# SEPTA Market Analysis

January 2022

Bus Revolution

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# 1 Introduction

The Market Analysis is a key component of the Bus Revolution's existing conditions analysis. The Bus Revolution aims to make bus service faster, more reliable, easier to use, and more competitive relative to other transportation options. In order to achieve these goals, this analysis aims to understand the current and potential demand for transit in our region.

Transit does not exist for its own sake. To be useful for people, it must get them where they want to go, such as home, work, school, a friend's house, or an appointment. In other words, there must be a market for transit.

## WHAT IS THE MARKET ANALYSIS?

This document investigates the underlying market for transit in SEPTA's service area. It looks at where existing and potential riders live, and where and when they travel. Ultimately, it helps identify gaps and needs—both spatially and by time of day.

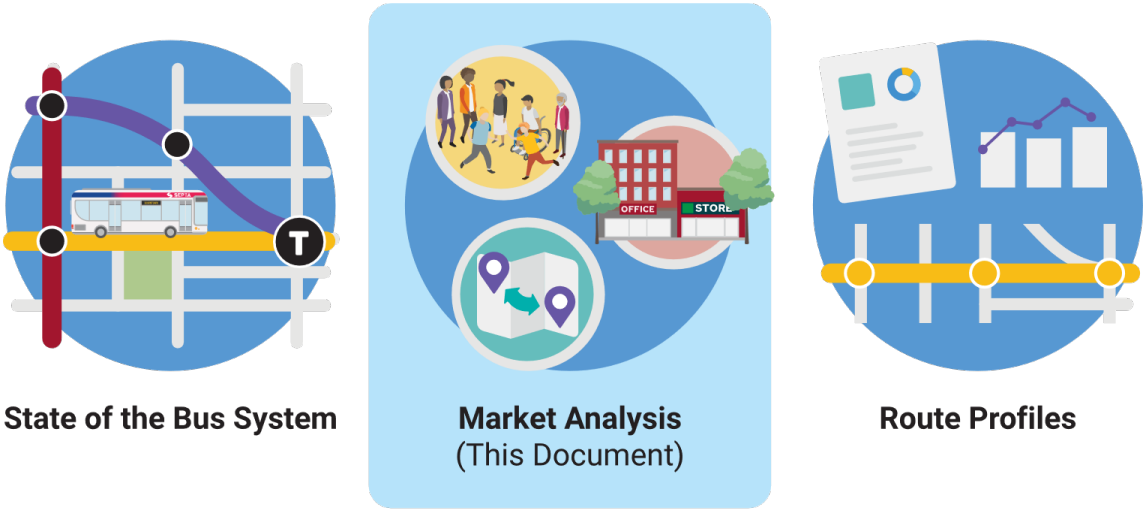
The Market Analysis evaluates:

- The size, density, spatial distribution and characteristics of Southeastern Pennsylvania's population and employment.
- Travel flows (vehicle trips) by time of day and day of the week.
- The extent to which existing SEPTA services meet those demands.

The Market Analysis is an initial step to understand existing conditions in the SEPTA service area. A companion document, the State of the System report, provides an in-depth look at SEPTA's existing bus network and how it performs today. In addition, a detailed evaluation was conducted for each individual route and the services provided in major corridors. Collectively, these analyses reflect a data-driven approach that will guide the Bus Revolution team towards unmet needs, opportunities for service improvements and strategies to strengthen SEPTA's overall transit network (Figure 1-1).

The Bus Revolution team will combine this analytical approach with input from stakeholders and community members to develop specific service improvement strategies.

**Figure 1-1 The Market Analysis and Other Existing Conditions Documents**




## Report Structure

In addition to this introduction, the rest of the Market Analysis is made up of five chapters:

- **Chapter 2: Population and Socioeconomic Characteristics.** Where do people live, and how does this relate to transit demand specifically?
- **Chapter 3: Jobs and Economic Activity-Based Demand.** Where are the concentrations of jobs and other places that people want and need to go?
- **Chapter 4: Travel Flows.** What patterns and gaps can we uncover when analyzing where people start and end trips?
- **Chapter 5: Looking Forward.** What changes are expected to occur in the future, and where?
- **Chapter 6: Issues and Opportunities.** What do the overall Market Analysis findings mean for the SEPTA Bus Revolution?

# OVERVIEW OF TRANSIT DEMAND

Transit demand is strongly related to six factors:

- **Population and Population Density:** Since transit relies on having more people in close proximity to service, population density (the number living in a defined area, like per acre) helps shape and define transit service levels. Higher population density, for example, makes it feasible to provide higher levels of transit service.

- **Socioeconomic Characteristics:** People may be more or less likely to use transit based on socioeconomic characteristics. For example, households with many cars are much less likely to use transit than those with one or none.

- **Employment and Employment Density:** The location and density of jobs (the number of jobs in a defined area, such as per acre) is a strong indicator of transit demand, as traveling to and from work often accounts for the most frequent type of transit trip.

- **Land Use Patterns:** In all cities, there is a strong correlation between land use patterns and transit ridership. In areas with denser development, mixed-use development, and a good pedestrian environment, transit can become very convenient.

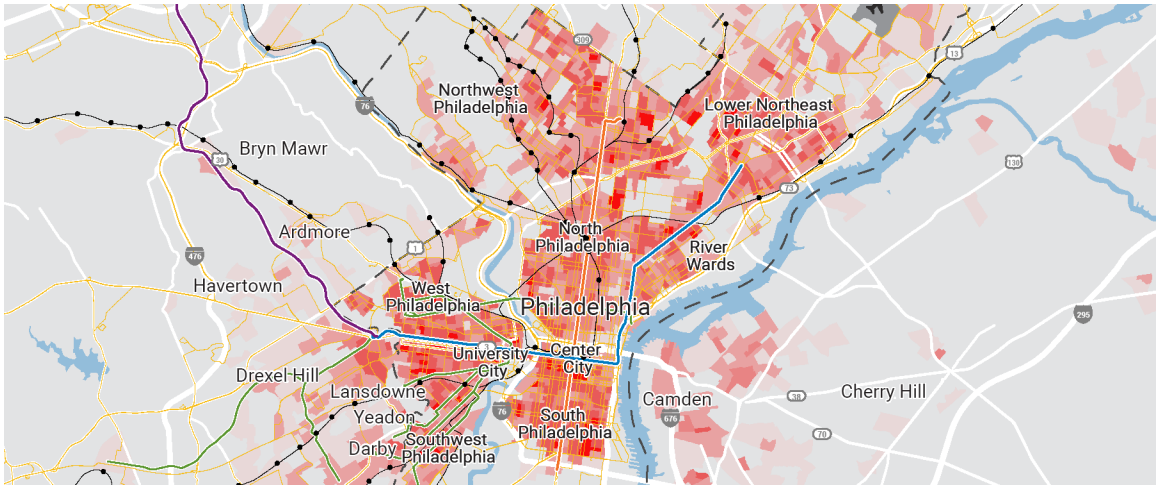
- **Major Activity Centers:** Large employers, universities, tourism destinations, and other high-activity areas attract large volumes of people and can generate a large number of transit trips.

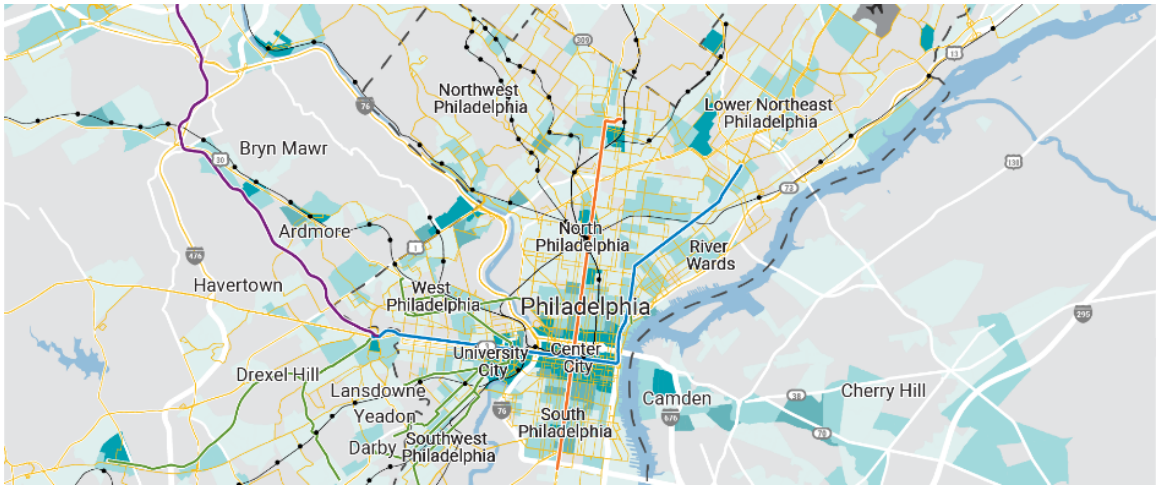
- **Travel Flows:** People use transit to get from one place to another. Major transit lines such as rapid transit services and or high frequency bus routes are designed to serve corridors with high volume travel flows.

Of these six factors, population and employment density are the most important in determining the underlying demand for transit. This is because:

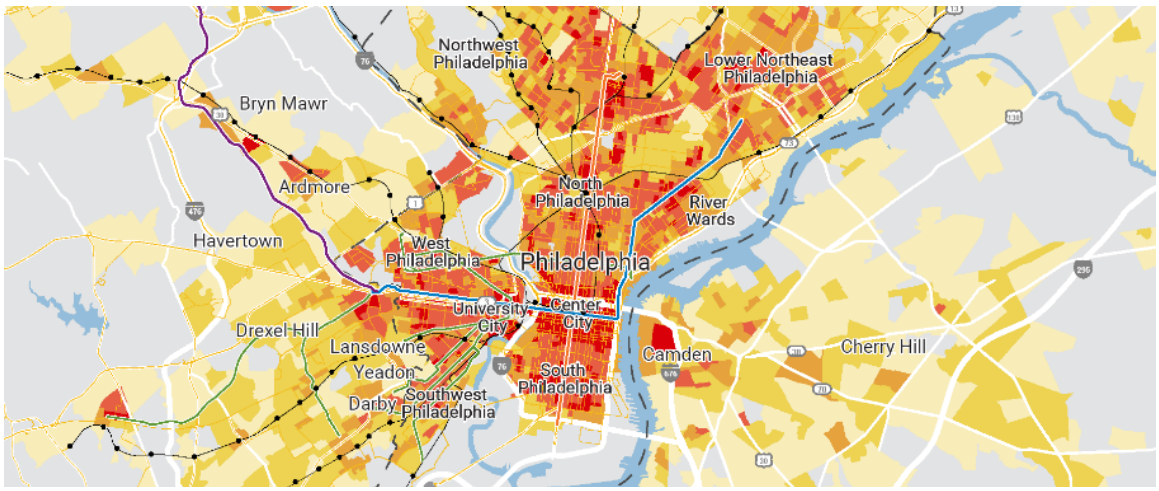
- The reach of transit is generally limited to within one-quarter mile of the bus stop or station. As a result, the size of the travel market is directly related to the density of development in that area.
- Transit service frequencies, in turn, are closely related to market size because the denser an area is, the more people within ¼ mile of a specific stop or station, the bigger the market for transit service. Bigger markets support more frequent service, while smaller markets can support only less frequent service.
- To attract travelers who have other options, such as private automobiles, transit service must be relatively frequent and have a long enough span of service that riders can use it whenever they need.

**Figure 1-2 Different Forms of Transit Demand**



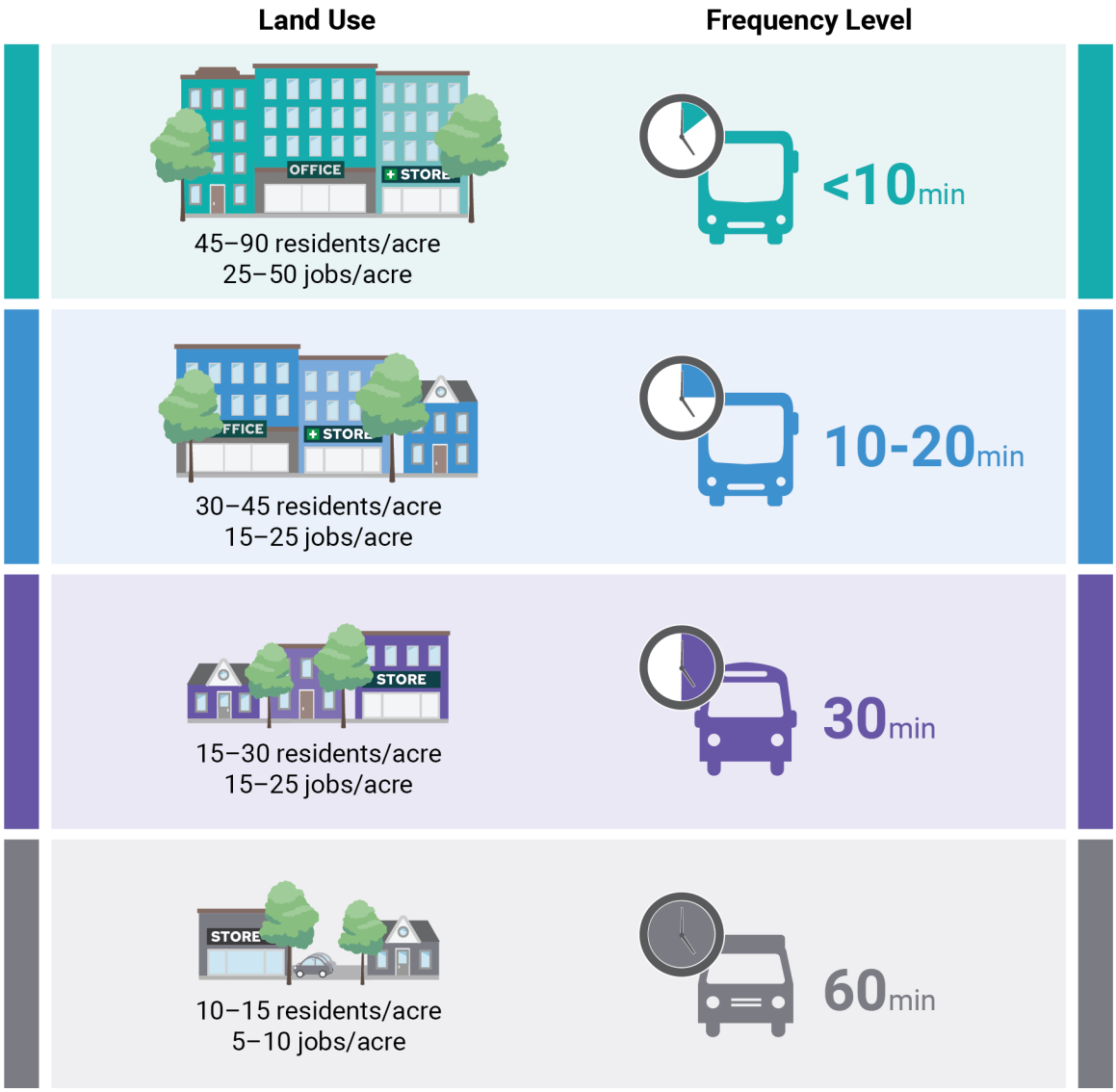




COMBINED POPULATION- AND EMPLOYMENT-BASED DEMAND



Population and job densities also provide an indication of the underlying population-based demand for transit. Demand, in turn, can be translated into the type and frequency of service that is likely appropriate. For example, to support 30-minute service, there generally must be at least 15 households per acre or more than 15 jobs per acre, or a combination thereof.

**Figure 1-3 Relationship Between Density and Transit Frequency**



# PLANNING FOR A POST-PANDEMIC WORLD

Bus Revolution is examining the travel needs and transportation markets in the region during an unprecedented time. During the COVID-19 pandemic, transit ridership has fallen dramatically, and the trajectory of the pandemic remains unclear. However, what is clear is that the SEPTA Bus Network must adapt to serve a permanently changed economy and altered travel needs.

- **Travel patterns are not expected to return to exactly what they were before the COVID-19 Pandemic.** Many office workers began working from home during the pandemic, and this trend will continue. While not all workers will become fully remote, many 9-to-5 office workers will not resume daily commutes. The SEPTA Ridership Recovery Model assumes that long-term reduced levels of ridership will continue through at least 2023.
- **Transit markets and travel patterns have spread throughout the day during the pandemic, and this trend is likely to continue.** Pre-COVID, SEPTA ridership peaked in the morning and afternoon rush hours. Peak periods are also when services are most frequent and provide the highest level or quality of service. Riders who used SEPTA in 2020 traveled throughout the day, which flattened the peak travel patterns experienced pre-pandemic. These travel patterns reflect commuting patterns of essential workers and riders taking transit for reasons other than commuting. In addition, as office workers are offered more flexible work hours, when they return to working on-site, they will be more likely to travel outside of peak periods than they were before the pandemic.
- **Focusing on the needs and travel patterns of those who can benefit from transit most, and where transit demand is highest, will be the best way to win back riders and grow ridership moving forward.** The SEPTA Ridership Recovery Model assumes that 31% of workers will continue to work from home (or telecommute) after the pandemic ends. However, Black, Hispanic, and low-wage workers are less likely than other groups to work from home. Focusing on the travel needs of people who work on-site, and those who use transit for non-work trips, can shift SEPTA from a peak-period, Center City-oriented system, into one that works for more riders making different types of trips at all times of day.

# 2 Population and Socioeconomic Characteristics

This chapter examines transit demand from the perspective of population. *Where people live* is central to understanding what kinds of transit services are feasible. Furthermore, socioeconomic characteristics—such as income, race, gender, and car ownership—shed additional light on the likelihood of using transit.

The first part of this chapter focuses on overall population. The second part covers the following socioeconomic characteristics:

- Zero-Vehicle Households
- Low-Income Residents
- Race and Ethnicity
- Overview of Socioeconomic Characteristics
- Socioeconomic Characteristics and Transit Propensity
- Adjusted Population-Based Demand

# POPULATION

SEPTA's service area, including areas served by suburban bus and regional rail, was home to 3.4 million residents as of 2019.

With respect to transit demand, however, population densities are more important than absolute numbers, as densities indicate where many people live in proximity and where transit is more likely to have higher ridership. Densities also generally indicate land use types more suited for transit as denser areas tend to be more walkable and less auto-oriented, with more limited access to parking and less reason and incentive to own a private automobile.

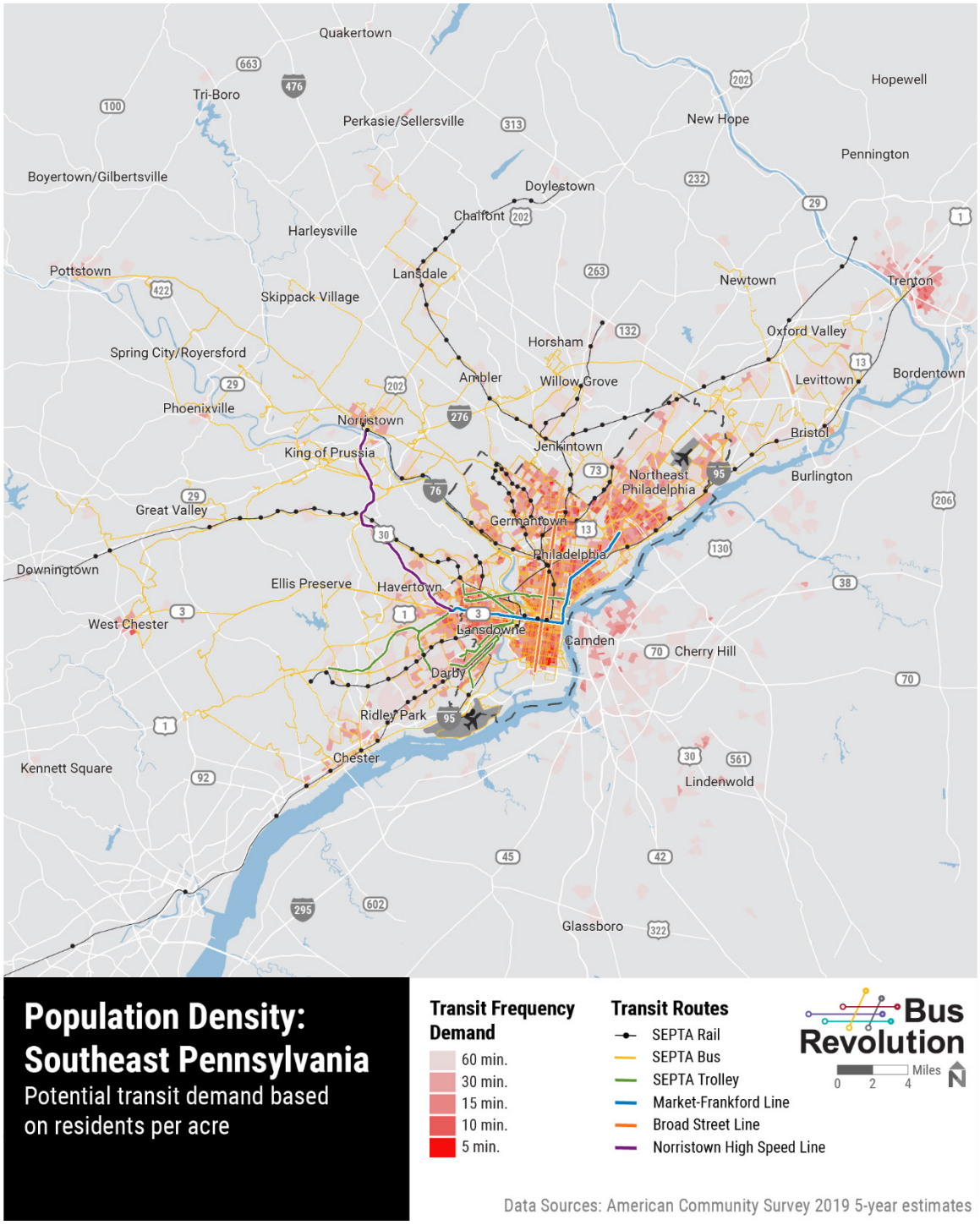
More people within proximity to a transit service means more potential riders. The highest concentrations of population live within the City of Philadelphia and some communities directly bordering the City. Several areas within Philadelphia have population densities that can support high levels of service with services operating every 5 to 10 minutes. These include:

