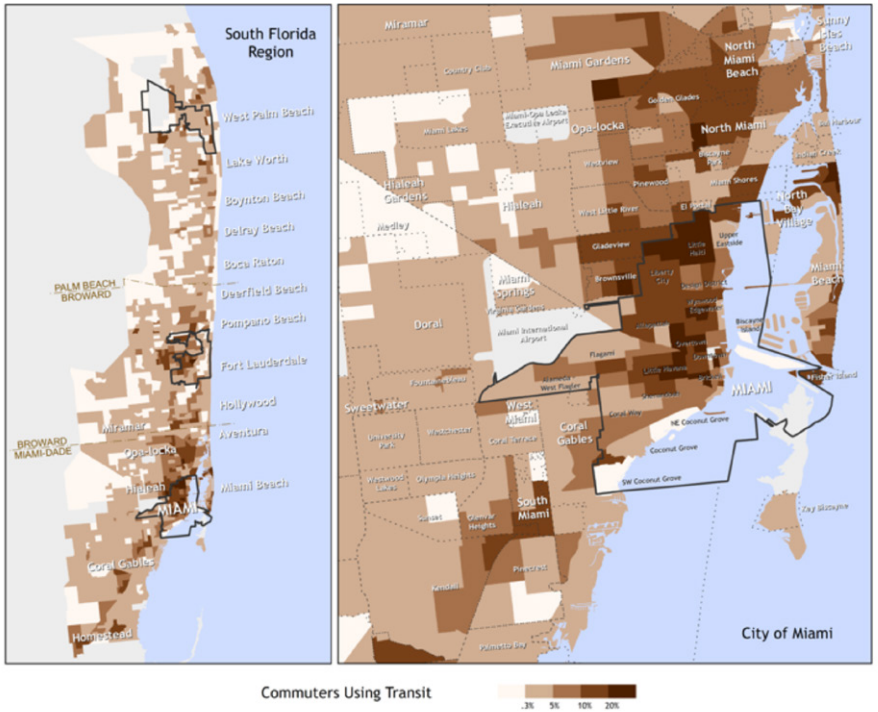
Note: U.S. average is 5.0%; lowest three large metros: Oklahoma City (0.4%), Memphis (0.7%), and Birmingham (0.7%)

DECLINING PUBLIC TRANSIT USE (CONTINUED)

Miamians take an average of roughly 25 transit trips per year, only a tenth of the number of trips taken by those in the New York metro (227.6 transit trips). And ridership has been waning: between fiscal years 2015 and 2018, public transit ridership in Miami-Dade County went from 105 million to 81 million, a decrease of 23 percent. This follows a national trend of declining transit ridership, which analysts have ascribed to the rise of Uber and Lyft, cheap gas prices, and a strong economy that has enabled more people to purchase cars.

Greater Miami's public transit commuters are highly concentrated in and around the region's two main urban centers, Miami and Fort Lauderdale, as shown in dark brown on the map below. In Miami and its nearby suburbs, transit ridership patterns trace the path of the Metrorail system south toward Coral Gables and Pinecrest and north through Liberty City and Gladeview. The path of the Tri-Rail commuter train is also discernable, from the Miami Airport up to Fort Lauderdale. The smaller, more suburban-style major city of West Palm Beach has a rate of transit usage that is barely higher than the surrounding suburbs. In the majority of census tracts, transit accounts for fewer than 5 percent of commuters.

Figure 4: Miami: Public Transportation Use for Commuting to Work



Source: U.S. Census American Community Survey 2017

WALKING AND BICYCLING

The saying "Nobody walks in Miami" is something of a truism. Just 1.4 percent of Greater Miami commuters walk to work, the 13th-lowest rate among all large metros. That's similar to sprawling metros like Houston and Atlanta and scarcely more than half the U.S. average.

