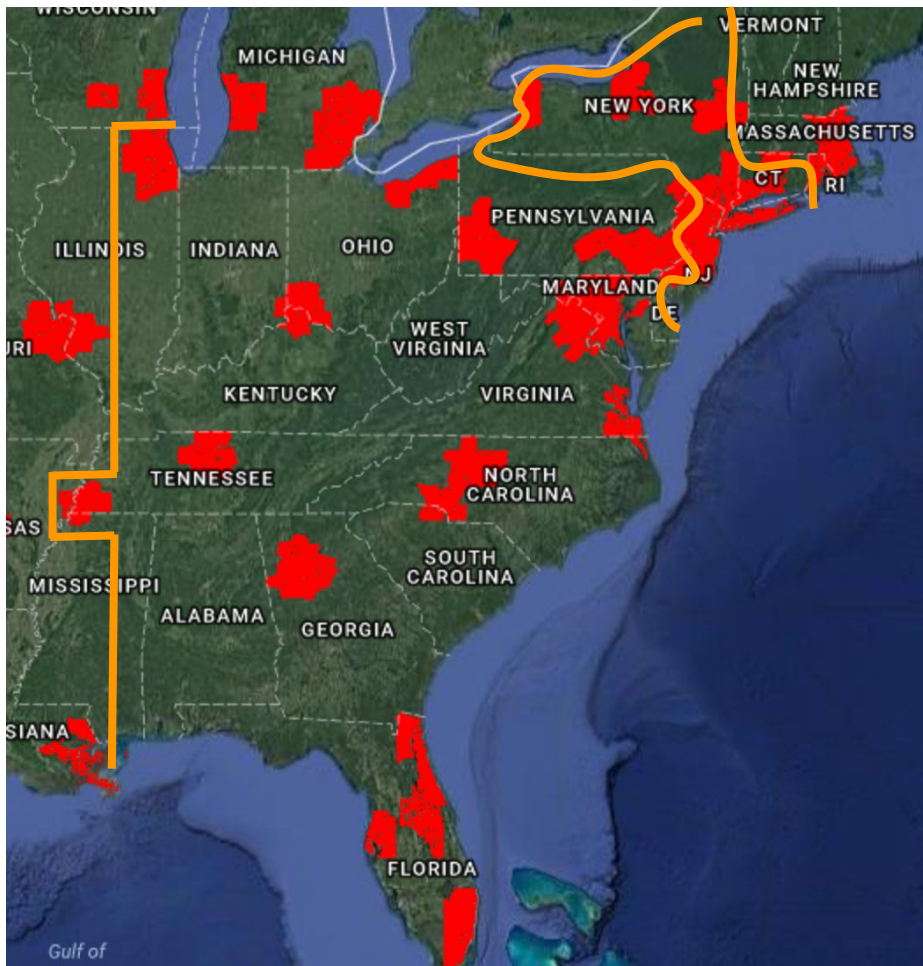




Chapter 7: Analysis of the Impact of Existing Transit Systems Chicago and East (excluding NY, NJ, and CT)

By Jamie Cuffe, Jarret
Lowell and Alex Yablonski



From TOD Database

- ▶ All major cities in:
 - ▷ Illinois
 - ▷ Michigan
 - ▷ Indiana
 - ▷ Kentucky
 - ▷ Tennessee
 - ▷ Mississippi
 - ▷ Everything East of those states
 - ▷ Excluded NY, NJ, and CT

Goal

Analyze impact of existing transit, light, and passenger rail systems in Eastern United States

Cities Analyzed:

- Atlanta, Baltimore, Boston, Charlotte, Chicago, Cleveland, Cincinnati, Detroit, Grand Rapids, Greensboro, Harrisburg, Jacksonville, Memphis, Miami, Nashville, Orlando, Philadelphia, Pittsburgh, Tampa, Washington D.C.

Counties Analyzed:

- Every county in the metro-city area of each of the above cities.

Data Used:

- Marocchini's and Kornhauser's Nationwide Trip Database and the Transit Oriented Development (TOD) database

Data Focus:

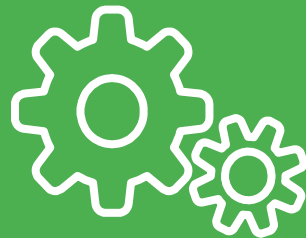
-Trips between 0.5 and 200 miles, simulated as typical daily trips

- Transit station latitude-longitude data from each of the 21 cities to the left.



**20 Cities → 137 Counties → 600+
Files → 240 million trips→
Innumerable Pixels**

- ▶ Each region had one city and at least one county.
- ▶ Each county had at least one file
- ▶ Each county was broken up into $\frac{1}{2}$ mi by $\frac{1}{2}$ mi pixels, based on Latitude and Longitude calculations.



From Pixels to Transit and City Files

- ▶ We compiled two files to read data into our program.
- ▶ A city file listed all files from the Kornhauser database pertaining to the counties within the city
- ▶ A transit file listed all train stations from the TOD database within 200mi of the city.

Link to Excel file
with Philadelphia
Train Stations:

<https://drive.google.com/open?id=0BwP13KzS7vIZci1ROXJkWk1cUU>

How the Code Worked

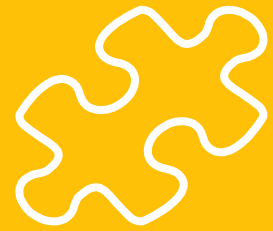


Using Matlab, we looped through all the county files in one of our 21 cities and output a workspace for each county file.

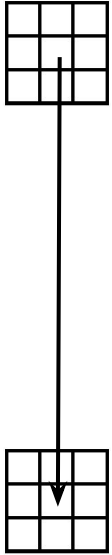
Within each county, the following analysis was done:

1. Sorted all trips by trip type (use transit only, transit to aTaxi, aTaxi to transit, and pure aTaxi)
2. Recorded all relevant information for each trip, including tour type, origin and destination identity, and information about train stations visited, with their location and information about the train lines

