# TECHNICAL REPORT 2

## Existing Conditions Analysis

May 2020

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SCPDC
South Central Planning & Development Commission

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# 1.0 Introduction

This report identifies the conditions and characteristics of the existing transportation system in the Houma-Thibodaux Metropolitan Planning Area (MPA) for the base year, 2018. Where required by the Fixing America's Surface Transportation (FAST) Act, it provides the data for the most recent year available.

For each mode of transportation, the report focuses on the following information:

- Network facilities and assets
- Maintenance
- Safety and security
- Traffic and demand

Detailed information for federally required performance measures and targets are discussed in a separate document, the Transportation Performance Management Report.

Planning for the future transportation system and its improvements begins with evaluating the existing transportation system.

# 2.0 Roadways and Bridges

The region's roadways and bridges are used by personal motor vehicles, public and private transportation providers, bicyclists, and freight trucks. These roadways can also be used to provide access to other transportation modes. This section discusses the general use of the MPA's roadways and bridges. The existing conditions for biking, walking, public transit, and freight will be further discussed in greater detail later in this report.

82%

Of workers commute by motor vehicle and drive alone

For households in urbanized areas, like Houma-Thibodaux, traveling by motor vehicle is the primary means of transportation. The most recent American Community Survey (ACS) 5-year estimates show that commuting by motor vehicle without carpooling is the most common method of commuting within the MPA. This means the overwhelming majority of household travel is affected by the condition of the MPA's roadways and bridges.

## 2.1 The Roadway Network

Several federal and state highways serve the planning area. The most significant of these facilities are discussed below:

**US 90:** This expressway provides a four-lane route from Lafayette to New Orleans and could ultimately be upgraded as an extension of Interstate 49 (I-49).

**LA 182 (Old US 90):** Prior to the construction of the Interstate Highway System, this Federal Highway was the major east/west route through the southern United States. It now primarily serves local trips in south Louisiana.

**LA 20:** This roadway begins at the northern-most portion of the MPA in Chackbay and travels south through Thibodaux where is serves as Canal Blvd. and Jackson Street. In Schriever, it turns west eventually dead-ending at LA 182. The road serves as Thibodaux's major commercial corridor and allows for trips outside the planning area to the River Parishes.

**LA 24:** Most of the length of this north/south arterial is a couplet on either side of Bayou Terrebonne.

**LA 3040:** In the early 1960's, the completion of a tunnel on this highway provided access across the Gulf Intracoastal Waterway (GIWW) unrestricted by marine operations. Later extensions of this highway provided an alternate route to LA 24. Today, the northern stretch of the highway, Martin Luther King Blvd., is the area's major commercial corridor.

**LA 1:** This north-south highway traverses the entire State of Louisiana from the Arkansas state line to Grand Isle. It parallels Bayou Lafourche through the study area.

The study area is divided by the ICWW. Routes crossing the ICWW are LA 315; LA 3040; LA 24; LA 659; LA 3087; LA 316; LA 1 and LA 308.

### Roadways by Functional Classification

Each type of roadway serves a function in the overall roadway network. Roadways are divided into functional classes based on their intended balance of mobility (speed) and access to adjacent land. Their designs vary in accordance with this functional classification.

Figure 2.1 illustrates the functional classification of the Houma-Thibodaux MPA's roadways. Table 2.1 summarizes this information by centerline miles and lane miles.

# Roadways and Bridges

**Interstates**

- Divided highways with full control of access and grade separations at all intersections.
- The controlled access character results in high lane capacities, three times greater than the individual lane capacities of urban arterials.

**Expressways**

- Provides for movement of large volumes of traffic at relatively high speed, and are primarily intended to serve long trips.
- Have some grade separated intersections, while the majority of the intersections are widely spaced and signalized.

**Arterials**

- Serve both as feeders to interstates and expressways, and as principal travel ways between major land use concentrations within the study area.
- Typically divided facilities (undivided where right-of-way limitations exist) with relatively high traffic volumes and traffic signals at major intersections.
- The primary function of arterials is to move traffic; they are the main means of local travel, with a secondary function of land access.

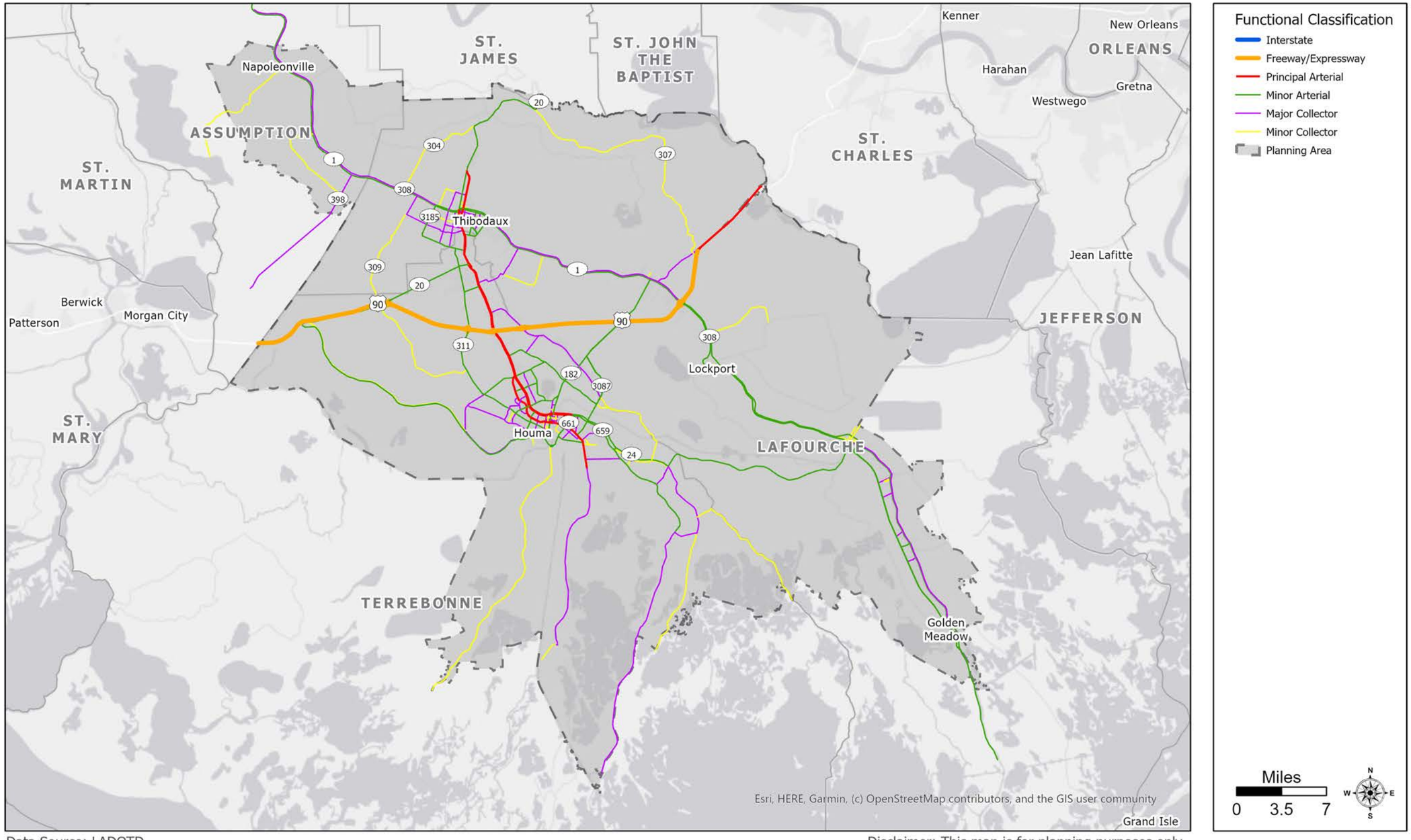
**Collectors**

- Provide both land service and traffic movement functions.
- Serve as intermediate feeders between arterials and local streets and primarily accommodate short distance trips.
- Generally not continuous for any great length since they serve few through trips.

**Local Streets**

- Provide access to immediately adjacent land.
- Within the local street classification, three subclasses are established to indicate the type of area served: residential, industrial, and commercial.

**Figure 2.1: Functional Classification of Roadways**




Data Source: LADOTD

Disclaimer: This map is for planning purposes only.

**Table 2.1: Roadway Model Network Lane Mileage by Functional Class**

| Functional Class | Centerline Miles | | Lane Miles | |
|---|---|---|---|---|
| | Miles | Percent | Miles | Percent |
| Expressway | 88.63 | 11.4% | 165.13 | 9.8% |
| Principal Arterial | 63.14 | 8.1% | 153.00 | 9.1% |
| Minor Arterial | 289.67 | 37.1% | 687.35 | 40.7% |
| Major Collector | 179 | 22.9% | 361.43 | 21.4% |
| Minor Collector | 159.67 | 20.5% | 320.66 | 19.0% |
| **Total** | **780.11** | **100.0%** | **1,687.57** | **100.0%** |

Source: HTMPO Travel Demand Model

## 2.2 Traffic and Congestion

The number of daily vehicle trips estimated by the Travel Demand Model, by trip purpose, in 2018 is summarized in the graph below. Only about one (1) percent of vehicle trips pass through the MPA, while taxi and truck trips account for a little over seventeen (17) percent of the trips in the MPA.

518,289

Daily trips within the MPA

**Figure 2.2: Trips by Type in MPA, 2018**

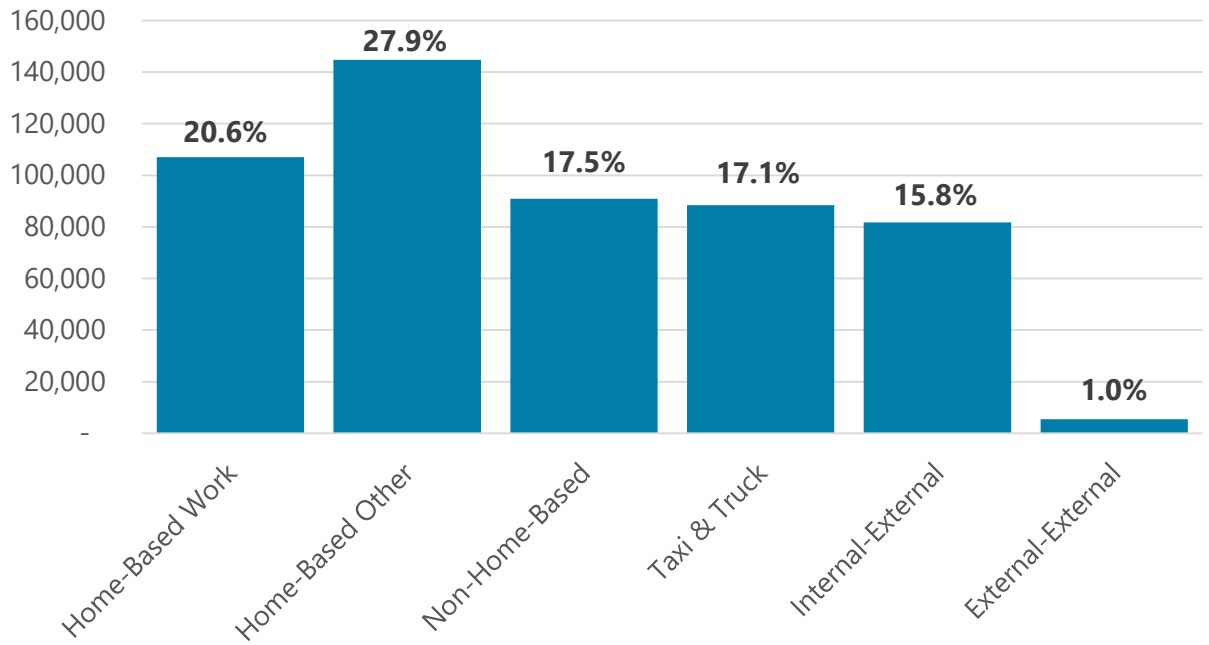


Table 2.2 displays how these trips are distributed onto the modeled transportation network. Most of the delay (just over 77 percent) is estimated to occur on the principal and minor arterials. This coincides with where the most vehicle miles travelled and vehicle hours travelled occur. There is comparatively little delay estimated to occur on collectors. This is in large part due to travel on these roadways accounting for 18 percent of vehicle miles traveled and 20 percent of vehicle hours traveled.

**Table 2.2: Roadway System Travel Characteristics, 2018**

| Functional Class | Daily Vehicle Miles Travelled (VMT) | | Daily Vehicle Hours Travelled (VHT) | | Daily Vehicle Hours of Delay (VHD) | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Expressway | 903,583 | 17% | 14,435 | 13% | 1,223 | 10% |
| Principal Arterial | 948,218 | 18% | 23,181 | 20% | 3,070 | 26% |
| Minor Arterial | 2,418,698 | 46% | 54,181 | 48% | 6,122 | 51% |
| Major Collector | 652,090 | 13% | 15,381 | 14% | 1,287 | 11% |
| Minor Collector | 283,960 | 5% | 6,462 | 6% | 209 | 2% |
| **Total** | **5,206,549** | **100%** | **113,640** | **100%** | **11,911** | **100%** |

Source: HTMPO Travel Demand Model

Figure 2.3 displays the vehicular traffic in the MPA, which is greatest on Martin Luther King Blvd., Tunnel Blvd., Prospect Street, Grand Caillou Road, LA 182 (New Orleans Blvd.), Hollywood Road, Canal Blvd. in Thibodaux, West Main Street, and West Park Ave. Figure 2.4 displays the volume to capacity (V/C) ratios for the major roadways in the MPA, representing the areas of greatest congestion. Table 2.3 displays those segments that experience a V/C ratio of 1.0 or greater, meaning the volumes on those roadways are greater than the designed capacity.

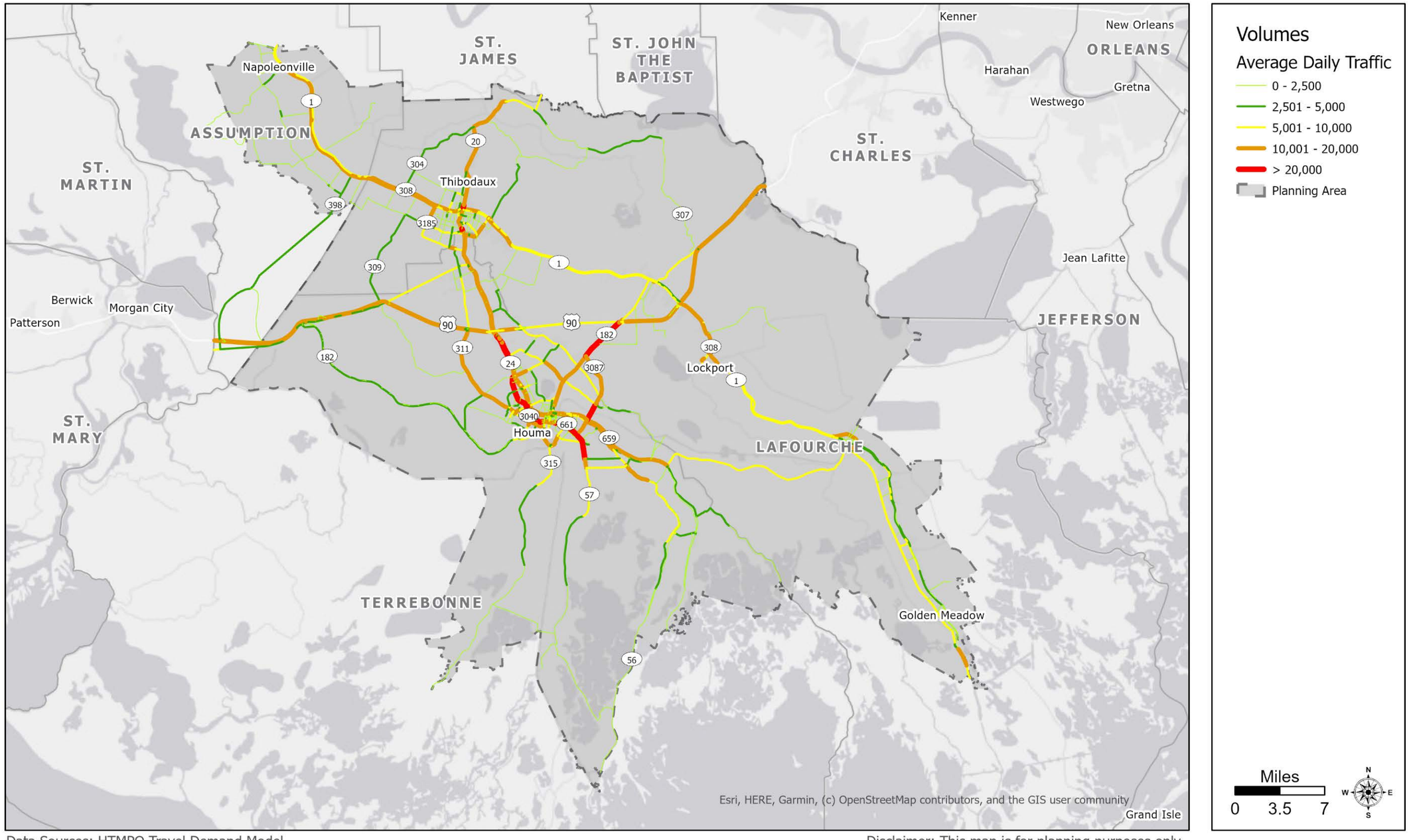
**Table 2.3: Roadway Corridors with Volumes Exceeding Capacity, 2018**

| Roadway | Location | Length (miles) |
|---|---|---|
| LA 3040 (Tunnel Blvd) | Houma Tunnel | 0.21 |
| LA 57 (Grand Caillou Rd) | South of James Road | 0.04 |

Source: HTMPO Travel Demand Model

The Houma Tunnel has been identified by the MPO as a chokepoint and needing to be replaced for quite some time now due to maintenance issues, though funding remains an issue. A Stage 0 Feasibility Study was conducted by DOTD in 2009. The report estimated the cost for replacing the tunnel ranges from approximately $111 to $117 million dollars.

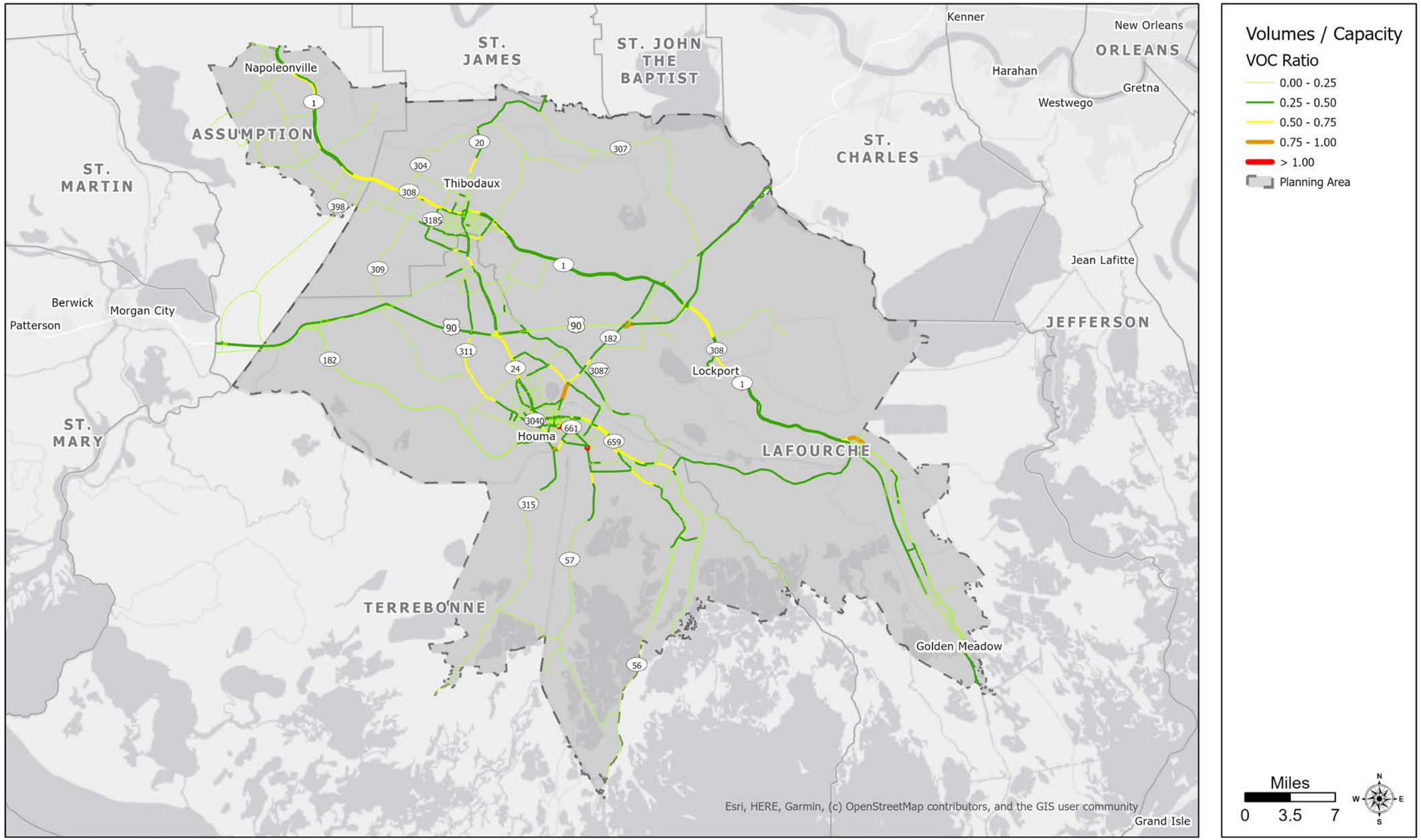
**Figure 2.3: Average Daily Traffic on Roadways, 2018**




Data Sources: HTMPO Travel Demand Model

Disclaimer: This map is for planning purposes only.

**Figure 2.4: Existing Roadway Congestion, 2018**




Data Sources: HTMPO Travel Demand Model

Disclaimer: This map is for planning purposes only.

