Peter Tobia

CENTER CITY REPORTS

GETTING TO WORK:
TRANSIT, DENSITY & OPPORTUNITY

JUNE 2016

**CENTER CITY DISTRICT,
CENTRAL PHILADELPHIA DEVELOPMENT CORPORATION &
CENTRAL PHILADELPHIA TRANSPORTATION MANAGEMENT ASSOCIATION**

FIND MORE REPORTS AT:
CENTERCITYPHILA.ORG

Center City Philadelphia, located at the center of the region's transit network, holds the largest concentration of employment anywhere in the metro area, with 295,000 jobs.[1] More than 1 million residents of surrounding suburban counties live within one mile of a rail station, connecting them directly to downtown's employers, retail shops, restaurants, educational, medical, arts and cultural institutions. Fifty percent (50%) of city residents can commute by transit to Center City in 30 minutes or less; 61% of those who live in Greater Center City can get to City Hall (the geographic center of downtown) in 15 minutes or less. Center City's transit connectivity is particularly important to the substantial number of lower-income Philadelphia residents who do not own cars.

JOB DENSITY AND TRANSIT

Transit is not just a convenience; it is essential to the density that enables Center City to provide 42% of all jobs in Philadelphia.[2] If downtown workers relied on cars to the same degree as commuters across the region, then 295,000 workers would arrive each day in 227,150 cars.[3] At 330 square feet per parking space, we would need a giant, surface parking lot of 2.6 square miles – larger than William Penn's original plan for the city (2.2 square miles river to river, Vine to South) – leaving little room for the office buildings, hotels, hospitals, universities, residences, cultural institutions, historic destinations, restaurants, retail shops and parks that define the diversity and create employment opportunities downtown. Instead, SEPTA rail, subway, trolley and bus lines converge with PATCO and NJ Transit from New Jersey to deliver 290,000 workers, students, visitors, shoppers and patients each weekday into Center City.

Center City employers benefit not just from a multi-modal transit system, but also from the rapidly growing, live-work neighborhoods that are expanding around the downtown core. While just 10% of downtown jobs are held by Greater Center City residents, the percentage of downtown residents with a BA degree or higher is 58%, nearly twice the regional rate of 34%. This critical mass of talent is positively impacting business-location decisions. Another 41% of downtown jobs are held by residents of city neighborhoods, north of Girard Avenue, south of Tasker Street and west of the Schuylkill River; 39% are held by residents of the suburban counties surrounding Philadelphia.

1: Greater Center City, from Girard Avenue to Tasker Street, river to river, holds 286,427 salaried jobs; another 8,500 individuals are compensated either as partners or work freelance.

2: Transit-accessible University City holds another 11% of the city's jobs.

3: 81% of the region's commuters use a car, truck or van to get to work, 90% driving alone. Accounting for the 10% of those who carpool, there are approximately 0.77 vehicles involved in commuting for each worker in the region.

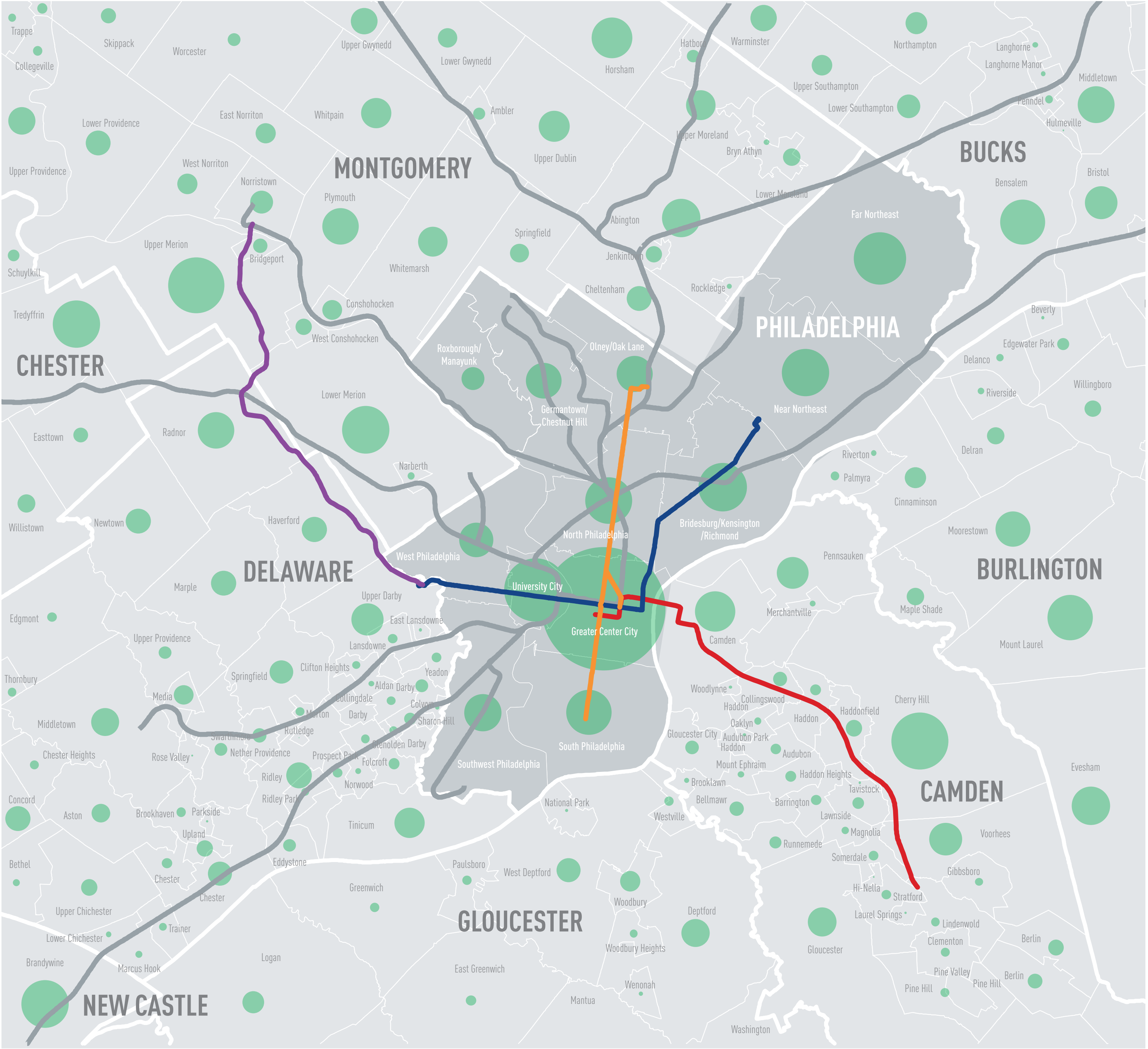


FIGURE 1: REGIONAL JOBS AND TRANSIT LINES BY PHILADELPHIA AREA AND SUBURBAN MUNICIPALITY

JOBS:

100,000 — Total jobs by municipality in surrounding counties; Total jobs by area within Philadelphia

SEPTA:

- Broad Street Line
- Market-Frankford Line
- Norristown Highspeed Line
- Regional Rail Lines

PATCO:

- PATCO

Source: U.S. Census Bureau, Local Employment-Household Dynamics, 2014

AT THE CENTER OF THE REGION'S TRANSIT NETWORK, CENTER CITY IS ALSO THE METRO AREA'S LARGEST EMPLOYMENT NODE, WITH 295,000 JOBS.

