# Access Across America: Transit 2015

**Final Report** 

Prepared by:

Andrew Owen Brendan Murphy David Levinson

Accessibility Observatory Center for Transportation Studies Department of Civil, Environmental, and Geo- Engineering University of Minnesota

CTS 16-09

### ACCESSIBILITY OBSERVATORY

University of Minnesota

### **Technical Report Documentation Page**

1. Report No. CTS 16-09	2.	3. Recipients Accession No.	
4. Title and Subtitle Access Across America: Transit 2015		5. Report Date December 2016	
7. Author(s) Andrew Owen Brendan Murphy	David Levinson	8. Performing Organization	Report No.
9. Performing Organization Name and Address Accessibility Observatory University of Minnesota		10. Project/Task/Work Unit CTS 2016016 11. Contract (C) or Grant (G	No.
Minneapolis, MN 55455 United States		12 Turns of Densert and Dens	d Count
Center for Transportation Name and Addres University of Minnesota 200 Transportation and Safety Bu	ilding	Final Report 14. Sponsoring Agency Code	e
511 Washington Ave. SE Minneapolis, MN 55455			
http://ao.umn.edu/publications/ http://www.cts.umn.edu/Publications/ 16. Abstract (Limit: 250 words)	ons/ResearchReports/		
Accessibility is the ease of reaching valued destinations. It can be measured across different times of day (accessibility in the morning rush might be lower than the less-congested midday period). It can be measured for each mode (accessibility by walking is usually lower than accessibility by transit, which is usually lower than accessibility by car). There are a variety of ways to measure accessibility, but the number of destinations reachable within a given travel time is the most comprehensible and transparent as well as the most directly comparable across cities.			
This report examines accessibility to jobs by transit in 49 of the 50 largest (by population) metropolitan areas in the United States. Transit is used for an estimated 5 percent of commuting trips in the United States, making it the second most widely used commute mode after driving. This report complements Access Across America: Auto 2015, a report of job accessibility by auto in 51 metropolitan areas and follows the Access Across America: Transit 2014 report. A separate publication, Access Across America: Transit 2015 Methodology, describes the data and methodology used in this evaluation.			
Rankings are determined by a wei reachable within ten minutes are w increases up to 60 minutes.	ghted average of accessibility, g veighted most heavily, and jobs	giving a higher weight are given decreasing w	to closer jobs. Jobs veight as travel time
17. Document Analysis/Descriptors accessibility, transit, commuting, work trips, land use, travel time, travel behavior, urban transportation		<ul><li>18. Availability Statement</li><li>No restrictions. Document available from:</li><li>National Technical Information Services,</li><li>Alexandria, Virginia 22312</li></ul>	
19. Security Class (this report) Unclassified	20. Security Class (this page) Unclassified	21. No. of Pages 121	22. Price

# Access Across America: Transit 2015

**Final Report** 

Prepared by:

Andrew Owen Brendan Murphy David Levinson

Accessibility Observatory Center for Transportation Studies Department of Civil, Environmental, and Geo- Engineering University of Minnesota

December 2016

Published by:

Center for Transportation Studies University of Minnesota 200 Transportation and Safety Building 511 Washington Ave. S.E. Minneapolis, Minnesota 55455

This report represents the results of research conducted by the authors and does not necessarily reflect the official views or policy of the Center for Transportation Studies or the University of Minnesota.

### Authors

#### Andrew Owen

Director, Accessibility Observatory University of Minnesota

#### **Brendan Murphy**

Lead Researcher, Accessibility Observatory University of Minnesota

#### **David Levinson**

Professor, Department of Civil, Environmental, and Geo- Engineering University of Minnesota

### Acknowledgements

The development of this report was made possible by sponsorship from:

- Arkansas State Highway and Transportation Department
- California Department of Transportation
- Federal Highway Administration
- Florida Department of Transportation
- Iowa Department of Transportation
- Maryland Department of Transportation
- Minnesota Department of Transportation
- North Carolina Department of Transportation
- Virginia Department of Transportation
- Wisconsin Department of Transportation

### **Executive Summary**

Accessibility is the ease and feasibility of reaching valuable destinations. Accessibility can be measured for a wide array of transportation modes, to different types of destinations, and at different times of day. There are a variety of ways to define accessibility, but the number of destinations reachable within a given travel time is the most comprehensible and transparent—as well as the most directly comparable between cities, and other geographic areas. This report focuses on accessibility to jobs by transit. Jobs are the most significant non-home destination, and job accessibility is an important consideration in the attractiveness and usefulness of a place or area. Transit is used for an estimated 5% of commuting trips in the United States nationwide, making it the second most widely used commute mode after driving.

This study estimates the accessibility to jobs by transit and walking for each of the United States' 11 million census blocks, and analyzes these data in 49 of the 50 largest (by population) metropolitan areas. Travel times by transit are calculated using detailed pedestrian networks and full transit schedules for the 7:00 - 9:00 AM period. The calculations include all components of a transit journey, including "last mile" access and egress walking segments and transfers, and account for minute-by-minute variations in service frequency.

Rankings are determined by a weighted average of accessibility, with a higher weight given to closer, easier to access jobs. Jobs reachable within ten minutes are weighted most heavily, and jobs are given decreasing weights as travel time increases up to 60 minutes. Based on this measure, the 10 metropolitan areas with the greatest accessibility to jobs by transit are:

- 1. New York
- 2. San Francisco
- 3. Chicago
- 4. Washington
- 5. Los Angeles
- 6. Boston
- 7. Philadelphia
- 8. Seattle
- 9. San Jose
- 10. Denver

This report presents detailed accessibility values for each metropolitan area, as well as block-level maps that illustrate the spatial patterns of accessibility within each area, and a U.S. Census tract-level map that shows accessibility patterns at a national scale. A separate publication, *Access Across America: Transit 2015 Methodology*, describes the data and methodology used in this evaluation.

This analysis uses the same tools and techniques as *Access Across America: Transit 2014*, with some minor updates to improve accuracy and representativeness of accessibility calculations. However, changes in the availability of transit schedule data from year to year make direct comparisons between the two years' datasets challenging without much more detailed analysis. For this reason, this report does not directly compare 2014 and 2015 transit accessibility results.

### Contents

1	Introduction	1
2	Accessibility to Jobs by Transit 2.1 Metropolitan Area Rankings	<b>3</b> 3
3	Discussion	6
	3.2 Land Use Effects	7
	3.3 Comparisons With 2014 Data	8
	3.4 Conclusions	8
4	Metropolitan Area Data and Maps	10

### 1 Introduction

Accessibility is the ease and feasibility of reaching valuable destinations. It combines the simpler metric of mobility with the understanding that travel is driven by a desire to reach destinations. Accessibility can be measured for a wide range of transportation modes, to different types of destinations, and at different times of day. There are a variety of ways to define accessibility, but the number of destinations reachable within a given travel time is the most comprehensible and transparent—as well as the most directly comparable across cities. This report focuses on accessibility to jobs by transit. Jobs are the most significant non-home destination, and economic accessibility is an important consideration in the attractiveness and usefulness of a place or area. Transit is used for an estimated 5% of commuting trips in the United States, making it the second most widely used commute mode after driving.<sup>1</sup> The commute mode share of transit can be higher in individual metropolitan areas: 31% in the New York metropolitan area; 11% in Chicago; 8% in Seattle.<sup>2</sup>

Accessibility is not a new idea.<sup>3</sup> Historically, however, implementations of accessibility evaluation have typically focused on individual cities or metropolitan areas. Recent work has demonstrated the feasibility and value of systematically evaluating accessibility across multiple metropolitan areas by auto,<sup>4</sup> and by transit.<sup>5</sup>

This study estimates the accessibility to jobs by transit and walking for each of the United States' 11 million census blocks, and analyzes these data in 49 of the 50 largest (by population) metropolitan areas using transit schedules from 2015. The city excluded from comparisons due to lack of available GTFS data is Memphis, TN, which ranks 41st by metropolitan area population. Table 1 lists the included metropolitan areas, ordered by the total employment within each.

Travel times by transit are calculated using detailed pedestrian networks and full transit schedules for the 7:00 - 9:00 AM period. The calculations include all components of a transit journey, including "last mile" access and egress walking segments and transfers, and account for minute-by-minute variations in service frequency.

Section 2 presents the accessibility values for the included metropolitan areas and ranks metropolitan areas by accessibility, as well as a look at accessibility to jobs nationally in ??. Section 3 discusses these results and their implications, and Section 4 provides data and maps describing patterns of accessibility in individual metropolitan areas. A separate document, *Access Across America: Transit 2015 Methodology*, describes the data and detailed methodology used in the evaluation.