## 2.3 Roadway Reliability

Most of the region's roadways do not have daily volumes that exceed their daily capacities. However, there may still be congestion issues at specific times, notably peak periods. Travel time reliability is a measure of how congested travel times compare to free-flow conditions. The Level of Travel Time Reliability (LOTTR) is defined as:

$$\text{Segment LOTTR} = \frac{\text{"Longer" 80th Percentile Travel Time}}{\text{"Normal" 50th Percentile Travel Time}}$$

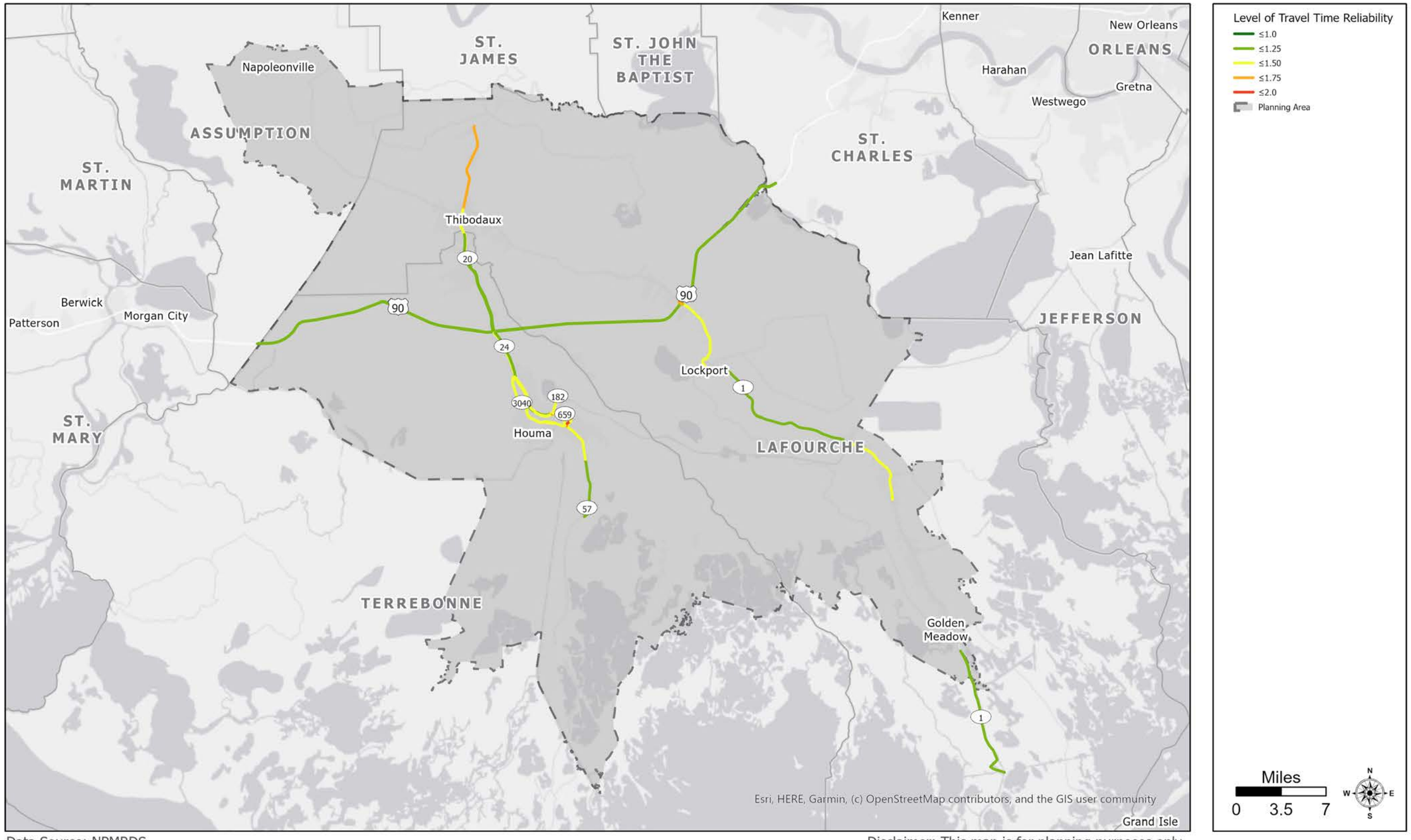
The LOTTR of each roadway segment is calculated for four time periods (including AM and PM peaks), with the worst LOTTR being used to determine segment reliability. The most recent LOTTR data available, year 2018, was obtained from the FHWA's National Performance Management Research Data Set (NPMRDS). Roadway segments with an LOTTR less than 1.5 are defined by the FHWA as reliable. Figure 2.5 displays the LOTTR of the monitored segments within the MPA.

It should be noted that the current NPMRDS for the Houma-Thibodaux MPA does not meet the full Enhanced NHS, which is reflected in this report. This is due to the reporting cycle of the NPMRDS data and recent updates to the Enhanced NHS by the FHWA. The Federal Register states that the MPO is only responsible for reporting what the NPMRDS displays.

93.3%

Non-Interstate NHS person-miles travelled are reliable

**Figure 2.5: LOTTR on MPA NHS Routes**




Data Source: NPMRDS

Disclaimer: This map is for planning purposes only.

## 2.4 Pavement Conditions

Maintaining sufficient pavement conditions ensures that roadways operate at their full capacity. Good pavement conditions provide roadway users with safe, comfortable travel experiences, while minimizing vehicle wear and tear. Results from the public participation survey showed that road and bridge maintenance is one of the public's top priorities.

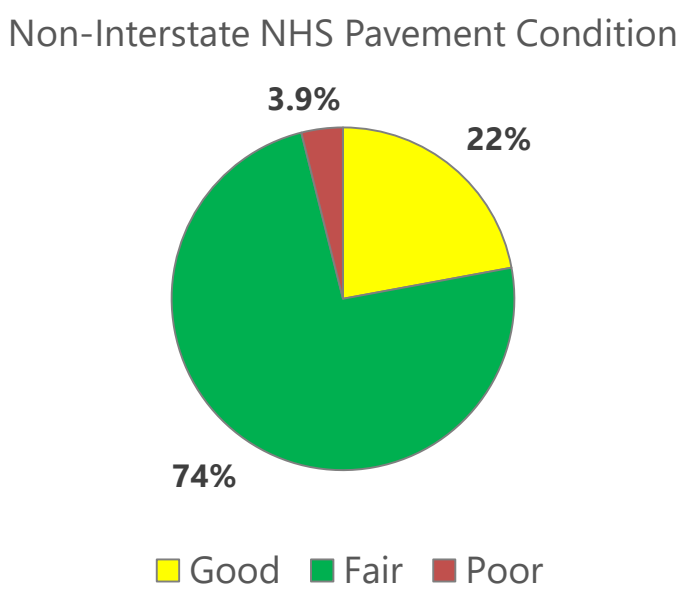
Pavement condition ratings for the MPA's roadways were obtained from data submitted by DOTD and found in the Highway Performance Monitoring System (HPMS). The HPMS is a national level highway information system that includes data on the:

- extent,
- condition,
- performance, and
- use and operating characteristics of the nation's highways.

The HPMS data is a sample dataset collected across the entire federal-aid eligible system for interstate, arterial, and collector networks.

The HPMS pavement condition is based on the International Roughness Index (IRI), cracking, rutting, and faulting.

There are no Interstate pavements within the MPA. Approximately four (4) percent of Non-Interstate NHS pavements in the MPA rank as Poor.




The locations of the poor pavement within the MPA occur at various points along:

US 90 between the LA 308 interchange and LA 182.

LA 1 between W. 225th Street and the MPA boundary.

LA 20 (Canal Blvd.) between LA 648 (Percy Brown) and Jackson St.

LA 24 between US 90 and Executive Dr.

LA 24 between Westside Blvd. and LA 312 (Lafayette St).

LA 57 (Grand Caillou Rd.) from Thompson Rd to Express Blvd.

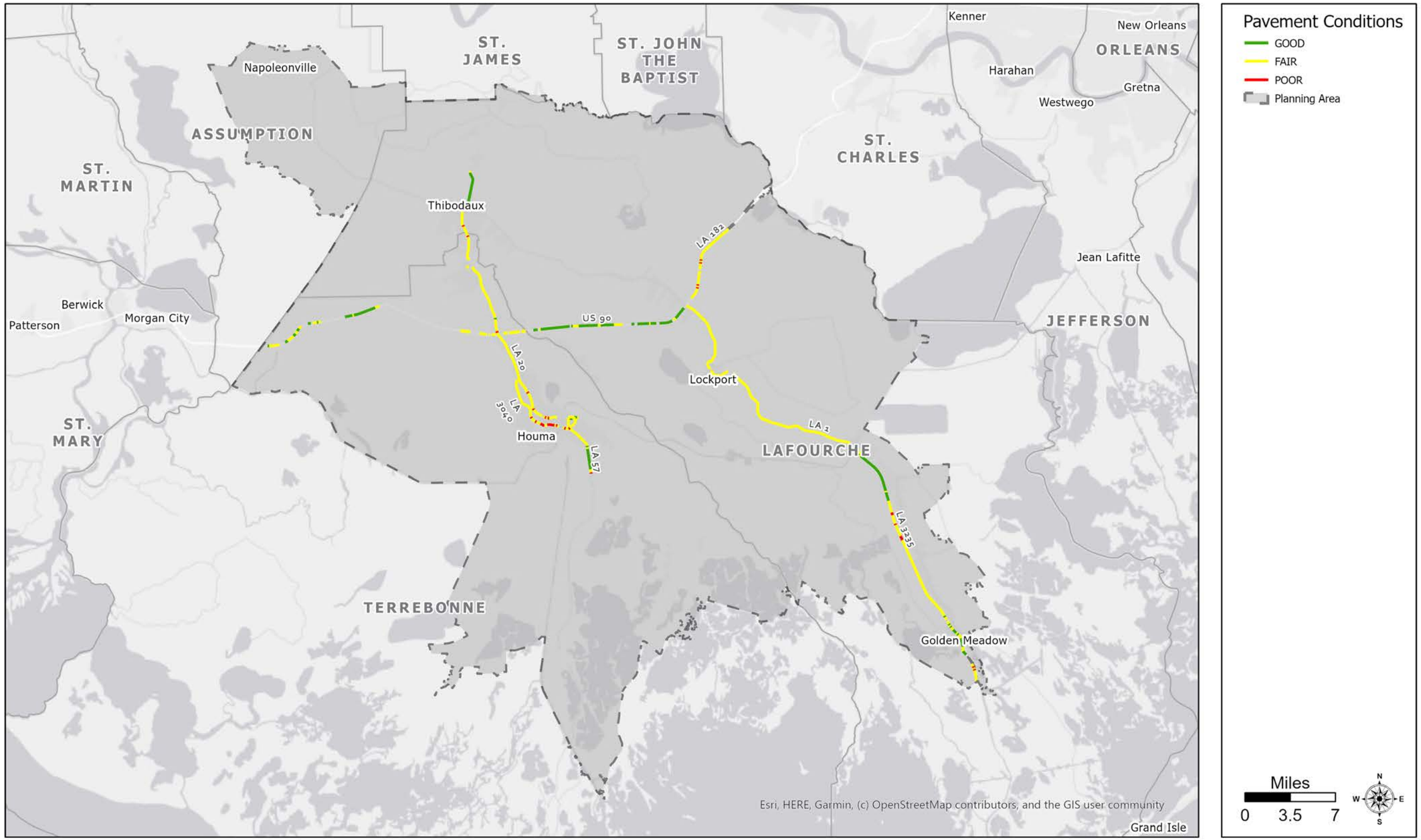
LA 3040 between Hollywood Rd and LA 57

LA 3235 between LA 3161 and W. 107th Street.

Figure 2.6 illustrates the most recent pavement condition data for the LADOTD monitored roadways within the MPA

Since the collection of this data, pavement projects have been completed along the segments of US 90 and LA 20 mentioned above.

**Figure 2.6: Roadway Pavement Conditions**




Data Source: LADOTD

Disclaimer: This map is for planning purposes only.

## 2.5 Bridge Conditions

Bridges are a critical part of the overall transportation network. They must be maintained and upgraded as needed to ensure that they are not safety or environmental hazards, bottlenecks, or limitations to freight movement.

Bridges serve as important connections over waterways, provide grade separation between roadways and other transportation facilities, and connect transportation facilities to each other.

As previously mentioned, results from the public outreach survey showed that the public places a high priority on maintaining the current transportation system and increasing its safety. There are 316 bridge structures within the Houma-Thibodaux MPA. Most of the bridge structures within the MPA cross water features. However, bridges can also be structures that cross over other roadways and railroads.

### Bridge Conditions and Scoring

The National Bridge Inventory (NBI) provides bridge conditions for all bridges in the United States with public roads passing above or below them. The NBI also defines bridges to include bridge-length culverts. The condition of the bridge is determined by the lowest rating of deck, superstructure, substructure, or culvert. If the lowest rating of these categories is greater than or equal to seven (7), the bridge is classified as good. If the score of the bridge is less than or equal to four (4), the classification is poor. Figure 2.7 displays the condition of each bridge within the MPA. While the bridges in the MPA are mostly in fair condition, efforts should be undertaken in the future to prioritize maintenance or replacement of these bridges so they do not worsen.

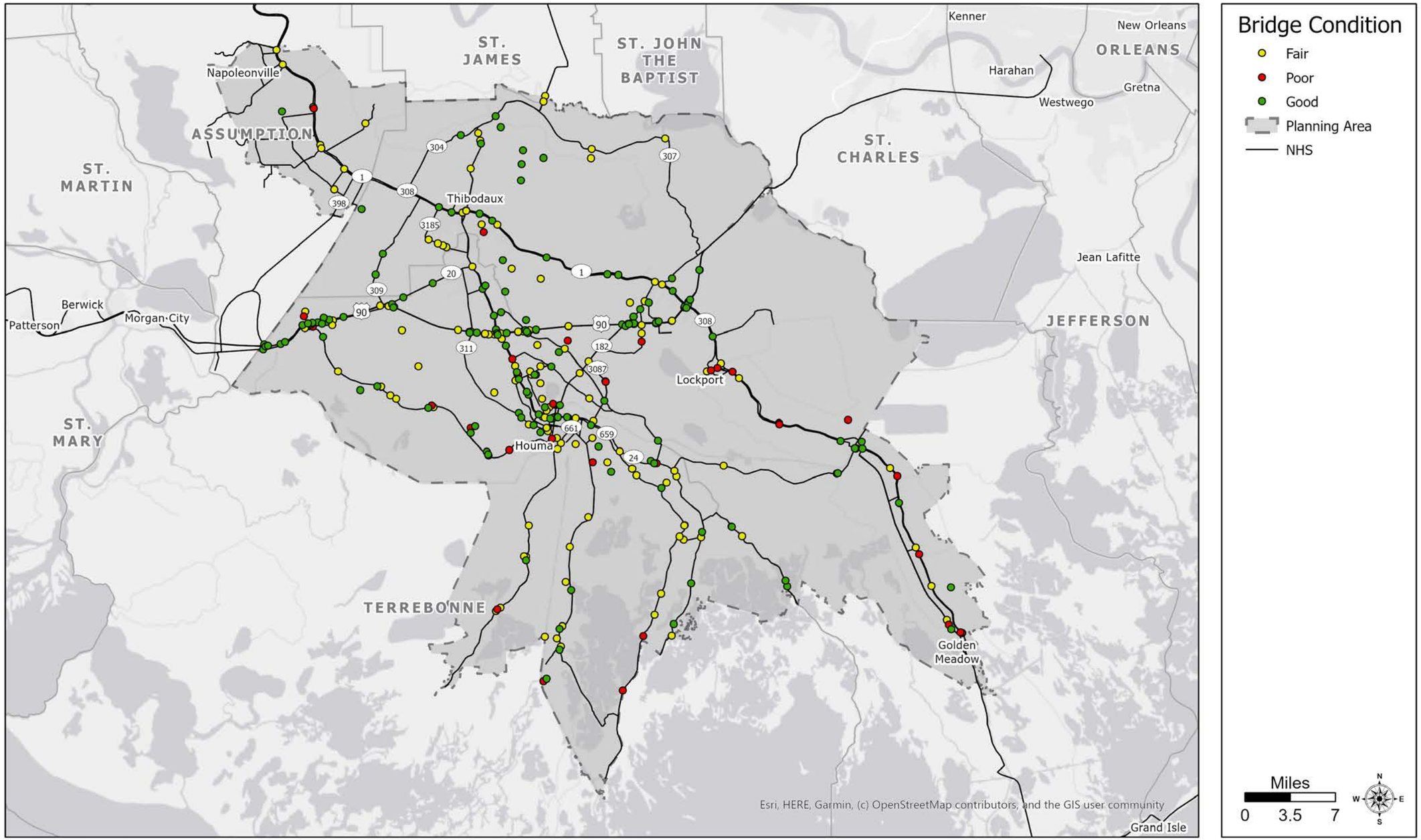
46.5%

NHS Bridges in Good Condition

10.2%

NHS Bridges in Poor Condition

**Figure 2.7: Bridge Conditions in the MPA**




Data Source: LADOTD

Disclaimer: This map is for planning purposes only.

## Structurally Deficient Bridges

All bridges in the nation are evaluated to determine if they are "structurally deficient." Structural deficiency is characterized by deteriorated conditions of significant bridge elements and potentially reduced load-carrying capacity.

A structurally deficient bridge typically requires significant maintenance and repair to remain in service. These bridges would eventually require major rehabilitation or replacement to address the underlying deficiency. These bridges are those that are defined as having a score of four (4) or less on any of the scoring components described above.

There are thirty-three (33) structurally deficient bridges in the MPA, nineteen (19) of which are on the reported sections of the NHS. Four (4) bridges in the MPA have been closed to vehicular traffic.

## 2.6 Roadway Safety

The Metropolitan Transportation Plan (MTP) safety analysis focused on gathering and analyzing available safety data and identifying hazardous locations. Due to the limited scope of this study, location-specific recommendations for the identified hazardous locations have not been developed.

*"Disclaimer: This document and the information contained herein is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal aid highway funds; and is therefore exempt from discovery or admission into evidence pursuant to 23 U.S.C. 409."*

### Supporting Documents

Highway Safety Improvement Program (HSIP)

The FAST Act requires each state to maintain an annually updated Highway Safety Improvement Program (HSIP). The HSIP must include the FHWA performance measures for roadway safety and the development, implementation, and evaluation of a Strategic Highway Safety Plan (SHSP). The required safety performance measures, state targets, and the Metropolitan Planning Organization's (MPO) existing performance are discussed in the MPO's Performance Report.

Strategic Highway Safety Plan (SHSP)

An SHSP is a statewide, coordinated safety plan developed and maintained by each state to reduce fatalities along all state highways and public roads. The SHSP[1], developed by LADOTD in coordination with Louisiana State Police, the Louisiana Highway Safety Commission, and other various partners, uses the 4Es of traffic safety: Engineering, Enforcement, Emergency Response, and Education. The SHSP identifies strategies and emphasis areas for analysis and investment.

[1] http://www.destinationzerodeaths.com/

In Louisiana each MPO houses a Regional Safety Coalition tasked with developing and implementing a Regional SHSP. In the Houma-Thibodaux region, this is the South Central Regional Safety Coalition that covers the parishes of Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, and Terrebonne. The regional SHSP emphasis areas are shown in Figure 2.8.

Both the statewide and regional SHSP have set a goal of reducing a 50% reduction in fatalities by 2030.

**Figure 2.8: SHSP Emphasis Areas and Objectives**

| SHSP EMPHASIS AREAS | | | | |
|---|---|---|---|---|
| INFRASTRUCTURE & OPERATIONS | IMPAIRED DRIVING | OCCUPANT PROTECTION | DISTRACTED DRIVING | YOUNG DRIVERS |
| Roadway Departure Crashes<br>Intersection Crashes<br>Pedestrians and Bicyclists | OBJECTIVES:<br>▪ Increase daytime and nighttime seatbelt<br>▪ Reduce the potential and recurrence of serious injuries and fatalities in the following categories:<br>• Involving Young Drivers<br>• Involving Distracted Driving<br>• Involving Non-Motorized Users<br>• Impaired Driving<br>• Roadway Departure Crashes<br>• Intersection Crashes<br>• Non or Improper Restraint Use | | | |

## Crash Impacts

Every crash, regardless of the severity, costs money and time in damages, emergency services, and delays. These costs affect both governments and taxpayers. One of the goals of the MTP process is to improve travel safety by reducing the risk of crashes on the roadways. This was accomplished by analyzing the data and determining the most hazardous locations in the MPA.

!

208

Persons killed in crashes in the MPA from 2014 to 2018

Crash information was obtained from the Louisiana Crash 3 database, a data analysis software package that is maintained by the Center for Analytics & Research in Transportation Safety at Louisiana State University. This study looked at all crashes within the MPA from 2014 through 2018.

### The crash records include the:

- severity
- location
- alcohol involvement
- vehicle type
- time of day
- number of fatalities or severe injuries
- roadway surface condition
- collision type

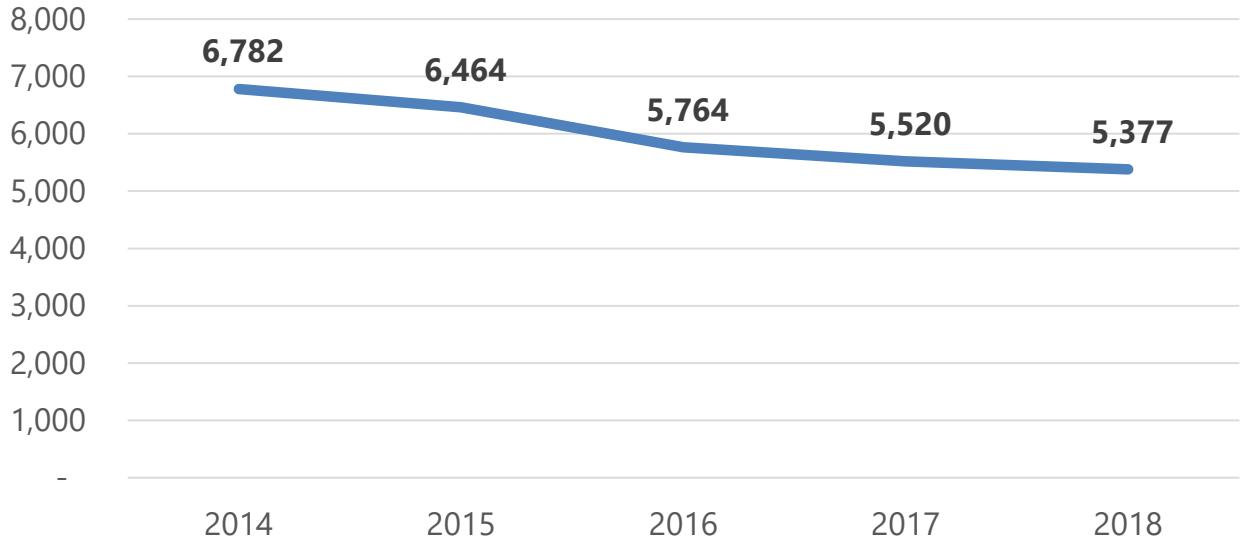
## MPA Crash Trends

This section discusses the observed trends regarding all crashes that occurred within the MPA during the analysis period.

Crashes by Year

From 2014 through 2018, there were a total of 29,907 crashes within the MPA, with a decrease in each year. Figure 2.9 displays the total number of crashes within the MPA by year.

**Figure 2.9: MPA Crashes by Year; 2014-2018**



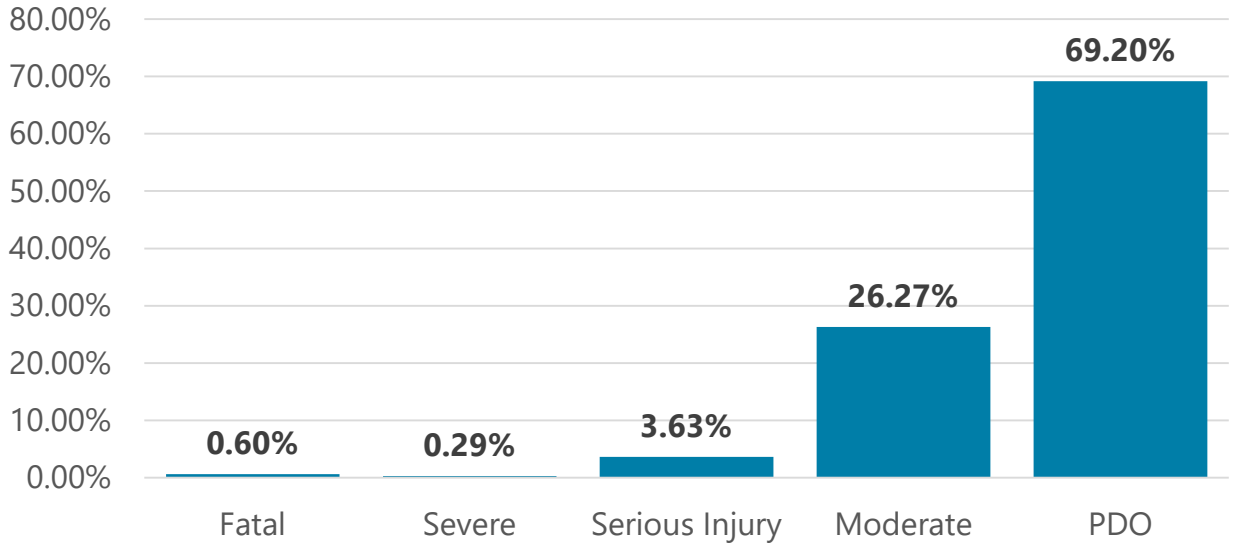

Crash Severity

Crash severity reveals the extent to which crashes in the MPA pose a safety risk to roadway users. Within the MPA there were 180 fatal crashes and 88 incapacitating injury (severe injury) crashes during the analysis period. Less than one (1) percent of the total crashes resulted in a fatality or severe injury. Figure 2.10 displays the severity of the crashes within the MPA.

