

Freight Needs Assessment

Existing Conditions and Future Freight Movement

Chapter 2 Freight Systems and Profiles



Roads and Highways

Inventory of Assets

Functional Classification

The GDOT defines and maintains a system of functional classification to group streets and highways into classes or systems based on the current character of service they provide, or the role that streets and roads play within the overall network. The functional classification system includes seven major categories. GDOT's Road Data Inventory includes interstate highways, state routes, county roads, and city streets. A breakdown by miles for each classification within the MATS planning area is shown below and in Figure 03:¹

- Interstates: 72 miles
- Principal Arterial - Freeways and Expressways: 0 miles
- Principal Arterial - Other: 45.90 miles
- Minor Arterial: 142.48 miles
- Major Collector: 140.81 miles
- Minor Collector: 26.02 miles
- Local Road: 1,054.80 miles

Within the MATS planning area, interstate highways include I-16, I-75, and I-475. All three interstates run through Macon-Bibb County and I-475 also passes through Monroe County. There are no interstate highways in Jones County. Most of the major collectors are within the core of Macon, while most of the minor arterials are in the more outlying areas toward the county boundaries.

Not all communities follow this classification system and many have their own definitions for types or categories of roads. In its most recent MTP, adopted in 2022, MATS grouped roads into interstates, US highways/arterials, local streets, and assorted other categories (four-wheel drive trails, frontage roads, and alleyways). Within the MATS planning area, there are more than 2,000 centerline miles of roads, as shown by road type, in Table 02 and mapped in Figure 04.

Table 02. MATS Area Roadway Centerline Miles by Type

Road Type	Centerline Miles	Percent of Total
Interstates and Ramps	112.5	5.3%
US Highways / State Routes, Major Arterials	288.1	13.4%
Local Roads and Streets	1,741.5	81.3%
TOTAL	2,142.1	100%