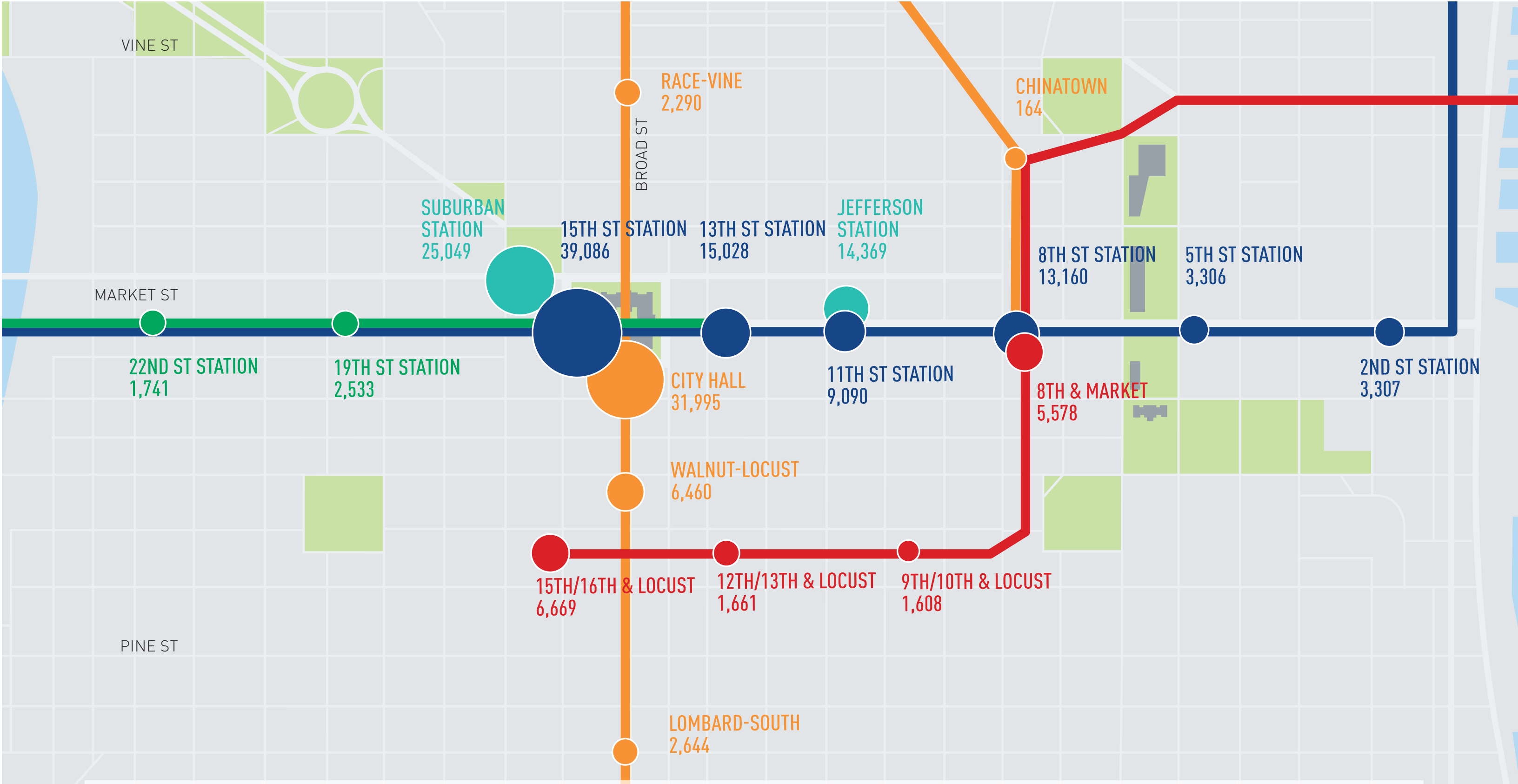


FIGURE 2: 2015 AVERAGE WEEKDAY RIDERSHIP IN CENTER CITY

SEPTA: Subway Lines: 116,590; Bus Lines: 91,813; Regional Rail Lines: 39,418; Trolley Lines: 23,244 **PATCO:** 15,516 **NJ TRANSIT:** 4,084

MARKET-FRANKFORD LINE	BROAD STREET LINE	REGIONAL RAIL	TROLLEY	PATCO

Note: Ridership counts for 13th and 15th Street Stations include both Market-Frankford Line and Trolley riders.

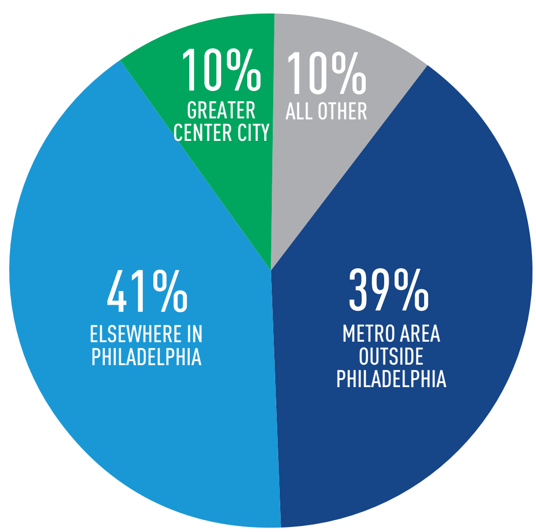
Source: SEPTA, NJ Transit, PATCO

GETTING TO WORK, GREATER CENTER CITY

Residents of Greater Center City enjoy the most commuting alternatives and rely the least on cars (Figure 6). Because 40% work in Center City (the highest live/work ratio in the city and region) and another 12% work in University City, 60% get to work without a car. By contrast, 60% of the residents of the balance of Philadelphia and 80% of the residents of surrounding counties depend on cars for their daily commute.

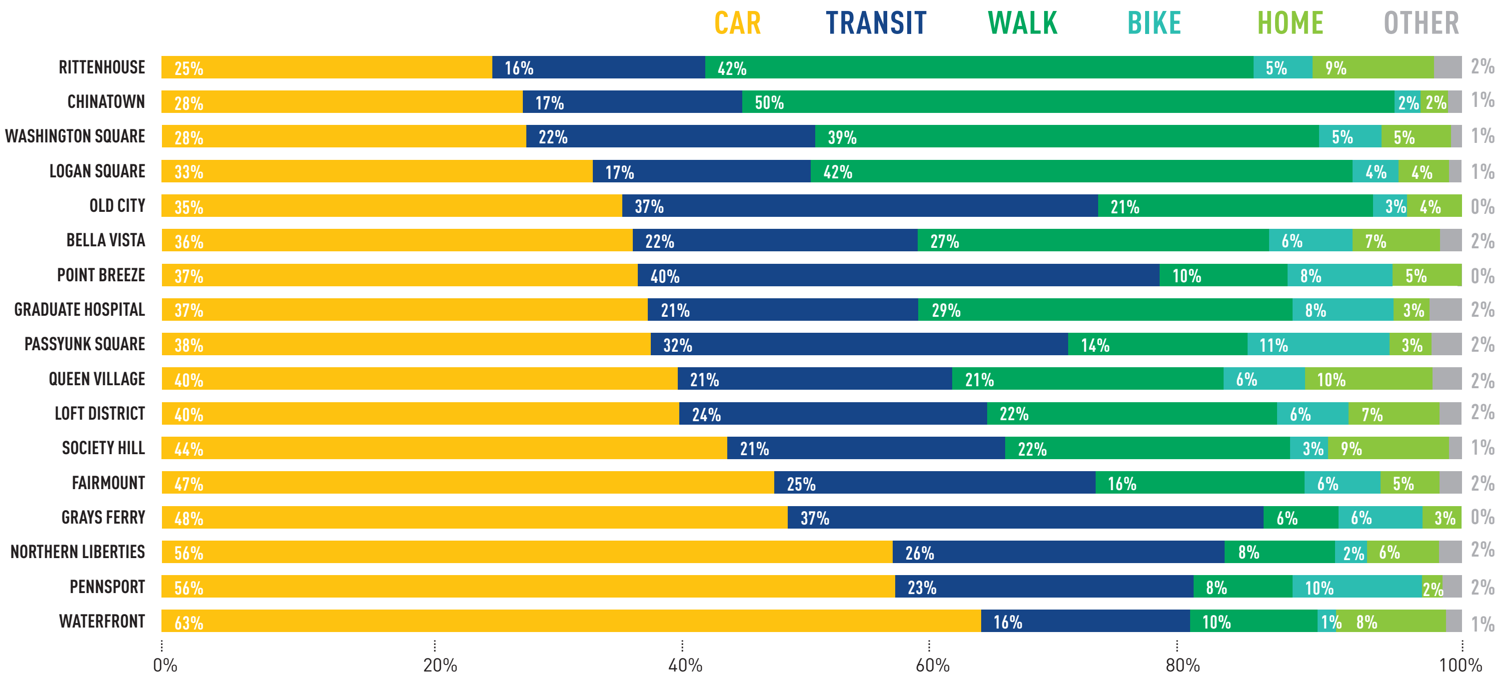
In Greater Center City, the closer one lives to the core, within the pre-automobile street-grid established in the 17th and 18th centuries, the lower the dependency on a car for commuting (Figure 5). In the neighborhoods of Rittenhouse Square, Chinatown, Washington Square, and Logan Square, more people walk to work than drive (Figure 4). In almost all of Greater Center City, the majority of commuters get to work by means other than a car; the only exceptions are neighborhoods at the periphery, along I-76 and I-95, like Grays Ferry, Pennsport, the Waterfront and Northern Liberties. Overall, Center City has the lowest reverse-commute rate to the suburbs (24%) of any portion of Philadelphia.