69.2%

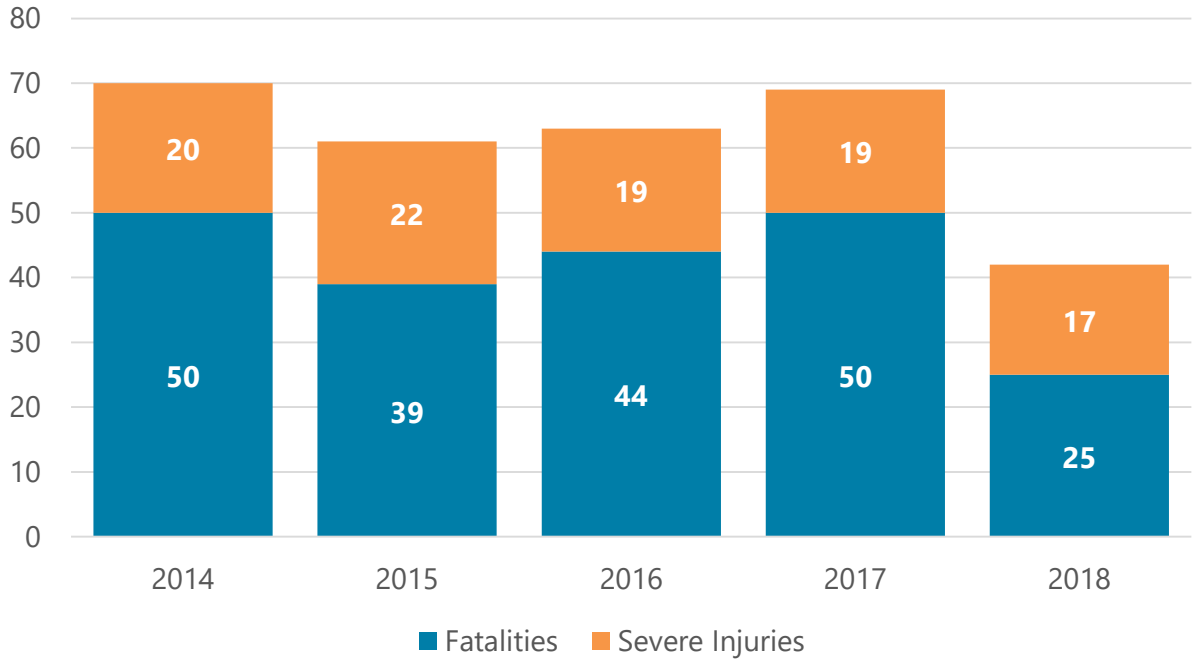
Crashes with Property Damage Only

**Figure 2.10: Severity of Crashes; 2014-2018**




From 2014 through 2018, the fatal and suspected serious injury crashes resulted in 208 deaths and 97 suspected serious injuries. The total fatalities and suspected serious injuries, by year, during this time period are shown in Figure 2.11.

**Figure 2.11: Fatalities and Suspected Serious Injuries; 2014-2018**



Alcohol Involved Crashes

From 2014 through 2018, there were 1,551 crashes that involved alcohol. This means that just over five (5) percent of the crashes in the MPA were alcohol involves. However, these crashes also resulted in seven in every ten of the fatalities within the area (146 fatalities, or 70%).

70%

Fatalities from alcohol-involved crashes

Crash Times

Identifying when crashes occur can assist with developing countermeasures for crashes affected by lighting, congestion, or other factors. A significant number of crashes, over five (5) percent, occur during the morning commute from 7:00 AM to 8:00 AM. The lunch peak from 12:00 PM to 1:00 PM experiences over seven (7) percent of the daily crashes. However, the largest percentage of crashes during the day occurs during the evening commute from 5:00 PM to 6:00 PM, accounting for over nine (9) percent of the crashes within the MPA. The hour in which the crashes occurred is displayed in Figure 2.12. Generally, crashes increase during the day and then fall after the evening peak.

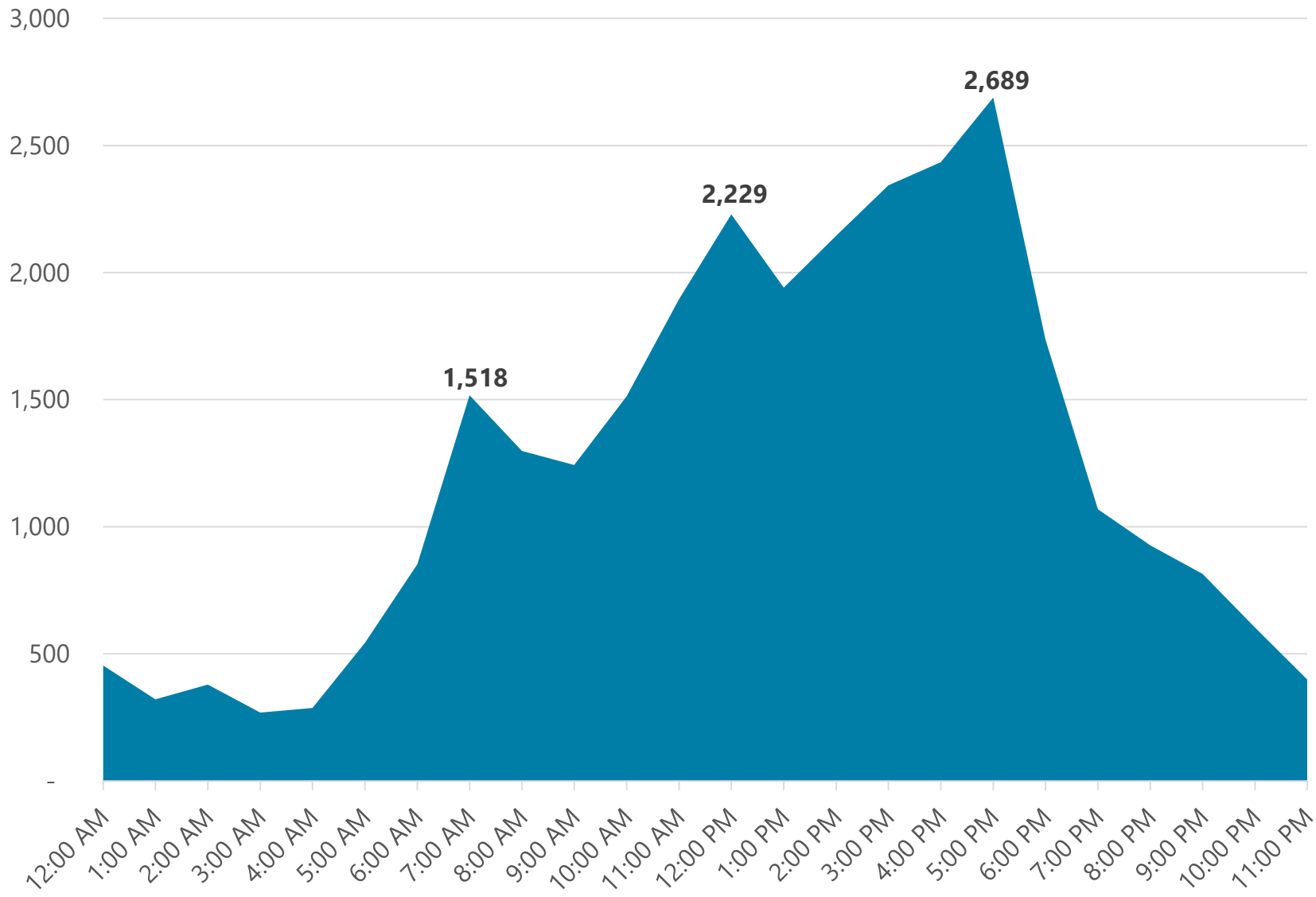
Roadway Surface Condition

14.9%

Crashes during wet pavement conditions

The roadway surface can also contribute to a crash through adverse conditions such as rain, oil, debris, or other sources. These conditions temporarily reduce the safety of the roadway and can lead to a crash. However, nearly 85 percent of the crashes occurred during dry conditions. This means the roadway surface condition is not a contributing factor in the vast majority of crashes.

**Figure 2.12: Crashes by Hour, 2014-2018**



Collision Type

This study also considers collision types that occurred. Table 2.4 displays the crashes by collision type and county.

**Table 2.4: Crashes by Collision Type, 2014-2018**

| Collision Type | Crashes | Percentage |
|---|---|---|
| Non Collision | 5,348 | 17.9% |
| Rear End | 10,696 | 35.8% |
| Head On | 668 | 2.2% |
| Right Angle | 4,729 | 15.8% |
| Left turn (E) | 808 | 2.7% |
| Left turn (F) | 1,185 | 4.0% |
| Left turn (G) | 758 | 2.5% |
| Right turn (H) | 513 | 1.7% |
| Right turn (I) | 200 | 0.7% |
| Side swipe, same | 2,534 | 8.5% |
| Side swipe, opposite | 701 | 2.3% |
| Other | 1,767 | 5.9% |
| **Total** | 29,907 | **100.0%** |

Source: Crash 3 database

Rear End

Most common collision type

62.4%

Crashes that are Angle, Sideswipe, or Rear End types

| Collision Type | | Collision Type | |
|---|---|---|---|
| Rear End |  | Left Turn (G) |  |
| Head On |  | Right Turn (H) |  |
| Right Angle |  | Right Turn (I) |  |
| Left Turn (E) |  | Side Swipe, Same |  |
| Left Turn (F) |  | Side Swipe, Opposite |  |

## Public Outreach and Safety

During the public outreach process, the following intersections were commonly identified for safety concerns:

- Percy Brown (LA 648) and Acadia Road
- LA 1 & LA 308 at LA 3185
- Bayou Blue Road (LA 316) and Bayou Gardens

The intersection of Percy Brown and Acadia Road experienced 43 crashes from 2014-2018, with about half resulting in injury. Due to its past crash history, the MPO and the City of Thibodaux are in the process of developing a feasibility study for intersection improvements at the intersection.

The intersections of LA 3185 at LA 1 and LA 308 experienced a higher number of crashes from 2014 and 2018, totaling 132 with approximately 33% resulting in injury. While there were no fatalities involved in the crashes at these particular intersections, it is recommended that the MPO work with LADOTD to conduct a safety analysis in an effort to be proactive in developing location-specific countermeasures.

Bayou Gardens Blvd. was only recently extended to Bayou Blue Road. Since 2017 there have been 11 crashes at the intersection with no fatalities and 15 injuries. These crashes were rear end (3), right-angle (3), left turn (3), non-collision (1) and other (1). Due to the number of comments and the high number of crashes since the intersection has been opened, it is recommended that the MPO work with LADOTD to conduct a safety analysis for this particular intersection to develop location-specific countermeasures.

The primary corridors identified by the public for safety concerns were:

- Martin Luther King Blvd. (LA 3040)
- LA 308 throughout the Study Area

Review of the crash data shows that these two corridors would be good candidates for safety studies and improvements. In fact, the MPO, in collaboration with the South Central Regional Safety Coalition, are currently working with the Louisiana Department of Transportation and Development (LADOTD) on a Stage 0 Feasibility Study to identify solutions for Martin Luther King Boulevard (LA 3040). In addition, the reconstruction of LA 308 to straighten and add

shoulders has been a priority for the MPO for many years, though funding remains an issue. It is recommended that the MPO continues to work with LA DOTD to conduct safety analyses and identify areas for improvement along the roadway.

### Parish Safety Plans

While local roads are less traveled than state highways, about 24% of Louisiana's 708 fatal traffic crashes in 2017 occurred on locally owned roads. Through a data-driven and collaborative approach, the Regional Safety Coalition and MPO will be working to develop and implement Local Road Safety Plans in Assumption, Lafourche, and Terrebonne. The plans are tailored to local issues and needs. The process will result in a prioritized list of issues, risks, actions, and improvements that can be used to reduce fatalities and serious injuries on the local road network. Once completed, this living document will be used as a tool for reducing roadway fatalities, injuries and crashes.

## 2.7 Roadway Security and Resiliency

A secure and resilient transportation system not only enhances the ability of physical infrastructure to withstand threats, but also allows accessibilty to individuals and drive the economy.

Area resiliency planning goes hand-in-hand with traditional transportation security planning. While security typically focuses on prevention, resiliency focuses also on the ability to quickly reestablish public services.

Security involves the prevention, management, and response to intentional harm to the transportation system or its users. This includes:

- theft or dismemberment of elements of the transportation infrastructure,
- assault on users of the system, or
- large-scale attacks intended to completely disrupt the movement of people and goods.

Resiliency involves the identifying, evaluating, and adopting strategies to address vulnerabilities from natural or man-made hazards that demonstrates a risk to the community. This includes:

- natural disasters,
- flooding, or
- large-scale events in the region is prone to that disrupts the movement of people and goods.

### MPO Role in Security and Resiliency

The MPO's main role in planning for security and resiliency is to coordinate with relevant agencies, such as

- emergency management officials
- fire departments
- rescue squads
- police and sheriff's departments
- local governments
- critical businesses

MPOs can take certain measures to improve security prevention and protection.

### Prevention

When discussing security, prevention refers to efforts to limit access to resources that may be compromised or efforts to increase surveillance. Examples of prevention measures include:

- access control systems
- closed circuit television (CCTV) systems
- security alarms
- fencing
- locks
- architectural barriers

The design of facilities and public spaces can also incorporate features that deter security breaches.

### Protection

High vulnerability risk facilities should have additional design measures considered. These measures would mitigate potential security risks, should they occur. Protection efforts could also include law enforcement where necessary.

### Preparedness

In a region that spends half of each year under threat of flooding, hurricanes, and tropical storms, evacuation routes are critical. By incorporating resilience planning into its decision-making, the MPO can play a direct role in enhancing the ability of the physical infrastructure to withstand these and other threats by including resilience in the criteria for evaluating projects for funding.

### Response

Redundancy of resilient transportation planning should be encouraged. These alternate routes assist in emergency evacuations or detours should a particular segment of the transportation

network become unavailable. Higher levels of connectivity, access, and capacity in areas that are hard to serve with utilities or subject to flooding are important. Looking at projects that improve access to shelters, first-responders, and critical facilities should be prioritized. FEMA defines critical facilies as hospitals, fire stations, police stations, courthouse, communications, and similar facilies where essenal programs/services are provided. Other facilies such as public schools may be deemed by a community to be a crical facility as well.

### Recovery

Transportation decision-makers should be familiar with both short-term and long-term recovery plans. This includes everything from evacuations to restoring local businesses and neighborhoods. Individuals should have access to jobs, affordable housing, and basic needs, an especially important consideration for historically disadvantaged or underserved populations. The MPO has a responsibility to not only recognize these impacts, but to strategically direct its transportation investments to those projects which will have the most positive impact on the strength and resilience of the regional economy. The need for linking transportation and economic development planning is recognized by the public and highlighted by regional economic conditions. All governments located in the MPO have office of emergency preparedness and hazard mitigation plans.

### Key Security Participants

As stated previously, the MPO coordinates with relevant agencies and is in a support role when security issues arise. The MPO can serve as a medium of communication between the various agencies involved. Several key participants have been identified to the security management process.

State and Local Governments

Louisiana DOTD maintains an information hotline (511) which provides information to the traveling public during emergencies. Individuals can get instant access to emergency information, travel maps, safety info, and Motorist Assistance Patrol services.

Individuals may use 511la.org to access this information over the web, or dial 511 from their telephone. Information is also distributed through the @Houma_Traffic Twitter account.

Louisiana Governor's Office of Homeland Security and Preparedness (GOHSEP)

An additional provider for emergency management in the state is GOHSEP, which coordinates with other state agencies and produces a variety of emergency management plans for several disaster types, including:

- earthquakes,
- flooding,
- hurricanes,
- tornadoes,
- and more.

The GOHSEP website (https://gohsep.la.gov/) provides information and planning to the public.

### Additional MPO Measures

Each MPO is ultimately responsible for crafting a security policy consistent with its goals, state guidance, and the FAST Act. Security must also be considered during the establishment of future MPO goals and the support for MPO funding priorities. The following presents potential areas of focus, recognizing that natural disaster evacuation is a primary concern within the Houma-Thibodaux Urbanized Area.

Use of MPO Transportation Model to Assess Evacuation Plans

The TransCAD regional model can be modified to simulate evacuation events. This can be used to test the effectiveness of existing plans or to improve plans for routing traffic through the MPO region.

Use of Area Transit Systems to Support Evacuation Events

Several transit providers in the area currently assist with evacuation events. The MPO will continue to work with local transit providers to investigate opportunities for the use of transit vehicles to provide for the evacuation of transit dependent populations.

Integration of Intelligent Transportation Systems (ITS) in Evacuation Planning

The MPO supports investment in ITS technologies. The MPO understands the need to study and assess how this technology can be used to assist evacuees in their decision-making and expedite their progress during evacuation events. Currently ITS infrastructure (dynamic message signs, cameras, and fiber optic cable) is deployed along US 90, LA 24, LA 3040, and Hollywood Road. An ITS Architecture Plan has been developed by DOTD. It is included on their website at http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Operations/ITS/Louisiana ITS Deployment Plan/Forms/AllItems.aspx.

Integration of Hurricane Evacuation Purpose and Need in Planning for Future Roadway Improvements

As the MTP projects are refined, project features will be reviewed for consistency with a hurricane evacuation purpose and need. Every hurricane produces a unique evacuation event. Evacuees are influenced by the amount of notice provided in advance of the storm's landfall, as well as the projected storm path and intensity. Information on hurricane procedures and evacuation routes can be found at:

http://www.lsp.org/pdf/2016EmergencyGuide_English.pdf

### Strategic Highway Network (STRAHNET)

The STRAHNET is a portion of the NHS considered vital to the nation's strategic defense. The current STRAHNET is about 61,000 miles long and links military installations with roadways that provide for the mobility of strategic military assets. All Interstate highways are included as part of the STRAHNET. In the HTMPO, US 90, US 3052, and US 24 are considered other NHS Routes.

The STRAHNET routes need additional considerations, which include maintenance of bridge capability, pavement conditions, and congestion management. The use of ITS along these corridors, particularly dynamic message signs, will allow for better management of the traffic related to military convoys.

# 3.0 Freight

## 3.1 Introduction to Freight Planning

In addition to providing access to work, schools, and shopping, the highway network is a vital component in the movement of goods. This chapter examines freight from national, regional and local perspectives, and identifies potential shortcomings in the region's freight network. The chapter also considers freight-specific infrastructure improvements that will be needed over the next 25 years. Finally, the chapter looks at the region's overall economy, examining major commercial and retail nodes and how transportation supports and links activities.

The FAST Act, and MAP-21 before it, includes provisions for improving the condition and performance of the national freight network and establishes the national freight policy and national freight goals. It also provides for identification of a national freight network "to assist States in strategically directing resources toward improved system performance for efficient movement of freight on highways, including the national highway system, freight intermodal connectors and aerotropolis transportation systems." The act encourages development of State Freight Plans to help focus the strategic direction of resources.

> The National Freight Policy is to improve the condition and performance of the national freight network to provide the foundation for the U.S. to compete in the global economy…

## 3.2 Supporting Plans and Goals

### LADOTD State Freight Plan

The LADOTD statewide comprehensive freight plan is the *Louisiana Freight Mobility Plan*. This document establishes the freight planning and performance monitoring activities to be undertaken throughout the state by DOTD.

Key plan elements include:

- An overview of relevant policy that influences freight planning at the statewide level.
- A discussion of existing and projected commodity flows and freight network characteristics, which provide the baseline for identifying needs statewide.
- A profile of the Interim National Multimodal Freight Network (NMFN) within the State of Louisiana.
- A summary of freight improvements of statewide significance, which forms the basis for the overall Freight Investment Plan.
- A description of the measures and procedures that will be used by DOTD to monitor transportation system performance with respect to freight mobility.
- A description of policies and actions to be implemented at a statewide level to help improve freight mobility.

### National Freight Goals

The current transportation legislation is the Fixing America's Surface Transportation Act (FAST Act). Per H.R. 22, 70101 (b) of the FAST Act, there are 10 National Freight Goals, which are to:

1. Identify infrastructure improvements, policies, and operational innovations that—

   a. Strengthen the contribution of the National Multimodal Freight Network to the economic competitiveness of the United States.

   b. Reduce congestion and eliminate bottlenecks on the National Multimodal Freight Network.

   c. Increase productivity, particularly for domestic industries and businesses that create high value jobs.

2. Improve the safety, security, efficiency, and resiliency of multimodal freight transportation.

3. Achieve and maintain a state of good repair on the National Multimodal Freight Network.

4. Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network.

5. Improve the economic efficiency and productivity of the National Multimodal Freight Network.

6. Improve the reliability of freight transportation.

7. Improve the short- and long-distance movement of goods that—

a. Travel across rural areas between population centers.

b. Travel between rural areas and population centers.

c. Travel from the Nation's ports, airports, and gateways to the National Multimodal Freight Network.

8. Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address multimodal freight connectivity.

9. Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network.

10. Pursue the goals described in this subsection in a manner that is not burdensome to State and local governments.

The *Louisiana Freight Mobility Plan*[2] describes how it improves the ability of the State of Louisiana to meet the national freight goals described above.

[2] http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Multimodal/Misc_Documents/Louisiana Freight Mobility Plan 04-09-18 FINAL.PRINT EDITION.pdf

## MPO Freight Goals

Freight goals for the Houma-Thibodaux MTP are as follows:

1. Improve the freight transportation system for better economic efficiency, productivity, and competitiveness.
2. Improve the safety, security, and resilience of the freight transportation system.
3. Improve and maintain the freight transportation system to ensure a state of good repair.
4. Reduce adverse environmental and community impacts of the freight system.
5. Use advanced technology, performance management, innovation, competition, and accountability to assist with congestion mitigation, operations, and maintenance of the freight transportation system.

## Louisiana's Marine Transportation System Plan

The Louisiana Marine Transportation System Plan was published in 2016. It summarizes the impact of Louisiana's extensive navigable waterway system on the state's economy and identifies infrastructure improvements to optimize the system's operational efficiency for future economic growth and congestion mitigation. Improving the operational capacity of the waterway system and increasing the economic benefits to the state and the nation are the overriding objectives identified in the Plan.

## Louisiana State Rail Plan

The 2015 Louisiana State Rail Plan was developed as part of the STP and includes the following freight rail objectives.

- Improve the interchange of Class I2 rail traffic in New Orleans
- Increase the number of miles of track capable of 286,000-pound (lb.) car weights on the state's short line3 railroads
- Minimize accidents, injuries, and fatalities at highway-rail grade crossings in Louisiana through crossing closures, safety improvements and grade separations
- Encourage economic development through investments in the rail system, e.g., improved access to marine and river ports, new intermodal facilities, and new industrial leads and spurs
- Establish a designated Rail Program empowered to assist in funding rail improvements, and
- Leverage public-private partnerships for funding rail improvements

## Louisiana Airport System Plan

The 2015 Louisiana Airport System Plan was also updated as part of the Statewide Transportation Plan update. Louisiana seeks to incorporate all aspects of this plan to develop new DOTD processes, policies and procedures and implement revisions to the Louisiana Administrative Code for program development and administration. The Airport System Plan identifies performance criteria as broad conditions or goals that the state seeks to achieve so that its aviation system can perform as desired. The following three performance criteria are discussed in the Airport System Plan.