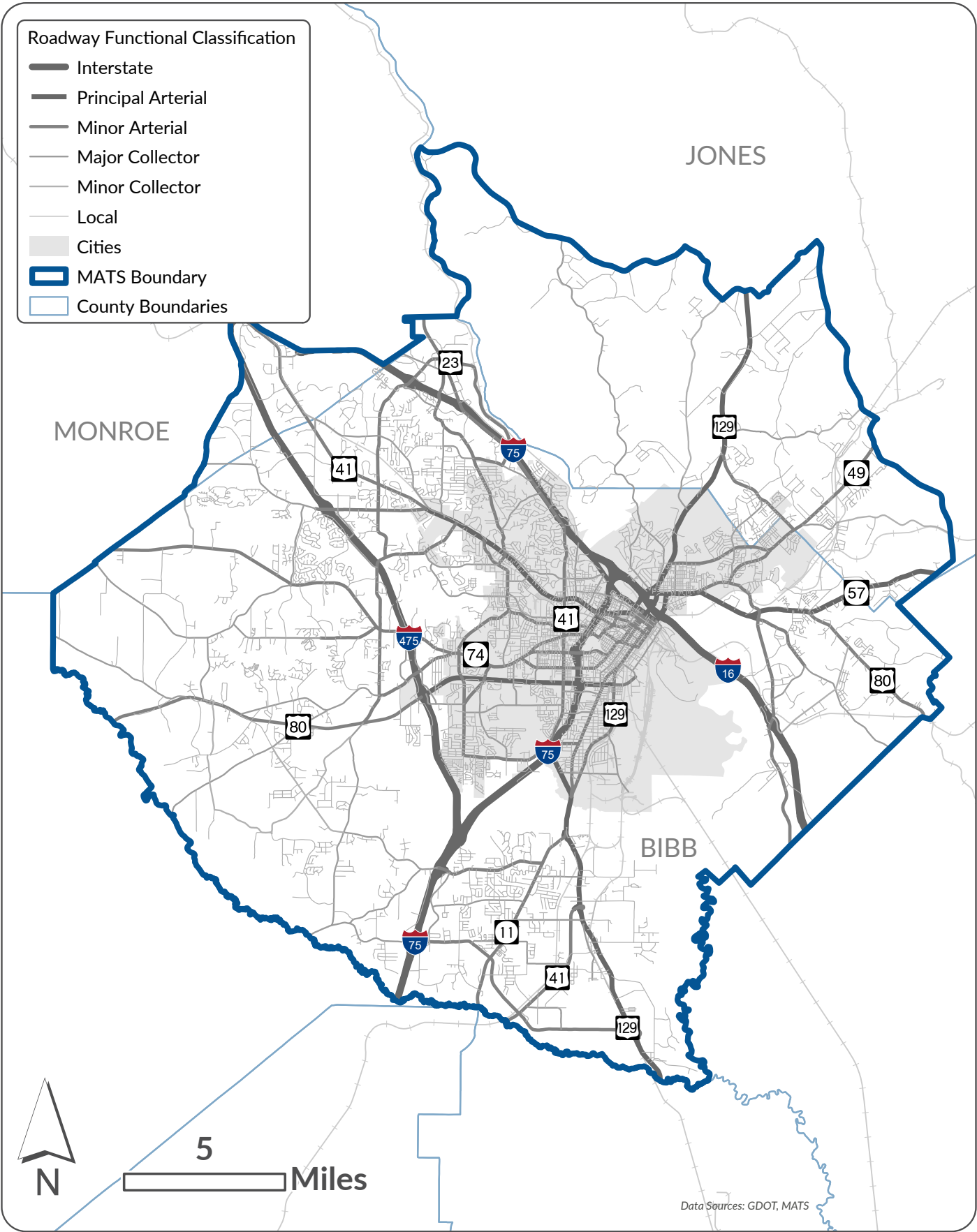


Figure 03. Roadways by Functional Classification in MATS Planning Area

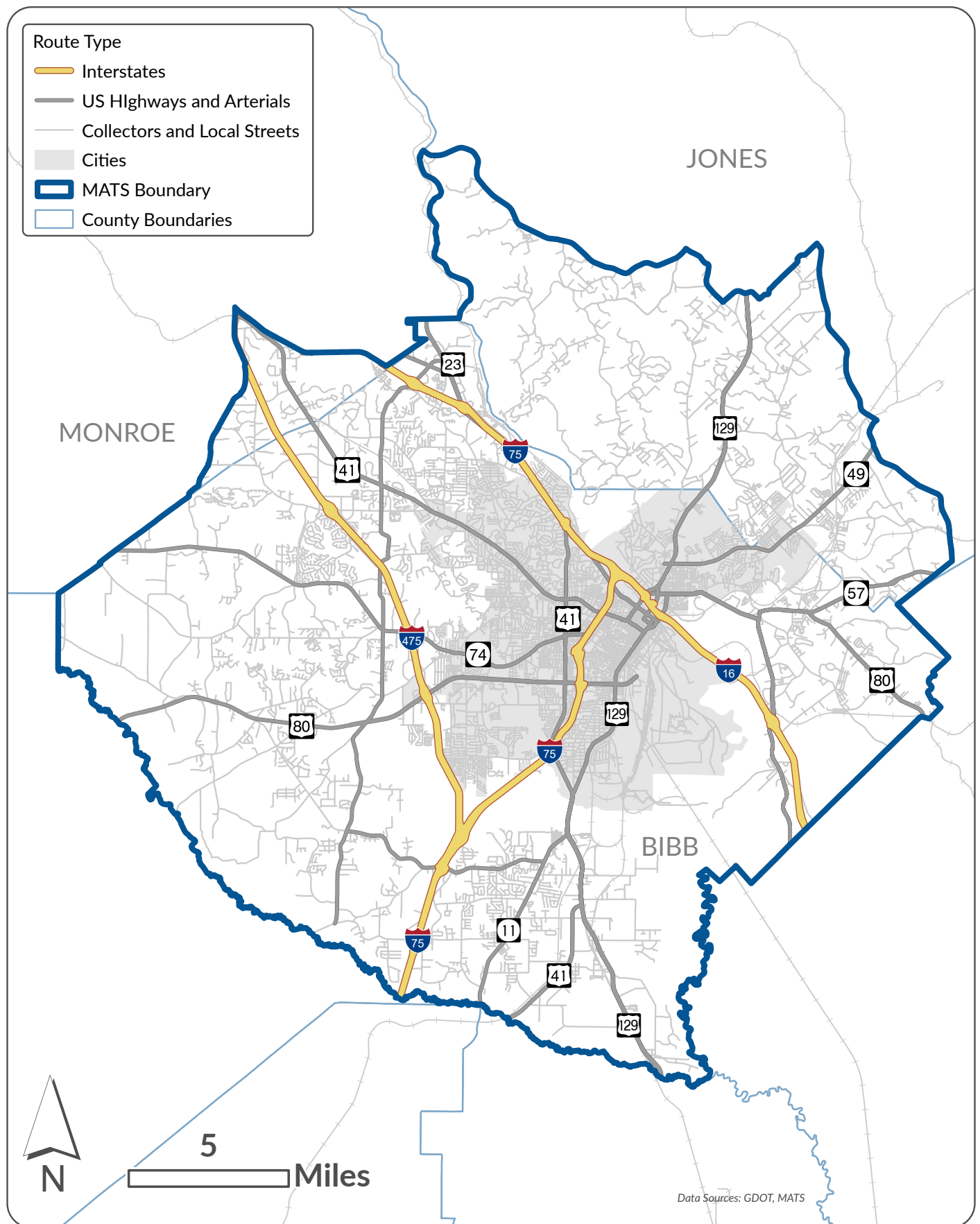


Figure 04. MATS Area Roadways by Type in MATS Planning Area

Designated Freight Network

Georgia's overall freight network is comprised of a vast system of roads, bridges, railways, seaports, and airports. It connects Georgia to the rest of the United States via interstate highways, two Class I railroads, multiple intermodal terminals, as well as shortline railroad tracks. Hartsfield-Jackson Atlanta International Airport, the Port of Savannah, and the Port of Brunswick connect Georgia to world markets, providing critical access to manufacturers, importers and exporters, consumer markets and the rest of the interconnected web of freight and logistics.

National Highway Freight Network

The Fixing America's Surface Transportation Act (FAST Act) directed the FHWA to establish a National Highway Freight Network (NHFN) to focus resources and policies on improving the highway components of the national freight system. The NHFN determines where funds from the National Highway Freight Program (NHFP) may be spent and determines eligibility of highway projects for competitive grant programs, like the Nationally Significant Freight and Highway Projects (INFRA). Recently, the Bipartisan Infrastructure Law (BIL) (also sometime referred to as the Infrastructure Investment and Jobs Act or IIJA) increased the number of miles that states may designate as critical urban and critical rural freight corridors. The NHFN consists of sub-systems of roadways:

- **Primary Highway Freight System (PHFS)** - These highways are considered the most critical for freight transportation in the US. In the MATS planning area, these include I-16 and I-475, as well as a portion of I-75.
- **Other Interstate portions not on the PHFS** - These highways provide critical connectivity between the PHFS and freight transportation facilities. In the MATS planning area, the most significant of these routes is the portion of I-75 between I-475 and I-16.
- **Critical Rural Freight Corridors (CRFCs) and Critical Urban Freight Corridors (CUFCs)** - These roadways provide access between interstates, the PHFS, and freight facilities. No roadways in the MATS planning area, or in the State of Georgia, are currently designated as CRFCs or CUFCs.

