

Freight Demand

There are a number of factors that contribute to freight demand in a community, and the resulting activity from commercial vehicle traffic. This chapter summarizes the facilities, land uses, and trips that drive freight demand in the MATS region.

Freight Generators

The MATS planning area has a complex mix of residential, commercial, industrial, and agricultural land uses (see Table 04 and Figure 13). While all land uses have the potential to generate freight, freight-generating facilities are primarily located in areas with industrial, commercial, and agriculture/forestry uses (particularly in the MATS region, which has a concentration of logging activities)*. The land uses with the largest areas are Undeveloped/Vacant (67,473 acres), Agriculture/Forestry (62,700 acres), and Residential (46,591 acres). Currently, there are just over 9,000 acres of industrial uses.

Freight Generating Land Uses

Industrial land use is concentrated on the eastern side of Macon as well as between the former City of Macon and the southern edge of the MPO along US 129. Additionally, there are industrial uses concentrated near the Middle Georgia Regional Airport. There are other smaller concentrations of industrial land uses near the northeastern MPO boundary in Jones County, in the eastern part of the region between US 23 and US 80, and scattered throughout a few other spots near major roadways.

To understand the likely future configuration of freight related land uses and the amount of land that will be used for freight and related purposes, the team assessed anticipated changes in land use, specifically looking at new industrial uses, the loss of industrial uses, and new residential land uses. There is anticipated to be an increase in residential land uses in the western portion of the MPO and an expansion of industrial uses in the areas between US 129 and I-16 in the southeastern portion of the MPO (see Figure 14). The area near downtown Macon and Brosnan Yard are anticipated to

become increasingly mixed use. Collectively, residential and rural residential uses (141,803 acres) are expected to comprise the vast majority of land, with industrial as the next biggest category (20,229 acres). (Note that the future land use map shows potential uses, not projected development patterns; this represents potential future uses - it does not mean all the land area will be developed).

Table 04. Current Land Uses by Acre in MATS Region

Land Use Category	Acres	Percent of Total
Undeveloped/Vacant	67,473	33.7%
Agriculture/Forestry	62,700	31.3%
Residential	46,591	23.2%
Industrial	9,160	4.6%
Commercial	7,550	3.8%
Park/Recreation/Conservation	3,058	1.5%
Transportation/Communication/Utilities	3,105	1.5%
Public/Institutional	867	0.4%
TOTAL	200,504	100%

*Note: The most recent Macon-Bibb County zoning attribute "in the parcel layer (provided to the team in March 2024) acts as a proxy for "current land use," as the county does not maintain an existing land use dataset. Due to these different typologies, the project team re-classified the Macon-Bibb County zoning codes into more general land use categories.