**Access:** Louisiana seeks to provide adequate access by air to the state's population for purposes of transportation, safety enhancement, and economic development

**Economic:** Louisiana seeks to provide an aviation system that supports the local, regional, and state economies by enabling the rapid and efficient movement of people and products that rely on aviation

**Physical:** In order for the aviation system to function as intended, the DOTD will assist the individual airports that need certain physical facilities in sufficient quantities to be able to provide safe and secure services that meet the role the airport is intended to fulfill in the system

## 3.3 Existing Freight Conditions

### Freight Truck Network

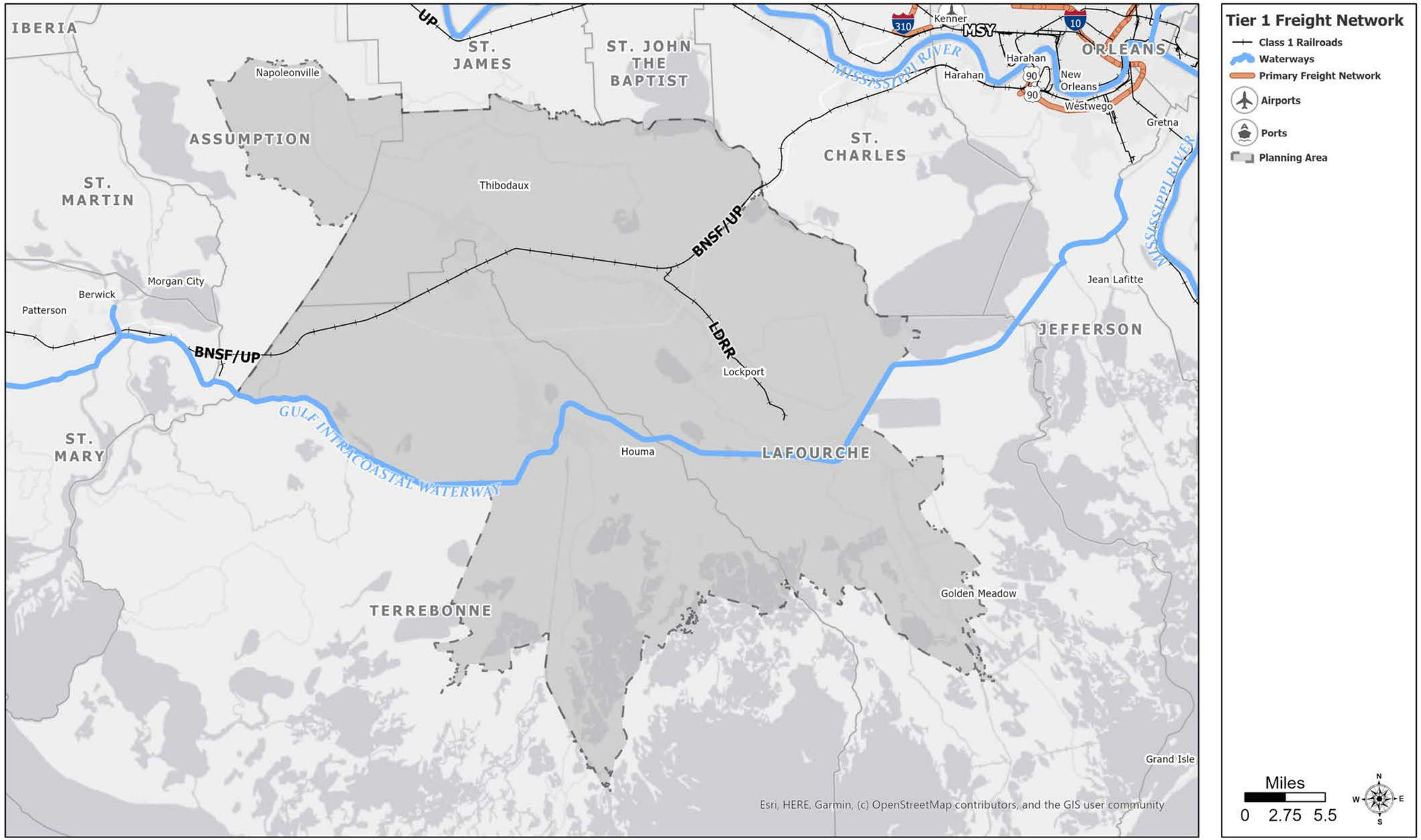
Louisiana has developed a three tiered freight network in the state in order to prioritize investments. The criteria for each tier is listed in Figure 3.1. Facilities in the MPO in the Tier 1 Freight Network include the BNSF railway and the Gulf Intracoastal Waterway. No highways in the region are on the National Primary Freight Network. Facilities in Tier 2 include Bayou Lafourche south of the Gulf Intracoastal Waterway, and Port Fourchon which is just outside the study area. Tier 3 includes the Port of Terrebonne, US 90, LA 1, LA 20, LA 24, LA 56, LA 57, LA 182, LA 307, LA 308, LA 309, LA 311, LA 315, LA 659, LA 661, LA 3040, LA 3087, LA 3185, and Hollywood Road.

### Figure 3.1: Freight Network Criteria

| Facility Type | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Ports | > 50 Million Tons | 20 to 50 Million Tons | 2 to 20 Million Tons |
| Airports | Value >$100 Million | Value btw $10 to $100 Million | Other Commercial Airports |
| Highways | Included on Primary Freight Network | Remainder of Interstate Network | >25% trucks, Other Critical Freight Network Links, Other Energy Access Links |
| Railroads | Class 1 | Tonnage > 500,000 | Other Active Railroads |
| Waterways | >10 Million Tons | 5 to 10 Million Tons | >500,000 tons |

Source: Louisiana Freight Mobility Plan, 2018

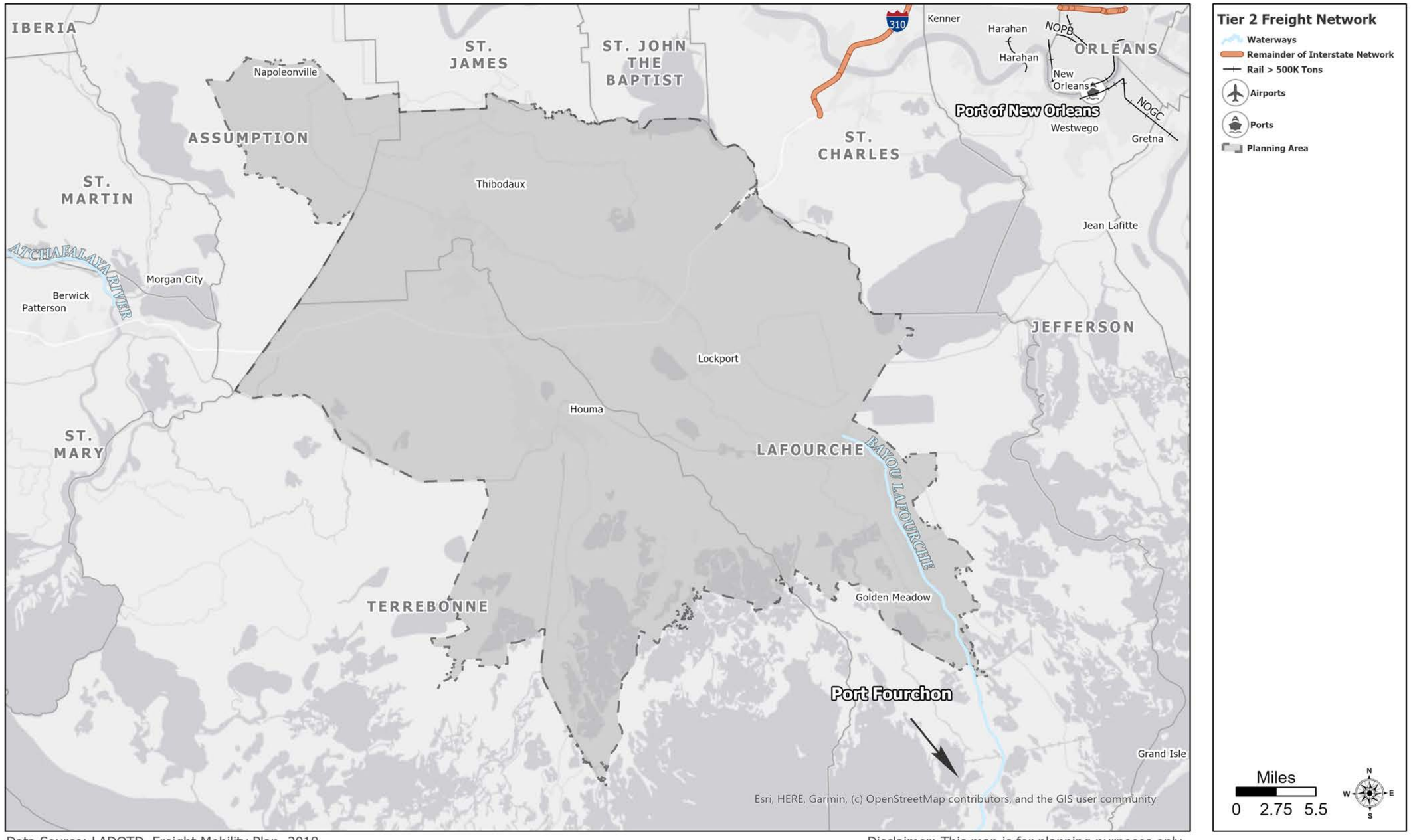
**Figure 3.2: MPA Tier 1 Freight Network**




Data Source: LADOTD, Freight Mobility Plan, 2018

Disclaimer: This map is for planning purposes only.

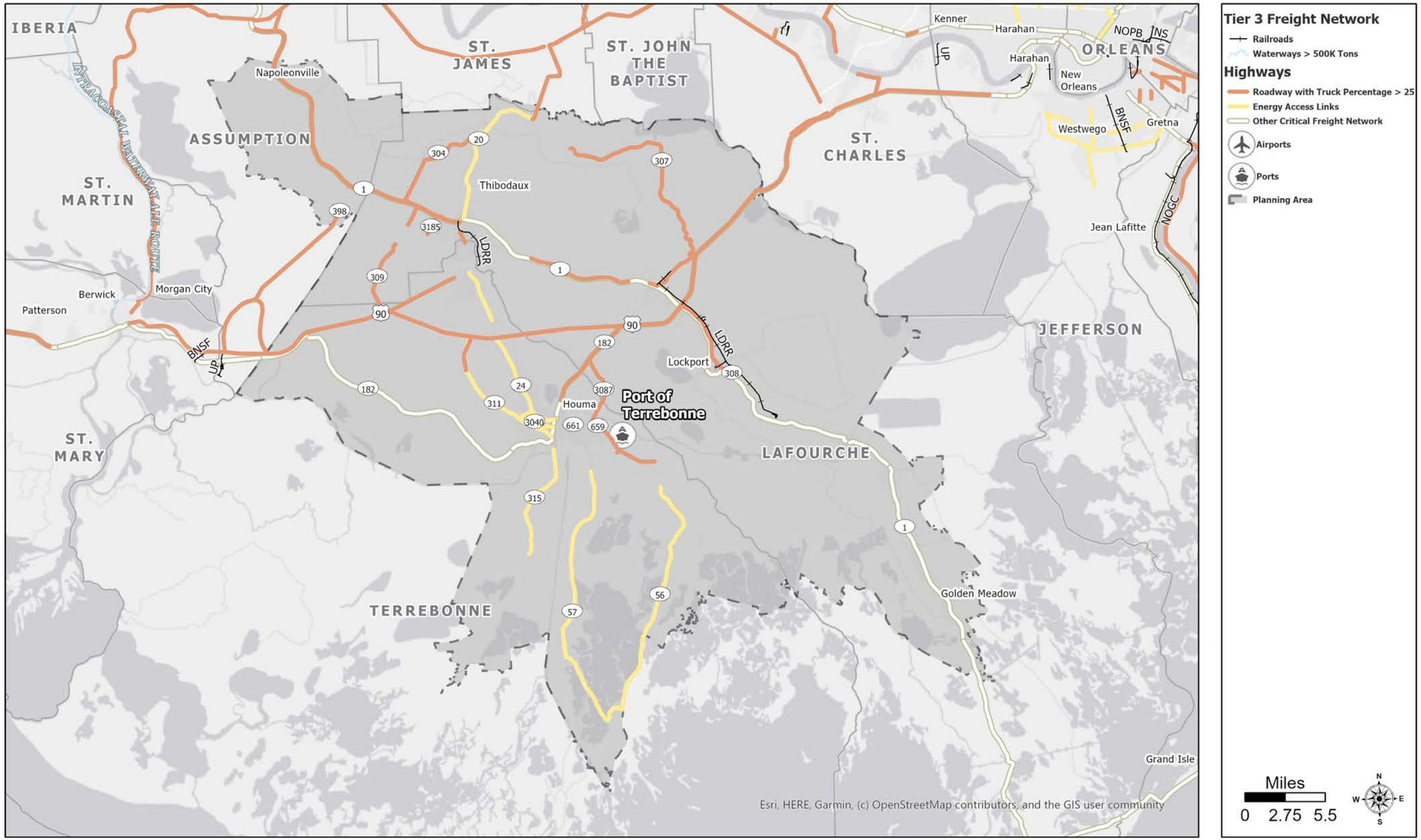
### Figure 3.3: MPA Tier 2 Freight Network




Data Source: LADOTD, Freight Mobility Plan, 2018

Disclaimer: This map is for planning purposes only.

## Figure 3.4: MPA Tier 3 Freight Network




Data Source: LADOTD, Freight Mobility Plan, 2018

Disclaimer: This map is for planning purposes only.

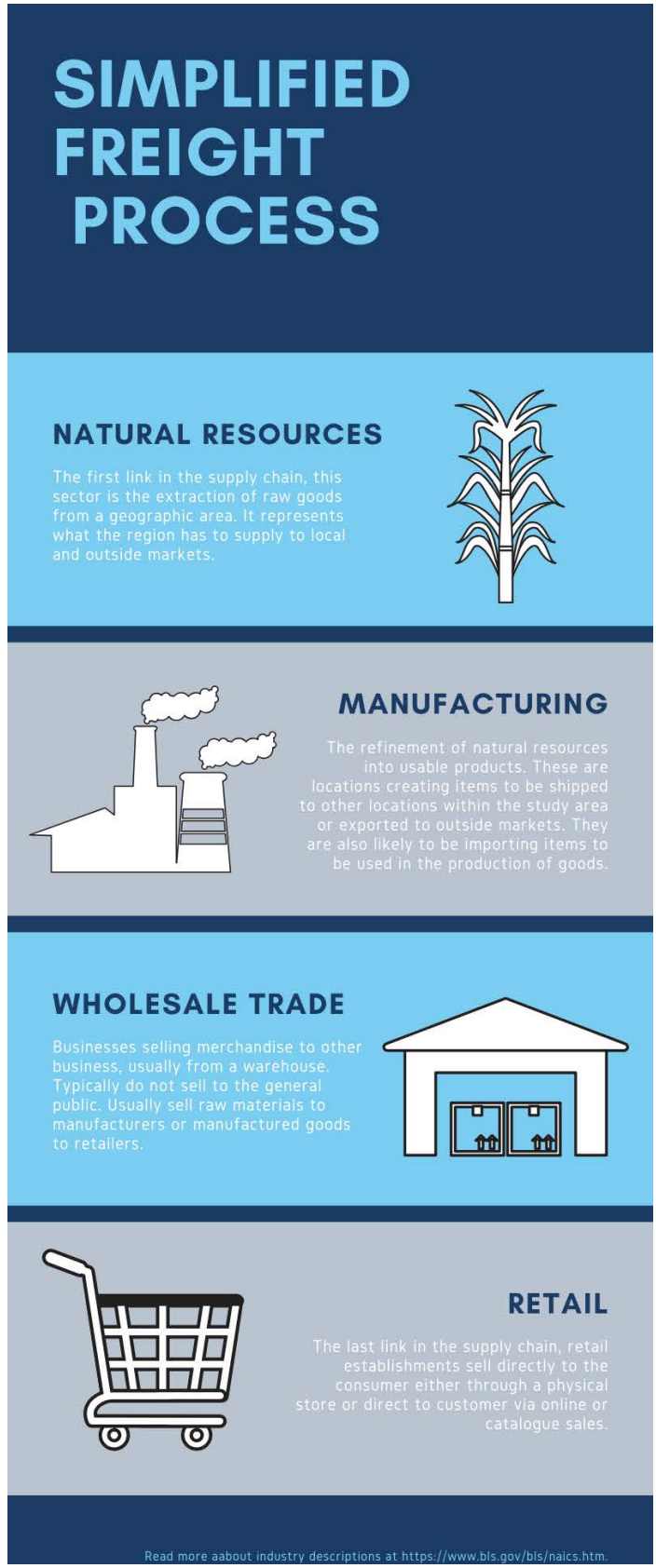
## Local Economic Factors

An examination of the businesses in the region can help determine the general locations of where goods are being shipped to and from. For this purpose, the terms *freight generators* and *freight attractors* will be used.

*Freight generators* represent the economic supply, or those industry sectors involved in the growing or extracting of natural resources that the region has to offer. It will also represent the manufacturing sector as this industry takes those raw materials and transforms them into usable materials.

*Freight attractors* represents the retail sectors. This industries are primarily involved in receiving goods from the manufacturers and passing them on to the end users.

The following series of figures show the major businesses in these highlighted sectors within the study area by volume of sales as well as the general locations of all businesses within these sectors. These maps give a general idea where freight is originating and where freight is being shipped.



### Figure 3.5: Major Natural Resource Businesses in MPO by Sales Volume, 2018

| Company | City | Description | # Employees | Sales Volume |
|---|---|---|---|---|
| Buddy's Seafood | Houma | Shellfish Fishing | 20 | $10-20 Million |
| Collins Oyster Co Inc | Golden Meadow | Shellfish Fishing | 5 | $2.5-5 Million |
| Cypress Duck Farm | Thibodaux | Other Poultry Production | 2 | $1-2.5 Million |
| Golden Ranch Plantation | Gheens | All Other Miscellaneous Crop Farming | 19 | $1-2.5 Million |
| Lafleur Dairy Products Inc | Houma | Dairy Cattle & Milk Production | 8 | $1-2.5 Million |
| Robichaux E G Co | Labadieville | All Other Miscellaneous Crop Farming | 35 | $1-2.5 Million |

Source: Infogroup

### Figure 3.6: Major Mining, Quarrying, and Oil and Gas Extraction Businesses in MPO by Sales Volume, 2018

| Company | City | Description | # Employees | Sales Volume |
|---|---|---|---|---|
| Schlumberger | Houma | Crude Petroleum Extraction | 300 | $500M-$1 Billion |
| Mcdermott J Ray Inc Mrne | | Support Activities For Oil & Gas Operations | 600 | $50-100 Million |
| Apache Corp | Golden Meadow | Crude Petroleum Extraction | 14 | $20-50 Million |
| Intermoor Inc | Golden Meadow | Natural Gas Distribution | 23 | $20-50 Million |
| Barracuda Oil Tools Llc | Houma | Crude Petroleum Extraction | 15 | $20-50 Million |
| Retif Oil & Fuel Llc | Houma | Crude Petroleum Extraction | 15 | $20-50 Million |
| Pipeline Construction & Mntnc | Houma | Drilling Oil & Gas Wells | 150 | $20-50 Million |
| National Oilwell Varco | Houma | Crude Petroleum Extraction | 20 | $20-50 Million |
| Iws Gas & Supply | Houma | Natural Gas Distribution | 20 | $20-50 Million |
| Enbridge Inc | Bourg | Natural Gas Distribution | 17 | $20-50 Million |
| Pierre Part Natural Gas Co | Raceland | Natural Gas Distribution | 22 | $20-50 Million |

Source: Infogroup

### Figure 3.7: Major Manufacturing Businesses in MPO by Sales Volume, 2018

| Company | City | Description | # Employees | Sales Volume |
|---|---|---|---|---|
| John W Stone Oil Distributor | Golden Meadow | Petroleum Refineries | 25 | $500M-$1 Billion |
| Collins Maintenance Svc | Houma | Petroleum Refineries | 8 | $100-500 Million |
| Marine Systems | Houma | Other Engine Equipment | 140 | $100-500 Million |
| Oil States Skagit Smatco | Houma | Oil & Gas Field Machinery | 350 | $100-500 Million |
| Martin Energy Svc | Golden Meadow | Petroleum Refineries | 12 | $100-500 Million |
| John Deere Thibodaux Inc | Thibodaux | Farm Machinery | 500 | $100-500 Million |
| Petroleum 1 Solutions Llc | Houma | Petroleum Refineries | 3 | $50-100 Million |
| Chevron Preservation Mnt Inc | Schriever | Petroleum Refineries | 4 | $50-100 Million |
| K & B Machine Works Inc | Schriever | Machine Shops | 200 | $50-100 Million |
| National Oilwell Varco | Houma | Oil & Gas Field Machinery | 100 | $50-100 Million |
| Benoit Machine Inc | Houma | Oil & Gas Field Machinery | 120 | $50-100 Million |
| Thoma-Sea Marine Constructors | Bourg | Ship Building | 83 | $50-100 Million |
| Ebi Liftboats Llc | Houma | Ship Building | 83 | $50-100 Million |
| Hope Services Inc | | Ship Building | 90 | $50-100 Million |
| Candies Shipbuilders Llc | Des Allemands | Ship Building | 110 | $50-100 Million |
| Grand Isle Shipyard | Houma | Ship Building | 83 | $50-100 Million |
| Houma Shipyard | Houma | Ship Building | 83 | $50-100 Million |

Source: Infogroup

### Figure 3.8: Major Retail Businesses in MPO by Sales Volume, 2018

| Company | City | Description | # Employees | Sales Volume |
|---|---|---|---|---|
| Barker Buick GMC | Houma | New Car Dealers | 300 | $100-500 Million |
| Walmart Supercenter | Cut Off | Department Stores | 360 | $50-100 Million |
| Walmart Supercenter | Raceland | Department Stores | 350 | $50-100 Million |
| Walmart Supercenter | Thibodaux | Department Stores | 300 | $50-100 Million |
| Lowe's Home Improvement | Houma | Home Centers | 250 | $50-100 Million |
| Trapp Chevrolet | Houma | New Car Dealers | 125 | $50-100 Million |
| Terrebonne Ford Lincoln | | New Car Dealers | 125 | $50-100 Million |
| Kenworth Of South Louisiana | Gray | New Car Dealers | 100 | $50-100 Million |
| Walmart Supercenter | Houma | Department Stores | 600 | $20-50 Million |
| Southland Dodge Chrysler Jeep | Houma | New Car Dealers | 50 | $20-50 Million |
| Barker Honda | Houma | Used Car Dealers | 48 | $20-50 Million |
| Geri Lynn Nissan | Houma | Used Car Dealers | 48 | $20-50 Million |
| Dantin Chevrolet | Houma | New Car Dealers | 45 | $20-50 Million |
| Barker Mazda | Houma | New Car Dealers | 45 | $20-50 Million |
| Walmart Supercenter | | Department Stores | 335 | $20-50 Million |
| Rouses Supermarkets | Houma | Supermarket | 230 | $20-50 Million |
| Rouses Supermarkets | Houma | Supermarkets | 180 | $20-50 Million |