Strategic Highway Network (STRAHNET)

Military installations such as military posts and bases generate freight traffic, similar to commercial goods movements. During peace time, these installations use the transportation network to transport goods to and from the military facilities and also serve as access for military personnel in heavy vehicles. During deployment, these roadways are critical for the effective mobilization of troops and equipment, to transport military equipment and personnel to where they are needed. Military installations serve an important role both during peacetime and deployment; thus, it is critical to maintain and improve routes along the STRAHNET.

The FHWA established the STRAHNET for the emergency mobilization and peacetime movement of commodities that support US military operations, including fuel, ammunition, repair parts, food, and other goods. The STRAHNET consists of both interstate and non-interstate highway routes on the National Highway System (NHS). Within the MATS planning area, there are three interstate routes on the STRAHNET: I-75, I-16 and I-475. There is also a STRAHNET Connector, US 41, that extends southward from I-75 to Robins AFB - this route is designed to provide access between the military installation and the interstate highway. The designated highway freight network in the MATS planning area is shown in Figure 05.

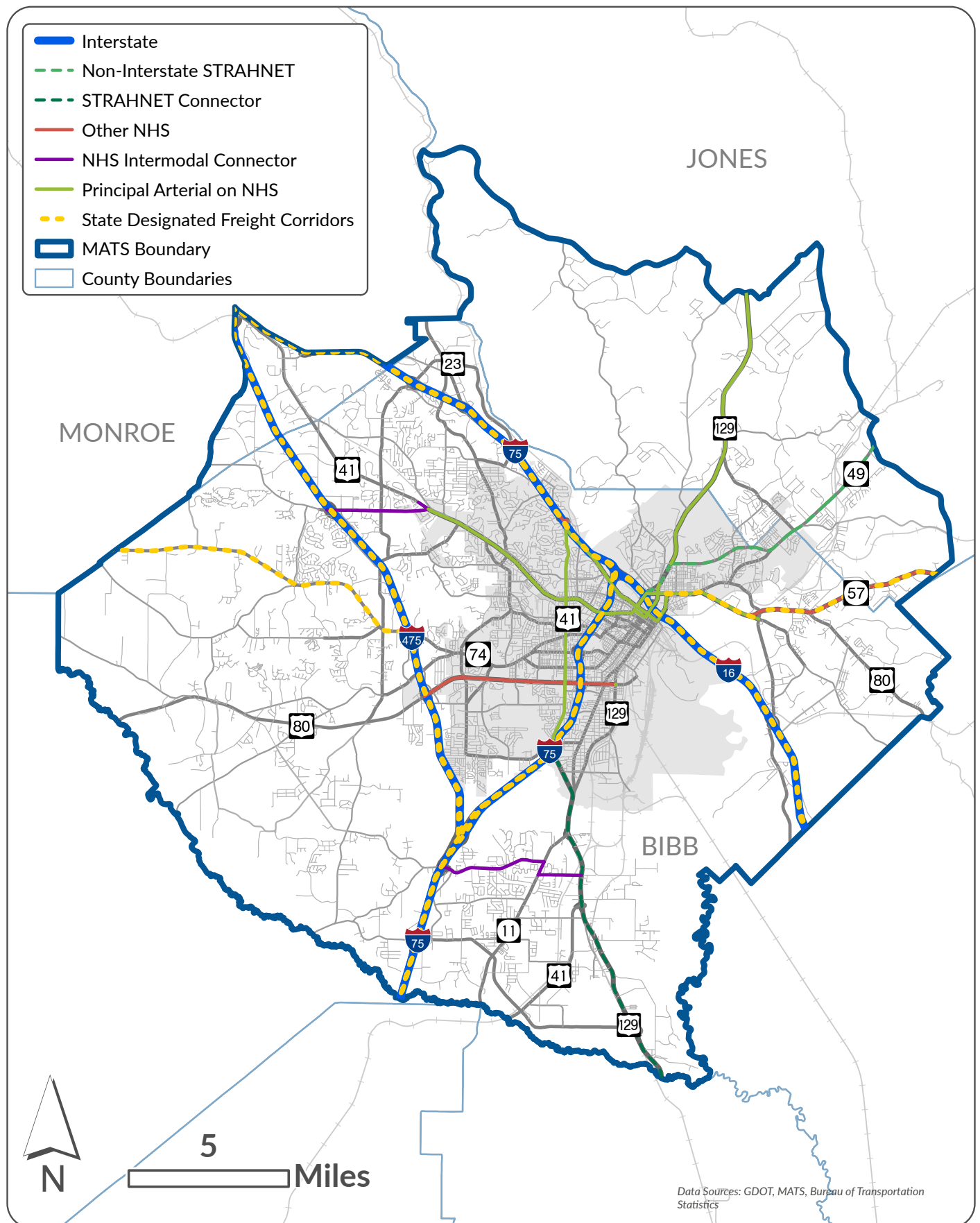


Figure 05. Designated Highway Freight Network in MATS Planning Area

Intermodal Connectors

NHS freight connectors are public roads that connect major intermodal terminals to the highway network. Public roads leading to major intermodal terminals are designated connectors on the NHS by the US Department of Transportation, in cooperation with state DOTs and MPOs. Consideration is given to the level of intermodal activity and its important to the state economy. In the MATS region, intermodal connectors include Zebulon Road from I-475 to US 41/SR 19 where there is a pipeline terminal and Hartley Bridge, Houston, and Allen Roads between I-75 and a cluster of petroleum and other pipeline terminals. (See Figure 36).

State Freight Network

Georgia's State Freight Network is comprised of a mix of interstate highways, state routes, and inter-city roadways that connect to intermodal facilities, airports, and industrial facilities. Trucks are allowed on all state routes, however, there are also designated freight corridors at the state level. Within the MATS planning area, Statewide Designated Freight Corridors include, I-16, I-75, and I-475, as well as SR 74 west of I-75, and SR 57 and portions of SR 19/US 80 east of I-16.

