



# DRAWDOWN GA

[www.DrawdownGA.org](http://www.DrawdownGA.org)

## Transportation Sector

### Local GHG Emissions Tracker

### Technical Documentation Figures for Major Data Sources and Emissions Calculations



# Transportation sector emissions

# Our general strategy

- Identify **recent annual or monthly data sources** for Georgia statewide emissions, including
  - EPA's State Inventory Tool
  - EIA's Open Data API
  - US-DOT's Traffic Trends monthly VMT
- Allocate the statewide totals to individual counties with **plausible indicator variables**
- **Interpolate** annual data to monthly data when needed
- **Avoid** proprietary data
- **Avoid** data that is specific to a single state

# Transportation data sources

1. EIA API monthly gasoline and distillate fuel deliveries
2. US DOT-FHWA monthly **Traffic Volume Trends** with
  - a. Georgia vehicle miles traveled (**VMT**) subdivided by
  - b. Urban arterials, rural arterials, and local roads
3. US DOT-FHWA Highway Performance Monitoring System (**HPMS**) road network GIS dataset
4. Census urbanized areas GIS dataset
5. Census county boundaries GIS dataset

# Transportation overall strategy

1. Download statewide monthly EIA motor gasoline **(MG)** and distillate fuel **(DF)** deliveries
2. Apply EIA CO<sub>2</sub> coefficients to calculate CO<sub>2</sub> emissions
3. Download monthly DOT Traffic Volume Trends **(TVT)**
4. Use TVT to divide emissions into shares for urban arterials **(UAs)**, rural arterials **(RAs)**, and local roads **(LRs)**
5. Use HPMS to calculate each county's share of statewide VMT on UAs, RAs, and LRs
6. Apply county shares to statewide emissions in the three road categories, and sum by county



U. S. Department of Transportation

Federal Highway Administration

Office of Highway Policy Information

# TRAFFIC VOLUME TRENDS

## August 2021

Travel on all roads and streets changed by **+8.3%** (+21.0 billion vehicle miles) for August 2021 as compared with August 2020. Travel for the month is estimated to be 273.8 billion vehicle miles.

The seasonally adjusted vehicle miles traveled for August 2021 is 261.1 billion miles, an **+8.5%** (+20.4 billion vehicle miles) increase over August 2020. It also represents **-2%** decline (-5.2 billion vehicle miles) compared with July 2021.

Cumulative Travel for 2021 changed by **+12.2%** (+224.4 billion vehicle miles). The Cumulative estimate for the year is 2,068.8 billion vehicle miles of travel.

Estimated Vehicle-Miles of Travel by Region - August 2021 - (in Billions)  
Change in Traffic as compared to same month last year.