- Center City
- South Philadelphia
- University City
- West Philadelphia
- North Philadelphia
- Parts of the River Wards
- Lower Northeast Philadelphia

Areas that can support moderate to high levels of transit service every 15 to 30 minutes based on population in Philadelphia are:

- Southwest Philadelphia
- Northwest Philadelphia
- Far Northeast Philadelphia

**Figure 2-1 Population Density, Southeast Pennsylvania**



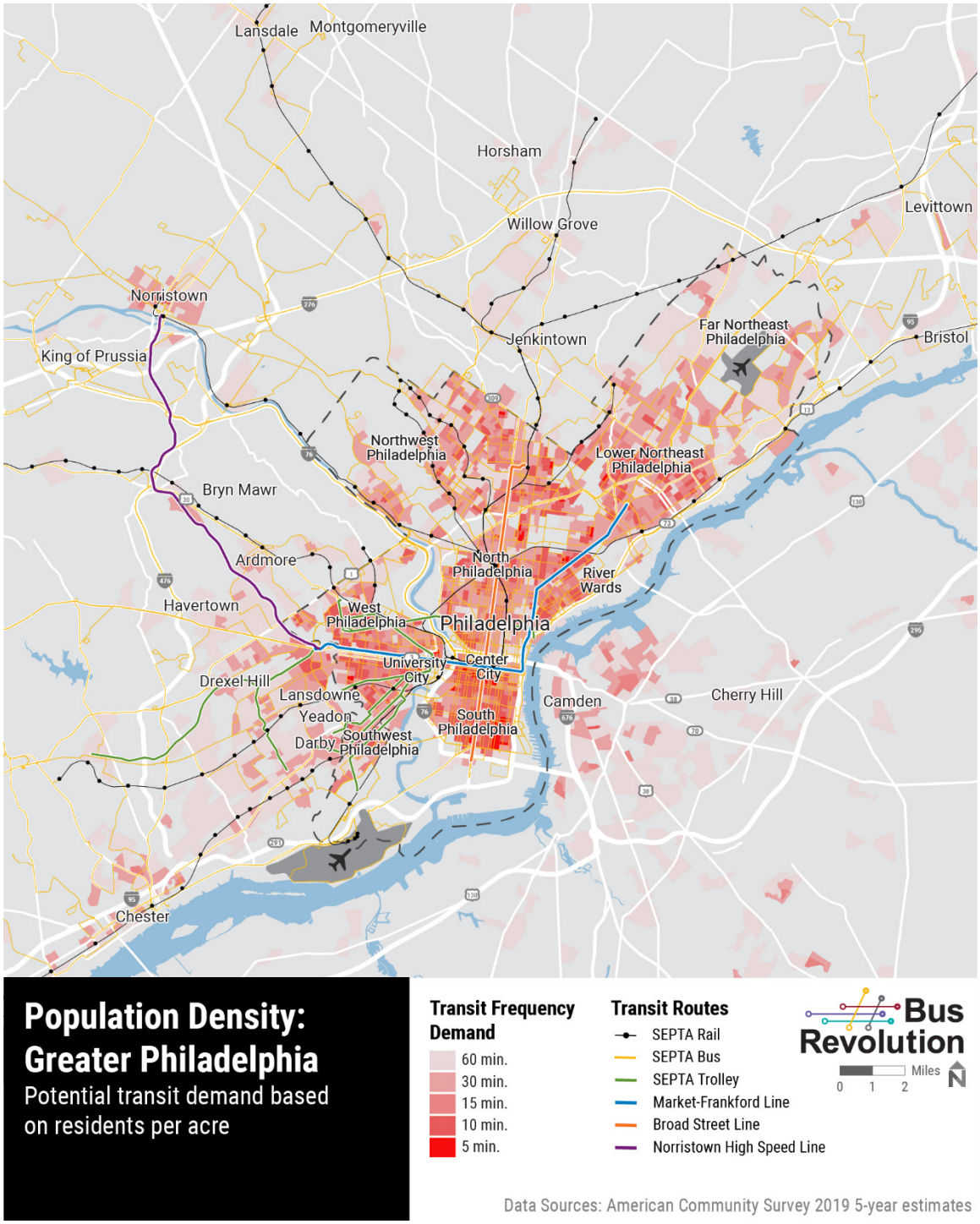
Outside of Philadelphia, there are some communities that can support moderate to high levels of transit demand including:

- Darby
- Lansdowne
- Norristown
- West Chester
- Chester
- Drexel Hill
- Ardmore

Areas outside of the communities listed have very low population-based transit demand, as residents are much more spread out and difficult to serve efficiently.

More people within proximity to a transit service means more potential riders. The highest concentrations of population live within the City of Philadelphia and some communities directly bordering the City.

**Figure 2-2 Population Density, Greater Philadelphia**



# SOCIOECONOMIC CHARACTERISTICS

In addition to population density, socioeconomic characteristics influence people's propensity to use transit. Socioeconomic characteristics that are related to transit propensity include: vehicle ownership and access, income, and race and ethnicity.

## Zero Vehicle Households

**Households with limited or no access to a personal vehicle, either by choice or because they cannot operate or afford a vehicle, are more likely to rely on transit.** Zero Vehicle household rates tend to be higher in cities because robust transit options make living without a car more viable, and restrictions and costs associated with parking a vehicle in dense development discourage car ownership. Zero vehicle households also correlate with low-income households, especially in dense urban areas.

Regionally, about 15% of households do not have access to a car. The City of Philadelphia has over twice the rate of zero vehicle households than the regional average at 31%.

Zero Vehicle households make up a particularly large proportion of the population in:

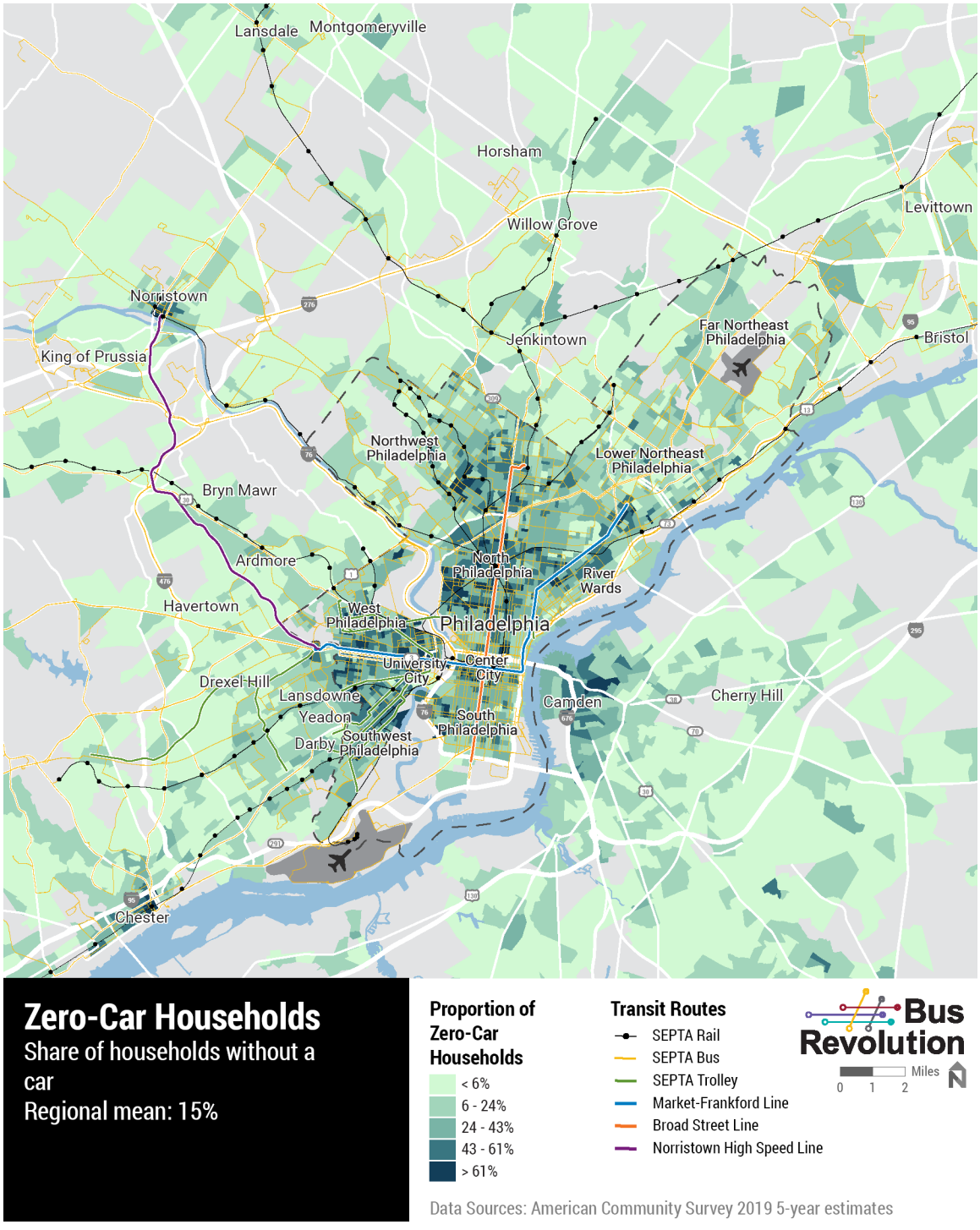
- North Philadelphia
- West Philadelphia
- University City
- Northeast Philadelphia

Zero Vehicle households are also notable in:

- South Philadelphia
- Center City

Outside of the City and dense suburbs, the number of zero vehicle households decreases dramatically. These patterns reflect challenges associated with living car free, including land-use patterns that are more auto-oriented. Further, average incomes in the suburbs are higher.

**Figure 2-3 Zero-Car Households**



## Low-Income Residents

**Low-income residents tend to ride transit at higher rates because transit is typically their lowest cost option.** In the Philadelphia area owning a car costs on average $6,800[1] a year. Comparatively, taking transit is a much more cost-effective way to travel, and where transit service is best residents tend to spend less on transportation costs. Most of the region's low-income residents live in Philadelphia. The highest concentrations of low-income residents are in:

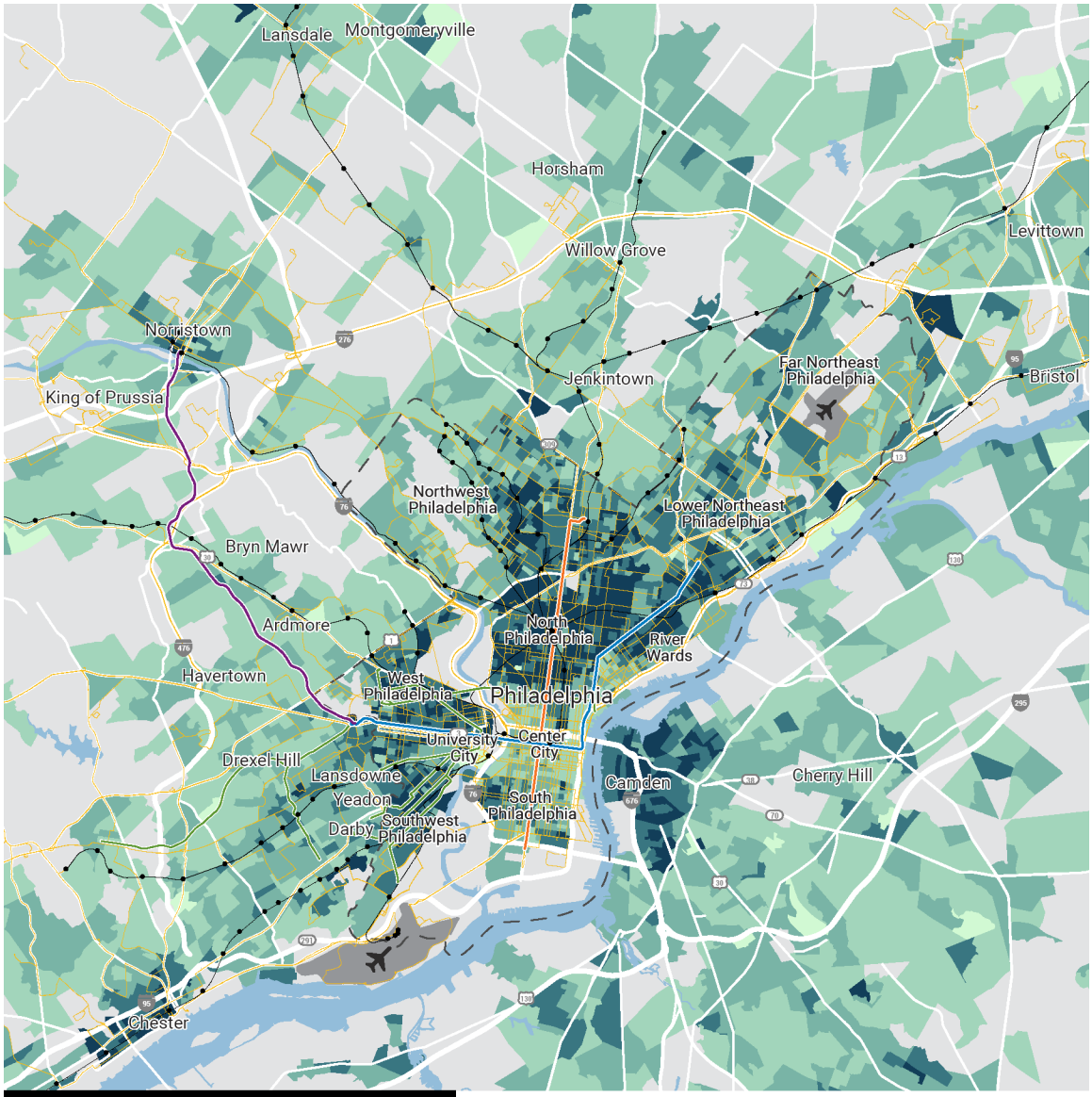
- North Philadelphia
- Northwest Philadelphia
- Lower Northeast Philadelphia
- The River Wards
- West Philadelphia
- Southwest Philadelphia

Outside of Philadelphia, communities with high proportions of low-income residents are:

- Chester
- Norristown
- Darby
- Lansdowne

[1] H+T Index.

**Figure 2-4 Low-Income Residents**



## Race and Ethnicity

**In the United States race is highly correlated with both personal income and generational wealth. As a result, residents of color tend to ride transit at higher rates than white, non-Hispanic residents.** Providing equal access to public transit is required by the Federal Transit Administration (FTA) as a requirement under Title VI of the Civil Rights Act of 1964.

The SEPTA service area is racially diverse, with about half of the residents identifying as white, non-Hispanic (55%), a quarter as Black (26%), 10% Hispanic residents, 7% Asian residents, and 3% identifying as another race or two or more races. The City of Philadelphia has higher proportions of people of color than the service area as a whole, with minorities making up two-thirds of residents.

- **Hispanic:** Hispanic residents are very concentrated in North Philadelphia east of Broad Street. Other small pockets include South Philadelphia and Norristown.
- **White** (non-Hispanic): Within the City of Philadelphia, white residents live in Center City, South Philadelphia, the River Wards, Northwest Philadelphia, and Far Northeast Philadelphia. The majority of residents in the suburbs are also white.
- **Black:** Black residents are most concentrated in North Philadelphia west of Broad Street, Northwest Philadelphia, South Philadelphia west of Broad Street, West and Southwest Philadelphia, east Delaware County, and Norristown.
- **Asian:** The largest proportion of Asian residents are in South Philadelphia, University City, Center City, Greater Northeast Philadelphia, east Delaware County, and King of Prussia.

**Figure 2-5 Race and Ethnicity**

# Overview of Socioeconomic Characteristics

**Figure 2-6 Overview of Socioeconomic Characteristics by Neighborhood/Community***

| Community | Low-Income (%) | Zero Vehicle Households (%) | White (%) | Black (%) | Hispanic (%) | Asian (%) | Other Race or Two or More Races (%) |
|---|---|---|---|---|---|---|---|
| **Philadelphia County** | 41% | 30% | 34% | 42% | 15% | 7% | 3% |
| Center City | 21% | 41% | 68% | 11% | 6% | 12% | 4% |
| Far Northeast Philadelphia | 28% | 11% | 70% | 10% | 9% | 9% | 3% |
| Lower Northeast Philadelphia | 40% | 20% | 36% | 30% | 23% | 10% | 4% |
| North Philadelphia | 52% | 36% | 12% | 59% | 25% | 4% | 2% |
| Northwest Philadelphia | 34% | 20% | 45% | 46% | 4% | 3% | 4% |
| River Wards | 35% | 23% | 63% | 10% | 24% | 3% | 2% |
| South Philadelphia | 36% | 33% | 50% | 22% | 11% | 16% | 3% |
| Southwest Philadelphia | 52% | 38% | 6% | 84% | 3% | 5% | 2% |
| University City | 46% | 47% | 41% | 34% | 7% | 14% | 4% |
| West Philadelphia | 51% | 41% | 7% | 87% | 3% | 2% | 2% |
| **Bucks County** | | | | | | | |
| Croydon | 33% | 4% | 78% | 5% | 12% | 3% | 2% |
| Levittown | 18% | 5% | 85% | 5% | 8% | 2% | 1% |
| Elsewhere in the County | 18% | 5% | 84% | 4% | 5% | 5% | 2% |
| **Chester County** | | | | | | | |
| Coatesville | 42% | 20% | 25% | 43% | 28% | 1% | 5% |
| West Chester | 31% | 11% | 76% | 8% | 11% | 2% | 2% |
| Elsewhere in the County | 14% | 4% | 81% | 5% | 7% | 6% | 2% |
| **Montgomery County** | | | | | | | |
| Ardmore | 21% | 8% | 79% | 8% | 5% | 3% | 4% |
| Horsham | 13% | 5% | 79% | 5% | 7% | 7% | 1% |
| King of Prussia | 15% | 6% | 66% | 6% | 2% | 22% | 3% |
| Landsdale | 23% | 8% | 71% | 5% | 6% | 15% | 3% |
| Montgomeryville | 9% | 1% | 80% | 4% | 2% | 12% | 2% |
| Norristown | 37% | 23% | 28% | 37% | 27% | 4% | 5% |
| Willow Grove | 17% | 4% | 76% | 9% | 5% | 5% | 5% |
| Elsewhere in the County | 16% | 5% | 79% | 8% | 4% | 7% | 2% |
| **Delaware County** | | | | | | | |
| Broomall | 20% | 4% | 86% | 1% | 2% | 8% | 3% |
| Chester | 51% | 30% | 17% | 69% | 12% | 1% | 3% |
| Darby | 39% | 24% | 15% | 83% | 2% | 1% | 1% |
| Drexel Hill | 20% | 8% | 71% | 16% | 4% | 5% | 4% |
| Lansdowne | 30% | 13% | 38% | 51% | 6% | 3% | 3% |
| Yeadon | 28% | 16% | 7% | 88% | 1% | 0% | 3% |
| Elsewhere in the County | 21% | 9% | 73% | 15% | 3% | 6% | 3% |

Source: American Community Survey 2019 5-year estimates

Notes: Census designated neighborhoods/communities as identified by SEPTA staff.

## Socioeconomic Characteristics and Transit Propensity

When large numbers of residents with high-transit propensity cluster together, they can influence the underlying demand for transit to an extent that is not captured when only considering population density. In a given location, groups of people from transit-supportive demographic groups may be too small individually to reveal significant demand for transit service. However, the clustering of multiple characteristics may result in higher levels of transit demand. Similarly, in locations where transit-supportive demographic groups are underrepresented, transit demand may be lower than population density would otherwise suggest.

To take this into account, Nelson\Nygaard developed a transit propensity factor to measure relative demand for transit. Transit propensity factors were created by comparing the demographics of current SEPTA bus riders with overall service area demographics.

**Differences in transit propensity are based on vehicle ownership, race and ethnicity, and poverty level.**

- Those experiencing poverty are proportionally more likely to ride the bus, as are Black residents, residents who don't identify as a major racial/ethnic group or who identify as more than one race, and residents living in a household with no vehicle.
- Hispanic residents, Asian residents, and those with one vehicle in their household made up the same proportion of the overall service area as SEPTA bus riders.
- White residents, those not living in poverty, and those living in a household with two or more vehicles, were proportionally less likely to ride the bus.