As noted in previous sections, the majority of roadway mileage in the MATS planning area is comprised of non-interstates and roads other than state routes. These corridors facilitate the movement of goods between the state freight network and warehouses, distribution facilities, industrial sites, rail yards, and other freight-oriented land uses.

Local Truck Routes and Prohibitions

While Macon-Bibb County's Code of Ordinances does not specifically designate any truck routes or prohibit outrightly truck traffic on certain classes of roads or specific roads by name, Sec. 28-17 does authorize the engineer to designate and maintain by traffic control signs "truck routes and streets to be designated specifically to prohibit various classes of trucks." Vehicles in excess of 10,000 pounds combined weight and load are prohibited on Plaudit Road between Knoxville Road and Bethel Church Road and roads where vehicles in excess of 8,000 pounds are restricted include:

- Augusta Avenue, Riggins Mill Road to Talmadge Drive
- Brunswick Avenue, Riggins Mill Road to Talmadge Drive
- Cordele Avenue, Riggins Mill Road to Talmadge Drive
- Dana Drive, Rianey Road W and SW to a cul-de-sac
- Decatur Avenue, Riggins Mill Road to Talmadge Drive
- Michael Drive, Fulton Mill Road to Rogers Road
- Talmadge Drive, Augusta Avenue to Decatur Avenue

Jones County's code does not mention truck routes, although it does authorize the sheriff to designate and maintain "truck or other traffic control zones" (Sec. 70-33). In Monroe County, Sec. 13-26 stipulates that the county is responsible for determining on which roads through truck traffic is prohibited and authorizes the county to post signs showing prohibitions; where such signs are posted, trucks other than pickups or light trucks are prohibited, except for local traffic. In addition to being permitted, by law, on any portion of a road that is on the National Highway System, it should be noted that trucks also are permitted on any road or street where they have an order or charge for pick-up or delivery.

Number of Lanes

The roadways with a higher functional classification - interstates and arterials - generally have the greatest number of lanes and carry the highest volumes of traffic in the MATS planning area. Interstate 75 traverses the region from Jones County southward through Macon-Bibb County. It is two lanes in each direction for most of its extent from the boundary at Jones County to I-16 and expands to three lanes in each direction until the interchange with I-475. South of I-475, it expands further to five lanes in each direction until the MPO's southern boundary. Interstate 475 serves a bypass around downtown Macon and is three lanes in each direction from its northern interchange at I-75 in Monroe County to the southern interchange with I-75 in Macon-Bibb County. Interstate 16 begins at an interchange with I-75 just north of downtown Macon and extends towards the southeast; it is primarily two lanes in each direction. Arterials such as US 41, US 80, US 129 and SR 74 are generally two lanes in each direction, with portions that include a center two-way left turn lane. North of Zebulon Road, US 41 is one lane in each direction to the MATS boundary in Monroe County. Among collectors and local roads, which comprise the majority of roadway mileage in the MATS planning area, most are two lanes wide (one lane in each direction). There are some segments of three- and four-lane collectors and arterials in and near downtown Macon.

Bridges

Based on the most recent data from FHWA's National Bridge Inventory (NBI) and GDOT, there are 247 roadway bridges in the MATS planning area (includes bridges within 500 feet of MATS boundary).² These bridges are located along a variety of arterial, collector, and local roads, as well as interstate highways.

Based upon bridge inspections, bridges are classified as Good, Fair, or Poor. According to the FHWA's National Bridge Inventory, based on the Pavement and Bridge Condition Performance Measures final rule (January 2017), Bridge Condition is determined by the lowest rating of National Bridge Inventory (NBI) condition ratings for Item 58 (Deck), Item 59 (Superstructure), Item 60 (Substructure), or Item 62 (Culvert). If the lowest rating is greater than or equal to 7, the bridge is classified as Good; if it is less than or equal to 4, the classification is Poor. Bridges rated 5 or 6 are classified as Fair.

Of the 247 bridges in the MATS region, none are classified as Poor condition. Most bridges (191) are in Good Condition, and the remaining 56 bridges are classified as Fair, as shown in Figure 06.

