

**Before the
OFFICE OF THE SECRETARY OF TRANSPORTATION
Washington, D.C. 20590**

In the Matter of)	
)	
Request for Comments on the Scope of)	Docket No. DOT-OST-2018-0150
the Study on the Impact of Automated)	
Vehicle Technologies on Workforce)	83 Fed. Reg. 50,747
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**COMMENTS OF
THE COMPETITIVE ENTERPRISE INSTITUTE**

November 1, 2018

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Introduction

On behalf of the Competitive Enterprise Institute (“CEI”), I respectfully submit these comments in response to the Office of the Secretary of Transportation’s (“OST”) Request for Comments on the Scope of the Study on the Impact of Automated Vehicle Technologies on Workforce (“RFC”).¹

CEI is a nonprofit, nonpartisan public interest organization that focuses on regulatory policy from a pro-market perspective.² This comment letter proposes expanding the scope of the RFC’s Statement of Work to include research questions related to employment impacts of low-cost automated vehicle taxi-style services on low-income, transit-dependent urban populations.

Exploring the Potential Employment Benefits of Future Automated Taxi Services Replacing Traditional Urban Mass Transit Services

In the RFC, OST notes two recent whitepapers examining the labor market effects of automated vehicles (“AVs”).³ The first, published by the Department of Commerce in 2017, examines potential workforce impacts by separating “motor vehicle operators” from “other on-the-job drivers,” noting that jobs in the latter category employed more than three times as many workers and that “other-on-the-job drivers” could stand to benefit from “greater productivity and better working conditions.”⁴

The second, published by Securing America’s Energy Future in 2018, notes similar potential labor market effects while also highlighting benefits to commuters by automobile, examining potential declines in travel costs related to AV-related traffic congestion reductions and enhanced productivity through the elimination of time-on-task driving.⁵

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1. Scope of the Study on the Impact of Automated Vehicle Technologies on Workforce, *Request for Comments*, DOT-OST-2018-0150, 83 Fed. Reg. 50,747 (Oct. 9, 2018) [hereinafter RFC].
 2. See About CEI, <https://cei.org/about-cei> (last visited Oct. 30, 2018).
 3. RFC, *supra* note 1, at 50,747-48.
 4. David Beede et al., *The Employment Impact of Autonomous Vehicles*, Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce, ESA Issue Brief #05-17 (Aug. 11, 2017), at 1, available at https://www.commerce.gov/sites/commerce.gov/files/migrated/reports/Employment%20Impact%20Autonomous%20Vehicles_0.pdf.
 5. Richard Mudge et al., *America’s Workforce and the Self-Driving Future: Realizing Productivity Gains and Spurring Economic Growth*, Securing America’s Future Energy (Jun. 2018), at 25-26, available at https://avworkforce.secureenergy.org/wp-content/uploads/2018/06/Americas-Workforce-and-the-Self-Driving-Future_Realizing-Productivity-Gains-and-Spurring-Economic-Growth.pdf.

Both of these whitepapers make important contributions to the preliminary debate over the projected employment impacts of AVs. However, neither address a significant longstanding urban policy issue related to low-income residential location choice, means of transportation to work, and accessibility to metropolitan area employment opportunities.

Since the 1960s, urban economists have attempted to explain why low-income households tend to concentrate in urban cores within metropolitan areas.⁶ A popular theory given the state of transportation technology and residential spatial patterns is that the urban poor reside close to central business districts largely because of access to mass transit service and their inability to afford their own automobiles.⁷ Recent research has supported this hypothesis, finding “the primary reason for central city poverty is public transportation.”⁸

Very few Americans rely on mass transit, with just 5 percent of American workers aged 16 years and older commuting to work via mass transit in 2017.⁹ In contrast, 76 percent of workers drove alone and 9 percent carpooled.¹⁰ Despite this, in 2017, mass transit received 28 percent of total federal, state, and local surface transportation funding¹¹—more than five times its commuting mode share and 11 times mass transit’s share of total commuting and non-commuting trips.¹² Thus, the most compelling public interest argument for continued mass transit subsidies is transportation equity for the transit-dependent urban poor.

