Transit Development Plan (TDP) Update 2017-2021

Montgomery Transit System

PREPARED FOR

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Executive Summary

An update of the M Transit System's 5-year Transit Development Plan (TDP) was conducted by the M Transit System in partnership with the Montgomery Metropolitan Planning Organization (MPO) and the City of Montgomery. The intent of the TDP is to guide operational changes and capital investments in the short-term to enhance the system, provide an improved experience for existing riders, and attract potential new customers.

This update is an analysis of the current transit service and ridership as well as demographics, employment, and land use in the City of Montgomery. A list of recommendations to increase the efficiency of transit service and improve accessibility to employment centers, hospitals and medical facilities, and shopping opportunities for M Transit riders is a key outcome of this process. Initial service recommendations were based on a review of existing conditions as well as system goals and objectives that were developed with input from the public, stakeholders, M Transit, and the City of Montgomery. These service recommendations were tested using the Transit Boardings Estimation and Simulation Tool (TBEST) modeling software and evaluated using performance measures tied to the goals and objectives.

A list of final recommendations was created from the highest performing recommendations. Systemwide performance measures were then calculated. Next, operating costs for the recommended system were estimated and potential funding sources were documented. Finally, an implementation plan for rolling out the recommended changes across the M Transit system was developed. The key findings of this update are grouped by section below.

Existing Service Structure

- The M Transit system operates 14 fixed routes Monday through Saturday
- Paratransit service is provided within the City of Montgomery limits
- There are two transfer centers located at:
  - Water and Molton Streets in Downtown Montgomery
  - West Fairview Avenue and Mobile Highway

- All vehicles, equipment and facilities are owned by the City of Montgomery
- First Transit operates the system under contract

Review of Previous Studies

The *2009 – 2013 Transit Development Plan* developed a set of recommendations to improve service efficiency. Due to funding shortfalls as a result of the Great Recession beginning at the end of 2007 and limited local support for the changes, none of the below recommendations were implemented:

- Routes were reconfigured to reduce run times and improve performance
- Routes 1 and 16 should be merged
- Route 9 should be divided into two routes
- Service to southwest Montgomery should be increased

The above recommendations were tested with new demographic and land use data to determine if they are still valid. Other findings from the *2009 – 2013 TDP Update* are:

- Highest transit demand was in neighborhoods south and west of downtown
- Poor on-time performance impacted timed transfers and system reliability
- The Intermodal Center offers good amenities, but opportunities for improving bicycle and pedestrian access exist

Findings from other relevant plans include:

- The M Transit is projected to receive approximately $21.6 million in federal funds through 2021, all of which is planned or programmed for fleet replacement and facilities rehabilitation (i.e. the Downtown Transfer Center, Fairview Transfer Center, and the Administrative/Maintenance Facility)
- The City of Montgomery population declined 2.5% between 2010 and 2015
- Employment is concentrated in Downtown Montgomery, along Southern and Eastern boulevards, and on I-85 between Taylor Road and Chantilly Parkway
- Low-income populations are located in southwest Montgomery and around the downtown area

- MPO projections show the density of the city will be constant through 2040
- Several bicycle routes and planned pedestrian improvements are adjacent to existing bus routes
- Routes 2, 3, 5, and 9 are all on roadways segments with congestion relief needs identified in the Congestion Management Plan

Public and Stakeholder Engagement

Throughout the TDP Update, a number of opportunities for the public, stakeholders, and partner agencies were held to gather input on the existing system as well as potential and final recommendations. Examples of engagement strategies include:

- Public meetings and open houses
- Interviews with key decision-makers
- Focus groups with major transit and mobility stakeholders
- Surveys of current transit riders and the general public

Market Analysis

The following traditional transit markets are generally served by the existing transit routes:

- Zero car households are in the northern part of Downtown Montgomery, near the Fairview Transfer Center, West Boulevard and US Route 331, Baptist Medical Center, Atlanta Highway, and East Boulevard
- Low income areas are concentrated in Downtown Montgomery, to the north and west of Downtown, and in Woodland Hills
- Young persons and seniors are fairly evenly distributed throughout the city
- The M Transit System provides access to areas with the high job densities, which are not projected to change much between 2010 and 2040
- From a land use perspective, within the City of Montgomery most areas and corridors with retail and residential uses are served by existing routes

Transit Development Plan Goals

Goals and objectives were based on a peer review of five other transit agencies and public and stakeholder input. The TDP goals include:

- Enhance the integration of transit services to support the economy and local land uses.

- Provide high quality mobility options with safe, efficient service, and multimodal connectivity.
- Ensure a high level of customer service through effective communication and public engagement.
- Maximize existing funding sources and assets to provide cost-effective service.
- Maintain reliability of the transit system service through a state of good repair

Ridership Data Summary

- There are currently 2,226 boardings per day
- The system operates from 4:40 AM to 9:35 PM
- There are an average of 9.02 passengers per vehicle revenue hour
- The current farebox recovery ratio is 10.9 percent

Recommended System

Two major focuses of the recommended system are providing more connections across the City of Montgomery and to reducing the time riders spend waiting, while minimizing increases in operating costs. Based on the TBEST model, the following are key performance increases of the recommended system:

- A 17% increase in fixed route operations costs is estimated
- A 17-32% increase in ridership is forecasted
- The increased ridership reduces cost per mile and average cost per trip
- Increased access to employment in the City of Montgomery
- Increased cross-town connectivity and direct connections

Other key findings regarding the recommended system include:

- The M Transit can provide the recommended service with existing vehicles
- Focusing on vehicle purchases will increase the reliability of the fleet
- Additional vehicles could improve headways throughout the system
- The M Transit System should continue striving to increase service frequency

Equipment and Facilities

- The M Transit System has 100 employees, made up of 50 drivers, 34 administrative positions, and 16 maintenance positions.
- There are 27 fixed route vehicles in the fleet

- Currently there are 11 demand response vehicles
- All fixed route vehicles are equipped with bicycle racks
- There are two transfer centers and one maintenance facility

Revenue and Expenditures

- Funding is through federal grants, the general fund, and farebox revenue
- The total operating cost for the M Transit System in 2014 was $7,310,783
- The TBEST model projected a 12% overall increase in costs to $8,288,495 including fixed route and paratransit operations

Implementation Plan

The implementation plan is for the five year duration of the TDP as detailed in the following figure.

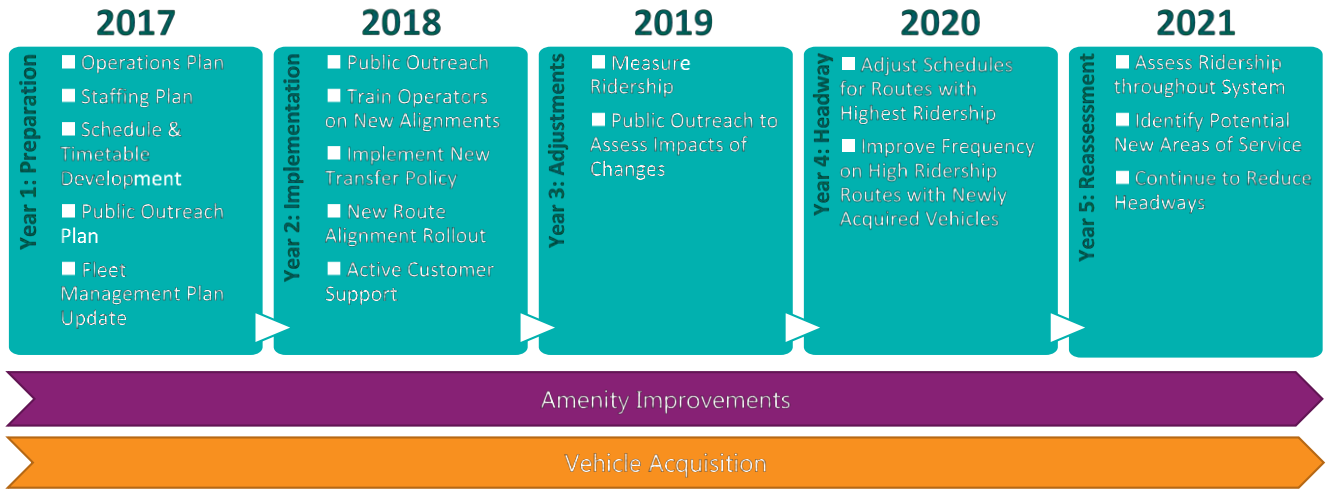
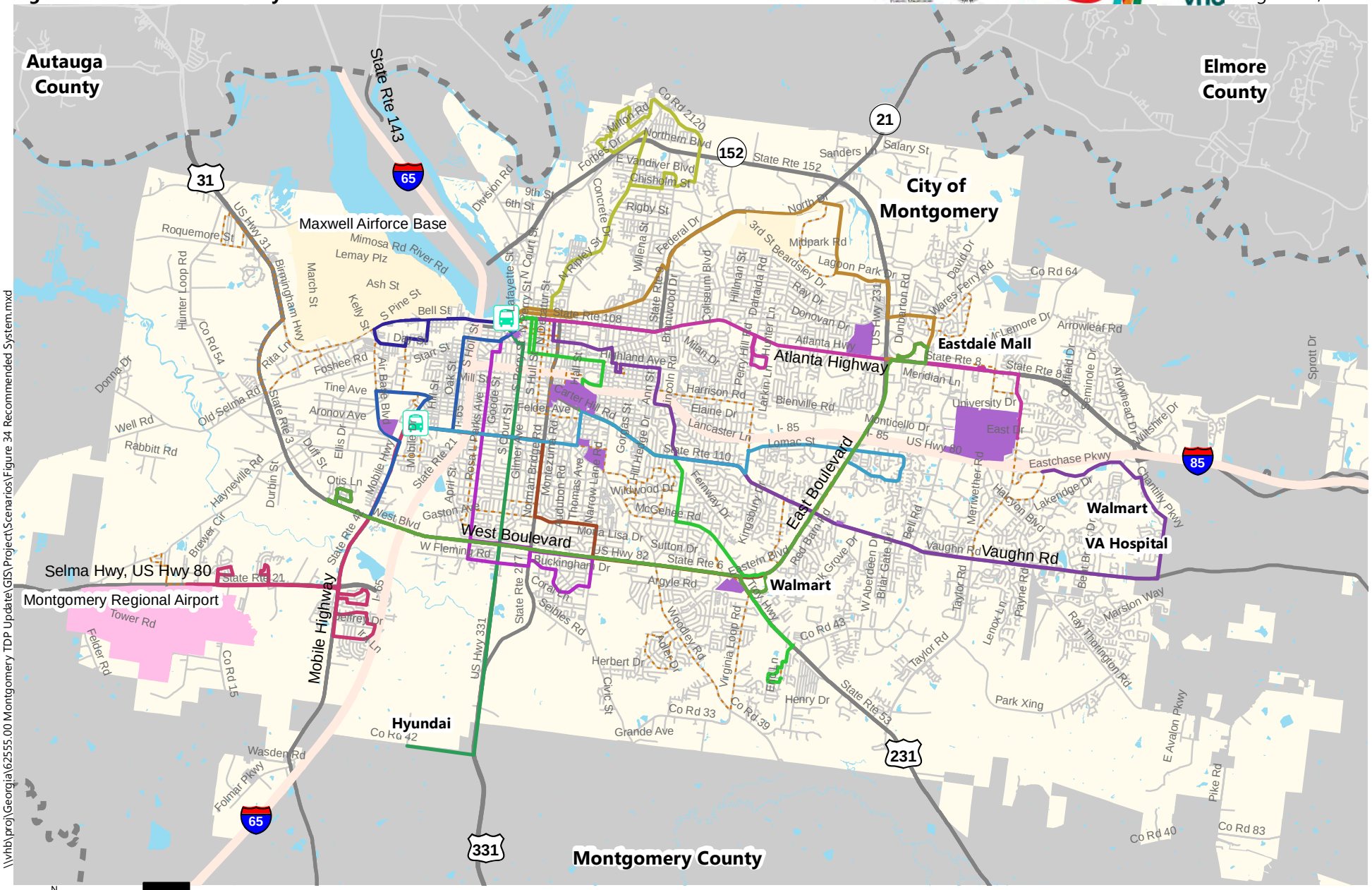


Figure ES-1: Recommended System

August 30, 2016



N

0 0.75 1.5 3 Miles

M Transit TDP | Montgomery, AL

M Transfer Centers
Hospitals
Local Roads
State & Federal Roads
Interstates
Montgomery Airport
Local Universities
Military Bases
Water
Montgomery County
Existing M Bus Routes

Recommended Routes

1
2
3
4
5
6
7
8
10
11
12
16
17

Sources: Montgomery MPO, U.S. Census, VHB

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Introduction

The M Transit System, in partnership with the Montgomery Metropolitan Planning Organization (MPO) and the City of Montgomery is updating its 5-year Transit Development Plan (TDP). This plan identifies service changes intended to increase transit service efficiency throughout Montgomery, as well as improve service, mobility and accessibility to jobs, medical appointments, and shopping.

This TDP Update provides background on previous transit plans in Montgomery and relevant other plans, describes findings from public engagement activities, provides a demographic market analysis, and performs a systemwide analysis to understand how the system is performing now and where the travel needs are. Using the goals and performance measures developed in this TDP Update, service recommendations were developed along with a discussion about funding sources, equipment needs, and implementation.

2

Service Structure

2.1 Existing System

The M Transit System in Montgomery provides service Monday through Saturday within Montgomery City limits. There are 14 fixed routes (Figure 1) with complementary paratransit service available within the City of Montgomery limits. The M Transit System provides connections throughout the City through two transfer centers located at the intersection of W. Fairview Avenue and Mobile Highway (2346 West Fairview Avenue) as well as Water Street and Molton Street downtown (495 Molton Street).

All routes connect to one of these transfer centers except Route 9 which provides a loop around Trenholm State Community college, Montgomery Town Center, and surrounding neighborhoods with opportunities for a free transfer at the One Center.

The M Transit System provides critical mobility options to those in neighborhoods that tend to be lower income and are more dependent on transit services, as well as local universities, hospitals, shopping destinations such as East Chase shopping center, and connections to the Montgomery Regional Airport. Services also provide access to the Maxwell Gunter Airforce Base main campus and annex, located on separate sides of the City.

Fares for the system are $2.00 for a one-way trip with free transfers at the transfer centers between routes. The system operates with a pulse schedule, where multiple routes pull into the transfer centers at the same time and allow transfers for rides. However, not all routes are operating on the same pulse schedule so some rider must wait at the transfer centers for their desired bus.

While the M Transit System does have designated stop locations with signs, schedules, benches, and/or shelters, this system is unique in that it also picks up at flagged stops. Anyone can hail the bus along its designated fixed alignment and if the bus driver deems it safe to stop, the bus will stop and pick-up that passenger. While this makes it convenient for riders, this can cause travel time issues if there are a lot of pickups located close to each other, as well as potential safety issues with riders desiring to board in unsafe locations. The final report will analyze how the flagger system is affecting the M Transit System and identify any associated recommendations.

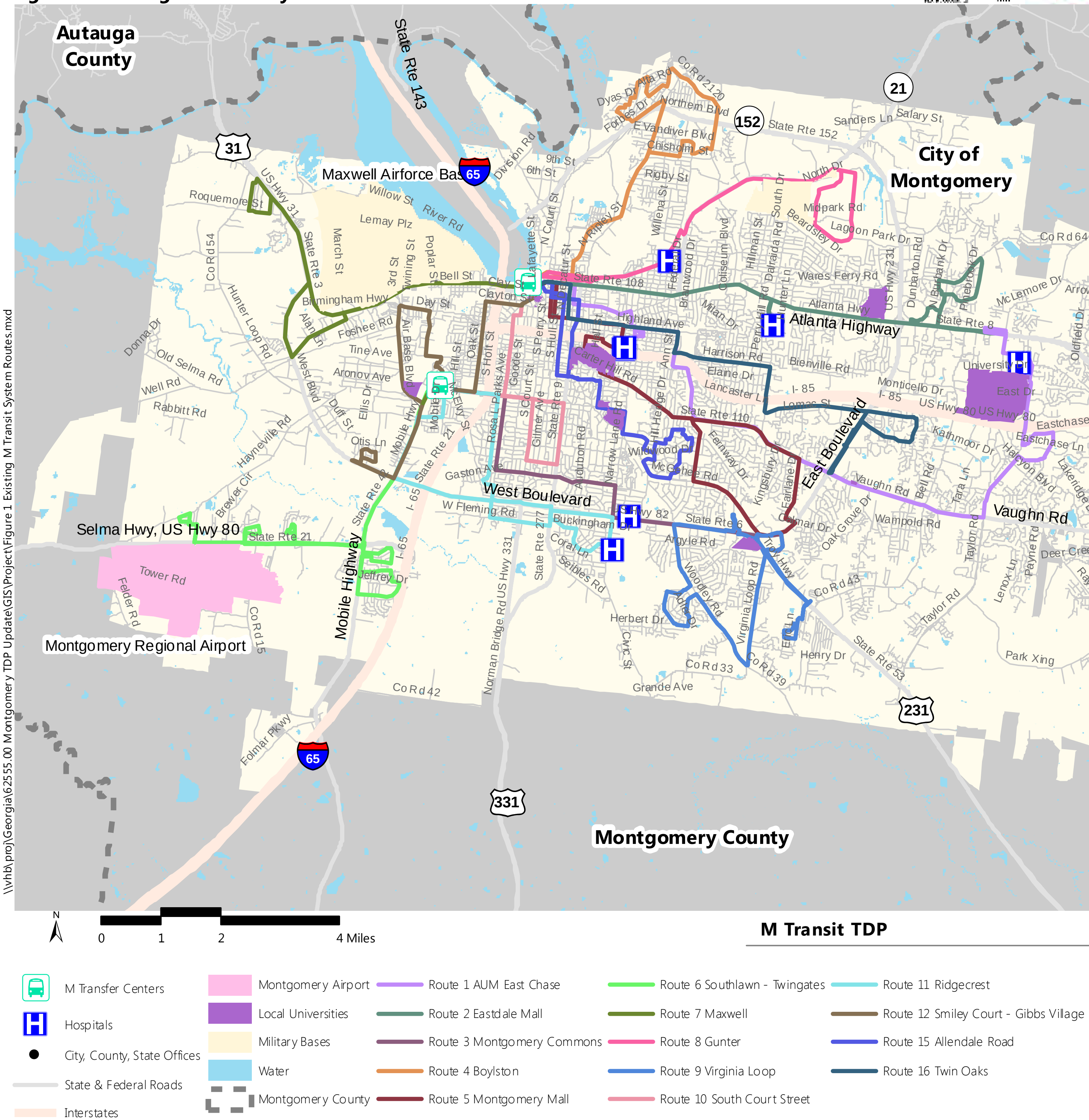
The City of Montgomery provides the local match for federal capital and operating expenses from its general fund.

2.2 Existing Contract

The M Transit System is owned by the City of Montgomery. Management and operations services are contracted out to First Transit. First Transit receives an annual fee of $285,000 for managing the service in addition to the operations costs for providing service and maintaining the vehicles and facilities. All equipment, facilities, and vehicles are owned by the City of Montgomery.

Figure 1: Existing M Transit System Routes

August 09, 2016



M Transit TDP | Montgomery, AL

M Transit System Existing Service

Sources: Montgomery MPO, U.S. Census, VHB

3

Review of Previous Studies

3.1 Introduction

The purpose of this section is to review policy documents relevant to the update of The M Transit's Transit Development Plan. In coordination with the client, it was determined the following documents would be reviewed as part of this effort:

- 2009-2013 Transit Development Plan (TDP)
- Montgomery Transit Needs Assessment in the 2030 Long Range Transportation Plan (LRTP)
- Montgomery MPO 2040 Long Range Transportation Plan (LRTP)
- 2012 Montgomery MPO Bicycle and Pedestrian Plan
- Montgomery Congestion Management Program (2014-2018)

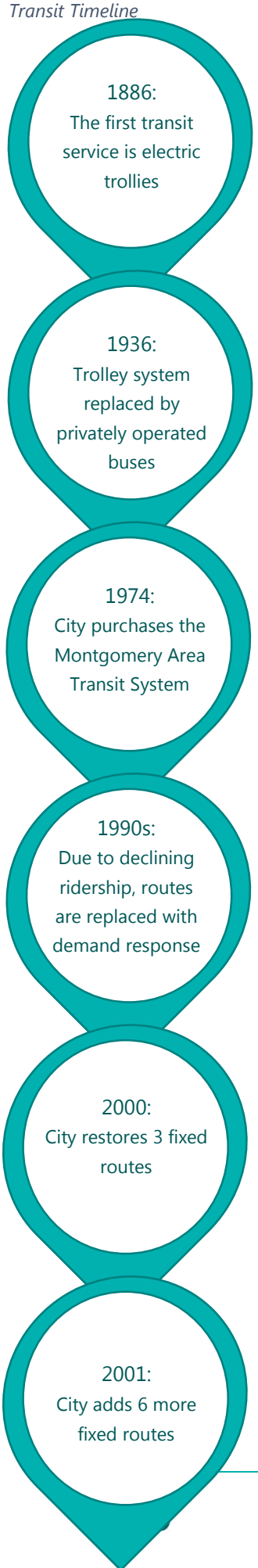
The subsections that follow describe the overall purpose of these documents and the relevance of their recommendations to developing goals and recommendations for transit mobility in Montgomery.

3.2 TDP 2009-2013

The 2009-2012 Transit Development Plan (TDP) was completed in September 2008. Based on transit services and demographic characteristics in 2008, the TDP provided a performance review of existing transit routes to develop a set of recommendations for more efficient services throughout the system. The primary means of determining transit needs was through an assessment of service trends with respect to servicing specific demographics and employment, the conducting of surveys, and an inventory of performance characteristics.

One item included within the previous TDP was a historical perspective of transit service with Montgomery. Highlights are included in Figure 2.

Figure 2: Montgomery Transit Timeline



Similar to the data collected for this project, the previous TDP performed a demographic market analysis and stakeholder outreach. These efforts were used to identify areas in the City with greater need for local mobility and understand what key stakeholders want out of transit in Montgomery.

Finally, the TDP undertook an assessment of the performance of the system.