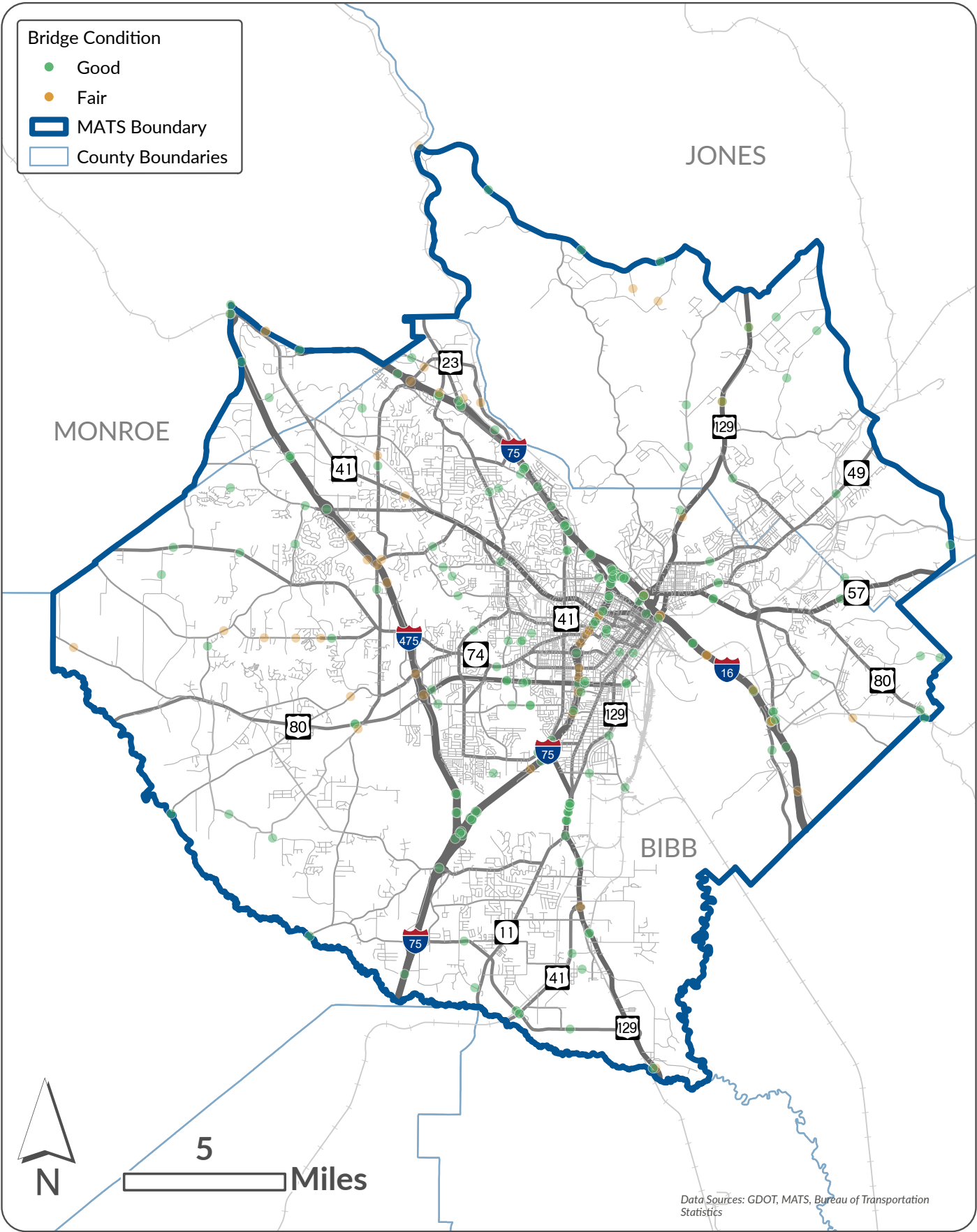


Figure 06. Bridge Condition in MATS Planning Area

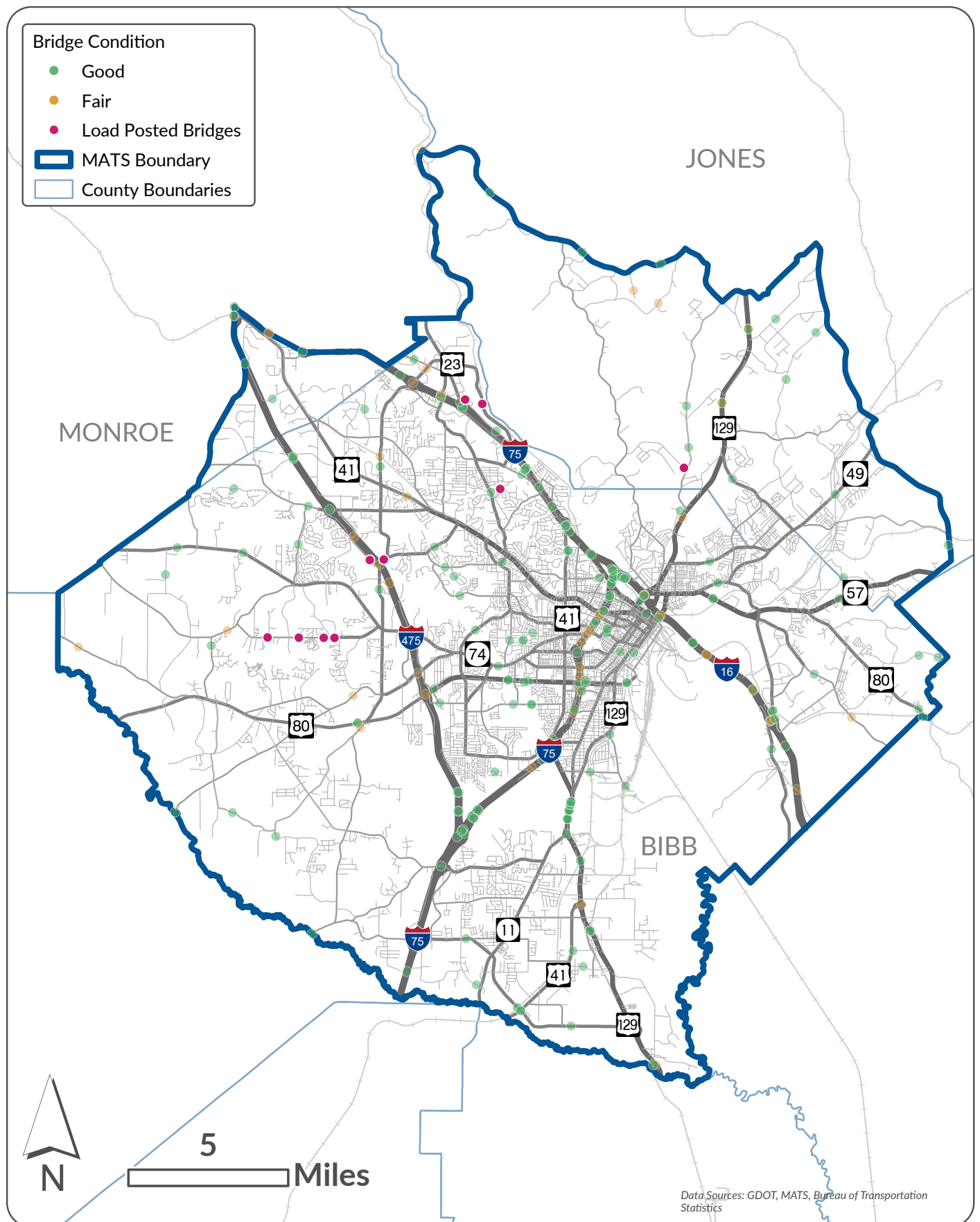


Figure 07. Load Posted Bridges in MATS Planning Area

Ten bridges in the MATS planning area are load posted, or have a weight restriction, where commercial trucks are not permitted to travel. All of these bridges were built in 1990 or earlier, with most of them dating to 1967. Based on data in the NBI, none of these bridges are over highways or railroads, but rather over creeks, streams, and other water bodies. Some of these bridges are described in terms of former Macon city limits, which refers to the geographical City of Macon boundary prior to the administrative and geographical consolidation of the City of Macon and Bibb County to form Macon-Bibb County in 2014.

Load posted bridges include:

- Tucker Road over Rocky Creek, 1 mile west of former Macon city limits
- Moseley Dixon Road over Lake Tobesofkee, 5 miles southwest of former Macon city limits
- Moseley Dixon Road over Lake Tobesofkee, 4 miles southwest of former Macon city limits
- Moseley Dixon Road over Lake Tobesofkee, 3 miles southwest of former Macon city limits
- Moseley Dixon Road over Lake Tobesofkee, 2 miles west of former Macon city limits
- Arkwright Road over Beaverdam Creek, 2 miles northwest of former Macon city limits
- Peake Road over Rocky Creek, 3 miles west of former Macon city limits
- Sheraton Drive over Ocmulgee River Tributary, 2.5 miles west of former Macon city limits
- Mathews Drive over Sabbath Creek, northwest of Macon
- Stagecoach Road over Walnut Creek, 9.1 miles southwest of Gray

Intelligent Transportation Systems

