

System Assessment

TRUCK TRAFFIC
ACCOUNTS FOR
AN ESTIMATED
557,880 VEHICLE-
MILES TRAVELED
IN THE MATS
REGION

The MATS multimodal freight network is a key component of the local economy, providing employment for thousands of individuals and contributing significant tax-revenue to Macon-Bibb, Jones, and Monroe Counties. However, there are several needs and opportunities with respect to freight traffic, truck parking, safety, and multimodal travel that need to be considered to help facilitate safe and efficient freight movements in the future. This chapter summarizes these needs and opportunities.

Freight Bottlenecks and Anticipated Growth in Freight Traffic

The 2020 Georgia Statewide Travel Demand Model indicates that trucks traffic accounts for an estimated 557,800 vehicle-miles traveled in the MATS planning area. This represents about 12% of total vehicle-miles traveled in the region. Persistent traffic congestion can impede the mobility of freight vehicles and the reliability of commercial trips. Traffic congestion is a function of both functional classification of roads as well as the volume of traffic and the capacity of the road. Other factors, such as crashes or incidents that may cause bottlenecks, also affect congestion and reliability. Being able to plan accurately for on-time arrivals, departures, pick-ups and drop-offs is critical to maintaining efficient operations, serving customers, and getting goods where they need to be. This section summarizes portions of the roadway network where traffic, including truck traffic, is congested and/or has unreliable travel times.