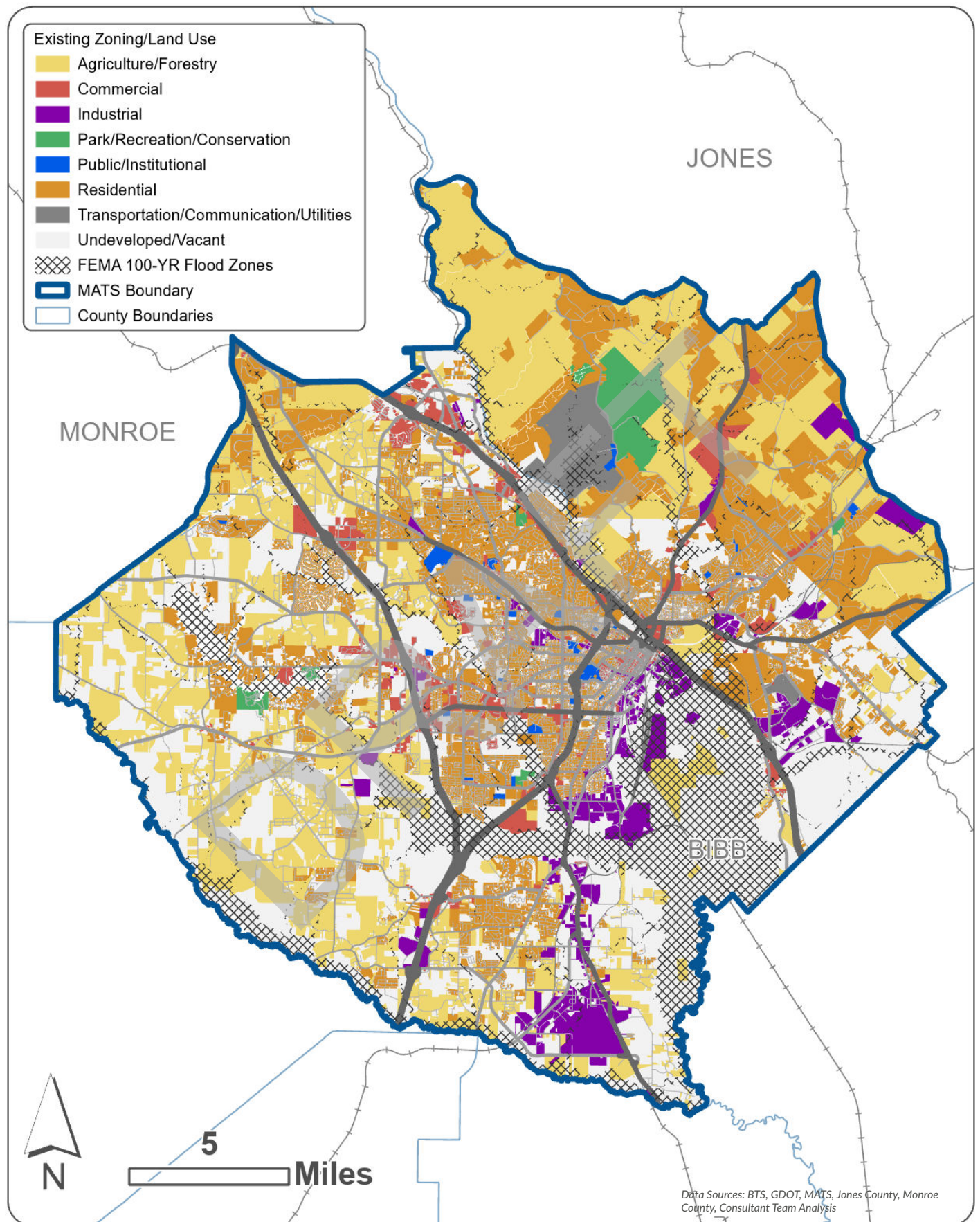


Figure 13. Existing Land Use in the MATS Planning Area

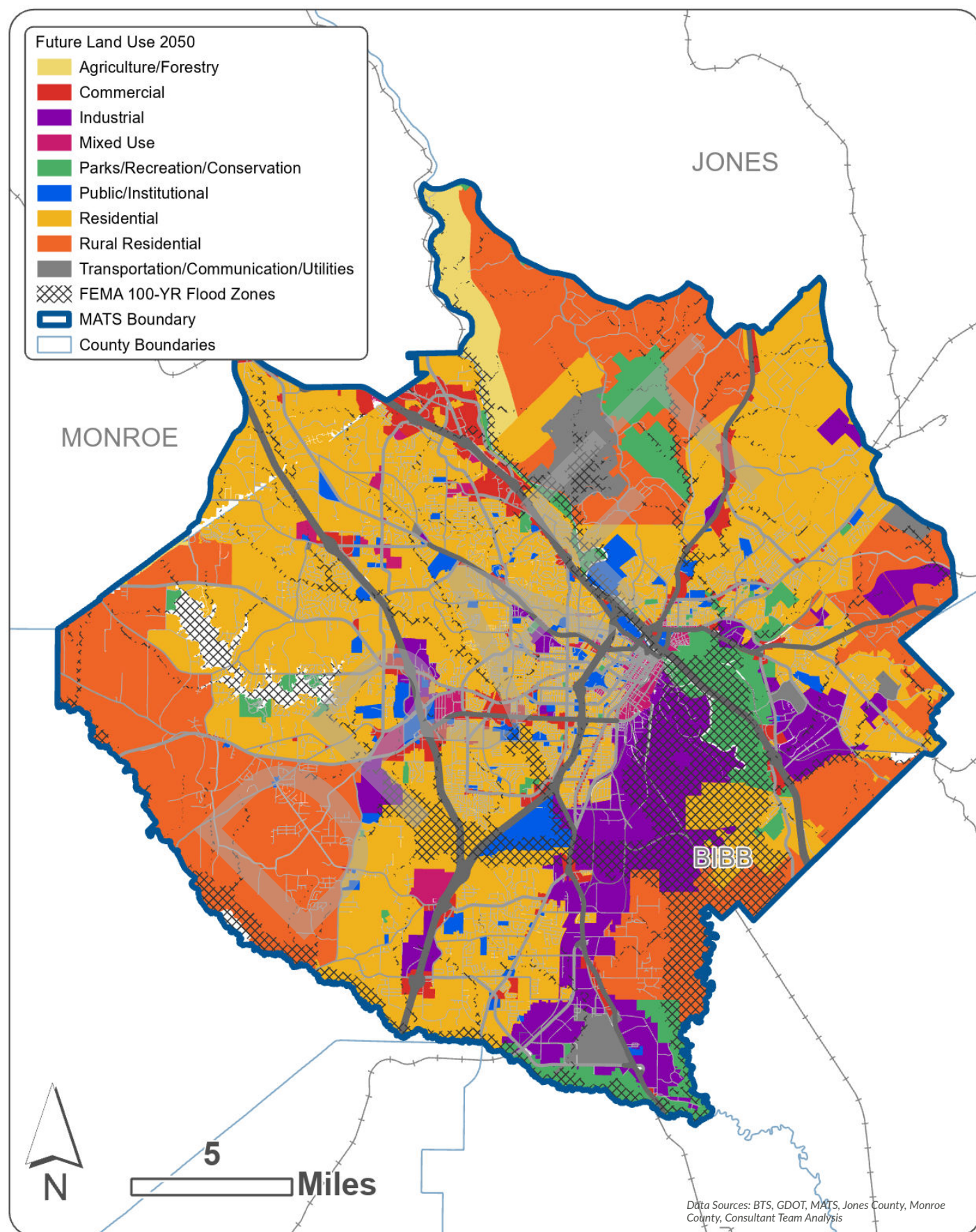


Figure 14. Anticipated Future Land Use in the MATS Planning Area

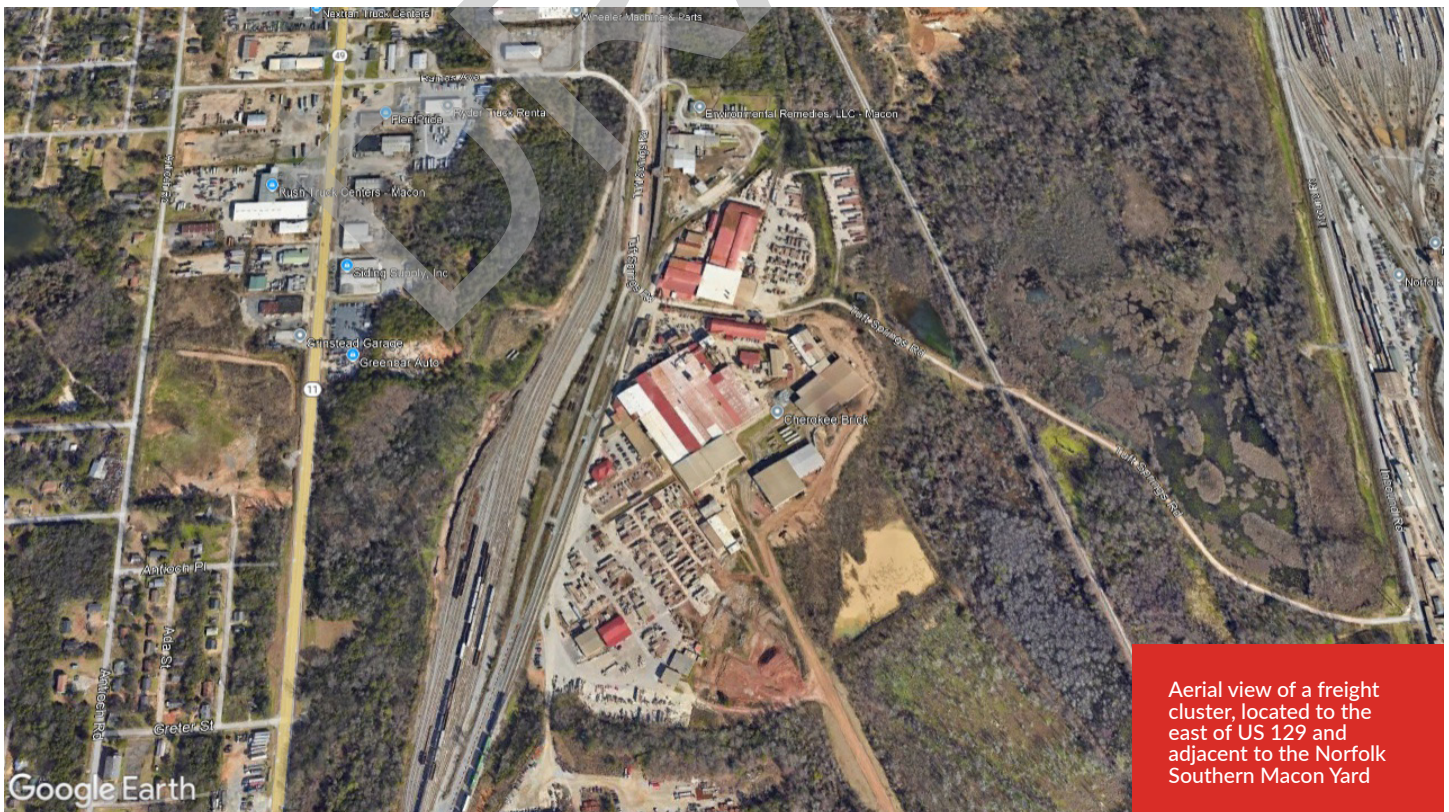
Freight Active Parcels

There are more than 1,100 parcels with active freight activity in the MATS planning area. The majority of these correspond to manufacturing, industrial, and/or light industrial zoning classifications. They include a variety of warehouses, manufacturing and distribution centers, pipeline terminals, and a number of smaller parcels that generate freight, such as car dealerships. There are a small number of parcels with zoning codes not typically thought to be industrial related, including Agricultural, Commercial, and Planned Development District.

Freight-active parcels are primarily located in central and southern Bibb County with a significant concentration within the former City of Macon. Figure 15 shows where the highest concentrations of freight active parcels are located.

The largest cluster of freight operations is located in the former City of Macon along US 129/US 41/US 80/Broadway and east of I-75. This cluster is adjacent to US 129/41 and expands northeast toward I-16. Large industrial facilities include the Norfolk Southern Brosnan Yard, Graphic Packaging International, Armstrong World Industries, and the Macon-Bibb County Landfill. This cluster is close to residential neighborhoods on the western side of US 129/US 41/US 80/Broadway and downtown Macon.

There is also a significant concentration of freight operations near the Middle Georgia Regional Airport and north of the City of Warner Robins, bordered by US 129, US 41, and Avondale Mill Road. In addition, there is concentration of freight operations near the SR 74 interchange with I-475, with Middle Georgia State University and residential and retail development located to the east. The fact that some of these freight clusters are adjacent to residential, retail, and civic uses underscores the need to not only improve freight mobility, but to mitigate against potential adverse impacts from freight traffic.



Aerial view of a freight cluster, located to the east of US 129 and adjacent to the Norfolk Southern Macon Yard