GDOT operates several types of intelligent transportation system (ITS) devices across the state, which are designed to collect and disseminate real-time traffic data. The agency's ITS Design Guidelines outline the primary types of ITS equipment deployed across the state. A few of these are highlighted below.

GDOT's NaviGator is the state's intelligent transportation system and serves as the primary source of real-time traffic data for Georgia. This information is collected and disseminated for use by GDOT, other government entities, and the general public. This information is available via the Georgia 511 website (www.511ga.org) and social media, as well as by phone call and text alerts. An example of the online web-based interface is shown in Figure 08 below.

Real-time traffic information is also displayed on dynamic message signs along and adjacent to interstates and state roads. Operators at GDOT's Traffic Management Center (TMC) strategically push out information on live traffic speeds, incidents, lane closures, construction activities, weather alerts, rest area status, and similar information that helps motorists, including truck drivers, make informed decisions while driving.

The GDOT TMC is the information clearinghouse for the NaviGator. The facility operates year-round, 24 hours a day with live operators. The NaviGator system collects and processes data from ITS devices, including traffic cameras, ramp meters, vehicle detectors, and environmental sensors. This information is displayed in the TMC in real-time. The operators are able to monitor vehicle speeds and incidents, and disseminate alerts to dynamic message signs, and through text, audio messages, and the GA 511 website and mobile application. The operators also receive calls from motorists who report incidents or request roadside assistance, and can help to dispatch the appropriate authorities.