Amongst the highlights of the performance analysis:

- The system-wide number of passengers per hour was 14.45 in 2008.
- Routes with the highest ridership in 2008 were Route 2 Eastsdale Mall and Route 12 Smiley Court.
- The routes with the lowest ridership per day were Route 15 Allendale and Route 8 Gunter Annex.

Key observations from the analysis tools noted above include:

- Reintroducing fixed-route service between 1999 and 2003 service brought about significant ridership growth.
- Refinements to existing routes and schedules were needed to meet planning objectives; not addressing the issues could result in a less effective system with major cost issues.
- Most of the demand for public transportation was found in the older, established neighborhoods located south and west of downtown Montgomery.
- Although some redevelopment activity was taking place in midtown and downtown, most of the residential, business/commercial and employment growth was occurring in the east and southeast sectors of the city in 2008.
- Poor on-time performance was having a major impact on timed transfers and system reliability.
- The West Fairview Transit Center, located west of I-65 in southwest Montgomery at 2318 West Fairview Avenue, was not centrally located.
- The new Intermodal Center offered improved passenger amenities; however, pedestrian access near the center (e.g., sidewalks, pedestrian crossings and signals), bus circulation, and the amount of space set aside for buses limited its short-term and long-term usefulness.

Generally, the recommendations included:

- Rerouting multiple routes to shorten run times and thus ease the burden of vehicle demands;
- Merging Routes 1 and 16,
- Changing the name of Routes 1, 6, 7, 10, 11,
- Dividing Route 9 into two routes (9A and 9B) with name changes,
- Increasing service to southwest Montgomery.

Unfortunately, none of the proposed improvements recommended by the previous TDP have been implemented. Funding shortfalls due to the recession affected implementation, and local support for the changes were limited. Through the course of this TDP update, a new look at ridership trends, updated demographic trends, and other baseline conditions will determine if any recommendations from the 2008 TDP for any of the routes are still valid along with new recommendations to improve service.

3.3 Other Relevant Studies

3.3.1 Montgomery Transit Needs Assessment from the 2030 LRTP

As part of the 2030 LRTP effort completed in March 2005, a one-page document was developed to summarize transit needs throughout Montgomery. While this was completed in 2005, similar demographic trends exist today.

Using the regional travel demand model, the following areas were determined to have concentrations of lower income populations:

- Areas adjacent to downtown, especially to the south and west
- Area west of I-65 and south of Maxwell AFB
- Decatur Street/Lower Wetumpka Road corridor north of downtown

Additionally, concentrations of higher income neighborhoods located along critical corridors were identified as having the potential to support express bus/vanpool services:

- Atlanta Highway corridor east of US 231
- East Montgomery - Fieldcrest/Perry Hill corridor
- Prattville area, especially along I-65 (though densities are much lower)
- Wetumpka Road area, east of US 231 (again, relatively low densities)

Major (non-retail) employment centers were identified as potential destinations of express bus/vanpool service using the regional travel demand model. This assessment identified the following areas:

- Primary concentration: Downtown Montgomery (107 non-retail jobs/acre in 14-TAZ area bounded by I-85, Court, Madison, Jackson)
- Secondary concentration: Forest Avenue at I-85, just southeast of Downtown (51 non-retail jobs/acre in 1 TAZ)
- Secondary concentration: Gunter Industrial Park in northeast Montgomery (11 non-retail jobs/acre in 1 TAZ)
- Secondary concentration: US 80 (South Boulevard) at Woodley Road (23 non-retail jobs/acre in 2 TAZs)

This assessment noted that the need for improved transit service was greatest along corridors that were expected to experience severe congestion. Major commute corridors expected to operate primarily at LOS F include:

- I-85 from Atlanta Highway to Downtown Montgomery
- SW commute corridor: US 82 from McGehee Road to Carter Hill Road
- Eastern/Northern Boulevard from US 231 to Norman Bridge Road
- Other corridors that will be approaching LOS F: Atlanta Highway, I-65 North, US 231 Eastern Boulevard to Wetumpka Road.

Based on the demographic analyses completed, preliminary findings from the 2030 LRTP regarding transit needs included:

- Low income areas were generally served by existing bus routes, but could benefit from improved service/frequency.
- The opportunity exists for express bus service from major middle/high income areas to downtown Montgomery, particularly along corridors expected to operate primarily at LOS F, however some of these areas fall outside of the city limits.
- The opportunity exists for vanpool service from middle/high income areas to secondary non-retail employment centers (Gunter Park, Forest Avenue, and Woodley Road).
- The Forest Avenue area could also serve as a stop along express bus service to downtown given its central location.

3.3.2 Montgomery MPO 2040 Long Range Transportation Plan Update

The 2040 LRTP adopted in 2015 serves as the overall transportation policy document for the Montgomery region. It identifies long-range and short-

range multimodal strategies to improve mobility and presents a financially-constrained improvement program based on projected funding through 2040.

The portions of the 2040 LRTP most relevant to this TDP update include:

- Identification of funding allocations for transit through 2040,
- Visionary projects through 2040,
- LRTP goals, and
- Socioeconomic information regarding potential transit dependent populations.

Pursuant to the 2040 LRTP, the Montgomery MPO is projected to receive federal funding totaling approximately $108.2 million, or $4,329,202 annually, through the year 2040. Given the TDP's short-term focus, the amount of federal funding through 2021 is most relevant. A breakdown of operations and capital expenditures of annual funds and those expected during the TDP's five-year horizon period (2017-2021) is provided in Table 1. As shown, The M Transit is projected to receive approximately $21.6 M in federal funds through 2021. Transit projects included the LRTP are listed in

Table 2 below.

Table 1: M Transit System Projected Federal Funding (2017-2021)

	Annual	5-Year Projections
Operations	$3,164,632	$15,823,160
Capital	$1,164,570	$5,822,850
TOTAL	**$4,329,202**	**$21,646,010**

As shown, the improvements are limited to fleet replacement and facility rehabilitation. These improvements should be recognized during the development of short-term recommendations from this TDP update. Due to a limited amount of local matching funds, the majority of capital funds in future years will be spent on bus replacement rather than system expansion.

Table 2: LRTP Projects through 2040

Years:	Recommended Action:	Cost:
2017, 2027, 2037	Bus Replacements (10-year vehicles)	$4,200,000/yr
2018, 2022, 2026, 2030, 2034, 2038	Bus Replacement	$250,000/yr
2019, 2023, 2027, 2031, 2035, 2039	Bus Replacement	$500,000/yr
2020, 2024, 2028, 2032, 2036, 2040	Bus Replacement	$950,000/yr
2020	Rehab of Transfer Center	$1,000,000
2021	Rehab of Administrative/Maintenance Facility	$3,000,000
2022	Bus Replacement	$300,000
2023	Replace Gillig Hybrids	$5,500,000

In addition to the transit-specific content of the LRTP, the overarching regional transportation goals are relevant and will be used to develop supporting transit-specific goals for this project. LRTP goals will be used to develop TDP goals in Section 7.

The spatial analysis of the LRTP described population trends and the locations of traditionally transit dependent populations and employment centers based on 2010 Census data. Among the significant contents:

- From 2010 to 2015, the population of Montgomery County (including the area outside of the MPO service area) is estimated to have decreased from 229,363 to 226,519, representing a decline in population of approximately 1.5 percent.
- Between 2010 and 2015, the population of the City of Montgomery is estimated to have decreased from 205,590 to 200,602, representing a decrease of less than 2.5 percent.
- Most of the employment is located in Downtown Montgomery, along the Southern and Eastern Boulevard, and along I-85 between Taylor Road and Chantilly Parkway.
- Non-white population concentrations are located in and around Downtown Montgomery and the areas surrounding Southern and Eastern Boulevard.
- Low-income concentrations are found in southwest Montgomery, in and around downtown and the areas near the Boulevard and US 231 (Troy Highway).

Lastly, the LRTP included the following vanpool-related items:

- There is no local express/vanpool service; however, based on trip origin and destinations, residential areas identified in the LRTP as

potential origin areas include Wetumpka, Prattville, and Pike Road – all of which are outside of the M service area. Potential destinations identified included Downtown Montgomery, east Montgomery, Airport and the Industrial area off of I-65 in southwest Montgomery.

- CommuteSmart is a program that coordinates car/vanpools between and within the metropolitan areas of the state of Alabama. Car/vanpools travel to and from Montgomery every day. Currently, 345 persons from the Montgomery area are in the rideshare database, 10 persons vanpool from Montgomery to Birmingham and 60 persons vanpool from Birmingham to Montgomery.

3.3.3 2012 Bicycle and Pedestrian Plan

In July 2012, the most recent update of the Montgomery Area Bicycle and Pedestrian Plan was completed to identify bicycle and pedestrian connectivity needs throughout the Montgomery MPO area. Connectivity to bicycle and pedestrian facilities has been shown to enhance overall transit ridership. The bicycle items primarily related to transit include:

- Seven existing Bicycle and Pedestrian facilities are near existing transit service:
  - Montgomery Riverwalk, located near the Intermodal Transfer Center
  - Maxwell Boulevard bike lanes
  - Hall Street bike lanes, connecting historic Centennial Hill, Alabama State University and Oak Park
  - Maxwell Boulevard two-way cycle track
  - Brown Springs Road bike lanes
  - Congressman WL Dickinson Share-the-Road signs
  - Gunter Park Drive Shared Lane Markings and Share-the-Road signs
- Three bicycle proposed projects are within or connecting to the transit service area:
  - Montgomery Riverwalk extension (which would increase accessibility to transit ridership for recreational bicyclists)
  - Rails-to-trails project that terminates near the Intermodal Center and traverses downtown southeast to I-85
  - Vaughn Road bicycle lanes from Taylor Road to Chantilly Boulevard

- There are 33 bicycle routes and 44 connector bicycle routes proposed in the Montgomery study area, including 17 bicycle routes and 24 connector bicycle routes within Montgomery County. Many of the proposed bicycle routes are along roads currently served by transit, including Atlanta Highway, Fairview Avenue, Selma Highway, Vaughn Road and Carter Hill Road.
- Pedestrian connectivity to transit ranges from high to low connectivity dependent on the area. The Montgomery Area Bicycle and Pedestrian Plan included a sidewalk inventory detailing the location of existing pedestrian facilities. Proposed pedestrian projects within the M service area are included within the Plan as Priority 1, Priority 2, and Priority 3 projects.
- Significant Priority 1 pedestrian improvements that will influence transit service include:
  - Multiple downtown sidewalk rehabilitations
  - New sidewalks along Atlanta Highway from Brantwood Drive to Coliseum Drive on both sides of the road
  - Sidewalk rehabilitation along West Fairview Avenue on both sides from Mobile Drive to Carver High School and new sidewalks on the south side of roadway (north side exists) from Carver High School to Oak Street
  - New sidewalks along the east side of South Court Street (west side exists) from Fairmont to Edgemont Avenue on east side
  - New sidewalks along both sides of Vaughn Road from Central Parkway to Carriage Brook Road

As it relates to the TDP, a long-term transit policy should be to monitor development of the proposed bicycle and pedestrian improvements and continue to promote connectivity to bicycling and pedestrian opportunities. It will be important to work with the City and MPO to focus sidewalk improvements and connections in areas with bus stops.

3.3.4 Montgomery Congestion Management Process (2014-2018)

In May 2014, the MPO developed a Congestion Management Process (CMP) to identify congested areas throughout the Montgomery MPO area and develop potential strategies to alleviate the most congested areas. While transit can be considered a means of alleviating congestion, understanding where congestion exists along the system can also assist in developing overall operational recommendations.

As part of the CMP process, specific improvements were identified along the 25 most congested roadway segments throughout the region, as

highlighted in red in Figure 3. Of these 25 segments, those currently served by transit included:

- Taylor Road from I-85 to East Chase Parkway (Route 1)
- Atlanta Highway from South Burbank Drive and East Boulevard (Route 2)
- South Boulevard from Narrow Lane Road to Troy Highway/US 231 (Routes 3 and 9)
- Carter Hill Road from McGhee to Vaughn Road (Route 5)

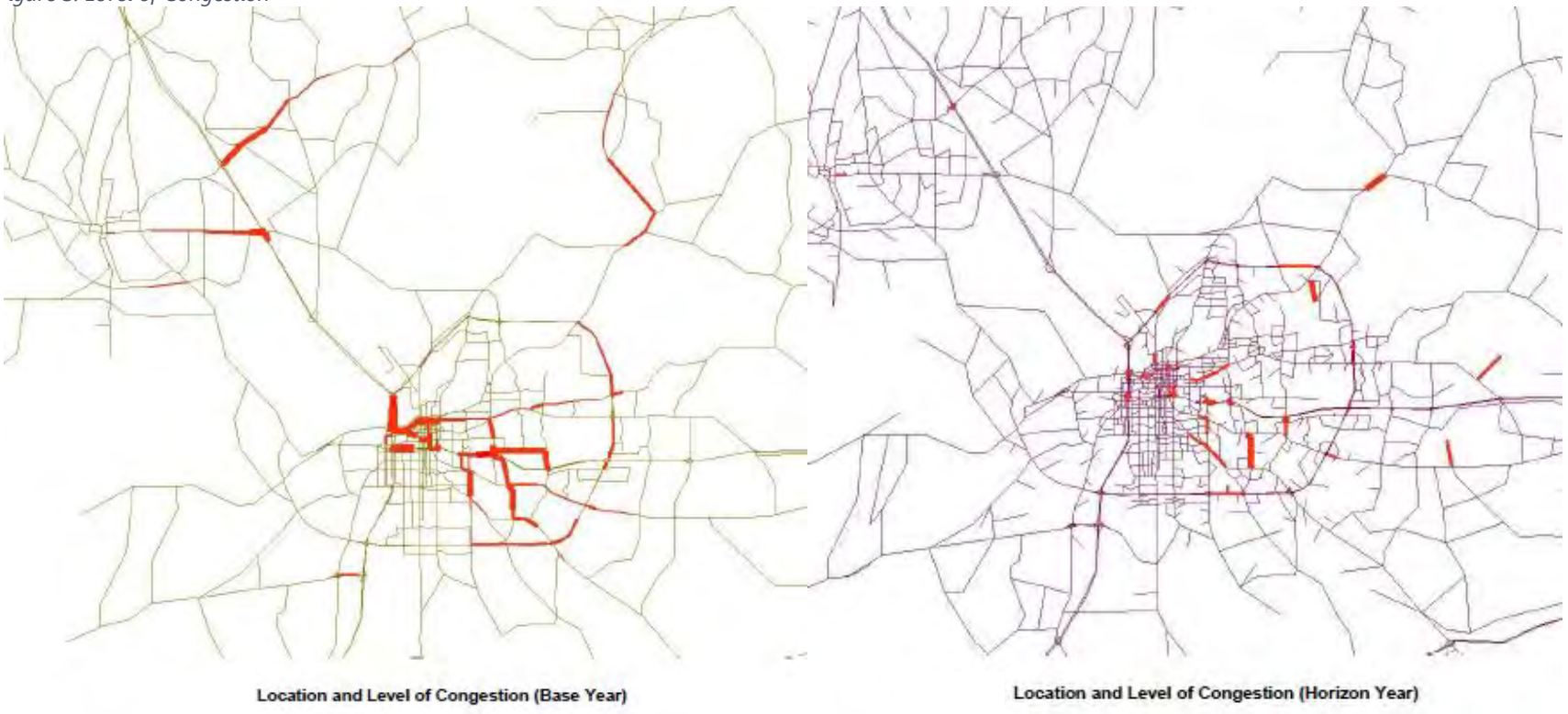
Roadway improvements along existing routes can help with both reliability and travel time along the corridor to improve on time performance. Furthermore, the CMP recommended the following congested segments for bus service and operations improvements (in addition to other enhancements):

- Atlanta Highway from South Burbank Drive and East Boulevard (Route 2)
- Carter Hill Road from McGhee to Vaughn Road (Route 5)
- Perry Hill Road from Atlanta Highway to I-85 (Not currently served)

Lastly, two congested segments outside the transit service area (located in Prattville) that were recommended for transit and ridesharing programs amongst other improvements were:

- Cobbs Ford Road from US 82 to I-65
- East Main Street from US 82 to Greystone Way

Figure 3: Level of Congestion



Source: Montgomery MPO

3.4 Key Takeaways for TDP Update

Moving forward in the TDP update, the following major findings from relevant studies should be considered:

- The previous TDP identified certain M routes that performed poorly when compared to the rest of the system that are still in operation – particularly Routes 7 Maxwell, 9 Virginia Loop, 1 AUM Campus, 8 Gunter Annex, and 15 Allendale. Routing changes were recommended to all but Route 15 to correct these issues (2009-2012 TDP).
- The most notable takeaway from the review of previous studies is the lack of significant changes to the demographic characteristics in the Montgomery area since the completion of the previous TDP. The population for the area has remained the same, the concentrations of low-income populations also appear to be unchanged, and many of the employment centers within the area have not shifted. Depending on the results of the baseline conditions assessment and system performance evaluations, these factors serve as an initial indication that many of the recommendations from the previous TDP – based in part on similar characteristics - may still be relevant. This is particularly true if the same performance has remained consistent with that reported in the previous TDP (2009-2012 TDP, 2040 LRTP).
- The M is projected to receive a total of $21.6 M in federal aid through 2021 and all of the transit projects identified in the 2040 LRTP are associated with bus replacement and rehabilitation of facilities. One of the primary objectives of this TDP update is to investigate the best uses for these funds moving forward (2040 LRTP Update).
- There are several bicycle routes and planned pedestrian improvements along existing bus routes. The potential for the placement of bicycle and pedestrian amenities along existing routes suggests a need for coordination with respect to the placement of stop amenities such as shelters, wayfinding, etc. to maximize City investments. This also suggests a need for educational programs to promote the connection between bicycling and transit moving forward (2012 Bicycle and Pedestrian Plan).
- Analysis has shown that the best origins for local express/bus vanpools are from outside of the City (Wetumpka, Prattville, and Pike Road) to locations inside the City. This is somewhat consistent with the findings from the 2030 LRTP assessment. Regardless, this trend reinforces the need for interjurisdictional coordination to

implement intra-regional commuter-related services such as express bus and/or vanpools (2030 LRTP, 2040 LRTP).

- Routes 2, 3, 5, and 9 all traverse roadway segments identified as needing congestion relief strategies. Given that bus transit is susceptible to the same congestion as general traffic, peak hour operation modifications may be needed for these routes (Montgomery CMP).

4

Public & Stakeholder Engagement

4.1 Public Engagement Objectives

To fully capture the issues, needs, and context around developing service recommendations for the M Transit System, the following are objectives of the public involvement process:

- Engage the general public through open house meetings,
- Engage current transit riders to identify issues and successes with current service,
- Engage drivers and system operators to understand where there are issues in the system;
- Engage Key Decision-Makers, including City council members, the mayor, City department heads, and the MPO director, and
- Engage community stakeholders through focus groups to identify their individual and agency mobility needs

4.2 Public Engagement Activities

To engage as many stakeholders as possible, public engagement activities were conducted through various media. This included public meetings for in-person conversations, interviews with key decision-makers, focus groups with major transit and mobility stakeholders, and surveys for the public that were available in both in paper format and online.

Through all of these activities, VHB was able to gather information on how the system works, is perceived, service priorities, and what both riders and non-riders want to see from transit in Montgomery in the future.

4.2.1 Public Open House

To directly reach transit riders and gather input, a public meeting was held at the Intermodal Transfer Center, located on Molton Street on April 20, 2016 from 5:30 PM to 7:00 PM. The project team, accompanied by City of Montgomery Planning Staff, were on hand to solicit feedback from citizens and riders on ways to provide more efficient transportation in the City of Montgomery and to receive feedback on ways to improve existing service. The team discussed the study and distributed Project Fact Sheets to approximately 30 riders in the bus waiting area, bus boarding area and Intermodal Transfer Center.

Almost without exception, the participants advocated for more public transportation, even while recognizing the severe constraints on resources available to fund such expansion. More service for the transit-dependent population was especially encouraged to provide critical access to jobs, training, recreational activities, medical and other essential services. Commuter service from nearby towns and cities was proposed by attendees. The need to extend operating hours was also identified as critical because, while some employees can get to work on transit, they can't get back home because the bus stops running before their shift ends, rendering transit of limited value to these workers.

Attendees of the open house meeting were given the opportunity to provide input on open-ended comment cards. These cards were also distributed through the transfer centers and to various stakeholders. The complete text of these comments can be found in Appendix A. Over 120 comment forms were collected. From the forms gathered, the comments could be categorized into the following:

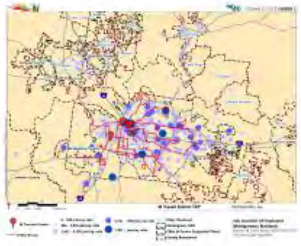
- *Weekend Service:* This includes a desire for Sunday service as well as earlier and later service on Saturdays. The Saturday/Sunday service were the most frequent requests. While not as highly requested, it was also mentioned that service on Holidays is important to some participants.
- *Locations:* The riders of the M Transit System suggested service expansion to many locations, but the locations mentioned the most were Chantilly Parkway and Hyundai Boulevard, none of the current bus routes reach that far east. Many riders would like to reach the Hyundai Manufacturing Plant, which is located just inside the Montgomery City boundary. These two locations were the most requested, followed by the Wind Creek Casino, which is located outside of City of Montgomery to the northeast.

Figure 4: Boards Used at Public Meeting

Montgomery Transit Development Update: Project Overview

What is a Transit Development Plan?

- **An evaluation** of the current transit system:
  - Routes
  - Demographics/Employment
  - Ridership
  - Operations
  - Finance and funding

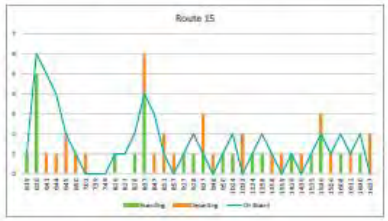


- **An opportunity** for public outreach:
  - Working directly with YOU helps us understand the needs of the community
  - Engaging stakeholders such as City Council Members and businesses focused on education, employment, health, and economic investment will help us plan for the future

If there were service here, we could provide access to more jobs.

I would use it more if they made some changes.

- **A starting point** for benchmarks and performance evaluation, to understand current performance and set goals for the future
  - Ridership
  - On-time performance
  - Duration of trips
  - Population served



Why Perform a TDP Now?