Table 6: Metros with Lowest Share of Residents Walking to Work

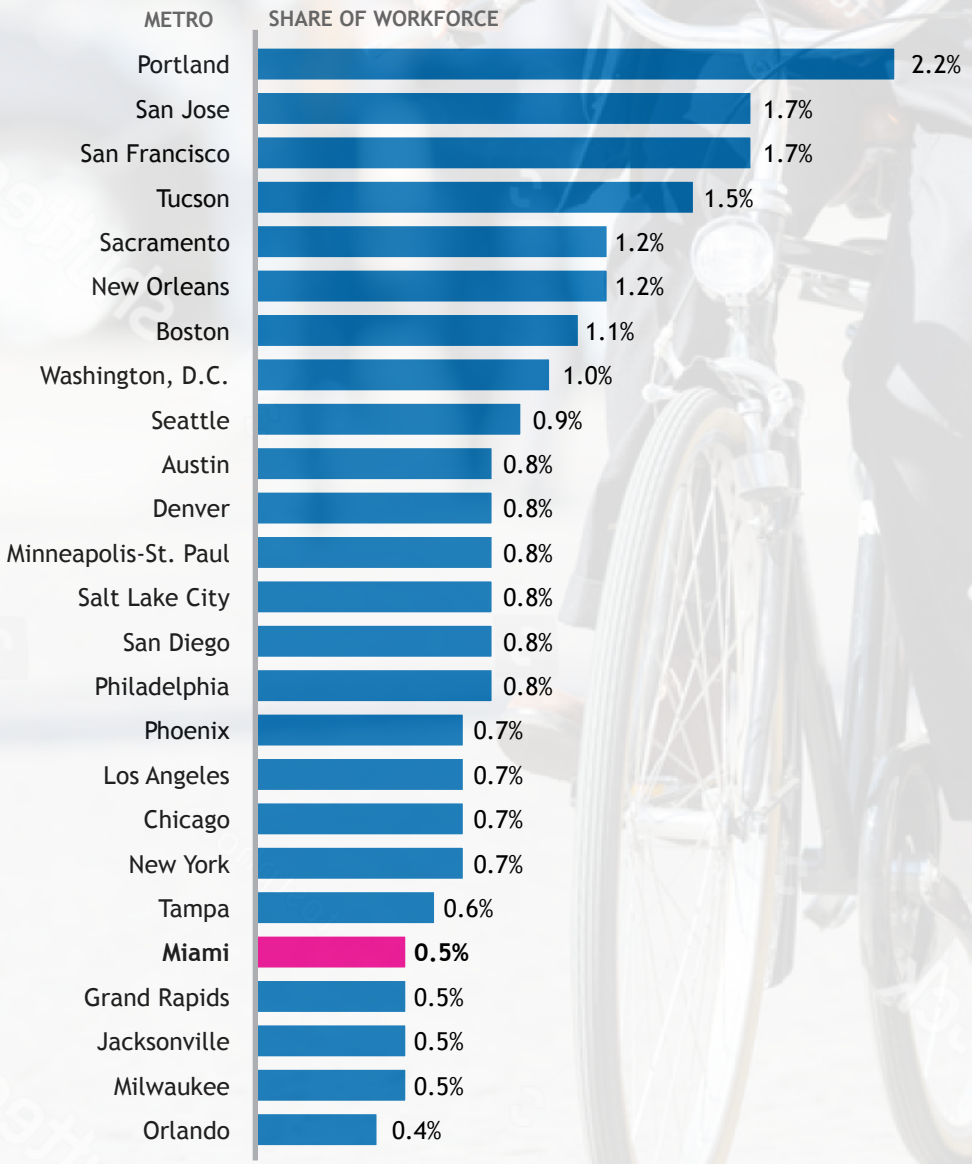
Rank	Metro	Share of Workforce
1	Memphis	0.9%
2	Raleigh	1.0%
3	Birmingham	1.3%
4	Charlotte	1.3%
5	Dallas	1.3%
6	Kansas City	1.3%
7	Nashville	1.3%
8	Orlando	1.3%
9	Tampa	1.3%
10	Atlanta	1.4%
11	Houston	1.4%
12	Louisville	1.4%
13	**Miami**	**1.4%**
14	San Antonio	1.4%
15	Detroit	1.5%