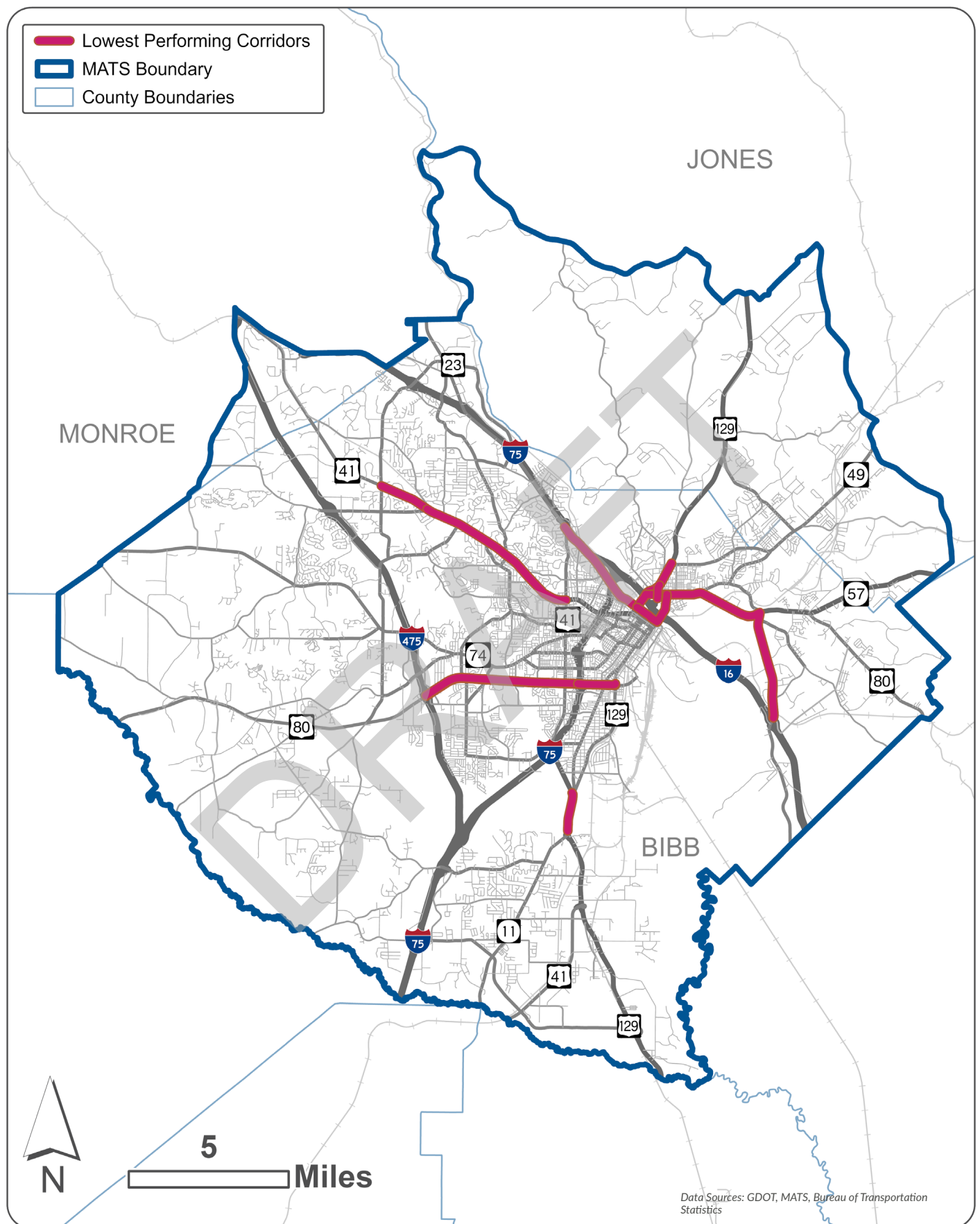


Figure 21. Lowest Performing Corridors in MATS Region

Current Bottlenecks

The Freight Needs Assessment utilized multiple measures to identify current bottlenecks. The FHWA's Freight Mobility Trends Analysis Tool provides a variety of metrics to identify congested segments on national freight networks, including interstates, the NHS, NHFN, and STRAHNET.

- The Travel Time Index (TTI) compares the peak period mean travel time to the free flow travel time - when values exceed 1.00, it indicates that vehicles need additional time to travel along a roadway during peak hours.
- The Truck Travel Time Reliability Index (TTTR) divides the 95th percentile travel time by the 50th percentile travel time to produce an index that indicates how reliable or unreliable truck travel time is on a roadway segment. The highest TTTR values demonstrate higher degrees of unexpected delays on roadways.
- The Buffer Index (BI) represents the extra time that motorists need to allow or plan for to arrive on-time for 95% of all trips. For example, a buffer index of 30% means that if a trip usually takes 40 minutes, a traveler should account for an additional twelve minutes ($40 \text{ minutes} \times 0.30$).

The project team analyzed each of these indices to identify roadway segments that have the greatest values, or the lowest performance for reliability and travel time. Each of these segments have a TTI greater than 1.25, TTTR over 1.2, and BI greater than 50%. These are shown in Figure 21.

- US 41 from Pierce Avenue to Zebulon Road
- US 80/Eisenhower Parkway from I-475 to US 80/Broadway
- US 80 from US 129/Riverside Drive to Jeffersonville Road
- US 23 from US 80 to I-16
- US 41 from Houston Road to US 129
- US 23 from Spring Street to I-16
- US 129 from US 23 to Shurling Drive
- 2nd Street from US 129 to US 23

More details about findings for the specific indices can be found in the Freight Needs Assessment included as an appendix to this plan.

The project team also examined data from the RITIS Probe Data Analytics (PDA) Suite to identify roads with persistent bottlenecks. The roadways include all functional types, including interstates, US highways, state routes, and local roads. The data was collected for the 2023 calendar year. Table 07 shows the top ten bottlenecks in the MATS region in 2023. It should be noted that during this time, the interchange at I-16 and I-75 was under construction, which may have exacerbated delays and contributed to its rank as the top bottleneck in the region.

Table 07. Top 10 Bottlenecks in MATS Region During 2023

Rank	Head Location	Avg Max Length (miles)	Avg Daily Duration
1	I-75 S at I-16 (Exit 165)	2.55	1h 36m
2	I-75 N at Sardis Church Rd (Exit 153)	6.30	14m
3	I-16 W at U-75	1.03	1h 5m
4	US 23 S at I-75	0.89	3h 58m
5	US 129 S at US 23/SR 19/Spring St	0.72	4h 24m
6	US 23 S at I-75	1.46	45m
7	US 129 S at I-16/US 23/SR 19/Emery Hwy	0.53	3h 24m
8	US 80 E at I-16/James Gillis Memorial Hwy	0.29	8h 59m
9	US 41 S at Tucker Rd	1.46	3h 8m
10	US 23 N at US 129/SR 19/Spring St/Riverside Dr	0.74	3h 55m

Among these bottlenecks, about half have an average maximum queue length of one mile or less. On the interstate segments (the top three locations) as well as US 23 at I-75 and US 41 S at Tucker Road, the average maximum queue length exceeds one mile, reaching greater than six miles on I-75 N at Sardis Church Road. The bottlenecks occurred due to a variety of incidents, including roadway constructions, obstructions on the roadway, vehicle fires, and collisions.