**Figure 2-7 Transit Propensity by Demographic Group**

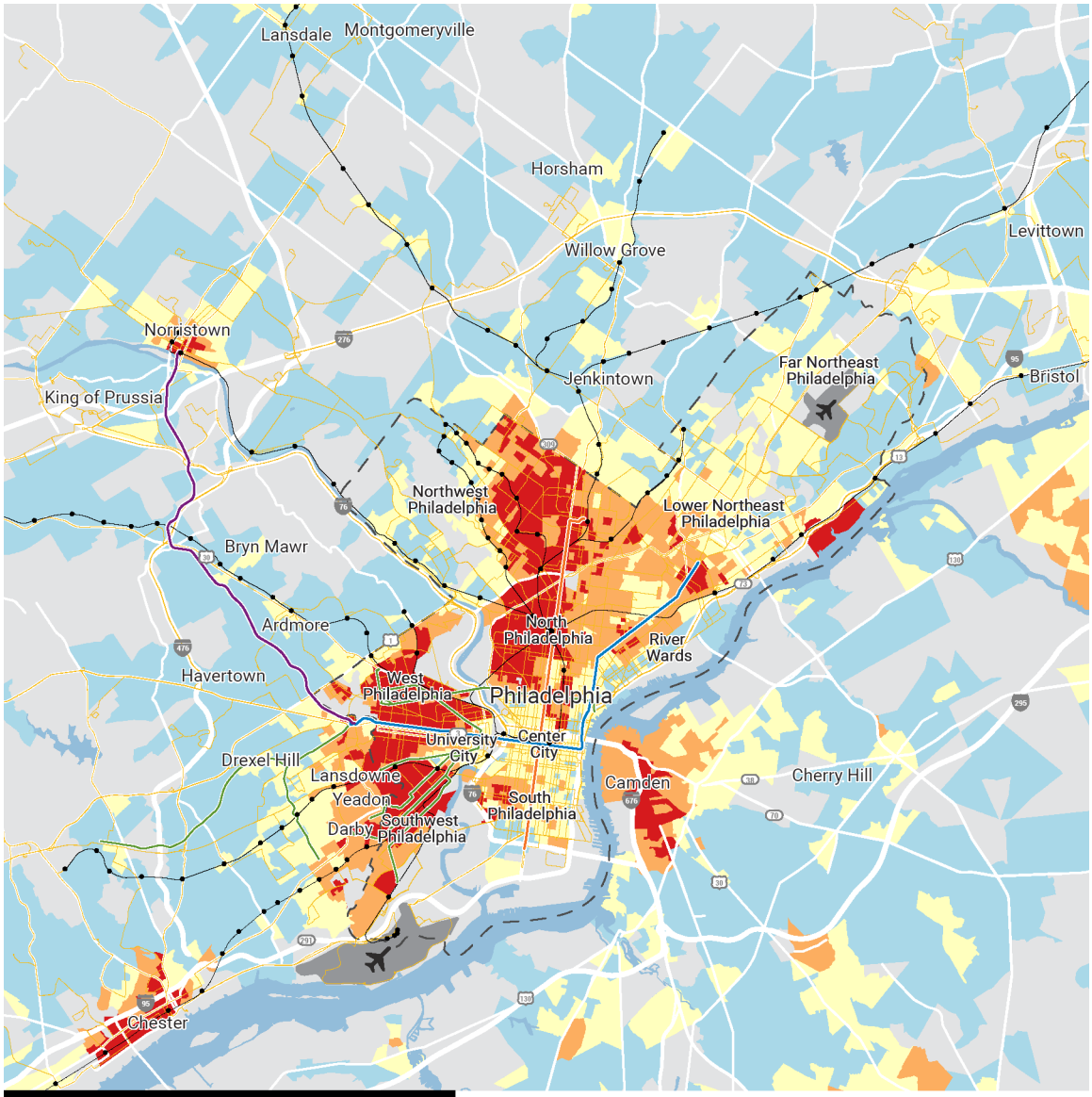
| Demographic group | Make up of SEPTA Bus Riders | Regional makeup | Transit propensity |
|---|---|---|---|
| Under 150% of the poverty line | 28% | 22% | 1.3 |
| At 150% of the poverty line or above | 72% | 78% | 0.9 |
| White alone (not Hispanic) | 31% | 55% | 0.6 |
| Black (not Hispanic) | 47% | 26% | 1.8 |
| Asian (not Hispanic) | 7% | 7% | 1.0 |
| Other race (not Hispanic) | 5% | 3% | 1.6 |
| Hispanic | 10% | 10% | 1.0 |
| No vehicle in household | 31% | 18% | 1.7 |
| One vehicle in household | 37% | 38% | 1.0 |
| Two or more vehicles in household | 32% | 44% | 0.7 |

Different communities in the SEPTA service area have different overall levels of transit propensity based on their underlying demographics.

**Figure 2-8 Transit Propensity by Community within SEPTA Service Area**

| Transit Propensity | SEPTA Service Area Communities |
|---|---|
| High Transit Propensity | ▪ North Philadelphia west of Broad Street<br>▪ West Philadelphia<br>▪ Southwest Philadelphia<br>▪ Chester<br>▪ Norristown |
| High Resident-based Propensity | ▪ North Philadelphia east of Broad Street<br>▪ South Philadelphia west of broad street<br>▪ Darby<br>▪ Yeadon<br>▪ Lansdowne |
| Average Resident-based Propensity | ▪ Center City<br>▪ Greater Northeast Philadelphia |
| Lower Resident-based Propensity | ▪ Much of suburban areas outside of Philadelphia |

**Figure 2-9 Resident Transit Propensity**



## Adjusted Population-Based Demand

When demographic factors are considered in the context of population density, the underlying demand is effectively higher in some areas and lower in others. **Most of the dense parts of Philadelphia show an even higher demand for transit when demographic factors are considered than when population alone is considered.** Taking demographic factors into account, the contrast between the core of the City and the suburbs becomes ever clearer. Underlying demand for transit is low outside of the City of Philadelphia.

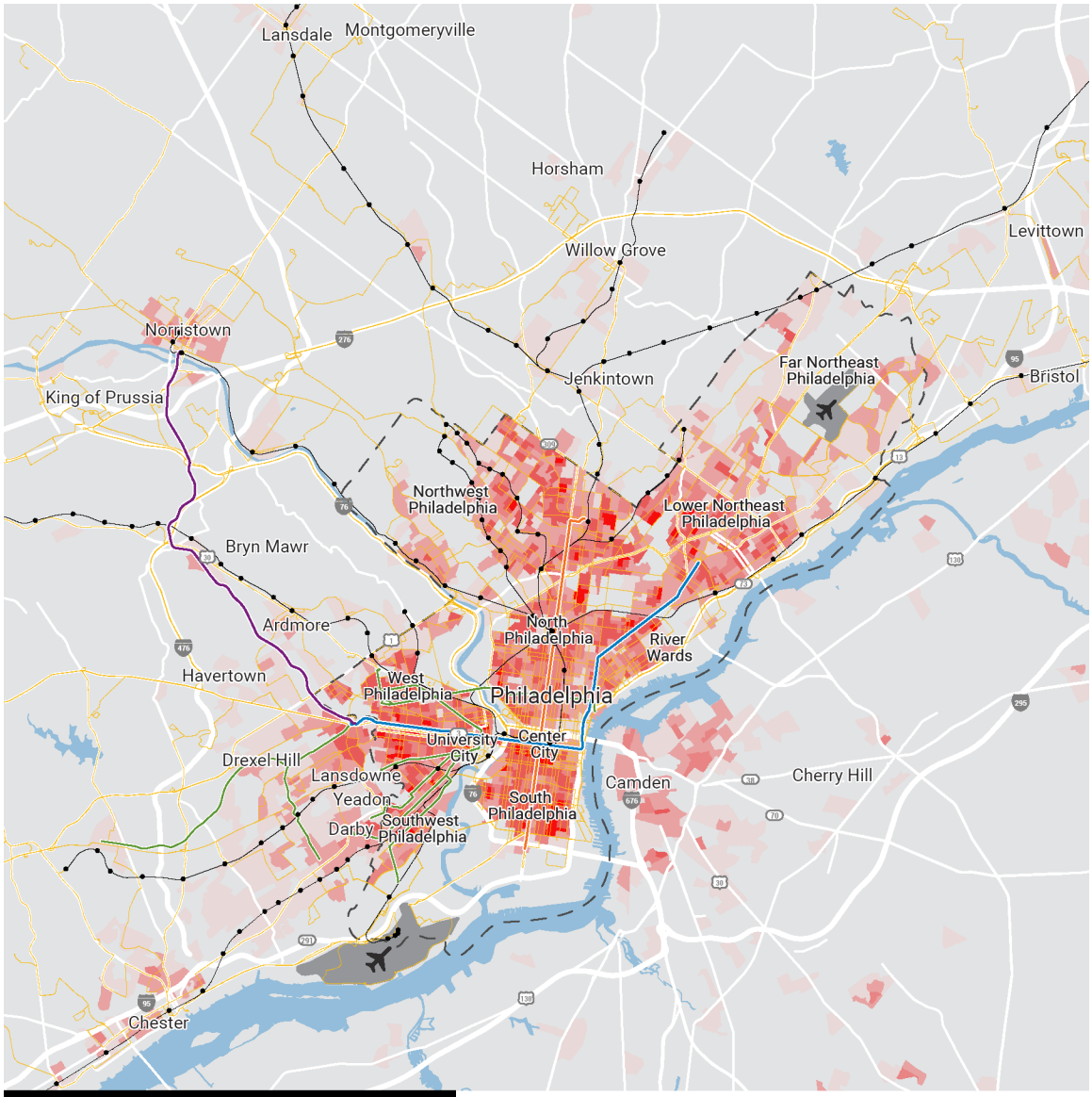
The areas in Philadelphia that show **the highest underlying demand for transit** based on both population and demographic factors are:

- South Philadelphia
- Center City
- University City
- West Philadelphia
- North Philadelphia
- The River Wards
- Lower Northeast Philadelphia

Other areas that show high demand are:

- Southwest Philadelphia
- Norristown
- Chester
- Darby
- Parts of Northwest Philadelphia

**Figure 2-10 Adjusted Population Density**



# 3 Jobs and Economic Activity-Based Demand

This chapter describes demand for transit in terms of jobs and other forms of economic activity. In other words, where are the *destinations* people are trying to reach? This is the flip side of Chapter 2, which focuses on *who lives where*.

Chapter 3 contains the following sections, each of which covers a different aspect of jobs and economic activity in relation to transit:

- Employment Density
- Customers, Clients, Patients, and Students
- Adjusted Population Density
- Composite Transit Demand
- Land Use Mix
- Major Activity Centers
- Transit Access to Jobs
- Transit Demand by Time of Day

# EMPLOYMENT DENSITY

In 2020, the SEPTA service area had 2.1 million jobs, with employment concentrated in a handful of areas. Nearly one-quarter of jobs (24%) are in areas that can support frequent transit, occupying only 1% of the total land area. However, this means most jobs in the service area are not in dense job districts.

Commuting is the most frequent and regular trip that most people, including transit riders, make. As a result, employment density is a major source of transit demand. Job density is also an important indicator of demand because it represents other types of travel activity; employees travel to restaurants and shops as do customers, likewise employment centers like hospitals and schools are also destinations for patients and students. Other employment centers, like office buildings, warehouses and manufacturing plants have less ancillary demand. As job density increases, the demand for transit grows, particularly for more frequent service.

The largest regional job centers include a combination of neighborhoods and specific job sites with high or moderate demand for transit:

- Center City
- University City
- King of Prussia
- Temple University
- Temple University Hospital Area
- Naval Support Facility in Northeast Philadelphia
- Philadelphia International Airport
- Einstein Medical Center
- City Avenue/Bala Cynwyd Shopping Center

**Figure 3-1 Employment Density**

# CUSTOMERS, CLIENTS, PATIENTS, AND STUDENTS

Many job sites attract travelers who are not employed at the site, broadly characterized as customers, clients, patients, and students. The 2012-2013 Regional Travel Survey[1] reveals that after commuting to work, trips are concentrated to places of economic activity, such as restaurants, grocery stores, or hospitals. Consequently, industries that attract customers, clients, patients, and students are associated with higher levels of transit ridership than other industries. Notably, these jobs are less likely to be done remotely, and will maintain high levels of demand even as work from home continues in other industries.

Figure 3-2 (next page) shows the percent of jobs with customers, clients, patients, and students, by community within the SEPTA service area. Places with high numbers and percentages of these types of jobs are:

- South Philadelphia
- University City
- West Philadelphia
- North Philadelphia
- Northwest Philadelphia
- Greater Northeast Philadelphia

Notably, Center City has a lower percentage of these types of jobs. Center City has a larger make up of office jobs that attract fewer trips outside of the employees themselves. However, there are still many jobs with customers, clients, patients, and students in Center City.

King of Prussia, known for its large malls and retail centers, is home to a large amount of professional, scientific, and technical services jobs, management jobs, and wholesale jobs. Collectively King of Prussia has more jobs categorized as professional than retail.

## Spotlight on COVID

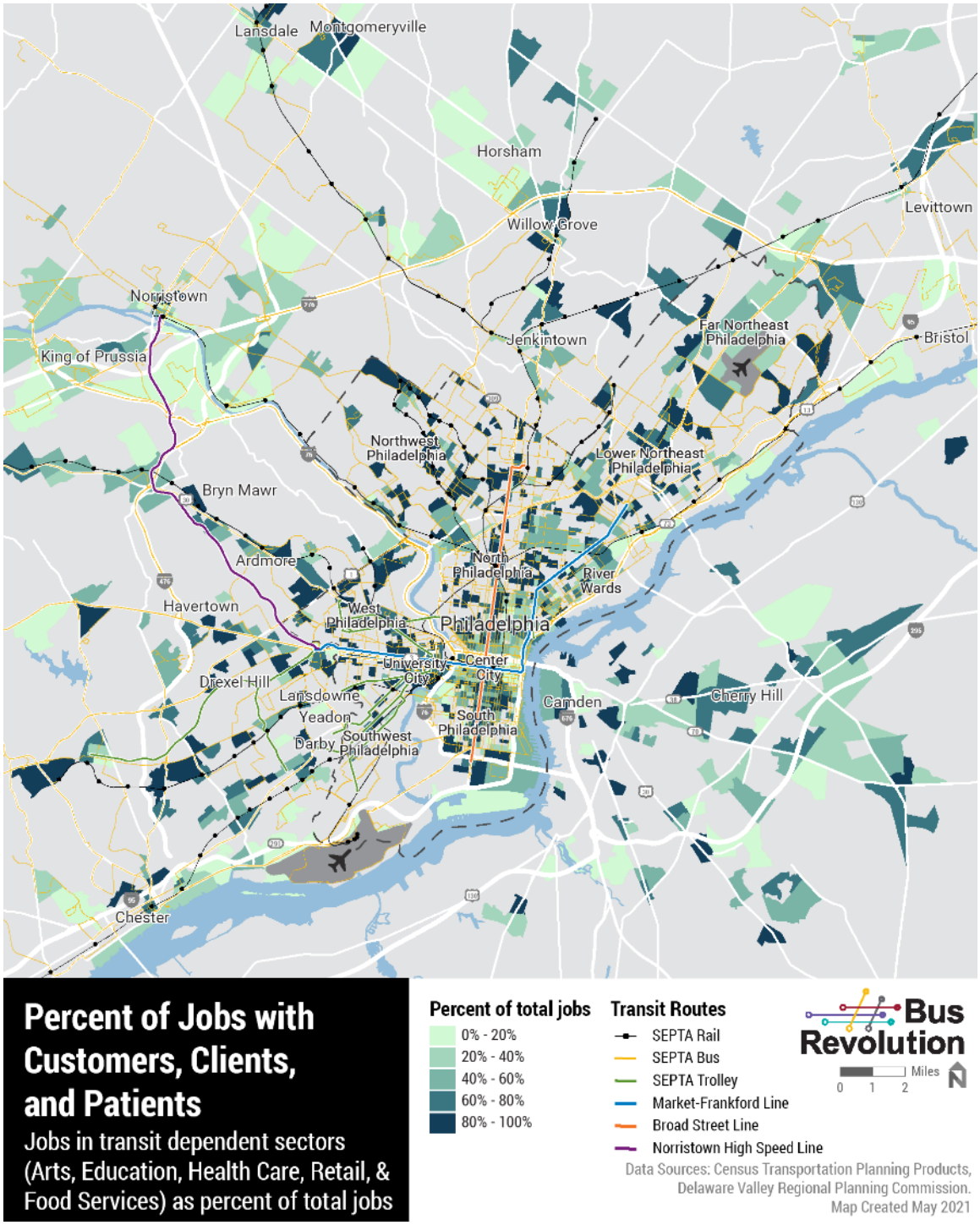
Jobs serving customers, clients, patients, and students are still most likely to be done in person. These employees will continue to have steady transit demand through and after the Pandemic.

[1] SEPTA's most recent travel survey

**Figure 3-2 Percent of Jobs with Customers, Clients, Patients, and Students by Neighborhood/Community**

| | Percent of Jobs with Customers, Clients, Patients and Students |
|---|---|
| **Philadelphia County** | |
| Center City | 35% |
| Far Northeast Philadelphia | 42% |
| Lower Northeast Philadelphia | 55% |
| North Philadelphia | 64% |
| Northwest Philadelphia | 50% |
| River Wards | 37% |
| South Philadelphia | 40% |
| Southwest Philadelphia | 18% |
| University City | 88% |
| West Philadelphia | 67% |
| **Bucks County** | |
| Croydon | 0% |
| Levittown | 8% |
| **Chester County** | |
| Coatesville | 0% |
| Phoenixville | 35% |
| West Chester | 32% |
| **Montgomery County** | |
| Ardmore | 50% |
| Horsham | 11% |
| King of Prussia | 16% |
| Lansdale | 36% |
| Montgomeryville | 27% |
| Norristown | 23% |
| Pottstown | 26% |
| Willow Grove | 55% |
| **Delaware County** | |
| Broomall | 6% |
| Chester | 44% |
| Darby | 67% |
| Drexel Hill | 28% |
| Lansdowne | 38% |
| Yeadon | 2% |

**Figure 3-3 Percent of Jobs with Customers, Clients, and Patients**



# ADJUSTED EMPLOYMENT DENSITY

Similar to socioeconomic factors, different types of jobs have different levels of demand associated with them. Because industries with customers, clients, patients, and students create more demand, employment demand was adjusted by the following factors. These factors were created by comparing 2019 SEPTA bus ridership data associated with employment density to the two different industry types.

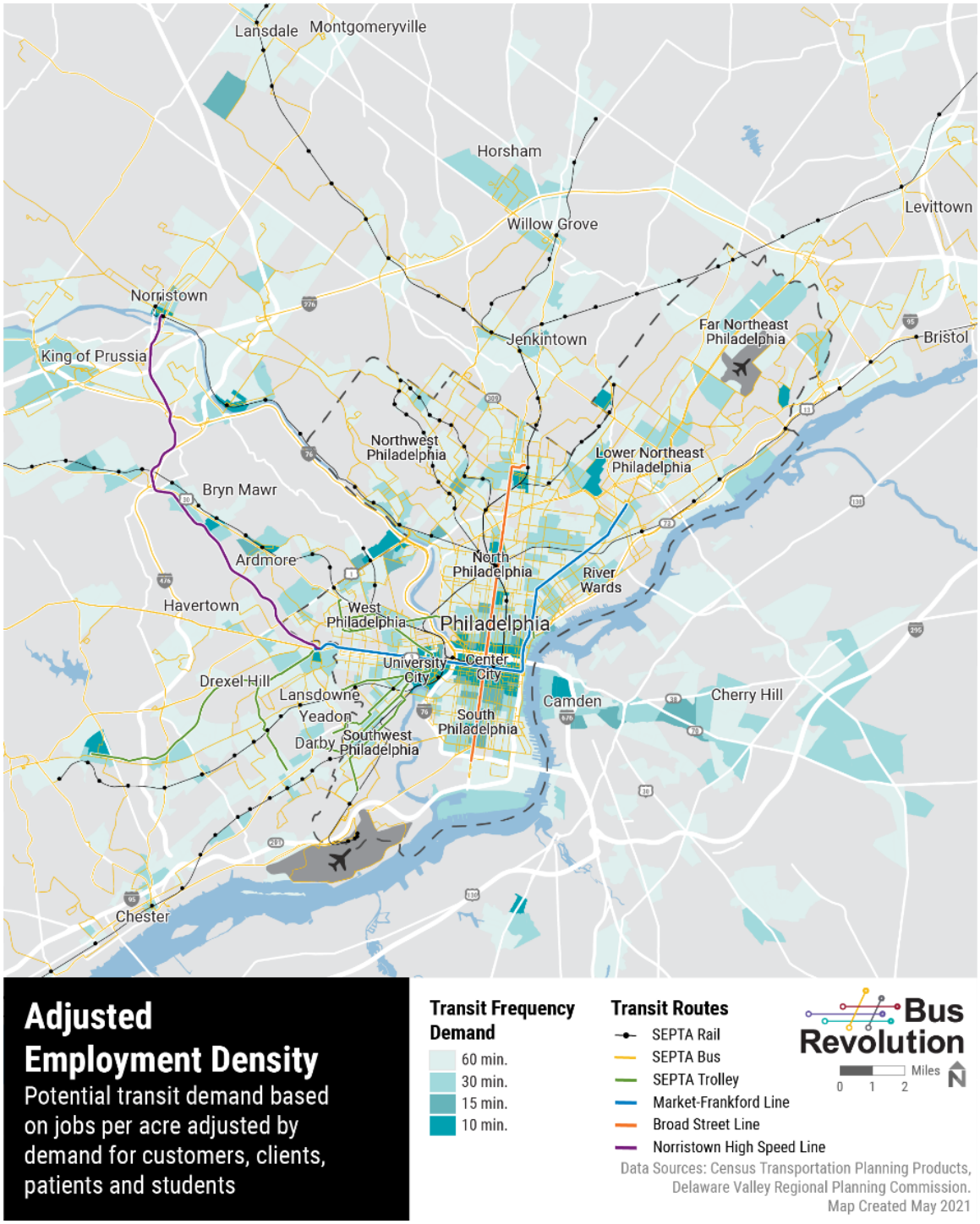
**Figure 3-4 Transit Demand Adjusted by Job Type**

| Job Type | Demand Compared to Average of All Jobs *(Average = 1)* |
|---|---|
| Jobs with customers, clients, patients, and students | 1.3 |
| Other Jobs | 0.9 |

The largest regional job centers, including both neighborhoods/areas and specific job sites when taking into account industry types with high or moderate demand for transit are:

- Center City
- University City
- South Philadelphia
- King of Prussia
- Temple University
- Temple University Hospital Area
- Lower Northeast Philadelphia
- Einstein Medical Center
- City Avenue/Bala Cynwyd Shopping Center

**Figure 3-5 Adjusted Employment Density**



# COMPOSITE TRANSIT DEMAND

Population density, socioeconomic factors, and employment density each provide an indicator of potential transit demand, but when the three are combined and considered together, the demand in many areas will be significantly higher than when looking at each factor alone. This also captures areas with a mix of uses (residential, job centers, commercial areas) that can generate particularly high transit ridership.