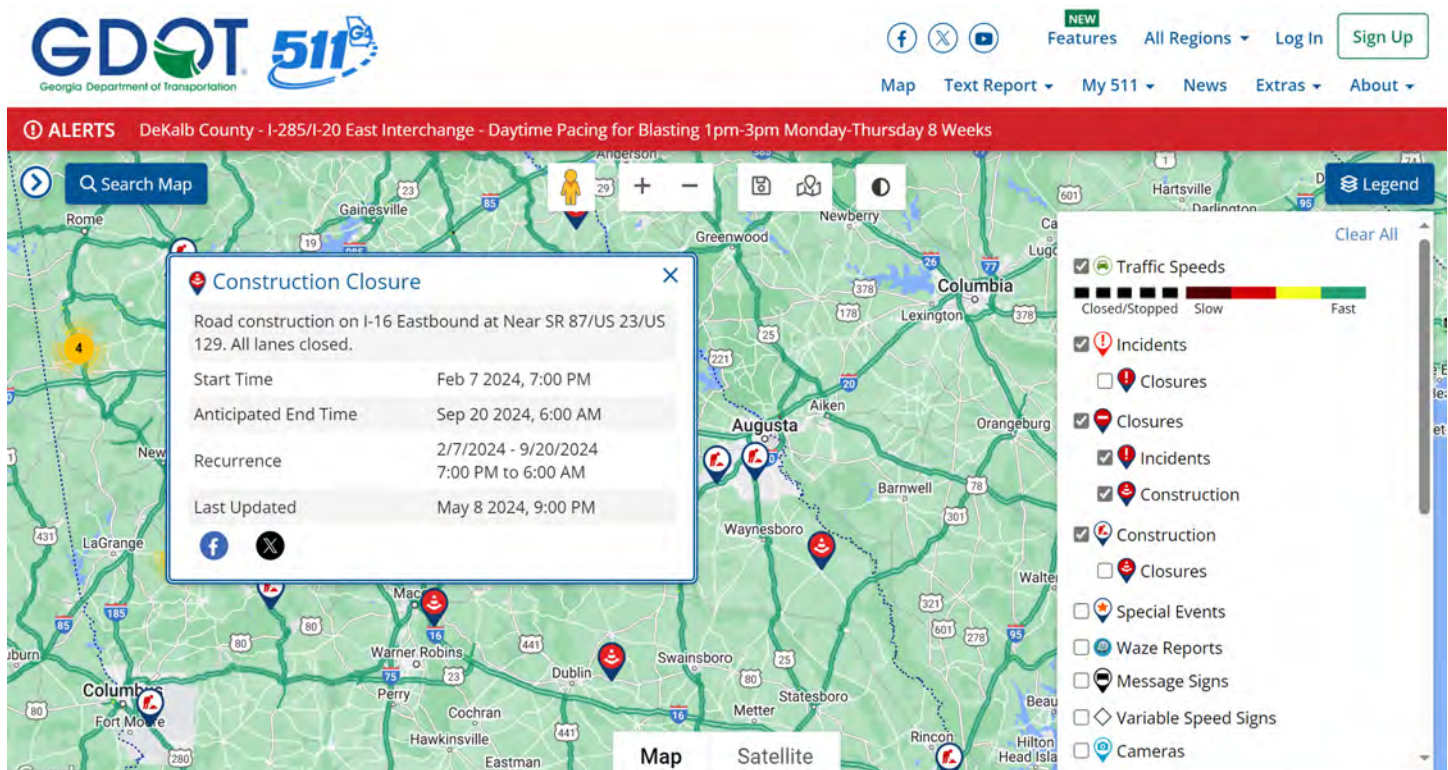


Figure 08. Screenshot of GDOT's NaviGator 511 system user interface

Source: GDOT Georgia 511, <https://511ga.org/>

Ramp Meters

Ramp meters control the flow of traffic at freeway entrance ramps, helping to preserve mobility along the mainline highway. These are deployed at select interchanges based on the traffic volume and speed on the freeway as well as the traffic flow rate on the entrance ramp. The ramp meters operate in association with ramp meter detectors, cameras, signals, and signs. At the time of this writing, there are no ramp meters in place in the MATS planning area.

Dynamic Message Signs

Dynamic message signs display real-time traffic information to motorists, such as travel times, incidents or road closures ahead, and emergency information such as AMBER alerts. Within and adjacent to the MATS MPO area, there are six dynamic message signs along interstates, as shown in Figure 08. Along I-75, these include I-75 northbound before Arkwright Road, I-75 southbound before Pierce Avenue, and I-75 northbound before Sardis Church Road. Along I-475, dynamic message signs are located along I-475 southbound at the rest area and along I-475 northbound at Columbus Road. There is one dynamic message sign on I-16, located on I-16 westbound at Marion Road.