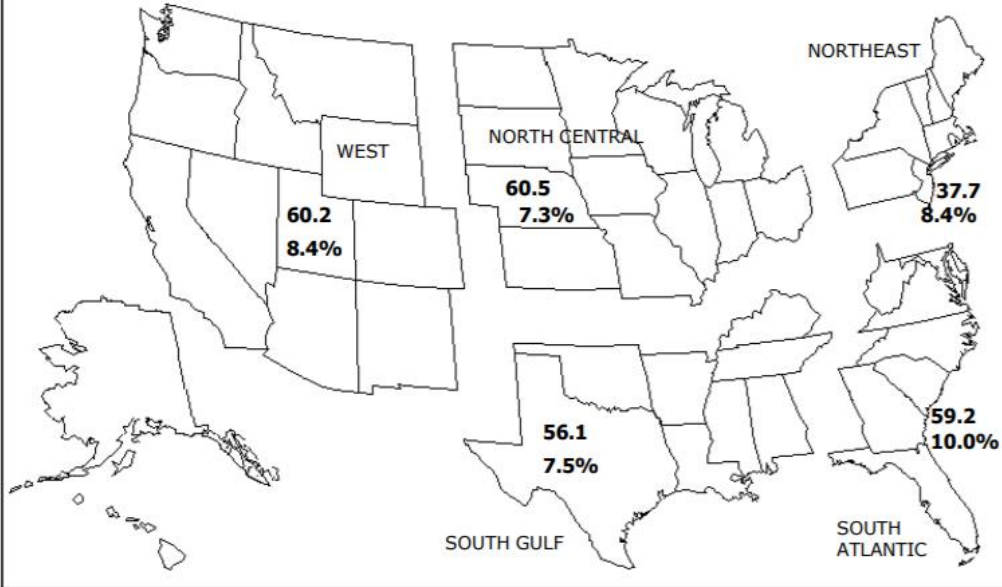


Table - 4. Changes on Urban Arterial Roads by Region and State\*\*

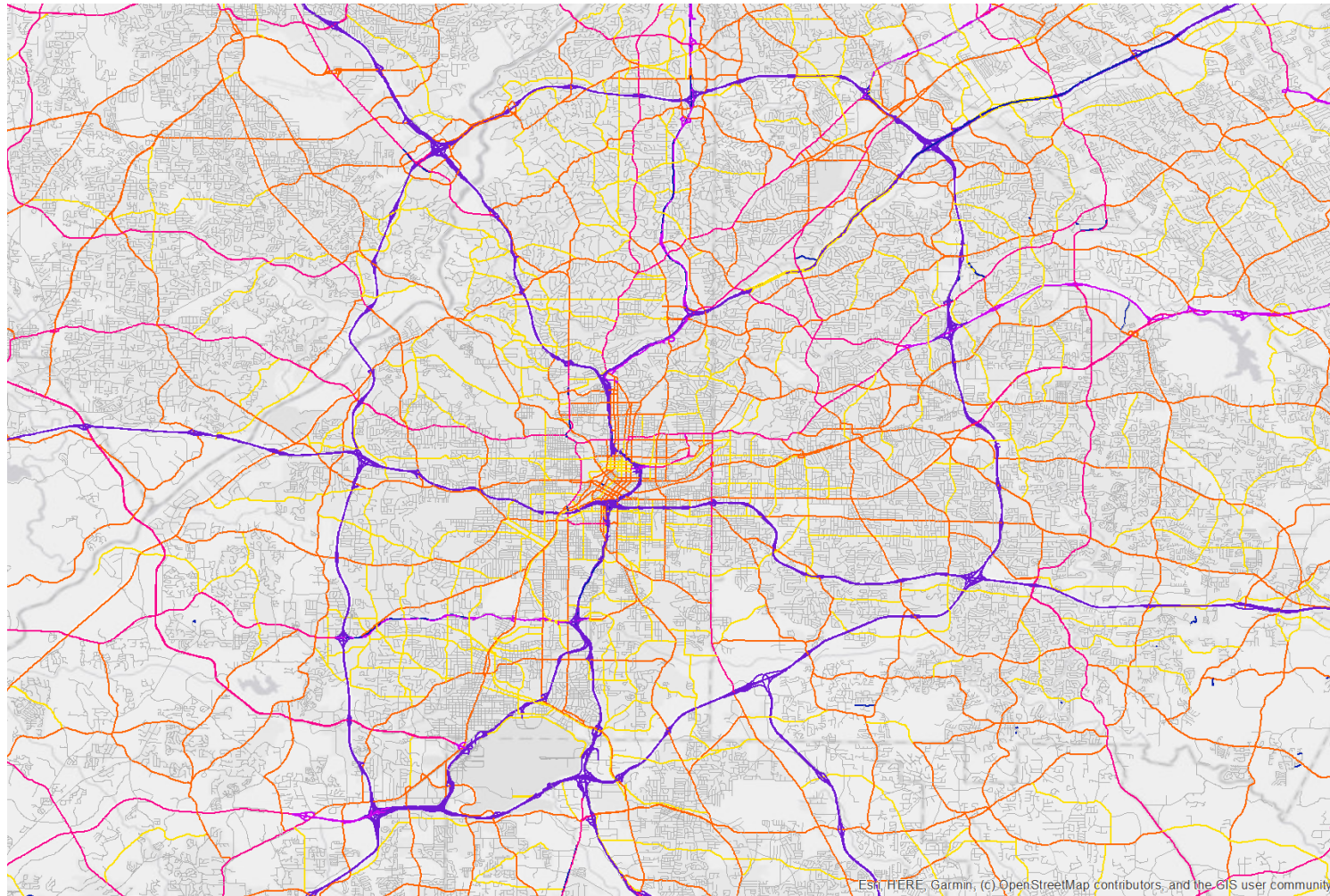
| Region and State      | August             |                          |               |                | July               |                          |               |                |
|-----------------------|--------------------|--------------------------|---------------|----------------|--------------------|--------------------------|---------------|----------------|
|                       | Number of Stations | Vehicle-Miles (Millions) |               | Percent Change | Number of Stations | Vehicle-Miles (Millions) |               | Percent Change |
|                       |                    | 2021 (Preliminary)       | 2020          |                |                    | 2021 (Revised)           | 2020          |                |
| <b>Northeast</b>      |                    |                          |               |                |                    |                          |               |                |
| Connecticut           | 15                 | 1,911                    | 1,812         | 5.5            | 16                 | 1,976                    | 1,804         | 9.5            |
| Maine                 | 22                 | 269                      | 239           | 12.6           | 22                 | 297                      | 255           | 16.6           |
| Massachusetts         | 194                | 4,117                    | 3,723         | 10.6           | 194                | 4,177                    | 3,730         | 12.0           |
| New Hampshire         | 68                 | 565                      | 519           | 8.9            | 67                 | 550                      | 498           | 10.5           |
| New Jersey            | 61                 | 4,403                    | 4,012         | 9.7            | 97                 | 4,455                    | 3,839         | 16.0           |
| New York              | 63                 | 6,296                    | 6,004         | 4.9            | 60                 | 6,308                    | 5,766         | 9.4            |
| Pennsylvania          | 34                 | 4,487                    | 4,102         | 9.4            | 34                 | 4,603                    | 4,169         | 10.4           |
| Rhode Island          | 28                 | 571                      | 487           | 17.3           | 27                 | 502                      | 466           | 7.7            |
| Vermont               | 12                 | 133                      | 116           | 13.9           | 11                 | 134                      | 118           | 13.5           |
| Subtotal              |                    | <b>22,752</b>            | <b>21,014</b> | <b>8.3</b>     |                    | <b>23,002</b>            | <b>20,645</b> | <b>11.4</b>    |
| <b>South Atlantic</b> |                    |                          |               |                |                    |                          |               |                |
| Delaware              | 10                 | 493                      | 455           | 8.3            | 13                 | 429                      | 409           | 4.8            |
| District of Columbia  | 3                  | 250                      | 216           | 15.7           | 3                  | 177                      | 148           | 19.7           |
| Florida               | 127                | 10,212                   | 9,064         | 12.7           | 129                | 10,782                   | 9,203         | 17.2           |
| Georgia               | 128                | 5,704                    | 5,185         | 10.0           | 131                | 5,525                    | 4,938         | 11.9           |
| Maryland              | 37                 | 3,540                    | 3,307         | 7.1            | 37                 | 3,795                    | 3,531         | 7.5            |