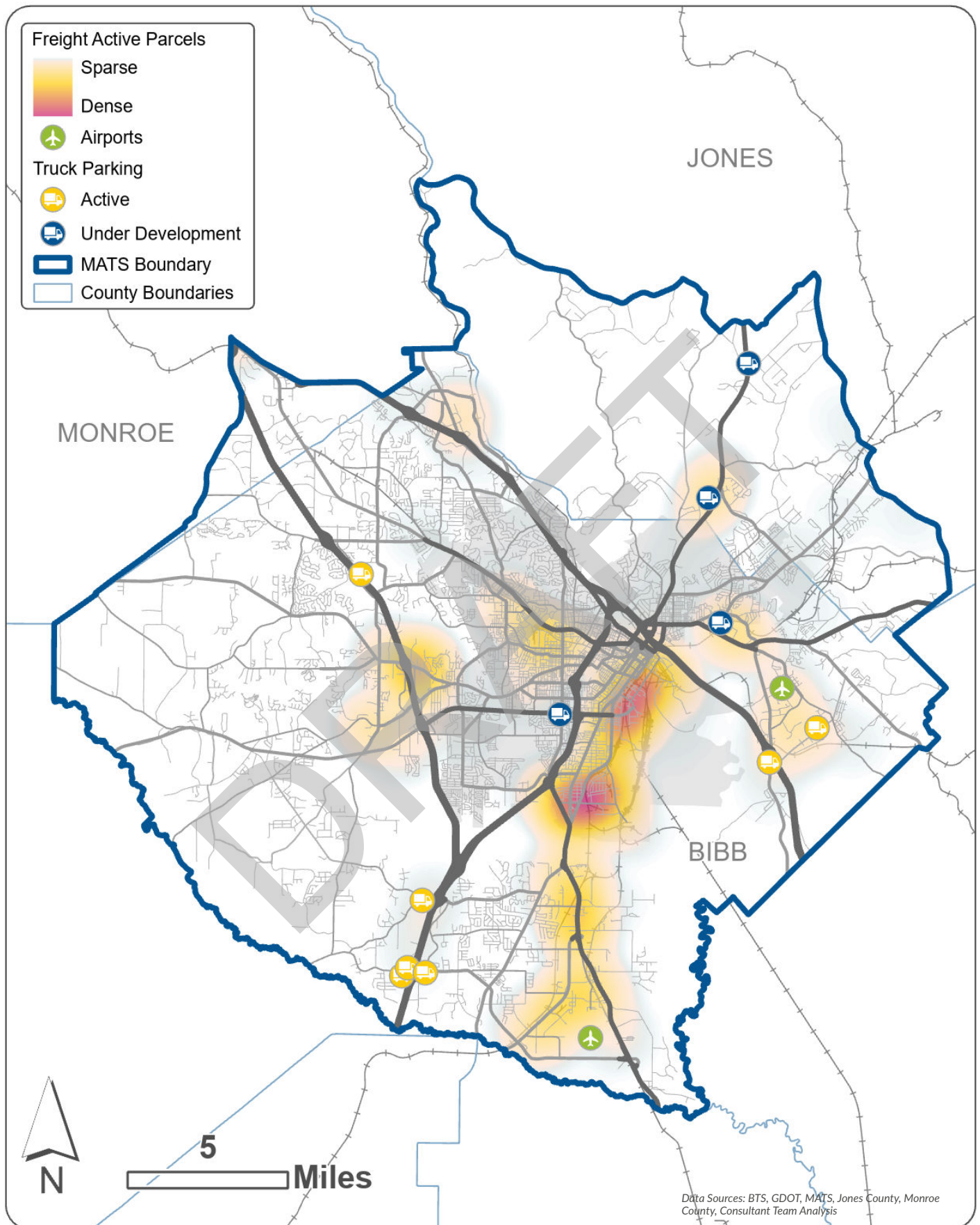


Figure 15. Active Freight Clusters in the MATS Planning Area

Industrial Development

Industrial real estate is directly connected to a region's freight activity, providing space for users that receive and produce freight (e.g., manufacturing) or are freight-intensive (e.g., warehousing, distribution). Industrial building stock within the MATS boundary is dominated by warehousing, though much of the recent new construction has been manufacturing space and flex/other development. Flex/other space includes showroom, service and truck terminal building types.

The project team compiled an inventory of industrial facilities from CoStar, supplemented by information from the Macon Bibb County Industrial Authority and MATS staff. There are numerous manufacturing, warehouse, food processing, and distribution facilities in the MATS region. There are also a few large industrial facilities located just outside the MATS region, including an Academy Sports & Outdoors Distribution Center located in Jeffersonville with over 1.8 million square feet of rentable building area, and a Five Below Warehouse and Distribution Center located in Forsyth with 715,000 square feet of rental building area. Additionally, several large formerly active sites are also present in the region, such as the former Brown & Williamson plant, which includes a large warehouse and several smaller buildings, totaling more than 1.9 million square feet. Table 05 shows the top 10 largest active facilities within the MATS region by approximate square feet of rentable building area.

Industrial building stock within the MATS boundary is dominated by warehousing, though much of the recent new construction has been manufacturing space and flex/other development. Flex/other space includes showroom, service and truck terminal building types. Within the MATS boundary, 16 industrial buildings have been constructed since 2015, totaling approximately 3.6 million square feet. Much of the newly constructed industrial space has been built to suit for specific businesses. New manufacturing facilities built by Irving Consumer Products (quality tissue products) and Kumho Tire (automobile tires)

Table 05. Top 10 Largest Industrial Facilities in MATS Region by Square Feet of Rentable Building Area

Facility Name	Address	Facility Type	Rentable Building Area (square feet)
Irving Consumer Products	2600 Weaver Rd, Macon, GA	Manufacturing	1,378,000
Armstrong World Industries	4520 Broadway, Macon, GA	Warehouse	1,210,000
Amazon Fulfillment Center	7001 Skipper Rd, Macon, GA	Warehouse	1,016,000
Kumho Tire	3051 Kumho Pkwy, Macon, GA	Manufacturing	818,000
Irving Consumer Products	1897 Allen Rd, Macon, GA	Manufacturing	700,000
Graphic Packing International	100 Graphic Packaging Intl Way, Macon, GA	Manufacturing	663,000
Kohl's Distribution Center	3030 Airport East Rd, Macon, GA	Distribution	561,000
Irving Consumer Products	2600 Weaver Rd, Macon, GA	Warehouse	500,000
California Cereal Products	4375 Mead Rd, Macon, GA	Food Processing	455,000
Multiple businesses	7501 Airport Dr, Macon, GA	Manufacturing	416,000

account for around 42% of the industrial space built since 2015. Overall, product built in the past 10 years is much larger than older industrial stock, averaging 225,000 square feet and 41,000 square feet, respectively. Product in the pipeline includes a distribution facility, an industrial agriculture facility, and two flex buildings that are being built “on spec,” or with no specific tenants identified.

Much of the investment since 2015 has been in build-to-suit facilities, as current market conditions do not support consistent speculative development. It appears the limited speculative warehouse development over the last 15 years has generally been the result of incentives to reduce land acquisition costs for developers. A stakeholder with knowledge of the current real estate market indicated that rents for warehouse space in the MATS Region are around \$5 per square foot and a robust market for spec warehouse development would require rents around \$8 per square foot. Successful adaptive reuse of previously single-tenant facilities into multi-tenant space (e.g., the former Brown and Williamson tobacco products manufacturing facility) could provide a roadmap for supporting expansion of local businesses at time when rents do not support the costs of new construction.