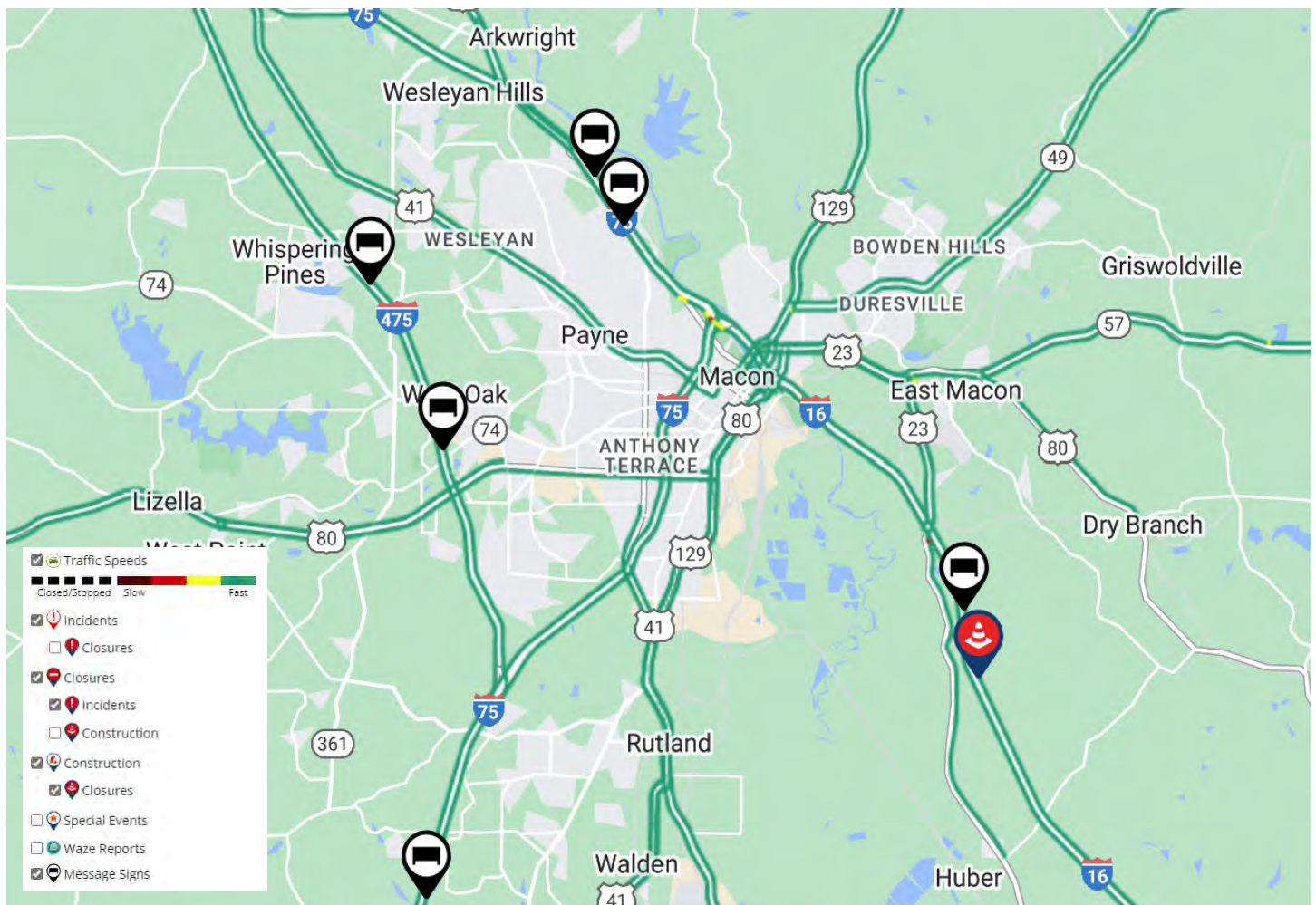


Figure 09. Dynamic Message Signs throughout MATS Planning Area

Source: GDOT Georgia 511, <https://511ga.org/>

Closed-Circuit Television

Closed-circuit television (CCTV) cameras relay visual data on traffic congestion and incidents, and operate in conjunction with other devices such as ramp meters. In Georgia, GDOT has installed CCTV cameras along interstates and arterial roadways. Within the MATS MPO area, there are numerous CCTV cameras along I-75, I-475, US 80, US 74, US 41, US 23, and US 129, as shown in Figure 10.

Environmental Sensor Stations

Environmental sensor stations (ESS) collect data from air, such as temperature, relative humidity, wind speed and direction, and precipitation, as well as from the pavement surface, such as temperature, condition, friction, and amounts of ice and precipitation. This information is processed and relayed to the TMC, in order to alert drivers to the presence of inclement weather and driving conditions such as dense fog, high wind speeds, or ice on the roadway. ESSs are often placed along corridors with frequent inclement weather conditions. They are typically spaced within 10 miles of each other in urban areas and within 20 miles of each other in rural areas. CCTV cameras are installed within the view of all sensors.

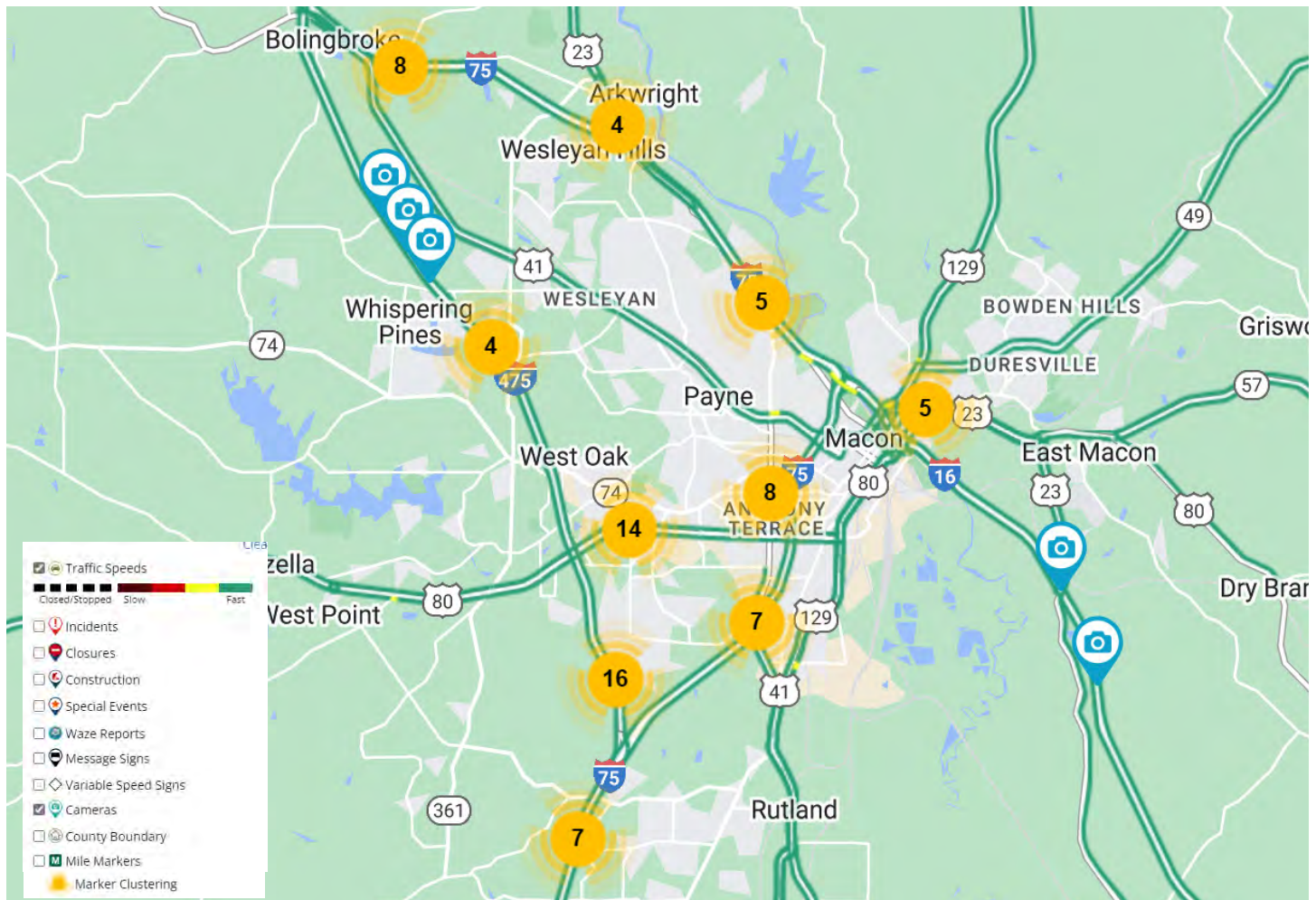


Figure 10. CCTVs throughout MATS Planning Area

Source: GDOT Georgia 511, <https://511ga.org/>