- **For direction**: the previous TDP was completed in 2008 for 2009-2013 and this plan will take a fresh look at service
- **For Growth**: with new developments downtown, and evolving neighborhoods, we need to understand how well transit is serving areas in transition
- **For the future**: this plan will lay out detailed recommendations for the next 5 years and look towards a future transit vision

Improving Direct Access to Downtown: Analyzing routes so that they provide direct routes downtown and to job centers will be a key part of the project.

Maximize Efficiency of Transfer Centers: The M has a great facility downtown, maximizing the efficiency of transfers will be part of the analysis.

Ensuring Access to Critical: Analyzing routes so that they provide direct routes downtown and to job centers will be a key part of the project.

Accessibility for New Developments: New developments such as 79 Commerce and The Heights are increasing investment in downtown. Accessibility and mobility will support further growth and development.

April, 2016 Public Engagement

Figure 4: Boards Used at Public Meeting (continued)

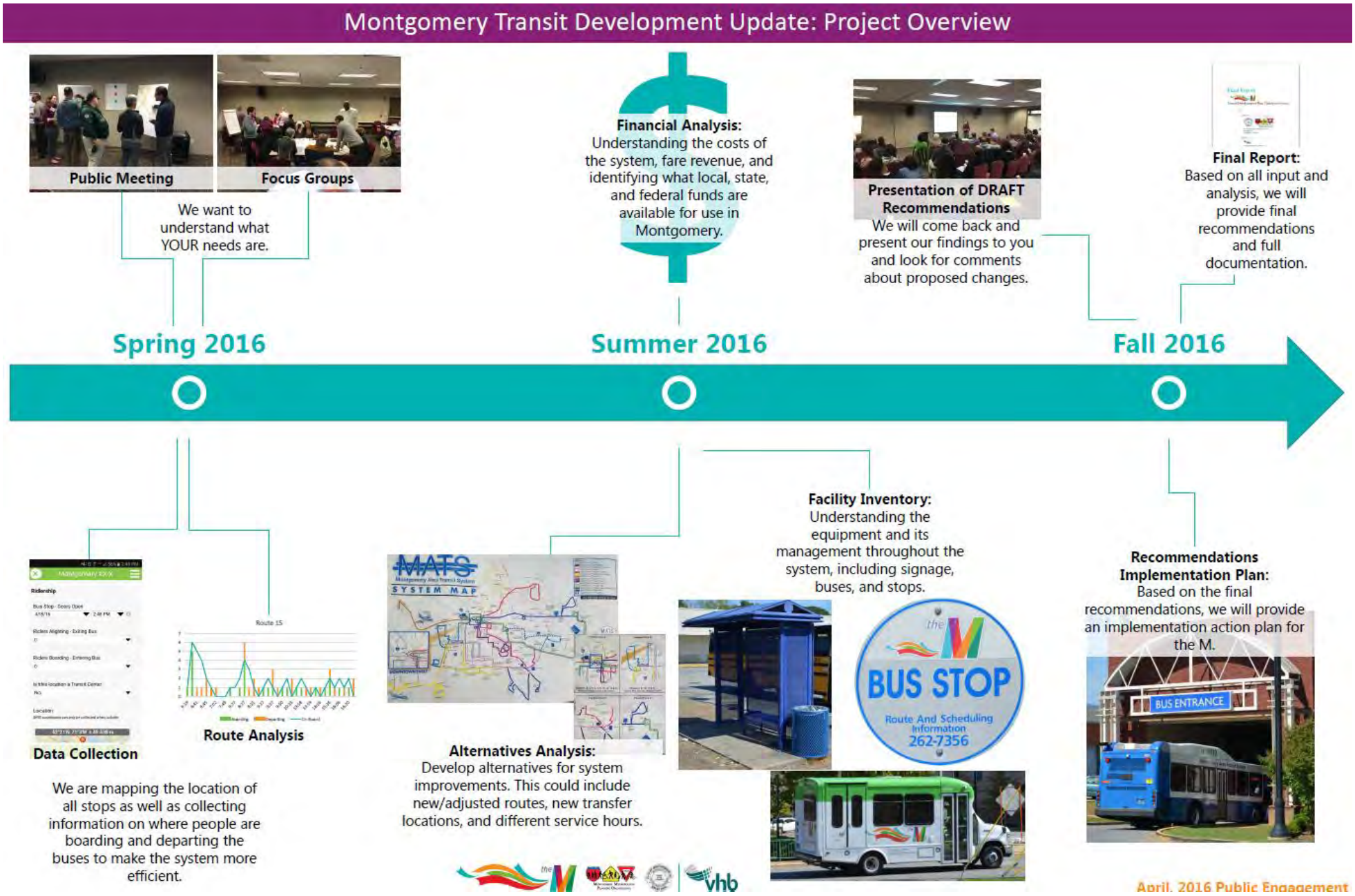
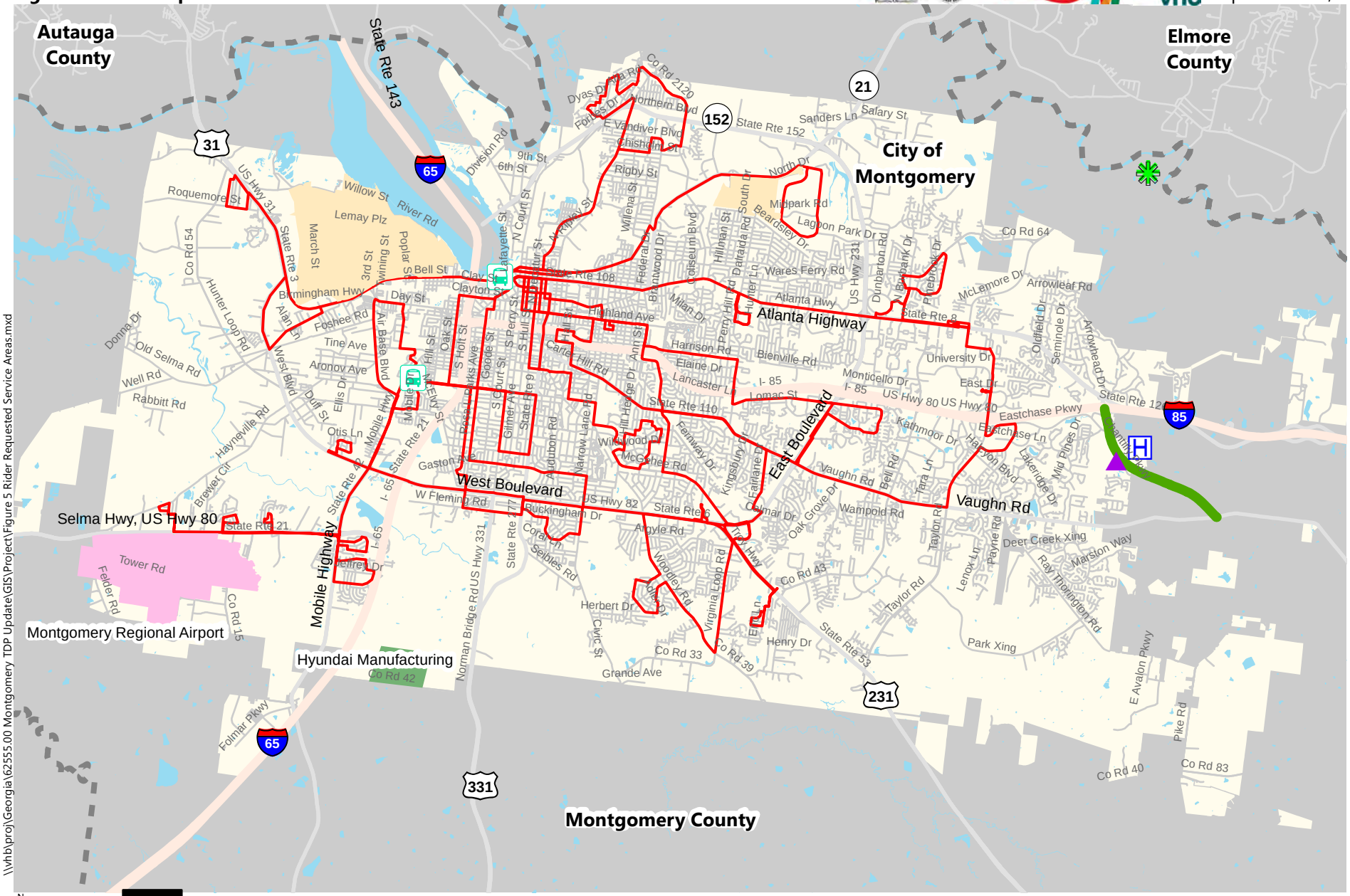


Figure 5: Rider Requested Service Areas

September 13, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Figure 5 Rider Requested Service Areas.mxd

N

0 1 2 4 Miles

M Transfer Centers

M Bus Routes

State & Federal Rouads

Interstates

Local Roads

Montgomery County

Montgomery Airport

Military Bases

Water

M Transit TDP

Rider-Requested Service Areas

VA Hospital

Walmart Super Center

Wind Creek Casino

Chantilly Pkwy

Hyundai

Montgomery, AL

Rider Survey Requested Service Areas

Sources: Montgomery MPO, U.S. Census, VHB

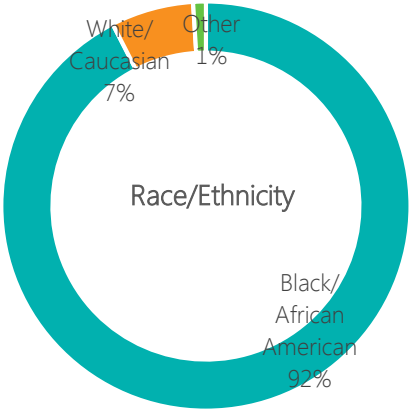
- *Service Hours & Running Time:* Several riders commented that extending the hours of the bus service, both starting the service earlier and extending the service significantly later into the evening, specifically on routes 2, 4, 5, and 10. Riders also expressed a desire for shorter travel times. VHB team members noted that some vehicles require a layover time somewhere in the route to ensure that they reach the transfer centers in coordination with other routes. While this allows for easy transfers, it requires riders to sit on the bus for a significantly longer time.
- *Amenities:* Several of the riders mentioned concerns and desires for amenities throughout the system, including more shelters, benches, schedule information, bus cleanliness, and functioning air conditioning.

4.2.2 Community Surveys

To gather input from M System transit riders two surveys were conducted; one to capture travel habits of riders and one to gather the opinion of the general public towards transit in Montgomery. The rider survey was conducted from April 18 through May 25, 2016 with paper surveys and open comment forms were available at the Intermodal Transfer Center and Fairview Transfer Center in Montgomery, AL. The surveys were designed to collect demographics of existing riders, to understand their travel habits, and to provide an opportunity for them to share insight into where services are needed.

To reach the general public, an online survey was available from April 18-May 25, 2016. This survey received mostly responses from participants who do not use the M Transit System and asks what could be done to affect their travel decisions and behavior to utilize transit.

Figure 6: Rider Survey Race/Ethnicity



Rider Survey

A total of 210 surveys were filled out by M Transit System riders. Approximately 60% of rider survey participants were women. The large majority of riders, (92%), who filled out the survey identified themselves as Black/African American, with only 8% identifying as all other ethnicities. With regards to age, 52% of riders surveyed were aged 45 and up. Reported household income for participants was very low. Just over half reported household income under $10,000 annually with overall 92% reporting a household income under $30,000.

Figure 8: Rider Survey

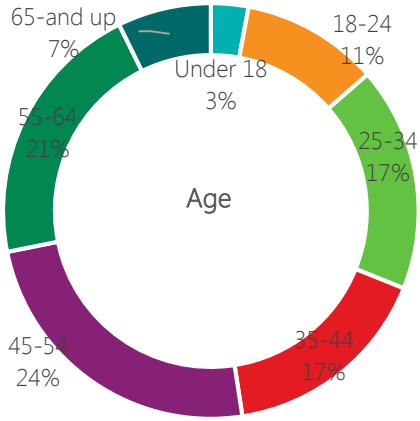


Figure 7: Rider Survey Income

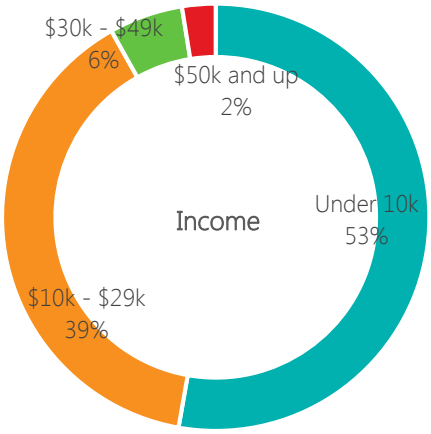


Figure 10: Rider Survey Riding

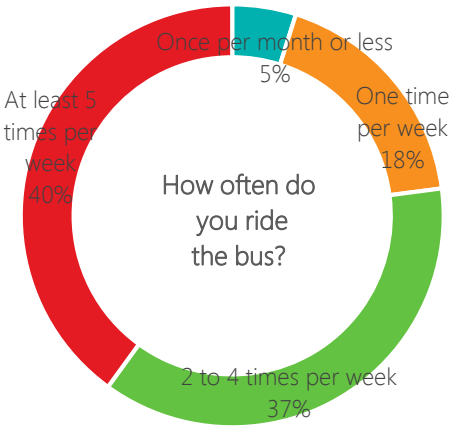


Figure 9: Riding History

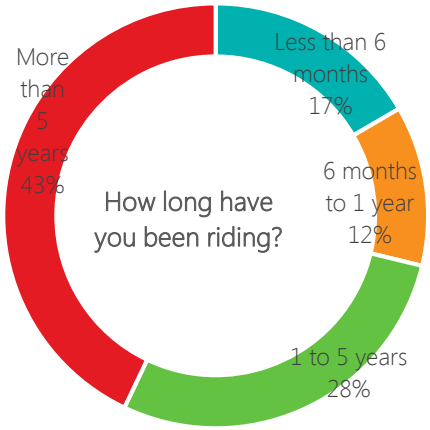


Figure 11: Rider Survey

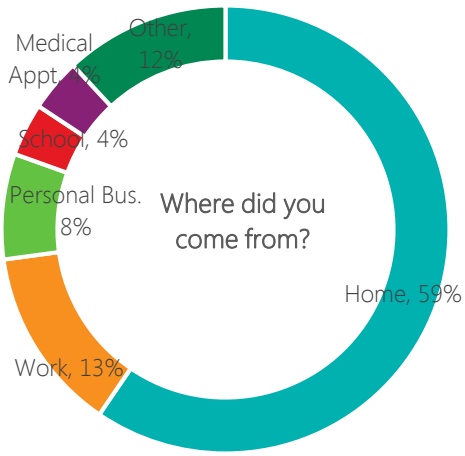
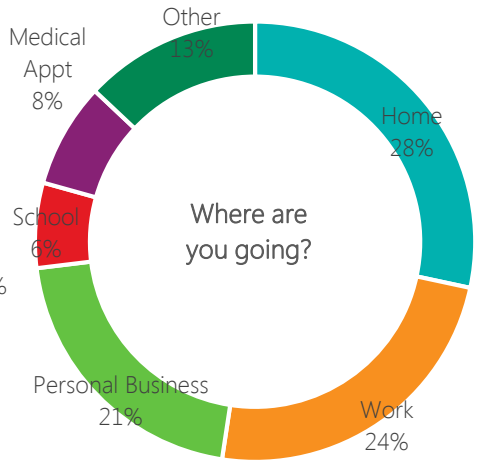


Figure 12: Rider Survey Destination



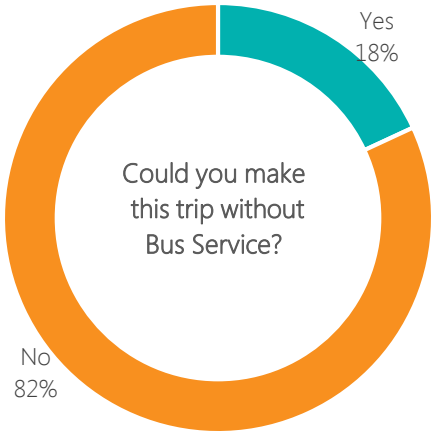
Ridership Habits

This section examines the ridership habits and trip characteristics of the rider survey participants. Of the riders who took the rider survey, 77% use the service at least twice each week and 71% have been riding the M Transit System for at least a year.

While the majority of survey participants stated they began their trip at home, destinations were more evenly split between home, work, personal business, and other. The surveys were not time-stamped, so it is unclear whether participants filled this survey out in the morning or afternoon.

When asked how they access bus stops and final destinations, 89% stated that they walked to the bus and 88% stated that they walked to their final destination. Only 3% use a bicycle to access bus stops and reach their final destination. This highlights the importance of safe sidewalk infrastructure and availability of shelters for riders. It is important to note that of riders who took this survey, 82% would be unable to make their trip without bus service,

Figure 13: Dependence on Service



highlighting the critical connections provided by the M Transit System.

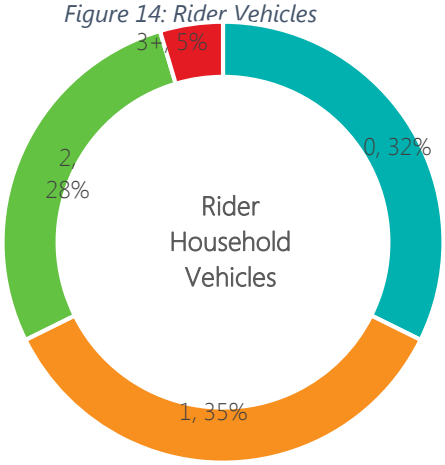
Service Areas

Survey participants were asked to select the bus route(s) they were riding or planning to ride for their next transit trip. The most popular responses were Routes 12, 3, and 10, which were taken by 30%, 28%, and 27% of participants on the trip completed while taking the survey. This corresponds to counted ridership, where Routes 3 and 10 were in the top five routes for weekday ridership.

Question 12 of the rider survey asked riders if there are any areas they wished had bus service. Out of the 210 surveys collected, 190 riders answered this question. Although there was a great variety of responses, a few were consistent amongst all of the responses collected. Several requests were made to establish some kind of bus service that would cover the Chantilly Parkway area. The second most requests were for a bus service that would cover Hyundai Boulevard, specifically the Hyundai Motor Manufacturing Plant.

Online Survey

Figure 14: Rider Vehicles

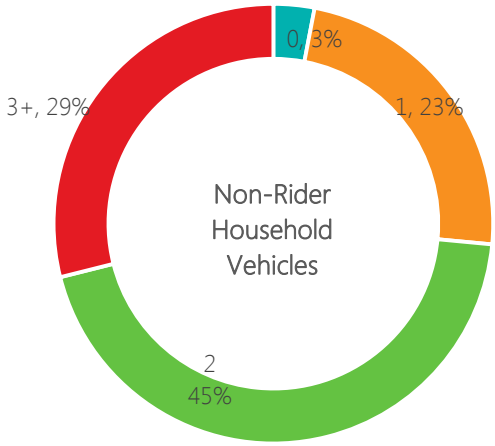


To capture transit opinions, behavior and how Montgomery residents make travel decisions, an online survey was made available and published on the websites of the Montgomery MPO, City of Montgomery, and passed through email lists of stakeholders. A portion of this survey was completed on paper with assistance from local agencies to allow persons who are unable to read and write provide their opinion as well. Overall, 172 participants stated they had never taken transit in Montgomery (70%) and 76 stated that they ride at least once per month (30%).

Participant Demographics

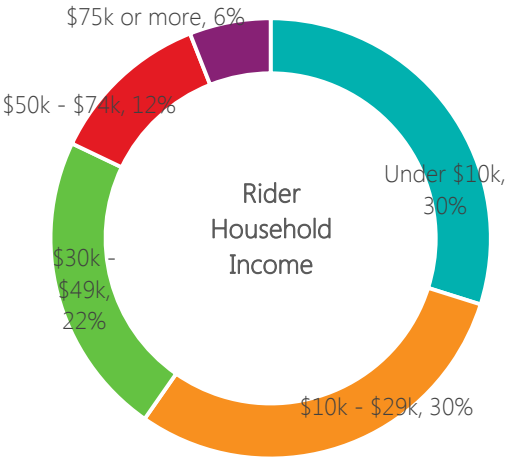
The online survey offered an opportunity to compare the demographics of the riders and non-riders who took the survey. While this survey was not statistically significant, it shows stark differences in both the number of household vehicles and household income, both indicators of mobility needs.

Figure 15: Non-Rider Vehicles



One of the biggest differences between riders and non-riders was household vehicle availability, with 32% of non-riders living in households without a vehicle and only 3% of non-riders. Income also showed a great disparity, with 60% of riders living in households with an income of less than $30,000, but only 17% of non-riders within that income bracket. These stark differences highlight the dependence on transit for many riders. Overall, the range of survey participants who are riders and non-riders was similar across the age groups.

Figure 16: Rider Income

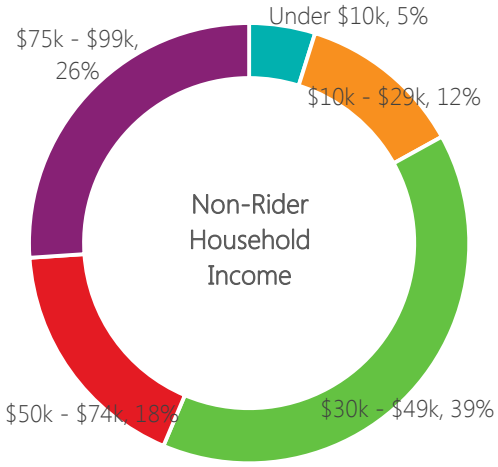


Ridership Habits

Of the riders, the breakdown was similar in how often they use the service, with 72% riding at least twice per week. This survey also asked about transfers. The percentage of riders who transferred at least once during their trips in the rider survey (56%) was similar to the percent off riders who took the online survey and stated that they have to transfer at least once per month when riding (61%). While the ability to transfer within a system is important, riding multiple routes can significantly add to the travel time, especially when the headways range from 60-120 minutes.

Survey participants were also asked whether there is transit near their homes and work and whether or not they have checked. While 55% of participants stated that there is service near their home, only 36% responded that there is service near their work/school, indicating an inconsistency between where transit connections exist. Only 16% of participants have never checked to see if transit is near their home and 20% have never checked to see if it was near their work/school.