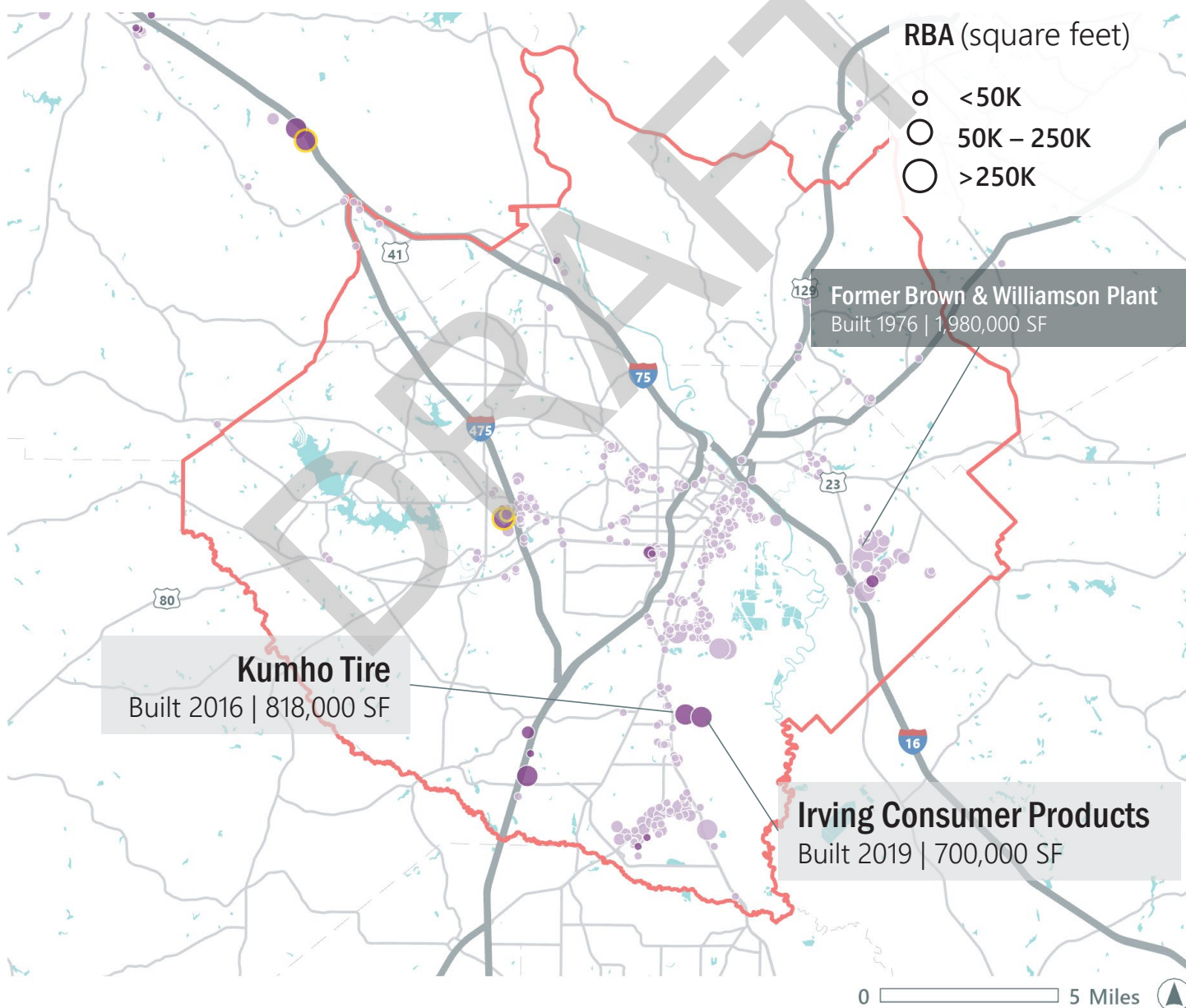


Figure 16. Industrial Real Estate in MATS Region

Data Sources: CoStar, SB Friedman Analysis

Inbound and Outbound Commodities

TOP INBOUND AND OUTBOUND COMMODITIES BY DAILY TRIPS (2020)

Trips carrying mining products account for nearly half of all daily trips carrying commodities - 43% of inbound trips and 49% of outbound trips. Trips carrying petroleum account for roughly 14% of all inbound and outbound trips combined, and stone products comprise about 12% of combined trips. The MATS region is a net importer of wood, which accounts for roughly 59 daily trips into the region, while it is a net exporter of paper products, which account for 116 daily trips from MATS to other areas. Other top inbound and outbound commodities include stone, petroleum, and bulk/secondary products, and paper is a top outbound commodity. Together, delivery of all commodities accounts for over 500 daily trips into the region and over twice as many (1,216 trips) out of the region. This indicates that MATS is a net “exporter” of trips delivering goods.

The areas that receive the most commodity-carrying truck trips are located off of SR 57 and SR 49 near the Macon Downtown Airport and northwest MATS, including portions of Monroe County. Most outbound truck trips begin on the east side of the region, in industrial areas around the Macon Downtown Airport and the Middle Georgia Regional Airport (see Figure 17 and Figure 18).

The number of inbound daily truck trips are projected to more than double in the next 25 years, from 504 trips in 2020 to 1,168 trips in 2050. Mining materials will drop from 43% to 26% of all inbound products, with the greatest projected increases in bulk/secondary, petroleum, stone, and chemical products. Outbound trips are projected to increase by over 56%, to 1,904 truck trips per day. The number of outbound trips carrying mining materials will drop, with significant increases in bulk/secondary and petroleum commodities. Overall, in 2050, MATS will remain a net exporter of products overall, with more outbound daily trips (1,904) compared to inbound daily trips (1,168).

The destinations for inbound daily trips are largely consistent between 2020 and 2050. For outbound trips, the origin areas are projected to be more widespread compared to 2020, with new trips originating from west of Downtown Macon and between Sardis Church Road and Hartley Bridge Road east of I-75. These new origin zones are reflective of the anticipated growth in industrial land uses in the MATS region.

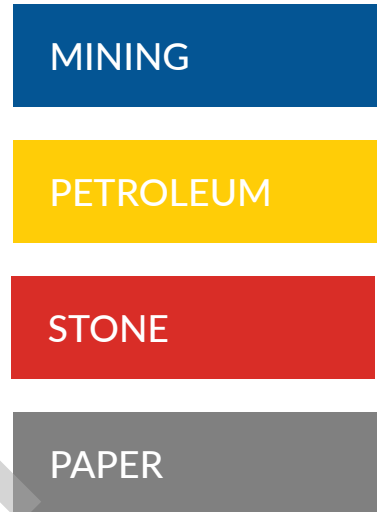


Table 06. Top Commodities in MATS Region by Daily Trips (2020 and 2050)

Top 5 Commodities (2020)			Top 5 Commodities (2050)		
Commodities	Inbound Daily Trips	Outbound Daily Trips	Commodities	Inbound Daily Trips	Outbound Daily Trips
Mining	219	598	Mining	300	129
Wood	59	0	Wood	0	0
Stone	47	157	Stone	113	168
Petroleum	35	203	Petroleum	125	629
Bulk/Secondary	34	41	Bulk/Secondary	270	513
Paper	0	116	Paper	0	217
Chemical	0	0	Chemical	77	0
Others	110	100	Other	283	248