| North Carolina        | 36                 | 4,790                    | 4,428         | 8.2            | 40                 | 5,098                    | 4,485         | 13.7           |
| South Carolina        | 50                 | 1,987                    | 1,802         | 10.3           | 52                 | 2,119                    | 1,889         | 12.2           |
| Virginia              | 369                | 3,751                    | 3,359         | 11.7           | 363                | 3,936                    | 3,498         | 12.5           |
| West Virginia         | 11                 | 581                      | 545           | 6.6            | 11                 | 680                      | 632           | 7.5            |
| Subtotal              |                    | <b>31,308</b>            | <b>28,361</b> | <b>10.4</b>    |                    | <b>32,541</b>            | <b>28,733</b> | <b>13.3</b>    |
| <b>North Central</b>  |                    |                          |               |                |                    |                          |               |                |
| Illinois              | 49                 | 4,590                    | 4,287         | 7.0            | 48                 | 4,651                    | 4,355         | 6.8            |
| Indiana               | 29                 | 2,776                    | 2,579         | 7.6            | 26                 | 2,982                    | 2,780         | 7.3            |
| Iowa                  | 27                 | 917                      | 849           | 8.1            | 24                 | 925                      | 851           | 8.6            |
| Kansas                | 17                 | 936                      | 893           | 4.9            | 17                 | 936                      | 885           | 5.8            |
| Michigan              | 48                 | 4,451                    | 4,049         | 9.9            | 50                 | 4,525                    | 4,126         | 9.7            |
| Minnesota             | 10                 | 2,161                    | 2,044         | 5.7            | 12                 | 2,397                    | 2,197         | 9.1            |
| Missouri              | 63                 | 2,713                    | 2,493         | 8.8            | 63                 | 2,691                    | 2,458         | 9.5            |
| Nebraska              | 19                 | 599                      | 563           | 6.4            | 19                 | 634                      | 589           | 7.7            |
| North Dakota          | 11                 | 160                      | 149           | 7.6            | 11                 | 182                      | 176           | 3.3            |
| Ohio                  | 96                 | 4,899                    | 4,549         | 7.7            | 98                 | 4,994                    | 4,623         | 8.0            |
| South Dakota          | 4                  | 236                      | 216           | 9.3            | 4                  | 227                      | 205           | 10.9           |
| Wisconsin             | 91                 | 2,313                    | 2,099         | 10.2           | 94                 | 2,451                    | 2,215         | 10.7           |
| Subtotal              |                    | <b>26,751</b>            | <b>24,770</b> | <b>8.0</b>     |                    | <b>27,595</b>            | <b>25,460</b> | <b>8.4</b>     |
| <b>South Gulf</b>     |                    |                          |               |                |                    |                          |               |                |
| Alabama               | 103                | 2,230                    | 2,111         | 5.6            | 98                 | 2,241                    | 2,053         | 9.2            |