Figure 17: Non-Rider Income

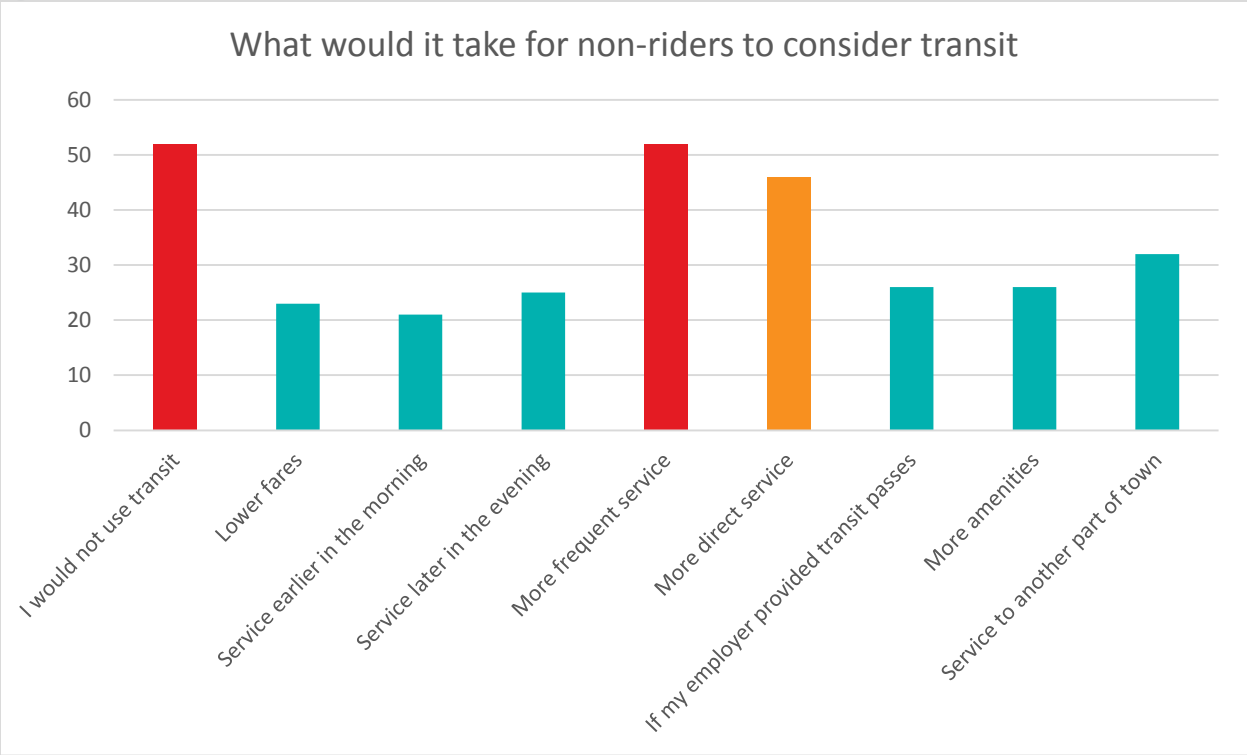


Non-riders were asked "What would encourage you to use the M Transit System buses for transportation?" to which the two most popular responses were "I would not use transit" and "More frequent service". Following these was "more direct service" which would reduce the number of transfers that people have to take to travel throughout the City.

Service Areas

Out of 172 non-riders, 32 stated that service to another part of town would encourage them to ride. Existing riders were also asked where they would like to see service and the overwhelming answer to this open-ended question was Wind Creek Casino, which is currently outside of the City limits.

Figure 18: What Would it take for Non-Riders to Consider Transit?



4.2.3 Key Decision-Maker Input

The study team and representatives of the Montgomery planning staff met with key staff of the City, the Mayor, and members of the City Council. The two main purposes of the meetings were to brief the participants on the study and to solicit their concerns, ideas and suggestions relative to how transit in Montgomery can be improved. Participation by city staff, the Mayor and President of the Council was very good. These meetings yielded critiques, ideas, and suggestions for improvement that were numerous, constructive and helpful.

- *Service Expansion*
  - Participants advocated for more public transportation, even while recognizing the severe constraints on resources available to fund such expansion.
  - Service expansion was focused on connecting transit-dependent populations to jobs, training, recreational activities, medical and other essential services.
  - Operating hours were seen as important, especially for shift workers in the City.
  - It was noted that more jobs are locating outside the boundaries of the City while M Transit can provide service

only within the city limits because of both the source and amount of local funds available.

- *Service Amenities*
  - Focusing on frequency rather than coverage was suggested to improve wait times for riders.
  - Shelters and benches were suggested at stops with high ridership.
  - Information availability at stops was seen as important to riders, and those who are unfamiliar with the system.
  - Sidewalk access to stops is a critical issue. While out of control of the M Transit System, participants discussed the necessity of coordination within the City for adding sidewalks where transit ridership is high. This would also improve access for those in wheelchairs and with other ADA mobility limitations. See Figure 19 for gaps in the sidewalk system along transit routes.

4.2.4 Community Stakeholders

On April 20, 2016, the VHB project team along with staff from the Montgomery Metropolitan Planning Organization (MPO), hosted a series of focus groups for The M Transit Development Plan. Five (5) different focus groups surrounding different interests were invited to participate. These interests included:

- Higher Education
- Jobs
- Housing
- Advocacy
- Health

Focus group meetings were held at the MPO offices located at 495 Molton Street, in Montgomery Alabama. Information gathered from these meetings will be used to advise the transit development plan's (TDP) goals and objectives, and inform recommendations for changes in the M Transit's services. There were many common themes expressed by focus group participants. Among these are:

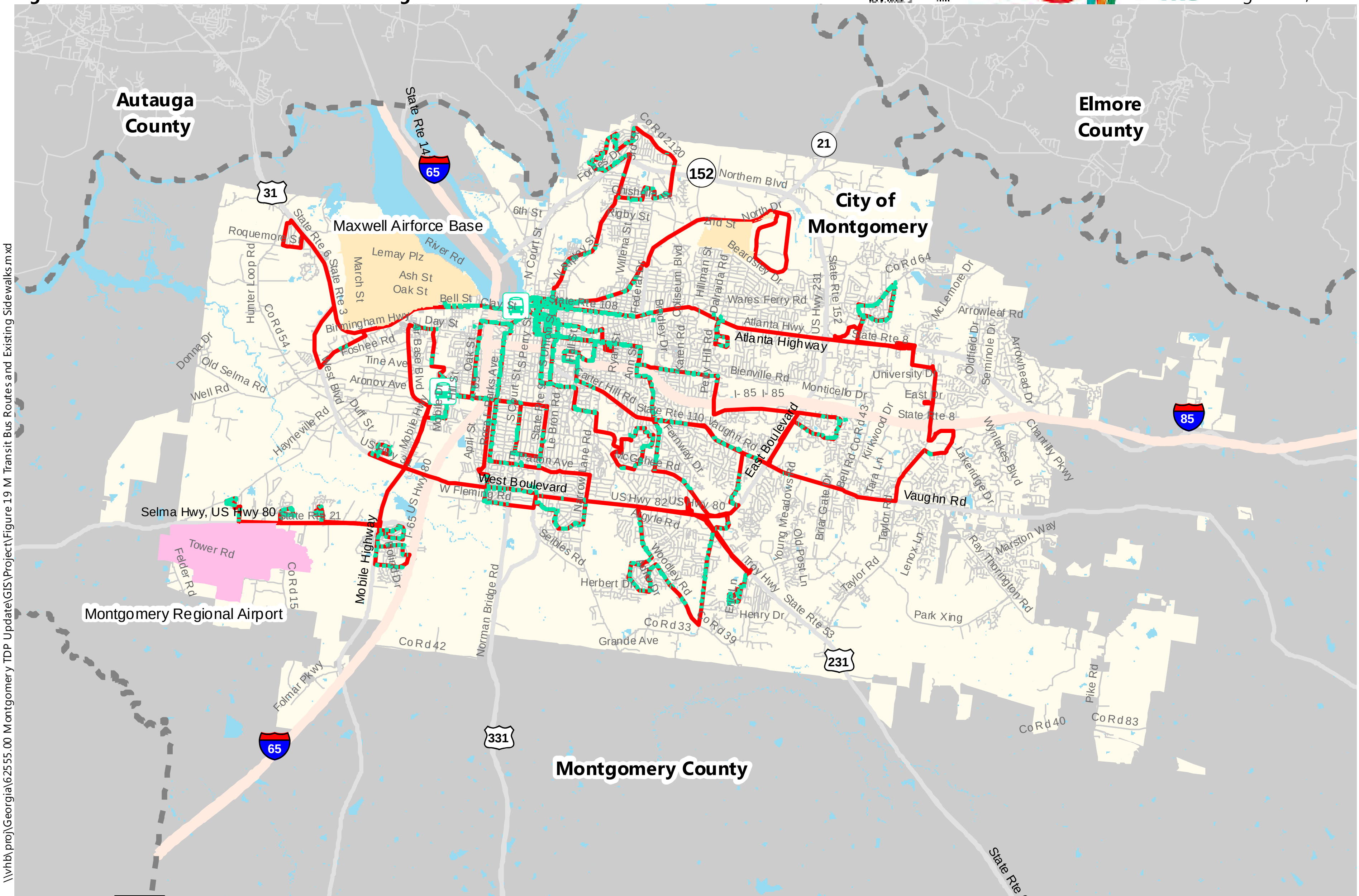
- *Service Expansion*
  - Many focus group participants stated employers in newly developing job centers are unable to attract and/or retain good employees because of transportation limitations due to location and service hours. This access limitation often affects populations most in need of social services and

would benefit most from access to jobs and other educational opportunities.

- Focus group participants were unable to prioritize the need for more frequent transit services with the desire for an expanded transit service area. They universally agreed that both were needed.
- The following locations were identified as in need of transit service:
    - Veterans Administration Hospital
    - Walmart Super Center on Chantilly
    - Wind Creek Casino
    - Chantilly Parkway
    - Hyundai Plant

Figure 19: M Transit Bus Routes and Existing Sidewalks

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Figure 19 M Transit Bus Routes and Existing Sidewalks.mxd

N

0 1 2 4 Miles

- M Transfer Centers
- M Bus Routes
- Existing Sidewalks Along Bus Routes
- State & Federal Rouads
- Interstates
- Local Roads
- Montgomery County
- Montgomery Airport
- Military Bases
- Water

M Transit TDP | Montgomery, AL

M Transit Bus Routes and Existing Sidewalks

Sources: Montgomery MPO, U.S. Census, VHB

- Shopping areas in east Montgomery
- The Veteran's Administration (VA) Hospital at Chantilly Parkway
- High employment areas outside of City limits
- Minority and low-income population concentrations with a higher proportion of zero-car households
- Suburban commuter corridors

Figure 20: Stakeholder Engagement

- *Service Amenities*
  - Universally, focus group participants agreed that access to bus stops and basic bus stop features, particularly benches and shelters were important because of the headways on some routes and the heat.
  - Focus group participants noted that not all stops are accessible by sidewalks, and that some stops are only accessed from the street.
  - Focus group participants offered that M Transit bus stops could offer bicycle parking in order to encourage and/or support the use of bicycles to access transit.
- *Transit Education, Information, and Perception*

- Focus group participants stated that even among transit dependent individuals, transit carries a negative stigma and is avoided due to perceived crime at stations and long travel times.
- Other common perceptions include that the vehicles are uncomfortable, not well maintained, and that the services do not go to the places where people want to/need to go.
- Focus group participants stated that all stops should include some basic information about the route and contact information for the M Transit customer service.
- Focus group participants collectively agreed that there is a need to better educate the public on how to use the buses and transit system, as well as read schedules and use the mobile application.
- Lastly, focus group participants suggested that the M Transit make a more concerted effort to inform people about the improvements that they have made and are planning to make in order to help change popular misperceptions about the system

Focus group participants agreed that the existing M Transit's service delivery must be improved. Participants collectively agreed that the system needed to improve its on-time performance and overall reliability. Participants also agreed that closer coordination with paratransit and human service transportation services is needed.

5

Market Analysis

5.1 Overview and Purpose

A market analysis provides a spatial snapshot of demographics, employment, land use, and travel characteristics within the City of Montgomery. These categories can be indicators of mobility needs, identifying where there are dense pockets of traditionally-transit dependent populations, or clusters of job locations that could efficiently be served by transit. While not the only indicator of mobility needs, assessing the spatial attributes of demographics, jobs, land use, and travel characteristics can be used to develop and assess routing scenarios.

5.2 Market Analysis

Demographics

Examining the demographics of a service area can be used to indicate potential transit and mobility needs. Spatial data in this section are based on the 2015 American Community Survey. Often, households with more drivers than available vehicles or those that cannot afford vehicles need alternative transportation. The areas with the highest density of zero car households are Downtown Montgomery north of downtown, as well as areas near the Fairview Transfer Center, West Boulevard and US Route 331, Baptist Medical Center, Atlanta Highway and East Boulevard. Areas with a median income of $30,000 or less are concentrated Downtown, north and west of Downtown, and Woodland Hills.

Concentrations of areas with high proportions of youths and/or seniors are more spread throughout the City. The northeast corner of the City limits and the area to the west of the Maxwell Airforce Base have higher concentrations of youths. The area west of the airport has seniors make

up 20%-70% of the population. The existing routes cover many of the areas identified by demographic analysis.

Employment and Population

Examining the density of population and employment is critical to understanding potential success of transit. Fixed route transit services provide the most efficient service when they can reach a large number of homes and jobs within a smaller area, and more directly along a single corridor. Figure 25 shows the 2010 population density for Montgomery. It is anticipated that the density of the city will remain constant through 2040 according to MPO projections. One thing that is important to note is the relationship between of household density and low income. Figure 26 overlays areas with a density of 500 households or less per square mile over the median income. West of I-65 and north of Maxwell-Gunter Air Force Base Annex are areas with low income populations and low density. While income is an indicator of mobility need, low densities are particularly difficult to serve with fixed route transit and oftentimes results in either low frequencies, circuitous routes, or a combination of both.

With regards to employment, the M Transit System provides access to the areas with the highest job density, which are not projected to change much between 2010 and 2040 as projected by the Montgomery MPO. The existing and projected employment densities can be seen in Figure 27. By far, the area with the highest employment density is Downtown Montgomery, with other hubs including East Chase, the Baptist Medical Center, Atlanta Highway, and the Maxwell-Gunter Airforce Annex. Similarly, Figure 27 and Figure 28 show the home origins and work destinations for all modeled home-based-work trips in the City, which are in line with the household and employment densities.

Land Use

Land use and transportation connections are critical to identify travel needs. Observed land use by parcel can be seen in Figure 30. Efficient transit systems provide direct connections between homes and common destinations, such as school, work, shopping, and medical appointments. Within City limits, many of these areas and corridors with retail and residential are served by existing routes.

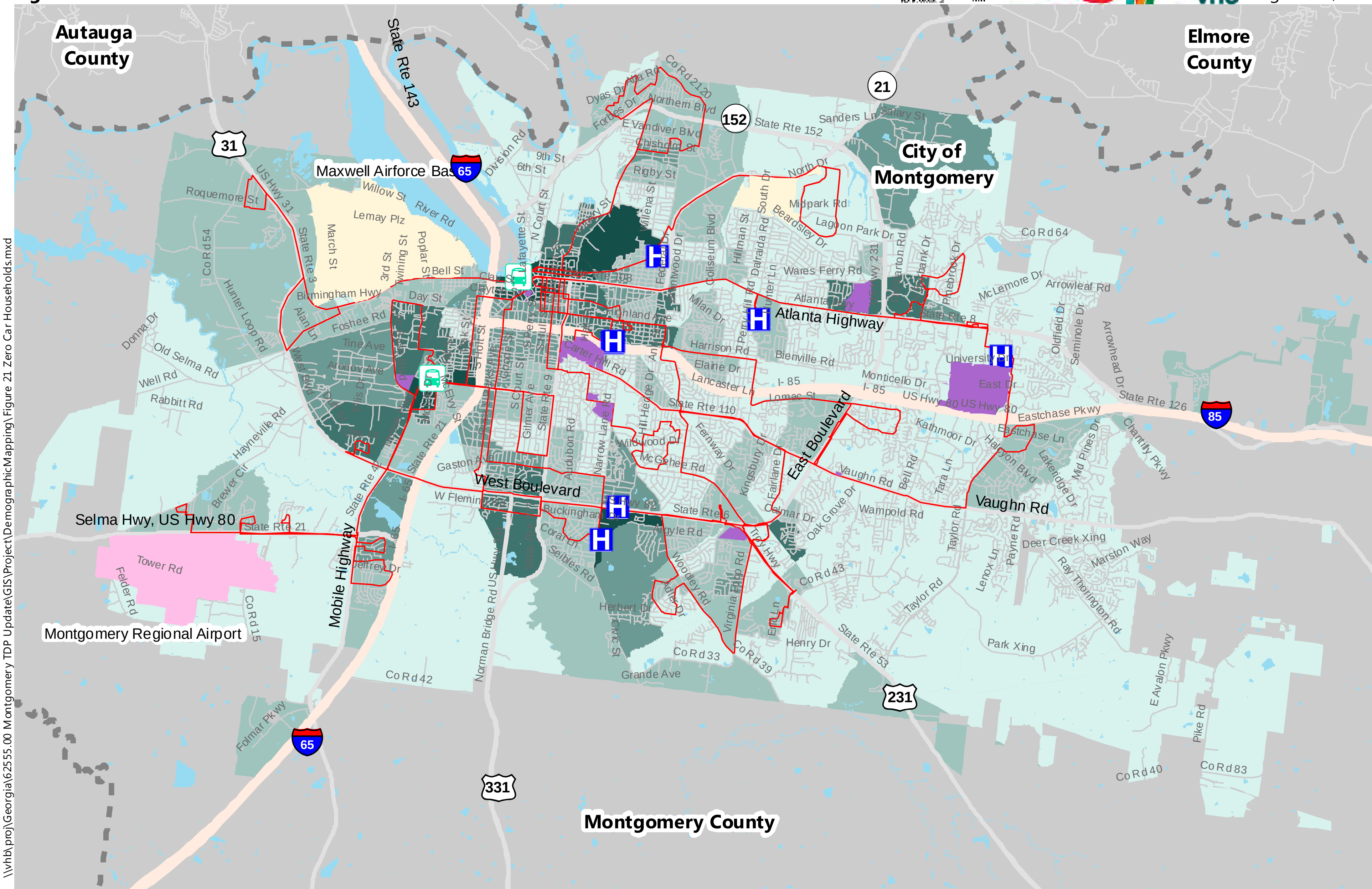
5.3 Implications for Scenarios

The current system provides coverage to areas within the City of Montgomery with high densities of populations with higher mobility needs. However, by spanning this large coverage area, the level of service suffers, and riders are required to spend more time waiting and riding.

While frequency for some routes is low, existing service does reach the major hospitals and employment areas. These should be the focus of frequency and installation of amenities to improve service delivery to those who already use the service

One of the largest issues is highlighted in Figure 26, showing that the areas with the low median incomes ($50,000 or less annually) also tend to be located in some of the least dense areas. This makes fixed route service difficult and less efficient. One potential solution to this is to reduce the number of trips to these areas, or designate some of these areas as flex zones where they can schedule demand response trips. This will be further explored in the scenario development.