FIGURE 3: WHERE DOWNTOWN WORKERS LIVE



Source: US Census Bureau, Local Employment - Household Dynamics, 2014

FIGURE 4: COMMUTING MODE BY NEIGHBORHOOD



Source: US Census Bureau, American Community Survey 2014 5-Year Estimates

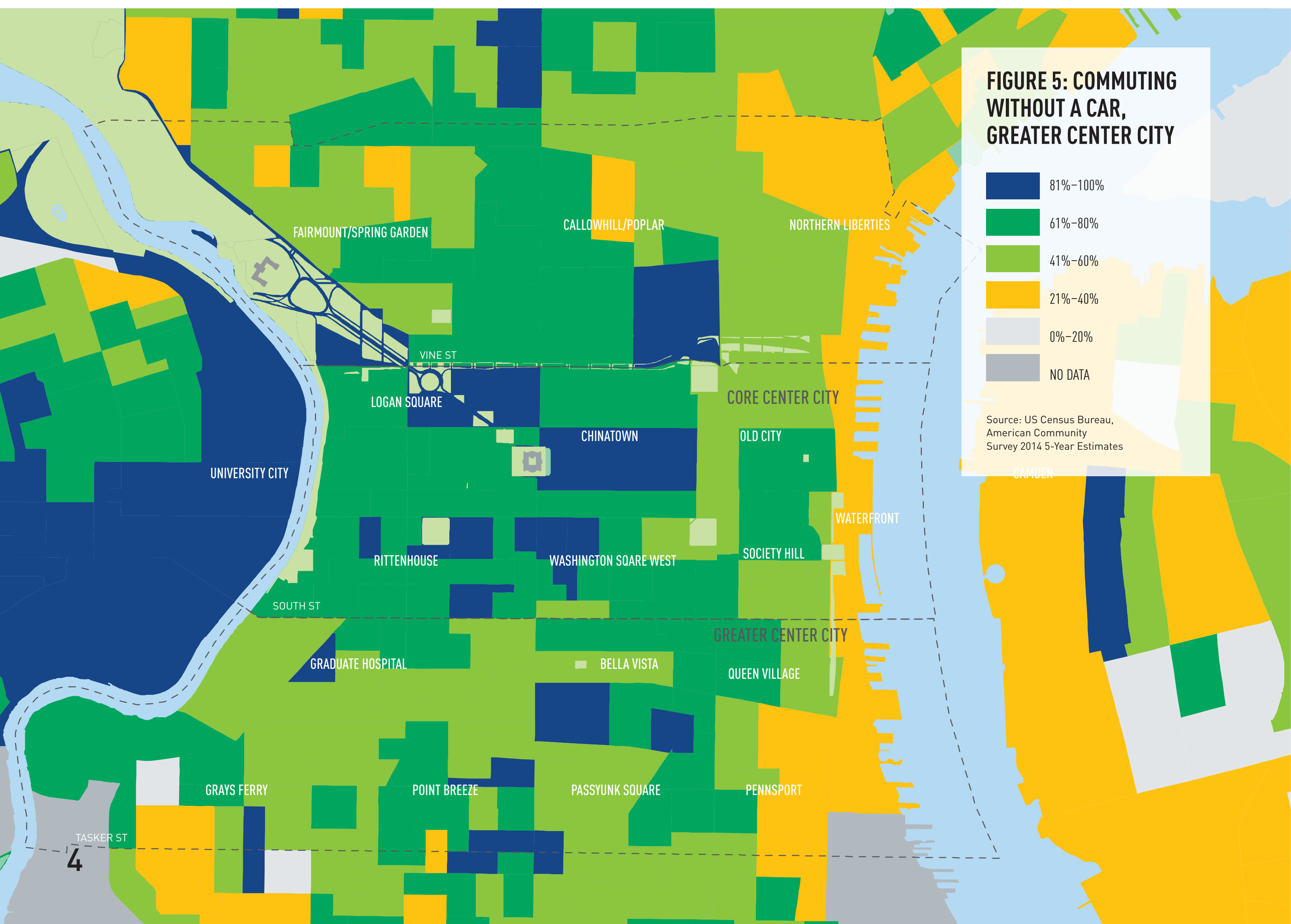


FIGURE 5: COMMUTING WITHOUT A CAR, GREATER CENTER CITY

Source: US Census Bureau, American Community Survey 2014 5-Year Estimates

Peter Tobia

GETTING TO WORK, CITY AND REGION

Beyond the downtown core, auto-free commuting is possible along subway and trolley lines that were extended in the early 20th century into Lower North, West, South, and Southwest Philadelphia (Figure 7).[4] In those areas, more than half of workers reach their job without using a car. The Regional Rail lines, particularly in Northwest Philadelphia, provide good connectivity as well to Center City and University City. Outside of Philadelphia, most of the car-free commuters are also living along regional rail lines – particularly the Paoli/Thorndale and Media/Elwyn Lines, the Norristown High Speed Line, and PATCO.

In the balance of the neighborhoods of Philadelphia outside Greater Center City, an average of 25% of workers commute to jobs in Center City; another 6% work in University City. In all these neighborhoods, more people work downtown than they do in the area in which they live (the citywide average live/work ratio is 12%, Figure 9). But 39% of city residents who live outside Greater Center City commute to jobs outside the city and are highly dependent on cars.

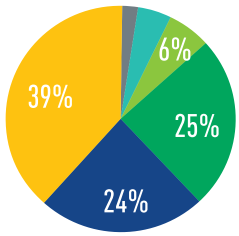
AN AVERAGE OF 25% OF THE WORKING RESIDENTS OF NEIGHBORHOODS OUTSIDE THE DOWNTOWN COMMUTE TO JOBS IN CENTER CITY; ANOTHER 6% WORK IN UNIVERSITY CITY. IN ALL THESE NEIGHBORHOODS, MORE PEOPLE WORK DOWNTOWN THAN IN THE AREA IN WHICH THEY LIVE.

4: Defined by Philadelphia City Planning Commission districts.