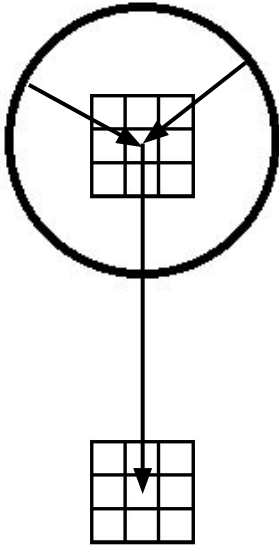
The Breakdown



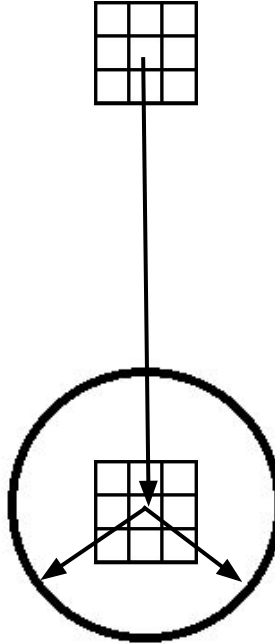
UseTransi
t



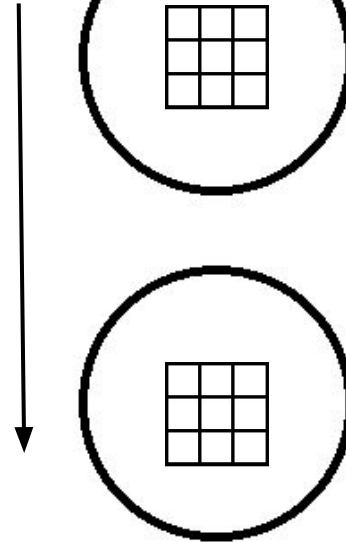
aTaxi to
Transit

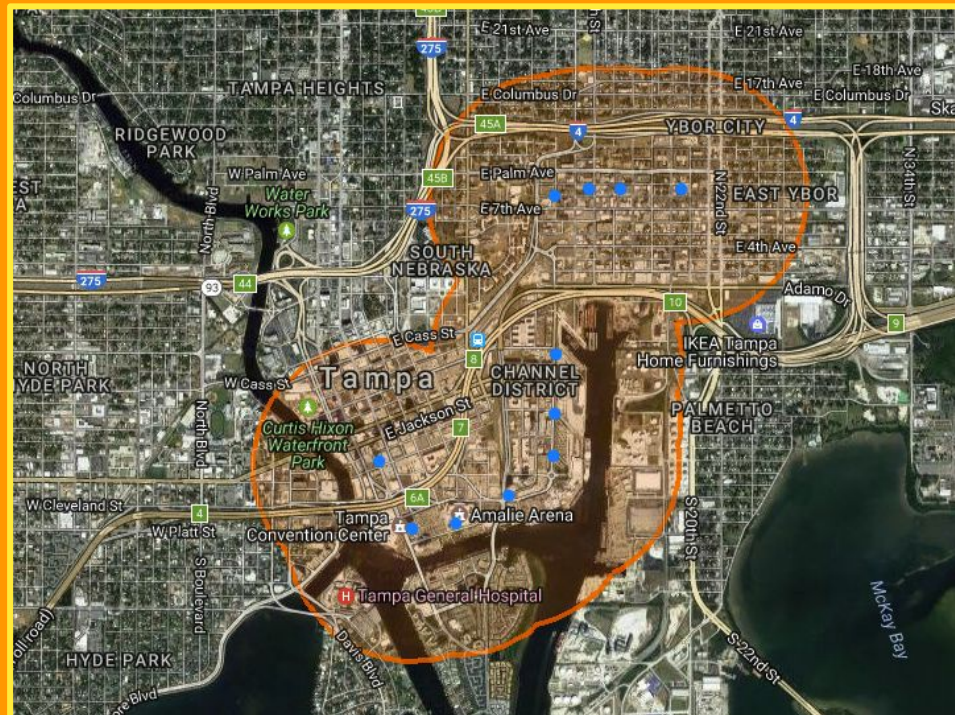
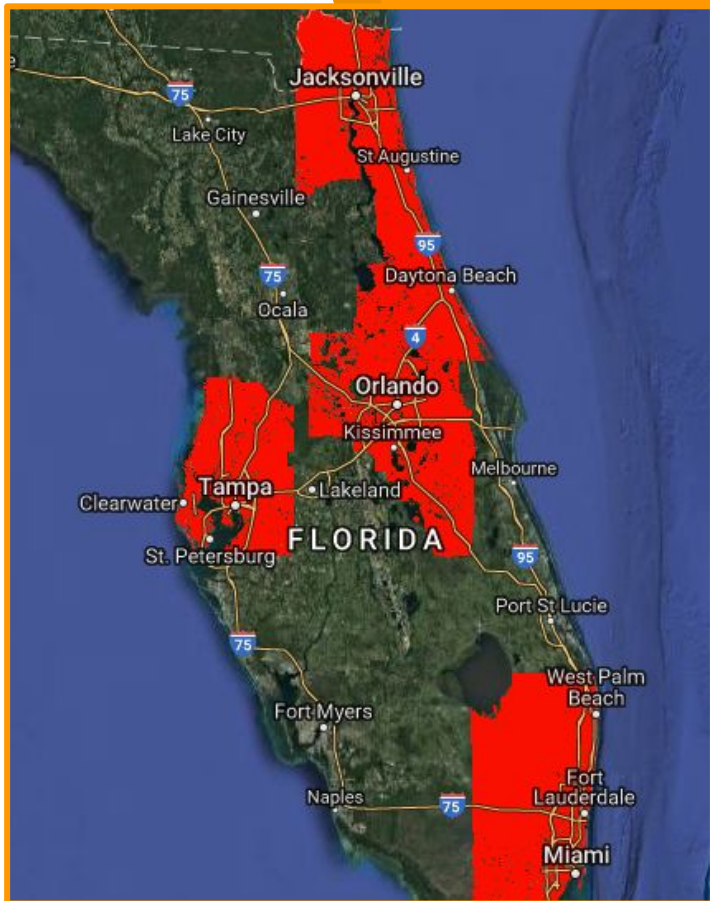


Transit to aTaxi



Pure aTaxi





Tampa County 12057

Use Transit

| | | | | | | | | | | | |
|--------------------|-------------|------------------------------|---|------------|----------------|-------|------------|-----------|---------|---------|------------|
| OFIPS | OLon | OLat | OXCoord | OYCoord | ODepartureTime | DFIPS | DLon | DLat | DXCoord | DYCoord | GCDistance |
| 12057 | -82.459572 | 27.936865 | -748 | -1516 | 5305 | 12057 | -82.454606 | 27.971643 | -747 | -1511 | 2.424665 |
| OType | OName | DType | DName | | | | | | | | |
| 'O' | Wendy's' | 'H' | 'Home' | | | | | | | | |
| TransitOLat | TransitOLon | TransitOYCoord | TransitOXCoord | | | | | | | | |
| 27.94155717 | -82.454825 | -1515 | -747 | | | | | | | | |
| Buffer | Agency | Lines | StationName | YearOpened | | | | | | | |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' | | | | | | | |
| TransitDLat | TransitDLon | TransitDYCoord | TransitDXCoord | | | | | | | | |
| 27.96067524 | -82.445515 | -1512 | -746 | | | | | | | | |
| Buffer | Agency | Lines | StationName | YearOpened | | | | | | | |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' | | | | | | | |

aTaxi to Transit

| OFIPS | OLon | OLat | OXCoord | OYCoord | ODepartureTime | DFIPS | DLon | DLat | DXCoord | DYCoord | GCDistance |
|-------|--------------|-----------|----------------------------------|---------|----------------|-------|------------|-----------|---------|---------|------------|
| 12057 | -82.504954 | 28.015283 | -752 | -1505 | 2020 | 12057 | -82.467417 | 27.948155 | -748 | -1514 | 5.17854843 |
| 12057 | -82.498355 | 28.011888 | -752 | -1505 | 9918 | 12031 | -81.662187 | 30.334361 | -661 | -1184 | 168.395045 |
| 12057 | -82.498355 | 28.011888 | -752 | -1505 | 10060 | 12031 | -81.662187 | 30.334361 | -661 | -1184 | 168.395045 |
| 12057 | -82.498449 | 28.013967 | -752 | -1505 | 14690 | 12057 | -82.463067 | 27.951329 | -748 | -1514 | 4.84182256 |
| 12057 | -82.498449 | 28.013967 | -752 | -1505 | 20639 | 12095 | -81.369118 | 28.576753 | -629 | -1427 | 79.0337014 |
| 12057 | -82.496616 | 28.012812 | -752 | -1505 | 22488 | 12057 | -82.42495 | 27.958398 | -744 | -1513 | 5.77312016 |
| 12057 | -82.498355 | 28.011888 | -752 | -1505 | 25846 | 12057 | -82.442306 | 27.956318 | -746 | -1513 | 5.14742481 |
| OType | OName | DType | DName | | | | | | | | |
| 'O' | 'UNIVERSITY' | 'H' | 'Home' | | | | | | | | |
| 'H' | 'Home' | 'S' | 'FLORIDA COMMUNITY CLG-JCKSNVLL' | | | | | | | | |
| 'H' | 'Home' | 'S' | 'FLORIDA COMMUNITY CLG-JCKSNVLL' | | | | | | | | |
| 'H' | 'Home' | 'O' | 'TAMPA BAY PERFORMING ARTS CTR' | | | | | | | | |
| 'H' | 'Home' | 'S' | 'FLORIDA HOSPITAL' | | | | | | | | |
| 'H' | 'Home' | 'O' | 'PCL CIVIL CONSTRUCTORS INC' | | | | | | | | |
| 'H' | 'Home' | 'W' | 'KIMMINS CONTRACTING CORP' | | | | | | | | |