<sup>&</sup>lt;sup>1</sup>McKenzie (2014)

<sup>&</sup>lt;sup>2</sup>American Community Survey 2012 5-year estimates

<sup>&</sup>lt;sup>3</sup>See Hansen (1959) for its origins, and Geurs and Van Eck (2001) and Handy and Niemeier (1997) for reviews.

<sup>&</sup>lt;sup>4</sup>Levinson (2013) Levine et al. (2012)

<sup>&</sup>lt;sup>5</sup>Ramsey and Bell (2014), Tomer et al. (2011)

Rank	Area	Total Employment
1	New York	8,271,797
2	Los Angeles	5,364,930
3	Chicago	4,242,819
4	Dallas	2,987,734
5	Philadelphia	2,703,026
6	Washington	2,689,299
7	Houston	2,674,987
8	Miami	2,256,047
9	Boston	2,247,058
10	Atlanta	2,245,086
11	San Francisco	2,010,301
12	Detroit	1,803,083
13	Phoenix	1,740,411
14	Minneapolis	1,709,509
15	Seattle	1,601,913
16	Riverside	1,535,841
17	San Diego	1,296,780
18	St. Louis	1,268,397
19	Baltimore	1,262,886
20	Denver	1,245,631
21	Tampa	1,145,780
22	Pittsburgh	1,103,769
23	Portland	1,013,919
24	Cincinnati	981,320
25	Orlando	977,204
26	Cleveland	944,142
27	San Antonio	910,213
28	Columbus	867,260
29	Sacramento	859,689
30	San Jose	842,627
31	Indianapolis	840,091
32	Austin	837,028
33	Las vegas	824,305
34	Nashville	742 460
35	Milwaukoo	742,400
30	Virginia Boach	689 338
38	Providence	666,008
30	Louisville	604 380
40	Richmond	597 123
40	lacksonville	590,966
42	Hartford	570 242
43	Oklahoma City	545 899
44	Raleigh	540.975
45	Kansas Citv	538.957
46	Salt Lake City	537,627
47	Buffalo	529,190
48	New Orleans	490,236
49	Birmingham	462,535

Table 1: Metropolitan Areas Ranked by Total Employment

Employment totals are based on LEHD estimates and may not match other sources.

### 2 Accessibility to Jobs by Transit

Table 2 gives the accessibility values for each metropolitan area, in alphabetical order, based on January, 2015 transit schedules. The columns represent the number of jobs that a typical worker residing in the city can reach within 10, 20, 30, 40, 50, and 60 minutes of travel, between 7:00 and 9:00 AM, by transit and walking.

### 2.1 Metropolitan Area Rankings

The rankings of accessibility across U.S. cities for 2015 are shown in Table 3. The ranking is based on a weighted average, where the jobs reachable within each threshold are given a decreasing weight as travel time increases. A job reachable within 10 minutes counts more toward the ranking than a job reachable within 20, and so on. The 10 metro areas where workers can, on average, reach the most jobs are listed below. Within the specific time thresholds, the rankings vary.

- 1. New York
- 2. San Francisco
- 3. Chicago
- 4. Washington
- 5. Los Angeles
- 6. Boston
- 7. Philadelphia
- 8. Seattle
- 9. San Jose
- 10. Denver

Additional details about each metropolitan area, including block-level maps of accessibility, are presented in Section 4.

Area	10 min	20 min	30 min	40 min	50 min	60 min
Atlanta	287	1,912	6,869	17,906	36,716	63,956
Austin	417	2,954	10,808	25,972	47,973	76,039
Baltimore	639	5,214	17,669	40,033	72,198	113,063
Birmingham	175	834	2,553	5,875	10,976	17,365
Boston	1,454	11,920	43,778	104,306	185,566	271,810
Buffalo	423	2,810	8,863	21,323	39,141	57,688
Charlotte	309	1,872	6,179	15,045	28,849	46,654
Chicago	1,592	14,344	50,586	118,527	214,886	328,034
Cincinnati	304	1,818	5,809	13,521	25,932	42,573
Cleveland	385	2,407	8,660	22,550	45,034	74,609
Columbus	406	2,917	9,812	22,059	40,273	64,154
Dallas	431	2,841	9,825	25,239	52,999	95,130
Denver	723	5,492	18,668	45,276	91,328	159,153
Detroit	273	1,766	6,020	15,200	32,062	58,067
Hartford	426	3,098	10,091	21,241	36,354	55,364
Houston	462	3,460	12,666	31,463	62,485	106,955
Indianapolis	313	2,067	6,790	16,167	30,971	50,708
Jacksonville	287	1,325	4,299	10,614	21,044	35,635
Kansas City	350	2,063	6,851	15,625	27,848	42,695
Las Vegas	263	1,913	7,469	21,359	49,423	94,883
Los Angeles	1,206	10,213	39,564	100,653	204,844	358,984
Louisville	297	2,013	6,932	17,081	32,222	51,278
Miami	695	4,390	14,462	35,851	71,076	122,624
Milwaukee	589	4,464	17,009	42,716	80,873	126,147
Minneapolis	534	4,273	17,043	44,296	86,133	139,841
Nashville	283	1,539	5,027	11,223	19,756	30,689
New Orleans	512	3,018	9,114	19,165	31,235	43,513
New York	5,839	60,008	204,745	451,270	798,935	1,221,944
Oklahoma City	246	1,548	4,794	11,264	21,321	34,679
Orlando	261	1,464	4,716	11,393	22,946	40,633
Philadelphia	1,119	9,912	34,234	74,268	129,018	193,921
Phoenix	295	2,342	9,019	24,381	51,992	94,360
Pittsburgh	559	3,413	13,101	29,619	51,500	77,906
Portland	726	5,208	18,790	46,614	89,674	145,855
Providence	491	2,828	8,615	18,253	31,557	48,280
Raleigh	229	1,533	4,528	10,369	19,838	33,500
Richmond	372	2,251	6,679	13,843	22,563	32,582
Riverside	189	1,251	4,238	10,297	20,313	34,910
Sacramento	561	3,161	9,483	21,552	42,372	71,009
Salt Lake City	470	3,674	13,970	36,767	76,174	134,513
San Antonio	335	2,447	9,533	24,466	49,090	84,016
San Diego	676	3,730	11,999	29,782	60,422	107,182
San Francisco	2,353	22,118	71,107	149,913	253,322	374,615
San Jose	575	4,440	16,739	45,792	100,493	184,272
Seattle	1,274	8,511	26,591	61,274	112,111	178,983
St. Louis	327	2,044	7,284	18,868	37,737	63,333
Татра	321	1,984	6,673	16,004	31,020	51,745
Virginia Beach	265	1,422	4,433	10,090	19,092	31,913
Washington	1,246	11,901	46,416	111,631	208,915	328,133