| Arkansas              | 6                  | 1,258                    | 1,194         | 5.4            | 7                  | 1,389                    | 1,291         | 7.6            |
| Kentucky              | 20                 | 1,636                    | 1,496         | 9.3            | 20                 | 1,486                    | 1,340         | 10.9           |
| Louisiana             | 13                 | 2,122                    | 1,992         | 6.5            | 12                 | 2,020                    | 1,833         | 10.2           |
| Mississippi           | 25                 | 1,010                    | 966           | 4.5            | 26                 | 1,111                    | 1,007         | 10.3           |
| Oklahoma              | 23                 | 1,611                    | 1,558         | 3.4            | 22                 | 1,701                    | 1,560         | 9.0            |
| Tennessee             | 29                 | 3,250                    | 3,076         | 5.7            | 24                 | 3,893                    | 3,630         | 7.3            |
| Texas                 | 79                 | 13,514                   | 12,126        | 11.4           | 79                 | 13,847                   | 11,961        | 15.8           |
| Subtotal              |                    | <b>26,631</b>            | <b>24,519</b> | <b>8.6</b>     |                    | <b>27,688</b>            | <b>24,675</b> | <b>12.2</b>    |
| <b>West</b>           |                    |                          |               |                |                    |                          |               |                |
| Alaska                | 57                 | 201                      | 176           | 14.2           | 54                 | 205                      | 184           | 11.5           |
| Arizona               | 72                 | 2,674                    | 2,382         | 12.2           | 104                | 3,150                    | 2,820         | 11.7           |
| California            | 101                | 19,188                   | 17,524        | 9.5            | 92                 | 20,389                   | 17,829        | 14.4           |
| Colorado              | 35                 | 2,821                    | 2,573         | 9.6            | 34                 | 2,461                    | 2,225         | 10.6           |
| Hawaii                | 52                 | 450                      | 349           | 29.0           | 51                 | 434                      | 344           | 26.4           |
| Idaho                 | 76                 | 524                      | 488           | 7.2            | 75                 | 554                      | 497           | 11.6           |
| Montana               | 14                 | 285                      | 280           | 2.1            | 13                 | 316                      | 300           | 5.3            |
| Nevada                | 36                 | 1,193                    | 1,085         | 10.0           | 37                 | 1,242                    | 1,100         | 12.9           |
| New Mexico            | 8                  | 669                      | 598           | 12.0           | 19                 | 792                      | 683           | 16.0           |
| Oregon                | 43                 | 1,508                    | 1,421         | 6.1            | 42                 | 1,545                    | 1,404         | 10.0           |
| Utah                  | -                  | 1,609                    | 1,482         | 8.6            | -                  | 1,529                    | 1,384         | 10.5           |
| Washington            | 78                 | 3,058                    | 2,852         | 7.2            | 72                 | 3,279                    | 2,952         | 11.1           |
| Wyoming               | 22                 | 172                      | 166           | 3.3            | 26                 | 164                      | 153           | 7.4            |