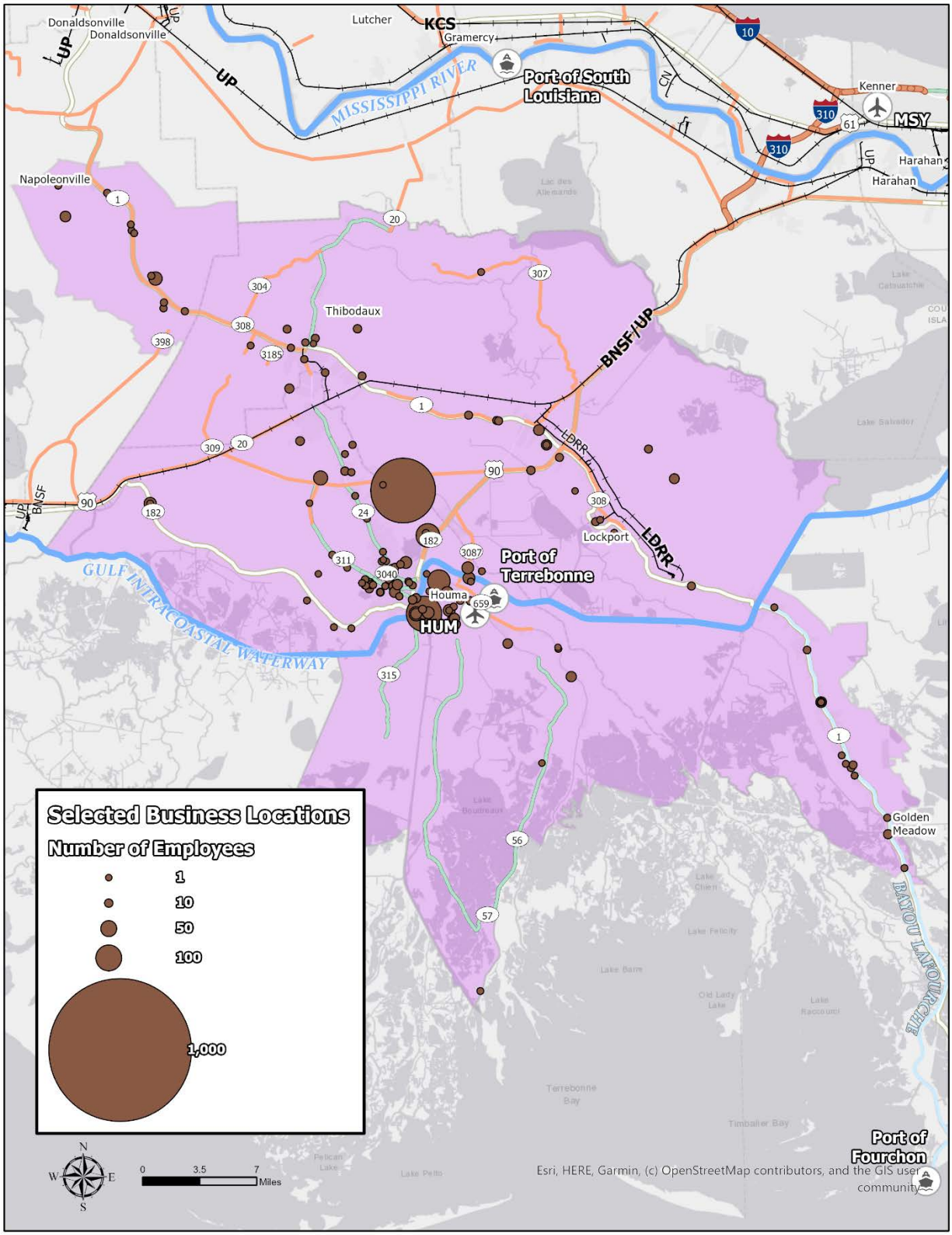
Source: Infogroup

### Figure 3.9: Major Mining, Quarrying, and Oil and Gas Extraction Businesses in MPO by Sales Volume, 2018

| Company | City | Description | # Employees | Sales Volume |
|---|---|---|---|---|
| Gaubert Oil | Thibodaux | Other Petroleum Merchant Whole-Sale | 18 | $100-500 Million |
| Waguespack Oil Co | Thibodaux | Other Petroleum Merchant Whole-Sale | 15 | $100-500 Million |
| Pfg-Caro Foods | Houma | Wholesale Trade Agents & Brokers | 210 | $100-500 Million |
| Breaux Petroleum Products | Lockport | Other Petroleum Merchant Whole-Sale | 20 | $100-500 Million |

Source: Infogroup

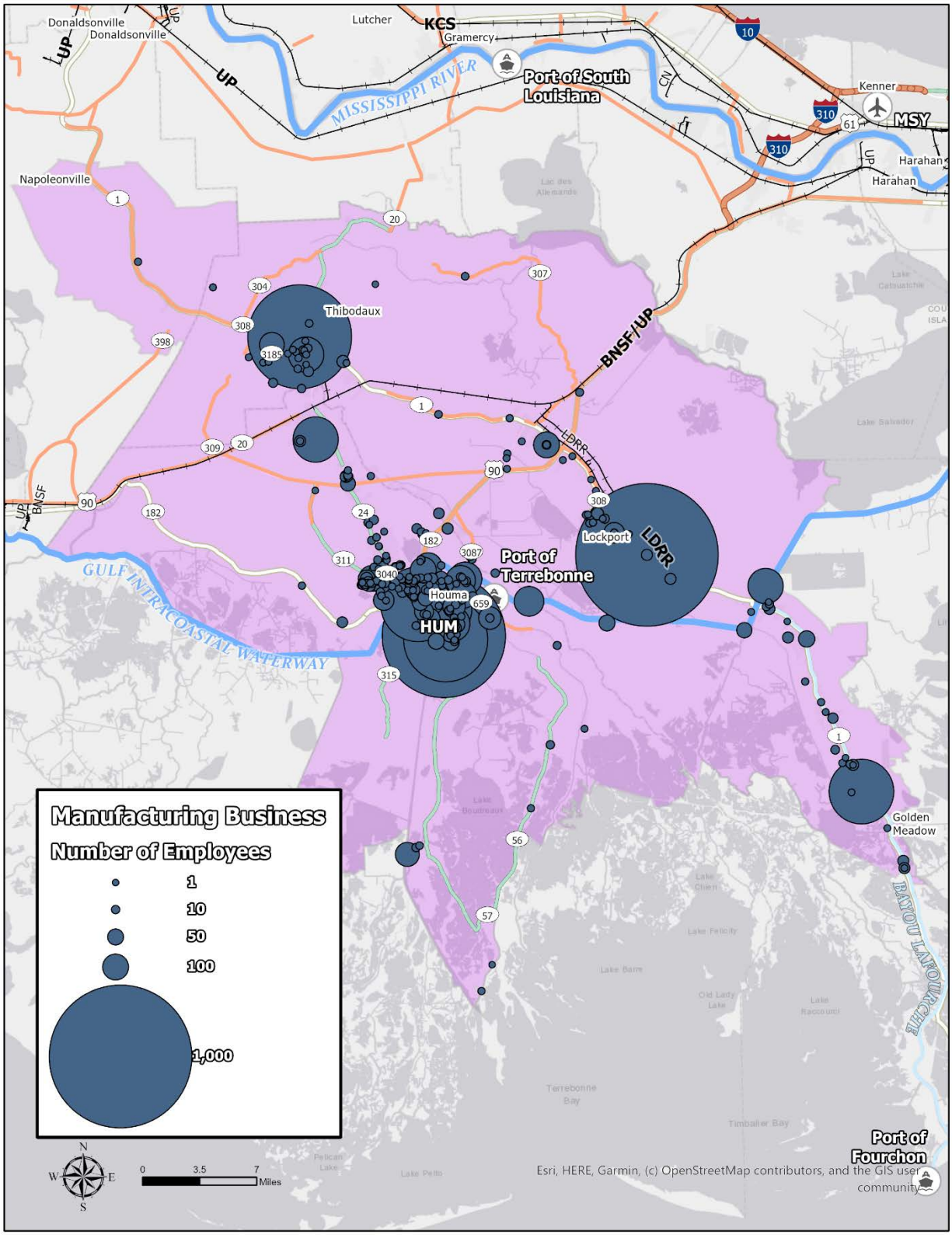
## Figure 3.10: Major Natural Resource Employers




Data Source: Infogroup

Disclaimer: This map is for planning and informational purposes only.

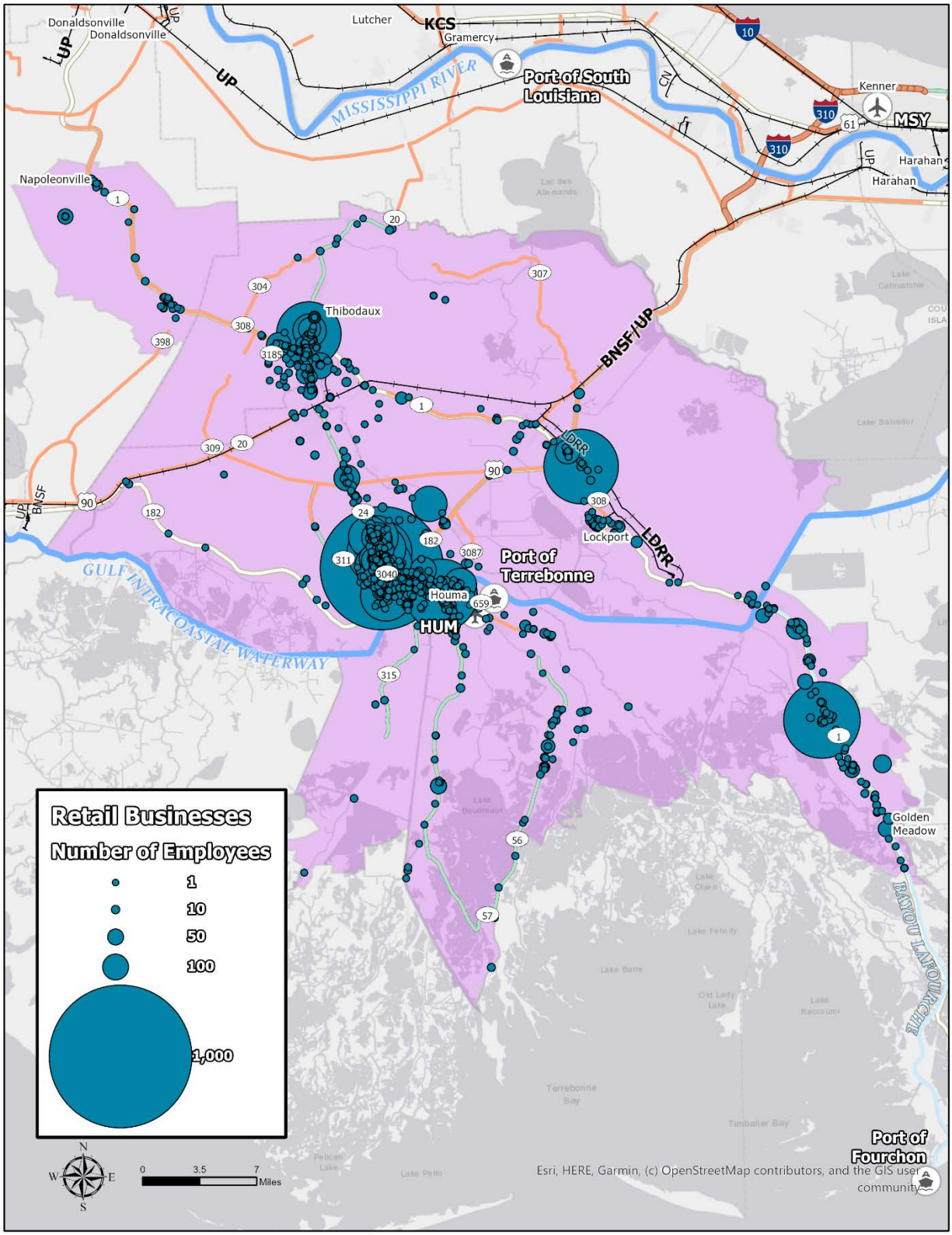
## Figure 3.11: Major Manufacturing Employers




Data Source: Infogroup

Disclaimer: This map is for planning and informational purposes only.

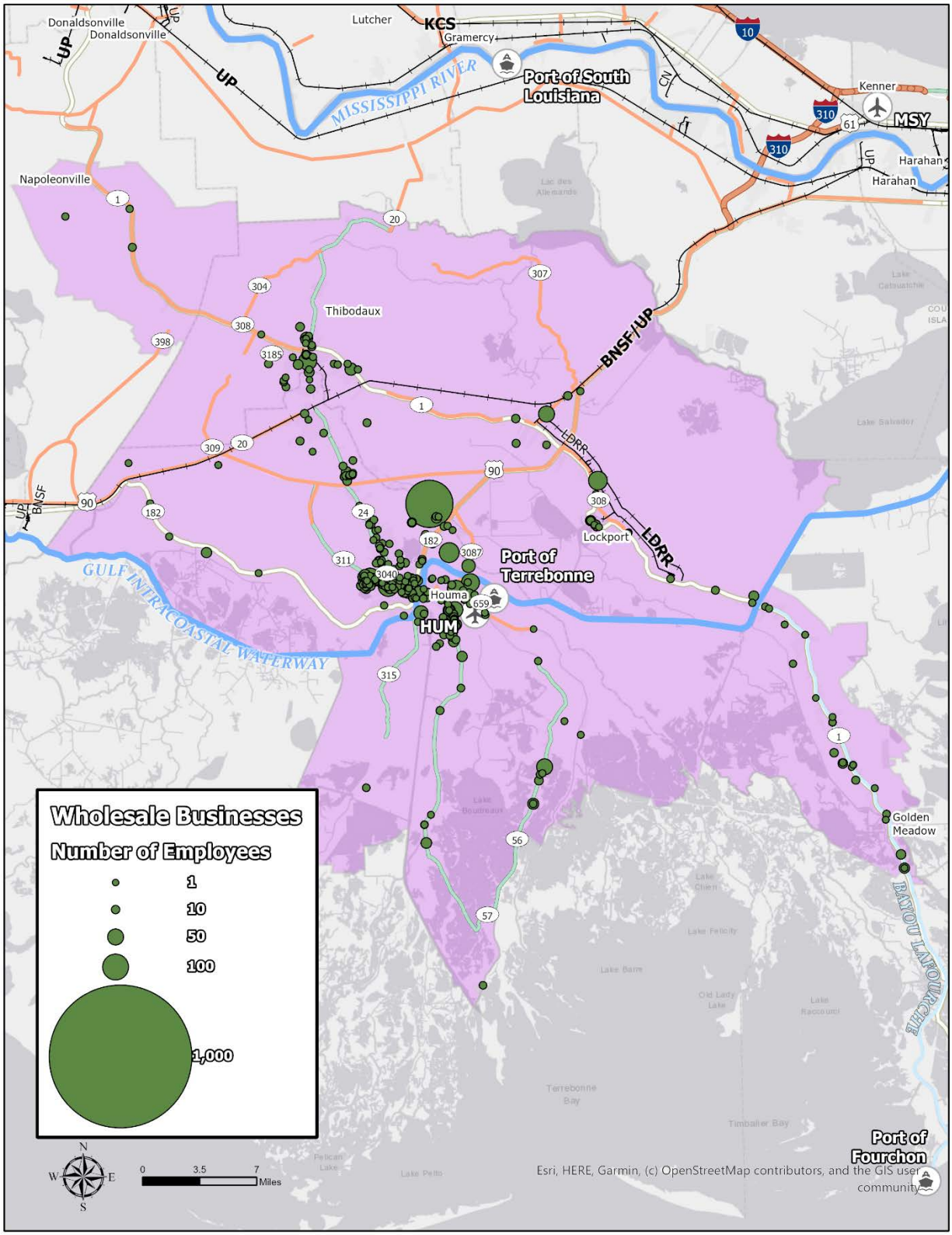
## Figure 3.12: Retail Employers




Data Source: Infogroup

Disclaimer: This map is for planning and informational purposes only.

## Figure 3.13: Major Wholesale Employers




Data Source: Infogroup

Disclaimer: This map is for planning and informational purposes only.

### The Amazon Effect

Online retail locations such as Amazon.com have drastically changed the supply chain worldwide. Millions of products that were once purchased in physical stores are now shipped directly to consumers. Research is still ongoing on how this changes freight patterns, and there are no readily available data to determine the effects in the study area.

It is reasonable to assume that, when goods are shipped via U.S. postal service, the freight impacts in the region may actually be lessened. However, when shipped via private carrier such as UPS or FedEx, these can add additional carrier trips into residential neighborhoods that would not normally be present.

This is an evolving and quickly changing area that will continue to be studied.

Safety

Crashes involving heavy vehicles were analyzed using crash records from 2014 to 2018 obtained from LADOTD. A total of 1,383 crashes involving heavy vehicles occurred within the MPA during the five-year study period. Between 2014 and 2018, there were sixteen (16) fatalities involving heavy vehicles comprised less than one percent of heavy vehicle crashes. However, nearly eight (8) percent of all fatalities in the study area involved a heavy vehicle.

## Freight Rail Network

Inventory

There is one Class I railroad in the MPA and one short-line railroad:

52

Miles of railroads in the MPA

The Burlington Northern Santa Fe Railway (BNSF) traverses the MPA roughly parallel to US-90 and LA 182/LA20. This facility is also a joint trackage with Union Pacific.

The Louisiana & Delta Railroad (LDRR), a Genesee and Wyoming (G&W) affiliate, lies entirely in Lafourche Parish and roughly parallels LA 308 between Larose and the BNSF interchange in Raceland. It transports aggregates, agricultural products, brick and cement, chemicals, food and feed products, forest products, and petroleum products. LDRR carload weights are limited to 263,000 pounds.

A map of these facilities is provided above in Figure 3.2.

Rail-Automobile Collisions

From 2014 through 2018, there were no crashes in the Houma MPA involving a vehicle and a train.

Derailments

According to the Federal Rail Administration, from 2014 to 2018, no train derailment occurred within the Houma MPA.

Railroad Crossings with Active Warning/Control Devices


Highway-rail crossing warning devices are classified as either passive or active. Passive warning devices typically consist of cross bucks, warning signs, regulatory signs, and pavement markings. Passive crossings refer to crossings without active warning devices. Active warning devices typically consist of automatic gates, and/or flashing lights and bells. Within the MPA, there are:

- 69 total crossings, of which 21 are open to the public, and 12 are at-grade crossings
    - 11 have active warning devices
        - 8 have gates and bells
        - 1 has bells and flashing signals
        - 2 have flashing signals only

    - 1 has passive warning devices
- None of the passive warning device crossings listed above are located on a roadway classified as a minor arterial or above.

LADOTD has developed a state highway-rail grade crossing action plan, the *State Highway-Rail Grade Crossing Action Plan*[3], as required under 49 CFR 234.11.

Strategic Rail Corridor Network

The U.S. Military Surface Deployment and Distribution Command's Transportation Engineering Agency has identified the national Strategic Rail Corridor Network (STRACNET). The STRACNET is comprised of a 32,000 mile interconnected network of rail corridors and associated connector lines most important to national defense. In additions to providing mainline corridor throughput capability, these lines also provide access to major defense contractors and logistic sites critical to our national defense.

In the MPA, the BNSF rail line is included in STRACNET.

[3] https://safety.fhwa.dot.gov/hsip/xings/docs/la-sap.pdf

## Air Network

Inventory

Historically, only a small amount of freight is typically shipped by air. However, the commodities transported this way tend to be high in value and areas around airports tend to serve as distribution and manufacturing hubs.

There are three public airports in the Houma MPA.

- The Houma-Terrebonne Airport in Houma. Federal Aviation Administration (FAA) data shows that there are 115 aircraft based at the airport, with 225 daily aircraft operations.
- The Thibodaux Municipal Airport in Schriever. Federal Aviation Administration (FAA) data shows that there are 8 aircraft based at the airport, with 18 daily aircraft operations.
- The South Lafourche Leonard Miller Jr. Airport in Galliano. Federal Aviation Administration (FAA) data shows that there are 54 aircraft based at the airport, with 80 daily aircraft operations.

Volumes

Cargo data is not publicly available for the above mentioned airports.

Economic Benefit

According to figures from DOTD's aviation section, the airports in the MPA have the following economic output.

### Figure 3.14: MPA Airport Economic Benefits

| Name | Total Employment | Total Payroll | Total Output |
|---|---|---|---|
| Houma-Terrebonne | 740 | $32,006,0 | $170,259,000 |
| South Lafourche Leonard Miller | 529 | $18,007,000 | $97,628,000 |
| Thibodaux Municipal | 12 | $213,000 | $450,000 |

Source: CDM Smith, *Louisiana Airports Economic Impact Study Update*, Nov. 2019

## Waterway Network

Inventory

There are two port facilities within the MPA.

- **Port Fourchon**

  Port Fourchon, located just outside the study area, is owned and operated by the Greater Lafourche Port Commission (GLPC), a political subdivision of the State of Louisiana. The GLPC, established in 1960, is the state's only elected port commission and has jurisdiction over the area of Lafourche Parish south of the Gulf Intracoastal Waterway. Port Fourchon fronts directly on the Gulf and offers the shortest distance to deep-water oil and natural gas exploration in the Gulf. The port services over 90% of the Gulf of Mexico's deep-water oil production.

  Port Fourchon is also the land base for the Louisiana Offshore Oil Port (LOOP), the only U.S. deep-water port capable of offloading very large and ultra-large crude oil carriers. The LOCAP pipeline transports crude oil received at the offshore LOOP facility to onshore storage at Clovelly in Lafourche Parish and from there to the St. James Hub along the Mississippi River. From the hub, oil is sent to major refineries.

- **Port of Terrebonne**

  The Terrebonne Port Commission is a special district of Terrebonne Parish. The seven-member port commission is appointed to six-year terms by local government and community civic groups. The port has jurisdiction over all waterways in the parish, and its largest facility is located on a 680-acre site with frontage on the Houma Navigation Canal, within half a mile of the canal's intersection with the Gulf Intracoastal Waterway (ICWW).

  Land frontage is on Industrial Boulevard in Houma, one mile west of LA Highway 57 and the Houma-Terrebonne Airport. The strategic location positions the port to take advantage of significant cargo flows and marine traffic on both waterways. The Navigation Canal provides a direct route to the Gulf of Mexico.

  Close ties to Port Fourchon support offshore activity in the Gulf. Lack of overhead restrictions has allowed the port to emerge as a center for fabricating some of the largest offshore energy structures in the industry. The port is also a center for new construction, inspections and repairs of marine vessels for the industry.

# Freight

The Gulf Intracoastal Waterway (GIW), Bayou Lafourche, Bayou Terrebonne, and the Houma Navigational Canal are the major navigable waterways in the MPA. The GIW and Bayou Lafourche south of the GIW are included in LADOTD's Tier 1 and Tier 2 freight networks, respectively.

| **Gulf Intracoastal Waterway** | |
|---|---|
| Channel | 306 miles long – 12 feet deep – 125 feet wide |
| Public Ports | 7 (including Port of Terrebonne) |
| Locks/Dams | 5 – Calcasieu Lock, Leland Bowman Lock & Dam, IHNC Lock, Harvey Lock, and Algiers Lock |
| Intermodal Access | Atchafalaya, Calcasieu, Mermentau, Mississippi, and Vermillion Rivers; Bayous Tech and Lafourche; the GIWW Morgan City/Port Allen Route and Commercial Canal |
| Domestic Tonnage | 113.8 million (USACE, 2012) |
| **Houma Navigational Canal** | |
| Channel | 36 miles long – 15 to 18 feet deep – 150 feet wide |
| Public Ports | 1 (Port Terrebonne) |
| Locks/Dams | None: one is currently under design |
| Intermodal Access | GIWW and Gulf of Mexico |
| Domestic Tonnage | 2.5 million (USACE, 2012) |
| **Bayou Lafourche** | |
| Channel | 55 miles long – 3 to 26 feet deep |
| Public Ports | 1 (Port Fourchon) |
| Locks/Dams | None (there is a floodgate at Larose) |

| | |
|---|---|
| Intermodal Access | GIWW and Gulf of Mexico |
| Domestic Tonnage | 24.09 million (PAL, 2012) |

Source: LADOTD, *Louisiana's Marine Transportation System*, 2016

## Pipeline Network

Inventory

According to the Pipeline and Hazardous Materials Safety Administration, there are approximately 1,950 miles of pipeline in the MPA. As the MPO region's economy is based on oil and gas many pipelines are present in the region.