Figure 21: Zero Car Households August 09, 2016



0 1 2 4 Miles

- M Transfer Centers
- Hospitals
- City, County, State Offices
- M Bus Routes
- State & Federal Rouads
- Interstates
- Local Roads
- Montgomery County
- Montgomery Airport
- Local Universities
- Military Bases
- Water

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Percent 0-Car Households

- 0% - 5%
- 5.1% - 15%
- 15.1% - 25%
- 25.1% - 45%
- 45.1% - 65%

Montgomery, AL
2014 Percent 0-Car Households
by Census Blocks

Sources: Montgomery MPO, U.S. Census, ACS Data, VHB

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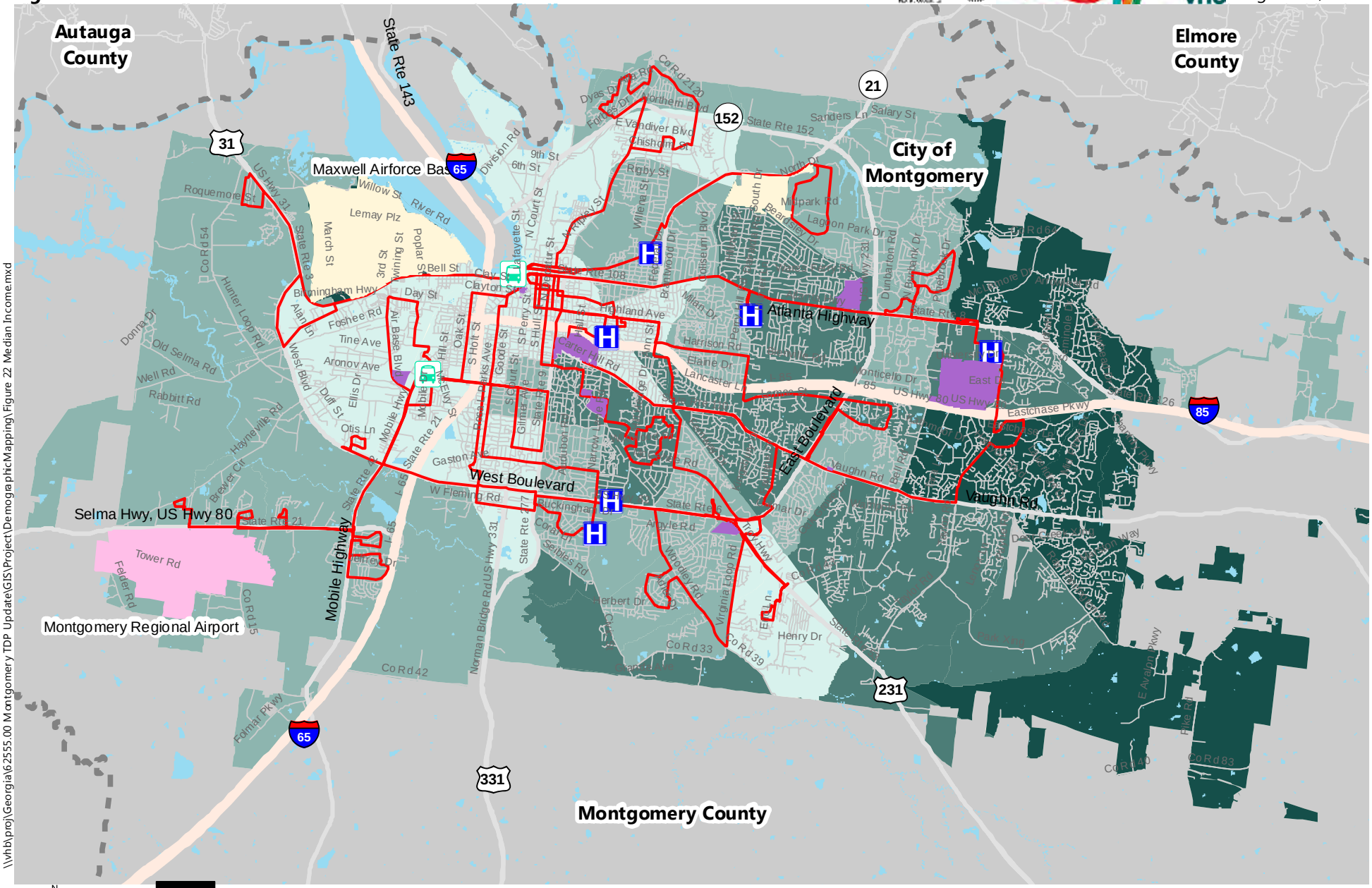
Figure 22: Median Income

August 09, 2016



N

0 1 2 4 Miles

M Transfer Centers
Hospitals
City, County, State Offices
M Bus Routes
State & Federal Rouads
Interstates
Local Roads
Montgomery County
Montgomery Airport
Local Universities
Military Bases
Water

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2010 Median Income

- $0 - $30,000
- $30,001 - $50,000
- $50,001 - $75,000
- Greater than $75,000

Montgomery, AL
2010 Median Income by Traffic Analysis Zone

Sources: Montgomery MPO, U.S. Census, VHB

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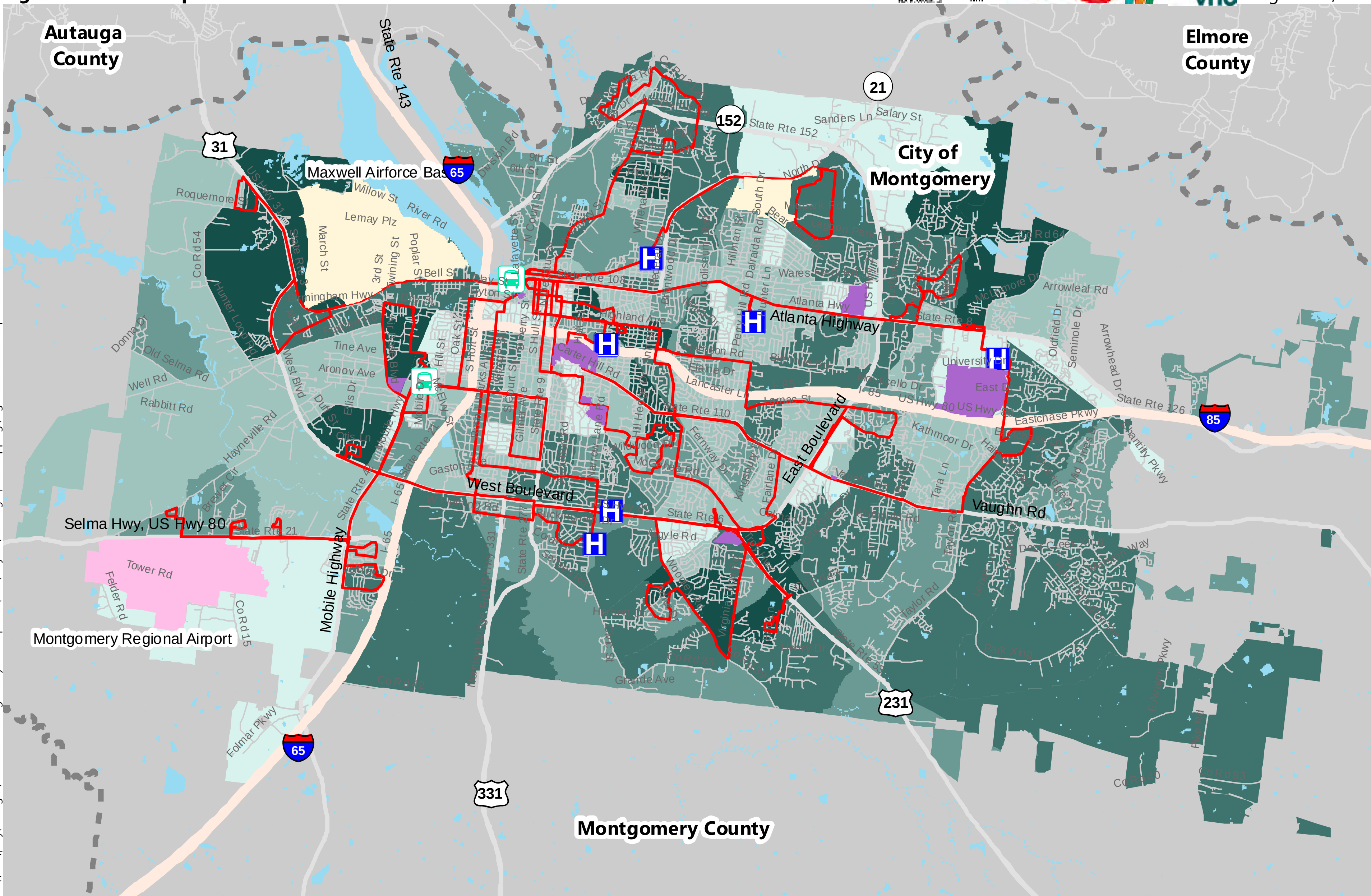
Figure 23: Youth Population

August 09, 2016



0 1 2 4 Miles

M Transfer Centers	M Bus Routes
Hospitals	State & Federal Rouads
City, County, State Offices	Interstates
	Local Roads
	Montgomery County

Montgomery Airport	
Local Universities	
Military Bases	
Water	

M Transit TDP | Montgomery, AL

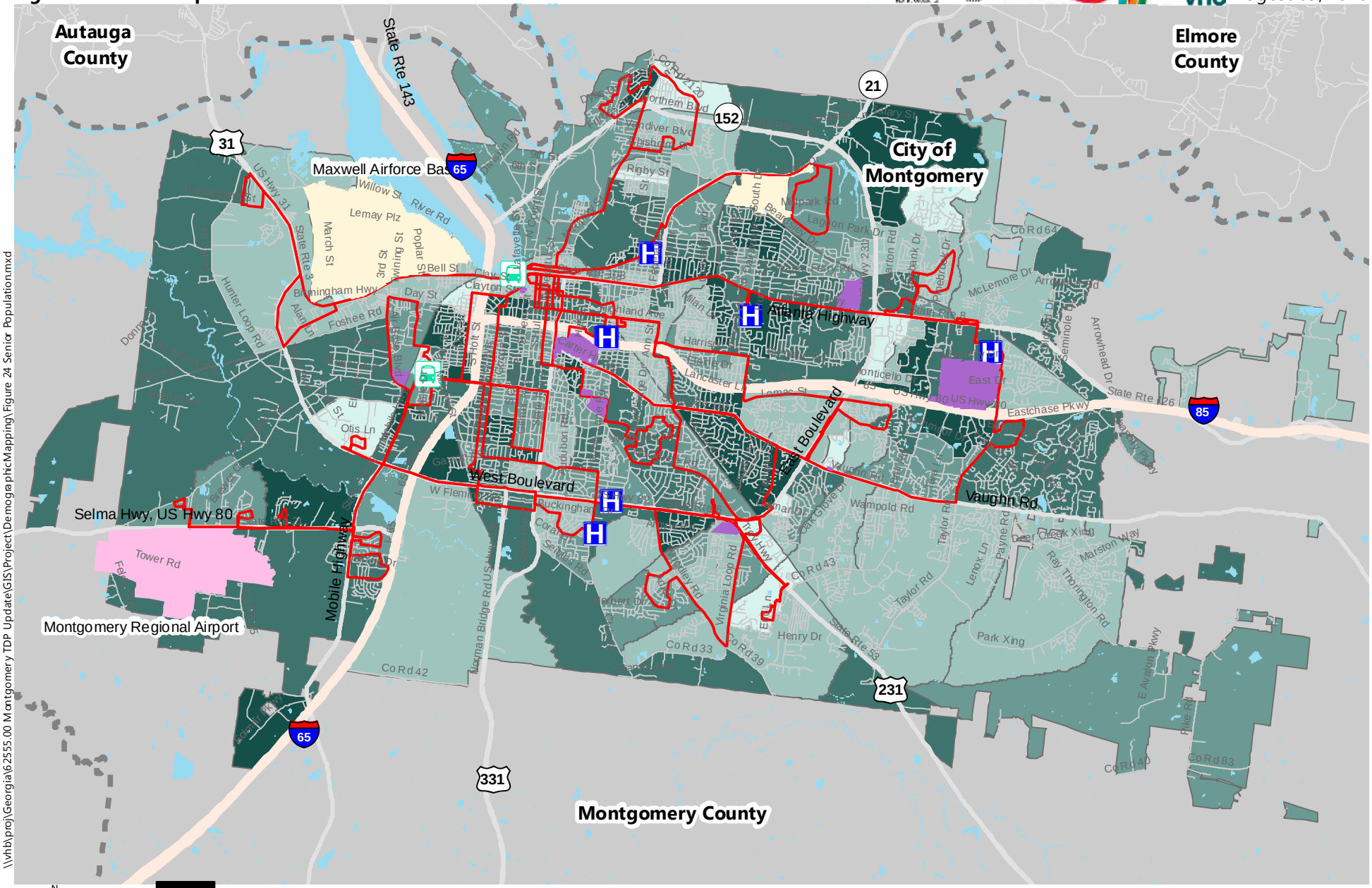
Percent Youth Population
- 0% - 10%
- 10.1% - 20%
- 20.1% - 25%
- 25.1% - 35%
- 35.1% - 58%

Montgomery, AL
2014 Percent Youth Population by Census Blocks

Sources: Montgomery MPO, U.S. Census, ACS Data, VHB

Figure 24: Senior Population

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Demographic Mapping\Figure 24 Senior Population.mxd

N

0 1 2 4 Miles

M Transfer Centers
Hospitals
City, County, State Offices
M Bus Routes
State & Federal Rouads
Interstates
Local Roads
Montgomery County
Montgomery Airport
Local Universities
Military Bases
Water

M Transit TDP | Montgomery, AL

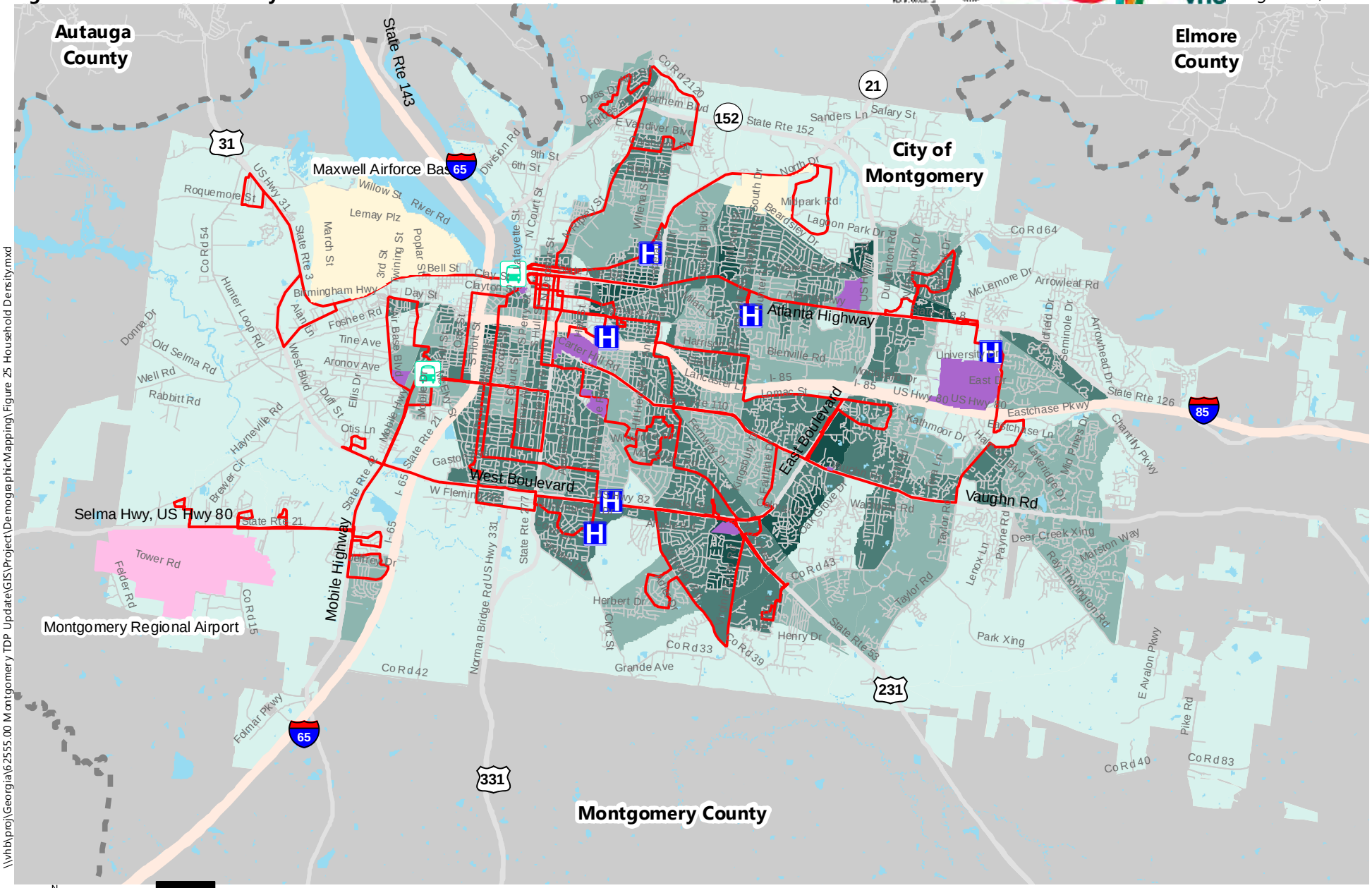
Percent Seniors
0% - 10%
10.1% - 20%
20.1% - 30%
30.1% - 40%
Greater than 40%

Montgomery, AL
2014 Percent Senior Population by Census Blocks

Sources: Montgomery MPO, U.S. Census, ACS Data, VHB

Figure: 25 Household Density

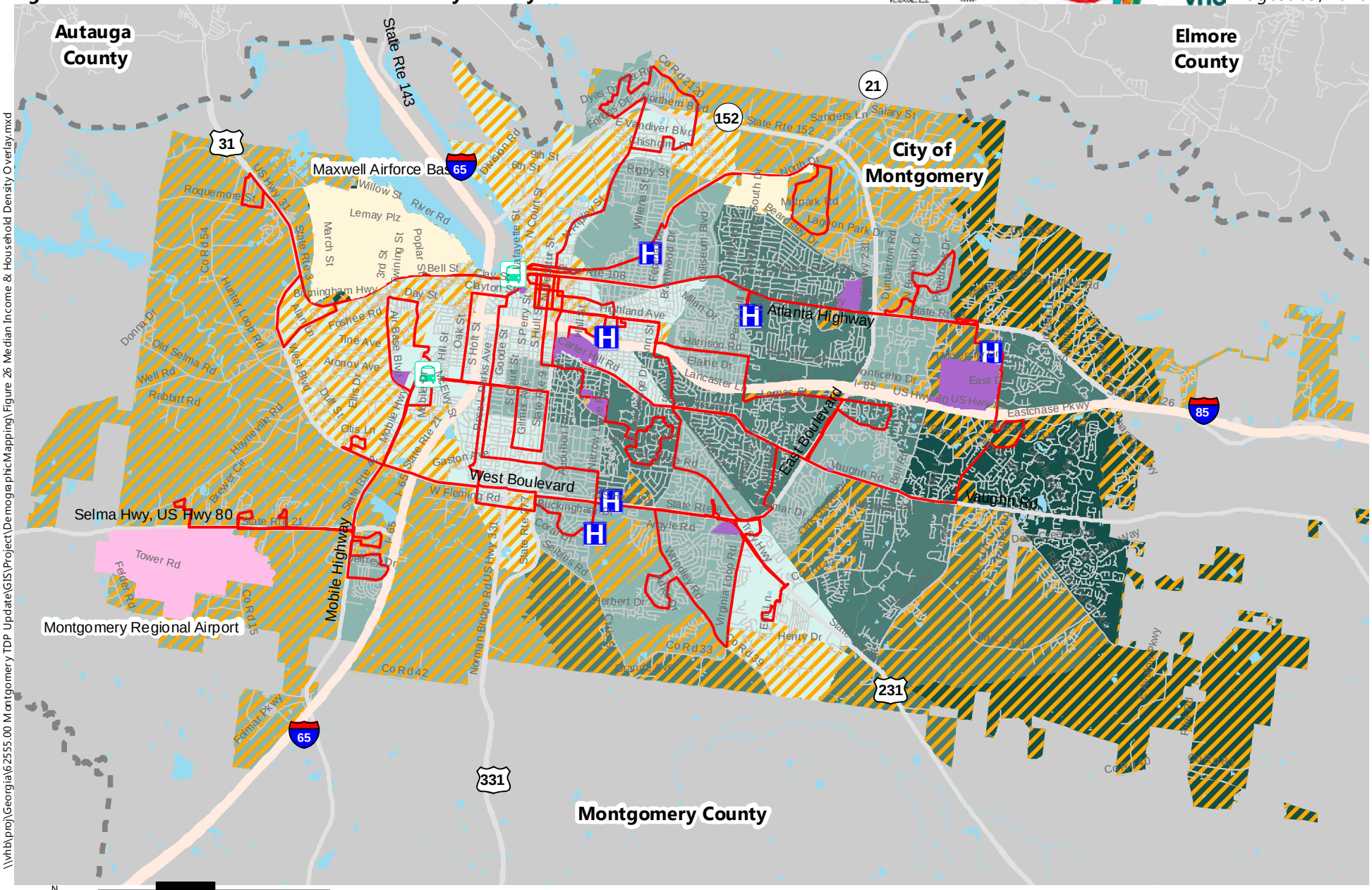
August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\DemographicMapping\Figure 25 Household Density.mxd

Figure 26: Median Income and Household Density Overlay

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Demographic Mapping\Figure 26 Median Income & Household Density Overlay.mxd

N

0 1 2 4 Miles

- M Transfer Centers
- Hospitals
- City, County, State Offices
- M Bus Routes
- State & Federal Roads
- Interstates
- Local Roads
- Montgomery County
- Montgomery Airport
- Local Universities
- Military Bases
- Water

M Transit TDP | Montgomery, AL

2010 Median Income

- $0 - $30,000
- $30,001 - $50,000
- $50,001 - $75,000
- Greater than $75,000

2010 Household Density

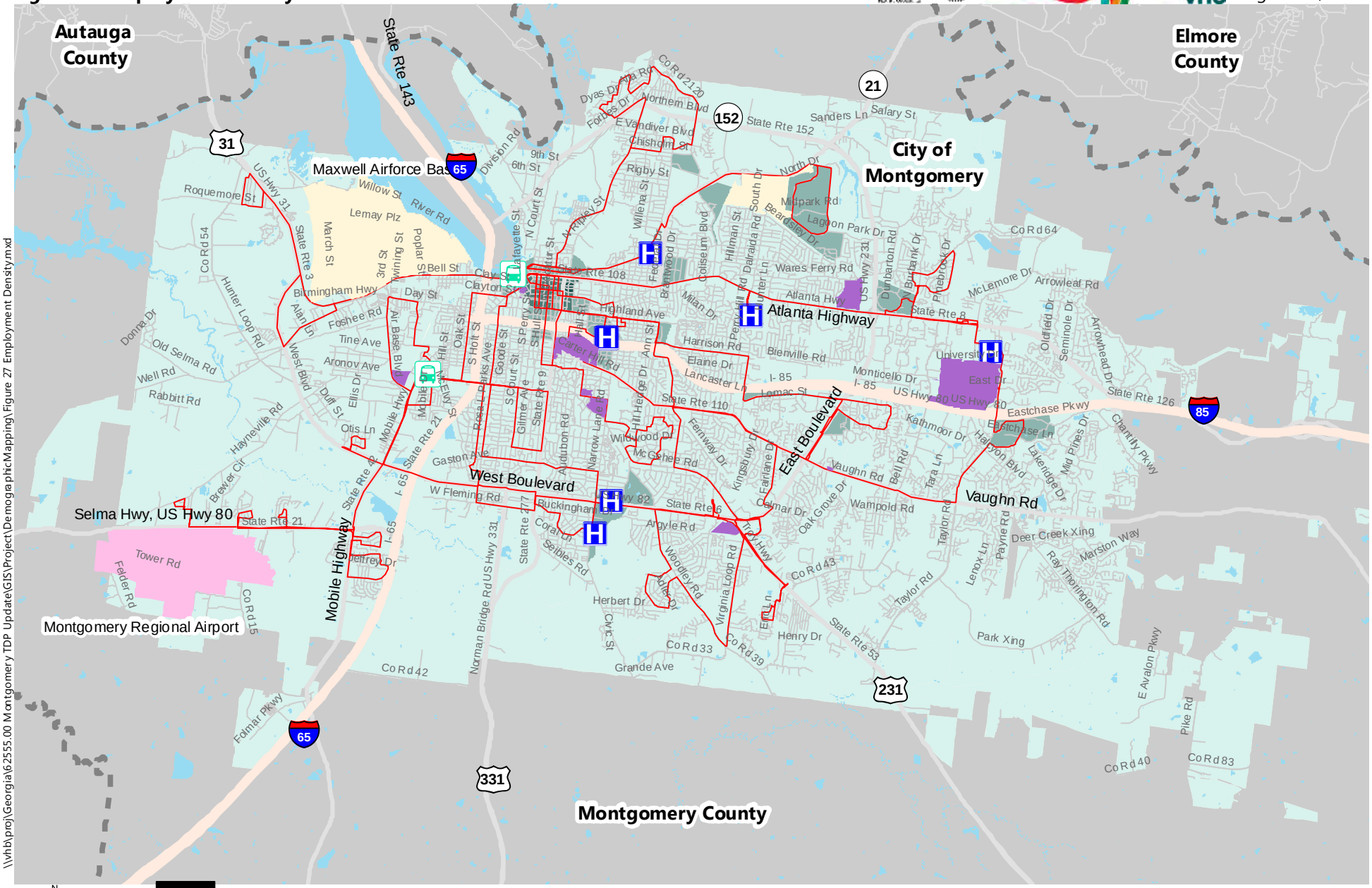
- 0 - 500 hh/sq mile

Montgomery, AL
2010 Median Income and Low Household Density by Traffic Analysis Zone