Table 2: Number of Jobs Reachable by Number of Minutes, 2015

Rank	Weighted Average	10 min	20 min	30 min	40 min	50 min	60 min
1	New York	New York	New York	New York	New York	New York	New York
2	San Francisco	San Francisco	San Francisco	San Francisco	San Francisco	San Francisco	San Francisco
3	Chicago	Chicago	Chicago	Chicago	Chicago	Chicago	Los Angeles
4	Washington	Boston	Boston	Washington	Washington	Washington	Washington
5	Los Angeles	Seattle	Washington	Boston	Boston	Los Angeles	Chicago
6	Boston	Washington	Los Angeles	Los Angeles	Los Angeles	Boston	Boston
7	Philadelphia	Los Angeles	Philadelphia	Philadelphia	Philadelphia	Philadelphia	Philadelphia
8	Seattle	Philadelphia	Seattle	Seattle	Seattle	Seattle	San Jose
9	San Jose	Portland	Denver	Portland	Portland	San Jose	Seattle
10	Denver	Denver	Baltimore	Denver	San Jose	Denver	Denver
11	Portland	Miami	Portland	Baltimore	Denver	Portland	Portland
12	Minneapolis	San Diego	Milwaukee	Minneapolis	Minneapolis	Minneapolis	Minneapolis
13	Milwaukee	Baltimore	San Jose	Milwaukee	Milwaukee	Milwaukee	Salt Lake City
14	Baltimore	Milwaukee	Miami	San Jose	Baltimore	Salt Lake City	Milwaukee
15	Salt Lake City	San Jose	Minneapolis	Miami	Salt Lake City	Baltimore	Miami
16	Miami	Sacramento	San Diego	Salt Lake City	Miami	Miami	Baltimore
17	Houston	Pittsburgh	Salt Lake City	Pittsburgh	Houston	Houston	San Diego
18	San Diego	Minneapolis	Houston	Houston	San Diego	San Diego	Houston
19	Pittsburgh	New Orleans	Pittsburgh	San Diego	Pittsburgh	Dallas	Dallas
20	Dallas	Providence	Sacramento	Austin	Austin	Phoenix	Las Vegas
21	Austin	Salt Lake City	Hartford	Hartford	Dallas	Pittsburgh	Phoenix
22	Phoenix	Houston	New Orleans	Dallas	San Antonio	Las Vegas	San Antonio
23	San Antonio	Dallas	Austin	Columbus	Phoenix	San Antonio	Pittsburgh
24	Sacramento	Hartford	Columbus	San Antonio	Cleveland	Austin	Austin
25	Las Vegas	Buffalo	Dallas	Sacramento	Columbus	Cleveland	Cleveland
26	Cleveland	Austin	Providence	New Orleans	Sacramento	Sacramento	Sacramento
27	Columbus	Columbus	Buffalo	Phoenix	Las Vegas	Columbus	Columbus
28	Hartford	Cleveland	San Antonio	Buffalo	Buffalo	Buffalo	Atlanta
29	Buffalo	Richmond	Cleveland	Cleveland	Hartford	St. Louis	St. Louis
30	New Orleans	Kansas City	Phoenix	Providence	New Orleans	Atlanta	Detroit
31	St. Louis	San Antonio	Richmond	Las Vegas	St. Louis	Hartford	Buffalo
32	Providence	St. Louis	Indianapolis	St. Louis	Providence	Louisville	Hartford
33	Atlanta	Tampa	Kansas City	Louisville	Atlanta	Detroit	Tampa
34	Louisville	Indianapolis	St. Louis	Atlanta	Louisville	Providence	Louisville
35	Indianapolis	Charlotte	Louisville	Kansas City	Indianapolis	New Orleans	Indianapolis
36	Tampa	Cincinnati	Tampa	Indianapolis	Tampa	Tampa	Providence
37	Detroit	Louisville	Las Vegas	Richmond	Kansas City	Indianapolis	Charlotte
38	Kansas City	Phoenix	Atlanta	Tampa	Detroit	Charlotte	New Orleans
39	Charlotte	Atlanta	Charlotte	Charlotte	Charlotte	Kansas City	Kansas City
40	Cincinnati	Jacksonville	Cincinnati	Detroit	Richmond	Cincinnati	Cincinnati
41	Richmond	Nashville	Detroit	Cincinnati	Cincinnati	Orlando	Orlando
42	Orlando	Detroit	Oklahoma City	Nashville	Orlando	Richmond	Jacksonville
43	Oklahoma City	Virginia Beach	Nashville	Oklahoma City	Oklahoma City	Oklahoma City	Riverside
44	Nashville	Las Vegas	Raleigh	Orlando	Nashville	Jacksonville	Oklahoma City
45	Jacksonville	Orlando	Orlando	Raleigh	Jacksonville	Riverside	Raleigh
46	Kaleigh	Oklahoma City	Virginia Beach	Virginia Beach	Raleigh	Kaleigh	Richmond
4/	Virginia Beach	Kaleigh	Jacksonville	Jacksonville	Riverside	Nashville	Virginia Beach
48	Riverside	Riverside	Riverside	Riverside	Virginia Beach	Virginia Beach	Nashville
49	Birmingham	Birmingham	Birmingham	Birmingham	Birmingham	Birmingham	Birmingham

### Table 3: Rank of Accessibility by Metropolitan Area, 2015

### **3** Discussion

This report builds on the work begun in *Access Across America: Transit 2014*, which introduced a new methodology and dataset to enable inter-metropolitan comparisons of accessibility by transit in a way that is clearly understood and explainable, tracks with our experience and the available evidence, and incorporates the many factors that determine the usefulness of a transit system.

Not all jobs are the same. Some jobs are higher paying, some are lower skilled, and they exist in a variety of industries. Given sufficient data, one could differentiate accessibility by breaking down jobs by type and get different results. Accessibility to non-work locations (shopping, health care, education, etc.) is also important. Regardless of trip purpose, people who experience higher accessibility tend to travel shorter distances because origins and destinations are closer together.

But accessibility to jobs is not the only thing that people care about. If it were, cities would be situated on a minimum amount of space so people could live immediately adjacent to their jobs, or everyone would work from home. Measuring (and then valuing) accessibility to other opportunities and considering the trade-off between accessibility and living space are central problems of urban economics, regional science, and transportation and land-use planning. While being more accessible is generally better, there are costs as well as benefits associated with accessibility. If land is more valuable, its price is higher, and purchasers can afford less. Streets in places with more activities are inherently more crowded, and trips are less peaceful.

Accessibility is a function of both transportation networks and land use decisions, which has important policy implications. There are two broad avenues to increasing accessibility: improving transportation systems, and altering land use patterns. Neither of these things can be easily shifted overnight, but over time they do change—both through direct plans and action and through market forces.

It is important to recognize that aggregate metrics such as these are also affected simply by the size of the areas being studied. For example, residents of central Minneapolis enjoy greater accessibility than those of central Milwaukee, but the expansive Minneapolis–Saint Paul metropolitan area, which is over four times as large in land area, includes far more suburban and exurban areas (with little or no transit service) than does the Milwaukee area.

#### 3.1 Transit Service Effects

Transit transportation improvements within existing infrastructure take the form of speed increases or frequency increases. Speed improvements increase accessibility by making destinations reachable in less time, but they are often difficult to achieve for transit vehicles operating in mixed traffic. Frequency improvements reduce the average amount of time spent waiting for transit vehicles at stops, leaving more time for travel toward valuable destinations. Speed and frequency are also linked: as average speeds increase, a fixed number of transit vehicles can serve the same route length with increasing frequency.<sup>6</sup> Improvements involving construction of new transit infrastructure (additional bus stops, rail line extensions, or entirely new transit lines) also can heavily influence accessibility by transit, by providing transit-based access to job centers and destinations previously unreachable. New transit lines which serve already-served areas do not expand the basin of reachable valuable destinations, but could

<sup>&</sup>lt;sup>6</sup>Walker (2012) provides a detailed and accessible exploration of transit service fundamentals.

serve to increase service frequency in aggregate.

This evaluation reflects the impact of transit service frequency by making the assumption that all departure times are equally valuable to users, and it includes full waiting times before each trip. This is an important difference relative to earlier national evaluations of transit accessibility, which typically use a single departure time and/or a fixed wait time.<sup>7</sup> This approach provides two important benefits. First, it avoids the assumptions that transit service with 30-minute frequency is as valuable as service with 10-minute frequency, and that users suffer no inconvenience from adjusting their personal schedules to match transit schedules. Second, it allows more meaningful comparisons with accessibility evaluations for other transportation modes such as driving,<sup>8</sup> which typically use average speeds over time periods implicitly assuming an equal value of departure times. As a result of this methodological choice, the accessibility results presented here are far more sensitive to service frequency effects than those of earlier transit accessibility evaluations. Cities with robust transit coverage but low service frequency are generally ranked lower than cities with comparable networks but higher frequencies.

#### 3.2 Land Use Effects

Land use-based approaches to improving transit accessibility revolve around proximity and density for both origins and destinations. Proximity to transit service is critical in overcoming both the low speed of pedestrian access to and from stops and stations, and the decrease in motivation to make the walking trip with greater distance. Density is the manifestation of the increasing value of more accessible locations. As residential areas become denser, more residents experience the local accessibility; as employment areas become denser, more jobs can be accessed through the same transit system.

Density is not determined solely by accessibility, however: land-use policies can restrict density where it would otherwise be high or encourage density where it might otherwise be low. Perhaps the most famous examples of such policies are Oregon's urban growth boundary laws, which encourage density by restricting the amount of land available for urban development, and the Height of Buildings Act of 1910, which restricts density in the District of Columbia by limiting building heights. Other notable areas with urban growth boundary laws in the U.S. include Seattle, San Jose, and Boulder; additionally, Boston limits building heights near its Common central park. Between these most salient examples lie a range of density-focused urban policies, typically embedded in zoning codes, which help enable (and hinder) each city's transit accessibility performance. In general, areas with higher residential and employment density can achieve greater transit accessibility given the same level of transit service.

At lower accessibility thresholds, and especially at the 10-minute threshold, the job accessibility experienced by a typical worker is determined primarily by local employment density and only secondarily, if at all, by transit service. With a 10-minute travel time budget, reaching a stop, waiting for a vehicle, and walking to the destination after alighting leave little time available for actually traveling on a transit vehicle. It is likely that most jobs within this threshold are reached solely by walking and do not involve a transit vehicle at all. The results presented in Table 3 for the 10-minute threshold look much like a ranking by employment and residential density. As the travel time threshold increases, so does the relative contribution of transit service and coverage to the rankings.