The project team also examined bottlenecks in the MATS planning area excluding interstate highways. This analysis identified some additional segments of highly congested roadways, including portions of US 80 at US 41/SR 247/Pio Nono Avenue, US 23 S at US 80/SR 87/Coliseum Drive, and US 23 N at SR 19 Spur/New Forsyth Road. These are shown in Table 08. These locations experienced bottlenecks that were each less than one-half mile but persisted for more than two hours per day on average.

Table 08. Top Ten Non-Interstate Bottlenecks in MATS Region During 2023

Rank	Head Location	Avg Max Length (miles)	Avg Daily Duration
1	US 23 S at I-75 (near Exit 171)	0.89	3h 58m
2	US 129 S at US 23/SR 19/SR 49/Spring St	0.72	4h 24m
3	US 23 S at I-75 (near Exit 169)	1.46	45m
4	US 129 S at I-16/US 23/SR 19/Emery Hwy	0.53	3h 24m
5	US 80 E at I-16/James Gillis Memorial Hwy	0.29	8h 29m
6	US 41 at Tucker Rd	1.46	3h 8m
7	US 23 N at US 129/SR 19/Spring St/Riverside Dr	0.74	3h 55m
8	US 80 at US 41/SR 247/Pio Nono Ave	0.38	7h 6m
9	US 23 S at US 80/SR 87/Coliseum Dr	0.35	9h 40m
10	US 23 N at SR 19 Spur/New Forsyth Rd	0.86	2h 12m

Projected Growth in Freight Traffic and Future Bottlenecks

While past conditions are not a foolproof indicator of future performance, identifying places where bottlenecks are present, where reliability on a road is not high, and where lots of additional travel time should be built in to trip planning can help identify segments of road where improvements are needed. To inform the potential needs for the MATS region, the project team looked first at the current regional travel demand model 2050 “Do Nothing” scenario as well as the patterns and overlap between segments with high TTI, TTTR, and BI values, and lower projected levels of service in the year 2050 (based on the statewide travel demand model do-nothing scenario).

If no improvements are made to the roadway network, portions of I-75 are projected to carry as much as 51,000 vehicles per day, representing a 20% increase over 2020 volumes. Similarly, some portions of I-475 could carry upwards of 46,000 vehicles per day, a potential increase of nearly 50% for certain segments. Other roadways projected to see a substantial increase in traffic include portions of US 129 north of Macon-Bibb County (25-30% increase), Jeffersonville Road (10% increase), Vineville Road (9-10% increase), and Mercer University Drive (10-11% increase). The volume of trucks is projected to increase substantially along I-475 between 2020 and 2050, with daily truck volume growing from about 6,000 trucks per day to 11,000 trucks per day. Likewise, Broadway (US 80/US 129) is projected to see up to 50% growth in truck traffic along segments just south of Eisenhower Parkway.

Future projected bottlenecks were derived from the 2050 “Do Nothing” scenario. It is anticipated that there will be decline in level-of-service (LOS) on corridors I-475 north of US 80, portions of I-75 and US 23 near the Monroe County line, and I-16 east of downtown. Similarly, worsening congestion is projected on portions of Dixie Highway (US 41) west of Macon, Martin Luther King, Jr. Boulevard through downtown, and Mercer University Drive (SR 74) west of downtown Macon, especially in the vicinity of I-475 (see).

If the roadway improvements planned in the Statewide Transportation Improvement Program (STIP) are implemented, conditions are anticipated to be better compared to the Do Nothing scenario. However, truck traffic is still projected to grow, and it is anticipated that several roadway segments will be near or over capacity by 2050. Some of these are near industrial areas, warehouses, and other freight intensive uses. Several of these segments are in downtown Macon, where right-of-way constraints may limit the types of improvements that can be made, and where there is a greater need to balance freight mobility with facilities for people who travel by other modes, such as walking and biking (see Figure 23).