| TransitOLat | TransitOLon | TransitOYCoord | TransitOXCoord | |
|--------------------|-------------|------------------------------|--------------------------|------------|
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| Buffer | Agency | Lines | StationName | YearOpened |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |

| TransitDLat | TransitDLon | TransitDYCoord | TransitDXCoord | |
|--------------------|-----------------|------------------------------|---|------------|
| 27.94155717 | -82.454825 | -1515 | -747 | |
| 30.327 | -81.6623 | -1185 | -661 | |
| 30.327 | -81.6623 | -1185 | -661 | |
| 27.94155717 | -82.454825 | -1515 | -747 | |
| 28.5741 | -81.3731 | -1428 | -629 | |
| 27.96103535 | -82.437268 | -1512 | -745 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| Buffer | Agency | Lines | StationName | YearOpened |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Existing Transit' | 'JTA ' | 'Skyway' | 'Central' | 'Pre-2000' |
| 'Existing Transit' | 'JTA ' | 'Skyway' | 'Central' | 'Pre-2000' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Planned Transit' | 'Central Flori' | 'Final Design' | 'Florida Hospital Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Centennial Park Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |


Transit to aTaxi

| OFIPS | OLon | OLat | OXCoord | OYCoord | ODepartureTime | DFIPS | DLon | DLat | DXCoord | DYCoord | GCDistance |
|-------|------------|-----------|---------|---------|----------------|-------|------------|-----------|---------|---------|------------|
| 12057 | -82.459854 | 27.936708 | -748 | -1516 | 242 | 12057 | -82.482695 | 27.946021 | -750 | -1514 | 1.53722918 |
| 12057 | -82.459068 | 27.937181 | -748 | -1516 | 337 | 12057 | -82.44906 | 27.933445 | -746 | -1516 | 0.66394783 |
| 12057 | -82.459854 | 27.936708 | -748 | -1516 | 395 | 12057 | -82.490893 | 27.895157 | -751 | -1521 | 3.44377498 |
| 12057 | -82.459068 | 27.937181 | -748 | -1516 | 507 | 12057 | -82.452289 | 27.927404 | -747 | -1517 | 0.79308204 |
| 12057 | -82.459854 | 27.936708 | -748 | -1516 | 552 | 12057 | -82.464658 | 27.970999 | -748 | -1511 | 2.39001192 |

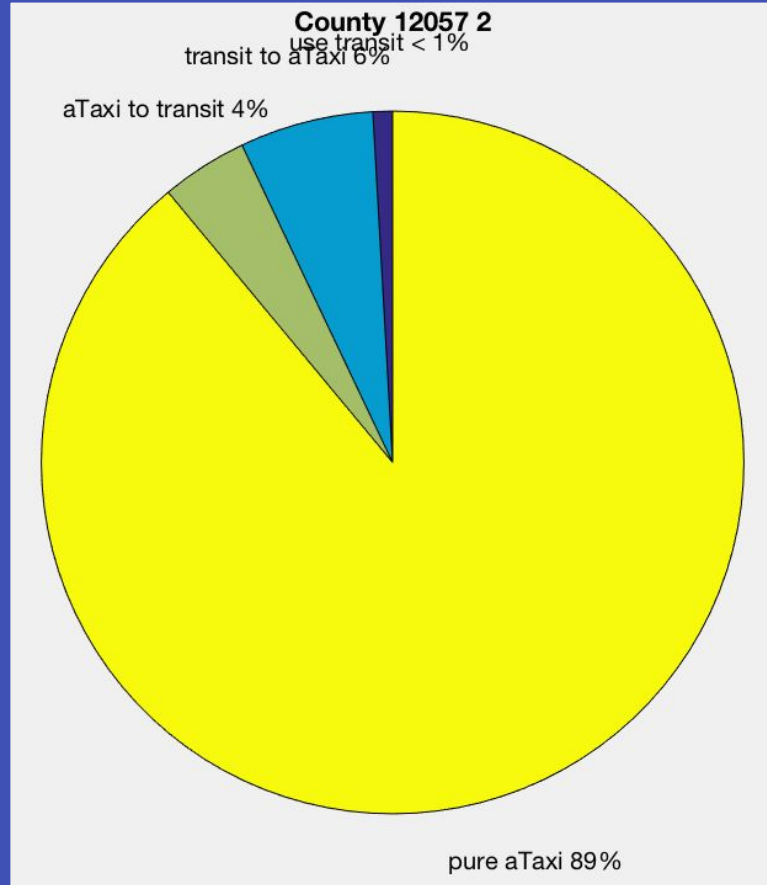
| OType | OName | DType | DName |
|-------------|--------------|----------------|------------------------------|
| 'O' | 'TAMPA GEN' | 'O' | 'HARDEMAN LANDSCAPE NURSERY' |
| 'O' | 'USFIVE' | 'H' | 'Home' |
| 'O' | 'TAMPA GEN' | 'H' | 'Home' |
| 'O' | 'USF REGION' | 'H' | 'Home' |
| 'O' | 'TAMPA GEN' | 'H' | 'Home' |
| TransitOLat | TransitOLon | TransitOYCoord | TransitOXCoord |
| 27.94155717 | -82.454825 | -1515 | -747 |
| 27.94155717 | -82.454825 | -1515 | -747 |
| 27.94155717 | -82.454825 | -1515 | -747 |
| 27.94155717 | -82.454825 | -1515 | -747 |
| 27.94155717 | -82.454825 | -1515 | -747 |

| Buffer | Agency | Lines | StationName | YearOpened |
|--------------------|-------------|------------------------------|---|------------|
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Dick Greco Plaza/ Transportation Center' | '2002' |
| TransitDLat | TransitDLon | TransitDYCoord | TransitDXCoord | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.94573695 | -82.445585 | -1514 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| 27.96067524 | -82.445515 | -1512 | -746 | |
| Buffer | Agency | Lines | StationName | YearOpened |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cumberland Avenue Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |
| 'Existing Transit' | 'HART' | 'Teco Line Streetcar System' | 'Cadrecha Plaza Station' | '2002' |