**Table - 4. Changes on Urban Arterial Roads by Region and State\*\***

| Region and State      | August             |                          |               |                | July               |                          |               |                |
|-----------------------|--------------------|--------------------------|---------------|----------------|--------------------|--------------------------|---------------|----------------|
|                       | Number of Stations | Vehicle-Miles (Millions) |               | Percent Change | Number of Stations | Vehicle-Miles (Millions) |               | Percent Change |
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| Connecticut           | 15                 | 1,911                    | 1,812         | 5.5            | 16                 | 1,976                    | 1,804         | 9.5            |
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| Subtotal              |                    | <b>31,308</b>            | <b>28,361</b> | <b>10.4</b>    |                    | <b>32,541</b>            | <b>28,733</b> | <b>13.3</b>    |

# HPMS by functional class

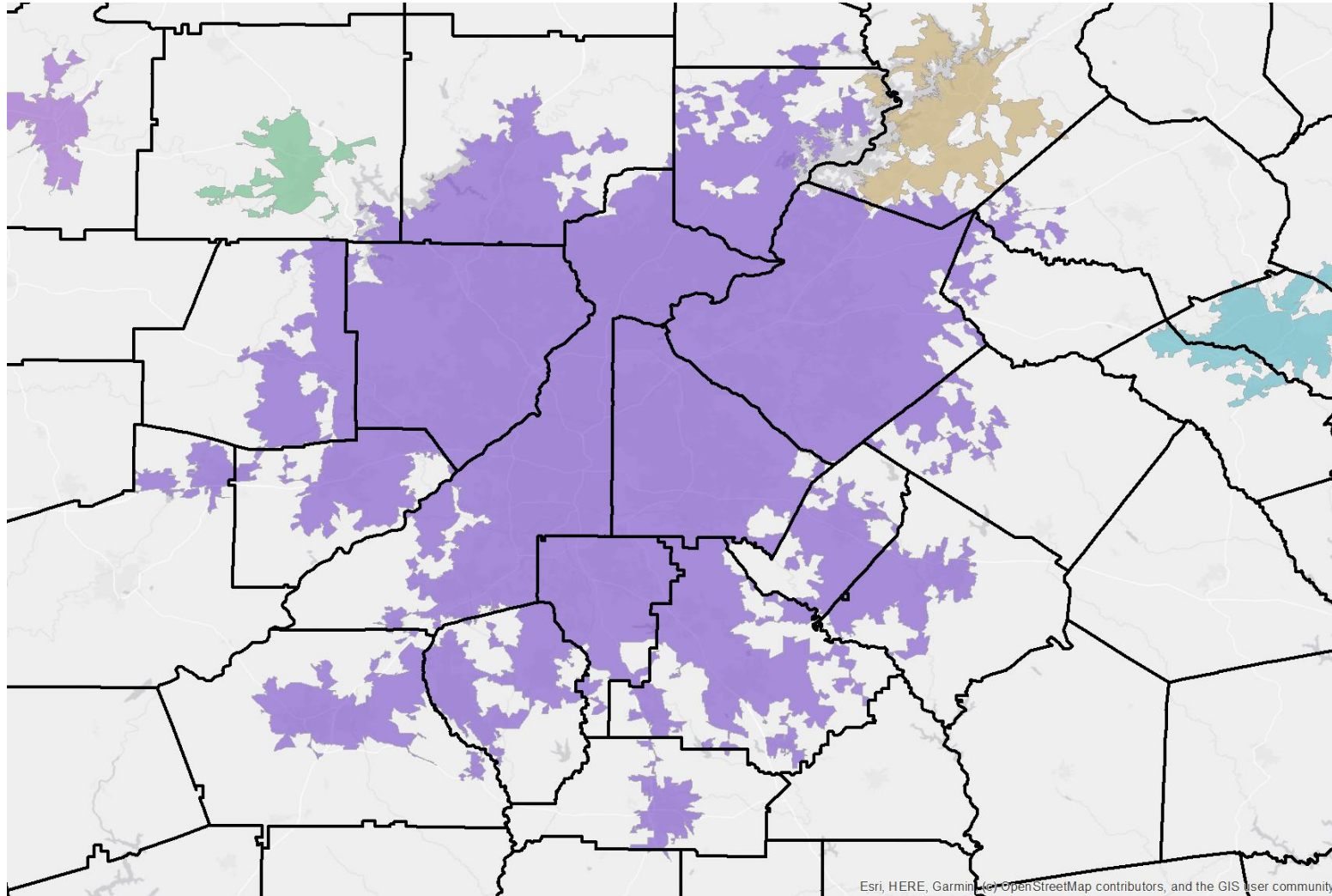


| Code | Description   |
|------|---|
| 1    | Interstate  |
| 2    | Principal Arterial – Other Freeways and Expressways |
| 3    | Principal Arterial – Other                          |
| 4    | Minor Arterial                                      |
| 5    | Major Collector                                     |
| 6    | Minor Collector                                     |
| 7    | Local   |