FIGURE 6: MODE OF COMMUTING TO WORK – GREATER CENTER CITY, PHILADELPHIA AND PHILADELPHIA METRO AREA

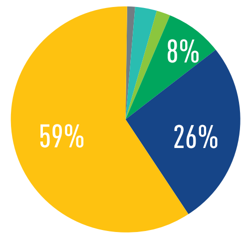
GREATER CENTER CITY

39% CAR
24% TRANSIT
25% WALK
6% BIKE
5% HOME
2% OTHER



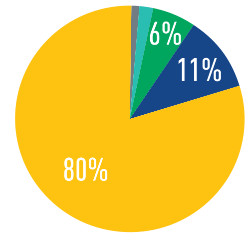
PHILADELPHIA

59% CAR
26% TRANSIT
8% WALK
2% BIKE
3% HOME
1% OTHER



PHILADELPHIA METRO AREA

80% CAR
11% TRANSIT
6% WALK
0% BIKE
2% HOME
1% OTHER



Source: US Census Bureau, American Community Survey 2014 5-Year Estimates

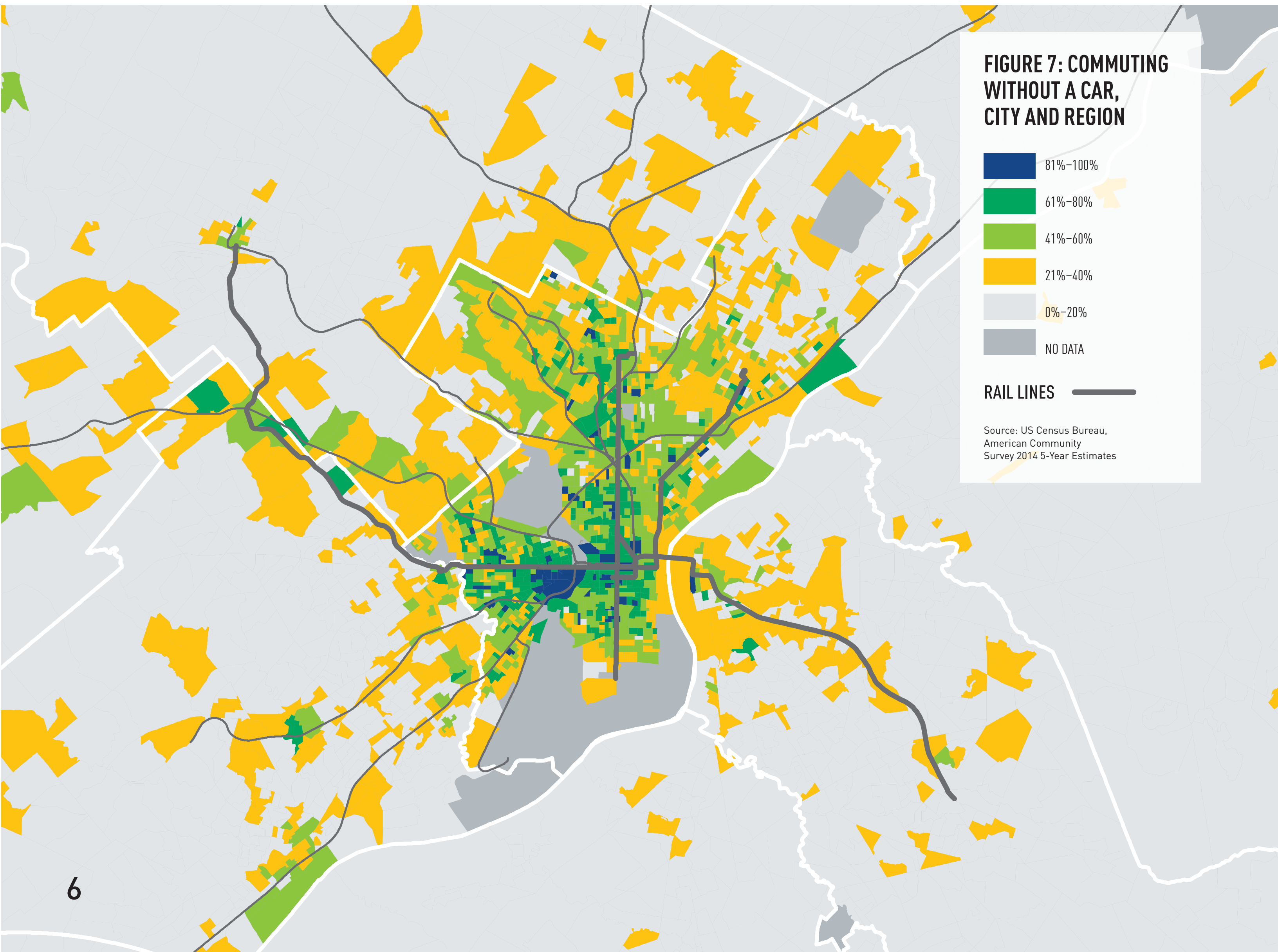
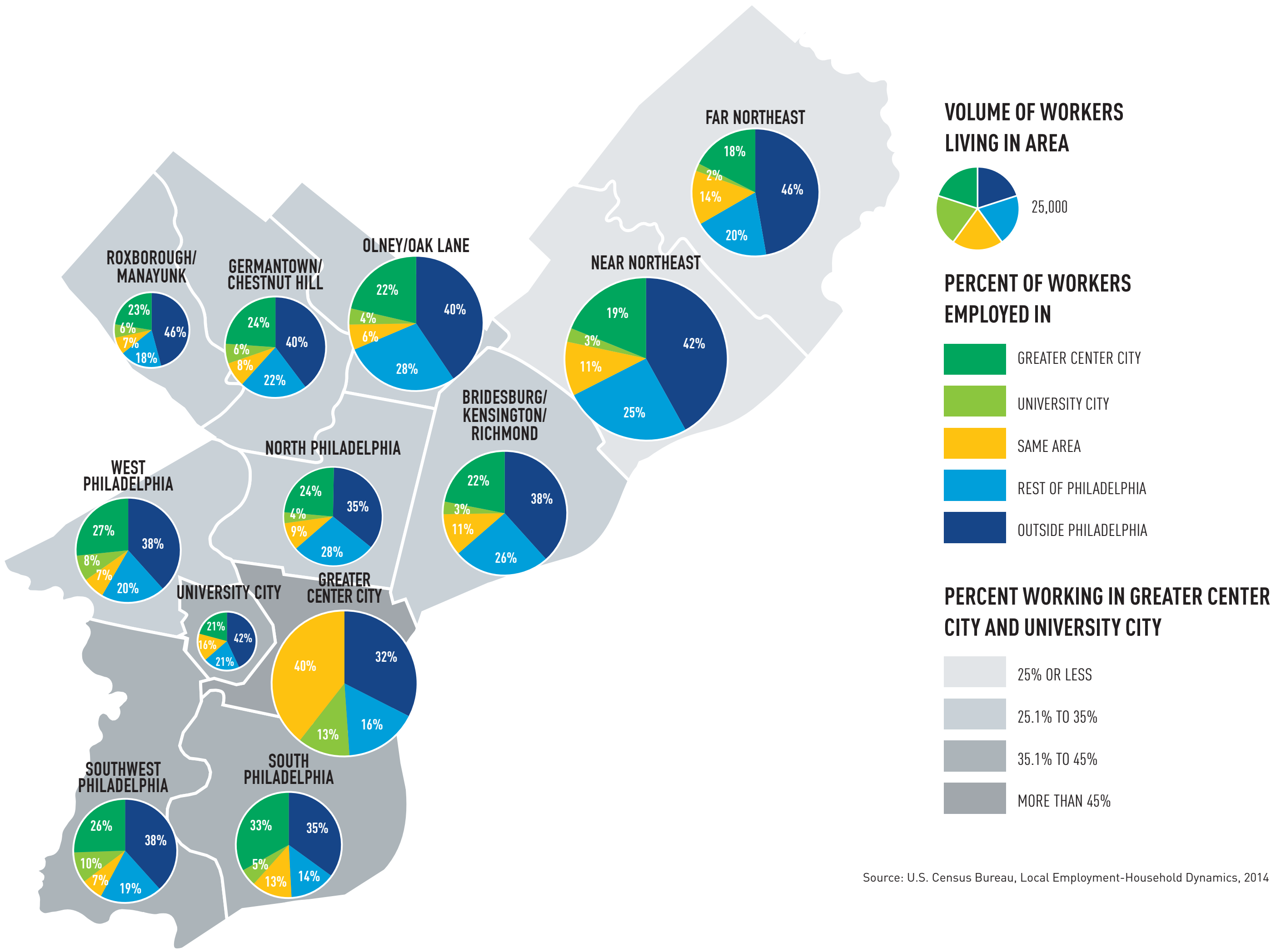
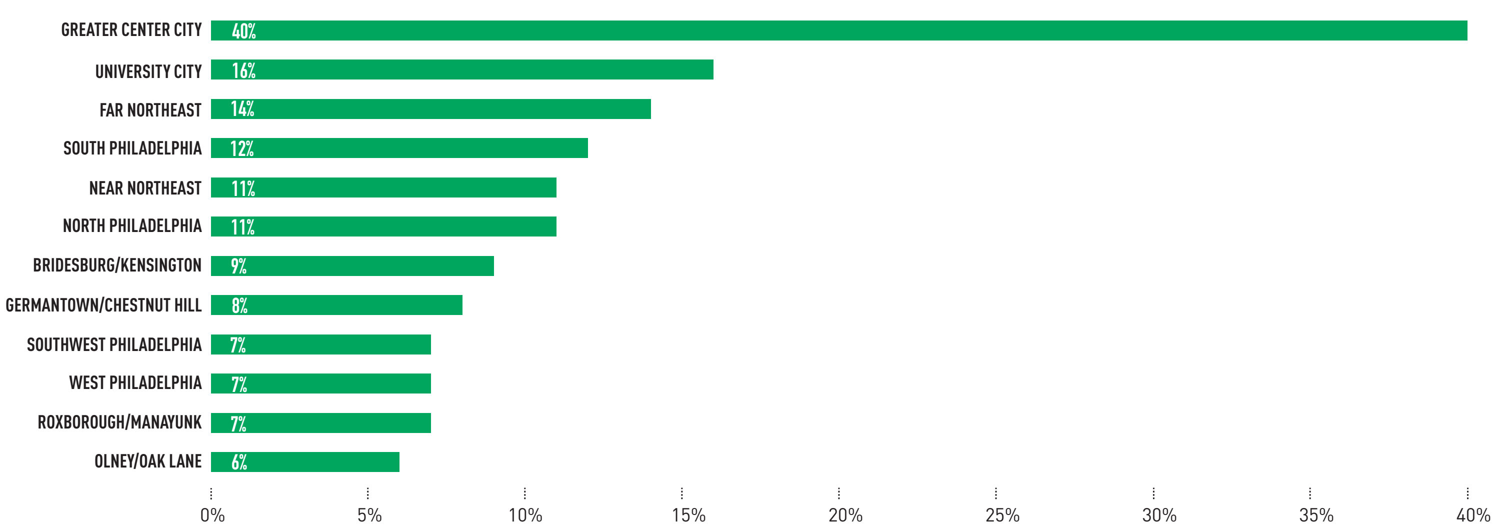


FIGURE 8: WHERE PHILADELPHIANS WORK



Source: U.S. Census Bureau, Local Employment-Household Dynamics, 2014

FIGURE 9: LIVE/WORK PERCENTAGE BY AREA OF PHILADELPHIA



Source: US Census Bureau, Local Employment - Household Dynamics, 2014

Peter Tobia

REVERSE COMMUTING

For Philadelphia residents who commute to work outside the city, the most frequent destinations are in adjacent Pennsylvania counties: Montgomery County is the locale for 13% (73,391 jobs) held by Philadelphia residents; Delaware and Bucks Counties, each account for 5% (33,462 jobs and 31,661 jobs, respectively). Despite proximity, Camden County holds only 2% of the jobs taken by Philadelphia residents.

Figure 10 shows the top 10 reverse-commuting destination municipalities for Philadelphians, ranked by number of jobs. Six out of 10 are in Montgomery County; Delaware and Bucks Counties are home to two each. The top two, Lower Merion, with 10,247 jobs held by Philadelphia residents, and Bensalem, with 9,333 held by city residents, directly border Philadelphia. Upper Merion, which contains the King of Prussia mall and office parks, is in the third position, with 8,402 of its total 57,960 jobs held by Philadelphia residents, despite its distance from the city.