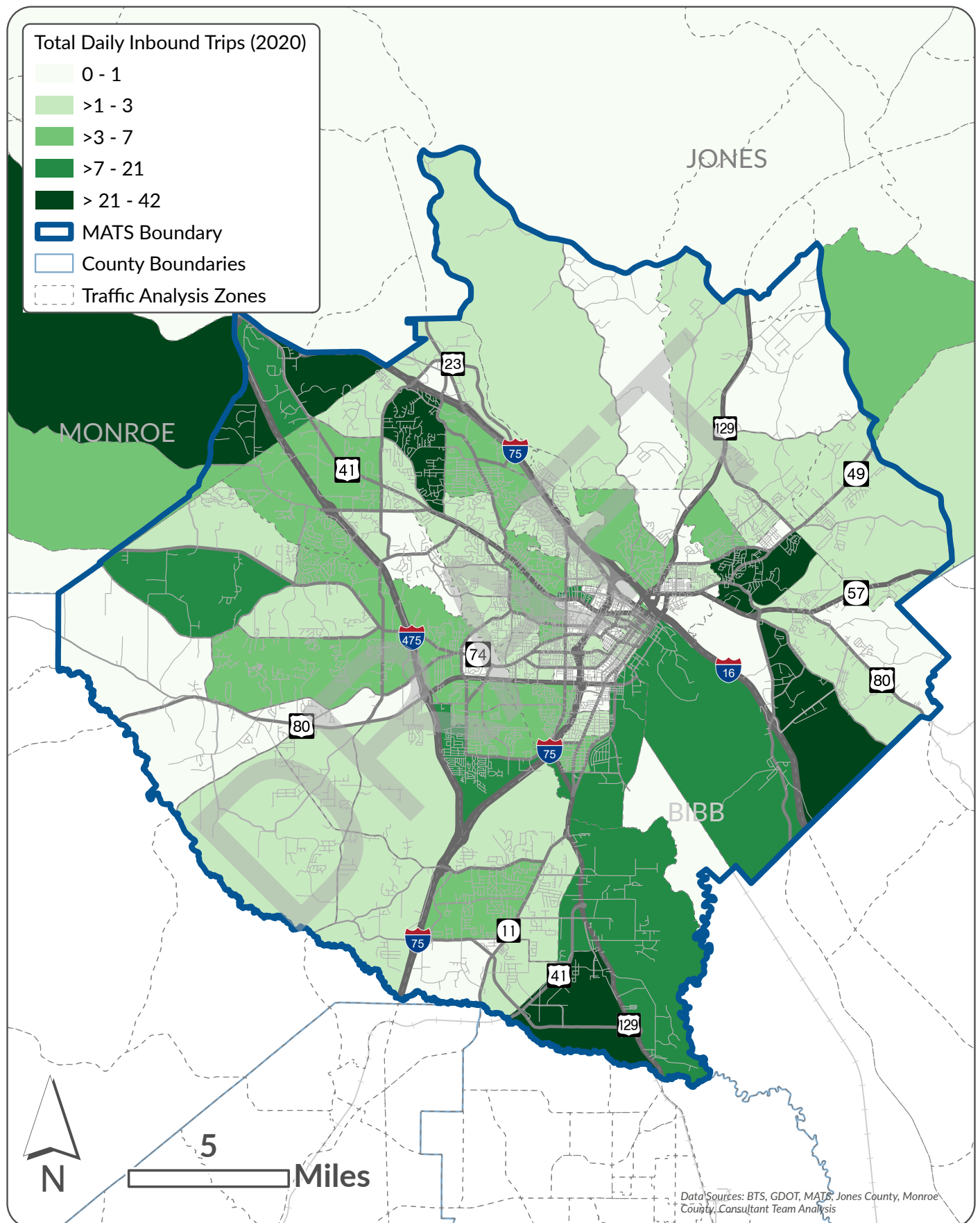


Figure 17. Top Inbound Commodity Trips by TAZ (2020)