Unfortunately, even when lavishly subsidized, mass transit poorly serves low-income, transit-dependent urban populations. As explained below, metropolitan area job accessibility by mass transit compares poorly with job accessibility by automobile. But before discussing U.S. metropolitan area job accessibility data and the diminished work prospects of the transit-dependent urban poor, we will first explain the type of travel cost at the root of this problem.

6. See, e.g., JOHN R. MEYER & JOHN F. KAIN, *THE URBAN TRANSPORTATION PROBLEM* (1965).

7. See, e.g., Stephen F. LeRoy & Jon Sonstelie, *Paradise Lost and Regained: Transportation Innovation, Income, and Residential Location*, 13 J. URB. ECON. 67 (1983).

8. Edward L. Glaeser et al., *Why Do the Poor Live in Cities? The Role of Public Transportation*, 63 J. URB. ECON. 1 (2008).

9. U.S. Census Bureau, *2017 American Community Survey 1-Year Estimates*, Table S0802 (Sep. 2018), available at https://factfinder.census.gov/bkmk/table/1.0/en/ACS/17_1YR/S0802.

10. *Id.*

11. Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure, 1956 to 2017* (Oct. 2018), available at <https://www.cbo.gov/system/files?file=2018-10/54539-Infrastructure.pdf>.

12. Federal Highway Administration, *Person Trips by Transportation Mode, 2017 NATIONAL HOUSEHOLD TRAVEL SURVEY* (Mar. 2018), available at <https://nhts.ornl.gov/person-trips>.

Transportation users face two travel cost budgets: time and money. Given their relative lack of financial resources, the urban poor are more sensitive to financial costs of transportation and less sensitive to travel time costs. A key constraint to travel time is known as Marchetti's constant.¹³ Marchetti's constant posits that people are willing to spend on average one hour commuting each workday, or 30 minutes each direction. Recent empirical research examining mobile phone data from the U.S., Europe, and Africa supports Marchetti's theory that this "universal law of commuting" holds across time, space, income, and culture.¹⁴

The Accessibility Observatory of the Center for Transportation Studies at the University of Minnesota has been publishing empirical research on job accessibility in America's largest 50 metropolitan areas by car, transit, and walking since 2013 in its *Accessibility Across America* series.¹⁵ This body of research shows, in keeping with Marchetti's constant, the average share of jobs reachable by car in 30 minutes from home to work is 47.3 percent versus 1.12 percent by transit (see A-3, Table 3).¹⁶

However, there are two major caveats. First, high-quality transit allows riders to engage in activities such as reading or napping that are unavailable to auto commuters, who must stay on task while driving, suggesting that quality differences would increase acceptable transit commute times above acceptable driver commute times. Second, most U.S. cities lack extensive and robust mass transit networks, and transit system usage is concentrated in a handful of very large metropolitan areas, namely New York City.

Even a doubling of Marchetti's constant for mass transit (from 30 to 60 minutes; two hours of total daily commuting) and a one-third reduction in Marchetti's constant for automobiles (from 30 to 20 minutes; 40 minutes of total daily commuting) does little to improve the standing of mass transit relative to driving in terms of metropolitan area job accessibility. The metropolitan area average for jobs accessible in 20 minutes of driving is 22.68 percent versus 8.1 percent in 60 minutes by transit.

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13. Cesare Marchetti, *Anthropological Invariants in Travel Behavior*, TECH. FORECASTING & SOC. CHANGE 45 at 75-88 (1994).
 14. Kevin S. Kung et al., *Exploring Universal Patterns in Human Home-Work Commuting from Mobile Phone Data*, 9 PLOS ONE 6 (2014), available at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0096180>.
 15. See Access Across America, <http://ao.umn.edu/research/america/index.html> (last visited Oct. 30, 2018).
 16. Author's calculation using 2017 auto data and 2017 transit data from the *Access Across America* series where jobs accessible by mode in 10-minute increments from 10 to 60 minutes are divided by total jobs. This is an analysis of the 49 largest metropolitan areas in the U.S., excluding Memphis, which lacked appropriate transit data for 2017. See Appendix A for the complete dataset.