The high position of Bensalem and Abington in the rankings is due largely to commuters coming from nearby Northeast Philadelphia. The home neighborhoods for Philadelphians working in Lower Merion and Upper Merion are much more geographically diverse, with these townships ranking as the first or second top reverse-commuting destination for every other part of the City of Philadelphia. Despite having less than one-fifth of the population of Greater Center City, Upper Merion (home of the King of Prussia Mall) has almost three-quarters as many retail jobs – a sector which pays an average wage of $25,000 per year. To fill those positions, Upper Merion needs to import labor from outside its borders, including many workers from Philadelphia. Fully 95% of Upper Merion's work force commutes in from outside the municipality, with almost 15% of its jobs staffed by Philadelphia residents.

There is nothing unusual about commuting between counties within a region. In fact, the designation of a metropolitan statistical area (MSA) by the Office of Management and Budget is based on economic interconnectivity – employee commuting and business-to-business patterns - within a cluster of counties. The

Philadelphia-Camden-Wilmington MSA includes Philadelphia and the four suburban Pennsylvania counties, four suburban counties in New Jersey, and one county each, in Delaware and Maryland. The Pennsylvania and New Jersey suburbs have the strongest connections with Philadelphia. In those eight counties, 13% of workers commute to Philadelphia, with the highest percentages of workers coming from Delaware County (23%) and Montgomery County (17%). But Philadelphia's reverse-commuting rate is more than twice the rate of New York City's and this poses significant challenges for many lower-income residents.

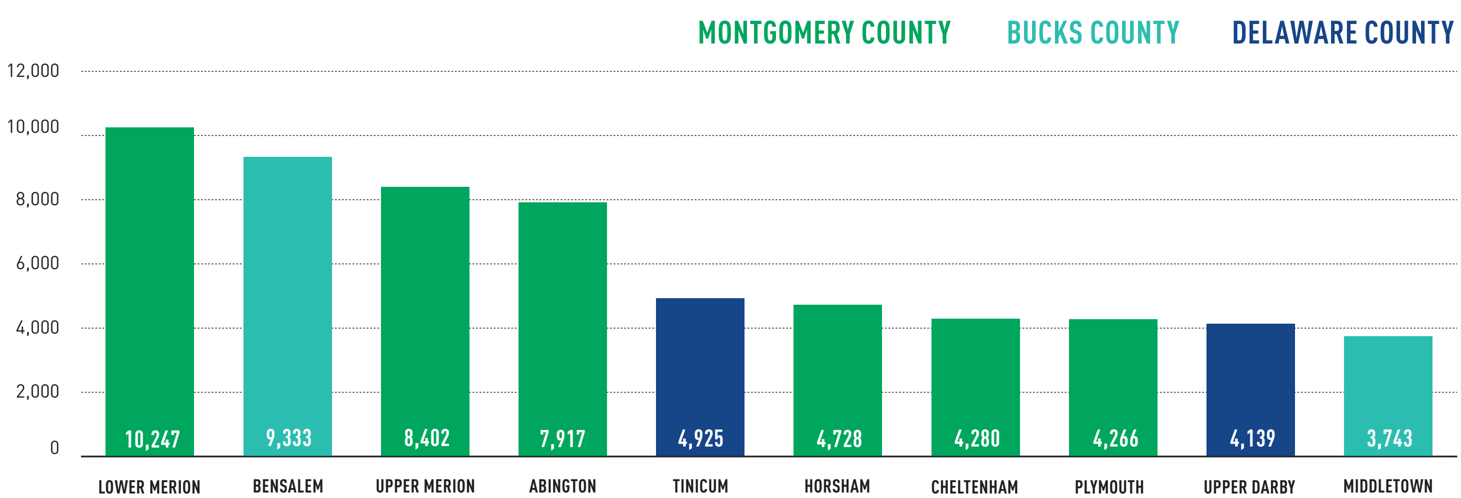
The educational levels required for suburban jobs are not significantly different from the educational levels required for downtown jobs. A slightly higher percentage of downtown jobs require a BA degree. But across the city and region about a third of all jobs require no more than a high school diploma; another 30% require an associate degree (Figure 11).

The suburbs simply have more jobs and in the last 25 years, surrounding counties have steadily added opportunity, while Philadelphia, despite success in Center City and University City, has 9.4% (72,803) fewer jobs than in 1990 (Figure 12).

The challenge comes into even sharper focus when Philadelphia is viewed in a longer time-frame and placed alongside East Coast peers. Boston, New York and Washington, D.C. have all surpassed the job levels they had in 1970 (Figure 13). But Philadelphia is still 28% below the employment number it had in 1970; this represents a loss of 274,449 jobs, which in 2016 terms is the equivalent of losing nearly every job in Greater Center City.

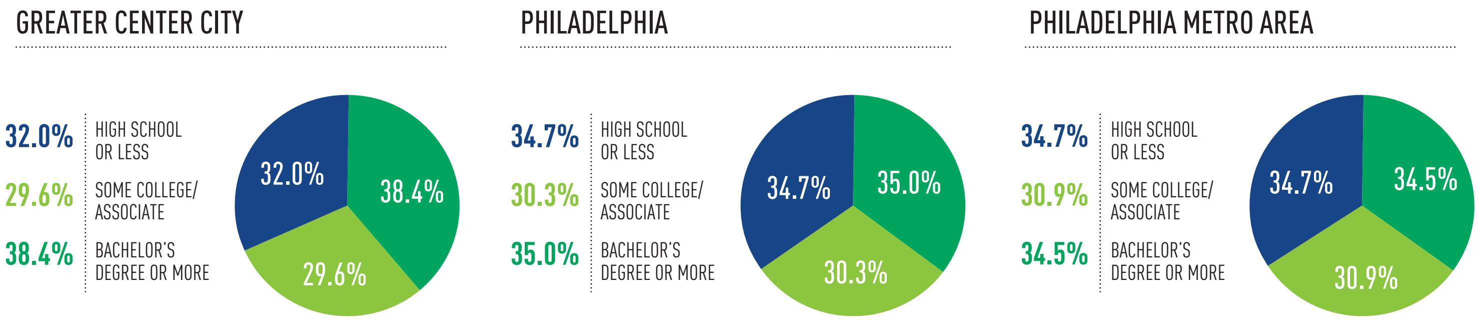
WITH LESS THAN ONE FIFTH OF THE POPULATION OF GREATER CENTER CITY, UPPER MERION HAS ALMOST THREE QUARTERS AS MANY RETAIL JOBS, HELPING TO DRAW 8,400 WORKERS FROM PHILADELPHIA IN SPITE OF THE LONG COMMUTE.