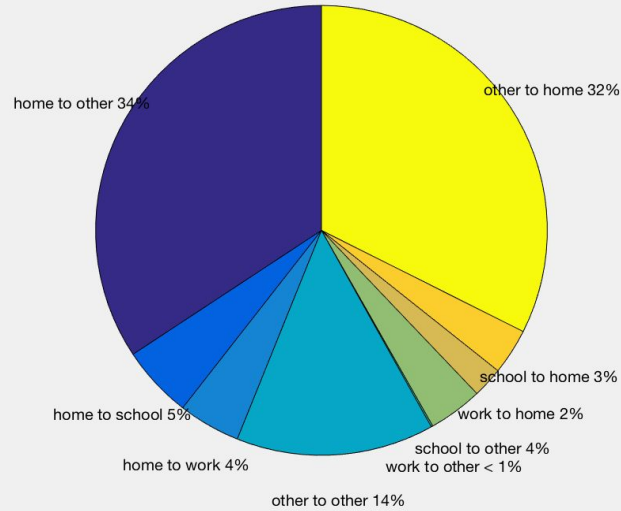
Pure aTaxi

| OFIPS | OLon | OLat | OXCoord | OYCoord | ODepartureTime | DFIPS | DLon | DLat | DXCoord | DYCoord | GCDistance |
|-------|---------------|-----------|---------|---|----------------|-------|------------|-----------|---------|---------|------------|
| 12057 | -82.459068 | 27.937181 | -748 | -1516 | 211 | 12057 | -82.379225 | 27.851916 | -739 | -1527 | 7.65565271 |
| 12057 | -82.459068 | 27.937181 | -748 | -1516 | 287 | 12103 | -82.636771 | 27.847183 | -767 | -1528 | 12.5210117 |
| 12057 | -82.459854 | 27.936708 | -748 | -1516 | 293 | 12057 | -82.605148 | 28.001711 | -763 | -1507 | 9.95003296 |
| 12057 | -82.459854 | 27.936708 | -748 | -1516 | 566 | 12057 | -82.320025 | 28.146413 | -732 | -1487 | 16.8308836 |
| 12057 | -82.459068 | 27.937181 | -748 | -1516 | 799 | 12057 | -82.410998 | 28.033718 | -742 | -1502 | 7.294537 |
| OType | OName | DType | DName | | | | | | | | |
| 'O' | 'USF PHYSICI | 'H' | 'Home' |  | | | | | | | |
| 'O' | 'US F PHYSICI | 'H' | 'Home' | | | | | | | | |
| 'O' | 'TAMPA GENI | 'H' | 'Home' | | | | | | | | |
| 'O' | 'TAMPA GENI | 'H' | 'Home' | | | | | | | | |
| 'O' | 'USF PHYSICI | 'H' | 'Home' | | | | | | | | |

Overall Trip Type Breakdown

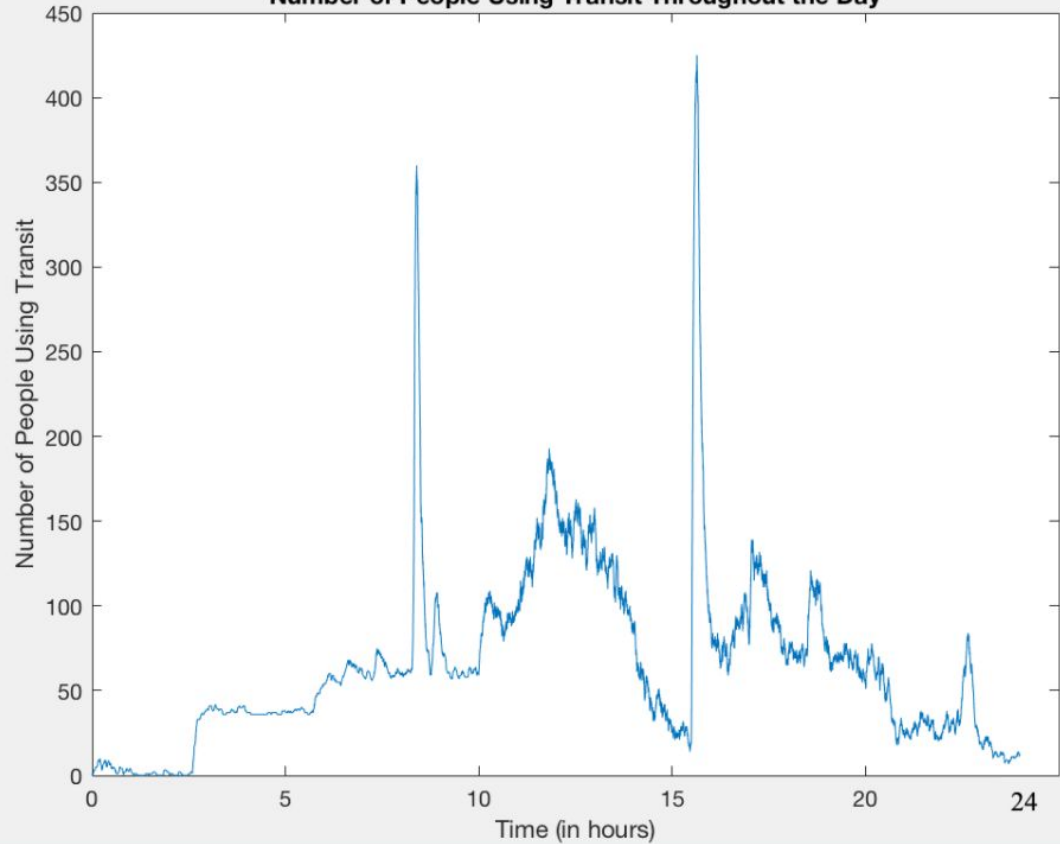


Use Transit Trip Type Breakdown

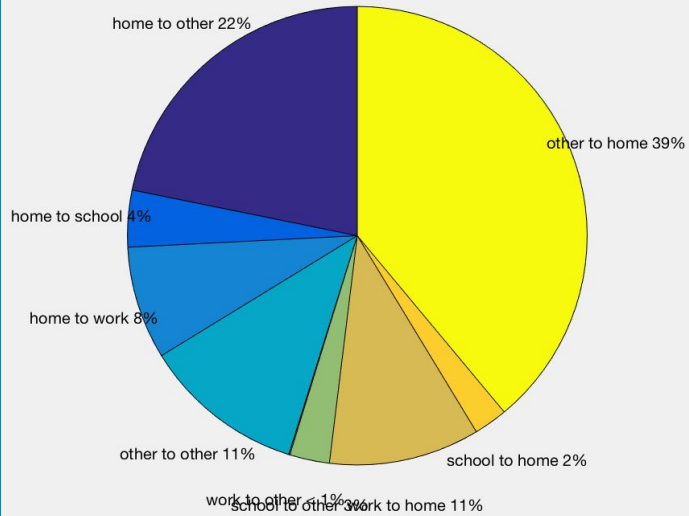


Time Distribution of Use Transit

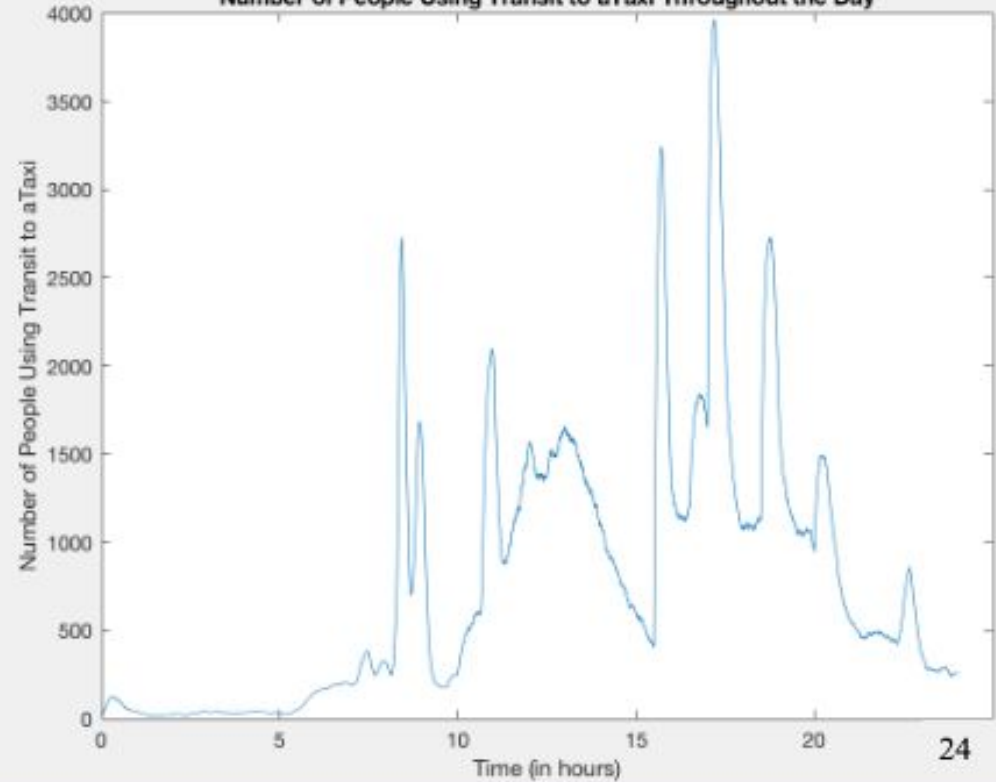
Number of People Using Transit Throughout the Day