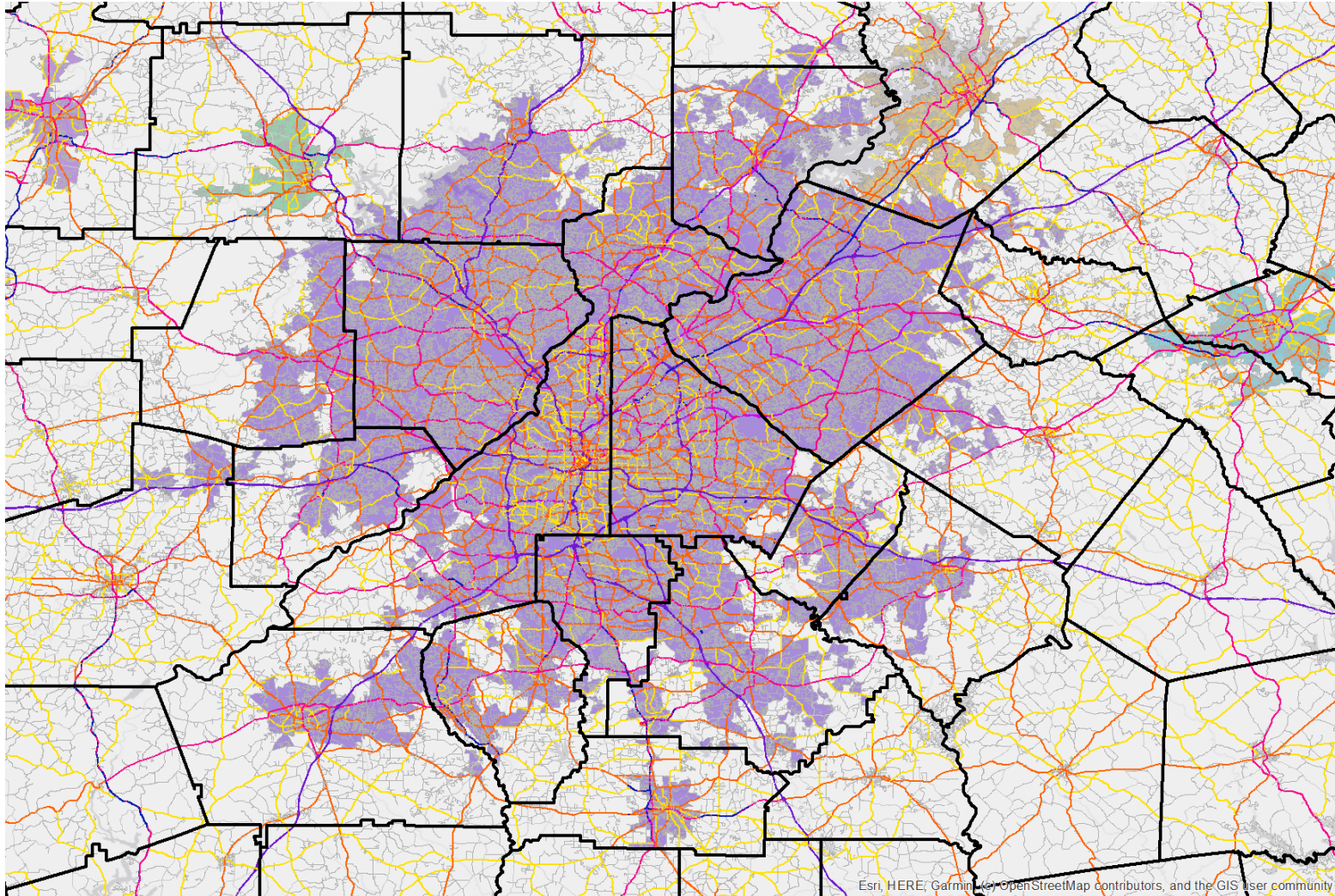
**Local Roads**  
**Arterials**



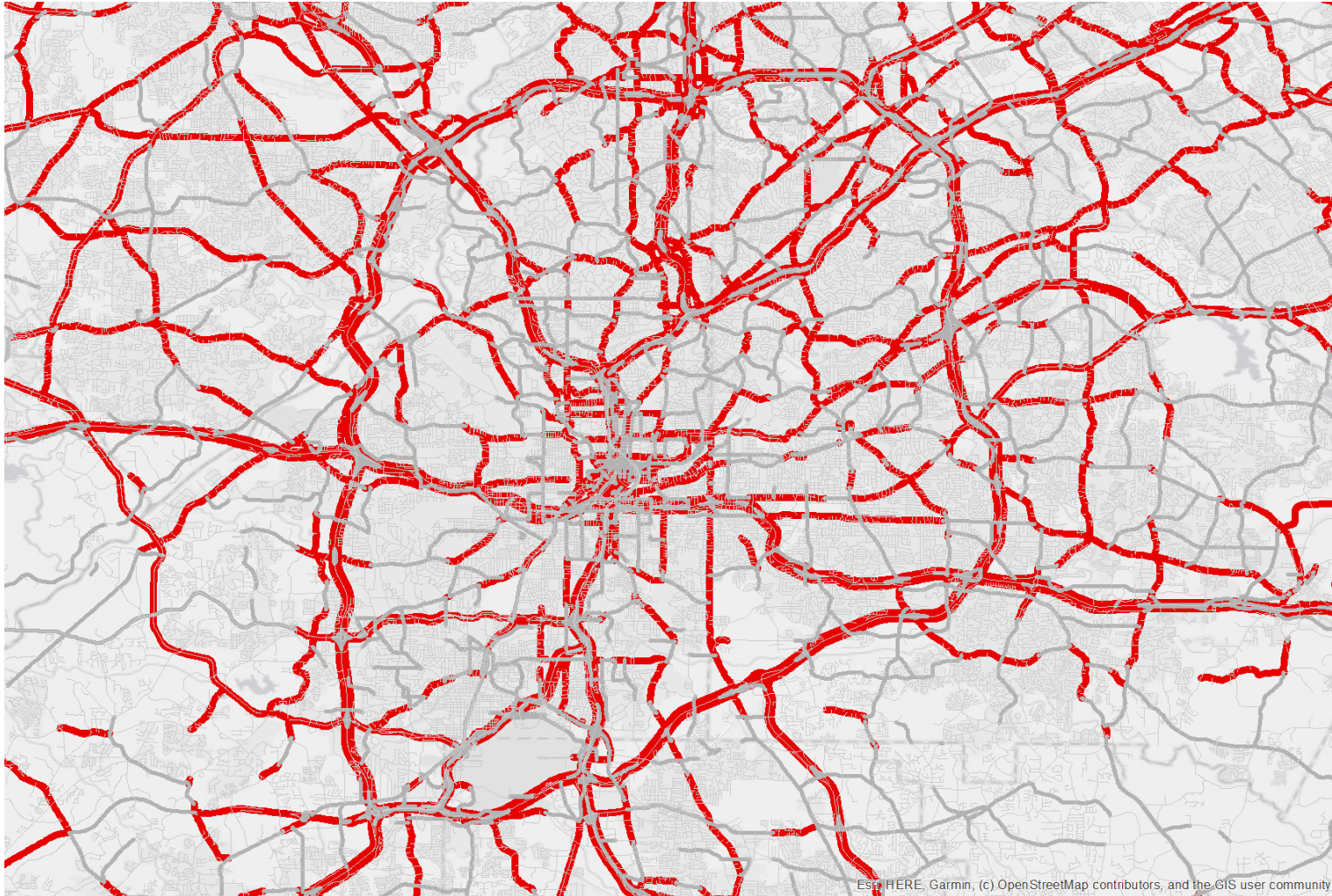
# Census urbanized areas (1)



# Census urbanized areas (2)



# HPMS by average annual daily traffic (AADT)



$$\text{VMT} = \text{AADT} * \text{length}$$

# Transportation calculations