<sup>&</sup>lt;sup>7</sup>e.g. Tomer et al. (2011), Ramsey and Bell (2014)

<sup>&</sup>lt;sup>8</sup>e.g. Levinson (2013), Levine et al. (2012)

#### 3.3 Comparisons With 2014 Data

This analysis uses the same tools and techniques as *Access Across America: Transit 2014*, with some minor updates to improve accuracy and representativeness of accessibility calculations. However, changes in the availability of transit schedule data from year to year make direct comparisons between the two years' datasets challenging. The 2015 analysis includes transit schedules from a much greater number of individual transit operators relative to 2014. This improved transit schedule coverage is the result of increased availability and discoverability of transit operators' schedule datasets (especially among smaller operators), and provides a significant improvement in the accuracy of the accessibility data. Unfortunately, it also means that much more detailed analysis is needed to determine if a change in aggregate accessibility for a single metropolitan area is the result of changes in an existing operator's service or the inclusion of a new operator. For this reason, the analysis in this report does not directly compare 2014 and 2015 transit accessibility results.

#### 3.4 Conclusions

The cities that make up the top 10 transit accessibility ranks all exhibit a combination of high density land use and fast, frequent transit service. However, there is still significant variation within this group. In New York, San Francisco, Washington, and Chicago, fast heavy rail systems connect both urban and suburban areas with a highly employment-dense core. It is instructive to compare these cities to Atlanta, which has a similar, but smaller, rail system but a much more decentralized job and population distribution, and lower accessibility. Seattle and Denver both have rapidly expanding light rail systems, supported by extensive and frequent bus networks. Though Portland is famous for its streetcar service, this covers only a small part of the city, and operates mostly in mixed traffic with very little access to proprietary right-of-way, limiting its service speed. Its urban growth boundary, combined with frequent bus service throughout core areas and light rail connections to suburban areas, likely plays a more important role in providing high accessibility: by encouraging both residents and employers to locate in parts of the city already well served by transit, each new resident enjoys high accessibility but imposes only a small marginal burden on the transit system's existing resources.

Additionally, the expanded scope of this report's focus toward analyzing accessibility for every census block in the U.S. affords a look at what impact public transit has on a national scale. The map visible in **?** illustrates a few important points. First, it is readily visible that the vast majority of the U.S. land mass is quite sparsely-populated outside of metropolitan areas, and the contained metropolitan areas are in many cases very far apart. Second, the type of transit service included in the analysis is strictly limited to public transit, most commonly found in urban areas—inter-city bus and rail services, such as Megabus, Greyhound, or Jefferson, and Amtrak, respectively, are not included. Further, such services operate on time-scales greater than the travel times involved in this analysis. Given that mostly urbancentric systems are included, only a very small geographical area of the country enjoys mass transit services, and thus the total area experiencing transit accessibility benefits is quite small.

Transportation and land use systems are both dynamic, and this report presents only a single snapshot in time. In constantly-evolving systems like these, it is also critical to monitor changes over time. A city that adopts a goal of increasing transit accessibility should be evaluated based on how effectively it advances that goal relative to a baseline. *Access Across America: Transit 2014* served as a starting point in building these time-series data; this report adds 2015 transit accessibility data, and future comparison reports in the Access Across America series will track the way that accessibility in these metropolitan areas evolves in response to transportation investments and land use decisions.

### 4 Metropolitan Area Data and Maps

The following pages present summary accessibility data and maps for each of the 49 included metropolitan areas. Metropolitan areas are presented in alphabetical order. The maps show 30-minute accessibility values at the Census block level, averaged between 7:00 and 9:00 AM. On the data summary pages, three different chart scales are used to accommodate the wide range of accessibility values across metropolitan areas. All charts using the same scale are plotted in the same color.

### Atlanta

Atlanta-Sandy Springs-Marietta, GA

Rank by Weighted Accessibility	33
Rank by Total Employment	9
Total Jobs	2,333,976
Average Job Density (per km <sup>2</sup> )	108
Total Workers	2,245,086
Average Worker Density (per km <sup>2</sup> )	104

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Atlanta Streetcar	December 2, 2014 - March 1, 2015
Atlantic Station Shuttle	January 3, 2013 - December 3, 2013
Buc Shuttle	January 3, 2013 - December 3, 2013
Cherokee Area Transportation System (CATS)	January 3, 2013 - December 3, 2013
Cliff Shuttles/Emory University	January 3, 2013 - December 3, 2013
CobbAVL	July 2, 2014 - July 3, 2015
GRTA Xpress	May 7, 2014 - June 4, 2015
Georgia Tech Trolley & Stinger Shuttles	August 2, 2013 - May 7, 2014
Gwinnett County Transit	June 5, 2014 - December 4, 2014
Metropolitan Atlanta Rapid Transit Authority	December 1, 2014 - December 6, 2015

# **Atlanta-Sandy Springs-Marietta, GA**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Austin

Austin-Round Rock-San Marcos, TX

Rank by Weighted Accessibility	21
Rank by Total Employment	34
Total Jobs	870,672
Average Job Density (per km <sup>2</sup> )	80
Total Workers	837,028
Average Worker Density (per km <sup>2</sup> )	77

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Capital Metro	August 1, 2014 - June 7, 2015

# Austin-Round Rock-San Marcos, TX



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

14

### **Baltimore**

Baltimore-Towson, MD

Rank by Weighted Accessibility	14
Rank by Total Employment	19
Total Jobs	1,263,285
Average Job Density (per km <sup>2</sup> )	187
Total Workers	1,262,886
Average Worker Density (per km <sup>2</sup> )	187

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Annapolis Transit	January 5, 2015 - December 5, 2015
BWI Thurgood Marshall Airport	June 2, 2015 - January 6, 2016
Carroll Area Transit System (CATS)	July 2, 2015 - May 6, 2016
Delmarva Community Transit	August 6, 2014 - June 5, 2017
Harford Transit LINK	October 5, 2015 - May 3, 2016
MET	January 3, 2015 - July 7, 2015
MTA Office of Local Transit Support	January 2, 2015 - February 7, 2015
Maryland Transit Administration	August 1, 2014 - February 7, 2015
Queen Anne's County Ride	March 3, 2016 - December 7, 2016
Rabbit Transit	November 1, 2014 - December 5, 2015
Regional Transportation Agency of Central Maryland	July 3, 2014 - December 5, 2015

**Baltimore-Towson, MD** 





State border —— MPO boundary \_\_\_\_\_

# Birmingham

Birmingham-Hoover, AL

Rank by Weighted Accessibility	49
Rank by Total Employment	49
Total Jobs	498,037
Average Job Density (per km <sup>2</sup> )	36
Total Workers	462,535
Average Worker Density (per km <sup>2</sup> )	34

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Birmingham Jefferson County Transit Authority	January 4, 2014 - December 5, 2015

# **Birmingham-Hoover, AL**





State border —— MPO boundary \_\_\_\_\_

### Boston

Boston-Cambridge-Quincy, MA-NH

Rank by Weighted Accessibility	6
Rank by Total Employment	8
Total Jobs	2,486,636
Average Job Density (per km <sup>2</sup> )	275
Total Workers	2,247,058
Average Worker Density (per km <sup>2</sup> )	249

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Bloom Bus	January 6, 2015 - January 7, 2016
Cape Ann Transportation	January 5, 2015 - January 6, 2016
Cape Cod Regional Transit Authority (CCRTA)	May 6, 2013 - September 4, 2020
DATTCO	January 6, 2015 - January 7, 2016
Lexpress Lexington MA	October 4, 2014 - June 5, 2016
Lowell Regional Transit Authority	January 7, 2000 - December 5, 2020
MBTA	February 5, 2014 - March 6, 2015
Massport	December 2, 2014 - March 6, 2015
Merrimack Valley Regional Transit Authority	December 7, 2014 - January 6, 2016
MetroWest Regional Transit Authority	September 3, 2013 - September 4, 2020
Plymouth & Brockton Street Railway Co.	June 7, 2014 - October 6, 2014
The Greater Attleboro Taunton Regional Transit Authority	December 7, 2014 - January 6, 2016

# **Boston-Cambridge-Quincy, MA-NH**





State border —— MPO boundary \_\_\_\_\_

## Buffalo

Buffalo-Niagara Falls, NY

Rank by Weighted Accessibility	29
Rank by Total Employment	47
Total Jobs	553,033
Average Job Density (per km <sup>2</sup> )	136
Total Workers	529,190
Average Worker Density (per km <sup>2</sup> )	131