Transit to aTaxi Trip Type Breakdown

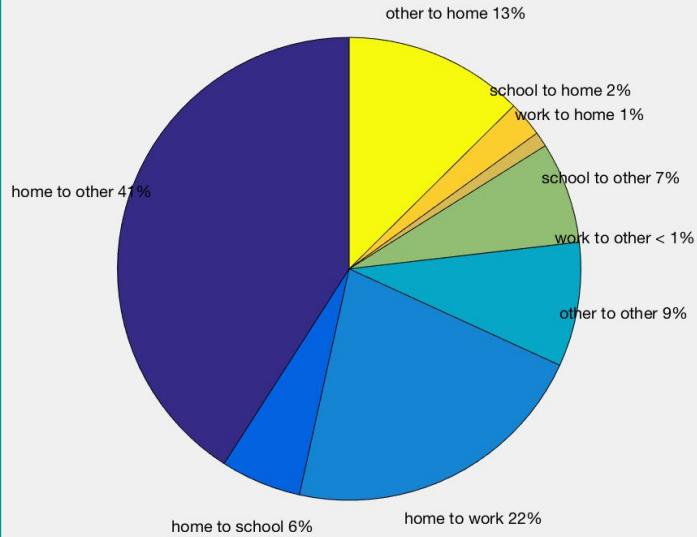


Number of People Using Transit to aTaxi Throughout the Day



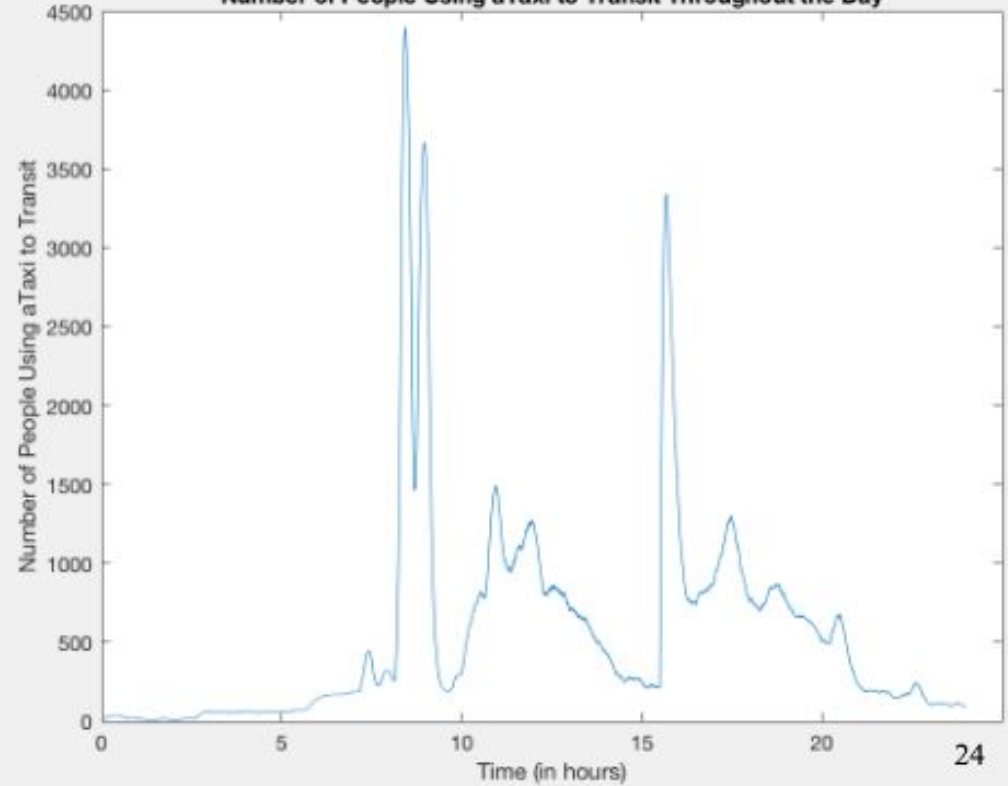
**Time
Distribution of
Transit to
aTaxi**