Source: U.S. Census American Community Survey 2017

Note: U.S. rate is 2.7%; highest three large metros: New York (5.9%), Boston (5.2%), and San Francisco (5.1%)

The metro is slightly more popular with bicyclists, relatively speaking. Half a percent of commuters bicycle to work, the 21st-highest rate among large metros. That's identical to the U.S. average and similar to Jacksonville, Tampa, and the much-colder Grand Rapids and Milwaukee. And it makes little sense that colder places like Boston or Minneapolis-St. Paul have more people bicycling to work than Greater Miami's warm, sunny, and flat metro region does.

Table 7: Metros with Highest Share of Residents Bicycling to Work



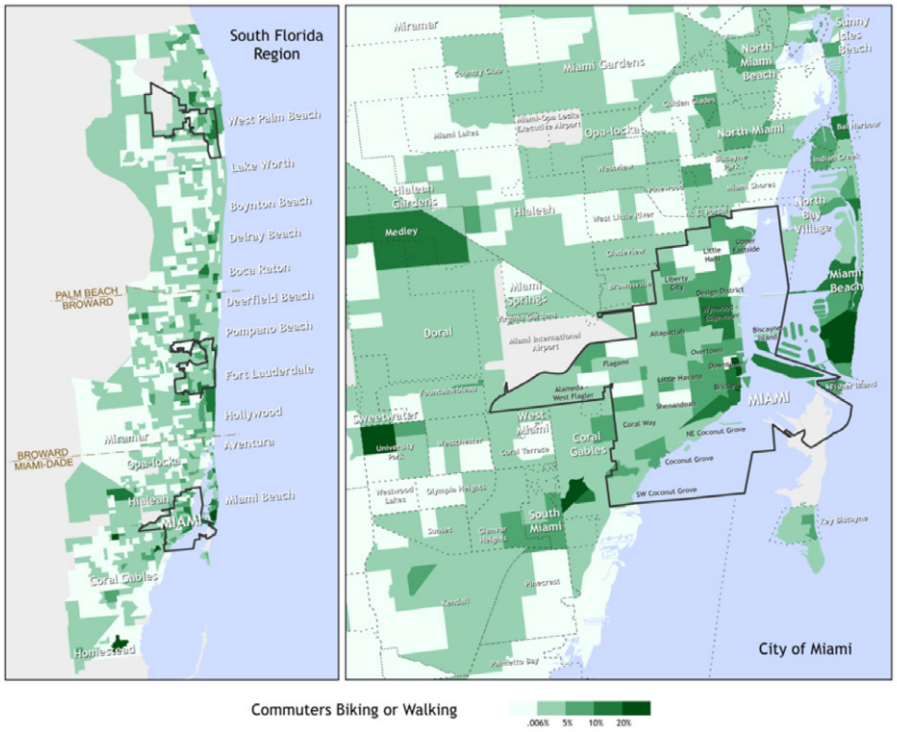
Source: U.S. Census American Community Survey 2017

Note: U.S. rate is 0.5%; lowest three large metros: Nashville (0.1%), Charlotte (0.1%), and Birmingham (0.1%)

WALKING AND BICYCLING (CONTINUED)

The geography of walking and bicycling in Greater Miami tracks closely with major job centers and universities, as shown in dark green on the map below. Downtown Miami, Miami Beach, and West Palm Beach stand out as hubs for walking and bicycling. The areas surrounding the University of Miami in Coral Gables and Florida International University in University Park also show relatively high rates of walking and bicycling.

Figure 5: Miami: Walking or Bicycling to Work



Source: U.S. Census American Community Survey 2017

Safety is a big part of the problem. Miami had 5.4 bicycle deaths per 100,000 people over this period, the fourth-highest rate among the nation's 50 largest metros. The only metros with that were higher were Tampa, Jacksonville, and Orlando. Florida, as a whole, is far and away the least-safe state for cyclists, with 6.2 bicycle deaths per 100,000 people between 2006 and 2017, nearly twice as high as Louisiana, the state with next-highest rate of bicycle deaths (3.9 per 100,000 people). Miami-Dade County had 1,357 pedestrian injuries and 733 cyclist injuries in 2017. Meanwhile, the percentage of streets considered "complete streets," designed to safely accommodate pedestrians and bicycles as well as cars, is an infinitesimal 0.0005 percent.