- Portions of 1st Street downtown
- Bass Road south of I-75, mainly between the interstate and Kentucky Downs Drive
- Clinton Road / Upper River Road from 2nd Street to Woodland Drive
- US 129/Gray Highway north of 2nd Street to Shurling Drive
- US 23/US 129 Alt/US 80/Emery Highway from US 80/SR 540 to the split US 23 and US 80 at
- Riggins Mill Road
- US 41/Vineville Avenue between Pierce Avenue and Forest Hill Road
- Zebulon Road west of I-475

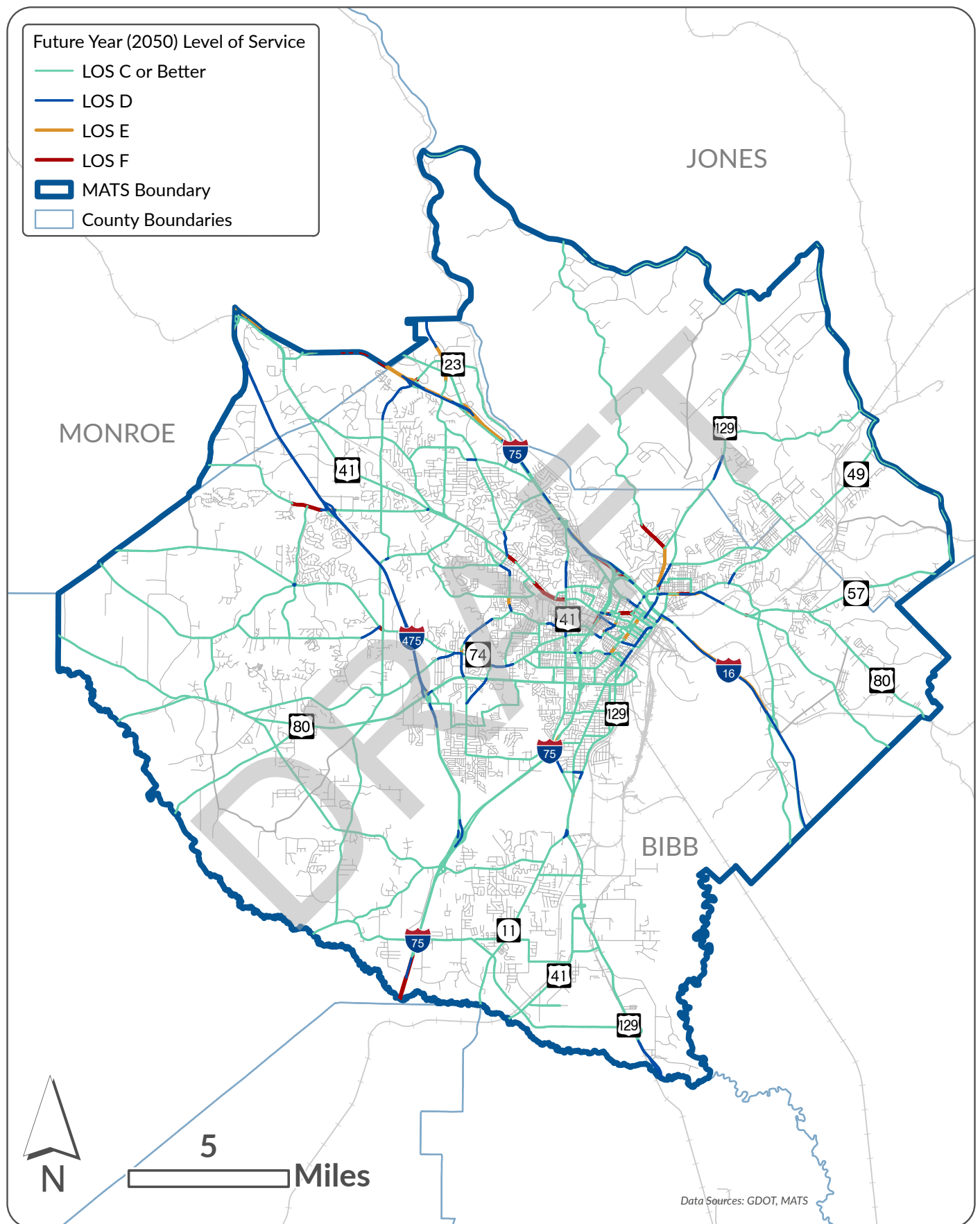


Figure 22. Future Year (2050) Level of Service in MATS Planning Area

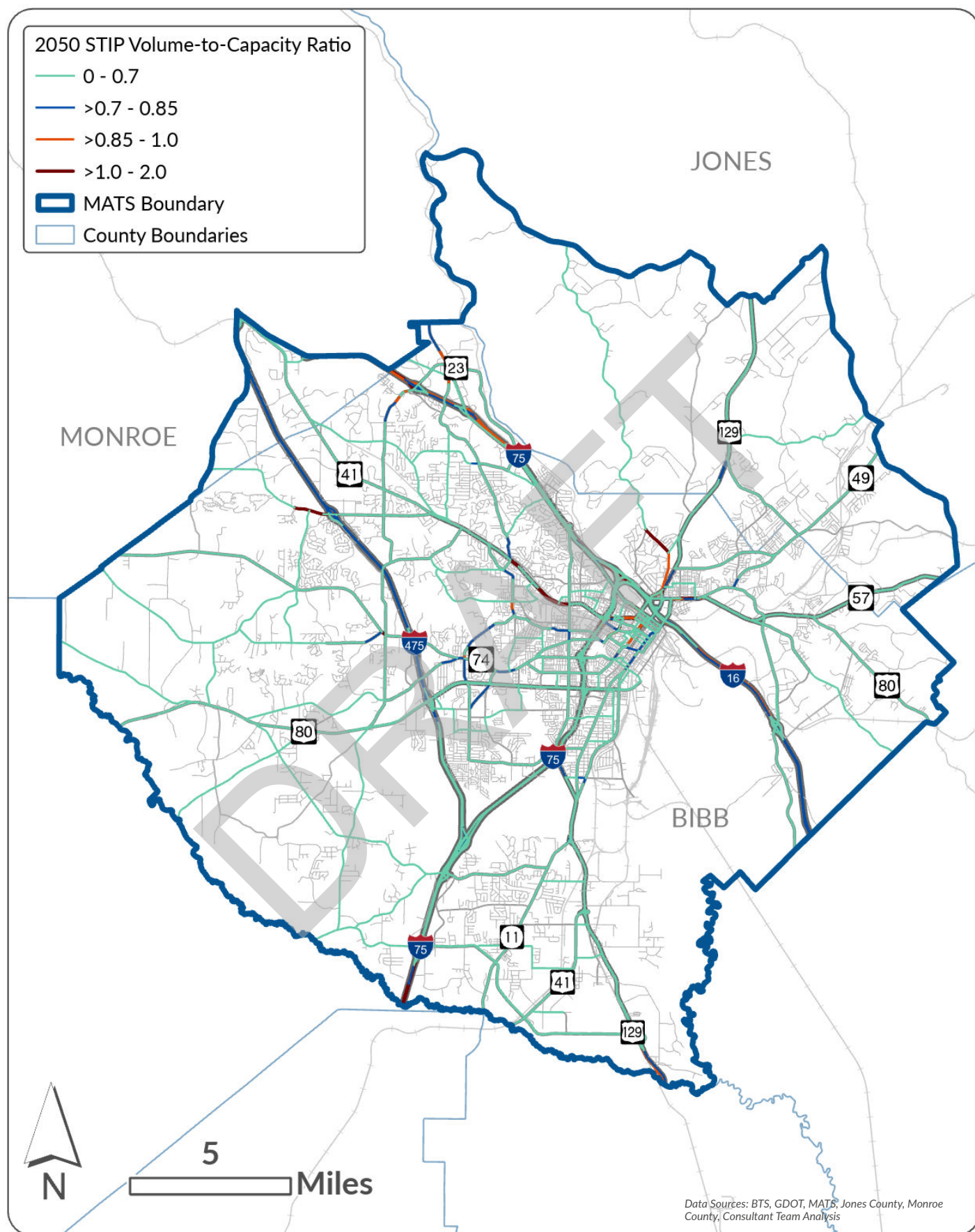


Figure 23. Projected Daily Volume-to-Capacity Ratios Based on 2050 STIP in MATS Planning Area