When these factors of demand are considered together, the underlying demand for transit is very high in nearly all of the urban core. Most of the City of Philadelphia (75% by land area when excluding areas with no population) has underlying demand that can support frequent service (every 15 minutes or less). **Almost 80% of residents in Philadelphia live in an area that can support frequent transit, and 73% of jobs are in an area that can support frequent transit. Of those jobs, over half (53%) are outside Center City.**

In the study area, 42% of residents and 39% of jobs are in places that can support frequent, all-day transit. These account for only 10% of the total land area.

***The City of Philadelphia has high transit demand, and can support frequencies as often as 5, 10, or 15 minutes throughout the entire day. The City also has a high proportion of transit critical populations, dense housing and job centers, and activity centers making it one of the most transit-supportive areas in the country.***

Areas that have demand for 5-minute service all-day include:

- Center City
- University City
- Parts of South Philadelphia

Areas that have demand for 10-minute service all-day include:

- Most of South Philadelphia
- West Philadelphia
- Southwest Philadelphia
- Upper Darby
- North Philadelphia
- Parts of Lower Northeast Philadelphia
- Downtown Norristown

Areas that have demand for 15-minute service all-day include:

- Lower Northeast Philadelphia
- The River Wards
- Northwest Philadelphia
- Parts of Chester
- Media

Outside these areas there may be demand to support 30- or 60-minute service, but some areas lack the demand to support even that. While areas that can support 30- and 60-minute service can still support fixed route transit, they will be much more dominated by auto-oriented travel and land use. The majority of transit demand in the region is concentrated in the City of Philadelphia and directly outside its borders.

**Figure 3-6 Composite Transit Demand by Neighborhood/Community**

| Community | Composite Density *(Adjusted Residents and Adjusted Jobs per Acre)* | Transit Demand |
|---|---|---|
| **Philadelphia County** | | |
| Center City | 263 | **Extremely High** |
| Far Northeast Philadelphia | 24 | Moderate |
| Lower Northeast Philadelphia | 47 | **Very High** |
| North Philadelphia | 62 | **Very High** |
| Northwest Philadelphia | 36 | **High** |
| River Wards | 52 | **Very High** |
| South Philadelphia | 75 | **Very High** |
| Southwest Philadelphia | 57 | **Very High** |
| University City | 96 | **Extremely High** |
| West Philadelphia | 64 | **Very High** |
| **Bucks County** | | |
| Croydon | 10 | Low |
| Levittown | 11 | Low |
| Elsewhere in the County | 8 | Low |
| **Chester County** | | |
| Coatesville | 20 | Moderate |
| West Chester | 37 | **High** |
| Elsewhere in the County | 5 | Very Low |
| **Montgomery County** | | |
| Ardmore | 29 | Moderate |
| Horsham | 12 | Low |
| King of Prussia | 13 | Low |
| Landsdale | 18 | Moderate |
| Montgomeryville | 8 | Low |
| Norristown | 40 | **High** |
| Willow Grove | 18 | Moderate |
| Elsewhere in the County | 11 | Low |
| **Delaware County** | | |
| Broomall | 10 | Low |
| Chester | 26 | Moderate |
| Darby | 40 | **High** |
| Drexel Hill | 23 | Moderate |
| Lansdowne | 27 | Moderate |
| Yeadon | 19 | Moderate |
| Elsewhere in the County | 19 | Moderate |

Note: Composite-based transit demand in terms of frequencies.

Extremely high: Density can support service every 5 minutes or less.
Very high: Density can support service every 6-10 minutes.
High: Density can support service every 11-15 minutes.
Moderate: Density can support service every 16-30 minutes.
Low: Density can support service every 31-60 minutes.
Very Low: Density can support service less than every 60 minutes.

**Figure 3-7 Composite Transit Demand, Greater Philadelphia**

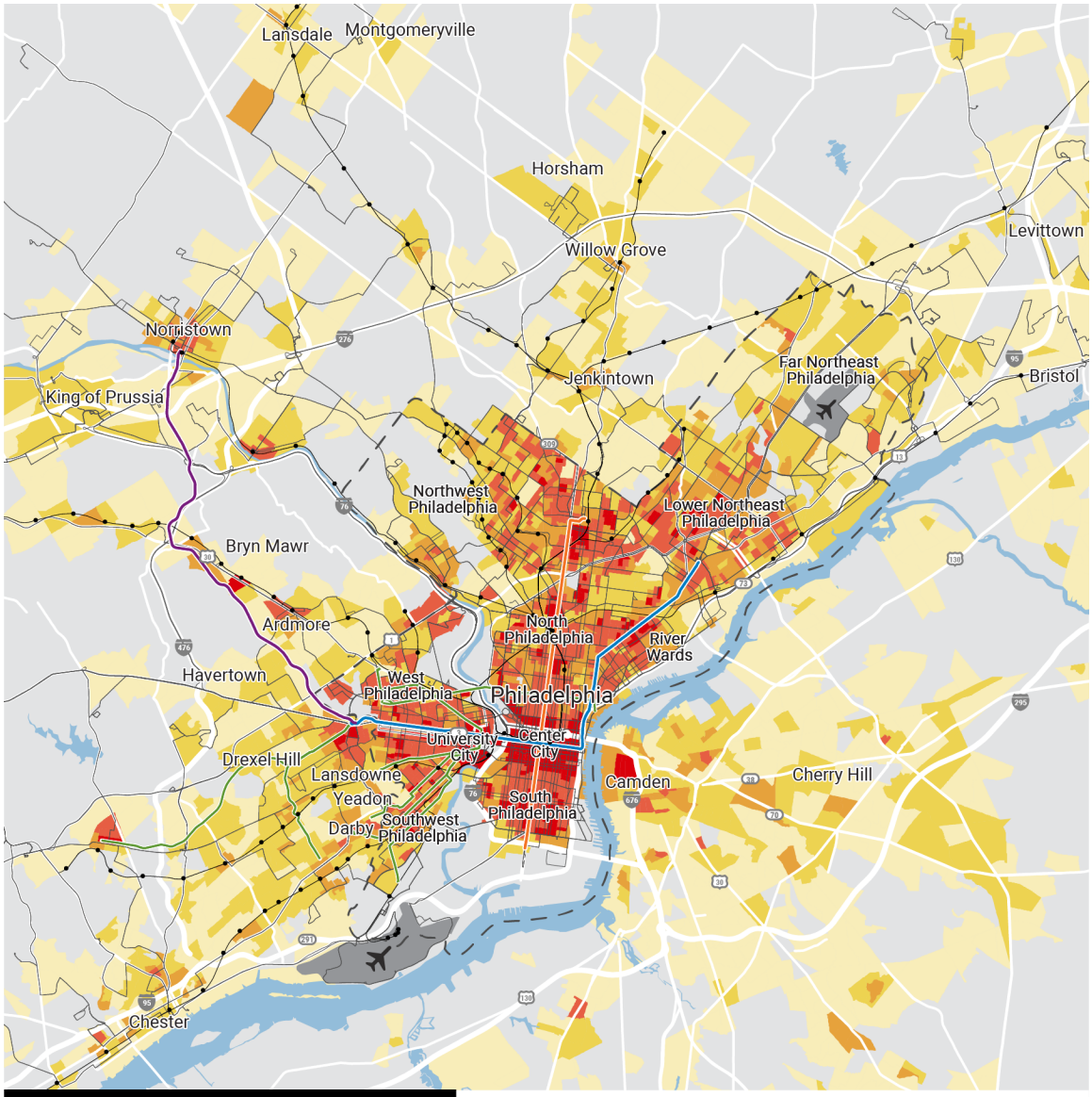
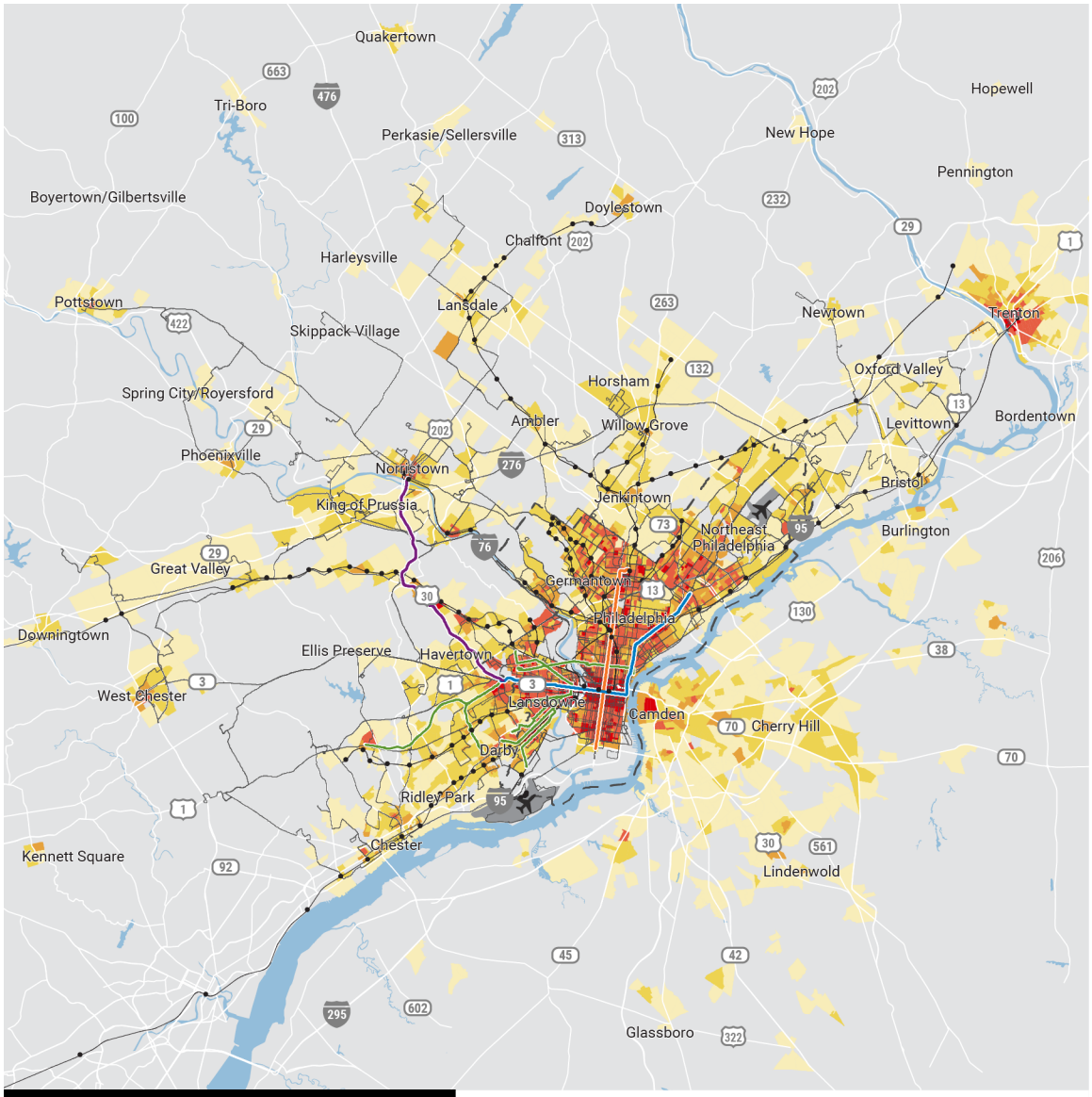


**Figure 3-8 Composite Transit Demand, Southeast Pennsylvania**



# LAND USE MIX

While density of jobs or residents are excellent indicators of transit demand, a mix of land use in the same areas can produce even more demand than either alone. Areas where individuals are working, living, and traveling to for a variety of reasons like shopping, appointments, or recreation indicate steady activity levels throughout the day and evening and on weekends, whereas segregated employment/activity and resident density leads to stricter windows of high demand for travel between areas.

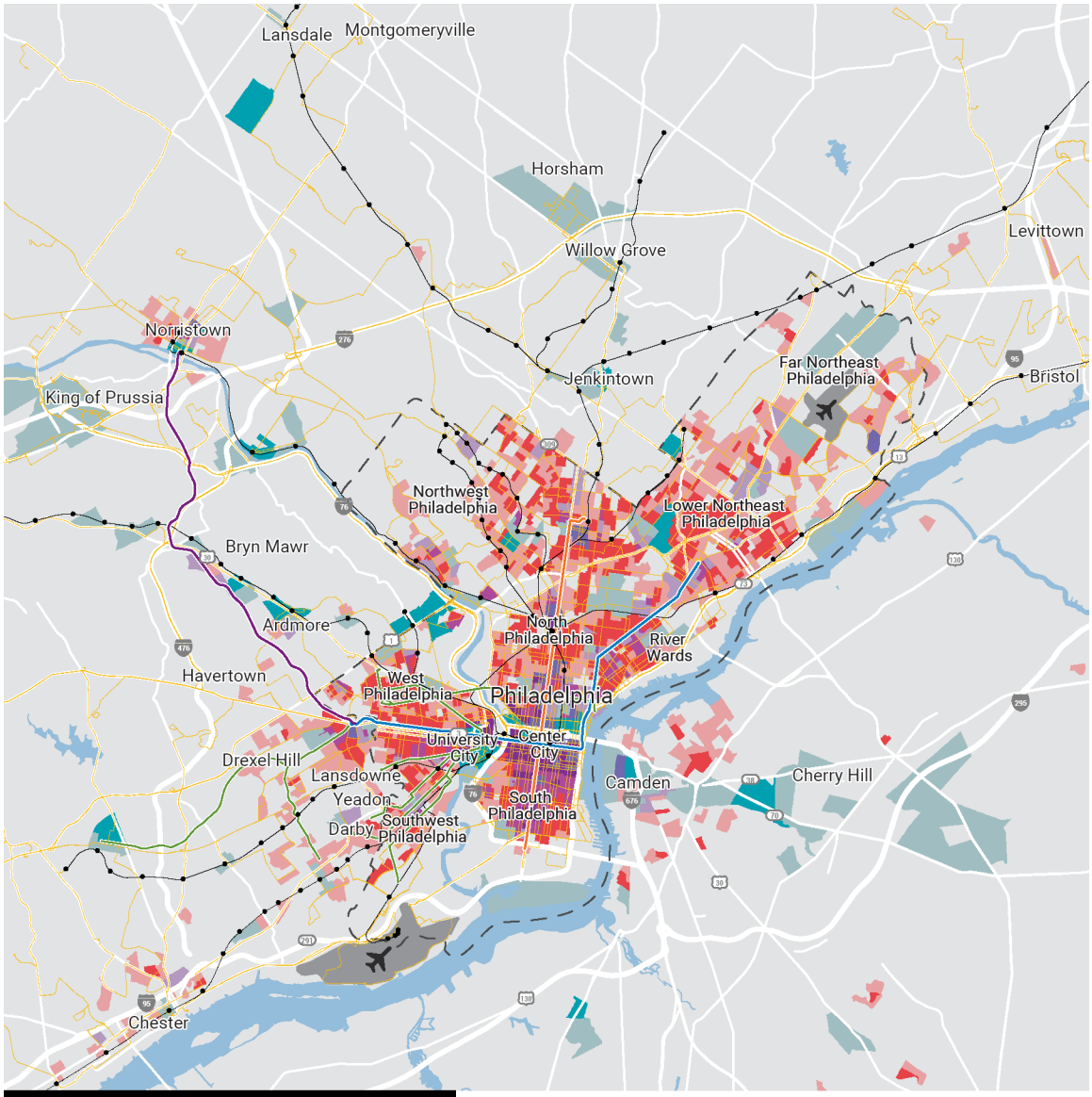
Places with a combination of high population and employment density (shown in purple in Figure 3-9) include:

- Center City
- South Philadelphia
- North Philadelphia
- University City

Only a handful of areas outside the City of Philadelphia have both high population and employment densities and most of these cases appear as small pockets, in places like Norristown, Chester, Upper Darby,  and near Bryn Mawr and Ardmore,

Other areas, both in Philadelphia and outside the city, have areas with high levels of density, but these areas are more likely have primarily residential density (shown in red on the map) or primarily employment density (shown in green on the map).

**Figure 3-9 Land Use Mix**



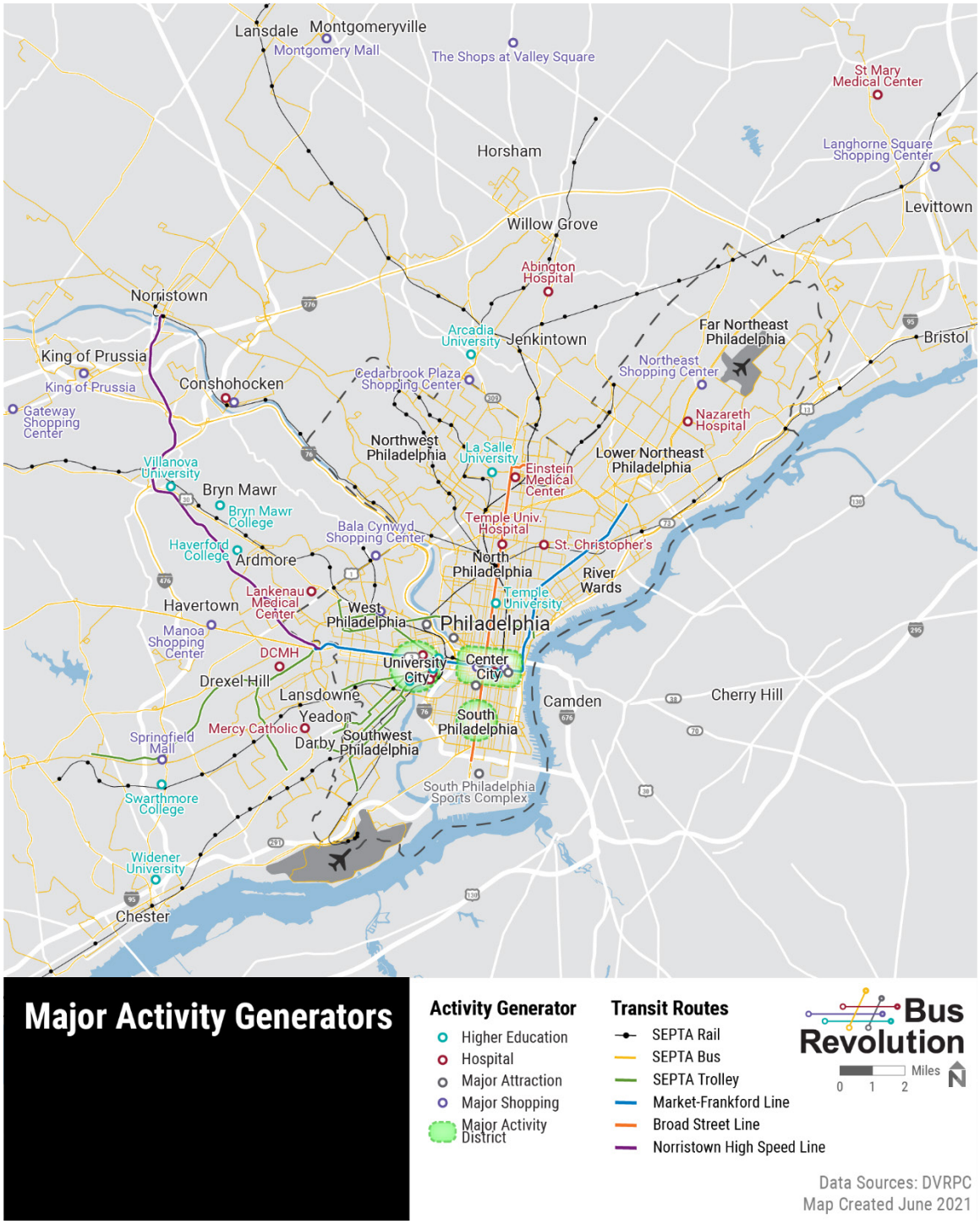
# MAJOR ACTIVITY CENTERS

There are many “activity centers” (or “activity generators”) in Greater Philadelphia that attract very high levels of travel. These include employment centers, universities, major hospitals, major shopping centers, and other significant destinations.

- Center City has traditionally been the employment and commercial heart of the Greater Philadelphia Region, and the radial pattern of existing Regional Rail, Market-Frankford Line, Broad Street Line, and much of the bus system reflect this. Center City contains 45% of Philadelphia’s jobs.
- University City is the home of the University of Pennsylvania and the associated large medical district connected to the university.
- South Philadelphia is a thriving area home to a diverse array of neighborhoods and notable destinations.
- Temple University Hospital and Einstein Medical Center are notable attractors in North Philadelphia.
- A collection of colleges and universities along State Route 30 in Ardmore and Bryn Mawr are major attractors.
- Many of the major demand generators in the suburbs are large shopping centers and retail sites including:
  - City Avenue
  - King of Prussia
  - Gateway Shopping Center near King of Prussia in Wayne

Most of the major activity centers within the City of Philadelphia are well served by transit because there is a mix of land uses that are conducive to high levels of transit use and supported with pedestrian infrastructure. However, activity centers in the suburbs of Greater Northeast Philadelphia are generally less dense and less transit accessible. This is because serving individual locations that are otherwise in low-density areas is much more challenging than in areas with continuous levels of higher density and mixed land uses.

**Figure 3-10 Major Activity Generators**



# TRANSIT ACCESS TO JOBS

***Transit access is generally highest near the Market-Frankford Line, the Broad Street Line, and frequent buses in the core of Philadelphia.***

Improving and expanding access to jobs and services can enhance economic opportunities and increase quality of life for people. The number of jobs that most people can access within 45 minutes is highest for those who live along the Broad Street and Market Frankfort Lines and in areas served by frequent bus routes. This is due to a combination of factors. First, they are relatively close to places with the highest numbers of jobs, such as Center City and University City. Second, many of these residents are served by SEPTA's fastest and most frequent services (since frequency reduces travel times by reducing wait times).

The most effective way to make more jobs accessible to the region's residents will be to make service faster. The second most effective way will be to make service more frequent for more hours of the day.