BRIGHT SPOTS

There are, however, a few bright spots on the horizon. The Brightline system, which is being re-branded as Virgin Trains USA, is a national trendsetter of private investment in inter-city rail service. The system, which currently runs from Miami to West Palm Beach via Fort Lauderdale, will soon expand to Orlando. Ridership has already improved, increasing from fewer than 75,000 riders (74,780) in the first quarter of 2018 to more than 90,000 in March 2019. The system is still far from breaking even financially, but that is forecast to change when the Orlando line opens in 2023. In a largely linear region such as South Florida, which stretches along the coast from Miami and Fort Lauderdale to Palm Beach and Orlando, rail makes a great deal of sense.

The system will become even more valuable when a new Tri-Rail link connects to MiamiCentral Station, Virgin/Brightline's origin, by the end of 2020, further integrating the region's transportation network. On its way to MiamiCentral, the Tri-Rail spur could include new stations in the growing Midtown and Little River neighborhoods.

The Underline will create a new linear park, complete with bike paths, recreation facilities, and art installations beneath the elevated MetroRail tracks running from downtown Miami to Coral Gables. (The project remains only partially funded to date). The community space beneath downtown Miami's new I-395 "Signature Bridge" also aims to create new public spaces which will better connect the city's cultural institutions, like the Arsht Center for the Performing Arts, the Frost Museum of Science, and the Perez Art Museum.

The Miami Downtown Development Authority is a vocal advocate for alternatives to the car, championing the SMART transit expansion plan, bikeshare, and other transportation improvements. The city's Bicycle-Pedestrian Program and 2040 Bicycle/Pedestrian Plan offer a powerful vision of what can be. Finally, it's worth noting that there are several foundations, governmental, not-for-profit, community-based, and public sector organizations across greater Miami who recognize the metro's transit challenges and are seeking viable solutions to improve mobility within the regions.

Brian Schriner,
Dean, FIU College of Communication, Architecture + The Arts

POLICY IMPLICATIONS AND DISCUSSION

As Greater Miami continues to grow and attract more residents, the problems associated with its car-dependent transportation system will continue to mount. Not only is the region losing productivity, it is tantamount to hanging out a sign to leading-edge talent and companies that reads, "Do not come here."

Building a world-class city, with a world-class innovation and startup ecosystem, requires a world-class transportation and mobility system. On this count, Miami badly lags behind all of the nation's leading global cities and tech hubs. What's more, these cities are ambitious in their efforts to get people out of their cars—investing in transit and, in the case of New York City, adopting congestion pricing that actually makes drivers pay for the roads they use. This is not to say that Greater Miami needs to eschew cars. But the region does need to provide its residents with a menu of quality mobility options, which includes transit, higher-speed rail, walking, and bicycling.

Miami needs to double down on creating a 21st-century transportation and mobility system. At its current population, it has simply grown beyond the car. The biggest obstacle in the way of Greater Miami's becoming an even stronger tech hub and global city is its car dependence and undeveloped transit and mobility systems. In a region as warm and sunny as Miami, it makes no sense that more people are not using bicycles or walking to work. The region must continue to invest in a safe cycling and pedestrian infrastructure. Furthermore, a region that is surrounded by and embedded in so much water can also do better at using its water-based transit. New York City, for example, has invested in ferries rather than new subway lines as a much more cost-effective way of providing transit. Greater Miami can do much more in water-based transit—in fact, the region should be a leader in it.