Only in five of the six legacy transit cities, which account for the majority of total transit trips in the U.S., does mass transit outperform driving in this very transit-favorable job accessibility comparison:

- Boston, 10.59 percent versus 9.55 percent;
- Chicago, 7.65 percent versus 6.77 percent;
- New York, 14.55 percent versus 5.42 percent;
- San Francisco, 17.96 percent versus 12.77 percent; and
- Washington, 12.16 percent versus 8.52 percent.

In Philadelphia, the sixth legacy transit city, drivers can access 8.71 percent of metropolitan area jobs in 20 minutes versus the 7.41 percent of jobs reachable in 60 minutes by transit.

As these data indicate, mass transit performs poorly relative to private automobiles. Given the high capital and operating costs of transit relative to autos and the inherent first- and last-mile challenges of radial or grid-based transit networks, it is unlikely mass transit will ever be able to offer service capable of meaningfully reducing this accessibility gap. This means low-income, transit-dependent urban populations are condemned to limited employment prospects until they are able to afford superior transportation service.

Fortunately, AVs may finally be able to solve the “urban transportation problem.” Research published in 2018 by a team of Swiss academics suggests automated driving systems have the potential to reduce taxicab operating costs by 85 percent in urban settings and 83 percent in suburban and exurban settings.¹⁷

Under this projection, automated taxi service costs on a passenger-mile basis would fall below present costs of providing rail and bus transit, and shared automated taxis are projected to be cheaper even than automated buses.¹⁸ If these cost savings are realized, the presently transit-dependent urban poor would be able to access automobility and reach jobs across their metropolitan areas currently inaccessible by transit.

OST asks in the RFC, “Should the [Statement of Work] be expanded...?”¹⁹ Given the above, the answer is yes. In conducting the AV workforce study, the Department should examine the potential employment prospect gains—particularly those for low-income, traditionally transit-dependent urban residents—in a world of affordable AV services.

17. Patrick M. Bösch et al., *Cost-based analysis of autonomous mobility services*, 63 TRANS. POL’Y 76, 82 (May 2018).

18. *Id.*

19. RFC, *supra* note 1, at 50,749.

Conclusion

We appreciate the opportunity to submit comments to OST on this matter and look forward to further participation.