FIGURE 10: TOP REVERSE-COMMUTING MUNICIPALITIES FOR COMMUTERS FROM PHILADELPHIA



Source: US Census Bureau, Local Employment - Household Dynamics, 2014

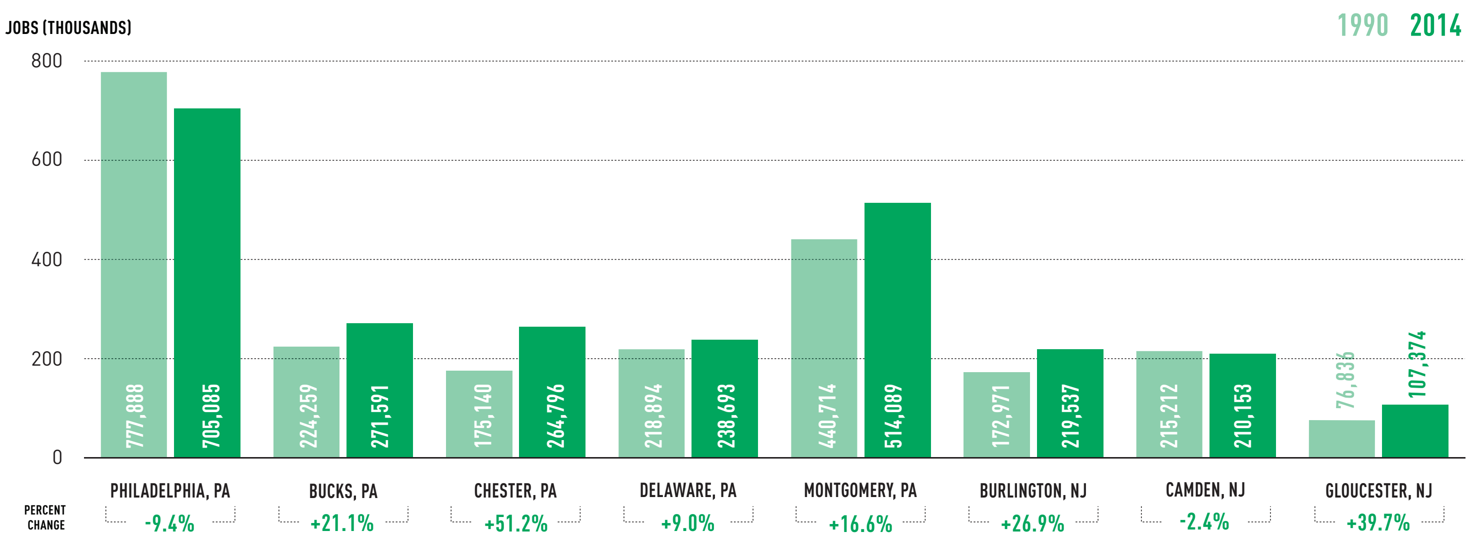
FIGURE 11: PERCENT OF JOBS BY LEVEL OF EDUCATION REQUIRED, WORKERS 30 AND OLDER



Source: U.S. Census Bureau, Local Employment-Household Dynamics, 2014

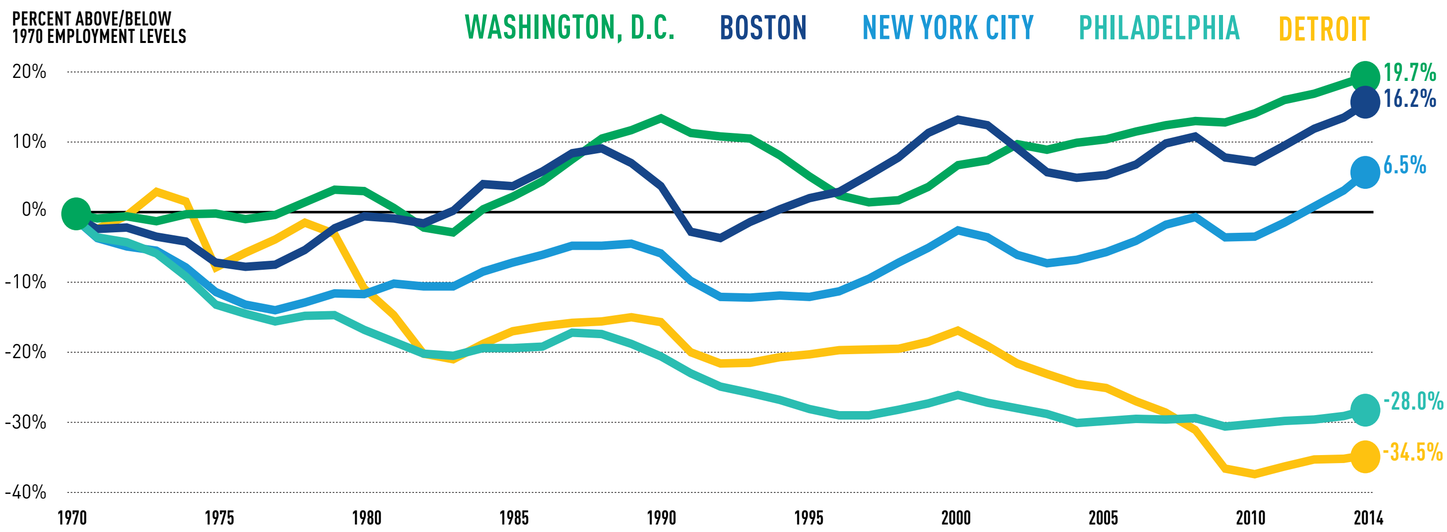
JOBS IN THE SUBURBS REQUIRE SIMILAR EDUCATION LEVELS AS THOSE IN THE CITY. BUT 39% OF PHILADELPHIANS REVERSE COMMUTE TO WHERE THE MOST JOB GROWTH HAS OCCURRED. MORE JOB GROWTH DOWNTOWN CAN BE PARTICULARLY BENEFICIAL TO LOWER-INCOME CITY RESIDENTS WHO DON'T OWN CARS.

FIGURE 12: TOTAL WAGE & SALARY JOBS, 1990 VS. 2014, PHILADELPHIA AND ADJACENT COUNTIES



Source: Bureau of Economic Analysis, Total Full and Part-Time Employment

FIGURE 13: MAJOR CITIES TOTAL WAGE & SALARY EMPLOYMENT, 1970-2014



Source: Bureau of Economic Analysis, Total Full and Part-Time Employment

TRAPPED IN OLD TRENDS

Across the country, the top 25 most populous cities have been growing jobs faster than the overall economy. Our Northeast peers have more than replaced their lost manufacturing jobs with new post-industrial opportunities. In many cities, the old story of decline has ended. But too many portions of Philadelphia are still living the post-World War II economic narrative that undermined American cities, as residents and employers left central cities for auto-dependent suburbs. As people and jobs decentralized, the average number of vehicle miles Americans traveled each year steadily rose, increasing by 78% between 1971 and 2016 (Figure 14).

Between 1970 and 2014, as Philadelphia was losing population and jobs, the city dropped from a 45% share of regional employment to just 24% of metro-area jobs (Figure 15). At the same time, the city and region experienced a significant shift from transit to driving: in 1970, the mode split in Philadelphia was 50% driving and 37% transit; by 2014, 59% were driving and transit dropped to 27%. In the region, the 1970 mode split was 69% driving and 19% transit; by 2014, 81% were driving and just 10% were taking transit.

For morning commuters taking SEPTA regional rail out of the city, more than a quarter ride the Paoli-Thorndale Line, which connects Philadelphia to employment centers in Montgomery, Delaware, and Chester Counties – including the numbers one and three reverse-commuting destinations – Lower Merion and Upper Merion.[5] The largest transit destination outside of Philadelphia for outbound commuters is Paoli Station, where riders can access three bus routes (204, 205, and 206) that connect to suburban office parks and retail centers. For other outbound commuters, SEPTA suburban bus routes are supplemented by shuttle operators, either operated by suburban agencies, like Rushbus in Bucks County, or by the employers themselves.

In the last 40 years, Center City and University City have emerged as vibrant, live-work clusters built around dense, post-industrial employment. Their success has brought Philadelphia's declining share of regional jobs to an end. But their growth is neither strong enough, nor matched by enough other employment nodes in the city, to enable Philadelphia to regain regional market share. Thus, the farther one lives from the gravitational pull of Philadelphia's two major, 21st century employment centers, the more likely one is to reverse commute to a suburban job. While 25% of the working residents of city neighborhoods outside downtown are commuting to Center City for work, 39% are reverse commuting to the suburbs. In the City Council Districts that border the suburbs, the rate climbs into the mid- to high-40% range (Figure 16).

There is probably no better predictor of out-migration from these neighborhoods than a reverse commute to the suburbs. Unless a working spouse is required to live in the city, reverse-commuters immediately get a 3.9% pay increase if they can find a home in the same county as their job and cease paying Philadelphia's wage tax. There is a very strong statistical correlation between the municipalities to which Philadelphians reverse commute and the municipalities to which Philadelphians move.[6]

5: SEPTA, 2013 Rider Census

6: The correlation coefficient of 0.679 between out-commuting destination municipalities and out-migration destination municipalities demonstrates the strong connection between the two. While the statistic does not prove a causal relationship, experience suggests that people choose to live as close to their job as possible.