~1,950

Miles of pipeline in the MPA

Commodity Flows

Within the MPA, pipelines carry hydrocarbon gas liquids and natural gas. The following commodities are carried:

Natural Gas (approximately 1,200 miles)

Crude Oil (approximately 460 miles of pipeline)

Liquid Natural Gas (approximately 170 miles)

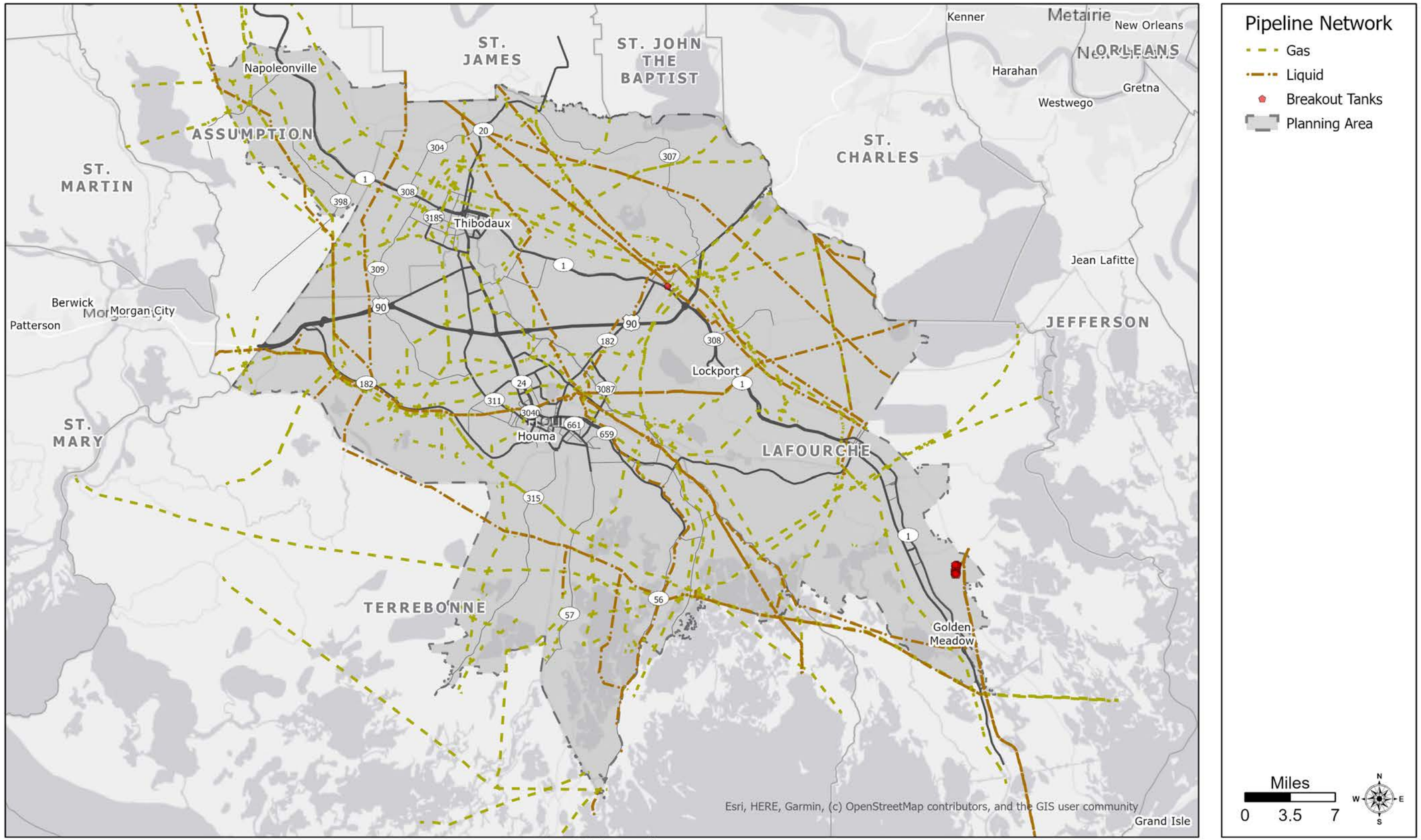
Fuel oils (approximately 17 miles)

Louisiana Offshore Oil Port (LOOP)

LOOP is America's first and only deep-water port operating under US and Louisiana licenses. It is 18 miles off shore in the Gulf of Mexico and provides tanker off loading and temporary storage service for crude oil. LOOP handles 13% of the nation's foreign oil, above 1.2 million barrels a day, and connects by pipeline to 35% of the US refining capability.

Port Fourchon is the land base for LOOP. The LOCAP pipeline transports crude oil received at the offshore LOOP facility to onshore storage at Clovelly in Lafourche Parish and from there to the St. James Hub along the Mississippi River. From the hub, oil is sent to major refineries.

**Figure 3.13: MPA Pipeline Network**




Data Source: National Pipeline Mapping System

For official use only.

Disclaimer: This map is for planning purposes only.

# 4.0 Bicycle and Pedestrian

As part of an effort to expand mobility and contribute to a safe transportation system for all users, the Houma-Thibodaux MPO has given a greater emphasis to bicycle and pedestrian projects throughout the region. While bicycle and pedestrian projects were traditionally only funded in the region through the Transportation Alternative Program (previously Transportation Enhancements) or the Recreational Trails Program, the MPO has dedicated funding from the directly controlled Urban Systems (STP<200K) towards this end. Examples of these projects include the rehabilitation of sidewalks in downtown Houma and Thibodaux, new sidewalks along Civic Center Blvd., and multi-use trails along Valhi Blvd. and in Central Lafourche. Despite these efforts, more work continues to be needed in the region.

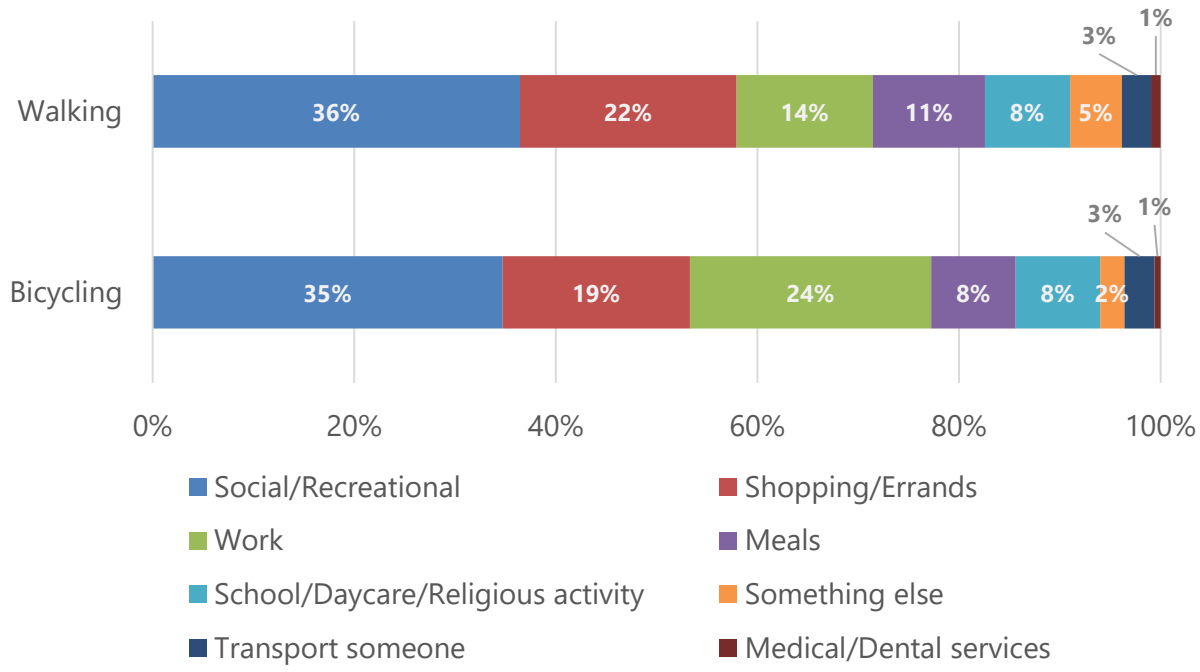
This plan has set three related goals on bicycle and pedestrian infrastructure: 1) to improve safety by expanding the pedestrian and bicycling network, 2) to improve mobility by expanding the pedestrian and bicycle network, and 3) to promote the use of pedestrian and bicycle facilities.

While bicycle and pedestrian conditions are often discussed alongside each other, their role within the transportation system is very different. First, in small metro areas like the Houma-Thibodaux area, the 2017 National Household Travel Survey (NHTS) indicates that walking accounts for 11 percent of all household trips while bicycling only accounts for one (1) percent. Pedestrian trips are not only more common, but they also are of critical importance for people with disabilities.

Walking and biking also differ somewhat in trip purposes. The primary purpose for both walking and biking in small metro areas is social or recreational, followed by shopping and errands. However, commuting to work constitutes 24 percent of bicycling trips compared to only 14 percent for walking trips.

It is important to note that these travel patterns are an average and that there is great variation within metropolitan areas and between metropolitan areas. Work-related and utilitarian trips by walking and biking will be more common in areas where walking and biking is more comfortable and in areas where access to cars is more limited.

**Figure 4.1: Walking and Bicycling Trip Purposes in Small Metro Areas**




Note: Small Metro Area = under 250,000 residents
Source: National Household Travel Survey, 2017

## 4.1 Bicycle and Pedestrian Facility Coverage

For the 2015-2019 Transportation Improvement Program, the Houma-Thibodaux MPO directed $2.3 million of Urban System funds towards eight bicycle and pedestrian projects through the region. In the 2019 Transportation Improvement Program, this was expanded to $7.4 million towards thirteen projects. Prior to 2015, no Urban System funds were directed to bicycle and pedestrian projects, which have traditionally been funded by the Transportation Alternatives Program (formerly Transportation Enhancements) and the Recreational Trails Program.

Much of this increase in funding has come from an increased focus of planning in the area. In 2009 DOTD adopted the Statewide Bicycle and Pedestrian Master Plan. In 2013, the MPO adopted a Regional Bicycle and Pedestrian Plan that laid out various projects and identified funding sources in a six-parish region, inclusive of the three parishes that make up the MPO Planning Area. During this same time frame, both Lafourche and Terrebonne also updated their comprehensive plans with a renewed emphasis on transportation, bicycle, and pedestrian infrastructure. The MPO is currently working on an update to the 2013 plan with an increased focus on bicycle and pedestrian safety. This plan is due for completion sometime in 2021.

### ADA Compliance

DOTD has analyzed sidewalks located along state highways in across the state. A review of this data shows there are some gaps as recently completed projects are not included. Also not included are sidewalks along locally owned roadways. However, it is a good proxy for sidewalks throughout the MPO planning area. In this dataset, of the 59,290 feet of sidewalk analyzed, only 27% are in ADA compliance.

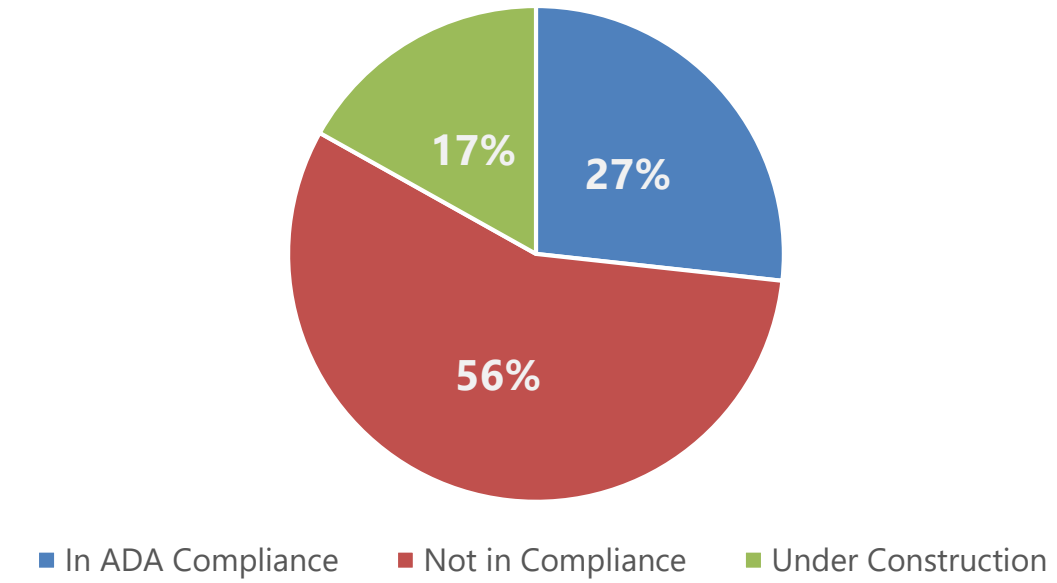
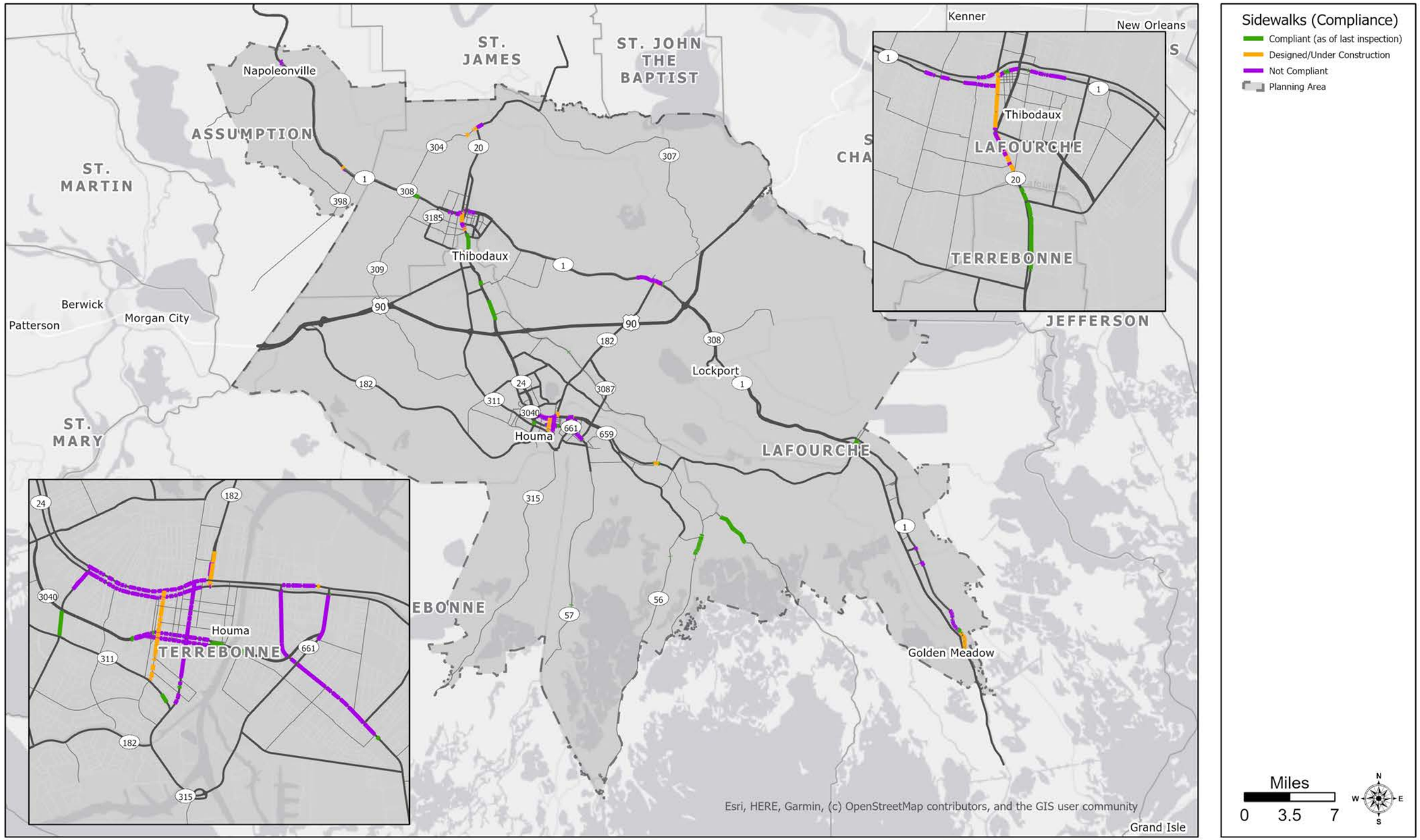


**Figure 4.2: Sidewalk ADA Compliance**




Data Source: LADOTD

Disclaimer: This map is for planning purposes only.

### Bicycle Level of Service

As part of its bicycle planning efforts in 2016, DOTD has analyzed and ranked all state highways based on the bicycle demand and current infrastructure. This data is displayed in Figure 4.3. The maps prioritize various roadways based on their bicycle level of service and bicycle demand. The roadways listed below are considered to have a low level of service and high demand.

- LA 1
- LA 20
- LA 56
- LA 182
- LA 307
- LA 309
- LA 312
- LA 315
- LA 648-S
- LA 664
- LA 3185

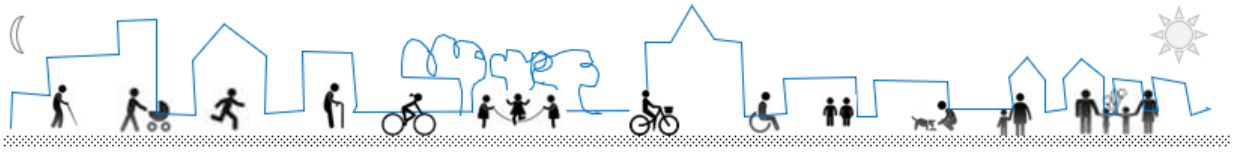
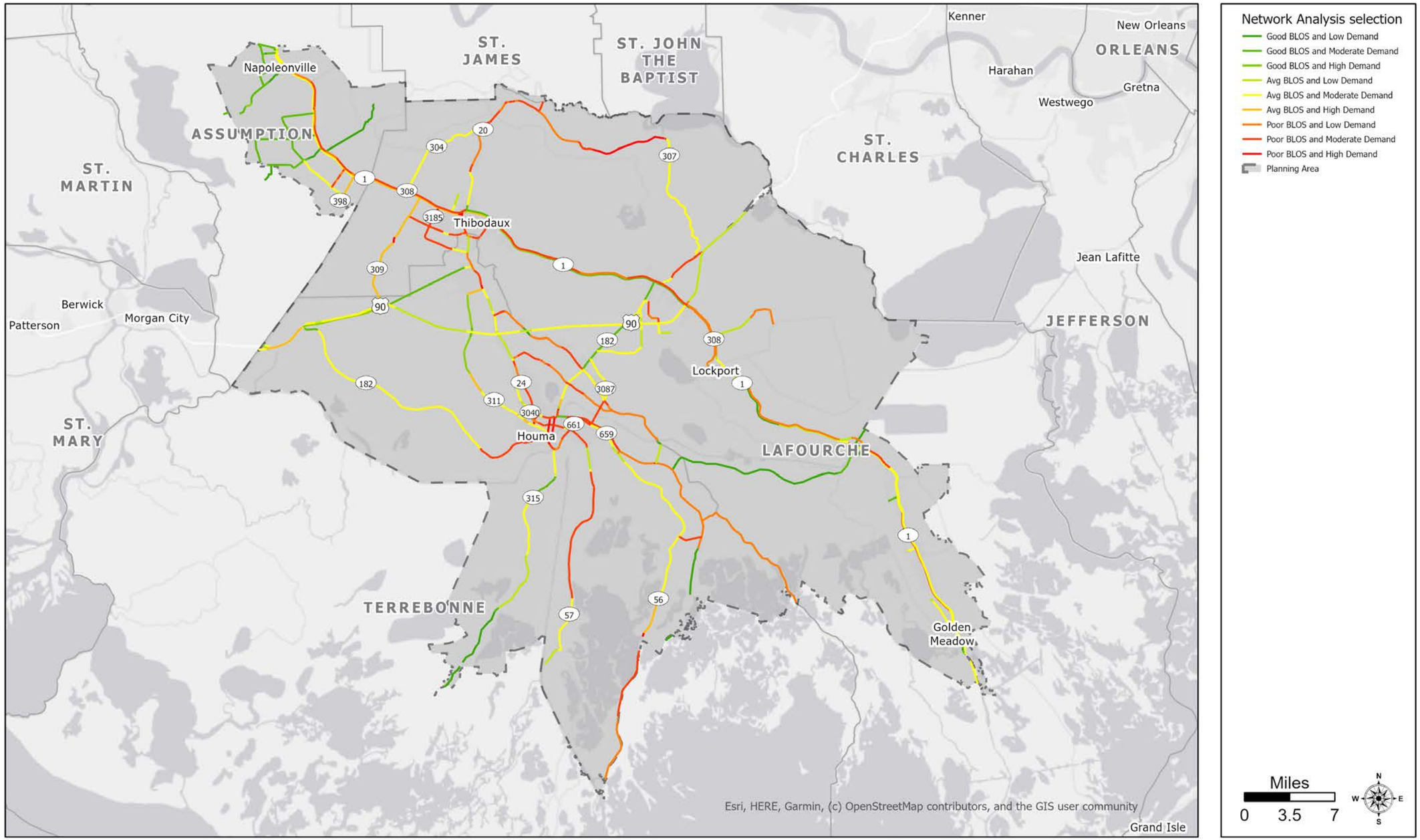


**Figure 4.3: Bicycle Network Analysis**




Data Source: LADOTD

Disclaimer: This map is for planning purposes only.

## 4.2 Existing Traffic and Usage Patterns

In general, mode choice for both workers and students has dramatically changed since the mid-1900s; shifting from active modes like bicycling and walking to vehicles, either by driving alone or carpooling. The population movement from urban cores to suburbs increased distances between locations, making active transportation less attractive and less feasible.

Table 4.1 shows that the majority of workers in the U.S. drive to work and Figure 4.4 displays the decrease in walking to work over time.

Mode choice for students has also followed a similar pattern. According to a 2011 report from the National Center for Safe Routes to School, the percent of children five to fourteen years that usually walked or bicycled to school dropped from 48 percent to 13 percent. The study also found that from 1969 to 2009, the percent of children in grades K–8 that lived within one mile of school dropped from 41 percent to 31 percent. Distance from school greatly affects mode choice.

The 2017 National Household Travel Survey found that 80.9 percent of students who lived a quarter mile or closer to school walked or biked, while less than one percent of students walked or biked if they lived more than two miles from school.

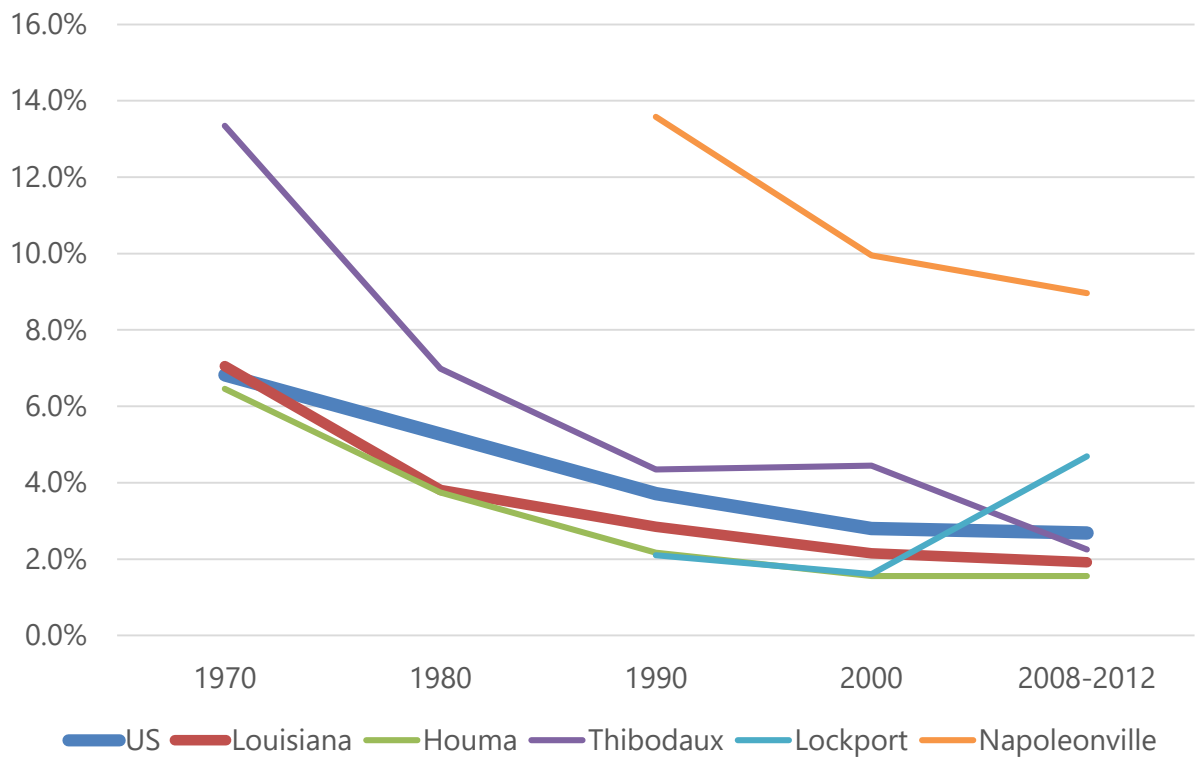
Historical Census and ACS data shows that walking to work trips in the communities throughout the MPA have decreased steadily since 1970. Figure 4.4 shows this decrease along with a small increase in Lockport since 2000. While steadily declining, the Village of Napoleonville continues to have the highest percentage of people walking to work in the MPA. The City of Thibodaux dropped below the national average during the years since the 2000 Census.