## Job Accessibility During AM Peak

Residents who have the greatest access to jobs are those who live in:

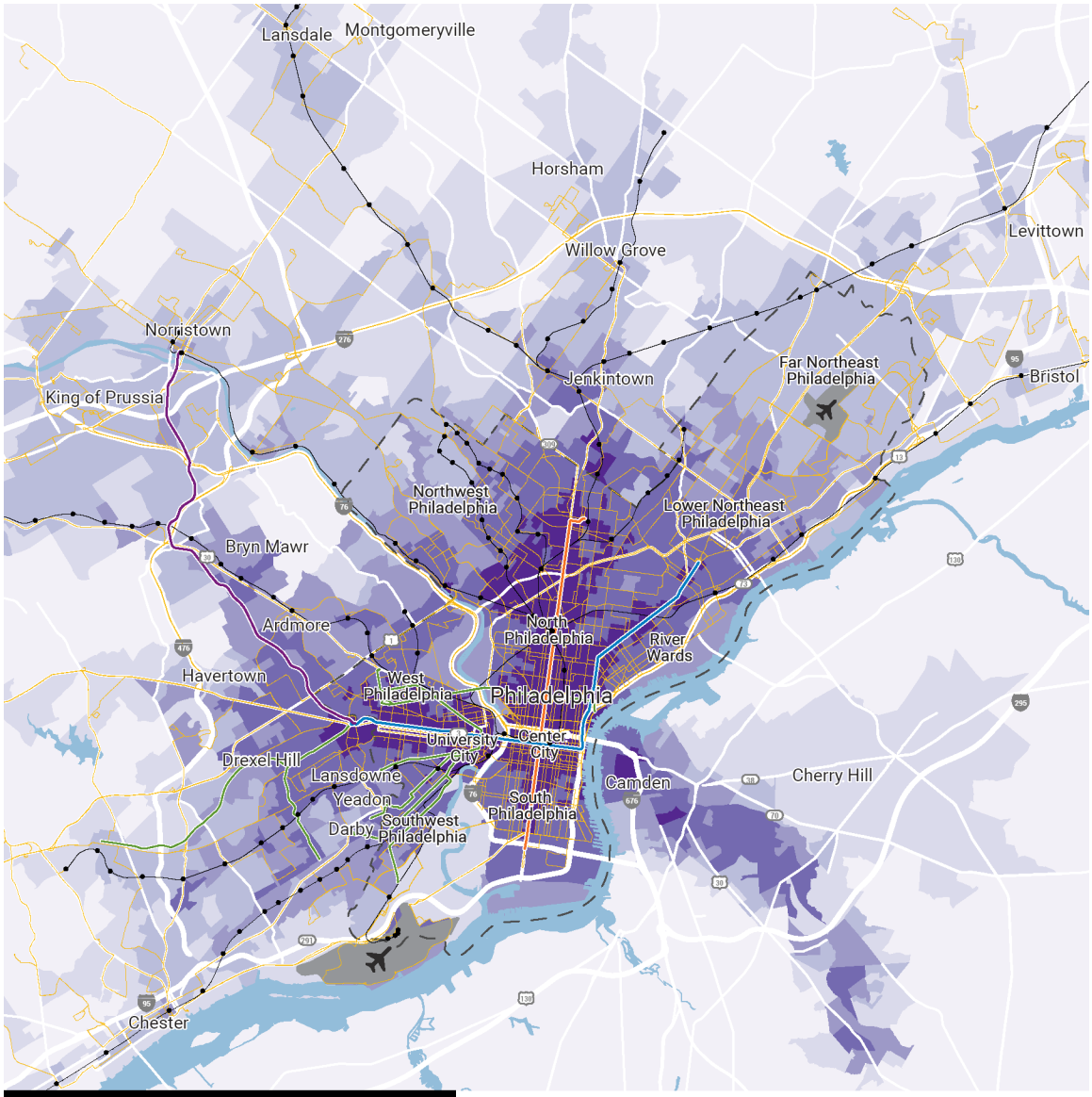
- Areas along the Market-Frankford Line
- Areas along the Broad Street Line
- Center City
- University City
- North Philadelphia

Residents who live in the following areas also have high access to jobs:

- South Philadelphia
- West Philadelphia
- Southwest Philadelphia
- River Wards
- Lower Northeast Philadelphia
- Parts of Northwest Philadelphia
- Drexel Hill/Lansdowne/Upper Darby Area
- Along the Paoli Thorndale line to Bryn Mawr
- North of Philadelphia in and around Jenkintown

Outside these areas the number of jobs that people can access via transit decreases quickly.

**Figure 3-11 Job Accessibility During AM Peak**



## Job Accessibility During Midday

Most bus routes operate less frequently during the midday than in the peaks. Consequently, access to jobs within 45 minutes is lower during the midday.

Center City, University City, South Philadelphia, and the River Wards, which have high transit access during peak periods, maintain a high level of access during midday, losing access to 8% or fewer jobs compared to the AM peak. Southwest Philadelphia, West Philadelphia, and North Philadelphia, which have high proportions of black residents, have on average access to 8-10% fewer jobs at midday than AM peak. Northwest Philadelphia and Northeast Philadelphia, which have the lowest levels of access in the city in the AM peak, lose access to the most jobs (15-16%) during midday.

Most areas outside the City of Philadelphia, however, have less access to jobs in general, and even fewer during midday, largely because of the difference between peak and midday service on the Regional Rail. Many areas lose access to approximately 20% of jobs or more during midday. For example, Chester and Darby, two transit-dependent communities, lose access to 21-22% of jobs at midday.

The exceptions to this are Horsham, King of Prussia, Willow Grove, Lansdowne, and Yeadon, which lose access to less than 10% of jobs during midday.

**Figure 3-12 Difference Between AM Peak and Midday Job Access by Neighborhood/Community (Job Access includes jobs within 45 minutes travel time)**

| | Average Number of Jobs Accessible During AM Peak | Average Number of Jobs Accessible During Midday | Difference Between AM Peak and Midday Job Access |
|---|---|---|---|
| **Philadelphia County** | | | |
| Center City | 855,838 | 812,599 | -5% |
| Far Northeast Philadelphia | 169,101 | 142,129 | -16% |
| Lower Northeast Philadelphia | 469,287 | 393,848 | -16% |
| North Philadelphia | 703,133 | 634,532 | -10% |
| Northwest Philadelphia | 501,109 | 426,916 | -15% |
| River Wards | 624,405 | 589,547 | -6% |
| South Philadelphia | 668,888 | 620,731 | -7% |
| Southwest Philadelphia | 579,568 | 530,779 | -8% |
| University City | 795,891 | 745,952 | -6% |
| West Philadelphia | 699,632 | 630,279 | -10% |
| **Bucks County** | | | |
| Croydon | 141,503 | 62,719 | -56% |
| Levittown | 45,572 | 39,184 | -14% |
| **Chester County** | | | |
| Coatesville | 12,548 | 12,548 | 0% |
| West Chester | 93,198 | 68,942 | -26% |
| **Montgomery County** | | | |
| Ardmore | 483,363 | 386,323 | -20% |
| Horsham | 75,815 | 68,957 | -9% |
| King of Prussia | 113,642 | 110,636 | -3% |
| Landsdale | 103,176 | 78,118 | -24% |
| Montgomeryville | 50,507 | 39,482 | -22% |
| Norristown | 141,751 | 127,123 | -10% |
| Willow Grove | 132,935 | 124,777 | -6% |
| **Delaware County** | | | |
| Broomall | 170,856 | 97,004 | -43% |
| Chester | 133,203 | 105,813 | -21% |
| Darby | 483,218 | 379,280 | -22% |
| Drexel Hill | 508,844 | 447,938 | -12% |
| Lansdowne | 568,576 | 519,203 | -9% |
| Yeadon | 481,419 | 442,443 | -8% |

Source: American Community Survey 2019, 5-year estimates

Note: The analysis reflects all SEPTA modes, including Regional Rail. Some areas, like Croydon are only served by Regional Rail, which has infrequent service overall and very low midday service.

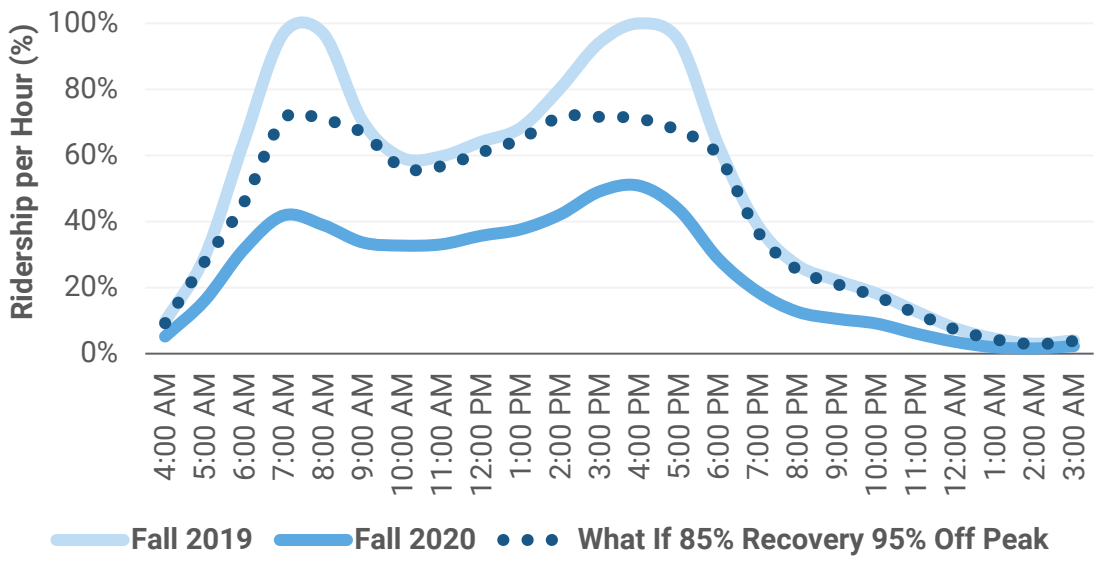
# TRANSIT DEMAND BY TIME OF DAY

Before the pandemic, SEPTA ridership was much higher during traditional morning and evening peak periods. In Fall 2019, hourly ridership reached its maximum between 7 and 8 AM and between 4 and 5 PM. The highest demand aligns with traditional work schedules, or "9 to 5" jobs.

During the pandemic, ridership fell at all hours of the day, but most starkly during peak periods. In Fall 2020, demand still peaked slightly during the morning and evening, but stayed relatively constant from 7 AM to 5 PM. This reflects the travel needs of those who continued to take transit during COVID: essential workers who couldn't do their job from home, and those who take transit for all trip types, not just work.

The SEPTA Ridership Recovery Model assumes that in the coming years, SEPTA bus ridership will reach 85% of its pre-pandemic levels. The scenario in Figure 3-13 explores one possibility of 85% total recovery, with 95% recovery during off-peak periods[2]. This is one possible scenario because some workers who used to commute during peak periods will continue to work from home permanently and others who worked from home during the pandemic will have more flexibility to spend less than a full workday in the office, shifting commuting trips to off-peak. This scenario reveals a pattern that is a combination of Fall 2019 and Fall 2020 ridership: total ridership approaching pre-pandemic levels, while demand is slightly peaked but stays relatively steady throughout the day.

**Figure 3-13 Ridership per Hour**




[2] It is also possible that the AM peak may recover more ridership because of Philadelphia public school trips.

***Focusing on providing all-day, frequent, and reliable service will be one of the best ways SEPTA can work to attract new riders and win back riders who left the system. The following section focuses on all-day travel markets.***

## Workers Who Travel During Nontraditional Commuting Hours

Approximately 64% of workers in SEPTA's service area travel to work in the AM peak[3], and for that reason, those are the times that SEPTA provides its most frequent service. However, 36% of workers travel at other times when service is less frequent. For purposes of this analysis "traditional" commute times refer to travel during the morning (roughly 6 AM and 9 AM) and evening (4 pm to 6 PM). These are often called "peak periods" because they tend to have higher volumes of traffic.

Workers who make one or more work trip outside peak periods are more likely to have a low income. They are also more likely to have varying shifts that change day-to-day and week-to-week. Based on the 2012-2013 Regional Household Travel Survey, 23% of residents do not leave for work at the same time each day. This jumps to 31% for those without any college degree, who are less likely to have 9-to-5 jobs. In addition, 10% of workers work on Saturdays and 5% work on Sundays. Workers with varying schedules often have variable transit travel times depending on the times and days that they work.

The best way to improve service to these workers is to provide more frequent off-peak service. Areas where workers would benefit the most from more frequent off-peak and weekend service include:

- North Philadelphia
- West Philadelphia
- Northwest Philadelphia
- Greater Northeast Philadelphia
- Norristown

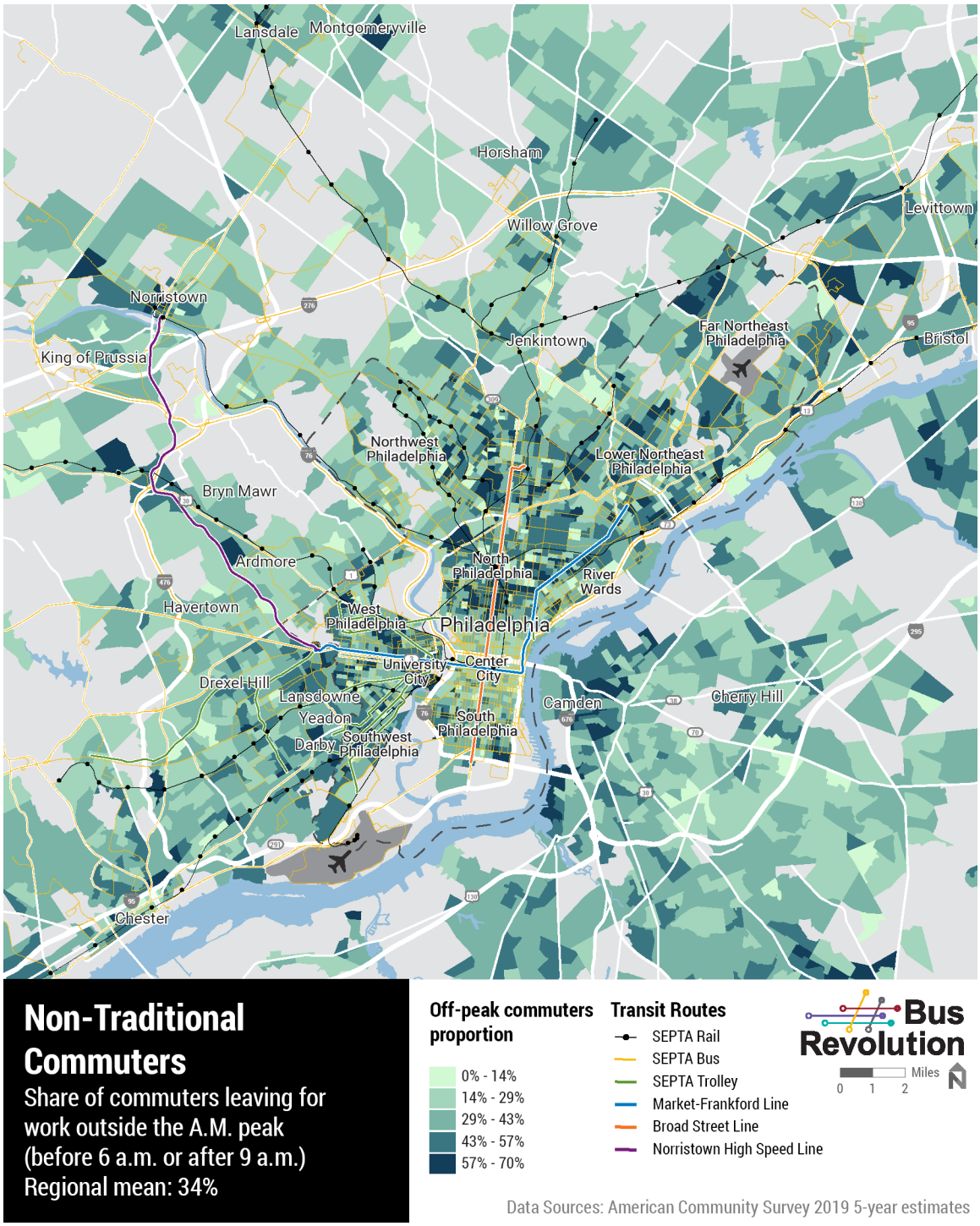
Areas with higher concentrations of wealthy residents tend to have more workers who have traditional commuting schedules.

### Spotlight on COVID

During 2020, rush hour ridership reflecting a "9 to 5" schedule declined more significantly than during any other period. Many areas with high transit propensity also have high proportions of workers who work non-traditional schedules, and bus service should reflect this.

[3] ACS 2019 5-Year Estimates.

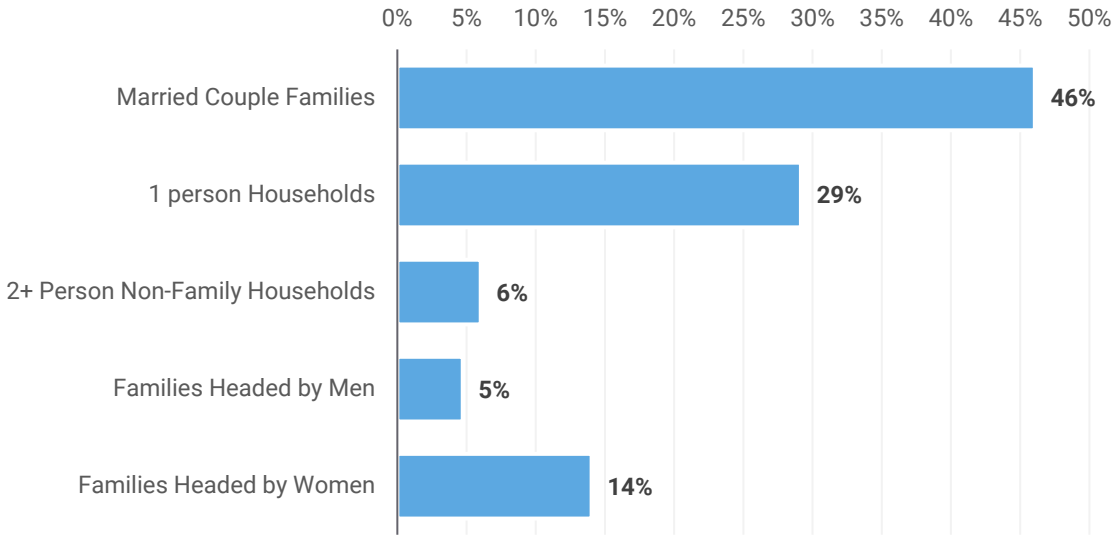
**Figure 3-14 Non-Traditional Commuters: People Making One or More Work Trips Outside Traditional Peak Periods)**



## Gender, Family Types, and Responsibilities

The SEPTA service area is home to a diversity of family types. Close to half of households are married couple families, 29% are one person households, and 19% are single parent households. Of the single parent households, women are the head of the household in nearly three-quarters.

**Figure 3-15 Family and Household Types**




Past research has shown that women and men have different travel needs and patterns, and that this is further influenced by the presence of children and other dependents. Also, women are much more likely to be the primary adult in their household responsible for errands like grocery shopping and transporting children[4]. While transit systems have been designed with a focus on commuting, the Regional Household Travel Survey shows that women are more likely to make non-work-related trips than men. These involve more trips associated with caretaking, errands, and meals. Women are also more likely to chain trips together, meaning they are more likely to drop off a child on the way to work, or stop at the grocery store on the way home. Although transit may be difficult to use for trips women are making, in 2018, 61% of SEPTA riders were women.

These patterns indicate that transit frequency and reliability are particularly important for women and parents with children. If a parent is dropping off a child while on the bus, and another bus doesn't come for 30 minutes, this can increase travel time dramatically, and may make it difficult to keep a job. It also limits the range an individual can travel for a job, further constraining access to opportunities.

[4] https://nhts.ornl.gov/assets/2017_nhts_summary_travel_trends.pdf

## Gender and Employment Sites

While women have a lower labor participation rate than men, a higher share of women have more than one job compared to men. This results in more jobs in the region being held by women, even though fewer women work. In the City of Philadelphia in 2018, 8% more jobs were held by women than men (54% to 46% respectively).

Most employees in the City of Philadelphia work in an area where men and women make up a roughly even proportion of employees (59%). However, a third of all jobs, are in an area that has 60% or more women employees, while this is only true of 8% of job sites that has 60% or more men employees.