Sources: Montgomery MPO, U.S. Census, VHB

Figure 27: Employment Density

August 09, 2016



N

0 1 2 4 Miles

M Transfer Centers
Hospitals
City, County, State Offices
M Bus Routes
State & Federal Rouads
Interstates
Local Roads
Montgomery County
Montgomery Airport
Local Universities
Military Bases
Water

M Transit TDP | Montgomery, AL

2010 Employment Density, jobs/sq mile

- 0 - 5,000
- 5,001 - 20,000
- 20,001 - 50,000
- Greater than 50,000

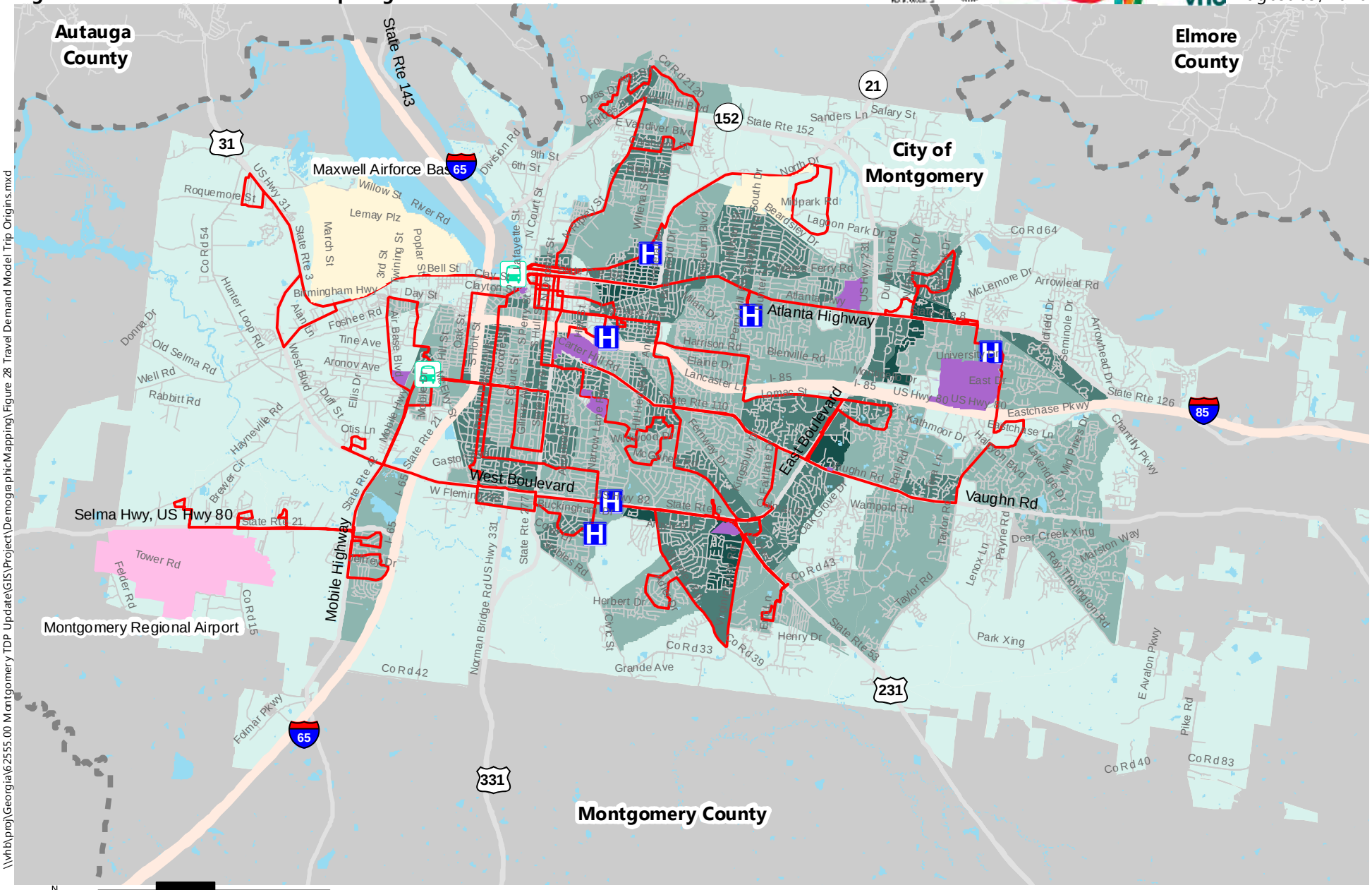
Montgomery, AL
2010 Employment Density by Traffic Analysis Zone

Sources: Montgomery MPO, U.S. Census, VHB

\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Demographic Mapping\Figure 27 Employment Density.mxd

Figure 28: Travel Demand Model Trip Origins

August 09, 2016



N

0 1 2 4 Miles

- M Transfer Centers
- Hospitals
- City, County, State Offices
- M Bus Routes
- State & Federal Rouads
- Interstates
- Local Roads
- Montgomery County
- Montgomery Airport
- Local Universities
- Military Bases
- Water

M Transit TDP | Montgomery, AL

2010 HBW Trip Origins per sq mile

- 0 - 750
- 751 - 2,000
- 2,001 - 3,500
- Greater than 3,500

Montgomery, AL
2010 HBW Trip Origins by Traffic Analysis Zone

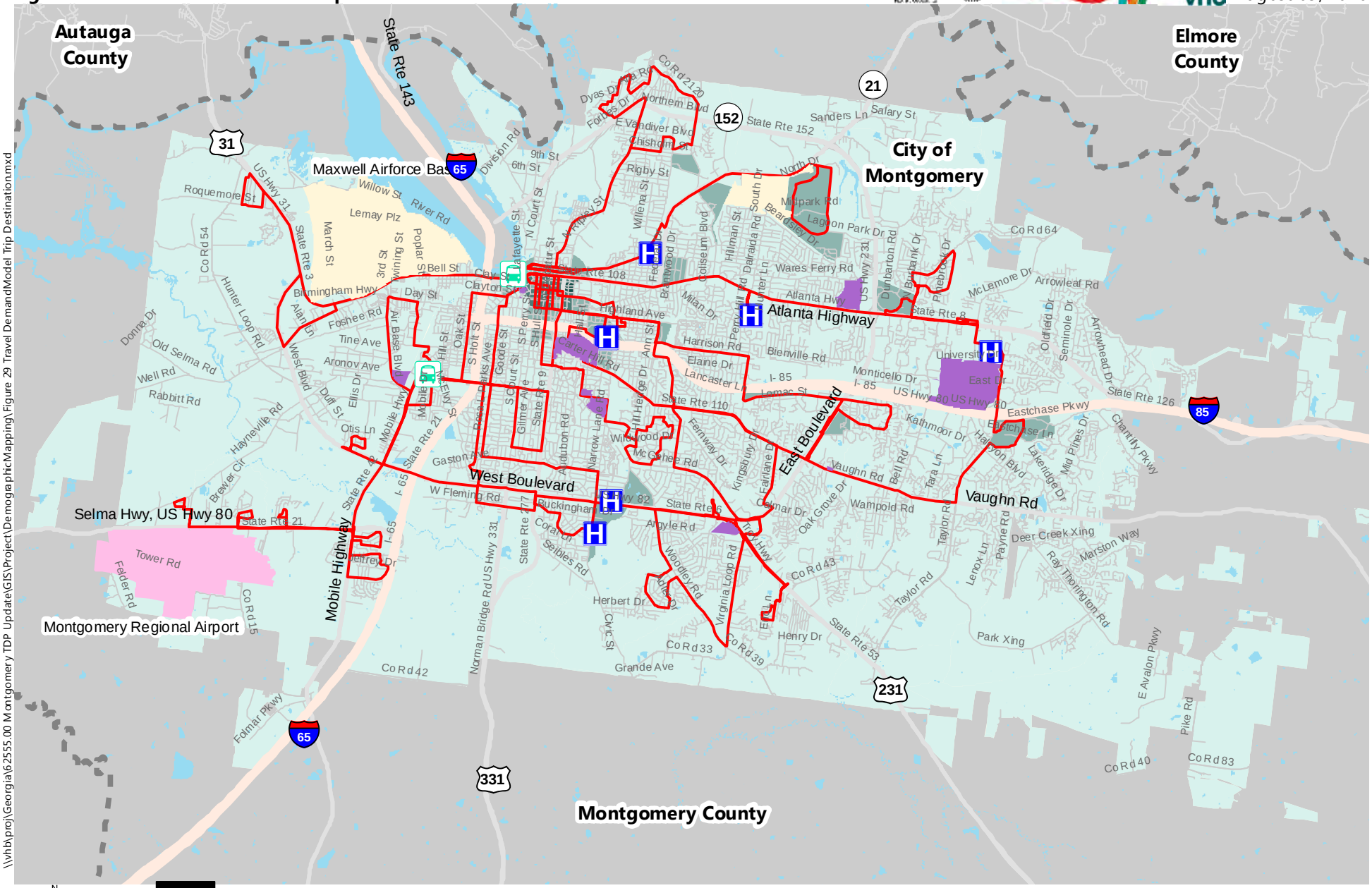
Sources: Montgomery MPO, U.S. Census, VHB

***HBW = Home-Based-Work Trips**

\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Demographic Mapping\Figure 28 Travel Demand Model Trip Origins.mxd

Figure 29: Travel Demand Model Trip Destination

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Demographic Mapping\Figure 29 Travel Demand Model Trip Destination.mxd

N

0 1 2 4 Miles

- M Transfer Centers
- Hospitals
- City, County, State Offices
- M Bus Routes
- State & Federal Rouads
- Interstates
- Local Roads
- Montgomery County
- Montgomery Airport
- Local Universities
- Military Bases
- Water

M Transit TDP | Montgomery, AL

2010 HBW Trip Destinations per sq mile

- 0 - 5,000
- 5,001 - 20,000
- 20,001 - 50,000
- Greater than 50,000

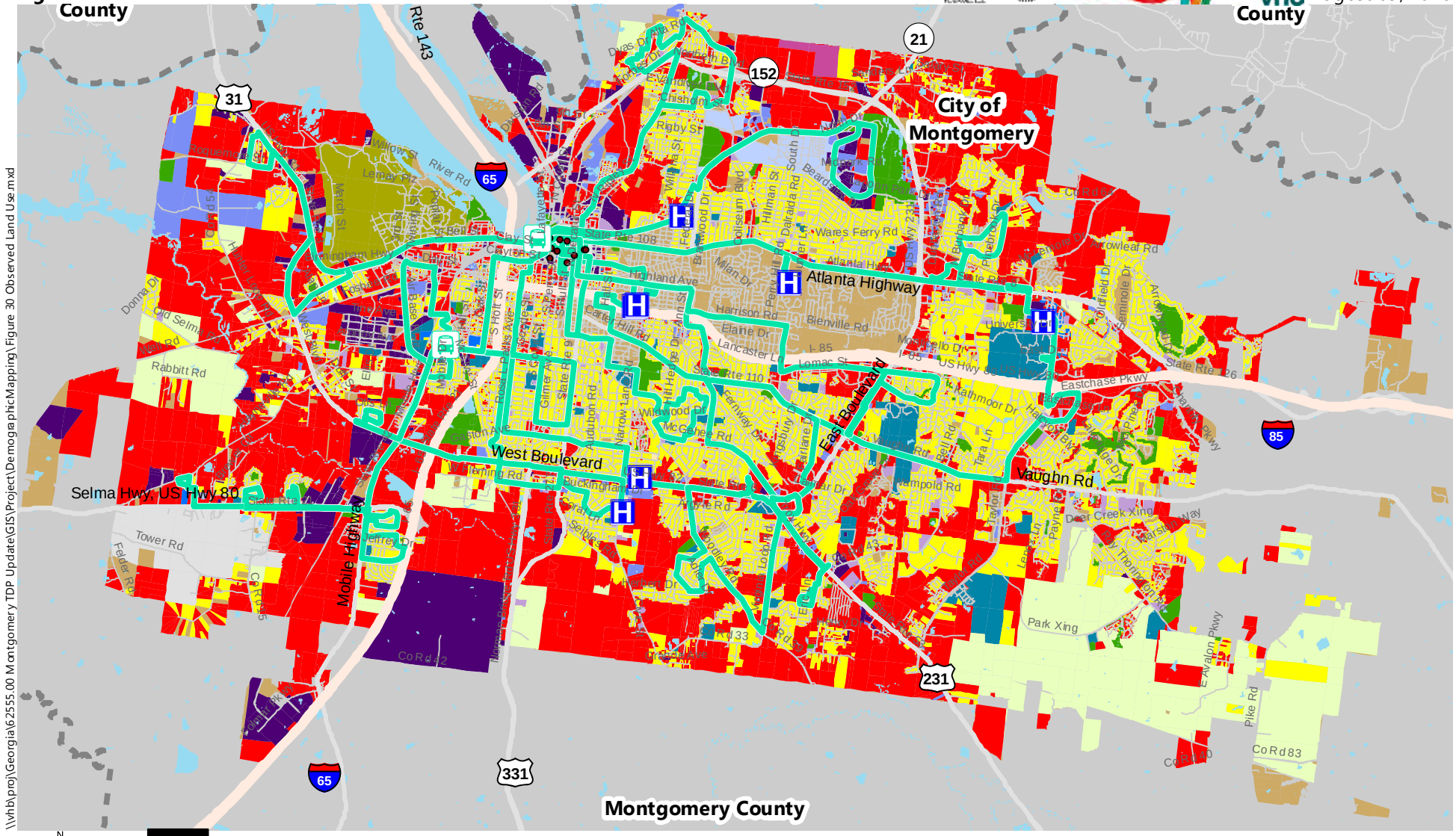
Montgomery, AL
2010 HBW Trip Destinations by Traffic Analysis Zone

Sources: Montgomery MPO, U.S. Census, VHB

***HBW = Home-Based-Work Trips**

Figure 30: Observed Land Use

August 09, 2016



N

0 1 2 4 Miles

M Transit TDP | Montgomery, AL

- M Transfer Centers
- Hospitals
- Landmarks
- M Bus Routes
- State & Federal Roads
- Interstates
- Local Roads
- Montgomery County
- Water

Observed Land Use

- Residential
- Assisted Living/Social Services
- Commercial/Retail/Office
- City/State/Federal Offices
- Entertainment
- Convention Center
- Education/Historic Landmarks
- Medical
- Church/Religious
- Agriculture
- Greenspace/Public Space
- Air Force Base
- Transportation
- Utilities
- Industrial
- Other/Unknown

Montgomery, AL
Observed Land Use
Sources: Montgomery MPO, U.S. Census, ACS Data, VHB

\\vhbpro\Georgia\62555.00 Montgomery TDP Update\GIS\Project\DemographicMapping\Figure 30 Observed Land Use.mxd

6

TDP Goals & Performance Measures

6.1 Introduction

The previous TDP did not have any specified goals for the M Transit System. To guide the development and selection of scenarios, this section draws from the Montgomery regional Long-Range Transportation Plan (LRTP), stakeholder input, and peer reviews to develop transit-specific goals for the TDP. The goals developed here will include associated performance measure that are SMART (**S**pecific, **M**easurable, **A**chievable, **R**ealistic, **T**ime-Bound) and make use of existing data.

As noted within the review of the previous studies, there were no goals included within the previous TDP. In fact, the only study reviewed with goals that would lend themselves to the TDP was the 2040 LRTP update. The table below lists the LRTP goals, the MAP-21 (FAST Act) emphasis areas they were meant to address, and their linkage to the TDP.

Table 3: Relationship between LRTP Goals & TDP

2040 LRTP Goals	MAP-21 (FAST ACT) Emphasis sis Areas	Relationship to TDP
Optimize the efficiency, effectiveness, connectivity, safety, and security of the transportation system	■ Safety ■ Congestion Reduction ■ System Reliability	The purpose of the TDP is to develop a strategy for an efficient transit system
Promote state of good repair and prioritize maintenance needs	■ Infrastructure Condition	The maintenance of fleet and stop amenities are a consideration of the TDP
Develop a financially feasible multimodal transportation system to support expansion of the regional economy	■ Freight Movement and Economic Vitality ■ Reduced Project Delivery Delays	Projected revenues and employment centers will be considered during the development of TDP recommendations
Provide viable travel choices to improve accessibility and mobility, sustain environmental quality, and preserve community values	■ Environmental Sustainability ■ Environmental Justice	Serving traditionally underserved populations is an inherent purpose of the TDP
Coordinate the transportation system with existing and future land use and planned development	■ Project Coordination and Public Involvement	Land use considerations such as population and employment centers will be assessed during the development of TDP recommendations
Increase jurisdictional coordination and citizen participation in the transportation planning process to enhance all regional travel opportunities	■ Project Coordination and Public Involvement	The TDP process will serve to reach out to areas of potential expansion, such as Pike Road, as well as include a community engagement program
Develop, maintain, and preserve a balanced multimodal transportation system that provides for safe, integrated, and convenient movement of people and goods	■ Multimodal Transportation ■ Environmental Justice	The connectivity of bicycle and pedestrian facilities to transit routes will be considered as part of this TDP update

In reviewing the Major Themes of the public engagement activities and the Common Themes from Montgomery Stakeholder Workshop Meetings, the following themes could lend themselves to the development of TDP Goals.

- Better access to employment is needed
- The **perception** of transit needs to be improved
- **Better amenities** are needed at bus stops

- More service coverage is needed
- **Reliability** is a perceived problem
- The M needs to explore more **funding**
- More education and awareness is needed

6.2 Peer Review

The section provides examples of goals from other peer transit planning documents. The peer agencies for this analysis were selected because: 1) of similarities with regard to size, such as the Mobile Wave and Sarasota County Area Transit; and/or 2) they provided good examples of goals and performance measures applicable to the M Transit System, such as Jacksonville Transit, Miami-Dade Transit and the Orlando Lynx. As a result, the documents included in this review were:

- Mobile Wave Transit Development Plan
- Sarasota County Area Transit System Service Standards Report
- Jacksonville Transit Authority Transit Development Plan
- Miami-Dade Transit Development Plan
- Orlando Lynx Transit Development Plan

Mobile Wave Transit Development Plan

The Mobile Wave TDP contained best practices for route planning and phasing. These standards are as follows:

- Service should be simple (Easy to understand)
- Routes should operate along a direct path (Easy to understand)
- Route deviations should be minimized (Easy to understand)
- Major routes should operate along arterials (Serve existing traffic)
- Routes should be symmetrical (Easy to understand)
- Service should be well-coordinated (Efficiency)
- Service should be consistent (Reliable)
- Service design should maximize service (Efficiency)

Sarasota County Area Transit Service Standards Plan

Much like Mobile, this plan contained standards that dealt specifically on route efficiency based on the following subject areas:

- Route Productivity Standards – passengers per revenue hour, passengers per revenue mile, etc.
- Service Delivery – on time performance and trips completed
- Route Design – route/stop spacing, stop amenities, etc.
- Schedule - headway and span of service

Jacksonville Transit Authority Transit Development Plan

The Jacksonville JTA TDP contained five goals associated with customer service, safety and security, mobility, financial stability, education and training, and effectiveness and efficiency, which are provided below:

- Increase **customer satisfaction** by providing a superior and reliable customer experience
- Ensure **safety and security** throughout the transit system and in the agency work environment
- Deliver accessible transportation choices, providing **mobility**, **livability**, **economic prosperity** and **environmental sustainability** throughout the community
- Provide for **long-term financial stability**, while increasing our modal share and service
- **Inform the community** on the value of a quality public transportation system and develop a highly qualified JTA workforce
- To deliver effective and quality multimodal transportation services and facilities in an **efficient** manner

Miami-Dade Transit Development Plan

The Miami-Dade TDP had the following goals:

- Improve convenience, **reliability** and customer service of transit services
- Improve operational **safety and security**
- Improve **coordination** and **outreach**
- Enhance the integration of transit services to **support the economy** and **preserve the environment**
- Maximize use of all **funding** sources
- Maximize and expand transit services (**efficiency**)
- Transit system shall fully meet requirements of the **Americans with Disabilities Act (ADA)**.

Orlando LYNX Transit Development Plan

The Orlando TDP has three goals focused on service characteristics, communication, and funding.

- Provide high quality mobility options with **effective and efficient** service
- **Improve internal and external communication** to improve organizational efficiency and meet the evolving needs of the community
- Secure a dedicated source of **funding** to allow LYNX to better meet varying transportation and infrastructure needs

Observations from Peer Review

The following are common themes and observations from the peer reviews of goals:

- All TDPs have a limited number of goals
- Some goals addressed more than one emphasis area (e.g., reliability and customer service, mobility and economic prosperity, etc.)
- Emphasis areas for goals commonly expressed in the peer TDPs included the following:
  - Safety
  - Reliability
  - Mobility
  - Customer Service
  - Service Coverage
  - Supporting the Economy
  - Efficiency
  - Communication and Public Awareness
  - Funding and Financial Stability
  - Environmental Sustainability

Below is a comparison matrix of common emphasis areas addressed in the peer review, Montgomery LRTP Goals and stakeholder interviews.