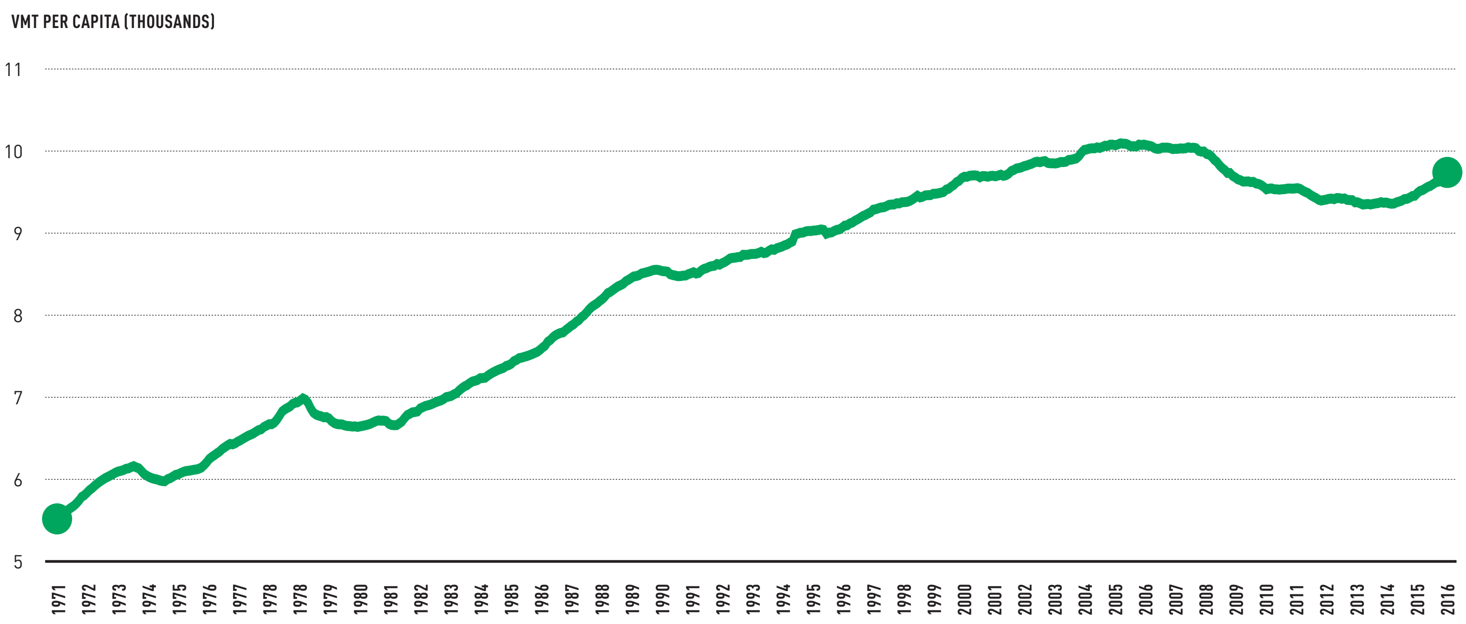
OPPORTUNITY AND EQUITY

Automobiles are an integral part of modern life. But there are significant disadvantages to a complete dependency on driving that go beyond the frustration of traffic jams. Tailpipe emissions are a major source of pollutants and the EPA currently designates Philadelphia as a nonattainment area for ozone and a maintenance area for carbon monoxide and fine particulate matter. There are major equity implications as well.

For many, living without a car is a lifestyle choice made possible by neighborhoods with multiple transportation options that connect to nearby employment. Walking, biking, taking transit or summoning cars via mobile apps are central to the new urban experience. But for many, being car-less is not a choice but rather a significant burden and a barrier to accessing dispersed employment opportunities. While 93% of suburban households have access to a vehicle and 61% have access to more than one, 33% of Philadelphia households lack access to a vehicle (Figure 17). For city households below the median income ($37,460), 50% have no access to a car.[7] For them, connecting to employment opportunities in auto-oriented centers can be a considerable challenge, including commute times of more than an hour, requiring several changes of mode.[8] Even those with limited means who own cars experience a considerable financial burden. AAA estimates the annual cost of owning and operating a vehicle at $8,500,[9] clearly a stretch on a $37,000 annual income.

50% OF HOUSEHOLDS IN PHILADELPHIA WHO EARN BELOW THE MEDIAN INCOME DO NOT HAVE ACCESS TO AN AUTOMOBILE. FOR THEM, BEING CARLESS IS NOT A CHOICE BUT A SIGNIFICANT BURDEN AND A BARRIER TO ACCESSING DISPERSED EMPLOYMENT OPPORTUNITIES.

FIGURE 14: VEHICLE MILES TRAVELED PER CAPITA, 1971-2016



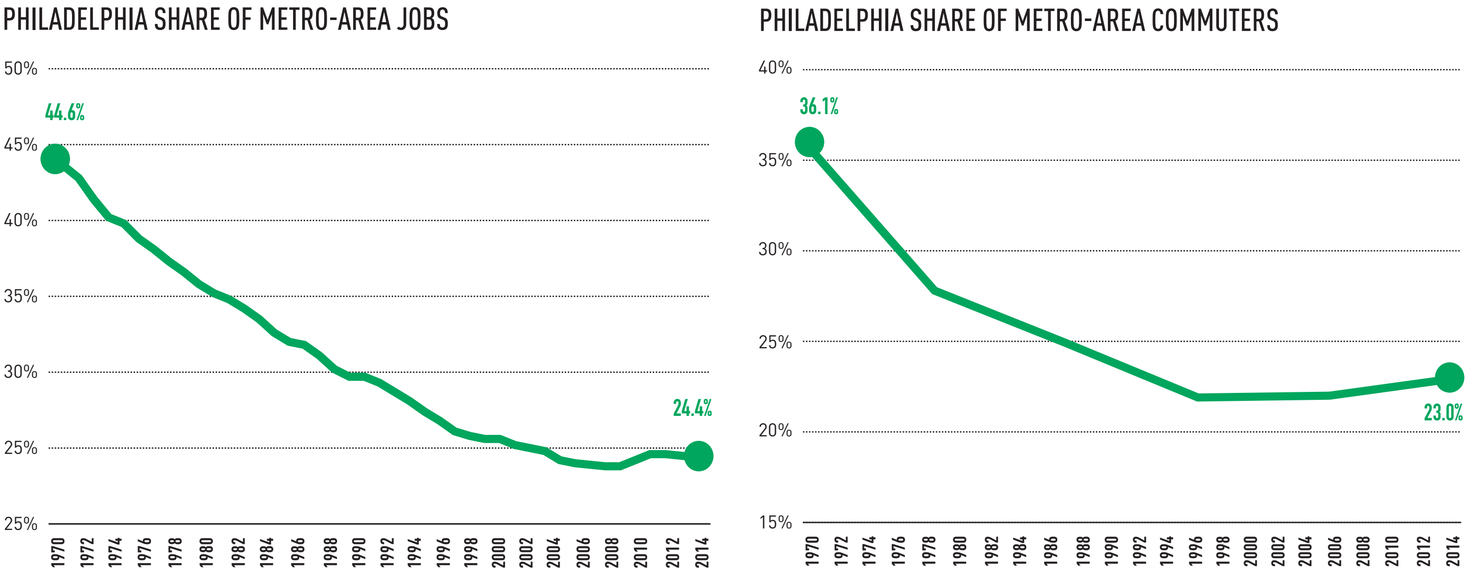
Source: Federal Reserve Economic Data

7: Calculation from Public Use Microsample of American Community Survey 2014 5-Year Estimates

8: Two thousand residents from North Philadelphia and Olney work in the King of Prussia area. For those without a car, the commute entails a subway or bus ride to 13th and Market to connect with the 124 or 125 bus to King of Prussia. Alternative routes pass through the Wissahickon Transportation Center, 69th Street, or 30th Street. All can take more than an hour.

9: http://newsroom.aaa.com/2015/04/annual-cost-operate-vehicle-falls-8698-finds-aaa-archive/

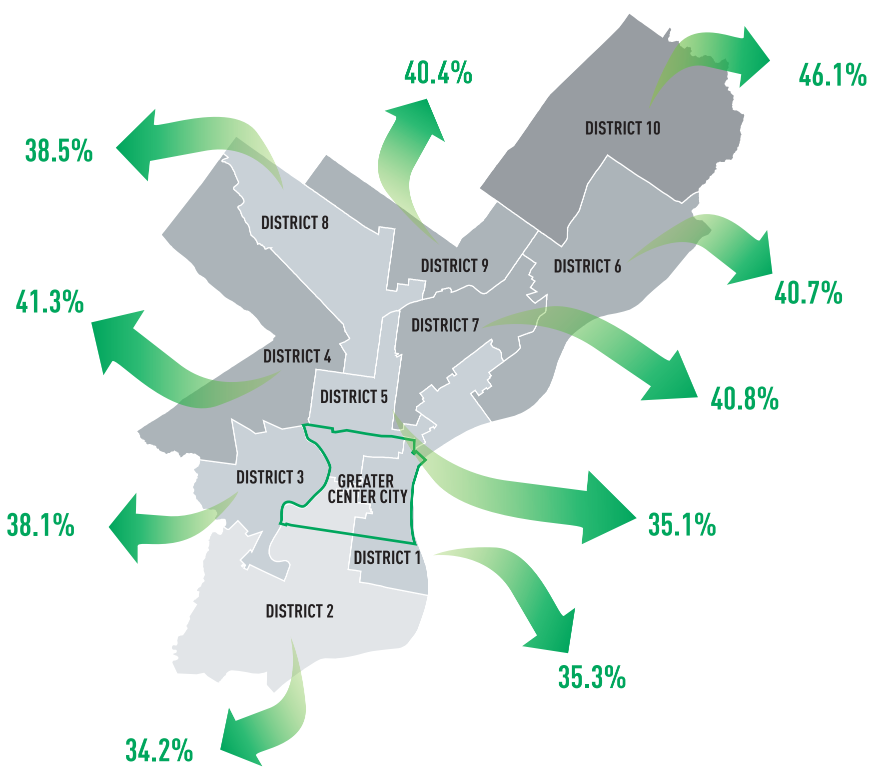
FIGURE 15: PHILADELPHIA SHARE OF REGION'S JOBS AND WORKERS



Source: Bureau of Economic Analysis, Total Full and Part-Time Employment

Source: US Census Bureau 1970, 1980, 1990, 2000 Decennial Census; ACS 2010 and 2014 1-Year Estimates

FIGURE 16: PERCENT COMMUTING TO JOBS OUTSIDE CITY OF PHILADELPHIA, BY CITY COUNCIL DISTRICT



RESIDENTS OUTSIDE OF CENTER CITY ARE REVERSE COMMUTING TO THE SUBURBS AT A VERY HIGH RATE. FOR THOSE WITHOUT CARS, THIS POSES A SIGNIFICANT CHALLENGE.