Majority women employment sites include:

- University City
- West Philadelphia
- Parts of Center City
- Southwest Philadelphia
- Northwest Philadelphia
- Greater Northeast Philadelphia
- Along the Paoli Thorndale line to Bryn Mawr

Majority men employment sites include:

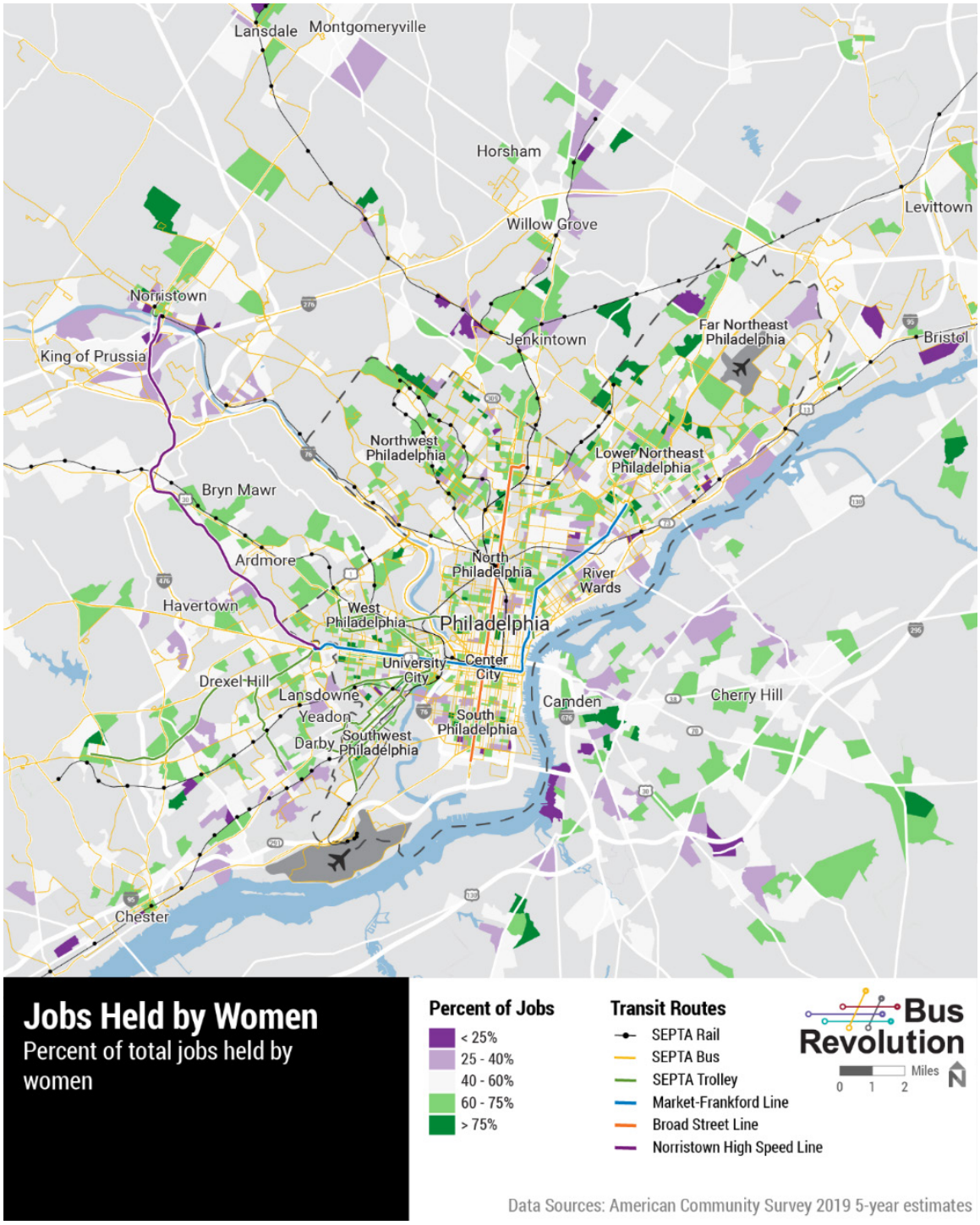
- King of Prussia
- Norristown
- South Philadelphia
- The River Wards

**Figure 3-16 Difference Between Percent of Jobs Held by Women and Men by Neighborhood/Community**

| | Percent of Jobs Held by Women | Percent of Jobs Held by Men | Difference Between Percent of Jobs Held by Women and Men |
|---|---|---|---|
| **Philadelphia County** | | | |
| Center City | 53% | 47% | +6% |
| Far Northeast Philadelphia | 53% | 47% | +5% |
| Lower Northeast Philadelphia | 58% | 42% | +16% |
| North Philadelphia | 59% | 41% | +17% |
| Northwest Philadelphia | 60% | 40% | +20% |
| River Wards | 45% | 55% | -9% |
| South Philadelphia | 42% | 58% | -15% |
| Southwest Philadelphia | 46% | 54% | -8% |
| University City | 62% | 38% | +25% |
| West Philadelphia | 62% | 38% | +24% |
| **Bucks County** | | | |
| Croydon | 34% | 66% | -32% |
| Levittown | 56% | 44% | +12% |
| **Chester County** | | | |
| Coatesville | 53% | 47% | +7% |
| Phoenixville | 59% | 41% | +17% |
| West Chester | 55% | 45% | +9% |
| **Montgomery County** | | | |
| Ardmore | 53% | 47% | 6% |
| Horsham | 47% | 53% | -5% |
| King of Prussia | 42% | 58% | -16% |
| Lansdale | 56% | 44% | +12% |
| Montgomeryville | 51% | 49% | +1% |
| Norristown | 55% | 45% | +9% |
| Pottstown | 54% | 46% | +8% |
| Willow Grove | 51% | 49% | +2% |
| **Delaware County** | | | |
| Broomall | 44% | 56% | -12% |
| Chester | 46% | 54% | -9% |
| Darby | 68% | 32% | +36% |
| Drexel Hill | 55% | 45% | +11% |
| Lansdowne | 62% | 38% | +24% |
| Yeadon | 47% | 53% | -7% |

Source: American Community Survey 2019, 5-year estimates

**Figure 3-17 Jobs Held by Women**



# 4 Travel Flows

For transit to be effective, it must take people from where they are to where they want to go. Examining travel flows is one way to determine where direct or relatively easy connections should be made.

Travel flows reveal the number of trips between two areas. The more trips made between two areas, the higher travel demand there is. This is the focus of Chapter 4.

This chapter contains five sections: All Trips; Transit Trips; Internal Trips on SEPTA; Transit Mode Share; and Trips to and from Center City.

## ALL TRIPS

The map below displays travel flows across the SEPTA service area and includes all types of trips made by all modes, including both transit and automobile trips.[1] Center City has traditionally been the primary business district and employment center in the region, and as a result, the largest numbers of trips are made to and from Center City.

Two flows have over 100,000 total weekday trips between them:

- Center City and South Philadelphia
- Center City and Lower North Philadelphia

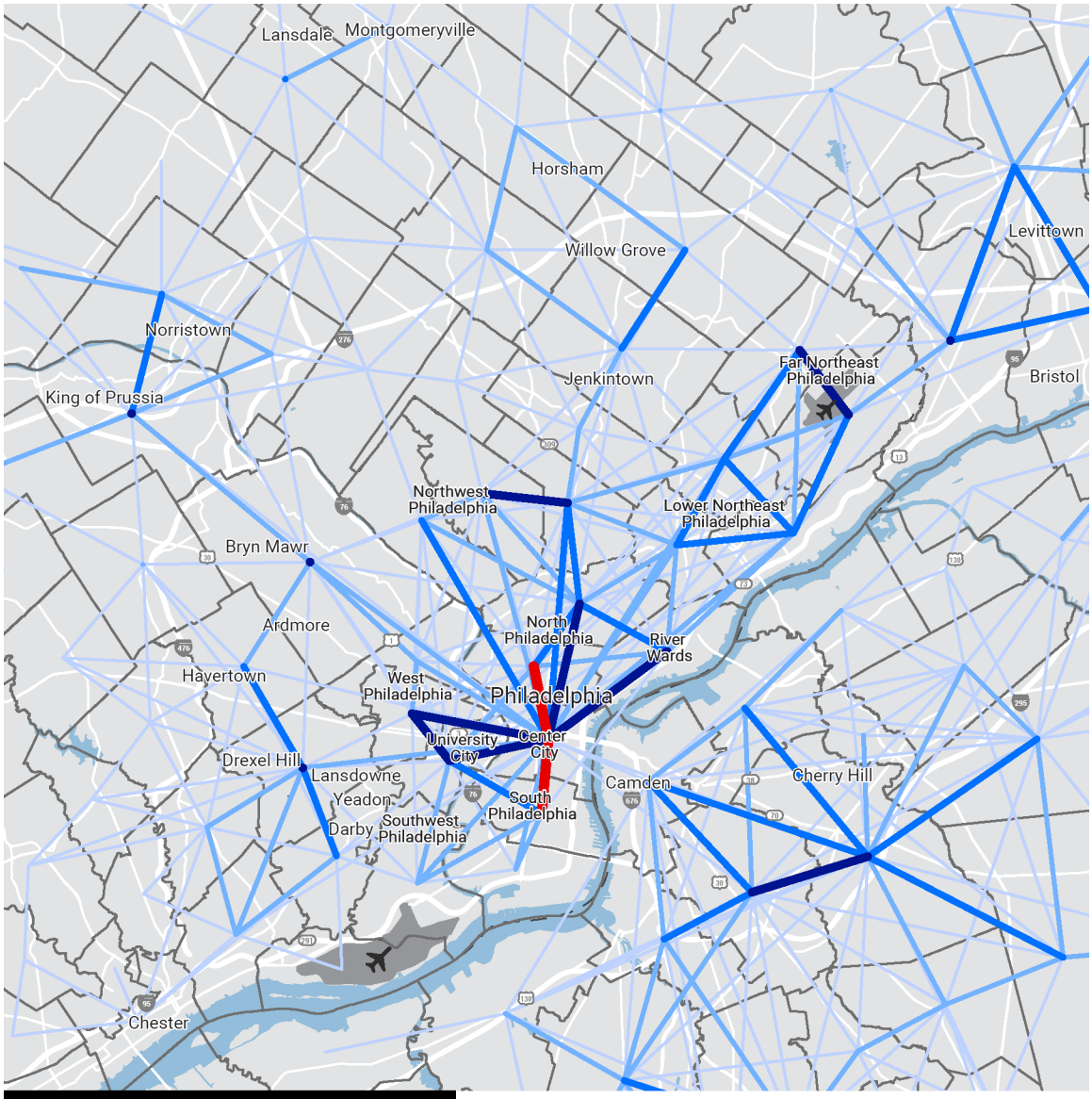
Flows with over 50,000 weekday trips include:

- Center City and University City
- Center City and North Philadelphia
- University City and West Philadelphia
- Northwest Philadelphia and Upper North Philadelphia
- Center City and West Philadelphia
- Upper Northeast Philadelphia east of Roosevelt Boulevard and Upper Northeast Philadelphia west of Roosevelt Boulevard
- Center City and the River Wards

Outside Philadelphia there is large amount of travel between Darby, Drexel Hill, and Havertown, as well as King of Prussia and Norristown.

[1] Travel flows are created from outputs from the DVRPC Regional Travel Demand Model for the year 2017.

**Figure 4-1 Travel Flows – All Modes, 2017**



# TRANSIT TRIPS

Travel flows on SEPTA bus and rail transit (i.e., BSL, MFL and trolley routes) share common characteristics with overall travel flows, but there are key distinctions. The largest transit travel flows are to and from Center City, similar to overall travel flows. SEPTA's transit services also most heavily focused on serving this area. However, unlike trips made on all modes, there are almost no areas outside the City of Philadelphia with large numbers of transit trips between them, both because there is less transit demand and because transit service levels are lower outside the City.[2]

Trip pairs that have more than 10,000 trips per weekday are to and from the following areas:

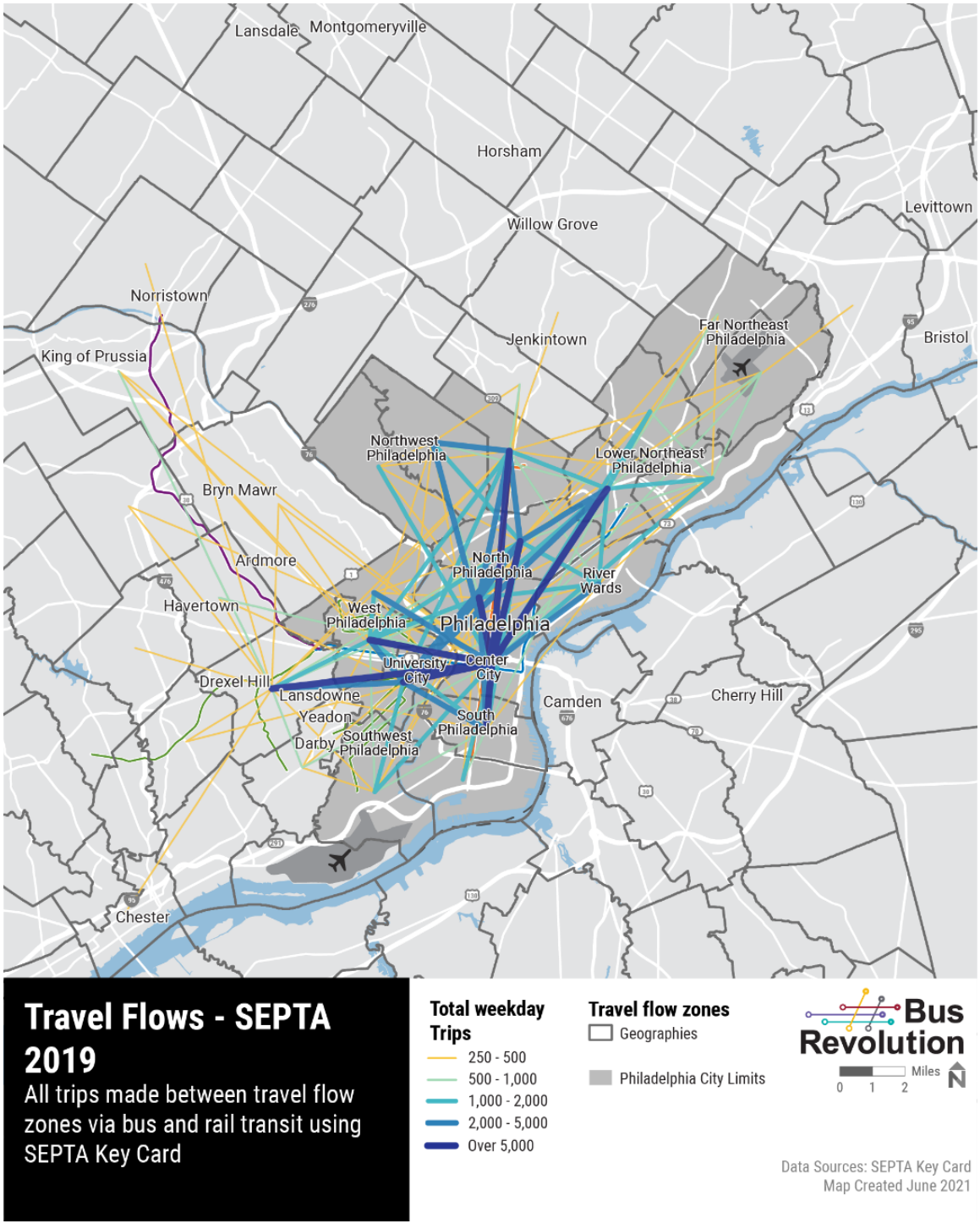
- Center City and University City
- Center City and South Philadelphia
- Center City and Lower North Philadelphia
- Center City and Upper North Philadelphia
- Center City and North Philadelphia

Trips with over 5,000 trips per weekday occur between:

- Center City and West Philadelphia
- Center City and Lower Northeast Philadelphia
- Center City and Drexel Hill/Lansdowne Area

[2] Two suburban origin-destination pairs have more than 500 trips per day: between King of Prussia and Drexel Hill and between Drexel Hill and Yeadon/Darby area. All other suburban origin-destination pairs have fewer than 500 trips per day.

**Figure 4-2 Travel Flows – SEPTA, 2019**

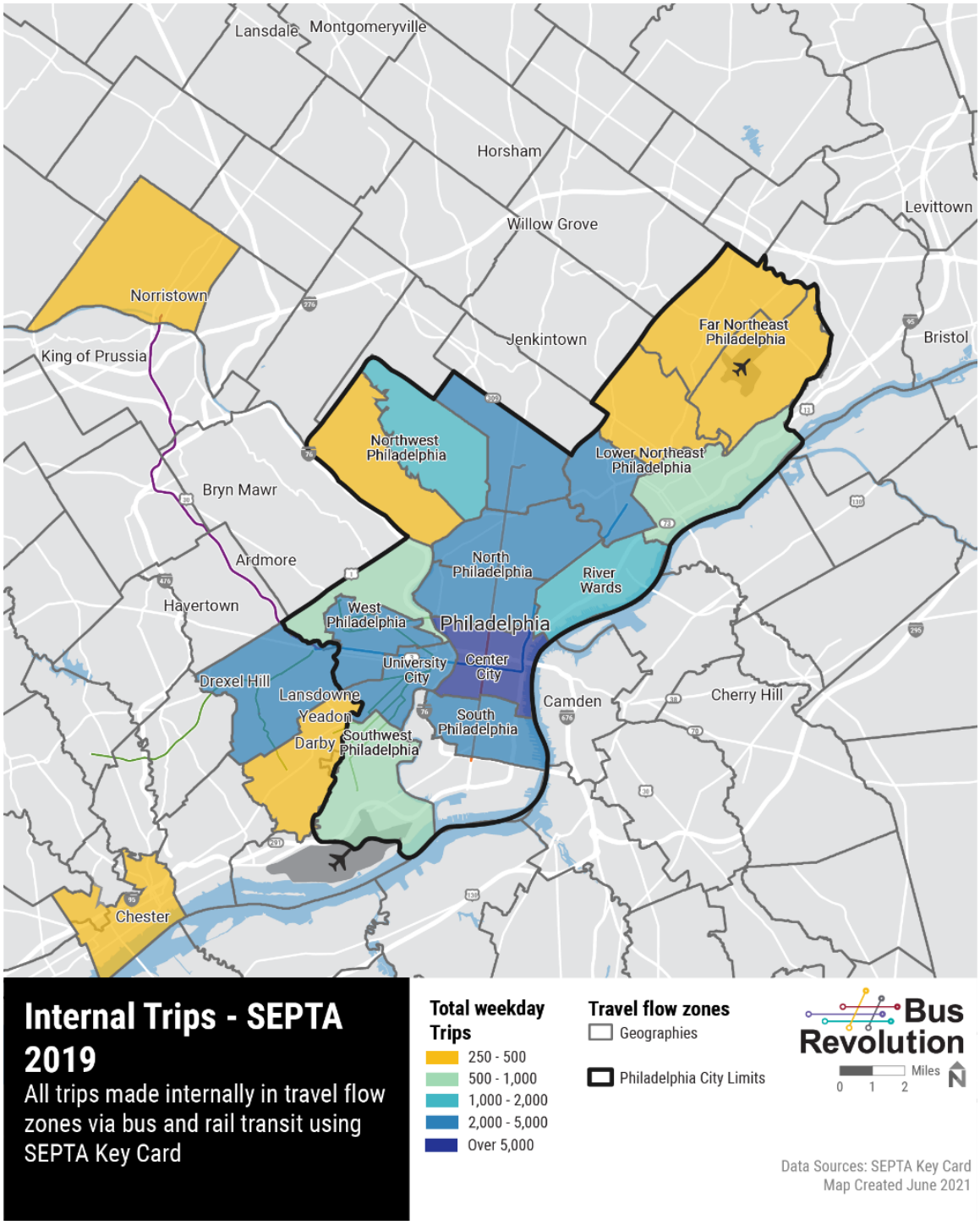


# INTERNAL TRIPS ON SEPTA

Internal transit trips start and end within the same zone. These trips tend to be shorter distance and are more likely to take place where there are high densities of residents and jobs. The largest number of internal trips generally occur in the same areas that have the largest amounts of flows in and out. Areas with large internal flows include:

- Center City
- University City
- North Philadelphia
- South Philadelphia
- West Philadelphia
- Drexel Hill and Lansdowne area
- Lower Northeast Philadelphia

**Figure 4-3 Internal Trips – SEPTA, 2019**



# TRANSIT MODE SHARE

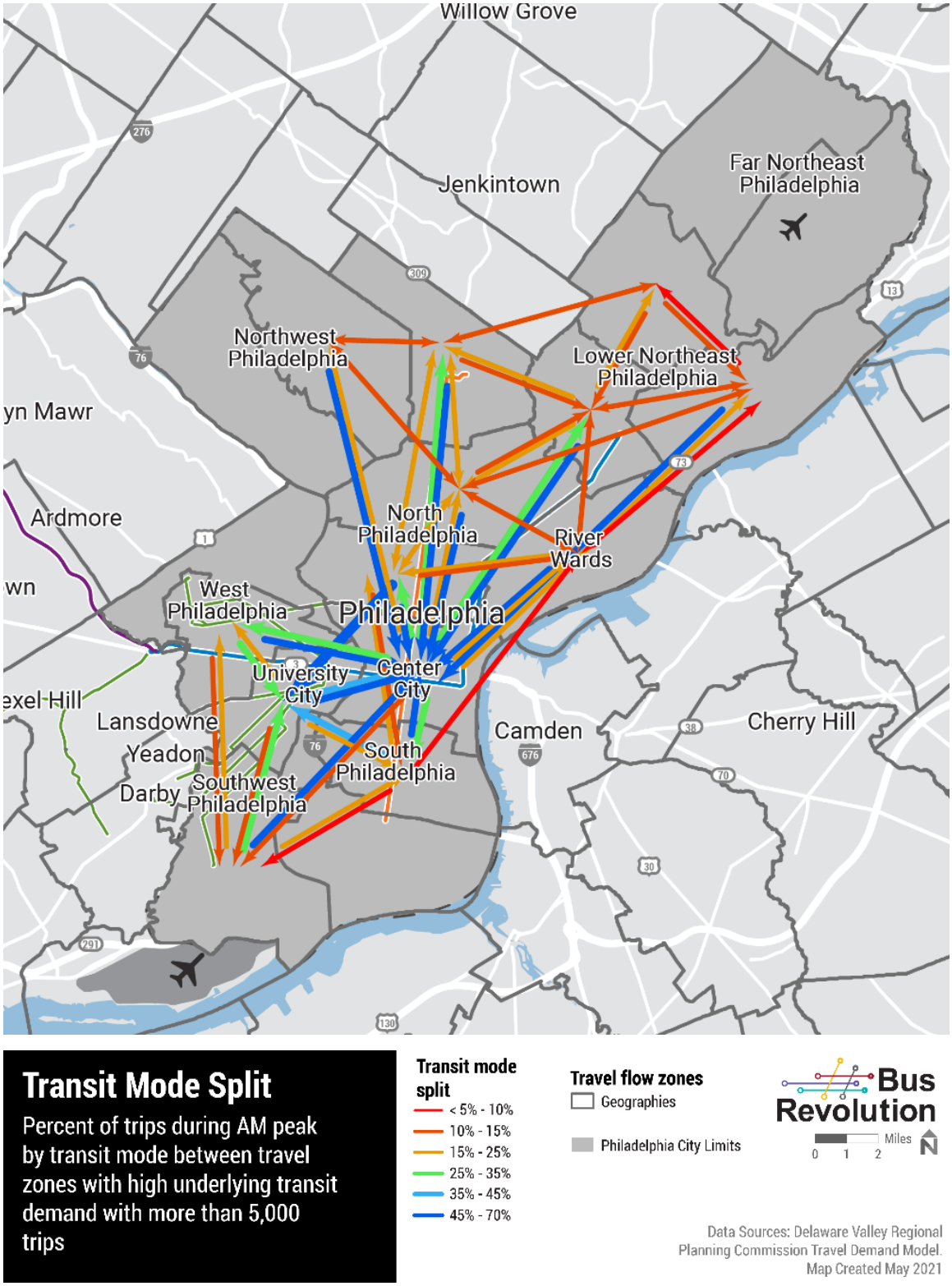
***While transit access and demand overlap well in much of the service area, access isn't always aligned with actual travel patterns or transit use. Areas in North, Northwest, and Northeast Philadelphia with high demand and access have relatively low transit mode shares.***

The composite transit demand analysis revealed that most of the City of Philadelphia has underlying demand for frequent transit throughout the whole day. Travel between these places should have high transit use if quality is high, but where the transit mode split is low, this is an area where transit service should be improved.