It is time to finally make much-needed investments in transit. Brightline/Virgin Trains USA is an enormous plus. And hopefully, it will become financially sustainable with the pending expansion to Orlando. Major investments in public transit are also on the horizon. The South Dade Busway, which operates its own dedicated lanes, has been the only bus line to post consistent ridership growth in recent years. And there are plans to modernize and expand the route. A lot more investment may be on the way, with Miami-Dade's $8 billion SMART Transit Plan, which could include new bus rapid transit and, eventually, Metrorail lines throughout the region. It is also high time to complete the Bay Link connecting Miami to Miami Beach.

When all is said and done, Greater Miami has reached a critical inflection point at which it can no longer grow—or become the region it aspires to be—if transportation is solely reliant on private cars. It is time for the region to put transit and mobility at the very top of its innovation and economic development agenda.

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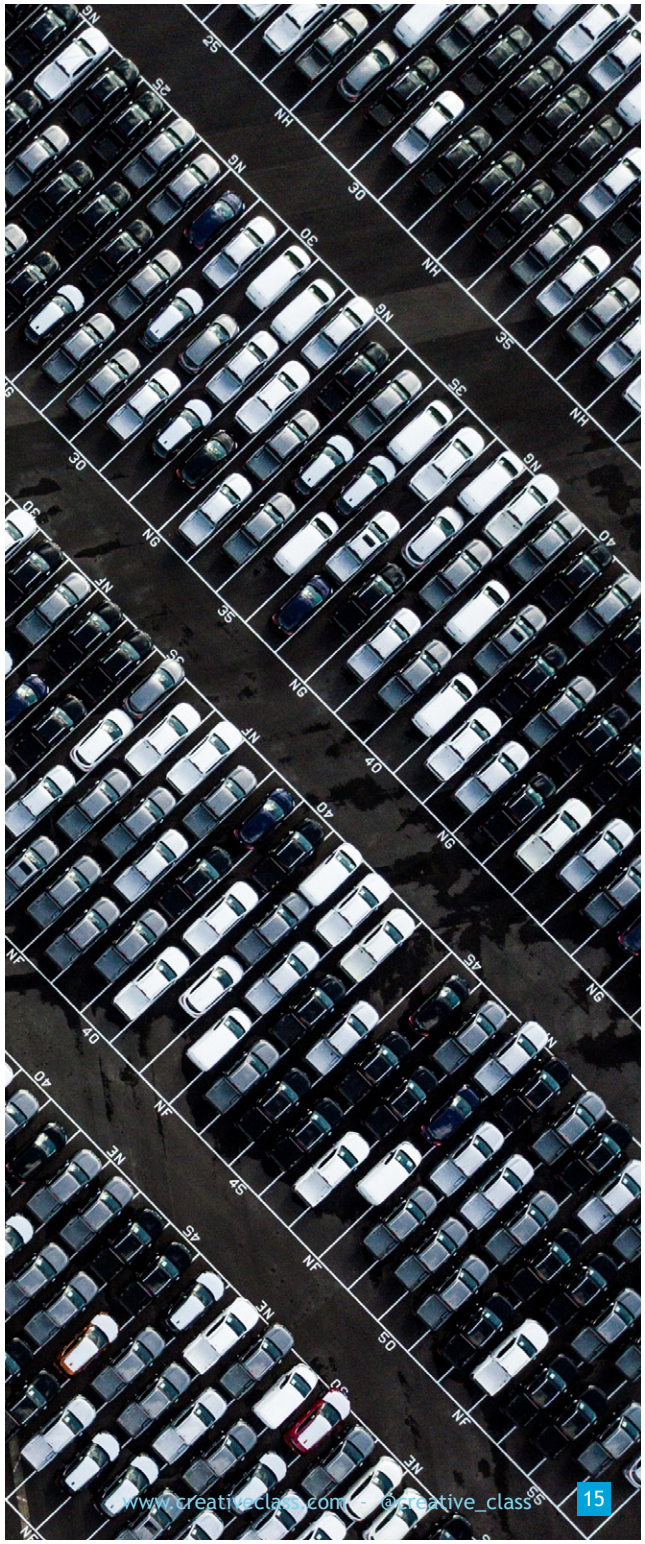

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