Truck Parking

Nationally and within the state of Georgia, there is a shortage of truck parking. Federal regulations limit the number of hours of service (HOS) that truck drivers are allowed to be on the road and require breaks after specific periods of time. When a driver is approaching the time at which they must take a break, there may not be a facility nearby to safely and legally park their truck. Also, drivers who are picking up or dropping off cargo may need a place to temporarily park, or stage, if they arrive early. The shortage of truck parking and staging areas may prompt drivers to park in unauthorized locations, such as on- and off-ramps and commercial parking lots. This poses a hazard to truck drivers as well as other motorists.

There are numerous private truck parking facilities in the MATS region. These facilities provide over 850 spaces, and some offer overnight parking and amenities for drivers. There are also four truck parking facilities that are currently under development. The facilities that provide the most spaces are located along US 41/Pio Nono Avenue, Joe Tamplin Industrial Boulevard, and Frank Amerson Parkway. There is one public truck parking facility in the MATS planning area - Rest Area 19 is located along I-475 North, south of the Zebulon Road interchange. Rest Area 22 is located just outside of the region, on I-75 South, near the Rumble Road interchange. Authorized truck parking locations are shown in Table 09.

In 2023, Macon-Bibb County Planning and Zoning Commission began enforcement of a ban on truck parking in front of residences. While there are numerous truck parking facilities in the MATS planning area, this prohibition may exacerbate the difficulty of finding a place to park trucks, especially for overnight parking. The Macon Truck Park facility is located on the site a former shopping center, indicating that there may be opportunities to re-purpose large parking lots for new truck parking facilities.

Table 09. Authorized Truck Parking Locations in MATS Planning Area

Truck Parking Facility	Location	Ownership	Status	Est. # Parking Spaces
Asphalt Cowboy Parking	8231 Industrial Hwy	Private	Existing	179
Big Space Parking	2270 Barnes Ferry Rd	Private	Existing	10
Circle K	4706 Hartley Bridge Rd	Private	Existing	10
DG Development Truck Stop	5250 Sardis Church Rd	Private	Existing	121
Gibbs Nation Semi & RV Station	2732 Old Gray Hwy	Private	In Development	-
GDOT Rest Area #19	I-475	Public	Existing	26
John's Truck Parking	3476 Gray Hwy	Private	In Development	-
Joyride Logistics	4739 Hawaiian Village Dr	Private	Existing	39
JP Travel Center	517 Perry Pkwy	Private	Existing	25
Love's Truck Stop	1190 Frank Amerson Pkwy	Private	Existing	119
Macon Truck Park	2525 Pio Nono Ave	Private	Existing	400
Macon Truck Parking	1773 Jeffersonville Rd	Private	In Development	-
Ocmulgee Travel Plaza	4900 Ocmulgee E Blvd	Private	Existing	75
QuikTrip	4934 Sardis Church Rd	Private	Existing	10
Terry's Big Rig Parking	859 Joe Tamplin Industrial Blvd	Private	Existing	240

Safety

The project team compiled historic crash data (2018-2022) from GDOT's AASHTOWare platform to conduct a roadway safety analysis in the MATS area. Special attention was given to crashes involving commercial vehicles (CMVs), including single-unit trucks and multi-unit tractor trailers.

Between 2018 and 2022, there were 2,316 crashes involving CMVs, comprising 6% of all crashes in the MATS area. There was a decline CMV crashes between 2018 and 2020, followed by a significant rise in 2021 and 2022 (see Figure 24). The rise in crashes may be reflective of increasing truck traffic due to growing e-commerce sales and an expansion of the economy.

Among the CMV crashes in the MATS area, most involved property damage only. Eighteen crashes resulted in a fatality, and 55 resulted in at least one serious injury. The highest concentration of fatal and serious injury crashes involving a CMV occurred along I-75 southwest of downtown Macon, where there is a concentration of industrial activity; around Macon's central business district; and at the US 129 interchange with I-75.