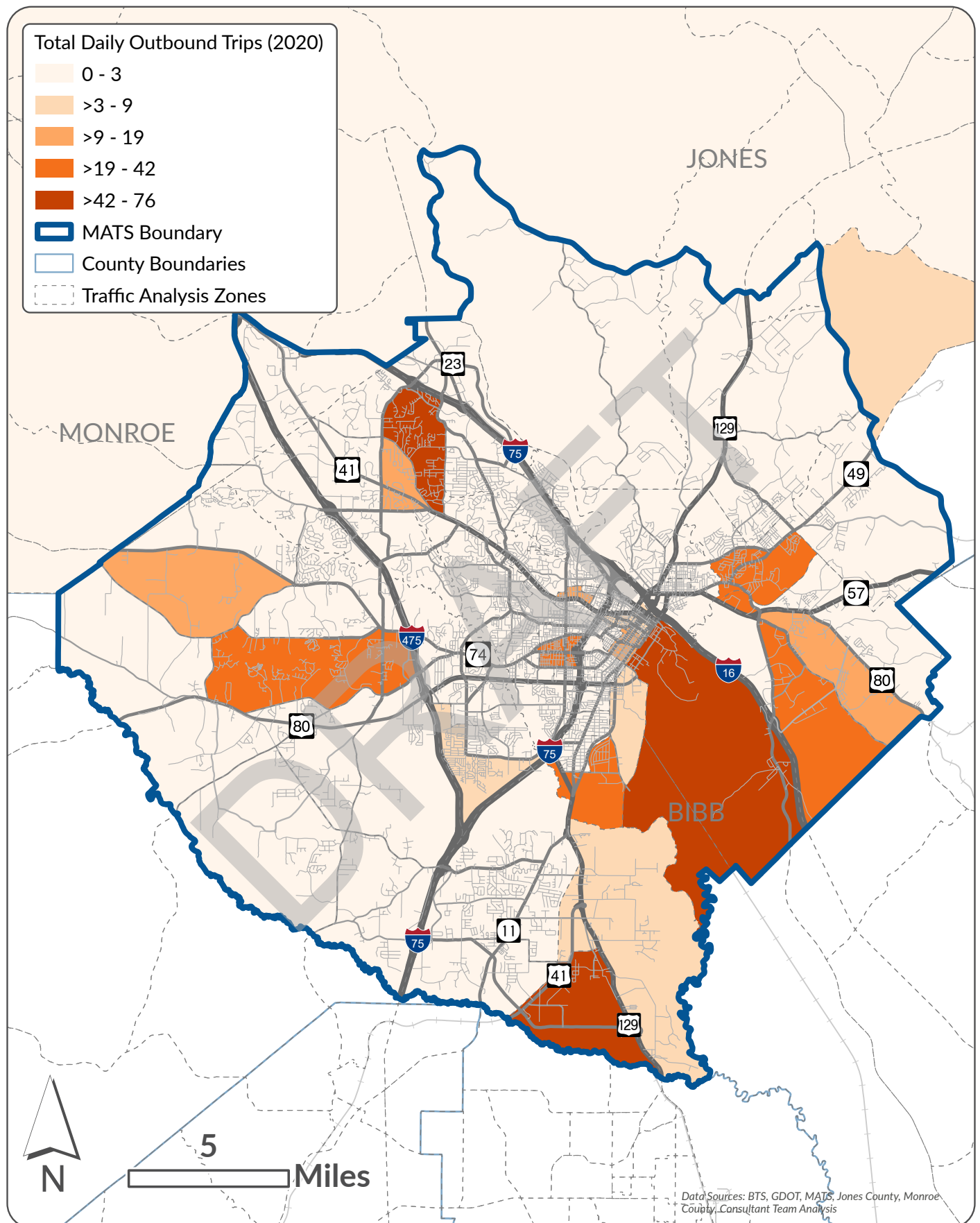


Figure 18. Top Outbound Commodity Trips by TAZ (2020)

Origin-Destination Patterns

The purpose of an origin-destination analysis is to understand where vehicle trips begin and end, in order to help identify traffic patterns and potential needs on relevant corridors. The origin-destination analysis conducted for the MATS 2050 Freight Plan was based on a sample of medium and heavy duty truck trips during all hours from March 1 to March 31, 2023, with a minimum threshold of 125 trips per zone.

External-to-Internal Trips

External-to-internal trips refer to truck trips that began outside of the MATS region and ended within the region. Collectively, more than 64,000 trips were made by medium- and heavy-duty trucks entering the MATS region during the one-month period. The greatest number of trips were from Monroe County along US 41, Peach County along I-75 and US 41, and Twiggs County along US 80, including Jeffersonville. The destinations for these trips, shown in Figure 19, are concentrated south of I-16 around Brosnan Yard, around the Middle Georgia Regional Airport, and the area containing the warehouses clustered west of I-75 just south of I-475 along Frank Amerson Parkway.

The majority of truck trips that began outside the MATS region originated within about 50 miles of the planning area. This short distance is reflective of the trend of companies shifting to distribution and fulfillment center models, whereby distribution centers or fulfillment centers are sited closer to the destinations of products for sorting, scanning, picking/packing, and shipping of goods. It is also worth noting that the Monroe County rest area on I-75 southbound (mile marker 179) in Juliette is the only rest area along I-75 between Atlanta and Macon; therefore it is a common place for drivers to stop and is likely over-represented among trip origins and destinations.

Internal-to-External Trips

Internal-to-external trips are truck trips that began within the MATS region and ended outside the region. There were more than 65,000 medium- and heavy-duty truck trips that originated from the MATS region and ended outside the region in March 2023. The patterns for internal-to-external trips are similar to those for external-to-internal trips. These trips largely began south of I-16 and Macon Downtown Airport (which includes Brosnan Yard); near the Middle Georgia Regional Airport; near the warehouses clustered west of I-75 along Frank Amerson Parkway; in smaller clusters west of I-475; and from the north side of I-75 near Monroe County (see Figure 20).

The greatest number of these truck trips ended in a portion of Monroe County along I-75 between US 23 and US 41 (11,400), followed by Peach County along I-75 north of Perry (3,500 trips), and along US 80 and US 23 east of the MATS region. Similar to external-to-internal trips, the majority of internal-to-external truck trips ended within about 50 miles of the planning area.