Respectfully submitted,

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APPENDIX A

Table 1. Transit Job Accessibility

Metro	Total Jobs	10	20	30	40	50	60
Atlanta	2,511,895	327	936	7,152	18,963	40,575	72,599
Austin	956,883	479	3,125	11,444	27,794	51,601	81,826
Baltimore	1,309,980	656	5,202	17,344	39,068	71,035	111,707
Birmingham	508,196	195	914	2,713	6,097	11,236	17,858
Boston	2,597,474	1,569	12,461	44,014	102,793	185,162	275,182
Buffalo	547,851	459	3,348	11,101	25,397	46,002	70,219
Charlotte	971,585	412	2,342	7,682	18,417	34,868	55,578
Chicago	4,480,793	1,765	15,515	53,831	124,251	224,898	342,635
Cincinnati	1,019,443	365	2,157	7,080	16,385	30,562	48,793
Cleveland	1,016,398	439	2,527	8,703	22,317	44,429	74,528
Columbus	987,881	404	3,165	10,857	24,913	46,249	74,521
Dallas	3,352,887	472	3,132	10,699	27,006	56,150	100,304
Denver	1,404,705	820	6,136	20,665	50,416	102,821	180,478
Detroit	1,881,505	298	1,877	6,349	16,277	34,937	64,677
Hartford	637,363	455	3,438	11,300	24,037	41,986	64,698
Houston	2,986,623	474	3,637	13,639	33,725	66,836	114,960
Indianapolis	976,644	332	2,278	7,491	17,349	32,467	52,705
Jacksonville	635,773	277	1,211	3,765	9,340	18,984	32,651
Kansas City	1,041,536	351	2,094	6,864	15,944	29,505	47,330
Las Vegas	911,758	286	2,094	8,350	24,295	57,145	110,821
Los Angeles	6,021,504	1,246	10,266	38,647	96,294	194,784	341,437
Louisville	645,913	321	2,155	7,263	17,588	33,099	52,872
Miami	2,471,380	753	4,558	14,419	33,960	66,127	113,542
Milwaukee	845,543	697	5,216	19,383	47,810	89,491	139,321
Minneapolis	1,841,695	558	4,455	18,029	46,801	90,650	146,905
Nashville	867,546	283	1,595	5,380	12,248	21,929	34,390
New Orleans	540,982	592	3,413	10,429	21,972	35,117	48,220
New York	8,848,900	6,132	62,161	213,407	471,409	840,599	1,287,186
Oklahoma City	609,953	262	1,587	4,936	11,529	21,693	35,139
Orlando	1,157,075	331	1,811	5,596	13,357	27,105	48,584
Philadelphia	2,774,614	1,337	11,406	38,185	80,695	138,076	205,692
Phoenix	1,913,898	325	2,611	10,290	28,260	60,739	109,972
Pittsburgh	1,122,707	514	3,133	12,317	28,734	50,509	76,673
Portland	1,115,646	819	5,785	20,666	50,787	96,831	156,682
Providence	682,358	535	3,205	9,751	20,457	35,071	53,339
Raleigh	645,722	244	1,347	4,371	10,631	21,036	36,321
Richmond	639,299	349	2,201	6,719	13,934	22,782	33,016
Riverside	1,335,442	203	1,371	4,732	11,519	22,827	39,302
Sacramento	903,212	478	2,969	9,430	22,005	43,074	72,932
Salt Lake City	682,296	499	3,877	14,721	38,625	81,033	144,560
San Antonio	949,296	328	2,326	9,306	24,329	49,566	86,468
San Diego	1,338,649	655	3,727	12,109	30,587	63,522	113,058
San Francisco	2,312,021	2,773	25,965	81,215	169,525	283,096	415,289
San Jose	1,022,079	654	5,173	19,254	51,597	111,469	203,107
Seattle	1,817,683	1,478	9,530	29,003	65,316	117,114	185,318
St. Louis	1,327,533	358	2,102	7,268	18,833	37,894	64,119
Tampa	1,254,396	343	2,078	6,891	16,252	31,310	52,728
Virginia Beach	706,028	284	1,492	4,649	10,542	19,919	33,168
Washington	2,939,000	1,324	12,775	50,551	120,916	226,810	357,510

Notes: The above data on the 50 largest* U.S. metropolitan areas were extracted from Access Across America: Transit 2017 (<http://ao.umn.edu/research/america/transit/2017/index.html>) from the University of Minnesota's Center for Transportation Studies Access Observatory. Columns 10-60 represent the number of metropolitan area jobs accessibly by transit within the numeric time increment (e.g., 30 = number of metropolitan area jobs accessible by transit within 30 minutes).

*Memphis, Tennessee, the 41st largest U.S. metropolitan area, was excluded due to a lack of General Transit Feed Specification data.