aTaxi to Transit Trip Type Breakdown

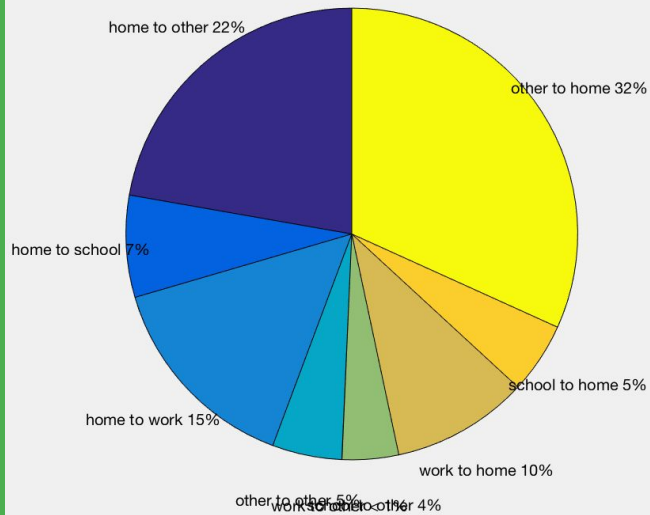


Time Distribution of aTaxi to Transit

Number of People Using aTaxi to Transit Throughout the Day

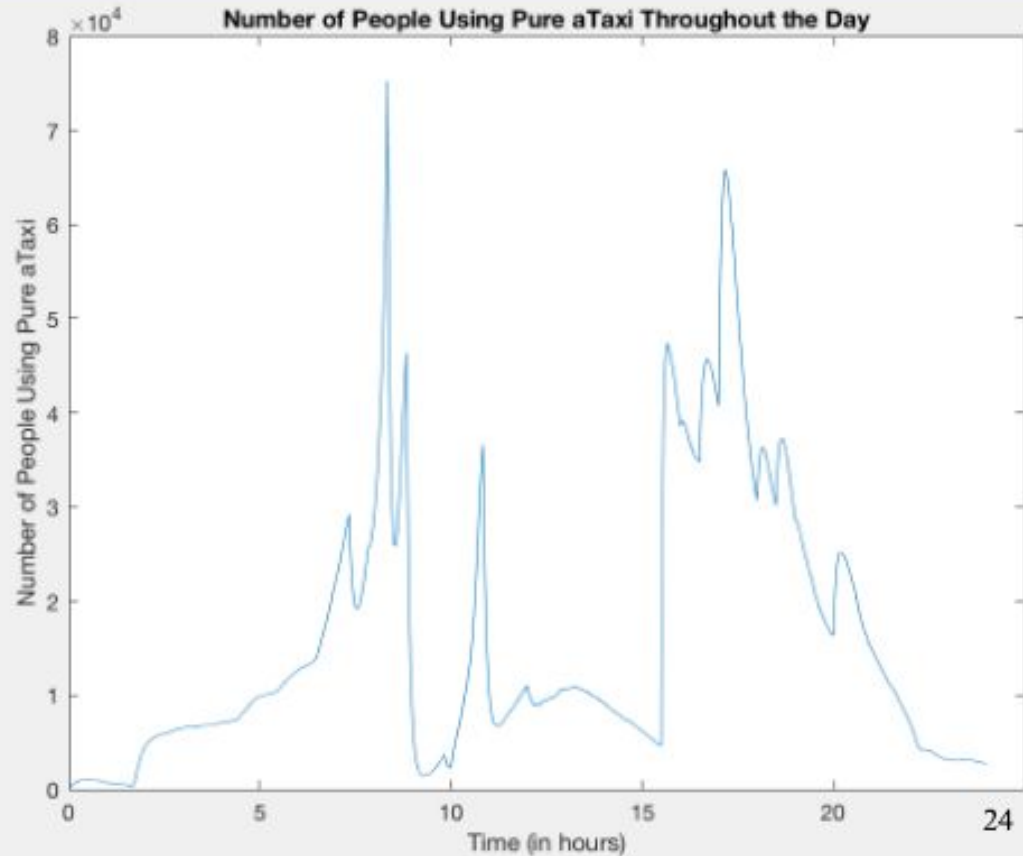


Pure aTaxi Trip Type Breakdown



Time Distribution of Pure aTaxi

Number of People Using Pure aTaxi Throughout the Day





BIG DATA SET

Use Supercomputers! → Della Research Cluster

Special thanks to Michael Bino and to Evan and Liz
for allowing us to run our cities on their very efficient
Java code



Taken from Della Research Computer Website



Assumptions about the Data

Travel Time

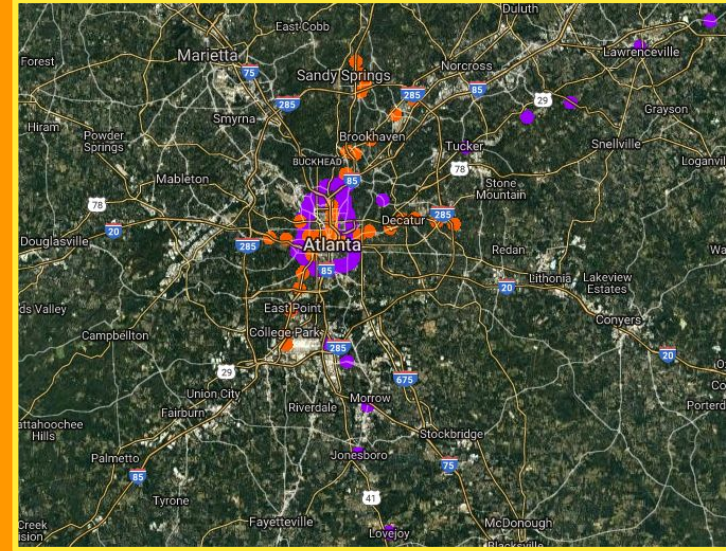
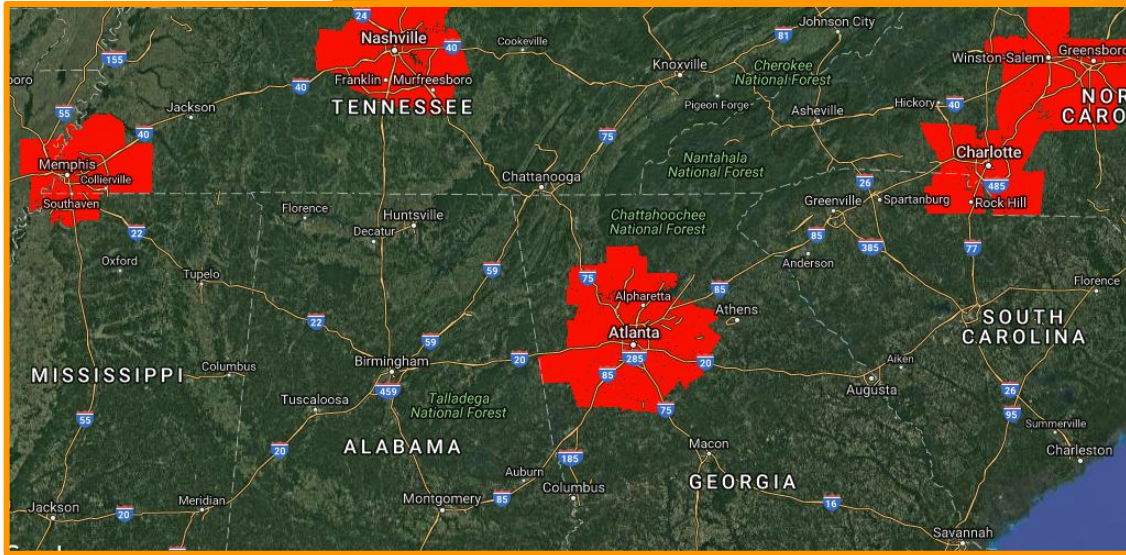
Assumed

- ▶ 3 mph for Walks,
- ▶ 30 mph for aTaxis,
- ▶ 40 mph for Transit

Distance

Sum up distance from the walking, transit, and aTaxi pieces if applicable for each trip.

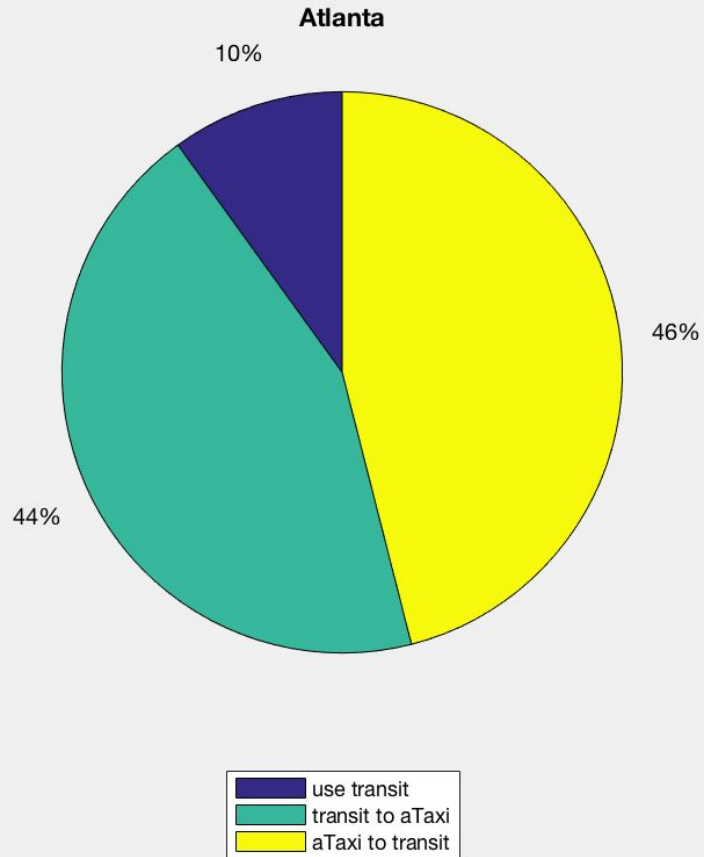
Given: lat-lon of start and end point, and Departure time.