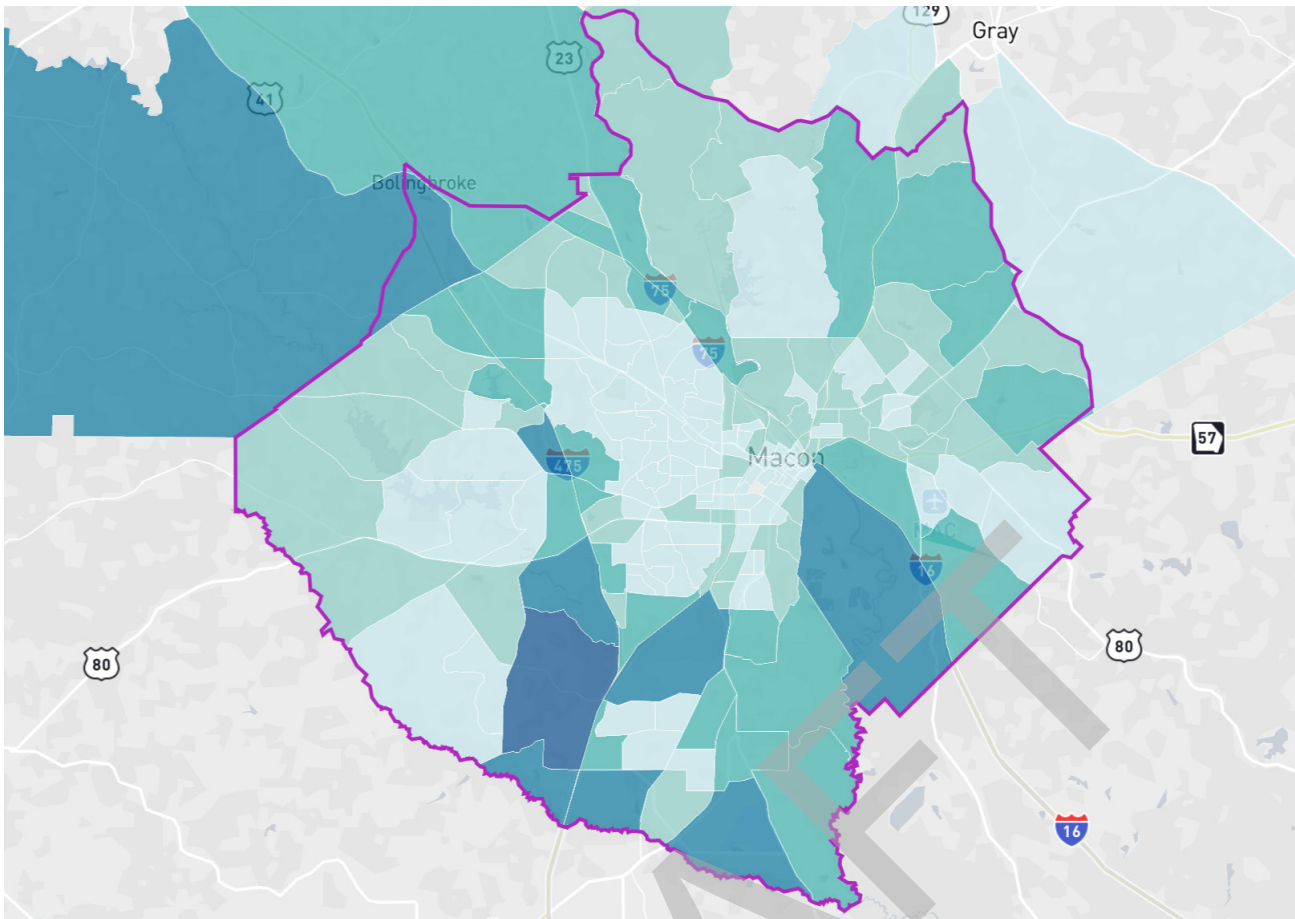


Figure 19. Destinations for Inbound Trips to the MATS Planning Area

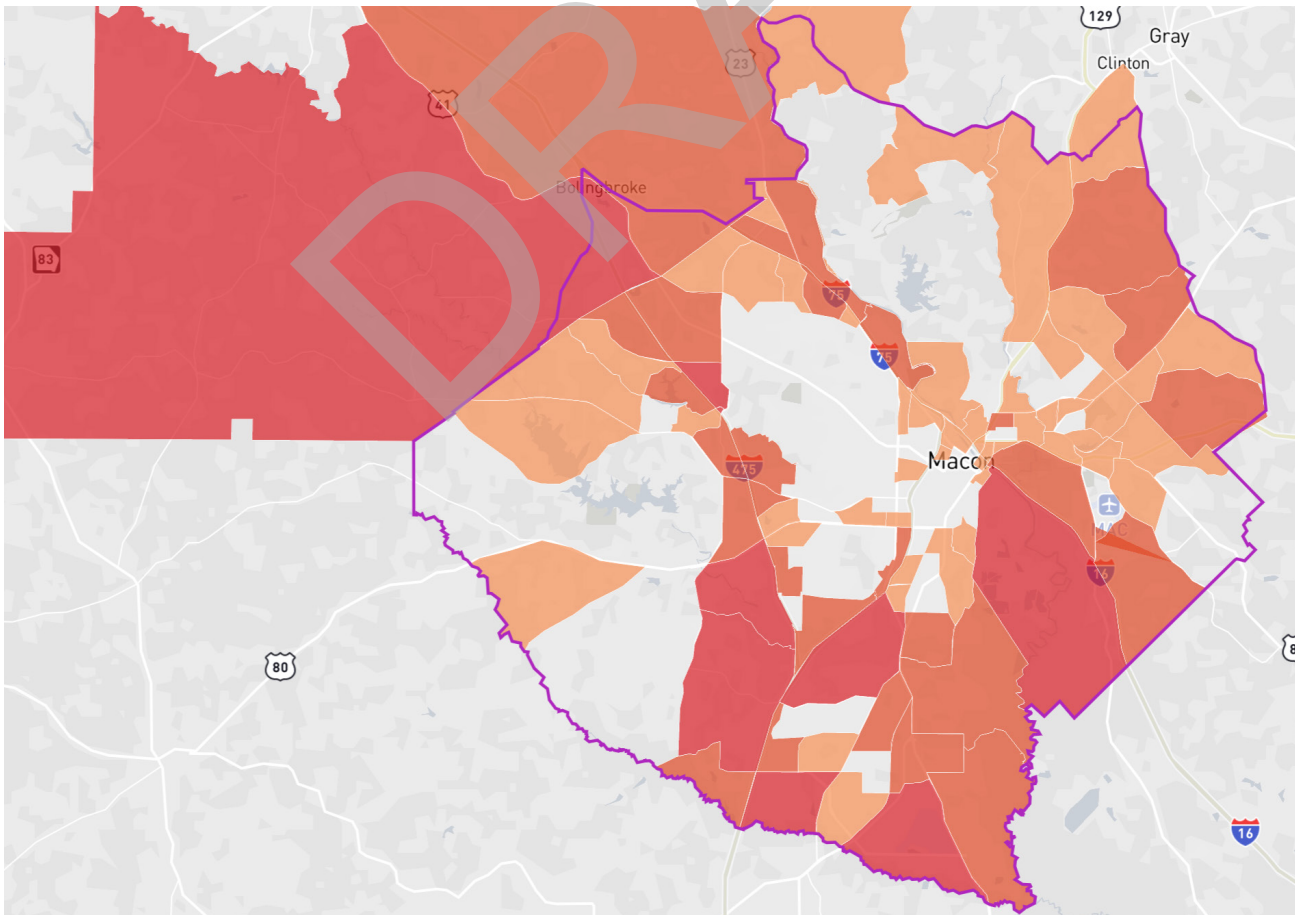


Figure 20. Origins of Outbound Trips from the MATS Planning Area