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
NFTA - Metro	January 4, 2015 - March 7, 2015

# **Buffalo-Niagara Falls, NY**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border — MPO boundary \_\_\_\_

22

### Charlotte

Charlotte-Gastonia-Rock Hill, NC-SC

Rank by Weighted Accessibility	39
Rank by Total Employment	31
Total Jobs	898,515
Average Job Density (per km <sup>2</sup> )	112
Total Workers	812,811
Average Worker Density (per km <sup>2</sup> )	102

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Charlotte Area Transit System	September 6, 2014 - February 1, 2015

# **Charlotte-Gastonia-Rock Hill, NC-SC**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

**Chicago** Chicago-Joliet-Naperville, IL-IN-WI

Rank by Weighted Accessibility	3
Rank by Total Employment	3
Total Jobs	4,348,205
Average Job Density (per km <sup>2</sup> )	233
Total Workers	4,242,819
Average Worker Density (per km <sup>2</sup> )	228

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Chicago Transit Authority	December 2, 2014 - February 7, 2015
Metra	January 5, 2015 - June 5, 2016
PACE	November 2, 2014 - March 7, 2015

# **Chicago-Joliet-Naperville, IL-IN-WI**



### Cincinnati

Cincinnati-Middletown, OH-KY-IN

Rank by Weighted Accessibility	40
Rank by Total Employment	26
Total Jobs	985,146
Average Job Density (per km <sup>2</sup> )	87
Total Workers	981,320
Average Worker Density (per km <sup>2</sup> )	86

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Southwest Ohio Regional Transit Authority	November 1, 2014 - March 7, 2015
Transit Authority of Northern Kentucky	October 6, 2014 - August 5, 2015

# **Cincinnati-Middletown, OH-KY-IN**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

28

### Cleveland

Cleveland-Elyria-Mentor, OH

Rank by Weighted Accessibility	26
Rank by Total Employment	25
Total Jobs	1,005,643
Average Job Density (per km <sup>2</sup> )	194
Total Workers	944,142
Average Worker Density (per $km^2$ )	183

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Greater Cleveland Regional Transit Authority	December 1, 2014 - May 7, 2015
# **Cleveland-Elyria-Mentor, OH**



# Columbus

Columbus, OH

Rank by Weighted Accessibility	27
Rank by Total Employment	29
Total Jobs	948,040
Average Job Density (per km <sup>2</sup> )	92
Total Workers	867,260
Average Worker Density (per km <sup>2</sup> )	84

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Central Ohio Transit Authority	January 2, 2015 - May 1, 2015

# Columbus, OH





State border —— MPO boundary ——

# Dallas

Dallas-Fort Worth-Arlington, TX

Rank by Weighted Accessibility	20
Rank by Total Employment	4
Total Jobs	3,148,497
Average Job Density (per km <sup>2</sup> )	136
Total Workers	2,987,734
Average Worker Density (per $km^2$ )	129

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
DALLAS AREA RAPID TRANSIT	September 7, 2014 - March 1, 2015
Fort Worth Transportation Authority	September 1, 2014 - January 7, 2015

# **Dallas-Fort Worth-Arlington, TX**





State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

34

### Denver

Denver-Aurora-Broomfield, CO

Rank by Weighted Accessibility	10
Rank by Total Employment	16
Total Jobs	1,299,620
Average Job Density (per km <sup>2</sup> )	60
Total Workers	1,245,631
Average Worker Density (per km <sup>2</sup> )	58

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Regional Transportation District	January 1, 2015 - May 7, 2015

## **Denver-Aurora-Broomfield, CO**





State border —— MPO boundary \_\_\_\_\_

36

## Detroit

Detroit-Warren-Livonia, MI

Rank by Weighted Accessibility	37
Rank by Total Employment	12
Total Jobs	1,802,981
Average Job Density (per km <sup>2</sup> )	179
Total Workers	1,803,083
Average Worker Density (per km <sup>2</sup> )	179

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Ann Arbor Area Transportation Authority	August 1, 2014 - May 7, 2015
Detroit Department of Transportation	April 3, 2014 - June 6, 2015

# **Detroit-Warren-Livonia**, MI



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

## Hartford

Hartford-West Hartford-East Hartford, CT

Rank by Weighted Accessibility	28
Rank by Total Employment	41
Total Jobs	627,583
Average Job Density (per km <sup>2</sup> )	160
Total Workers	570,242
Average Worker Density (per km <sup>2</sup> )	145

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
CTTransit- Hartford	November 2, 2014 - April 7, 2015
CTTransit- New Britain-Bristol	December 4, 2014 - May 1, 2015
CTTransit- Waterbury	October 2, 2011 - June 5, 2016
PVTA	August 5, 2014 - September 2, 2015
Shore Line East	November 2, 2014 - March 3, 2016

# Hartford-West Hartford-East Hartford, CT



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Houston

Houston-Sugar Land-Baytown, TX

Rank by Weighted Accessibility	17
Rank by Total Employment	6
Total Jobs	2,780,308
Average Job Density (per km <sup>2</sup> )	122
Total Workers	2,674,987
Average Worker Density (per $km^2$ )	117

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Metropolitan Transit Authority of Harris County	August 1, 2014 - January 7, 2015

# Houston-Sugar Land-Baytown, TX



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border —— MPO boundary \_\_\_\_\_

# Indianapolis Indianapolis-Carmel, IN

Rank by Weighted Accessibility	35
Rank by Total Employment	30
Total Jobs	934,297
Average Job Density (per km <sup>2</sup> )	94
Total Workers	840,091
Average Worker Density (per km <sup>2</sup> )	84

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
IPTC	January 6, 2015 - June 7, 2015

# Indianapolis-Carmel, IN





State border —— MPO boundary \_\_\_\_\_

44

## Jacksonville

Jacksonville, FL

Rank by Weighted Accessibility	45
Rank by Total Employment	43
Total Jobs	620,999
Average Job Density (per km <sup>2</sup> )	75
Total Workers	590,966
Average Worker Density (per $km^2$ )	71

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Jacksonville Transportation Authority	December 2, 2014 - March 1, 2015

## Jacksonville, FL



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

# Kansas City Kansas City, MO-KS

Rank by Weighted Accessibility	38
Rank by Total Employment	27
Total Jobs	975,712
Average Job Density (per km <sup>2</sup> )	48
Total Workers	538,957
Average Worker Density (per km <sup>2</sup> )	27

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
JOCO	January 3, 2013 - December 5, 2015
KCATA	January 1, 2015 - June 7, 2015

Kansas City, MO-KS





State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

# **Las Vegas** Las Vegas-Paradise, NV

Rank by Weighted Accessibility	25
Rank by Total Employment	35
Total Jobs	841,071
Average Job Density (per km <sup>2</sup> )	41
Total Workers	824,305
Average Worker Density (per $km^2$ )	40

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Regional Transportation Commission of Southern Nevada	October 1, 2014 - November 7, 2015

Las Vegas-Paradise, NV



## **Los Angeles**

Los Angeles-Long Beach-Santa Ana, CA

Rank by Weighted Accessibility	5
Rank by Total Employment	2
Total Jobs	5,776,763
Average Job Density (per km <sup>2</sup> )	460
Total Workers	5,364,930
Average Worker Density (per km <sup>2</sup> )	427

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Anaheim Resort Transportation	January 5, 2015 - January 1, 2017
Big Blue Bus	February 3, 2014 - June 3, 2016
Culver CityBus	December 5, 2015 - May 1, 2016
Eastern Sierra Transit Authority	January 1, 2012 - January 1, 2017
Foothill Transit	January 1, 2015 - July 7, 2015
Irvine Shuttle	June 2, 2013 - December 5, 2015
Kern Transit	January 2, 2015 - January 1, 2017
Laguna Beach Transit	January 3, 2013 - January 1, 2017
Long Beach Transit	August 1, 2014 - February 7, 2015
Metro - Los Angeles	December 1, 2014 - June 7, 2015
Metrolink Trains	September 6, 2014 - December 5, 2016
OMNITRANS	January 2, 2015 - September 1, 2015
Orange County Transportation Authority	December 7, 2014 - February 7, 2015
Palos Verdes Peninsula Transit Authority	January 6, 2015 - January 1, 2017
Riverside Transit Agency	January 1, 2015 - May 7, 2015
Thousand Oaks Transit	August 5, 2013 - August 2, 2016
Torrance Transit	November 1, 2014 - October 7, 2015

# Los Angeles-Long Beach-Santa Ana, CA





State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

## Louisville

Louisville/Jefferson County, KY-IN

Rank by Weighted Accessibility	34
Rank by Total Employment	42
Total Jobs	624,255
Average Job Density (per km <sup>2</sup> )	59
Total Workers	604,380
Average Worker Density (per km <sup>2</sup> )	57