Table 2. Automobile Job Accessibility

Metro	Total Jobs	10	20	30	40	50	60
Atlanta	2,511,895	30,978	184,204	475,950	863,805	1,314,616	1,791,972
Austin	956,883	52,575	246,705	481,581	709,627	895,010	1,051,765
Baltimore	1,309,980	41,606	238,010	584,586	979,380	1,384,892	1,926,759
Birmingham	508,196	25,029	131,759	268,251	373,520	473,486	582,467
Boston	2,597,474	48,002	248,183	605,308	1,080,633	1,635,082	2,261,287
Buffalo	547,851	44,912	214,387	389,028	486,679	540,586	582,827
Charlotte	971,585	35,290	185,778	450,125	741,740	964,577	1,137,958
Chicago	4,480,793	60,745	303,397	769,483	1,417,022	2,198,055	3,012,464
Cincinnati	1,019,443	36,069	213,277	494,927	779,140	1,014,801	1,197,690
Cleveland	1,016,398	34,822	206,317	507,302	844,128	1,136,296	1,372,782
Columbus	987,881	51,510	308,145	605,435	796,633	952,756	1,093,480
Dallas	3,352,887	62,472	387,888	998,369	1,748,896	2,459,862	2,941,638
Denver	1,404,705	63,077	337,609	786,345	1,214,524	1,454,894	1,617,550
Detroit	1,881,505	57,697	336,700	787,536	1,257,842	1,655,733	1,975,248
Hartford	637,363	40,742	217,490	487,649	803,045	1,128,824	1,443,504
Houston	2,986,623	53,421	327,120	829,147	1,468,574	2,082,569	2,520,388
Indianapolis	976,644	42,811	248,710	556,698	808,328	970,325	1,115,194
Jacksonville	635,773	27,122	149,127	316,042	452,106	556,738	634,122
Kansas City	1,041,536	52,354	292,255	615,321	849,842	978,380	1,087,996
Las Vegas	911,758	62,912	414,110	782,690	847,343	852,504	856,257
Los Angeles	6,021,504	100,180	532,090	1,282,378	2,258,999	3,376,463	4,517,360
Louisville	645,913	40,349	221,991	423,448	536,331	631,936	720,647
Miami	2,471,380	46,495	247,916	598,727	984,479	1,367,894	1,737,359
Milwaukee	845,543	76,029	330,152	596,519	800,010	963,380	1,172,274
Minneapolis	1,841,695	65,094	392,612	875,049	1,298,075	1,573,580	1,754,122
Nashville	867,546	27,864	139,193	307,872	510,781	708,438	847,287
New Orleans	540,982	39,896	178,482	308,564	390,489	495,148	616,252
New York	8,848,900	93,672	479,756	1,241,973	2,328,370	3,724,480	5,165,184
Oklahoma City	609,953	44,142	221,828	398,760	507,486	574,222	619,587
Orlando	1,157,075	33,684	206,921	526,926	841,115	1,088,168	1,323,827
Philadelphia	2,774,614	44,166	241,781	618,294	1,167,747	1,829,560	2,542,247
Phoenix	1,913,898	66,595	353,914	803,505	1,245,242	1,565,484	1,739,291
Pittsburgh	1,122,707	25,716	135,152	319,641	548,311	779,283	1,000,173
Portland	1,115,646	51,156	243,316	523,784	799,920	1,002,541	1,130,378
Providence	682,358	35,567	163,683	351,809	602,433	923,578	1,279,767
Raleigh	645,722	42,333	228,986	489,859	714,512	902,002	1,070,759
Richmond	639,299	40,220	203,279	392,485	513,821	598,144	697,915
Riverside	1,335,442	37,199	195,896	455,652	771,648	1,195,483	1,815,028
Sacramento	903,212	45,923	229,228	482,910	728,643	910,671	1,063,577
Salt Lake City	682,296	81,378	396,026	637,938	833,871	983,225	1,044,810
San Antonio	949,296	51,422	303,655	583,812	756,627	866,640	949,332
San Diego	1,338,649	60,997	316,370	642,021	903,024	1,164,618	1,433,964
San Francisco	2,312,021	76,658	295,256	652,817	1,164,493	1,773,188	2,414,867
San Jose	1,022,079	85,367	443,429	811,889	1,181,427	1,612,387	2,163,277
Seattle	1,817,683	52,984	240,557	547,963	861,352	1,157,365	1,421,132
St. Louis	1,327,533	42,086	254,468	581,284	878,895	1,074,346	1,200,988
Tampa	1,254,396	39,609	185,724	421,134	736,001	1,047,874	1,328,760
Virginia Beach	706,028	36,215	181,882	339,490	473,903	575,621	659,585
Washington	2,939,000	47,353	250,518	623,387	1,174,119	1,849,361	2,555,148

Notes: The above data on the 50 largest* U.S. metropolitan areas were extracted from Access Across America: Auto 2017 (<http://ao.umn.edu/research/america/auto/2017/index.html>) from the University of Minnesota's Center for Transportation Studies Access Observatory. Columns 10-60 represent the number of metropolitan area jobs accessible by automobile within the numeric time increment (e.g., 30 = number of metropolitan area jobs accessible by automobile within 30 minutes).

*Memphis, Tennessee, the 41st largest U.S. metropolitan area, was excluded due to a lack of General Transit Feed Specification data.