There was one CMV crash at an at-grade railroad crossing, on Forsyth Road/Rivoli Road at the crossing just north of Sanders Road. As a truck driver attempted to cross, their trailer got stuck on the railroad tracks. There were no injuries from this incident.

Crashes between commercial vehicles and pedestrians or cyclists are more likely to result in injury due to the large size of the vehicle relative to the pedestrian or cyclist. On non-interstate routes, there were seven incidents involving CMVs and pedestrians or cyclists. Collectively, these crashes resulted in seven injuries and two fatalities.

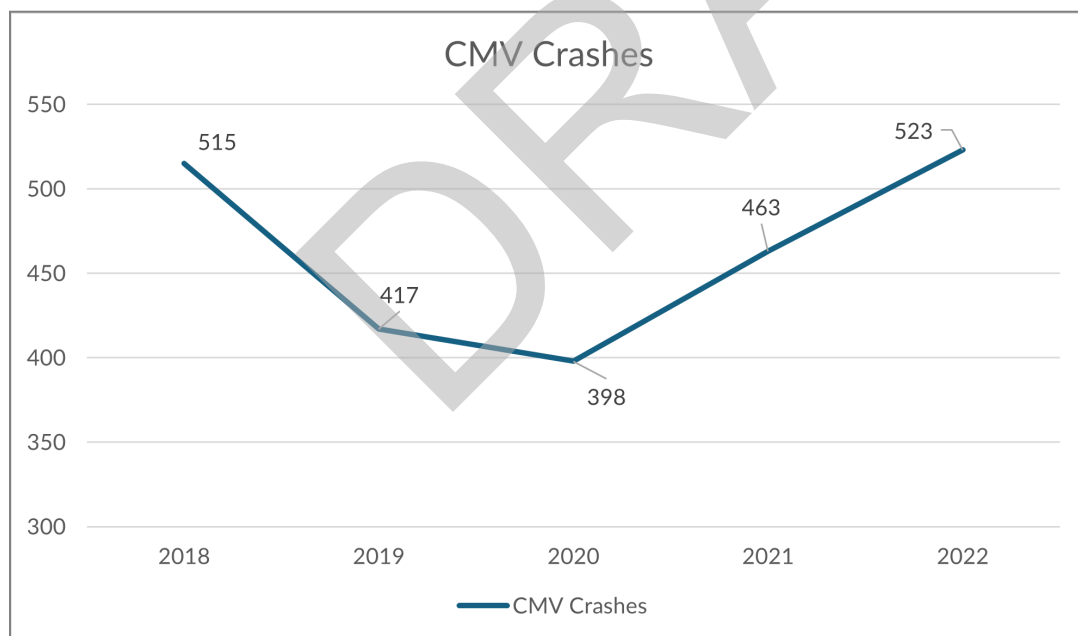


Figure 24. Commercial Vehicle Crashes in MATS Planning Area (2018-2022)

Freight Traffic in Multimodal Environments

Macon-Bibb County is in a transitional phase with regard to freight-oriented land uses. A major focus of the Macon-Bibb Comprehensive Plan is on converting old industrial areas to mixed-use developments, particularly in the central business district and the revitalizing downtown area. Nearly 300 acres of land previously designated for industrial use in the 2040 plan have been converted to mixed-use designation in the 2050 plan. As areas transition from industrial to mixed uses, there will be a need to ensure that the transportation network facilitates safe travel by pedestrians, cyclists, and transit users, and that the design allows trucks and multimodal users to co-exist in these transitional areas.

There is an interest among some community members in shifting the designation of the US 80 from



a portion of Broadway and Martin Luther King, Jr. Drive in downtown Macon, to an alternate route. There is a significant volume of trucks on this portion of US 80, and the truck traffic is inconsistent with Macon-Bibb County's vision for this corridors to become more walkable and pedestrian-friendly. This plan represents an opportunity to examine shifting this portion of US 80 off of the national freight network and help make this major corridor through downtown Macon more pedestrian-friendly.