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Transit Authority of River City	January 1, 2015 - June 3, 2015

# Louisville/Jefferson County, KY-IN





State border —— MPO boundary \_\_\_\_\_

## Miami

Miami-Fort Lauderdale-Pompano Beach, FL

Rank by Weighted Accessibility	16
Rank by Total Employment	10
Total Jobs	2,302,083
Average Job Density (per km <sup>2</sup> )	175
Total Workers	2,256,047
Average Worker Density (per km <sup>2</sup> )	172

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Broward County Transit	January 1, 2015 - June 7, 2015
Miami Dade Transit	August 1, 2014 - September 6, 2015
Palm Tran	November 7, 2014 - November 1, 2016
SFRTA/Tri-Rail	April 6, 2012 - December 5, 2015



# Miami-Fort Lauderdale-Pompano Beach, FL

57

### Milwaukee

Milwaukee-Waukesha-West Allis, WI

Rank by Weighted Accessibility	13
Rank by Total Employment	36
Total Jobs	815,690
Average Job Density (per km <sup>2</sup> )	216
Total Workers	739,272
Average Worker Density (per km <sup>2</sup> )	196

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Milwaukee County Transit System	January 1, 2015 - March 1, 2015
Waukesha County Transit	November 7, 2014 - January 6, 2016

# Milwaukee-Waukesha-West Allis, WI



## **Minneapolis**

Minneapolis-St. Paul-Bloomington, MN-WI

Rank by Weighted Accessibility	12
Rank by Total Employment	14
Total Jobs	1,760,838
Average Job Density (per km <sup>2</sup> )	113
Total Workers	1,709,509
Average Worker Density (per $km^2$ )	110

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
Airport (MAC)	December 7, 2014 - March 6, 2015
MVTA	December 2, 2014 - February 6, 2015
Maple Grove	January 2, 2015 - March 6, 2015
Metro	December 2, 2014 - February 6, 2015
Metro Bus	January 1, 2015 - May 7, 2015
Metro Transit	November 3, 2014 - March 6, 2015
Minnesota Valley	December 4, 2015 - March 6, 2016
Plymouth	January 4, 2015 - March 6, 2015
Prior Lake	January 2, 2015 - March 6, 2015
Scott County	November 4, 2014 - March 6, 2015
SouthWest Transit	November 4, 2014 - March 6, 2015
St. Cloud Link	January 7, 2015 - March 6, 2015
University of Minnesota	November 3, 2014 - March 6, 2015

# Minneapolis-St. Paul-Bloomington, MN-WI



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border —— MPO boundary \_\_\_\_\_

## Nashville

Nashville-Davidson-Murfreesboro-Franklin, TN

Rank by Weighted Accessibility	44
Rank by Total Employment	37
Total Jobs	812,042
Average Job Density (per km <sup>2</sup> )	55
Total Workers	742,460
Average Worker Density (per km <sup>2</sup> )	50

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
MTA	March 1, 2014 - March 7, 2015
RTA	March 1, 2014 - March 7, 2015

## Nashville-Davidson--Murfreesboro--Franklin, TN



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

## **New Orleans**

New Orleans-Metairie-Kenner, LA

Rank by Weighted Accessibility	30
Rank by Total Employment	48
Total Jobs	514,598
Average Job Density (per km <sup>2</sup> )	67
Total Workers	490,236
Average Worker Density (per km <sup>2</sup> )	64

Job and worker totals are based on LEHD estimates and may not match other sources.

### Job Accessibility by Travel Time Threshold



Agency	Dates
New Orleans RTA	January 1, 2015 - July 7, 2015

# **New Orleans-Metairie-Kenner, LA**





State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

65
### **New York**

New York-Northern New Jersey-Long Island, NY-NJ-PA

Rank by Weighted Accessibility	1
Rank by Total Employment	1
Total Jobs	8,497,473
Average Job Density (per km <sup>2</sup> )	491
Total Workers	8,271,797
Average Worker Density (per km <sup>2</sup> )	478

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
CTTransit- Stamford	July 1, 2014 - November 7, 2015
JFK Airtrain	December 4, 2014 - February 3, 2015
Long Island Rail Road	November 2, 2014 - May 1, 2015
MTA Bus Company	January 7, 2015 - April 7, 2015
MTA New York City Transit	June 1, 2014 - December 5, 2015
MTA New York City Transit - Bronx	January 1, 2015 - April 7, 2015
MTA New York City Transit - Brooklyn	January 7, 2015 - April 7, 2015
MTA New York City Transit - Manhattan	January 7, 2015 - April 7, 2015
MTA New York City Transit - Queens	January 7, 2015 - April 7, 2015
MTA New York City Transit - Staten Island	January 1, 2015 - April 7, 2015
Metro-North Railroad	October 2, 2014 - April 7, 2015
NJ TRANSIT BUS	January 5, 2015 - July 2, 2015
NJ TRANSIT RAIL	January 5, 2015 - July 2, 2015
NY Waterway	September 5, 2015 - October 7, 2015
Nassau Inter-County Express	August 1, 2014 - September 1, 2015
New York City Department of Transportation	April 4, 2014 - December 6, 2021
Port Authority Trans-Hudson Corporation	January 4, 2014 - April 2, 2016

Rockland County Department of Public Transportation	October 2, 2011 - April 7, 2013
Sussex County Skylands Ride	April 1, 2012 - January 3, 2018
Westchester County Department of Transportation	September 3, 2014 - February 7, 2015

### New York-Northern New Jersey-Long Island, NY-NJ-PA





State border —— MPO boundary \_\_\_\_\_

# **Oklahoma City** Oklahoma City, OK

Rank by Weighted Accessibility	43
Rank by Total Employment	45
Total Jobs	590,487
Average Job Density (per km <sup>2</sup> )	41
Total Workers	545,899
Average Worker Density (per km <sup>2</sup> )	38

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Embark	January 1, 2015 - January 7, 2016

## **Oklahoma City, OK**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Orlando

Orlando-Kissimmee-Sanford, FL

Rank by Weighted Accessibility	42
Rank by Total Employment	23
Total Jobs	1,085,798
Average Job Density (per km <sup>2</sup> )	121
Total Workers	977,204
Average Worker Density (per km <sup>2</sup> )	108

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Central Florida Regional Transit Authority	December 2, 2014 - April 7, 2015

## **Orlando-Kissimmee-Sanford, FL**



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

Philadelphia Philadelphia-Camden-Wilmington, PA-NJ-DE-MD

Rank by Weighted Accessibility	7
Rank by Total Employment	7
Total Jobs	2,682,051
Average Job Density (per km <sup>2</sup> )	225
Total Workers	2,703,026
Average Worker Density (per $km^2$ )	227

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
DART First State	January 1, 2015 - July 1, 2015
Harford Transit LINK	October 5, 2015 - May 3, 2016
MTA Office of Local Transit Support	January 2, 2015 - February 7, 2015
Maryland Transit Administration	August 1, 2014 - February 7, 2015
NJ TRANSIT BUS	January 5, 2015 - July 2, 2015
NJ TRANSIT RAIL	January 5, 2015 - July 2, 2015
Port Authority Transit Corporation	July 5, 2015 - November 3, 2016
SEPTA-bus	August 1, 2014 - February 7, 2015
SEPTA-rail	December 1, 2014 - April 7, 2015

### Philadelphia-Camden-Wilmington, PA-NJ-DE-MD



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Phoenix

Phoenix-Mesa-Glendale, AZ

Rank by Weighted Accessibility	22
Rank by Total Employment	13
Total Jobs	1,801,030
Average Job Density (per km <sup>2</sup> )	48
Total Workers	1,740,411
Average Worker Density (per km <sup>2</sup> )	46

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Valley Metro	October 2, 2014 - January 1, 2015

## **Phoenix-Mesa-Glendale, AZ**



## **Pittsburgh** Pittsburgh, PA

Rank by Weighted Accessibility	19
Rank by Total Employment	22
Total Jobs	1,134,551
Average Job Density (per km <sup>2</sup> )	83
Total Workers	1,103,769
Average Worker Density (per km <sup>2</sup> )	81

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Port Authority of Allegheny County	November 1, 2014 - March 7, 2015

## Pittsburgh, PA



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Portland

Portland-Vancouver-Hillsboro, OR-WA

Rank by Weighted Accessibility	11
Rank by Total Employment	24
Total Jobs	1,039,087
Average Job Density (per km <sup>2</sup> )	60
Total Workers	1,013,919
Average Worker Density (per km <sup>2</sup> )	59