Table 4: Comparison of Emphasis Areas

Emphasis Area	Peer Review	2040 LRTP Goals	Stakeholder Input
Safety	✓	✓	
Reliability	✓	✓	✓
Multimodal Connectivity	✓	✓	
Mobility	✓	✓	
Customer Service	✓		✓
Service Coverage	✓		✓
Supporting the Economy	✓	✓	✓
Efficiency	✓	✓	✓
Communication and Public Awareness	✓	✓	✓
Funding and Financial Stability	✓	✓	✓
Environmental Sustainability	✓	✓	
State of Good Repair		✓	✓

These emphasis areas cover a wide range of aspects of transit service. The stakeholder input was more focused on the customer service, communication, reliability, and coverage, while the LRTP had much

broader transportation emphasis areas. It is important to balance goal development to ensure the goals facilitate system improvements while remaining realistic in light of system constraints.

6.3 Goals and Performance Metrics

Using peer review analysis input from the Montgomery MPO, as well as feedback from stakeholders and the public, the following goals for the TDP have been developed:

- Enhance the integration of transit services to support the economy and local land uses.
- Provide high quality mobility options with safe, efficient service, and multimodal connectivity.
- Ensure a high level of customer service through effective communication and public engagement.
- Maximize existing funding sources and assets to provide cost-effective service.
- Maintain reliability of the transit system service through a state of good repair

It should be noted that under the new federal transportation funding bill, the Fixing America's Surface Transportation (FAST) Act, performance measures developed for the M Transit System will become part of the required overall performance monitoring process for MPOs reporting to the Federal Highway Administration (FHWA). Performance measures for each goal were developed in recognition of the annual reporting needed for the National Transit Database (NTD) to the Federal Transit Administration (FTA). Therefore, the performance measures derived from the TDP goals were developed based on the following factors:

- Data available for analysis
- Relevancy to Montgomery area and transit characteristics
- Availability of staff resources for review
- Transparency of process to members of policy boards (Transit Board, MPO), transit riders and other constituents
- Streamlined for reporting responsibilities to FHWA and FTA

The performance measures developed for the M Transit are provided in Table 5.

It should be noted that the FHWA and FTA are currently in the process of developing guidelines for performance monitoring at the MPO level. Therefore, the performance measures presented within may need to be amended per FHWA guidance.

Table 5: TDP Goals and Associated Performance Measures

2040 LRTP Goals	Related Performance Measure(s)	Data Source(s)
Enhance the integration of transit services to support the economy and support local land uses	Percent of transit service area employment served by transit routes (within ¼ mile)	■ US Census/American Community Survey (ACS)
	Percent of transit service area population served by transit routes (within ¼ mile)	■ US Census/ACS
	Percent of MPO area employment served by transit service (within ¼ mile of routes, ½ mile of park and ride facility access)	■ US Census/ACS
	Percent of MPO area population served by transit service (within ¼ mile of fixed routes, ½ mile of park and ride facility access)	■ US Census/ACS
Provide high quality mobility options with safe, efficient service, and multimodal connectivity	Number of crashes involving fleet vehicles (buses and service vehicles)	■ M Transit, CARE data
	Number of injuries at M facilities (at transfer centers, bus stops, and on board)	■ M Transit, Montgomery Police
	Number of bicycle amenities along existing fleet (bike racks, bike bays) and transfer facilities (bike parking)	■ M Transit
Ensure a high level of customer service through effective communication and public engagement	Conduct customer service survey and report results in an annual letter to be distributed along buses, at transfer centers, and via internet	■ Annual survey conducted by M Transit
	Percent of trips on time (within one minute early or five minutes late)	■ M Transit
	Percent of transfers (per total riders)	■ M Transit
Maximize existing funding sources and assets to provide cost-effective service	Cost per revenue mile	■ M Transit (NTD reporting)
	Cost per revenue hour	■ M Transit (NTD reporting)
Maintain reliability of the transit system service through a state of good repair	Develop and monitor fleet maintenance program that includes a prescribed maintenance and monitoring schedule	■ M Transit
	Maintain adequate spare ratio for fleet vehicles (buses and demand response)	■ M Transit (NTD Reporting)

7

Ridership Data Summary

7.1 Overview

To properly understand how the system operates, develop profiles of individual routes, and develop recommendations; detailed ridership information is critical. The M Transit System operates using signed and flagged stops. Flagged stops allow anyone to board at any street corner along routes that the operators deem safe. The purpose of this policy was to allow those with disabilities or mobility impairments to find a place where they can safely board the bus, if they cannot do so at a signed stop. However, this allows all riders to take advantage of this policy and therefore can cause delays when multiple people board separately within a short distance, or try to chase the bus and potentially cause unsafe situations.

This section describes the methodology used to collect data, system wide analysis, and individual route performance. The individual route profiles are included in the appendix.

7.2 Methodology

Passenger data collection occurred April 12-15, 2016 and covered all routes. Data were collected using tablets with ArcGIS Online (AGOL) technology and an in-house VHB mobile application. Every time the bus stopped, data collectors used the app to automatically record the date, time, and location. Data collectors entered in the number of passengers boarding and alighting. In this way, ridership on the M Transit System was mapped.

Data were cleaned using AGOL and exported for analysis with spatial and attribute components. This allows the routes to be mapped and analyzed by the location of the stops, as well as the time and boarding/unloading volumes for each stop. Occasionally, a GPS signal was missing, and stops were placed along the routes based on the time stamp of the data point. The full methodology for placing the stops can be seen in the appendix.

To add context to the data collection, a VHB team member met with drivers, operators, and dispatchers at the quarterly meeting. Additionally, drivers were encouraged to talk with the VHB data collection team member while she was conducting data collection if they wanted to remain anonymous in their comments. Together, these data provided a detailed system analysis with local context.

7.3 System Evaluation

Overall, the VHB team counted 2,226 passengers boarding during data collection for one weekday. This included all routes, and a handful of pickups by buses deadheading to the Intermodal Center from the garage, and back at the end of the service day. Routes individually vary in their span of service, but overall the M Transit System provides service from 4:40 AM until 9:35 PM.

Table 6: M Transit Systemwide Statistics

Systemwide Statistics	
Boardings per Day	2,226
Trips per Day	225
Span of Service	4:40 AM - 9:35 PM
Pass in Peak Trip	59
Peak Trip	Route 1: 5:35 AM
Pass/ VRM	0.59
Pass/ VRH	9.02
Pass/ Trip	9.87
Farebox Recovery	10.9%
Cost/ Trip	$9.14

Systemwide, the trip that carried the most boardings was the 1:20 PM trip from Route 10: South Court St. which had the second highest daily ridership of 342. Route 2 Eastdale Mall had the highest ridership with 386 daily riders. These were the only two routes with more than 300 daily riders. Route 15 Allendale had by far the lowest daily ridership, with only 25 boardings.

Passengers per vehicle revenue mile (VRM) measures the efficiency of a route compared to the distance operated, while passengers per vehicle revenue hour (VRH) measures the route efficiency based on the hours of service provided. These metrics can be used to identify routes with low productivity and/or high costs, and therefore can be an indicator that a route needs to be reevaluated. The average passenger per VRM for the M Transit System was 0.67 and the average passenger per VRH systemwide was 10.19. Route 10 had the most efficient service, with the highest number of passengers per VRM (1.7) and per VRH (18.0).

Farebox recovery ratio examines the relationship between operating costs and fares. Based on 2014 NTD data, approximately $1.00 was recovered per unlinked passenger trip, despite the fact that the fare is $2.00. While it is expected to be lower than the actual fare because of multi-day passes and discounts for seniors and disabled riders, this is particularly low because of the large number of transfers. In surveys, a large number of riders stated they had to transfer on most trips, some even stating they needed to transfer twice within a one-way trip, which likely contributed to the low systemwide farebox recovery of 12.3%. Routes 10 and 2 had the highest farebox recovery ratio with 21.7% and 20.3% respectively.

Systemwide, the average cost per trip was $8.09, with a large range across all routes from $23.09 on Route 15 Allendale down to $4.58 on Route 10 Ridgecrest. The cost per trip for individual routes can be on indicator of routes that are financially unfeasible and those with a high demand.

Another way to analyze the system is by using heat maps. Figure 31 shows heat maps of the system to identify areas where a lot of riders are boarding. Figure 33Figure 32 shows all boardings for the system, and there are clearly two main hotspots where the Intermodal and West Fairview Transfer Centers are. These are inflated due to the number of people transferring at these locations and not necessarily beginning their trips here. To address this, Figure 32 performs the same density analysis without those two transfer centers. Once removed, the One Center stands out along with the intersection of Fairview Street and Rosa Parks Avenue, the area just west of downtown, and Eastdale Mall.

It is also worth noting that while the neighborhood of Winderton on Route 6 registers on the density analysis, the neighborhoods along Highway 80, Gunter Annex, and at the intersection of Taylor Road and Vaughn Road do not even register and have the lowest boarding density within the system.

Individual route heat maps can be found in the appendix as part of the route profiles. The systemwide as well as detailed route-level analysis was to develop the recommended scenario in Section 8.

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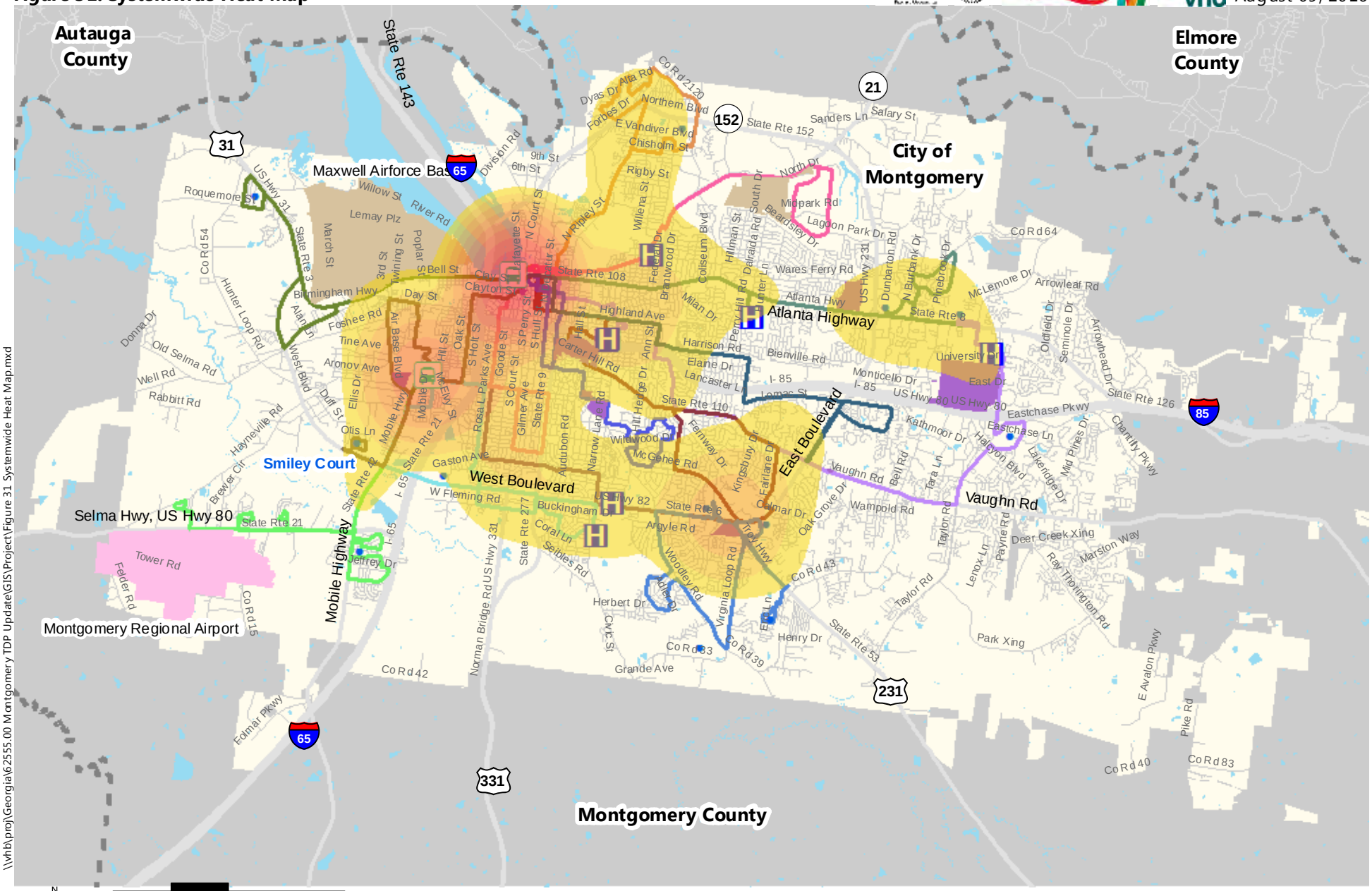
Table 7: Route Level Statistics

	Route	Pass./ Day	Trips/ Day	Pass/ VRM	Pass/ VRH	Pass/ Trip	Pass/ Peak Trip	Peak Trip	Route Farebox Recovery Ratio	Cost/ Trip	% of Operating Cost	% of System Ridership
1	AUM East Chase	224	15	0.5	7.5	14.9	26	1:35 PM	9.0%	$11.04	12%	9%
2	Eastdale Mall	386	23	0.9	16.8	16.8	37	2:35 PM	20.3%	$4.91	9%	15%
3	Montgomery Commons	251	15.5	1.0	12.1	16.2	25	8:20 AM	14.6%	$6.82	8%	10%
4	Boylston	171	15	0.8	11.4	11.4	24	6:35 AM	13.8%	$7.23	6%	7%
5	One Center	237	17	0.8	9.3	13.9	25	2:35 PM	11.2%	$8.87	10%	9%
6	Southlawn Twingate	124	15	0.4	8.3	8.3	14	6:20 AM	10.0%	$9.98	6%	5%
7	Maxwell AFB	55	16	0.2	4.6	3.4	9	11:35 AM	5.5%	$17.99	5%	2%
8	Gunter Annex	63	15	0.3	5.6	4.2	9	7:50 AM	6.8%	$14.73	5%	3%
9	Virginia Loop	70	21	0.2	4.5	3.3	10	12:00 PM	5.5%	$18.26	6%	3%
10	South Court St.	342	19	1.7	18.0	18.0	48	1:20 PM	21.7%	$4.58	8%	14%
11	Ridgecrest	124	17	0.6	10.9	7.3	17	3:40 PM	13.2%	$7.54	5%	5%
12	Smiley Court/Gibbs Village	281	18	1.0	10.8	15.6	30	5:25 AM	13.0%	$7.63	11%	11%
15	Allendale	25	7	0.3	3.6	3.6	6	6:35 AM	4.3%	$23.09	3%	1%
16	Twin Oaks	162	12	0.6	10.5	13.5	25	1:05 PM	12.6%	$7.89	6%	6%
	Whole System	2,515	225.5	0.7	10.2	11.2	48	Route 10 1:20 PM	12.3%	$8.09	100%	100%

Figure 31: Systemwide Heat Map

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Figure 31 Systemwide Heat Map.mxd

N

0 1 2 4 Miles

M Transfer Centers
Hospitals
Points of Interest
State & Federal Roads
Interstates
Local Roads

Montgomery Airport
Local Universities
Military Bases
Water
Montgomery County

Route 1 AUM East Chase
Route 2 Eastdale Mall
Route 3 Montgomery Commons
Route 4 Boylston
Route 5 Montgomery Mall
Route 6 Southlawn - Twingates
Route 7 Maxwell
Route 8 Gunter
Route 9 Virginia Loop
Route 10 South Court Street
Route 11 Ridgecrest
Route 12 Smiley Court - Gibbs Village
Route 15 Allendale Road
Route 16 Twin Oaks

M Transit TDP | Montgomery, AL

Boardings Density

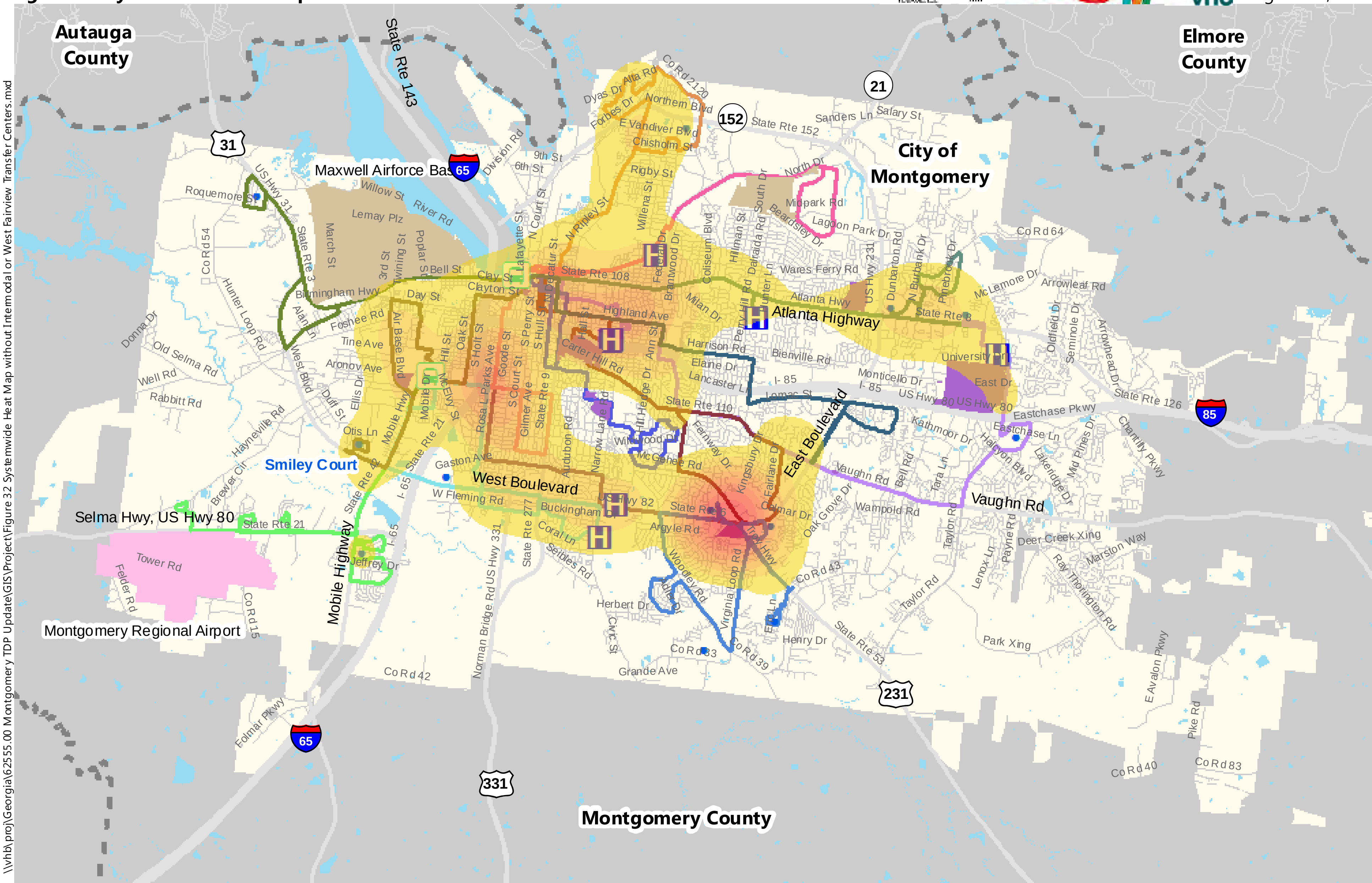
Low
Medium-Low
Medium
High
Very High

M Transit System Heat Map

Sources: Montgomery MPO, U.S. Census, VHB

Figure 32: Systemwide Heat Map without Intermodal or West Fairview Transfer Centers

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Figure 32 Systemwide Heat Map without Intermodal or West Fairview Transfer Centers.mxd

0 1 2 4 Miles

M Transit TDP | Montgomery, AL

- M Transfer Centers
- Hospitals
- Points of Interest
- State & Federal Roads
- Interstates
- Local Roads
- Montgomery Airport
- Local Universities
- Military Bases
- Water
- Montgomery County
- Route 1 AUM East Chase
- Route 2 Eastdale Mall
- Route 3 Montgomery Commons
- Route 4 Boylston
- Route 5 Montgomery Mall
- Route 6 Southlawn - Twingates
- Route 7 Maxwell
- Route 8 Gunter
- Route 9 Virginia Loop
- Route 10 South Court Street
- Route 11 Ridgecrest
- Route 12 Smiley Court - Gibbs Village
- Route 15 Allendale Road
- Route 16 Twin Oaks

Boardings Density

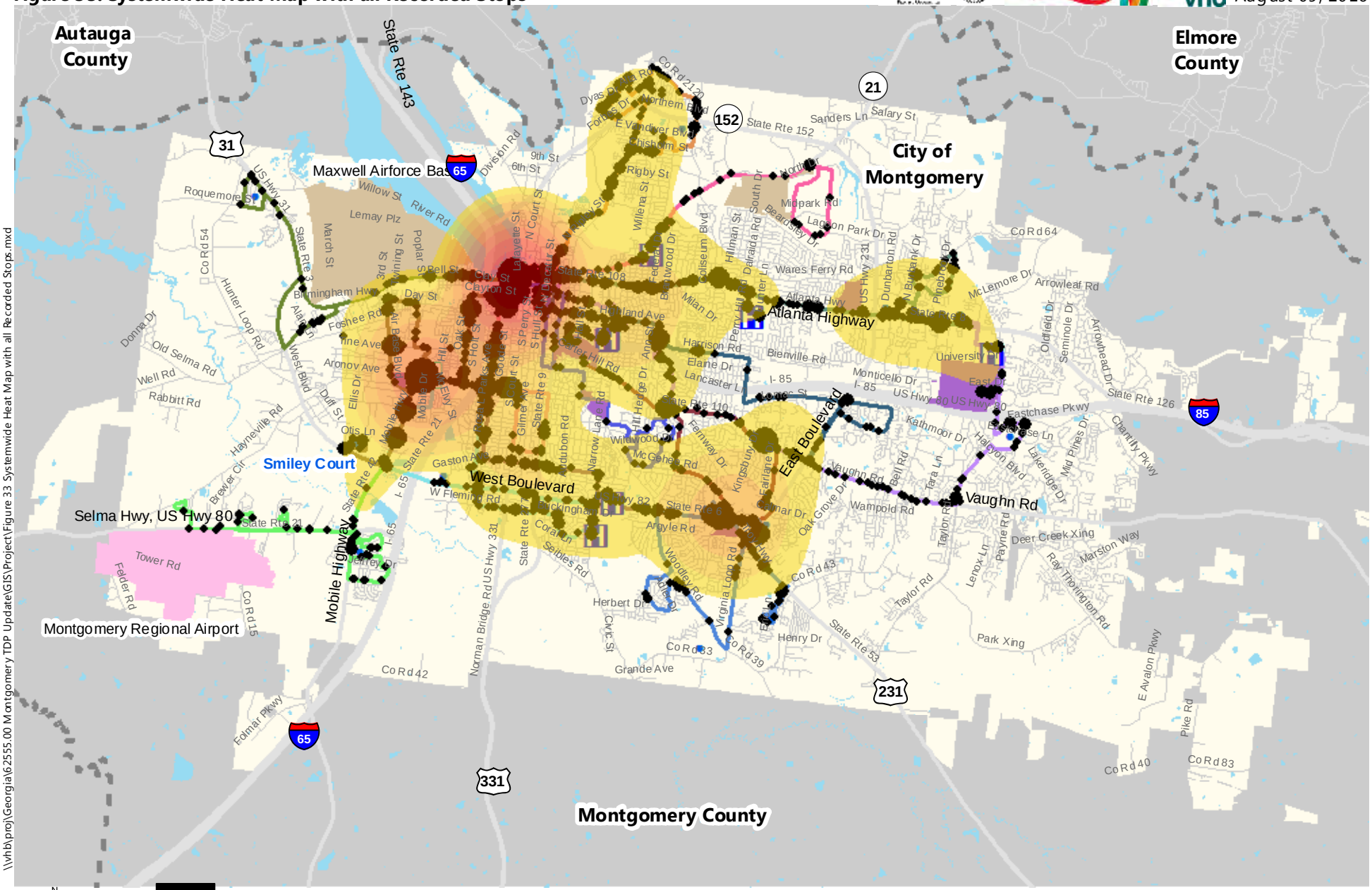
- Low
- Medium-Low
- Medium
- High

M Transit System Heat Map Excluding Transfer Centers

Sources: Montgomery MPO, U.S. Census, VHB

Figure 33: Systemwide Heat Map with all Recorded Stops

August 09, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Figure 33 Systemwide Heat Map with all Recorded Stops.mxd

N

0 1 2 4 Miles

M Transfer Centers
Hospitals
Points of Interest
State & Federal Roads
Interstates
Local Roads

Montgomery Airport
Local Universities
Military Bases
Water
Montgomery County

Route 1
Route 2
Route 3
Route 4
Route 5
Route 6
Route 7
Route 8
Route 9
Route 10
Route 11
Route 12
Route 15
Route 16

M Transit TDP

Collected Boardings
0 - 1
2 - 4
5 - 9
10 - 16
17 - 26

Montgomery, AL

Boardings Density
Low
Medium-Low
Medium
High
Very High

M Transit System Heat Map

Sources: Montgomery MPO, U.S. Census, VHB

8

Recommended System

Based on the analysis of the individual route profiles and the systemwide evaluation completed in Section 7, this section describes the methodology used to develop the recommended transit system for Montgomery.