**Table 4.1: Means of Transportation to Work**

| Mode | United States | Louisiana | HTMPO |
|---|---|---|---|
| Drove Alone | 76.4% | 82.7% | 83.2% |
| Carpooled | 9.1% | 9.3% | 8.9% |
| Transit | 5.0% | 1.3% | 0.5% |
| Walked | 2.7% | 1.8% | 1.3% |
| Bicycle | 0.6% | 0.5% | 0.4% |
| Other | 1.2% | 1.4% | 3.0% |

Note: Excludes those who worked from home
Source: ACS 2014-2018, Table S0801

**Figure 4.4: Percentage of People Walking to Work, 1970-2012**

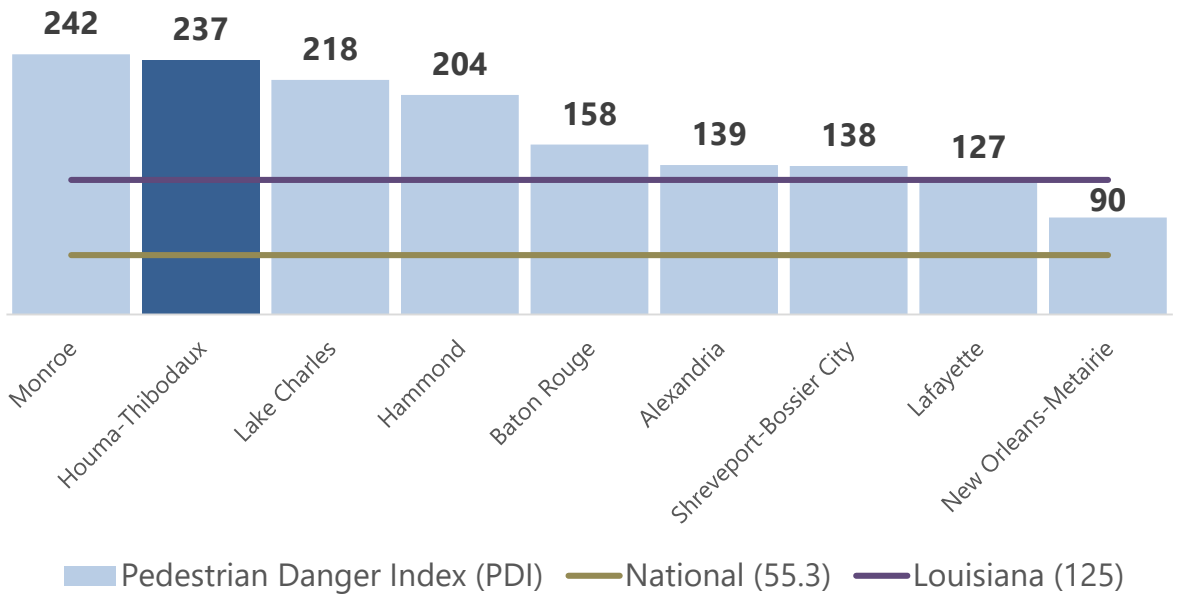



Source: IPUMS NHGIS, University of Minnesota, www.nhgis.org

## 4.3 Bicycle and Pedestrian Crashes

According to Smart Growth America's "Dangerous by Design" report, the Houma-Thibodaux metro region has the second highest Pedestrian Danger Index (PDI) score in the state (Figure 4.3). In fact, from 2014-2018, there were 254 crashes involving pedestrians with 32 fatalities and 187 injuries (9 severe). During the same years, there were 169 crashes involving bicycles with 7 fatalities and 141 injuries (9 severe) (Table 4.4).

### Figure 4.5 Pedestrian Danger Index




*Source: Smart Growth America, 2019*

Table 4.2 shows data on bicycle crashes in the MPO from 2014-2018. Neither the bicycle nor pedestrian data notes whether the bicyclist or pedestrian was the person injured. Table 4.3 shows pedestrian crash data in the MPO from 2014-2018. Table 4.4 summarizes the severity of all bicycle and pedestrian injuries from 2014-2018.

### Table 4.2: Bicycle Crashes in MPA (2014-2018)

| Crash Type | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Fatal | 1 | 3 | 1 | 1 | 1 | 7 |
| Non-Fatal | 25 | 36 | 33 | 38 | 30 | 162 |
| **All Crashes** | **26** | **39** | **34** | **39** | **31** | **169** |

Source: Crash 3 Database

### Table 4.3: Pedestrian Crashes in MPA (2014-2018)

| Crash Type | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| Fatal | 10 | 2 | 8 | 6 | 6 | 32 |
| Non-Fatal | 46 | 43 | 44 | 45 | 44 | 222 |
| **All Crashes** | **56** | **45** | **52** | **51** | **50** | **254** |

Source: Crash 3 Database

### Table 4.4: Severity of Bicycle and Pedestrian Crashes in MPA (2014-2018)

| Severity | Bicycle Crashes | Pedestrian Crashes | Percentage |
|---|---|---|---|
| Fatal | 7 | 32 | 9% |
| Severe Injury | 7 | 9 | 4% |
| Serious Injury | 37 | 70 | 25% |
| Moderate Injury | 97 | 108 | 48% |
| Complaint | 21 | 35 | 13% |
| Property Damage Only | 0 | 0 | 0% |
| **Total** | **169** | **254** | **100%** |

Source: Crash 3 Database

## 4.4 Regional Bicycle and Pedestrian Demand Analysis

In order to better understand the existing potential demand for pedestrian and bicycle trips, a latent demand score analysis was conducted that attempts to illustrate potential demand based on characteristics of the built environment, location of major attractors, and demographics.

The demand analysis is the same for pedestrians and bicyclists. The mapping exercise used fine-grained information to assess an area's potential demand for pedestrian or bicycle trips based on a 0-100 scale. Points were awarded based on the factors summarized in Table 4.5.

Figure 4.5 shows the results of the latent demand score analysis. Again, this exercise reflects relative potential demand, not absolute demand. Simply put, it shows which areas are more likely to have high or low demand relative to all other areas within MPA. It does not attempt to quantify the actual number of bicycle or pedestrian trips occurring in these areas.

The analysis indicates that potential bicycle and pedestrian demand is greatest in the downtown cores of Houma and Thibodaux. Demand is highest around Houma's East Side and in western Thibodaux

**Table 4.5: Bicycle and Pedestrian Demand Factors**

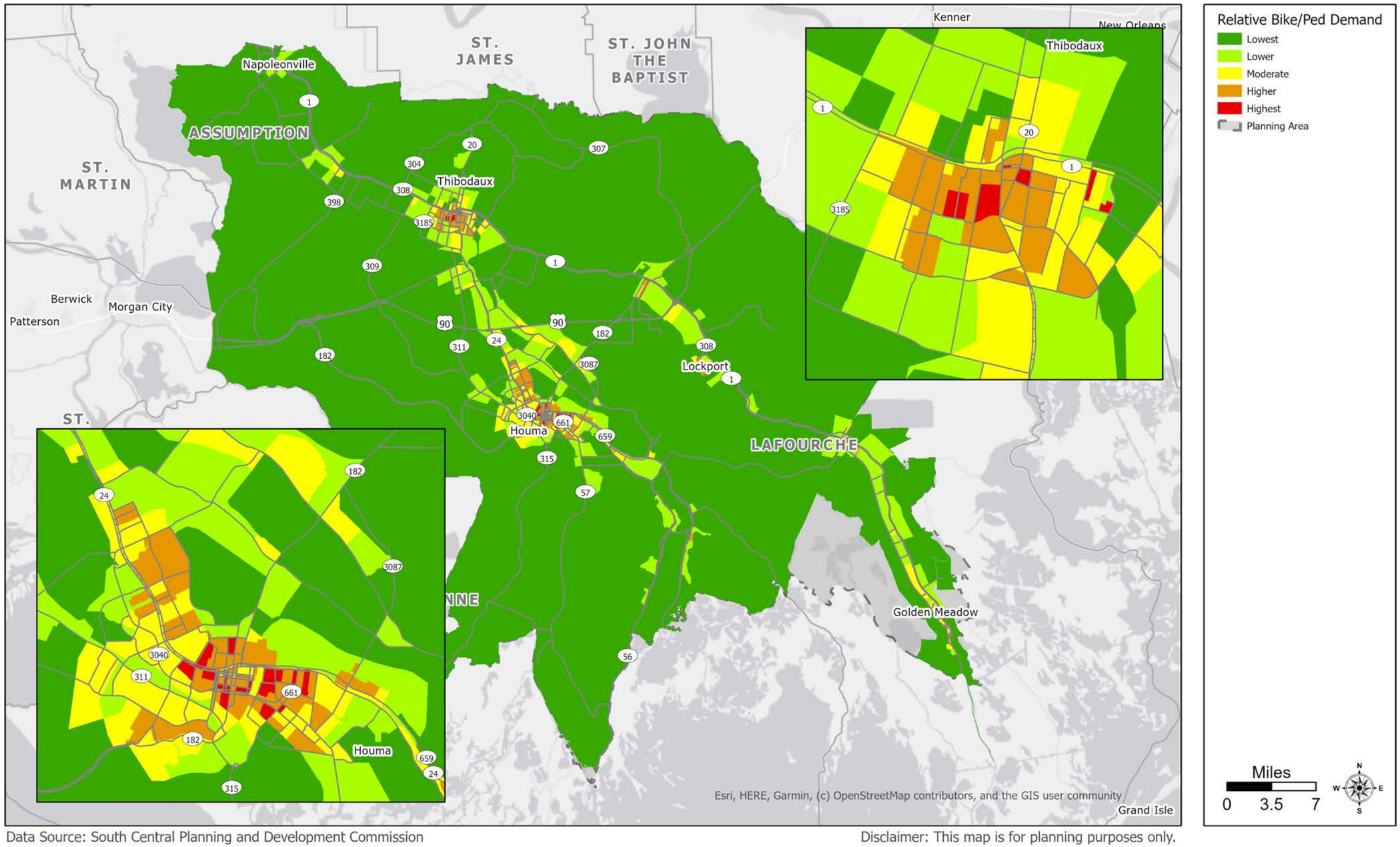
| Factor | Measure | Maximum Points |
|---|---|---|
| Land Use | Population, jobs, and students per acre | 30 |
| | Within half mile of popular destination(s)[1] | 15 |
| Demographic | Senior (65+) and youth (<18) population per acre | 10 |
| | Households with no vehicle available or on-campus housing unit[2] | 25 |
| Travel Environment | Intersections per square mile[3] | 20 |
| | **Total Possible Points** | **100** |

[1]Popular destinations are parks, major recreation centers, schools, libraries, hospitals, grocery stores, pharmacies, convenience stores, and eating and drinking places. Universities were weighted 10x, other schools and hospitals were weighted 5x. Grocery stores, pharmacies, convenience stores, dollar stores, and parks/rec centers/libraries were weighted 2x. Eating and drinking places were weighted 1x.

[2]On-campus housing units calculated by dividing group quarters dorm population by 2.2

[3]Intersections with at least 4 segments are weighted 2x

**Figure 4.6: Existing Bicyle and Pedestrian Demand**




Data Source: South Central Planning and Development Commission

Disclaimer: This map is for planning purposes only.

## 4.5 Existing Plans and Policies

In recent years, steps have been taken at the state and regional levels which make walking and cycling more viable modes of transportation.

### Statewide Plan

In 2009, the LADOTD finalized the *Louisiana Statewide Bicycle and Pedestrian Master Plan* to ensure that bicycling and walking are fully integrated into the state's transportation system. The plan established new policies which encourage a complete and multi-modal transportation system for the state. Some highlights include:

- The LADOTD will consider the needs of pedestrians and bicycles at appropriate stages during all projects and use best practices to ensure facilities are built to appropriate standards.
- Safety and comfort of cyclists and pedestrians will be provided for, and every effort will be made to reduce crashes and injuries associated with these modes.
- Restricting bicycle and pedestrian access should not be considered as an appropriate strategy, with the exception of those limited access facilities where pedestrians and bicycles are prohibited.
- The LADOTD will strive to ensure that projects do not become barriers to walking and bicycling.

### Louisiana Complete Streets Policy

A "complete street" is a street that is designed and operated to allow all types of users – including, but not limited to, bicyclists, motorists, and transit users of all ages and physical abilities – to safely use and traverse the right-of-way. A Complete Streets Policy directs communities to ensure that every transportation project undertaken, whether a new road, a major resurfacing project, or a transit investment, takes into consideration the needs of all potential users, and strives to maximize safety for all.

In 2009, The Louisiana Department of Transportation and Development convened a Complete Streets Work Group in fulfillment of the request of the state legislature. This process resulted in the adoption of an award winning Complete Streets Policy ("Innovations for Sustaining Places Award: Best Practices," Louisiana Chapter of the American Planning Association, 2011).

### MPO Plan

At the November 12, 2009 Policy Committee meeting of the Houma-Thibodaux MPO, the Policy Committee directed the MPO staff to develop a region-wide bicycle and pedestrian plan. As such, the Active Transportation Committee began meetings in February 2011. Attendees

included stakeholders from Assumption, Lafourche, St. Charles, St. James, St. John the Baptist, and Terrebonne parishes. In addition, SCPDC staff met with each parish during the months of February and March 2012 in lieu of committee meetings. Input from these committee and individual meetings directly influenced the format and contents of the plan. This plan won statewide and national awards including the 2014 Louisiana APA award for Excellence Award for a Process and was highlighted in the application for the MPO's 2013 AMPO award for Outstanding Overall Achievement for a Non-TMA MPO.

This plan is currently being updated with a greater focus on safety data and recommended policies. The updated plan is due to be completed sometime in 2021.

# 5.0 Public Transit

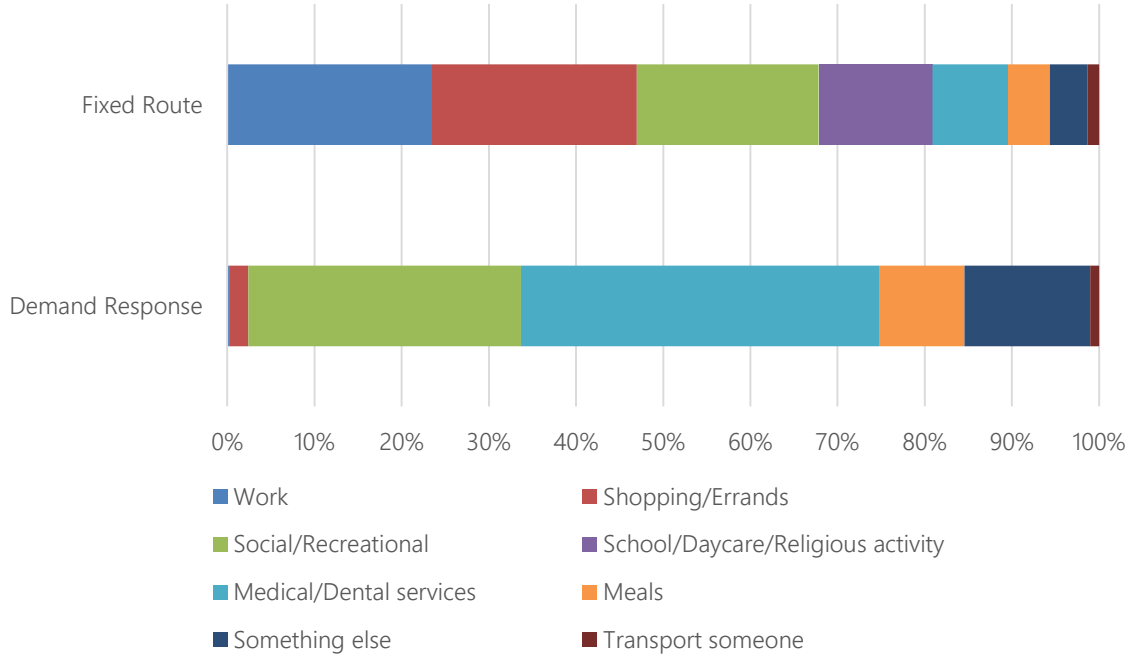
Public transit provides people with access to the places they need to go – work, school, grocery stores, medical facilities, and other destinations. For those that have no other choice, either because of economic or physical limitations, it is a lifeline service. For others, it reduces the burden of transportation costs and serves as a convenient alternative to driving.

Public transit also has significant benefits for the entire community as it can increase local business access to skilled workers, reduce congestion and emissions, reduce urban sprawl, and foster walkable communities.

Still, in small metropolitan areas like the Houma-Thibodaux area, public transit accounts for a small percentage of all trips– 2.5% according to the 2017 National Household Travel Survey.

For those that do use public transit in these areas, trip purposes vary substantially. People riding fixed routes are primarily traveling for work, shopping, or social/recreational purposes. People using demand response services are overwhelmingly traveling for medical or social/recreational purposes. However, trip purpose patterns will ultimately depend on the availability of the service.

**Figure 5.1: Trip Purposes for Transit Riders in Small Metro Areas**




Note: Small Metro Area = under 250,000 residents
Source: 2017 National Household Travel Survey

## 5.1 Good Earth Transit

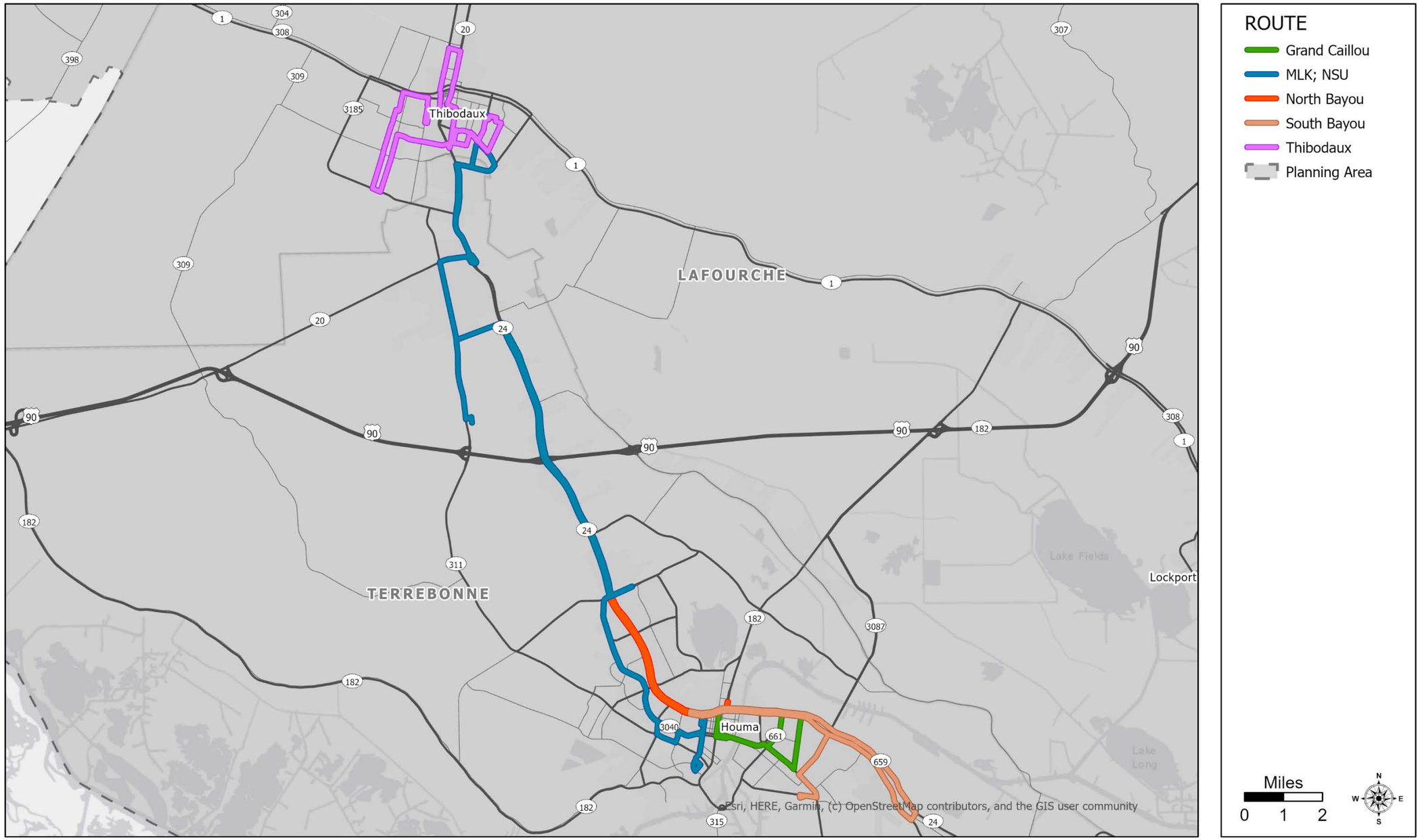
### Services Provided

Good Earth Transit, the area's urban, fixed-route provider, began operations on February 12, 1997 and is the only fixed-route public bus service in the study area. Good Earth's mission is to provide "safe and reliable transit and quality service for Terrebonne Parish."

Good Earth's initial service in Terrebonne was provided with four bus lines that covered much of downtown Houma and connected to Nicholls State University. In 2008, the City of Thibodaux contracted Good Earth to expand service within the city. The result was the addition of a fifth bus route, a Thibodaux "loop," which connected Thibodaux to the existing Terrebonne lines.

Good Earth serves an area of 57 square miles with a population of roughly 83,000. There are 369 bus stops. Service is provided weekdays from approximately 6:00 a.m. to 7:00 p.m. Weekend and holiday services operates from approximately 8:00 a.m. to 5:00 p.m. In Thibodaux, service is offered on weekdays from 6:00 a.m. to 6:00 p.m. Average headways vary with routes, with overall peak headways averaging about 40 minutes. Good Earth operates seven buses on fixed routes in Houma and one in Thibodaux. It also operates complimentary para-transit on all routes on an as needed basis to qualifying individuals. In all, the system fleet consists of 12 heavy-duty Gillig buses and 5 cutaway busses. The cutaway vehicles are used on the Thibodaux fixed route and for paratransit services. The paratransit service is a curb to curb demand response system available to people with disabilities.

**Figure 5.2: Good Earth Transit Service Area**




Data Source: Terrebonne Parish

Disclaimer: This map is for planning purposes only.

## Ridership Trends

From 2014 to 2018, ridership on GET's demand response services have decreased from a high of 4,860 in 2016 to 4,068 in 2018. Ridership on its fixed route service have decreased from 164,302 in 2014 to 156,089 in 2018 (see FigTable 5.1).

GET 2018 ridership by route is displayed in Table 5.2. The North Bayou and Grand Caillou were the most used routes in 2018. The MLK and NSU routes, when combined, also represents a significant portion of the system ridership at 32.9%. The South Bayou route was the least used in 2018 with 11.8%.