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Blue Star Bus	January 3, 2013 - January 1, 2017
C-TRAN	January 5, 2015 - May 1, 2015
CCC Xpress	January 2, 2015 - December 1, 2015
Canby Area Transit	January 4, 2014 - January 1, 2017
Caravan Airport Transportation	January 5, 2015 - January 1, 2017
Cascades POINT	September 2, 2014 - January 1, 2017
Central Oregon Breeze	January 4, 2014 - January 1, 2017
Cherriots	March 1, 2012 - June 7, 2016
City2City Shuttle	January 5, 2015 - January 1, 2017
Columbia Area Transit	January 1, 2012 - January 1, 2017
Columbia County Rider	January 1, 2012 - January 1, 2017
Mt. Hood Express	January 4, 2014 - July 7, 2017
NorthWest POINT	January 1, 2012 - January 1, 2017
Portland Aerial Tram	August 1, 2015 - March 7, 2016
Portland Streetcar	August 1, 2015 - March 7, 2016
Ride Connection	January 5, 2015 - January 1, 2017
Sandy Area Metro	January 4, 2014 - January 1, 2017

South Metro Area Regional Transit	January 3, 2013 – January 1, 2017
Sunset Empire Transportation District	August 2, 2014 - September 4, 2015
Swan Island TMA	January 3, 2013 – January 1, 2017
Tillamook County Transportation District	January 4, 2014 - January 1, 2017
TriMet	December 1, 2014 - June 7, 2015
Valley Retriever	January 3, 2013 – January 1, 2017
Yamhill County Transit Area	January 5, 2015 – January 1, 2017

## Portland-Vancouver-Hillsboro, OR-WA



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

### Providence

Providence-New Bedford-Fall River, RI-MA

Rank by Weighted Accessibility	32
Rank by Total Employment	39
Total Jobs	659,709
Average Job Density (per km <sup>2</sup> )	161
Total Workers	666,008
Average Worker Density (per km <sup>2</sup> )	162

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Bloom Bus	January 6, 2015 - January 7, 2016
DATTCO	January 6, 2015 - January 7, 2016
MBTA	February 5, 2014 - March 6, 2015
MetroWest Regional Transit Authority	September 3, 2013 - September 4, 2020
Plymouth & Brockton Street Railway Co.	June 7, 2014 - October 6, 2014
Rhode Island Public Transit Authority	August 7, 2014 - March 6, 2015
Southeastern Regional Transit Authority	November 3, 2014 - November 7, 2015
The Greater Attleboro Taunton Regional Transit Authority	December 7, 2014 - January 6, 2016



### **Providence-New Bedford-Fall River, RI-MA**



State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

# Raleigh Raleigh-Cary, NC

Rank by Weighted Accessibility	46
Rank by Total Employment	46
Total Jobs	582,853
Average Job Density (per km <sup>2</sup> )	106
Total Workers	540,975
Average Worker Density (per km <sup>2</sup> )	99

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Capital Area Transit	January 4, 2014 - January 3, 2016
Cary Transit	January 4, 2014 – January 1, 2016
Durham Area Transit Authority	January 4, 2014 – January 6, 2016
NCSU Wolfline	January 4, 2014 – January 6, 2016
Triangle Transit	January 4, 2014 - January 3, 2016

Raleigh-Cary, NC





State border —— MPO boundary \_\_\_\_\_

### Richmond

Richmond, VA

Rank by Weighted Accessibility	41
Rank by Total Employment	44
Total Jobs	617,780
Average Job Density (per km <sup>2</sup> )	42
Total Workers	597,123
Average Worker Density (per km <sup>2</sup> )	41

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
GRTC Transit System	January 1, 2015 - May 7, 2015

### **Richmond**, VA



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border —— MPO boundary \_\_\_\_\_

### Riverside

Riverside-San Bernardino-Ontario, CA

Rank by Weighted Accessibility	48
Rank by Total Employment	20
Total Jobs	1,225,620
Average Job Density (per km <sup>2</sup> )	17
Total Workers	1,535,841
Average Worker Density (per km <sup>2</sup> )	22

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Beaumont Transit System	January 3, 2013 - January 1, 2017
Corona Cruiser	January 3, 2013 - January 1, 2017
Foothill Transit	January 1, 2015 - July 7, 2015
Metrolink Trains	September 6, 2014 - December 5, 2016
Mountain Transit	January 4, 2014 - January 1, 2017
OMNITRANS	January 2, 2015 - September 1, 2015
Orange County Transportation Authority	December 7, 2014 - February 7, 2015
Palo Verde Valley Transit Agency	January 3, 2013 - January 1, 2017
Riverside Transit Agency	January 1, 2015 – May 7, 2015
Sunline Transit Agency	January 1, 2015 - September 6, 2015
Victor Valley Transit Authority	January 4, 2014 - January 6, 2016

### **Riverside-San Bernardino-Ontario, CA**





State border —— MPO boundary \_\_\_\_\_

### Sacramento

Sacramento-Arden-Arcade-Roseville, CA

Rank by Weighted Accessibility	24
Rank by Total Employment	33
Total Jobs	871,134
Average Job Density (per km <sup>2</sup> )	66
Total Workers	859,689
Average Worker Density (per $km^2$ )	65

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Amador Transit	January 1, 2012 - January 1, 2017
BlueGo	September 7, 2015 - January 6, 2016
Capitol Corridor Joint Powers Authority	January 6, 2013 - November 6, 2013
El Dorado Transit	January 5, 2015 - January 1, 2017
Fairfield and Suisun Transit	January 3, 2013 - January 1, 2017
Gold Country Stage	July 3, 2014 - December 5, 2015
Mountain Line	January 4, 2014 - January 1, 2017
Night Rider (Airport Minibus)	December 4, 2014 - February 1, 2015
Night Rider (Airport Minibus)	July 4, 2015 - September 1, 2015
Northstar-at-Tahoe	June 5, 2012 - September 2, 2012
Rio Vista Delta Breeze	January 3, 2013 - January 6, 2016
Roseville Transit	January 1, 2014 - December 7, 2016
Sacramento Regional Transit	January 1, 2015 - June 7, 2015
Tahoe Area Regional Transit	December 2, 2014 - June 4, 2015
Tahoe Truckee Area Regional Transit	March 2, 2016 - March 4, 2017
Unitrans (Davis)	December 1, 2014 - March 7, 2015
Verde Lynx	January 3, 2013 - January 1, 2017

Yolobus (Yolo County) Yuba-Sutter Transit January 1, 2015 - December 7, 2016 January 3, 2013 - January 1, 2017

### Sacramento--Arden-Arcade--Roseville, CA



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border \_\_\_\_\_ MPO boundary \_\_\_\_\_

# Salt Lake City Salt Lake City, UT

Rank by Weighted Accessibility	15
Rank by Total Employment	40
Total Jobs	641,484
Average Job Density (per km <sup>2</sup> )	26
Total Workers	537,627
Average Worker Density (per km <sup>2</sup> )	22

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Elevated Transit	November 5, 2014 - January 1, 2017
Utah Transit Authority	December 1, 2014 - April 7, 2015

Salt Lake City, UT





State border —— MPO boundary \_\_\_\_\_

### San Antonio

San Antonio-New Braunfels, TX

Rank by Weighted Accessibility	23
Rank by Total Employment	32
Total Jobs	882,896
Average Job Density (per km <sup>2</sup> )	47
Total Workers	910,213
Average Worker Density (per $km^2$ )	48

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
VIA Metropolitan Transit	September 2, 2014 - September 1, 2015

### San Antonio-New Braunfels, TX



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border —— MPO boundary \_\_\_\_\_

**San Diego** San Diego-Carlsbad-San Marcos, CA

Rank by Weighted Accessibility	18
Rank by Total Employment	18
Total Jobs	1,275,701
Average Job Density (per km <sup>2</sup> )	117
Total Workers	1,296,780
Average Worker Density (per km <sup>2</sup> )	119

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
MTS	August 1, 2014 - June 7, 2015
Metrolink Trains	September 6, 2014 - December 5, 2016
North County Transit District	October 1, 2014 - June 7, 2015
Riverside Transit Agency	January 1, 2015 – May 7, 2015

### San Diego-Carlsbad-San Marcos, CA



### San Francisco

San Francisco-Oakland-Fremont, CA

Rank by Weighted Accessibility	2
Rank by Total Employment	11
Total Jobs	2,135,735
Average Job Density (per km <sup>2</sup> )	334
Total Workers	2,010,301
Average Worker Density (per $km^2$ )	314