This plan is also considering options to make it easier for workers to access freight-oriented jobs by walking and taking transit. There may be opportunities to improve sidewalks and pedestrian crossings between bus stops and workplaces, or for future expansion of transit to reach more freight-oriented workplaces.

Some communities are testing technologies that alert truck drivers to the presence of pedestrians and cyclists. This would require the installation of connected vehicle technology, whereby the truck could receive communications from roadside devices and pedestrian signals. Other communities are taking an approach that "right-sizes" roads to accommodate multiple modes of transportation, including trucks and pedestrians. This may include wider lanes for trucks, as well as wider sidewalks with a buffer that includes lighting, landscaping, and street furniture. This type of design provides sufficient space for both trucks and pedestrians, as well as a buffer that protects pedestrians from potential conflicts with trucks and other vehicles. An example of design guidance from the City of Atlanta's "Street Atlanta" Design Guide is shown in Figure 25.

SUBURBAN AND RURAL/PRODUCTION ARTERIAL

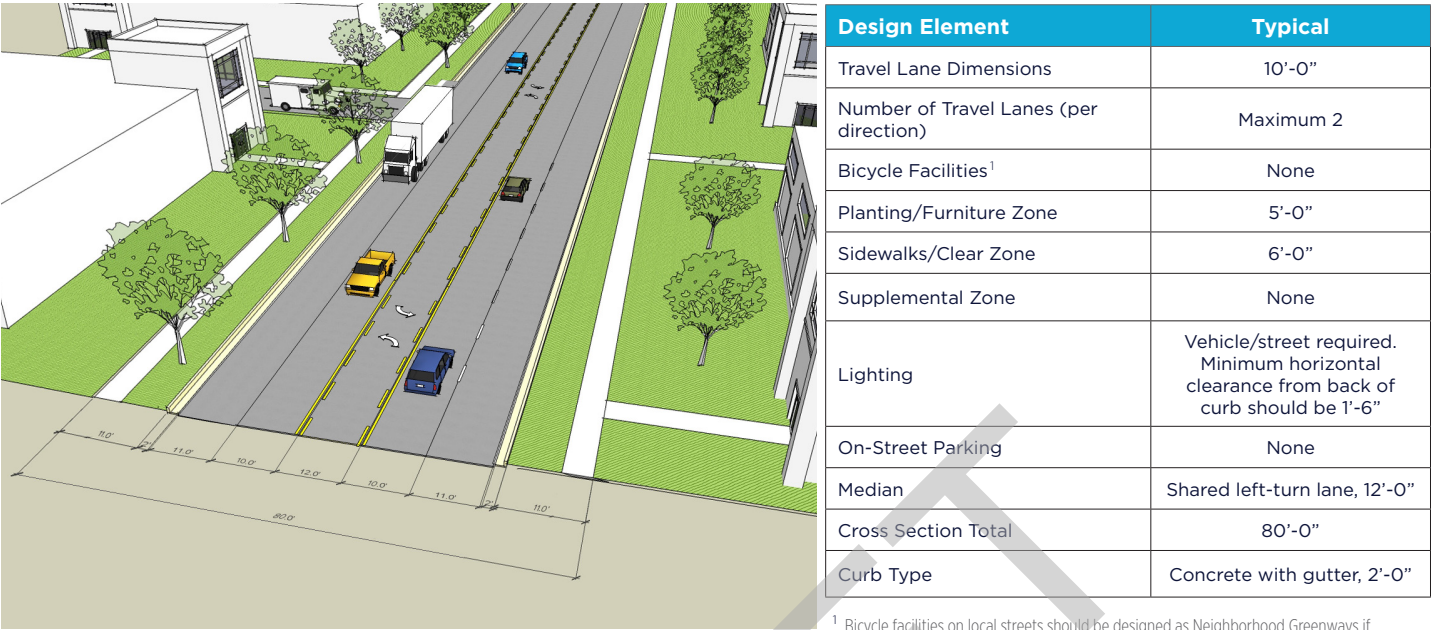


Figure 25. Example of Design Guidance for Production Corridors

Source: City of Atlanta. Streets Atlanta

¹ Bicycle facilities on local streets should be designed as Neighborhood Greenways if recognized in a City adopted plan