Table 3. Transit Job Accessibility versus Automobile Job Accessibility

Metro	T10	A10	T20	A20	T30	A30	T40	A40	T50	A50	T60	A60
Atlanta	0.01%	1.23%	0.04%	7.33%	0.28%	18.95%	0.75%	34.39%	1.62%	52.34%	2.89%	71.34%
Austin	0.05%	5.49%	0.33%	25.78%	1.20%	50.33%	2.90%	74.16%	5.39%	93.53%	8.55%	109.92%
Baltimore	0.05%	3.18%	0.40%	18.17%	1.32%	44.63%	2.98%	74.76%	5.42%	105.72%	8.53%	147.08%
Birmingham	0.04%	4.93%	0.18%	25.93%	0.53%	52.78%	1.20%	73.50%	2.21%	93.17%	3.51%	114.61%
Boston	0.06%	1.85%	0.48%	9.55%	1.69%	23.30%	3.96%	41.60%	7.13%	62.95%	10.59%	87.06%
Buffalo	0.08%	8.20%	0.61%	39.13%	2.03%	71.01%	4.64%	88.83%	8.40%	98.67%	12.82%	106.38%
Charlotte	0.04%	3.63%	0.24%	19.12%	0.79%	46.33%	1.90%	76.34%	3.59%	99.28%	5.72%	117.12%
Chicago	0.04%	1.36%	0.35%	6.77%	1.20%	17.17%	2.77%	31.62%	5.02%	49.06%	7.65%	67.23%
Cincinnati	0.04%	3.54%	0.21%	20.92%	0.69%	48.55%	1.61%	76.43%	3.00%	99.54%	4.79%	117.48%
Cleveland	0.04%	3.43%	0.25%	20.30%	0.86%	49.91%	2.20%	83.05%	4.37%	111.80%	7.33%	135.06%
Columbus	0.04%	5.21%	0.32%	31.19%	1.10%	61.29%	2.52%	80.64%	4.68%	96.44%	7.54%	110.69%
Dallas	0.01%	1.86%	0.09%	11.57%	0.32%	29.78%	0.81%	52.16%	1.67%	73.37%	2.99%	87.73%
Denver	0.06%	4.49%	0.44%	24.03%	1.47%	55.98%	3.59%	86.46%	7.32%	103.57%	12.85%	115.15%
Detroit	0.02%	3.07%	0.10%	17.90%	0.34%	41.86%	0.87%	66.85%	1.86%	88.00%	3.44%	104.98%
Hartford	0.07%	6.39%	0.54%	34.12%	1.77%	76.51%	3.77%	125.99%	6.59%	177.11%	10.15%	226.48%
Houston	0.02%	1.79%	0.12%	10.95%	0.46%	27.76%	1.13%	49.17%	2.24%	69.73%	3.85%	84.39%
Indianapolis	0.03%	4.38%	0.23%	25.47%	0.77%	57.00%	1.78%	82.77%	3.32%	99.35%	5.40%	114.19%
Jacksonville	0.04%	4.27%	0.19%	23.46%	0.59%	49.71%	1.47%	71.11%	2.99%	87.57%	5.14%	99.74%
Kansas City	0.03%	5.03%	0.20%	28.06%	0.66%	59.08%	1.53%	81.60%	2.83%	93.94%	4.54%	104.46%
Las Vegas	0.03%	6.90%	0.23%	45.42%	0.92%	85.84%	2.66%	92.94%	6.27%	93.50%	12.15%	93.91%
Los Angeles	0.02%	1.66%	0.17%	8.84%	0.64%	21.30%	1.60%	37.52%	3.23%	56.07%	5.67%	75.02%
Louisville	0.05%	6.25%	0.33%	34.37%	1.12%	65.56%	2.72%	83.03%	5.12%	97.84%	8.19%	111.57%
Miami	0.03%	1.88%	0.18%	10.03%	0.58%	24.23%	1.37%	39.84%	2.68%	55.35%	4.59%	70.30%
Milwaukee	0.08%	8.99%	0.62%	39.05%	2.29%	70.55%	5.65%	94.61%	10.58%	113.94%	16.48%	138.64%
Minneapolis	0.03%	3.53%	0.24%	21.32%	0.98%	47.51%	2.54%	70.48%	4.92%	85.44%	7.98%	95.24%
Nashville	0.03%	3.21%	0.18%	16.04%	0.62%	35.49%	1.41%	58.88%	2.53%	81.66%	3.96%	97.66%