Travel flows into Center City have very high transit mode splits, all between 45 and 70%. This is due to the high quality of transit service into Center City during peak periods as well as high parking costs that incentivize taking transit. There are also high transit mode splits into University City (25% - 45%), which has good service and high parking costs.

Flows originating in Center City and ending in other areas all have lower transit mode splits than flows into Center City. The flows that are best served by the Broad Street Line and Market Frankford Line have mode shares up to 45%. This reveals that where demand for transit and transit quality are high, mode shares are also very high. However, in most other areas with high demand but lower transit quality (lower frequencies and indirect routing), transit mode splits are lower. This is especially true for crosstown trips between Northwest Philadelphia, North Philadelphia, the River Wards and Lower Northeast Philadelphia.

**Figure 4-4 Transit Mode Split**



# TRIPS TO AND FROM CENTER CITY

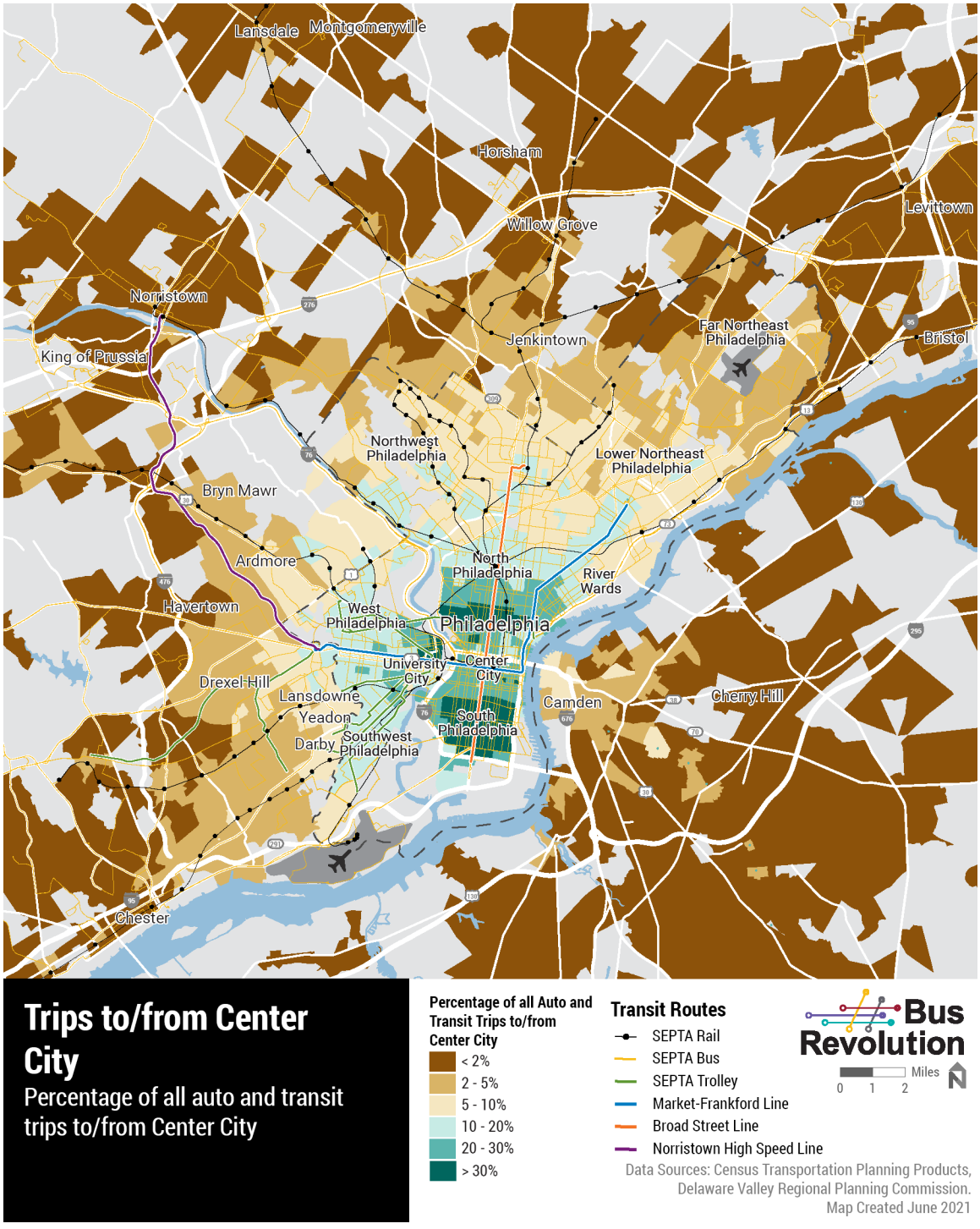
***Many dense parts of Philadelphia are more connected locally than they are to Center City. These places have lower transit use despite high demand.***

Serving traditional Central Business Districts has historically been the main function of transit systems. Most of SEPTA's network is oriented around serving Center City, the region's largest activity center. Over 30% of auto and transit trips in South Philadelphia, North Philadelphia, and University City begin or end in Center City. Internal trips that both start and end in Center City are also high, between 20 and 30%. However, as the distance from Center City increases, the number of people traveling to Center City decreases. Large areas in Northwest Philadelphia, and greater Northeast Philadelphia have fewer than 10% of trips ending or starting in Center City.

Hispanic residents in particular, who live in large concentrations in North Philadelphia east of Broad Street and Lower Northeast Philadelphia, work in Center City at lower rates than other racial/ethnic groups.[3] Hispanic residents are more likely to work within the neighborhoods they live in. The misalignment of the transit system with travel patterns could be why Hispanic residents ride transit at lower rates than other people of color in the region.

[3] LEHD LODES 2018.

**Figure 4-5 All Trips to and from Center City**



# 5 Looking Forward

SEPTA Forward: Bus Revolution is focused on making changes to match existing markets. At the same time, it is important to understand both how the region has changed over the past several years and where changes are expected to occur in the future. This chapter considers recent growth together with forecasted changes in population and employment as well as planned development.

## POPULATION AND POPULATION DENSITY

Over the past decade, the population of Southeast Pennsylvania grew by 5%. Montgomery and Chester County grew the fastest, increasing by 7%. Philadelphia grew by 5%, while Bucks and Delaware counties added fewer residents, increasing residents by 3% (Figure 5-1).

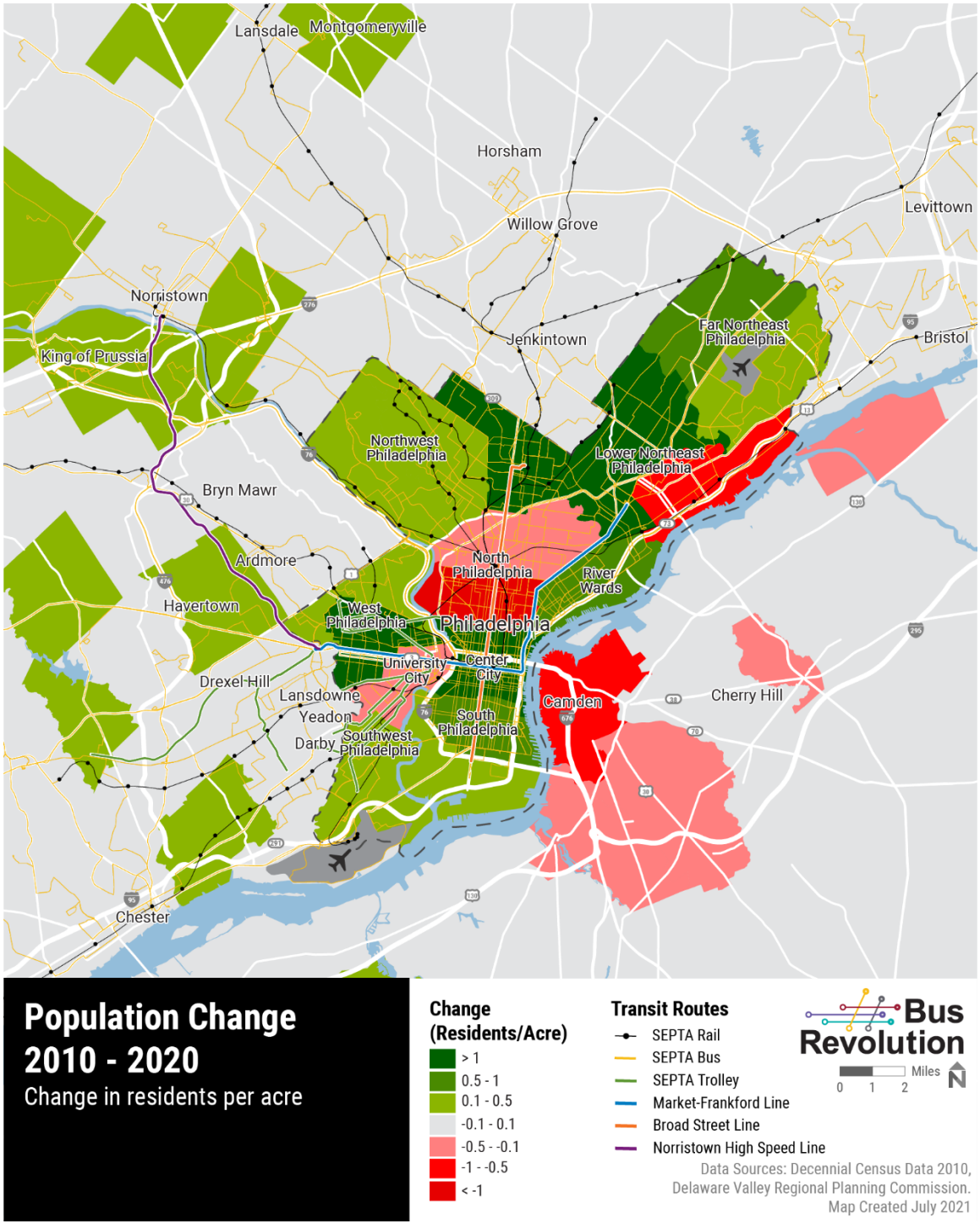
Within the region, changes in population density—which have a greater impact on transit demand than overall population—have been uneven. Population density increased fastest in areas that were already dense, such as Center City, West Philadelphia, and Lower Northeast Philadelphia (Figure 5-2). Other areas, including the Riverwards and South Philadelphia also became denser. In contrast, North Philadelphia became less dense. Outside of Philadelphia, several communities including parts of Montgomery County (King of Prussia, Norristown) and parts of Delaware and Chester counties densified.

**Figure 5-1 SEPTA Service Area: Population Change and Forecasted Growth by County**

| County | 2010 | 2020 | Percent Change 2010 – 2020 | 2030 | Percent Change 2020 – 2030 |
|---|---|---|---|---|---|
| Bucks | 625,249 | 646,538 | 3% | 641,786 | -0.7% |
| Chester | 498,886 | 534,413 | 7% | 586,300 | 9.7% |
| Delaware | 558,979 | 576,830 | 3% | 573,667 | -0.5% |
| Montgomery | 799,874 | 856,553 | 7% | 868,662 | 1.4% |
| Philadelphia | 1,526,006 | 1,603,797 | 5% | 1,650,559 | 2.9% |
| **Region** | **4,008,994** | **4,218,131** | **5%** | **4,320,974** | **2.4%** |

Source: US Census (2010, 2020) Forecasted data DVRPC

**Figure 5-2 Change in Population by Neighborhood, 2010 – 2020**



# EMPLOYMENT AND EMPLOYMENT DENSITY

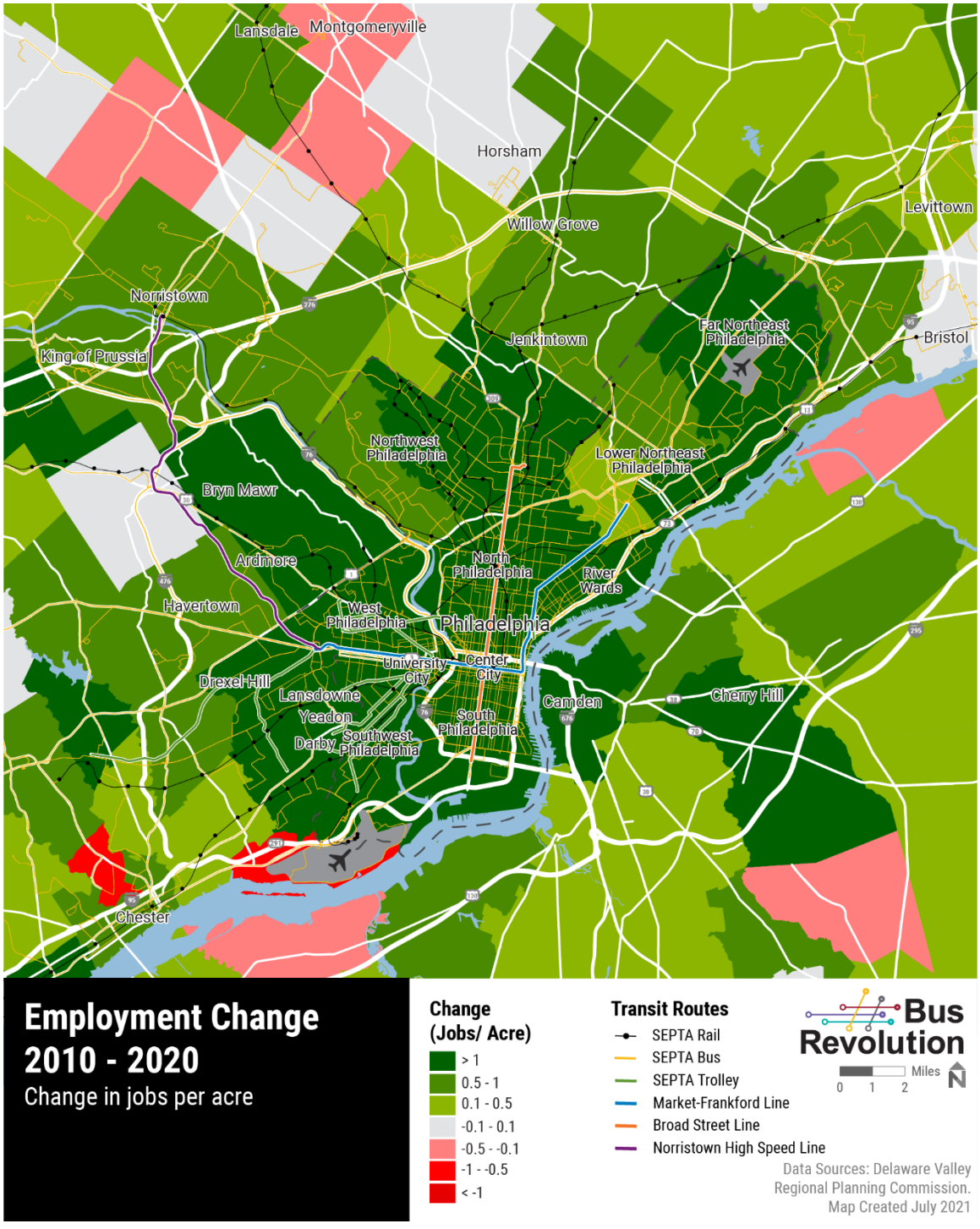
From 2010 to 2020, overall job growth and job density both increased within the SEPTA service area. According to a Brookings Institute report[1] job density increased nationally in U.S. cities, but some cities added many more jobs in their urban cores than others. The Brookings Institute attributes differences in employment density to certain industry sectors, such as arts/entertainment, health care, hospitality, and finance. As a result, cities with growth in these sectors also showed significant increases in job density (e.g., San Francisco, New York, Chicago, and Seattle). According to this analysis, Philadelphia is mid-pack - employment density increased, but not as intensely as some other large U.S. cities.[2]

Employment data from regional models also suggests that employment in Southeast Philadelphia has been growing, but current information does not reflect the COVID pandemic or captured recent changes in the labor market. The forecast data suggests that growth will be spread across the region, with the City of Philadelphia and surrounding counties show an increase in the number of jobs, but only modest increases in employment density. Most of the outlying areas added jobs and employment density at a slower rate, but still showing growth and densification.

[1] Where jobs are concentrating and why it matters to cities and regions (June 2019) Brookings Institute

[2] Ibid.

**Figure 5-3 Change in Employment by Neighborhood, 2010 – 2020**



# FUTURE TRANSIT DEMAND

As discussed, combining population and employment density reveals the areas of SEPTA's service area where there is the greatest demand for transit and where that demand is likely to generate the highest transit ridership. Further adjusting population by socioeconomic factors and adjusting employment by industry type can lead to a more nuanced understanding of underlying demand. Forecast data, however, is not available for demographic characteristics or industry types, so the future year transit demand analysis was not adjusted based for underlying demographic characteristics or employment types.

The analysis shows that transit demand will intensify in areas that already have high demand. Areas with moderate demand also will intensify, especially along key corridors.

Areas expected to have demand for 5-minute service all-day include:

- Center City
- University City
- Most of South Philadelphia
- Parts of North Philadelphia
- The Navy Yard

Areas expected to have demand for 10-minute service all-day include:

- West Philadelphia
- Southwest Philadelphia
- Upper Darby
- Most North Philadelphia
- Parts of Lower Northeast Philadelphia
- Parts of Northwest Philadelphia
- Most of the River Wards

Areas expected to have demand for 15-minute service all-day include:

- Most of Northwest Philadelphia
- Most of Lower Northeast Philadelphia
- Norristown
- King of Prussia
- Media
- Parts of the suburban area, including:
  - Horsham
  - Conshohocken
  - Ardmore to and just west of Bryn Mawr
  - Jenkintown and Willow Grove