Source: U.S. Census Bureau, Local Employment-Household Dynamics, 2014

Peter Tobia

PLANNING FOR THE FUTURE

Philadelphia today benefits greatly from the legacy transportation system it has inherited from the early 20th century. But continuing reinvestment is crucial to keep transit competitive as technology and the economy evolve. The rollout of the highly-anticipated, new fare system, SEPTA Key, has begun. Once completed, SEPTA Key will leapfrog many other cities' transit payment technologies and enable riders to pay using credit or debit cards, smart phones, and SEPTA smart cards. By the end of 2019, SEPTA vehicles will also be outfitted with cellular modems to provide accurate real-time arrival information accessible by smartphone. These are just the tip of the iceberg of more than $7.3 billion in capital projects that SEPTA has in the pipeline over the next 12 years, including: increasing the number of hybrid buses to 95% of SEPTA's total fleet, purchasing 55 double-decker regional rail cars, and completing the installation of computerized safety controls on Regional Rail lines. In addition, SEPTA is enhancing the experience of downtown transit users with significant renovations to the Center City Concourse.

PATCO recently completed $103 million in improvements to Benjamin Franklin Bridge rail tracks and plans to upgrade its 120-car fleet by 2017.

SEPTA HAS MORE THAN $7.3 BILLION IN CAPITAL PROJECTS IN THE PIPELINE. CONTINUING REINVESTMENT IN THE REGION'S TRANSPORTATION SYSTEM IS CRUCIAL TO KEEP TRANSIT COMPETITIVE AS TECHNOLOGY AND THE ECONOMY EVOLVE.

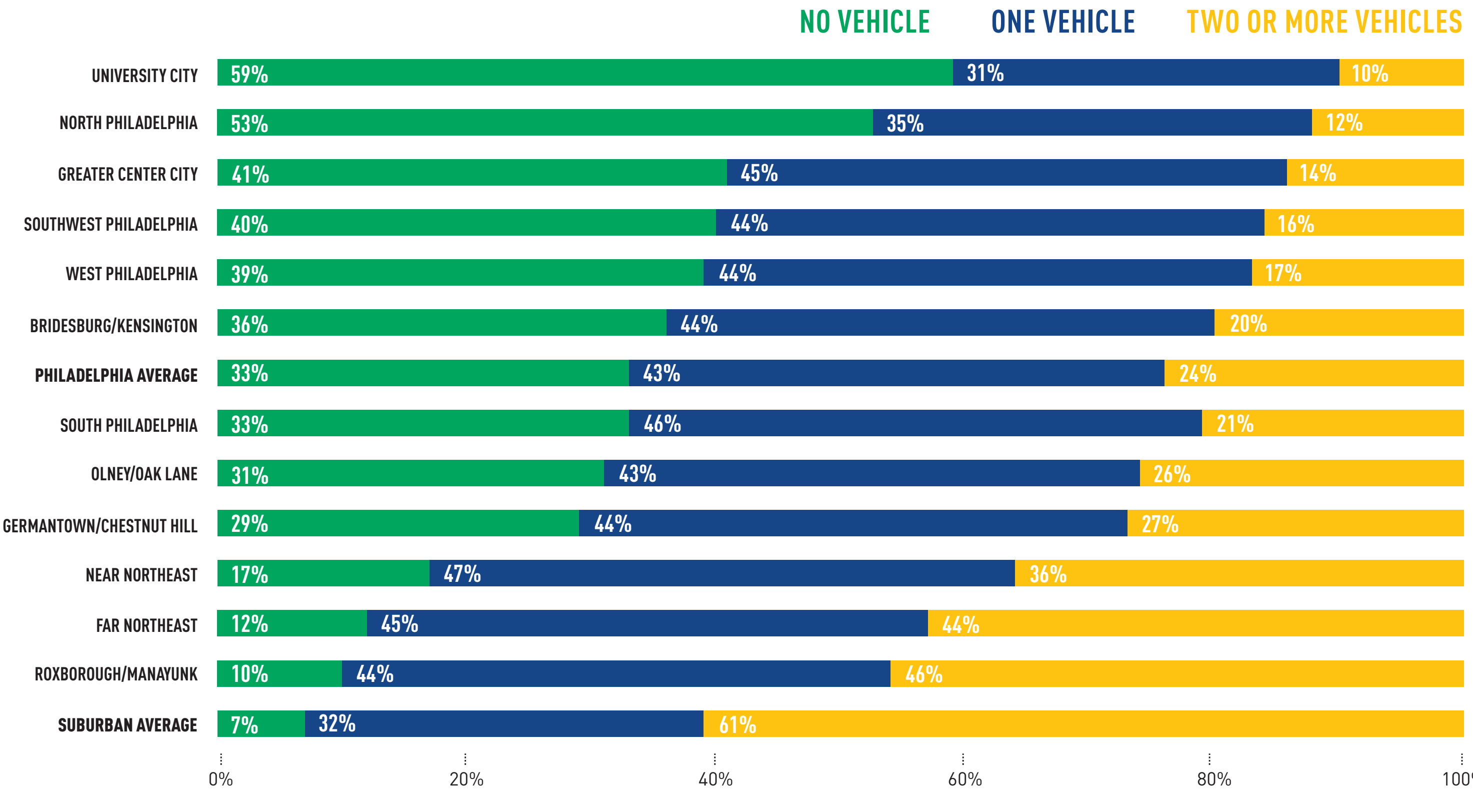
CONCLUSION

It is easier, more efficient and more economical to add jobs in a transit-oriented employment center than it is to extend rail or bus lines to auto-dependent settings. The concentration of employment in the core of downtown is already 203 jobs per acre. That density is of benefit to both employers and employees in that it enables face-to-face communication, the cross-pollination of ideas and diversifies choice. Across the suburbs, employment is dispersed at 0.6 jobs per acre.

Philadelphia's legacy transit system is a gift from the past to the present, not readily replicated at reasonable cost. Reinvesting in existing transit systems, concentrating development and facilitating job growth where it can take advantage of already built infrastructure is also the most equitable way to give lower-income workers and residents true transportation choice. Some suburban job clusters, particularly Jenkintown, Radnor, and Conshohocken are built on the rail network. So, too, are University City and Temple University's campuses. But the highest social returns can come from development in Center City. For those low-income, inner-city residents who are piecing together multiple transit rides to reverse

Peter Tobia

FIGURE 17: HOUSEHOLD VEHICLES AVAILABLE BY AREA



Source: US Census Bureau, American Community Survey 2014 5-Year Estimates

FIGURE 18: PHILADELPHIA POVERTY AND TRANSIT ACCESS TO DOWNTOWN

Source: US Census Bureau, American Community Survey 2014 5-Year Estimates (left); Google travel times via Econsult Solutions, Inc (right)
Note: Average Transit Commute time to City Hall by block, based on 8:30am departure

THE AREAS OF PHILADELPHIA WITH THE HIGHEST LEVELS OF POVERTY ALSO HAVE SOME OF THE BEST TRANSIT ACCESS TO CENTER CITY. GROWING JOBS DOWNTOWN CREATES OPPORTUNITIES EASILY ACCESSIBLE TO THE AREAS THAT NEED THEM MOST.

commute to the suburbs, a job in Center City could reduce their commuting time by at least half, closer to average commute time for all city residents (33 minutes).[10]

Sixty-one percent (61%) of all Philadelphians can take transit to a downtown job in less than 30 minutes. The areas of Philadelphia that have the highest rates of poverty also have some of the best transit access to downtown with the quickest commutes for those living closest to the Market-Frankford and Broad Street Lines (Figure 18). Along these transit lines, 33.2% of those within half a mile of a subway station live in poverty. Overall, forty-three percent (43%) of Philadelphia's population living below the poverty line are within a half mile of a subway stop. More downtown jobs and more neighborhood jobs would dramatically reduce the time and financial burden of reverse commuting to the suburbs.

The region's transit and housing investments from the late 19th and early 20th centuries have been re-infused with value by employment, demographic and cultural trends of the early 21st century that favor dense, diverse and transit-oriented job centers. Land use and development patterns in the third quarter of the 20th century created an environment that not only required a car for the most essential trip a person regularly undertakes – the journey to work - they also disconnected many lower-income workers from easy access to employment opportunities. By reinvesting in existing infrastructure and concentrating development around transit-oriented nodes, Philadelphia can decrease congestion and air pollution, reinforce the competitiveness of our employment centers and create new opportunities for disadvantaged workers.

10: US Census Bureau, American Community Survey 2014 5-Year Estimates.