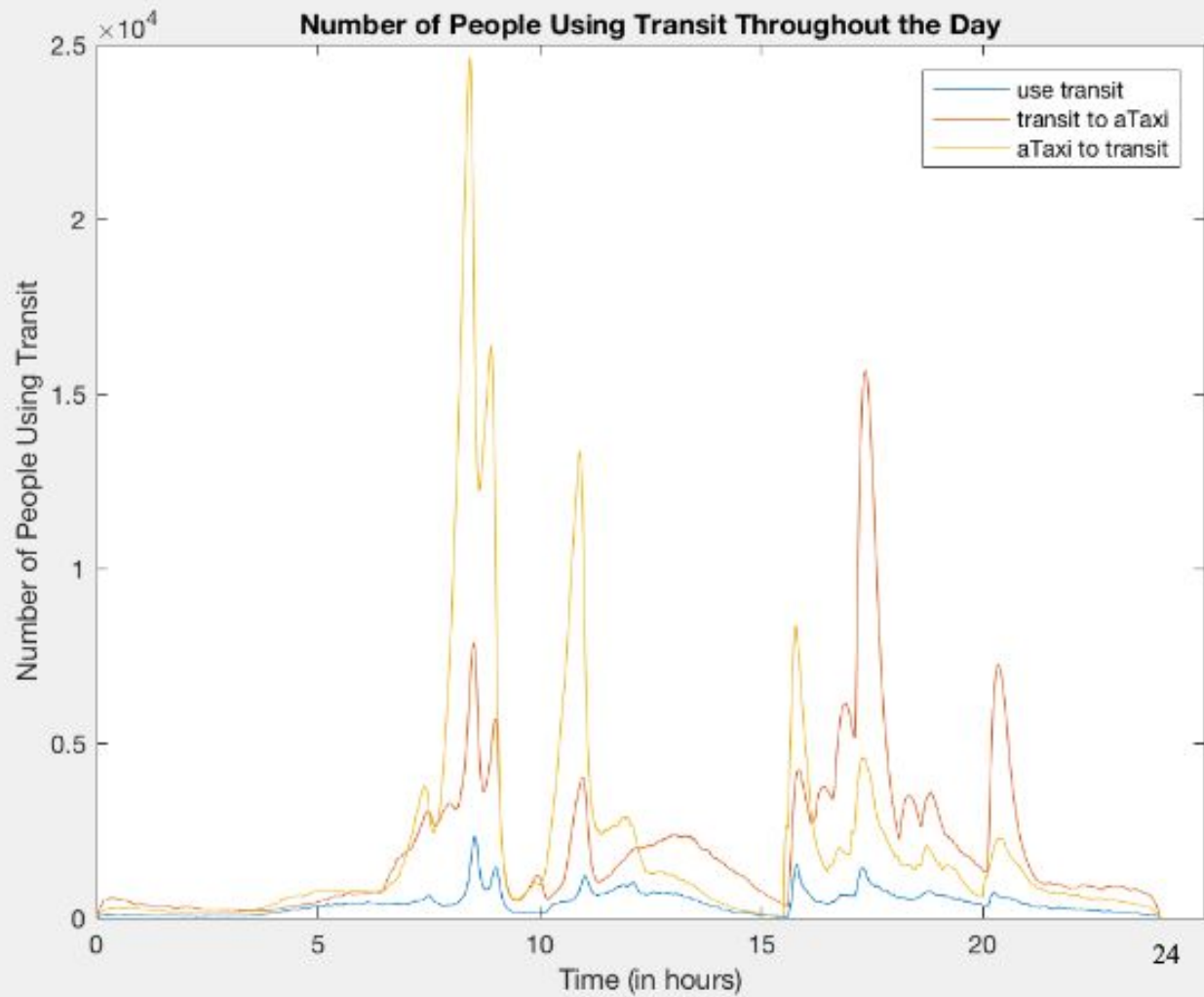


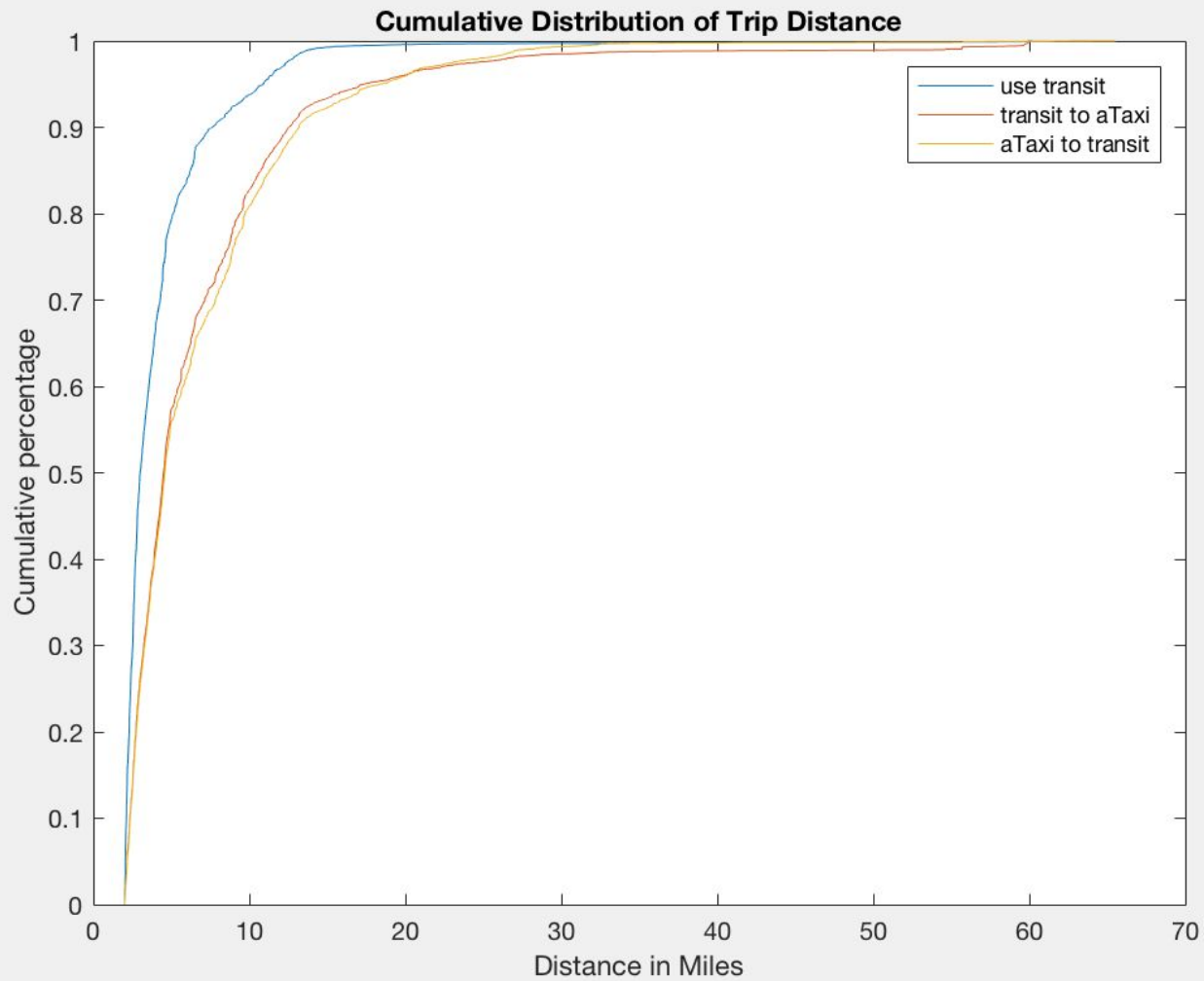
Atlanta Transit System

From TOD Database

Mode Split

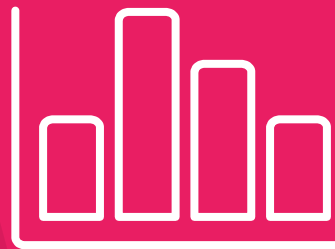






Atlanta Statistics

| Trip Type | Metric | Value |
|------------------|---------------------|------------|
| Transit | Average Distance | 1.49 miles |
| Transit | Average Travel Time | 6.23 min |
| Transit to aTaxi | Average Distance | 3.67 miles |
| Transit to aTaxi | Average Travel Time | 6.08 min |
| aTaxi to Transit | Average Distance | 3.77 miles |
| aTaxi to Transit | Average Travel Time | 7.83 min |