New Orleans	0.11%	7.37%	0.63%	32.99%	1.93%	57.04%	4.06%	72.18%	6.49%	91.53%	8.91%	113.91%
New York	0.07%	1.06%	0.70%	5.42%	2.41%	14.04%	5.33%	26.31%	9.50%	42.09%	14.55%	58.37%
Oklahoma City	0.04%	7.24%	0.26%	36.37%	0.81%	65.38%	1.89%	83.20%	3.56%	94.14%	5.76%	101.58%
Orlando	0.03%	2.91%	0.16%	17.88%	0.48%	45.54%	1.15%	72.69%	2.34%	94.04%	4.20%	114.41%
Philadelphia	0.05%	1.59%	0.41%	8.71%	1.38%	22.28%	2.91%	42.09%	4.98%	65.94%	7.41%	91.63%
Phoenix	0.02%	3.48%	0.14%	18.49%	0.54%	41.98%	1.48%	65.06%	3.17%	81.80%	5.75%	90.88%
Pittsburgh	0.05%	2.29%	0.28%	12.04%	1.10%	28.47%	2.56%	48.84%	4.50%	69.41%	6.83%	89.09%
Portland	0.07%	4.59%	0.52%	21.81%	1.85%	46.95%	4.55%	71.70%	8.68%	89.86%	14.04%	101.32%
Providence	0.08%	5.21%	0.47%	23.99%	1.43%	51.56%	3.00%	88.29%	5.14%	135.35%	7.82%	187.55%
Raleigh	0.04%	6.56%	0.21%	35.46%	0.68%	75.86%	1.65%	110.65%	3.26%	139.69%	5.62%	165.82%
Richmond	0.05%	6.29%	0.34%	31.80%	1.05%	61.39%	2.18%	80.37%	3.56%	93.56%	5.16%	109.17%
Riverside	0.02%	2.79%	0.10%	14.67%	0.35%	34.12%	0.86%	57.78%	1.71%	89.52%	2.94%	135.91%
Sacramento	0.05%	5.08%	0.33%	25.38%	1.04%	53.47%	2.44%	80.67%	4.77%	100.83%	8.07%	117.75%
Salt Lake City	0.07%	11.93%	0.57%	58.04%	2.16%	93.50%	5.66%	122.22%	11.88%	144.11%	21.19%	153.13%
San Antonio	0.03%	5.42%	0.25%	31.99%	0.98%	61.50%	2.56%	79.70%	5.22%	91.29%	9.11%	100.00%
San Diego	0.05%	4.56%	0.28%	23.63%	0.90%	47.96%	2.28%	67.46%	4.75%	87.00%	8.45%	107.12%
San Francisco	0.12%	3.32%	1.12%	12.77%	3.51%	28.24%	7.33%	50.37%	12.24%	76.69%	17.96%	104.45%
San Jose	0.06%	8.35%	0.51%	43.39%	1.88%	79.44%	5.05%	115.59%	10.91%	157.76%	19.87%	211.65%
Seattle	0.08%	2.91%	0.52%	13.23%	1.60%	30.15%	3.59%	47.39%	6.44%	63.67%	10.20%	78.18%
St. Louis	0.03%	3.17%	0.16%	19.17%	0.55%	43.79%	1.42%	66.21%	2.85%	80.93%	4.83%	90.47%
Tampa	0.03%	3.16%	0.17%	14.81%	0.55%	33.57%	1.30%	58.67%	2.50%	83.54%	4.20%	105.93%
Virginia Beach	0.04%	5.13%	0.21%	25.76%	0.66%	48.08%	1.49%	67.12%	2.82%	81.53%	4.70%	93.42%
Washington	0.05%	1.61%	0.43%	8.52%	1.72%	21.21%	4.11%	39.95%	7.72%	62.92%	12.16%	86.94%
Average	0.05%	4.32%	0.33%	22.68%	1.12%	47.30%	2.64%	70.27%	4.98%	90.94%	8.10%	110.45%

Notes: Comparison between Tables 1 and 2, expressed as rates (jobs accessible/total jobs). T10-T60 represent the share of metropolitan area jobs accessible by transit within the numeric time increment (e.g., T30 = share of metropolitan area jobs accessible by transit within 30 minutes). A10-A60 represent the same for jobs reachable by automobile.