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
AC Transit	December 7, 2014 - February 7, 2015
AirBART	September 2, 2012 - January 4, 2014
Bay Area Rapid Transit	November 7, 2014 - January 6, 2016
Baylink	January 1, 2012 - December 2, 2012
Bear Transit - UC Berkeley Shuttle	January 4, 2015 - January 3, 2017
Caltrain	October 1, 2014 - October 7, 2024
Capitol Corridor Joint Powers Authority	January 6, 2013 - November 6, 2013
County Connection	December 1, 2014 - June 7, 2015
Fairfield and Suisun Transit	January 3, 2013 – January 1, 2017
Golden Gate Ferry	October 2, 2012 - December 2, 2012
Golden Gate Transit	December 1, 2014 - March 7, 2015
Harbor Bay Ferry	January 1, 2012 - December 2, 2012
Marin Transit	January 4, 2015 - June 7, 2015
Menlo Park Midday Shuttle	January 7, 2010 - December 3, 2013
Modesto Area Express	January 4, 2014 – January 1, 2017
Rio Vista Delta Breeze	January 3, 2013 - January 6, 2016
SamTrans	December 1, 2014 - June 7, 2015

San Francisco Municipal Transportation Agency	November 7, 2014 - January 6, 2015
SolTrans	December 2, 2014 - December 1, 2017
Sonoma County Transit	January 5, 2015 - January 1, 2017
VTA	January 2, 2015 - April 1, 2015






## San Jose

San Jose-Sunnyvale-Santa Clara, CA

Rank by Weighted Accessibility	9
Rank by Total Employment	28
Total Jobs	955,658
Average Job Density (per km <sup>2</sup> )	138
Total Workers	842,627
Average Worker Density (per km <sup>2</sup> )	121

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
AC Transit	December 7, 2014 - February 7, 2015
Caltrain	October 1, 2014 - October 7, 2024
Capitol Corridor Joint Powers Authority	January 6, 2013 - November 6, 2013
Menlo Park Midday Shuttle	January 7, 2010 - December 3, 2013
SamTrans	December 1, 2014 - June 7, 2015
San Benito County Express	January 4, 2014 - January 1, 2017
Santa Cruz Metro	December 5, 2014 - March 4, 2015
VTA	January 2, 2015 - April 1, 2015



San Jose-Sunnyvale-Santa Clara, CA



# Seattle

Seattle-Tacoma-Bellevue, WA

Rank by Weighted Accessibility	8
Rank by Total Employment	15
Total Jobs	1,720,269
Average Job Density (per km <sup>2</sup> )	113
Total Workers	1,601,913
Average Worker Density (per km <sup>2</sup> )	105

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
City of Seattle	October 7, 2014 - February 6, 2015
Community Transit	March 2, 2014 - September 7, 2014
Everett Transit	November 1, 2015 - February 7, 2016
Intercity Transit	December 3, 2014 - December 2, 2019
Island Transit	August 4, 2014 - May 1, 2015
Kingcounty Marine Divison	October 7, 2014 - February 6, 2015
Kitsap Transit	January 5, 2015 - December 5, 2015
Metro Transit	September 7, 2014 - February 6, 2015
Pierce Transit	September 1, 2014 - February 7, 2015
Seattle Children's Hospital Shuttle	April 7, 2013 - December 5, 2015
Sound Transit	September 1, 2014 - February 7, 2015
Washington State Ferries	December 5, 2014 - March 7, 2015

# Seattle-Tacoma-Bellevue, WA



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

## St. Louis

St. Louis, MO-IL

Rank by Weighted Accessibility	31
Rank by Total Employment	17
Total Jobs	1,293,166
Average Job Density (per km <sup>2</sup> )	58
Total Workers	1,268,397
Average Worker Density (per km <sup>2</sup> )	57

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
JeffCo Express	January 4, 2014 - January 1, 2017
Metro St. Louis	December 2, 2014 - June 1, 2015

St. Louis, MO-IL





## Tampa

Tampa-St. Petersburg-Clearwater, FL

Rank by Weighted Accessibility	36
Rank by Total Employment	21
Total Jobs	1,162,376
Average Job Density (per km <sup>2</sup> )	179
Total Workers	1,145,780
Average Worker Density (per km <sup>2</sup> )	176

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Hillsborough Area Regional Transit	December 1, 2014 - July 7, 2015
Manatee County Area Transit	January 3, 2013 - December 1, 2017
PSTA	October 1, 2014 - June 7, 2015



# Tampa-St. Petersburg-Clearwater, FL



Virginia Beach Virginia Beach-Norfolk-Newport News, VA-NC

Rank by Weighted Accessibility	47
Rank by Total Employment	38
Total Jobs	696,784
Average Job Density (per km <sup>2</sup> )	102
Total Workers	689,338
Average Worker Density (per km <sup>2</sup> )	101

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Hampton Roads Transit (HRT)	October 1, 2014 - May 7, 2015

# Virginia Beach-Norfolk-Newport News, VA-NC





State border —— MPO boundary \_\_\_\_

## Washington

Washington-Arlington-Alexandria, DC-VA-MD-WV

Rank by Weighted Accessibility	4
Rank by Total Employment	5
Total Jobs	2,878,413
Average Job Density (per km <sup>2</sup> )	199
Total Workers	2,689,299
Average Worker Density (per km <sup>2</sup> )	185

Job and worker totals are based on LEHD estimates and may not match other sources.

#### Job Accessibility by Travel Time Threshold



Agency	Dates
Alexandria Transit Company (DASH)	February 1, 2015 - December 7, 2015
Arlington Transit	January 2, 2015 - December 7, 2016
DC Circulator	January 3, 2015 - July 7, 2015
Fairfax Connector	September 7, 2013 - March 6, 2017
MET	January 3, 2015 - July 7, 2015
MTA Office of Local Transit Support	January 2, 2015 - February 7, 2015
Maryland Transit Administration	August 1, 2014 - February 7, 2015
Montgomery County MD Ride On	May 1, 2015 - September 7, 2015
Montgomery County MD Ride On	November 1, 2014 - March 7, 2015
Potomac and Rappahannock Transportation Commission	July 2, 2014 - December 5, 2015
Regional Transportation Agency of Central Maryland	July 3, 2014 - December 5, 2015
St. Mary's Transit System	August 6, 2014 - December 7, 2016
Virginia Railway Express	November 2, 2010 - February 1, 2016

# Washington-Arlington-Alexandria, DC-VA-MD-WV



Jobs within 30 minutes (Transit, AM peak) 0 - 1,000 1,000 - 2,500 2,500 - 5,000 5,000 - 7,500 7,500 - 10,000 10,000 - 25,000 25,000 - 50,000 50,000 - 75,000 75,000 - 100,000 100,000 - 250,000 250,000 - 500,000 500,000 - 750,000 750,000 - 1,000,000 1,000,000 - 2,500,000 2,500,000 - 5,000,000 5,000,000 - 7,500,000 7,500,000 - 10,000,000 10,000,000 +

> State border —— MPO boundary \_\_\_\_

## References

- Geurs, K. and Van Eck, J. (2001). Accessibility measures: Review and applications. Technical Report 408505 006, National Institute of Public Health and the Environment.
- Handy, S. L. and Niemeier, D. A. (1997). Measuring accessibility: An exploration of issues and alternatives. *Environment and planning A*, 29(7):1175–1194.
- Hansen, W. (1959). How accessibility shapes land use. *Journal of the American Institute of Planners*, 25(2):73–76.
- Levine, J., Grengs, J., Shen, Q., and Shen, Q. (2012). Does accessibility require density or speed? A comparison of fast versus close in getting where you want to go in U.S. metropolitan regions. *Journal of the American Planning Association*, 78(2):157–172.
- Levinson, D. M. (2013). Access across America. Technical Report CTS 13-20, University of Minnesota Center for Transportation Studies, http://www.cts.umn.edu/Publications/ResearchReports/pdfdownload.pl?id=2334.
- McKenzie, B. (2014). Modes less traveled bicycling and walking to work in the United States: 2008–2012. Technical Report ACS-25, U.S. Census Bureau.
- Ramsey, K. and Bell, A. (2014). The smart location database: A nationwide data resource characterizing the built environment and destination accessibility at the neighborhood scalement and destination accessibility at the neighborhood scale. *Cityscape: A Journal of Policy Development and Research*, 16(2).
- Tomer, A., Kneebone, E., Puentes, R., and Berube, A. (2011). Missed opportunity: Transit and jobs in metropolitan america. Technical report, Brookings Institution, http://www.brookings.edu/~/media/research/files/reports/2011/5/12%20jobs%20and% 20transit/0512\_jobs\_transit.pdf.

Walker, J. (2012). Human Transit. Island Press.