**Figure 5-4 Composite Transit Demand, Greater Philadelphia, 2030**

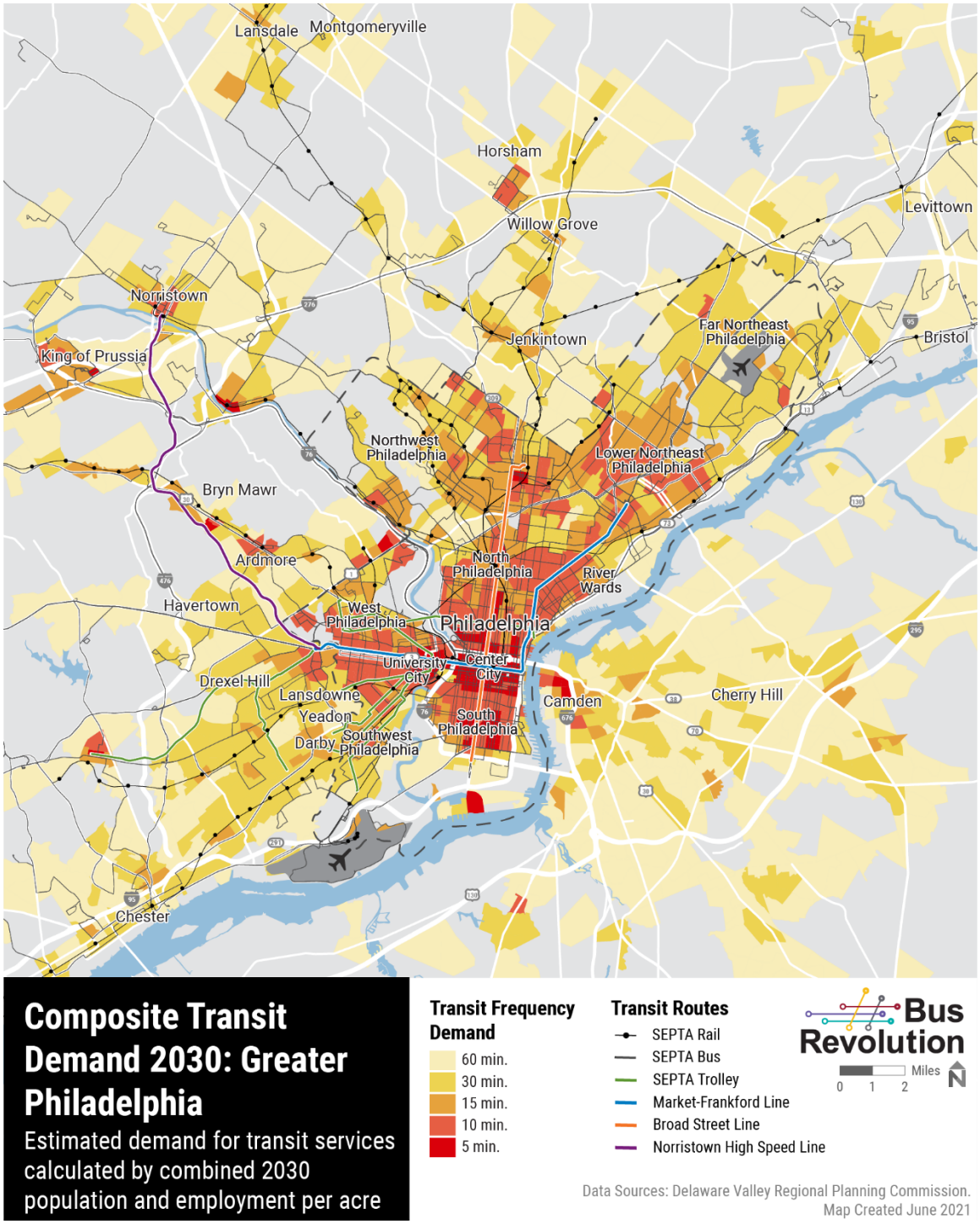
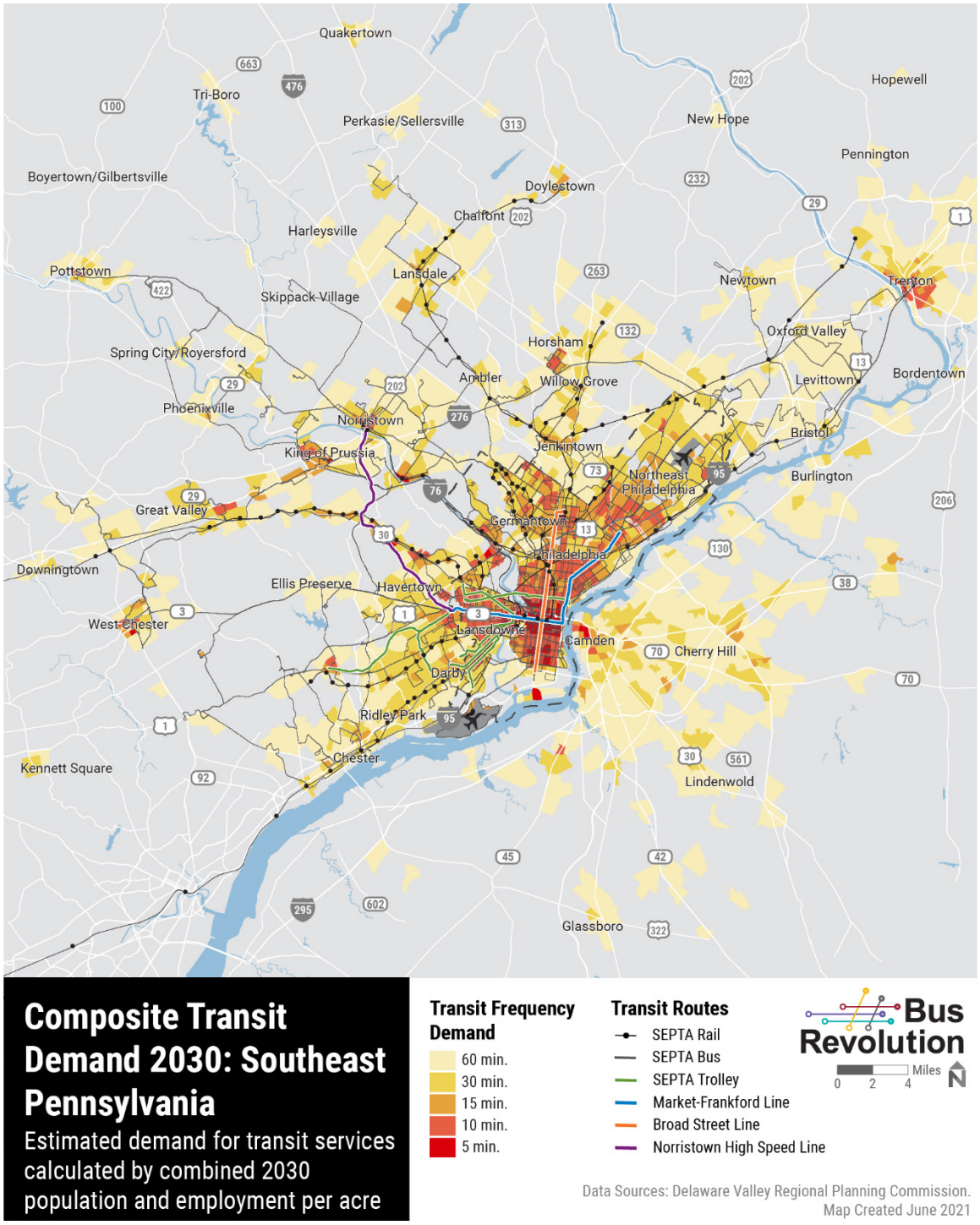


**Figure 5-5 Composite Transit Demand, Southeast Pennsylvania, 2030**



# GROWTH DEVELOPMENT AREAS

Individual jurisdictions within Southeast Pennsylvania have been and continue to be intentional about encouraging growth and development. There are a variety of organizations and authorities assuming responsibility for different geographic regions and types of growth. This section describes specific areas and projects within SEPTA's service area that have been identified and targeted for growth and development and are expected to be emerging areas of transit demand. The findings are indicative only and reflect information provided by the Delaware Valley Regional Planning Commission's (DVRPC) Smart Growth database tool, as well as stakeholder input and published sources.

## City of Philadelphia

The City of Philadelphia has several concentrations of anticipated growth and real estate development. One of the strongest trends has been for increasing residential development in Center City, a trend that is both not expected to change and is having subsequent impacts on supporting industries like shopping, entertainment and dining.

The City of Philadelphia has also strategic, targeted areas of growth that were identified by the City and City agencies such as the Philadelphia Industrial Development Corporation (PIDC). Initiatives for large-scale commercial, institutional, residential, and public-private partnership developments are currently largely focused in the Navy Yard, University City, and the Delaware River Waterfront.

- **The Navy Yard** is a public-private development project in southern end of Philadelphia. There are already some 15,000 jobs on the facility, with plans for 30,000 jobs at full build out. Plans also call for 3,000 residential units as well as 150,000 square feet of commercial development. The Navy Yard already has shuttle services that connect it to SEPTA services at Jefferson and NRG stations. Pre-COVID, these shuttles were carrying about 17,000 riders per day.
- **University City** has been one of the fastest growing neighborhoods in the region, spurred by connections to life sciences and higher education. While much of recent and planned development is oriented around employment, the neighborhood is also attracting residential and mixed-use investment.
- **The Delaware River Waterfront** includes a stretch of the waterfront just east of Center City. The area is slated for intensified development, with several projects focused on residential development, entertainment, and retail as well as industrial/office uses. Development plans include increased transportation investments, with increased access provided through connections with existing roadways and links between projects.

Other significant, but more dispersed developing areas include the North Philadelphia Station (Amtrak and SEPTA) area, which has been the recent subject of a planning study and real estate development interest. Temple University is a significant contributor to

the growth of North Philadelphia, and recently completed construction on three or four large-scale mixed, use student housing projects. It will continue to be critical for the SEPTA bus network to serve not only the growth at Temple University, but all universities in the Philadelphia region.

Other strong market-driven growth is happening in city neighborhoods such as Kensington that can be characterized by large-scale apartment complexes and mixed-use developments. The Philadelphia Housing Authority (PHA) is leading a large affordable housing redevelopment in the Sharswood neighborhood, refurbishing over 600 affordable apartments, and improving neighborhood and safety conditions.

#### Opportunities for Bus Revolution

- Many neighborhoods in the City of Philadelphia are already well served by SEPTA's bus network, but additional capacity and frequency will be needed in the future for these target growth areas and evolving neighborhoods.
- As major development projects, like the Navy Yard and the Delaware River Waterfront strengthen, needs for high quality, high capacity transit may emerge.
- As neighborhoods develop a wider mix of uses, transit will need to expand beyond peak period connections to all day, evening, and weekend services.

## Suburban Projects

### KING OF PRUSSIA

King of Prussia has been and is expected to continue to be one of the City of Philadelphia's primary economic hubs. Currently, there are several projects planned or under development in King of Prussia, including mixed-use projects or other sites with transit-oriented potential. Other developments include a large logistics center planned for 900 River Road to help support the strong retail and commercial demand.

*Rendering of Planned Logistics Center in King of Prussia (King of Prussia)*

#### Opportunities for Bus Revolution

- King of Prussia is already served by SEPTA bus routes and will justify continued future service. Regional Rail connects nearby in Conshohocken which has opportunities to serve King of Prussia through intermodal connections. In addition, a planned extension of the Norristown High Speed Line will provide rail service to the area.
- Transit demand will continue to be driven by employment in King of Prussia, effective transit services, however, can shape and support residential transit-oriented development in the area.

- Land uses, however, remain challenging making the need for investments in pedestrian infrastructure and first/last mile connections part of making the area accessible transit.

### CONSHOHOCKEN

Conshohocken is another area that is changing rapidly, with several developments planned, under construction, or recently completed. Most notably, SORA West is a large-scale, multi-faceted development centered around a vibrant plaza, which will be flanked by a 165-room hotel, with significant restaurant and retail space and a 1,500-space parking structure to support these facilities. Nearby developments will add additional residential and office stock to downtown Conshohocken.

*SORA West (DVRPC Smart Growth)*

#### Opportunities for Bus Revolution

- Conshohocken is served by SEPTA bus routes, in part through connections with Regional Rail.
- Like King of Prussia, transit demand will be driven by employment. Transit services can help support potential future residential transit-oriented development.
- Also, like King of Prussia, land use and urban design remain challenging. As the area grows, there will be opportunities for first/last mile transit connections and improvements in walkability to strengthen transit accessibility.

## Regional Growth and Development Patterns

Parts of Bucks, Chester, Delaware, and Montgomery counties are also experiencing concentrated growth, including residential, commercial, and mixed-use real estate development. While many areas are expanding, some existing developments such as malls and shopping centers are on the decline. Others are finding ways to pivot or repurpose their footprint to serve new market trends and business and customer demands.

### BUCKS COUNTY

There is currently a large development proposed in Bucks County at the Oxford Valley Mall for a new apartment complex with 600-plus units. The project is not yet underway but has been approved at the local level.

#### Opportunities for Bus Revolution

- While continuing to be on the fringe of SEPTA's service area, there may be opportunities for expanded service to the Oxford Valley Mall.

## CHESTER COUNTY

Chester County is forecast for both population and employment growth, especially along the Route 30 corridor with several future projects also planned. Development on this corridor reflects, in part, expansion of employment in the King of Prussia area.

Other areas slated for growth include the West Whiteland Township, which continues to attract new development interest, including the Exton Mall. Chester County is also focused on expanded its affordable housing footprint with several new developments currently under construction in West Chester, Downingtown, and Kennett Square, including a 168 unit residential development in Chester City.

### Opportunities for Bus Revolution

- Improved transit connections in central parts of Chester County to King of Prussia, as well as increased service along the Route 30 corridor, connecting places like Exton with the rest of the region.
- Emerging transit needs in the southern part of the county, in places like Kennett Square, which will look for connections to local and regional destinations.

## DELAWARE COUNTY

While overall growth in Delaware County is expected to be modest, population and employment density is expected to both intensify in the areas adjacent to the City of Philadelphia and in Media. New investments include the Drexeline Town Center, a large-scale redevelopment project with plans to create a mixed-use, transit-oriented development style town center with residential, shopping, and medical services. The Delaware County Housing Authority is also leading a housing redevelopment project, named the Fairgrounds, in Chester Township. This project will include nearly 300 affordable housing units including 48 senior apartments.

### Opportunities for Bus Revolution

- Transit investments to serve redevelopment projects with improved connections within Delaware County.
- Evaluate opportunities for reigonal connections including into Center City but also new and emerging employment in West Philadelphia and north to King of Prussia.

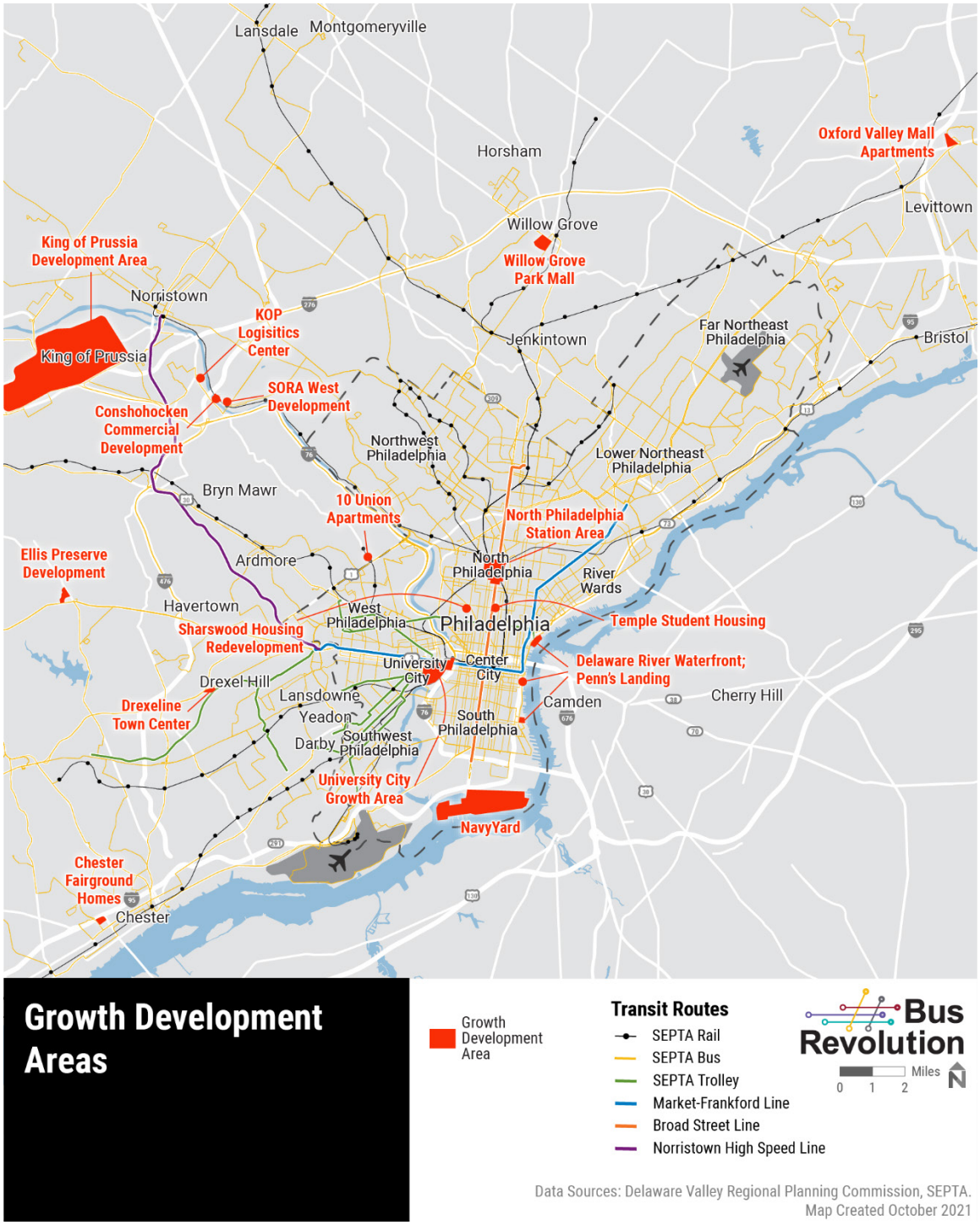
## MONTGOMERY COUNTY

As discussed, Montgomery County has several large and growing employment centers. Other projects include investment in the Willow Grove Park Mall. The Willow Grove Park Mall has been a success story in repurposing a mall on the decline to finding new retail uses that better align with customer demand and interests. In early 2022, the mall will be opening a new entertainment complex. The Montgomery Mall in North Wales was foreclosed in 2021, with its future now in jeopardy.

### Opportunities for Bus Revolution

- Development patterns show sustained need for connections to traditional destinations, such as Northwest Philadelphia, Norristown, Conshohocken, King of Prussia as well as areas that are growing like Horsham, Willow Grove and Jenkintown.
- Identify modes from our Family of Services to meet the needs of growing areas.

**Figure 5-6 Select Major Development Projects**



# 6 Issues and Opportunities

The Market Analysis explores and evaluates the underlying market and need for transit in SEPTA's service area. Previous sections of the analysis considered what the size, density, distribution and characteristics of the underlying population, employment, and existing travel flows tell us about the demand for transit services. This chapter considers opportunities to improve SEPTA's bus services based on findings from this Market Analysis.

## KEY FINDINGS

### *The City of Philadelphia has high transit demand, and can support frequencies as often as 5, 10, or 15 minutes throughout the entire day.*

The City has a high proportion of transit critical populations, dense housing and job centers, and activity centers that make it one of the most transit-supportive areas in the country. Center City Philadelphia is the strongest market for transit in the region. This market is changing in part because of increased residential development, which is increasing population density in Center City and creating needs for reverse-commute trips from Center City to other Philadelphia neighborhoods and in some cases, suburban locations.

Many neighborhoods outside of Center City, which are considered to be primarily residential have as much underlying transit demand as downtowns in other major cities, especially in the western United States. Almost 80% of residents in Philadelphia live in an area that can support frequent transit, and 73% of jobs in the city are in an area that can support frequent transit. Of those jobs, over half (53%) are outside of Center City. Generally, transit access to jobs is highest near the Market-Frankford Line, the Broad Street Line, and frequent bus routes in the core of Philadelphia. All areas with high underlying demand for transit have lower access to jobs during the midday than peak periods.

- Center City is the region's main job center and has high employment density of jobs of all types and high residential density. It is by far the most accessible area by transit in the region. Transit mode splits into Center City range from 45-75% from other high demand areas.
- Upper Darby and Norristown also exhibit high levels of demand.

***While transit demand is strong throughout the City, much of this demand is dispersed spatially, meaning people want to travel to a variety of destinations, and temporally, meaning they want to travel throughout the day.***

To date, SEPTA has not served non-Center City bound and off-peak trips as successfully.

- Outside of Center City, jobs are more likely to be those that attract customers, clients, patients, and students. This points to the fact that many neighborhoods have their own commercial strips and areas of activity that are vital to these communities.
  - There are many job sites outside of Center City where women make up over 60% of employees. Women are more likely to work more than one job, trip chain, work part-time, and make more trips in general. All of these indicate a greater demand for more frequent and consistent service, rather than just peak period service.
  - Other than areas directly adjacent to Center City, trips in other dense areas in the City of Philadelphia are often crosstown trips to other areas of high density. These travel flows have lower transit mode shares because the transit quality is not as high. Areas in North, Northwest, Lower Northeast, West, and Southwest Philadelphia all have strong transit demand but low transit mode splits for crosstown trips.
- Providing all-day frequent service can most benefit:
  - Low-wage, Black, and Hispanic workers who are more likely to have varying schedules, less likely to work from home, and less likely to adhere to a “9 to 5” work schedule.
  - Women, especially those with children or other dependents. Women make more trips in general, and frequent service can help facilitate trip chaining and working multiple jobs.
  - Residents with no or limited access to a vehicle. Residents with no vehicle rely on transit for most trip types, not just work trips.

### *Recent and emerging development reinforces patterns of dispersed destinations within the City of Philadelphia.*

As employment and residential density broadens there are more nodes of strong transit demand within the City of Philadelphia. Transit needs and opportunities include connecting these sub-areas, potentially without requiring riders to travel into Center City.

- As mentioned, transit investment focused on Center City has been successful, but connections between neighborhoods are not as well served and, in some cases require multiple connections.
- Neighborhoods outside of Center City, such as North Philadelphia and Lower Northeast Philadelphia have relatively low transit mode splits, despite having a high demand for transit.
- This suggests opportunities to strengthen transit service, so it is convenient for shorter trips within neighborhoods, as well as neighborhood-to-neighborhood travel.

### *The region is poised for growth and strengthening transit demand, especially in the suburbs outside Philadelphia.*

The largest of these areas strengthening nodes is King of Prussia, but other pockets of increasing density and transit demand existing in Norristown and Conshohocken as well as corridors connecting Jenkintown, Willow Grove, and Horsham and West Philadelphia, Ardmore, and Bryn Mawr.

- Regional transit demand will be driven, in part, by employment growth in and around King of Prussia. While future King of Prussia rail service will provide important connections, additional bus service needs include connections between nearby towns and communities as well as with the urban neighborhoods in Philadelphia.
- In addition to King of Prussia, there are several corridors that are densifying with pockets of employment, residential, service centers, and retail/entertainment activities. As these pockets are filling in and densifying around key corridors, there may be opportunities for more and higher quality transit services.
- The ability of SEPTA to effectively serve suburban areas, however, will require partnerships with municipalities and local jurisdictions to make changes in land uses and development patterns. Without better pedestrian infrastructure and walkability, even concentrations of jobs and activity will be hard to serve with transit service. Instead, transit may work best by focusing on first/last mile connections to/from existing rail services.

### *Post-pandemic travel patterns suggest a need to adjust and refine transit services.*

Transit ridership fell dramatically during the COVID-19 pandemic. While future travel patterns are unfolding, the SEPTA Bus Network should adapt to serve a permanently changed economy and altered travel needs.

- Travel patterns are not expected to return to exactly what they were before the COVID-19 Pandemic. While not all workers will become fully remote, many 9-to-5 office workers will not resume daily commutes. The SEPTA Ridership Recovery Model assumes that lower peak-period travel will continue through at least 2023.
- Transit markets and travel patterns are increasing the need for off-peak, evening and weekend day service. Riders who used SEPTA in 2020 traveled throughout the day, flattening peak travel patterns experienced pre-pandemic. These travel patterns reflect commuting patterns of essential workers and riders taking transit for reasons other than commuting. In addition, as office workers are offered more flexible work hours, when they return to working on-site, they will also be more likely to travel outside of peak periods than they were before the pandemic.
- Focusing on the needs and travel patterns of those who can benefit from transit most and where transit demand is highest will be the best way to win back riders and grow ridership moving forward. The SEPTA Ridership Recovery Model assumes that 31% of workers will continue to work from home (or telecommute) after the pandemic ends. However, Black, Hispanic, and low-wage workers are less likely than other groups to work from home. Focusing on the travel needs of workers who work on-site, and those who use transit for other trips can re-orient SEPTA from being a peak-period Center City-oriented system, to a system that works for more riders, making different types of trips at all times of day.