Transit Utilization

| Cities | PTM Old | PTM New | Multiplier | Trips Old | Trips New | Multiplier |
|--------------|---------------|----------------|------------|-------------|---------------|------------|
| Atlanta | 765,469,408 | 1,030,459,787 | 1.35 | 131,756,876 | 263,275,595 | 2.00 |
| Baltimore | 794,420,383 | 1,489,399,653 | 1.87 | 113,995,672 | 298,480,575 | 2.62 |
| Boston | 1,847,714,947 | 5,382,869,748 | 2.91 | 409,248,438 | 1,114,070,520 | 2.72 |
| Charlotte | 197,566,308 | 618,673,687 | 3.13 | 37,461,838 | 154,778,980 | 4.13 |
| Chicago | 3,799,121,983 | 17,446,181,136 | 4.59 | 588,598,934 | 2,712,435,085 | 4.61 |
| Cleveland | 223,146,222 | 615,225,860 | 2.76 | 49,245,884 | 187,037,680 | 3.80 |
| Cincinnati | 91,524,056 | 117,634,310 | 1.29 | 16,624,349 | 65,147,755 | 3.92 |
| Detroit | 197,566,308 | 639,241,306 | 3.24 | 37,461,838 | 102,039,765 | 2.72 |
| Grand Rapids | 48,755,929 | 336,969,622 | 6.91 | 12,524,771 | 48,489,520 | 3.87 |
| Greensboro | 38,016,971 | 69,862,146 | 1.84 | 5,400,899 | 30,786,290 | 5.70 |

Data for Original (Old) Utilization from Transit DOT.gov 2014

Transit Utilization

| Cities | PTM Old | PTM New | Multiplier | Trips Old | Trips New | Multiplier |
|-----------------|---------------|---------------|------------|-------------|---------------|------------|
| Harrisburg | 117,336,054 | 402,013,174 | 3.43 | 4,032,961 | 25,080,975 | 6.22 |
| Jacksonville | 80,165,368 | 47,346,019 | 0.59 | 12,596,111 | 23,635,575 | 1.88 |
| Miami | 655,965,657 | 613,231,874 | 0.93 | 111,354,011 | 84,413,915 | 0.76 |
| Memphis | 46,745,902 | 131,759,095 | 2.82 | 9,354,609 | 43,643,050 | 4.67 |
| Nashville | 65,725,205 | 59,379,483 | 0.90 | 10,238,898 | 1,759,300 | 0.17 |
| Orlando | 178,129,638 | 324,969,503 | 1.82 | 30,141,247 | 73,454,425 | 2.44 |
| Philadelphia | 1,546,679,224 | 6,104,306,038 | 3.95 | 347,177,503 | 1,438,480,330 | 4.14 |
| Pittsburgh | 292,806,101 | 459,782,009 | 1.57 | 63,919,450 | 148,850,650 | 2.33 |
| Tampa | 82,678,376 | 41,067,633 | 0.50 | 15,687,946 | 18,705,885 | 1.19 |
| Washington D.C. | 1,968,724,491 | 4,450,069,759 | 2.26 | 411,323,792 | 1,001,410,715 | 2.43 |

Data for Original (Old) Utilization from Transit DOT.gov

Financial Impact

| Cities | Operating Expenses Per PMT Now | Operating Expenses Now | Operating Expenses New | Average Fare Revenue Now | Fare Revenue Now | Fare Revenue New | Profits Now | Profits New | Profits Change |
|--------------|--------------------------------|------------------------|------------------------|--------------------------|------------------|------------------|----------------|----------------|----------------|
| Atlanta | 0.49 | 375,080,010 | 504,925,296 | 0.57 | 74,914,218 | 149,693,025 | -300,165,792 | -355,232,271 | -0.18 |
| Baltimore | 0.74 | 587,871,083 | 1,102,155,743 | 0.11 | 13,020,548 | 34,092,353 | -574,850,535 | -1,068,063,391 | -0.86 |
| Boston | 0.54 | 997,766,071 | 2,906,749,664 | 0.48 | 197,899,125 | 538,727,972 | -799,866,946 | -2,368,021,692 | -1.96 |
| Charlotte | 0.53 | 104,710,143 | 327,897,054 | 0.12 | 4,553,044 | 18,811,557 | -100,157,099 | -309,085,497 | -2.09 |
| Chicago | 0.38 | 1,443,666,354 | 6,629,548,832 | 0.49 | 290,337,682 | 1,337,960,485 | -1,153,328,672 | -5,291,588,347 | -3.59 |
| Cleveland | 0.75 | 167,359,667 | 461,419,395 | 0.13 | 6,380,158 | 24,232,075 | -160,979,509 | -437,187,320 | -1.72 |
| Cincinnati | 0.94 | 86,032,613 | 110,576,252 | 1.78 | 29,521,729 | 115,690,206 | -56,510,884 | 5,113,955 | 1.09 |
| Detroit | 1.05 | 207,444,623 | 671,203,371 | 0.50 | 18,596,179 | 50,652,873 | -188,848,444 | -620,550,497 | -2.29 |
| Grand Rapids | 0.83 | 40,467,421 | 279,684,786 | 0.72 | 9,050,678 | 35,039,605 | -31,416,743 | -244,645,181 | -6.79 |
| Greensboro | 0.92 | 34,975,613 | 64,273,175 | 0.62 | 3,343,986 | 19,061,442 | -31,631,627 | -45,211,733 | -0.43 |

Data for Original (Old) Utilization from Transit DOT.gov

Financial Impact

| Cities | Operating Expenses Per PMT Now* | Operating Expenses Now | Operating Expenses New | Average Fare Revenue Now | Fare Revenue Now | Fare Revenue New | Profits Now | Profits New | Profits Change |
|-----------------|---------------------------------|------------------------|------------------------|--------------------------|------------------|------------------|--------------|----------------|----------------|
| Harrisburg | 0.45 | 52,801,224 | 180,905,928 | 8.19 | 33,009,837 | 205,288,099 | -19,791,387 | 24,382,171 | 2.23 |
| Jacksonville | 0.88 | 70,545,524 | 41,664,497 | 0.88 | 11,081,896 | 20,794,274 | -59,463,628 | -20,870,223 | 0.65 |
| Miami | 0.57 | 373,900,424 | 349,542,168 | 0.23 | 25,654,430 | 19,447,803 | -348,245,994 | -330,094,365 | 0.05 |
| Memphis | 3.71 | 173,427,296 | 488,826,241 | 0.08 | 706,781 | 3,297,420 | -172,720,515 | -485,528,821 | -1.81 |
| Nashville | 1.00 | 65,725,205 | 59,379,483 | 1.06 | 10,847,629 | 1,863,895 | -54,877,576 | -57,515,588 | -0.05 |
| Orlando | 0.59 | 105,096,486 | 191,732,007 | 0.91 | 27,296,885 | 66,522,695 | -77,799,601 | -125,209,311 | -0.61 |
| Philadelphia | 0.43 | 665,072,066 | 2,624,851,596 | 0.30 | 103,850,277 | 430,288,770 | -561,221,789 | -2,194,562,826 | -2.91 |
| Pittsburgh | 1.57 | 459,705,579 | 721,857,754 | 0.18 | 11,385,832 | 26,514,441 | -448,319,747 | -695,343,313 | -0.55 |
| Tampa | 3.10 | 256,302,966 | 127,309,663 | 0.03 | 465,012 | 554,468 | -255,837,954 | -126,755,195 | 0.50 |
| Washington D.C. | 0.63 | 1,240,296,429 | 2,803,543,948 | 1.44 | 593,323,968 | 1,444,509,145 | -646,972,461 | -1,359,034,803 | -1.10 |

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