### Table 5.1: Good Earth Transit Annual Ridership by Mode, 2013-2017

| | | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| Trips | Demand Response | 4,421 | 4,418 | 4,860 | 4,032 | 4,068 |
| | Fixed Route | 164,302 | 153,884 | 163,588 | 154,854 | 156,089 |
| | Total | 168,723 | 158,302 | 168,448 | 158,886 | 160,157 |

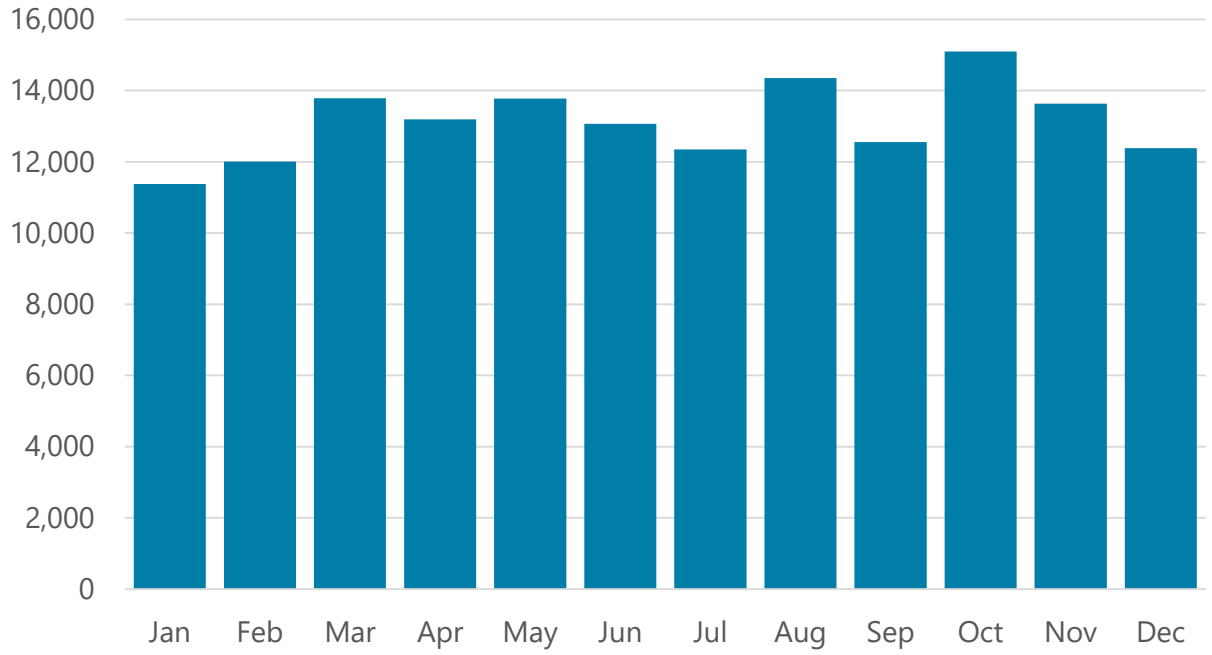
Source: National Transit Database

### Table 5.2: Good Earth Transit 2018 Ridership by Route

| Routes | 2018 | |
|---|---|---|
| | # | % |
| Grand Caillou | 31,931 | 20.8% |
| North Bayou | 31,636 | 20.6% |
| NSUO | 22,719 | 14.8% |
| Thibodaux | 21,330 | 13.9% |
| South Bayou | 18,090 | 11.8% |
| NSUI | 15,065 | 9.8% |
| MLK | 12,672 | 8.3% |
| **Total** | **153,443** | **100.0%** |

Source: Terrebonne Parish Government

**Figure 5.3: Good Earth Transit Ridership by Month, 2018**




Source: Terrebonne Parish Government

## Operating Trends

GET's ridership, number of vehicles operated, and its operating budget have remained consistent over the last five years. The system is heavily subsidized, with fares making up only 6 to 8 percent of operating costs.

The system averages nearly 8 trips per hour and just under ½ trip per mile.

### Table 5.3: Recent Operating Characteristics for Good Earth Transit Service

| General Performance | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| Service Area Population | 82,803 | 82,803 | 82,803 | 82,803 | 82,803 |
| Passenger Trips | 168,723 | 158,302 | 168,448 | 158,886 | 160,157 |
| Total Operating Expense | $1,714,970 | $1,991,841 | $1,912,306 | $1,839,729 | $1,906,708 |
| Service Supply and Quality | | | | | |
| Vehicles Operated in Maximum Service | 12 | 8 | 10 | 10 | 11 |
| Vehicle Revenue Miles | 379,555 | 378,869 | 367,107 | 378,780 | 372,987 |
| Vehicle Revenue Hours | 22,738 | 20,380 | 20,154 | 20,263 | 20,722 |
| Average Age of Fleet | 4.5 | 6 | 6.7 | 7.7 | 8.7 |
| Service Consumption | | | | | |
| Passenger Trips per Capita | 2.04 | 1.91 | 2.03 | 1.92 | 1.93 |
| Passenger Trips per Revenue Mile | 0.44 | 0.42 | 0.46 | 0.42 | 0.43 |
| Passenger Trips per Revenue Hour | 7.42 | 7.77 | 8.36 | 7.84 | 7.73 |
| Efficiency | | | | | |
| Operating Expense per Capita | $20.71 | $24.06 | $23.09 | $22.22 | $23.03 |
| Operating Expense per Passenger Trip | $10.16 | $12.58 | $11.35 | $11.58 | $11.91 |
| Operating Expense per Revenue Mile | $4.52 | $5.26 | $5.21 | $4.86 | $5.11 |
| Operating Expense per Revenue Hour | $75.42 | $97.74 | $94.88 | $90.79 | $92.01 |
| Farebox Recovery | | | | | |
| Fare Revenue | $138,740 | $121,776 | $136,557 | $128,128 | $132,165 |
| Farebox Recovery Ratio | 8.09% | 6.11% | 7.14% | 6.96% | 6.93% |

Source: National Transit Database

## Safety and Security Trends

As a recipient of federal transportation funds, GET is required to report safety and security events occurring on a transit right-of-way, in a transit revenue facility, in a transit maintenance facility, or involving a transit revenue vehicle.

Table 5.4 shows GET's reported safety and security events from 2014 to 2018.

### Table 5.4: Good Earth Transit Safety and Security Events

| | 2014 | 2015 | 2016 | 2017 | 2018 | Total |
|---|---|---|---|---|---|---|
| All Events | 1 | 4 | 2 | 6 | 4 | 17 |
| Fatalities | 0 | 0 | 0 | 0 | 0 | 0 |
| Injuries | 1 | 1 | 2 | 2 | 4 | 10 |

Source: National Transit Database

## Transit Asset Management

Good Earth Transit annually develops a Transit Asset Management - or TAM - Plan. This plan helps the agency and the MPO better plan for future capital improvements. The details of this plan are listed on the following pages.

Over the next five years, eight of Good Earth Transit's heavy duty buses will reach the end of useful life. Good Earth plans to rebuild the engines of these vehicles, extending the life from 15 years to 20 years. In addition, five twelve-passenger cut-away buses will also reach the end of useful life. These vehicles will be replaced with new cut-away buses with the existing vehicles being held in reserve for backup or emergency service.

Over the next 25 years, as these vehicles are replaced, consideration will be given to electric or other alternative fuel vehicles as those technologies mature.

### Table 5.5: Transit Asset Management Performance Measures

| Asset Category | FTA established Performance Measure | Reported by GET |
|---|---|---|
| Rolling Stock | % of revenue vehicles exceeding ULB | Yes |
| Equipment | % of non-revenue service vehicles exceeding ULB | Yes |
| Facilities | % of facilities rated under 3.0 on the TERM scale | Yes |
| Infrastructure | % of track segments under performance restriction | No |

Note: ULB = Useful Life Benchmark; TERM is software used to rate facility conditions
Source: Federal Transit Administration

**Useful Life Benchmark**: The expected lifecycle of a capital asset for a particular transit provider's operating environment, or the acceptable period of use in service for a particular transit provider's operating environment.

Note: ULB is distinct from the useful life definition used in FTA's grant programs

GET currently has 17 vehicles in its rolling stock fleet (see Table 5.6). This fleet consists of two different types of vehicles, as shown on the inventory in Table 5.7. As shown in Table 5.6, GET meets the performance target for rolling stock and facilities, but does not met the target for equipment in its fleet. A detailed vehicle inventory and condition assessment is provided in Table 5.7.

Table 5.8 details GET's strategies for meeting the various targets.

### Table 5.6: Transit Asset Management 2018 Performance and Target

| Asset Category | Total Number | Average Age | Avg TERM Condition | Average Value | % At or Past ULB | 2019 Target | Status |
|---|---|---|---|---|---|---|---|
| Equipment | 6 | 7.3 | N/A | $22,736 | 50% | 10% | Target Not Met |
| Facilities | 4 | 11.5 | 4.5 | $746,717 | 0% | 0% | Met |
| Rolling Stock | 17 | 7.4 | N/A | $241,806 | 0% | 0% | Met |

Source: Good Earth Transit, Transit Asset Management Plan, 2019

### Table 5.7: Good Earth Transit Inventory

| Category | Class | Name | ID/Serial No. | Age (Yrs) | Value | ULB (Yrs) | Past ULB |
|---|---|---|---|---|---|---|---|
| Rolling Stock | HD Bus | 601G | 15GGE2719B10 | 8 | $332,934 | 15 | No |
| Rolling Stock | HD Bus | 602G | 15GGE2710B10 | 8 | $332,934 | 15 | No |
| Rolling Stock | HD Bus | 603G | 15GGE2712B10 | 8 | $332,934 | 15 | No |
| Rolling Stock | HD Bus | 604G | 15GGE2714B10 | 8 | $332,934 | 15 | No |
| Rolling Stock | HD Bus | 609 | 15GGB2712810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 610 | 15GGB2714810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 611 | 15GGB2716810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 612 | 15GGB2718810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 613 | 15GGB2718810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 614 | 15GGB2710710 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 615 | 15GGB2714810 | 11 | $303,288 | 15 | No |
| Rolling Stock | HD Bus | 616 | 15GGB2716810 | 11 | $303,288 | 15 | No |
| Rolling Stock | 12-2 Bus | 625 | 1FDFE4FS8KDC1 | 1 | $65,267 | 5 | No |
| Rolling Stock | 12-2 Bus | 624 | 1FDFE4FS3KDC1 | 1 | $65,267 | 5 | No |
| Rolling Stock | 12-2 Bus | 637 | 1FDFE4FS9KDC1 | 1 | $65,267 | 5 | No |
| Rolling Stock | 12-2 Bus | 638 | 1FDFE4FS9KDC1 | 1 | $65,267 | 5 | No |
| Rolling Stock | 12-2 Bus | 639 | 1FDFE4FS6KDC1 | 1 | $65,267 | 5 | No |

Source: Good Earth Transit, Transit Asset Management Plan, 2019

**Table 5.8: Good Earth Transit Investment Strategies**

| Asset Category/Class | Overhaul Strategy |
|---|---|
| HD Bus | Overhaul of engines and transmissions are solely done on an as needed basis. We do not set specific time or mileage for overhaul of these components. |
| Cutaway Bus | No overhaul strategy, we do not typically overhaul this type of equipment. We replace these units before overhauls are needed. |
| Service Vehicle | No overhaul strategy, we do not typically overhaul this type of equipment. We replace these units before overhauls are needed. |
| **Asset Category/Class** | **Disposal Strategy** |
| All Equipment | All equipment including revenue and service vehicles are liquidated by surplus auction sale. |
| **Asset Category/Class** | **Acquisition and Renewal Strategy** |
| Cutaway Bus | Cutaway buses will be replaced by units acquired from the Statewide contract for FTA buses when possible. Good Earth Transit will no longer use Diesel buses due to emission control problems. We will procure either gasoline or propane vehicles in the near future, until other fuel options become available. We will also focus on procuring low floor designs due to minimize lift issues and to have alternative means to operate ramp or lift in case of failure. |

## 5.2 Coordination of Services

Several agencies provide demand/response and/or para-transit service to the general public, elderly, and the disabled within the MPA. The rural public transportation providers are Terrebonne Parish Council on Aging and Assumption Parish Council on Aging. Both agencies receive section 5311 rural operating and capital assistance as well as section 5310 elderly and disabled capital assistance. Four agencies are funded solely by section 5310 to provide transportation services to the elderly or disabled. These agencies are the Terrebonne ARC, the Assumption ARC, the Lafourche ARC, the Lafourche Special Education District #1, and the Lafourche Council on Aging.

### Coordinated Human Services Transportation Plan

The purpose of the *Coordinated Human Services Transportation Plan* is to identify the transportation needs of individuals with disabilities, older adults, and those with lower incomes, and to identify and prioritize strategies for meeting those needs. The primary reason for this is to promote transportation equity among those who may otherwise be transportation disadvantaged. In order for these populations to benefit from full participation in society enjoyed by the general population it is critical that they are provided transportation suited to their needs.

The *Coordinated Human Services Transportation Plan* for the parishes of Assumption, Lafourche, St. James, St. Mary, and Terrebonne is a "unified, comprehensive strategy for public transportation service delivery that identifies the transportation needs of individuals with disabilities, older adults, and individuals with limited incomes, lays out strategies for meeting these needs, and prioritizes services for funding and implementation."

### Regional Transit Committee

The MPO's Regional Transit Committee is made of multiple stakeholders throughout the MPA and surrounding rural communities. These meetings are held quarterly.

Membership of the committee is made up of those agencies receiving FTA funds in the parishes of Assumption, Lafourche, St. James, St. Mary, and Terrebonne, as well as other interested parties. This includes Good Earth Transit, the Assumption ARC, the Assumption Parish Council on Aging, the Lafourche ARC, the Lafourche Council on Aging, the Lafourche Special Education District #1, St. Mary Community Action, the St. James Parish Human Resources department, the Terrebonne ARC, and the Terrebonne Parish Council on Aging.

## 5.3 Intercity Public Transit

The Houma-Thibodaux MPA is served by Greyhound and Amtrak.

Greyhound has several stops in the study area. Stops are located in downtown Houma, Thibodaux, and Raceland. Riders can travel from these locations to New Orleans, Baton Rouge, and Lafayette where they can then catch a bus to other parts of the nation. The latest information on fares, departures times, and service areas can be found on Greyhound's website https://www.greyhound.com.

There is one Amtrak station in the study area, located in Schriever off Highway 20. The station is part of the *Sunset Limited* line. The MPO, through its Amtrak Technical Advisory Subcommittee, is currently studying options to make ADA improvements at the station and bring more awareness of the station to the general public. More information on proposed improvements at the Schriever Station can be found in DOTD's *Louisiana Passenger Rail Station Assessment* prepared by HDR Engineering in December of 2018.

The latest information on fares, departure times, and service areas can be found on Amtrak's website https://www.amtrak.com.

## 5.4 Transportation Network Company Partnerships

A Transportation Network Company (TNC) is a private company that matches passengers with vehicles, via websites and mobile apps. These are also referred to as ride-hailing services and Uber and Lyft are the largest of these service providers. Currently, both Uber and Lyft serve the Houma-Thibodaux area.

While these transportation services are not public transit, TNCs are increasingly partnering with the public sector to provide public transit pilot programs. While Uber and Lyft provide traditional ride-hailing services in the MPA, there are currently none of these public-private pilot programs in the MPA.

## 5.5 Travel Demand Management Program

The MPO receives funding from DOTD to implement a Travel Demand Management (TDM) program, primarily focused on the promotion of vanpooling and carpooling. Since that time, the MPO has researched how other urbanized areas have implemented similar programs and have begun outreach to employers and other stakeholders in the community.

The next phase of the program is to identify partners with whom the MPO can begin a pilot vanpool program. MPO staff will also continue to work with local stakeholders to identify location for park and ride lots.

While vanpooling is not traditionally considered in many transit programs, the HTMPO has identified it as a potential solution for individuals whose origin and destination points or travel times may not align with traditional fix-route service, and for those who do not fall within the mission of many of the 5310 and 5311 service providers. Examples include individuals living in the rural areas of the parish needing to access job training centers in the urban area.

## 5.6 Regional Transit Demand Analysis

The regional demand analysis uses a GIS-based approach to identify the level of transit service supported throughout the MPA. There are a number of factors that can be analyzed to evaluate and predict transit demand in an area. Given the availability of data and regional scope of the 2045 MTP, the transit demand analysis focused on the following factors.

**Household density** – A higher concentration of population in an area creates more potential transit riders in an area. This is especially true of very dense areas, where other factors, such as parking availability or congestion, may influence demand.

**Employment density** – A higher concentration of employment in an area creates more potential transit riders in an area. This is especially true of very dense areas, where other factors, such as parking availability or congestion, may influence demand. Some studies argue that employment density is more important for predicting ridership than residential densities.

**Activity density** – In areas with both residential areas and employment, it is necessary to consider a combined density.

**Low-income household density** – Low-income persons are more likely to ride transit due to a greater likelihood that they do not have regular access to a vehicle or seek to minimize travel by automobile for economic reasons.

**Low-income employment density** – Low-income workers are more likely to ride transit due to a greater likelihood that they do not have regular access to a vehicle or seek to minimize travel by automobile for economic reasons.

**Density of adults without a vehicle** – Persons without access to a vehicle are more likely to ride transit due to a lack of other options. A person may lack a vehicle because of economic reasons, physical or mental ability, or because of a decision to live a car-free lifestyle.

**Street connectivity** – A well connected street network, assuming sufficient pedestrian infrastructure is provided, enables pedestrians to directly and conveniently access a transit stop or their destination. All things being equal, an area with better connectivity is more likely to attract a higher number of transit riders than an area with poor connectivity. Furthermore, connectivity increases the likelihood that a transit route will be able to serve an area in an efficient manner, with minimal deviations.

Table 5.9 shows the Transit Demand Analysis criteria and measurements. For each density criterion, an area's value is calculated. Before being assigned a level of service tier, all criteria

values are multiplied by an area's street connectivity factor. Based on these adjusted values, level of service tiers are then assigned, based on industry standard thresholds.

Figure 5.4 illustrates the results of this analysis and the distribution of transit demand throughout the region.

Based upon Figure 5.4, there are several areas within the MPA that could support fixed route service with frequencies between 15 – 30 minutes. These areas are concentrated around the urban cores of Houma and Thibodaux. Several areas that do not currently have any transit service would also support flexible transit service.

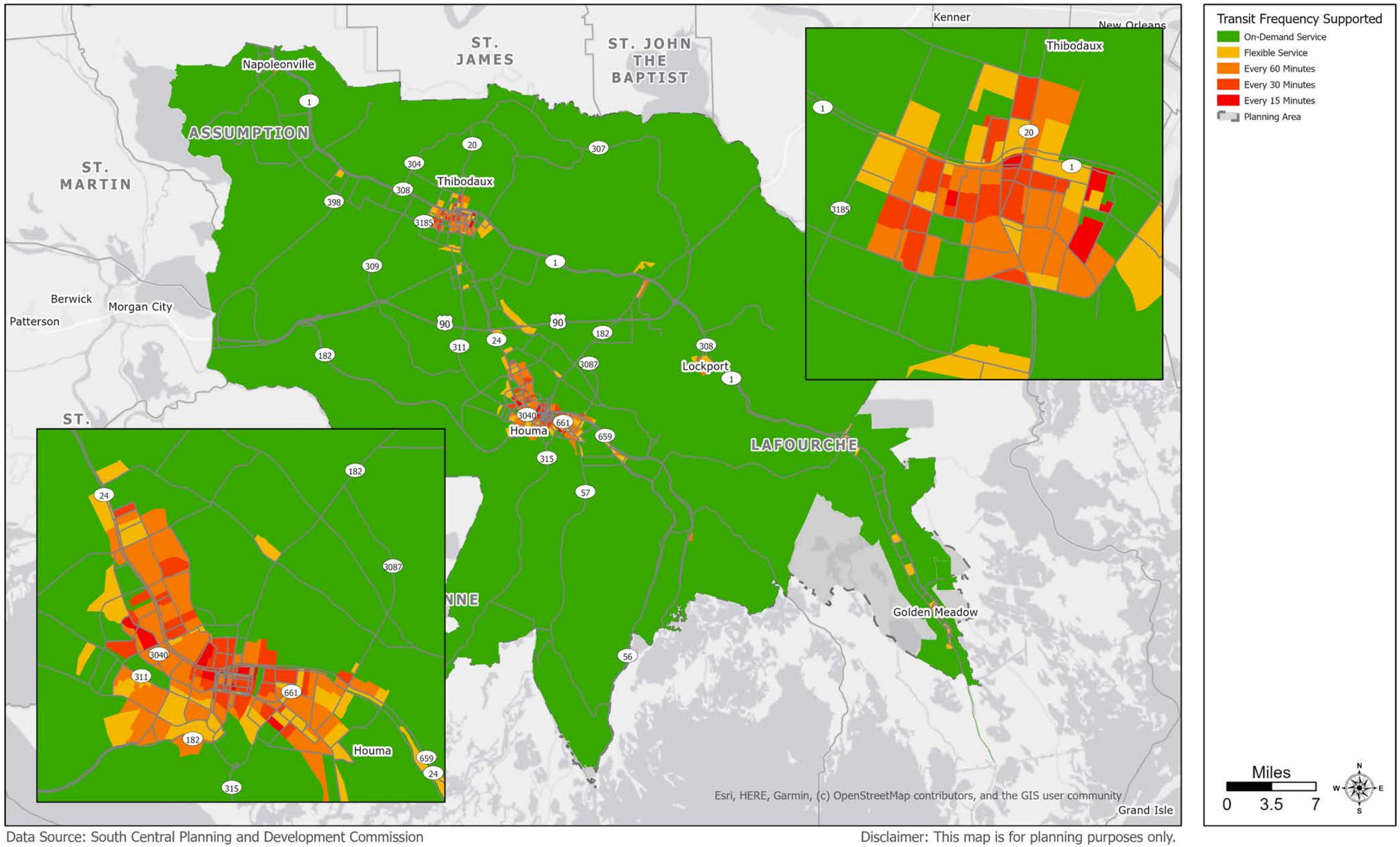
**Table 5.9: Transit Demand Analysis Criteria and Level of Service Thresholds**

| Criteria | Measurement | Transit Level of Service | | | | |
|---|---|---|---|---|---|---|
| | | On-Demand | Flexible | 60 min. | 30 min. | 15 min. |
| Residential Density | Households per acre | 0 to 1 | 1 to 2 | 2 to 4 | 4 to 7 | 7+ |
| Employment Density | Employment and college enrollment per acre | 0 to 5 | 5 to 10 | 10 to 25 | 25 to 50 | 50+ |
| Low-Income Residential Density | Households using food stamps per acre | 0 to 0.33 | 0.33 to 0.66 | 0.66 to 1.33 | 1.33 to 2.33 | 2.33+ |
| Transit Supportive Employment Density | Employment per acre for industries with high percentage of workers riding transit | 0 to 2.5 | 2.5 to 5 | 5 to 12.5 | 12.5 to 25 | 25+ |
| Residential Vehicle Availability | Households without vehicle per acre | 0 to 0.25 | 0.25 to 0.5 | 0.5 to 1 | 1 to 1.75 | 1.75+ |
| Activity Density | Sum of highest residential and employment density value | 0 to 3.75 | 3.75 to 7.5 | 7.5 to 18.75 | 18.75 to 37.5 | 37.5+ |
| Street Connectivity | Percentage of intersections that are four-way | 33%-50%, multiply values by 1.25; >50%, multiply values by 1.5 | | | | |

Note 1: Dorms were converted to households assuming an average of 2.5 people per dorm and assumed to be twice as likely to receive food stamps or lack a car as the regional average.

Note 2: Industries with high percentage of workers riding transit included NAICS codes: 44-45, 61, 62, 71, and 72

## Figure 5.4: Regional Transit Demand Analysis




Data Source: South Central Planning and Development Commission

Disclaimer: This map is for planning purposes only.