8.1 Methodology & Recommendation Development

Iterations of the recommended system were tested using the Transit Boardings Estimation and Simulation Tool (TBEST), examining the changes based on adjusting the route alignments and headways, with a focus on areas with the highest ridership and connections to cover common transfers. TBEST estimates daily boardings based on demographic inputs directly from federal Census data as well as local land uses. The Montgomery MPO provided VHB with a map of observed land uses that were used as input for this analysis. While services were discussed that would connect to locations outside of the City, existing regulatory limitations on operations constrained our focus to the City limits.

The TBEST model was calibrated to existing ridership counts of the M Transit System, as collected by VHB in April, 2016. While results were calibrated to local collected data, the relative results indicate the change in ridership that can be expected once service is fully implemented.

There were two major focuses of the recommended system: to provide more opportunities for connection across the City of Montgomery and to reduce the total time riders spend waiting and riding. Strategies such as more direct service and shorter headways were used in developing

recommendation to increase connections and reduce time spent traveling to destinations. Recommendations were also focused on minimizing operating cost increases in the short term.

8.2 Recommended System

The recommended transit system focuses on cross-town connections so riders do not necessarily have to ride to one of the transfer centers to change buses and can take more direct routes to their destinations. Because the existing system is based on scheduled pulses from two transfer centers located in the northwest quadrant of the City, many riders are required to ride into either downtown or Fairview and then back out on another bus instead of having a direct route between their destinations. Additionally, the recommended system adds service to Chantilly Parkway in response to public and stakeholder input.

The recommended scenario can be seen in Figure 34 with individual routes described in Table 8. Detailed recommended route maps used to develop the scenario can be seen in Appendix XX.

Table 8: Recommended Changes by Route

Route	Change	Reasoning
1	Route 1 was extended east along Vaughn Road to Ryan Road and Chantilly Parkway, then east along Eastchase Parkway to access the shopping center. At the shopping center, the bus will turn around and return to the Intermodal Center along Chantilly Parkway, Ryan Road, and the existing alignment.	The main purpose of this change was to provide access to the retail along Chantilly Parkway, and The Shops at Eastchase.
2	Route 2 follows the same alignment along Atlanta Highway with a deviation to the Veterans Affairs Hospital during designated trips. The deviation to Pinebrook was removed, and the route was extended to Taylor Road, where it turns south to access AUM. There the bus turns around and on its way west, deviates into the Eastdale Mall parking lot. The bus then returns to the Intermodal Center along the existing alignment on Atlanta highway.	Ridership in the Pinebrook neighborhood was low and it was cut to save time on the route to instead access Taylor Road. The extension to AUM provides an opportunity to transfer to Routes 1 and 17 to more directly access other eastern and southern portions of the City.

Route	Change	Reasoning
3	Route 3 alignment changed slightly. The route begins at the West Fairview Transfer Center and travels west along Fairview Avenue until turning south along Norman Bridge Road instead of Rosa Parks Avenue. Instead of turning around at the One Center, it will provide access along Woodley Rd for riders who currently use Route 9..	This change provides access to transit along a parallel north-south corridor since Rosa Parks Avenue will be covered by Route 11. This also provides direct access from Woodley Rd to a transfer center.
4	No changes proposed	
5	Route 5 follows its existing alignment until it reaches Boulevard. Here, the route extends along US 231 into the Regency Park neighborhood where it turns around.	This extension provides service to an area currently served by Route 9, which has been eliminated in the recommended system.
6	Route 6 was shortened to turnaround at the regional airport and removes service from the westernmost neighborhood along Richardson Road North. The route now turns around at the Regional Airport. On northbound service, Smiley Courts was added to this route.	The low ridership in the westernmost neighborhood was removed due to low ridership and to save time on the route. Smiley Courts was added as a way to provide direct service from this neighborhood to the West Fairview Transfer Center.
7	Route 7 was redrawn to provide access to Hunter Station and eliminate the loop. The new Route 7 will travel along Bell Street to Birmingham Highway, then follow its route along Old Selma Rd and West Blvd to Hunter Station. When returning, the vehicle will follow the same route.	Because of low ridership, Route 7 service hours have been reduced to peak hours only. This results in two trips in the morning and two in the afternoon to provide service to Hunter Station while reducing the cost of the route.
8	As service currently is operated, one vehicle serves Routes 7 and 8. Route 7 has been shortened to loop through May Street and Day Street before heading back to the Intermodal Center along Maxwell Blvd. Service west of 3rd was removed. Route 8 has been extended to the Eastdale Mall. The loop around Gunter Park Drive W was removed, but service will still run along Gunter Park Drive E.	Low ridership west of 3rd Street made this route too expensive per trip all day and it will be served by the peak hour service of Route 7.To provide access to riders along Day Street who are losing service from Route 12, Route 8 provides service for them. The extension to Eastdale Mall provides an opportunity for connectivity and reduce travel times and transfers for those traveling to the south and west parts of the City.

Route	Change	Reasoning
9	Route 9 was eliminated. However, riders along South Boulevard as well as the Riverdale Area will be able to access transit on Route 5. Riders along Woodley Rd will have access to Route 3.	The ridership on Route 9 was low, and it was a relatively expensive route that provided little connectivity and no direct service to a transfer center. Splitting the route allows these riders direct access to a route connecting to transfer centers.
10	Route 10 now provides north-south access along Court Street to the Intermodal Center.	This new route provides direct north-south service along Court Street which currently does not have service.
11	Route 11 still provides access to Fleming Road and the health service on the southern part of Montgomery, but connects to the Intermodal Center along Rosa Parks Ave instead of connecting to the West Fairview Transfer Center.	Route 11 service along Fleming Road and Sunshine Drive were kept intact because of the ridership in that area. However, many of these riders were transferring to other routes so the service connects to the Intermodal Center. With Route 3 being altered, Route 11 now provides north-south service along Rosa Parks Avenue.
12	Route 12 was kept largely intact. Service north of Terminal Road was eliminated and no longer goes directly through Gibbs Village.	Low ridership in north of Terminal Road and new coverage by Route 7 account for eliminating service in that area. Low ridership in Gibbs Village and tight turns cause the routing to remain outside of the local streets.
15	Due to low ridership, Route 15 was eliminated.	This was by far the lowest ridership route. While this connection was only made 7 times per day, these were expensive per trip costs.
16	Route 16 still provides access to Carmichael Road, however it connects to the West Fairview Transfer Center instead of the Intermodal Center.	The switch from accessing the Intermodal Center downtown was to provide a connection directly from the eastern side of the City to the West Fairview Transfer Center for more direct connectivity, as described in the on board survey.
17	This is a new route that provides service along the Boulevard from Smiley Courts to the Eastdale Mall.	The purpose of this new route was to provide additional connectivity along Boulevard and allow riders to access cross-town destinations with more direct service.

To continually provide improved travel times for riders, it will be important to improve the frequency of all routes within the system. However, to implement the recommended changes with the existing number of vehicles, the following headways are recommended for the first year of implementation. As detailed in Section 11, it is recommended

that the M Transit System acquire additional vehicles to improve these headways over time for routes with high ridership.

Table 9: Recommended Headways for Rollout of New System

Route	Existing	Recommended			
	Headways	Weekday	Weekday Buses	Saturday	Saturday Buses
1	60	60	2	120	1
2	30	30	2	60	1
3	60	60	2	120	1
4	60	60	1	120	0.5[1]
5	30, 60, 90*	45	2	90	1
6	60	60	1	120	0.5
7	45, 90*	45	1	45	1
8	45, 90*	90	1	90	1
10	30, 60	60	1	45	1
11	60	60	1	120	0.5
12	30, 60*	30	2	120	0.5
16	60, 90*	45	2	90	1
17	-	60	1	60	1
		TOTAL	**19**		**11**

**Indicates multiple headways throughout the weekday*

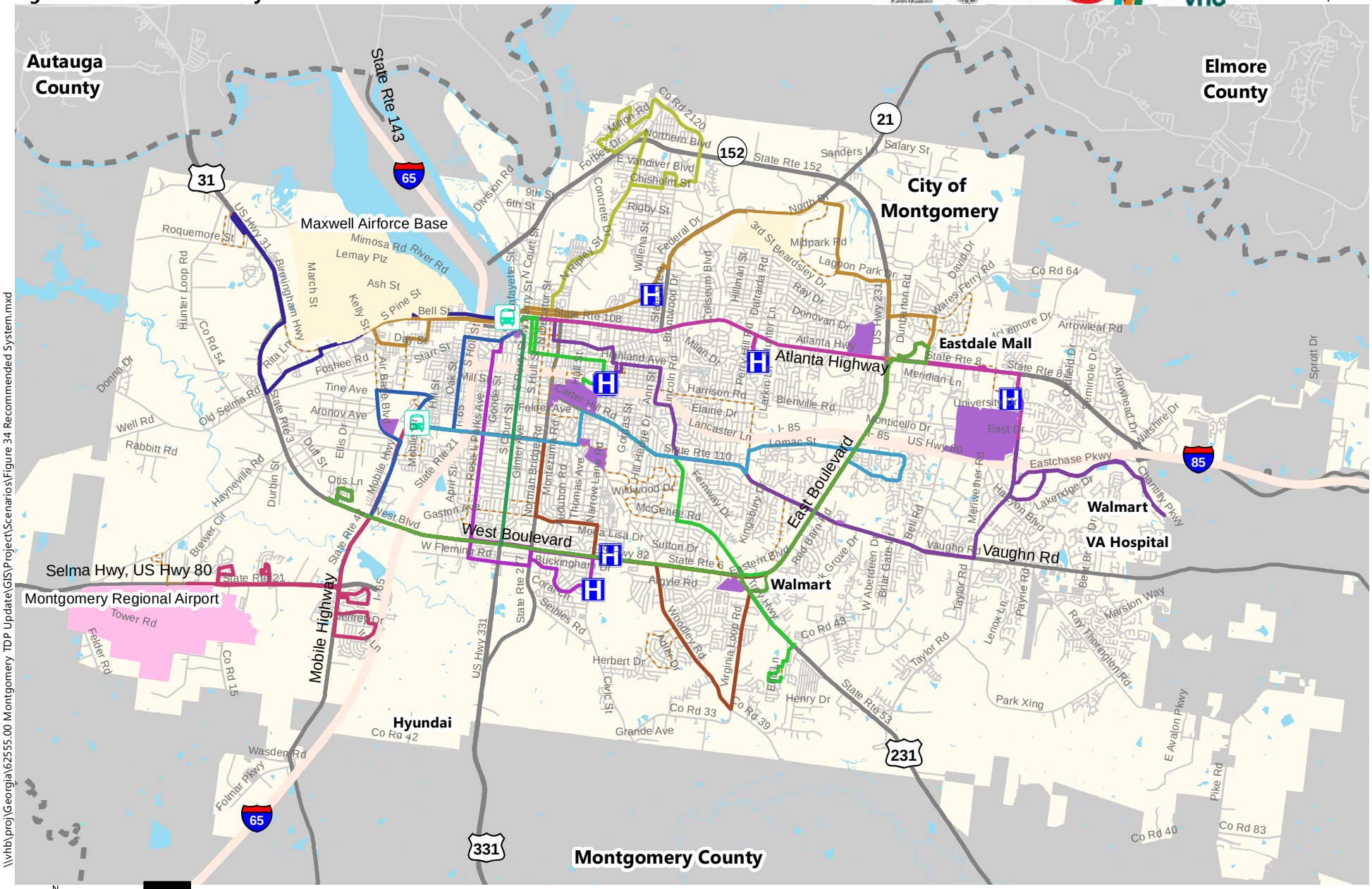
The M Transit System currently has a fleet of 27 buses. To maintain a spare ratio of 20%[2], only 22 of those buses should be in daily use. However, many of these vehicles are beyond useful life and are not always available for use, as described in Section 9. Therefore, the initial recommended headways were restricted to the same number of vehicles currently used daily, 19. It is recommended that the M Transit System continue to grow its fleet as capital funds are available and that the expanded fleet be used to improve headways for all routes in the system over the five year period of the TDP. Shorter headways will improve rider satisfaction and reduce overall travel time for riders.

[1] Routes requiring 0.5 vehicles will be interlined with another route requiring 0.5 vehicles

[2] As recommended by the American Public Transportation Association

Figure 34: Recommended System

October 05, 2016



\\vhb\proj\Georgia\62555.00 Montgomery TDP Update\GIS\Project\Scenarios\Figure 34 Recommended System.mxd

N

0 0.75 1.5 3 Miles

M Transfer Centers
Hospitals
Local Roads
State & Federal Roads
Interstates
Montgomery Airport
Local Universities
Military Bases
Water
Montgomery County
Existing M Bus Routes

Recommended Routes

1
2
3
4
5
6
7
8
10
11
12
16
17

M Transit TDP | Montgomery, AL

Sources: Montgomery MPO, U.S. Census, VHB

To promote connectivity the recommended scenario is dependent on the ability to transfer between routes for free throughout the system instead of one of four current transfer areas (Intermodal Center, Westview Transfer Center, One Center, Walmart).

TBEST provides estimates for daily ridership, run-time, relative cost, and transfers. The service area and headway for each route were adjusted to optimize the relative cost and route performance. As shown in the following table, the recommended system provides significant improvements.

Table 10: Relative Changes in Performance Measures

Characteristic	Existing System[3]	Recommended System Projection
% Population served	83%	83%
% Employment Served	88%	90%
Boardings per Mile	0.7	0.9 ±0.1
Boardings per hour	11.3	15.8 ±1.6
$/Passenger Trip	$10.50	$7.70 ± $0.70

With regard to ridership, TBEST projections estimated an increase in annual riders between 17% and 32%. Additionally, TBEST forecasted an increase in operations cost of approximately 17%. The projected ridership increase brings down the cost per mile as well as the average cost per trip. The ridership increases assume that the land use pattern will remain the same. The addition of Route 17 along the Boulevard, improvements to headways in four routes, and the ability to take more direct trips helped drive the increase in ridership. While the recommended system utilizes the same number of vehicles on weekdays, 19, the recommended system has more of those vehicles in use for the entire day, as opposed to portions of the service day. This results in higher operation costs with the same number of vehicles.

Financial feasibility was an important part of developing the recommended system and rollout headways. This system provides additional connectivity throughout the City while maintaining service to areas with low ridership but an identified mobility need. Conversations with local decision-makers indicated the potential for small increases in local funding to support the increase in operations costs. Ideally, these headways would be improved over time with all routes on either 30 or 60 minute headways in the future.

[3] Note that these are the numbers for the existing system from TBEST, and are calibrated to a combination of on board counts and farebox data for the week of April 11, when data were collected.

9

Equipment and Facilities

This section provides an overview of the equipment and facilities managed and operated by the M Transit System. The M Transit System has 100 employees, made up of 50 drivers, 34 administrative positions, and 16 maintenance positions. Of the 100 employees, 82 are full time.

9.1 Vehicles

The section provides an overall description of the current fleet in operation by The M Transit System. Fleet inventory characteristics were provided by M transit staff. There are a total of 38 vehicles in the M fleet - 27 fixed route vehicles and 11 demand response vehicles.

9.1.1 Fixed Route Service Fleet

Characteristics for the fixed route fleet are provided in Table 11. A summary of key characteristics of the M Transit System fixed route fleet shown in Table 11 follows:

- Of the 27 fixed route vehicles, all but six of the vehicles have been in operation for five of fewer years.
- All six of the older vehicles have bene in operation for at least 10 years.
- Four of the older vehicles, which are shaded in Table 11, will be replaced in FY 2017, however they were originally scheduled for replacement in 2012 or 2013.
- There are two other vehicles that were slated for replacement in 2015 and 2016 that have no determined replacement date.
- Collectively, there appears to be a shortfall of available revenues to meet their anticipated fleet replacement schedule.

Table 11: Fixed Route Vehicle List

Make	Model	Age	Scheduled Replacement
Thomas	SLF	14	2012
Thomas	SLF	14	2012
Thomas	SLF230	13	2013
Thomas	SLF230	13	2013
Thomas	SLF235	12	2016
Thomas	SLF232	10	2015
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Gillig	G30B102N4	5	2023
Chevrolet	GOSHEN	5	2017
Chevrolet	GOSHEN	5	2017
Chevrolet	GOSHEN	5	2017
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	>1	2020
Ford	STARCRAFT	1	2019
Ford	STARCRAFT	1	2019
Ford	STARCRAFT	1	2019
Ford	STARCRAFT	1	2019

Of the fixed route fleet, the M Transit System operates 19 buses per day with a spare ratio of 30%. It should also be noted that all fixed route vehicles are equipped with bicycle racks.

In addition to the fleet in Table 11, the M Transit System fleet includes a 1956 GMC which serves as a Rosa Parks commemorative bus. Due to its historical nature, no replacement date is immediately anticipated for this vehicle.

9.1.2 Demand Response Vehicles

Fleet characteristics for the 11 demand response are presented below in Table 12. Key characteristics include:

- Seven of the 11 have been in operation for only one year; however, the other four are past their scheduled date of replacement.
- Of the four vehicles scheduled for replacement, three were scheduled in 2010 and the other in 2013.
- There is no determined replacement date for the four vehicles scheduled for replacement.
- Much like fixed route vehicles, there appears to be a shortage of available capital for replacement of demand response vehicles.

Table 12: Demand Response Fleet Characteristics

Make	Model	Age	Scheduled Replacement
FORD	GOSHEN	11	03.07.10
FORD	GOSHEN	11	03.18.10
FORD	GOSHEN	11	03.18.10
FORD	GOSHEN	8	07.15.13
FORD	STARCRAFT	1	04.16.19
FORD	STARCRAFT	1	04.23.19
FORD	STARCRAFT	1	05.08.19
FORD	STARCRAFT	1	04.23.19
FORD	STARCRAFT	1	04.16.19
FORD	STARCRAFT	1	04.16.19
FORD	STARCRAFT	1	04.23.19

9.2 Facilities & Transfer Locations

Information regarding facility characteristics were provided by M Transit staff.

There are four main facilities associated with the M transit operations, maintenance, and administration. These facilities are located at two locations.

- 2318 West Fairview Avenue – Two of the M's facilities are at this location. They include:
  - An administration building of roughly 7,200 square feet; and
  - A maintenance facility and storage yard of approximately 26,600 square feet.

- 2340 West Fairview Avenue - A transfer center for local fixed route service of approximately 530 square feet
- 495 Molton Street – The Intermodal Transfer Center facility in downtown Montgomery. This location also includes the intercity passenger bus terminal and planning offices for M Transit, City of Montgomery, and the Montgomery MPO.

Immediate maintenance needs for the facilities above include:

- Expansion of the Fairview Transfer Center to enclose the facility, which is currently underway, and.
- The replacement of a bus washer at the maintenance facility.

The maintenance facility and administrative building are located next door to the West Fairview Transfer Center and 3.2 miles from the Intermodal Center. With the transfer centers in close proximity to the maintenance facility, there is minimal dead head time for the buses, improving cost effectiveness.

In addition to the bike racks on the fixed route fleet, the M has an inventory of the following amenities throughout its fixed route network:

- A total of 125 benches with an average cost of $600.
- A total of 20 bus shelters with an average cost of $7,000.

Bus stop shelters were a common request during public outreach. The combination of hot summers and headways ranging from 30 to 90 minutes throughout the system increases the need for shelters, particularly at high volume stops. The M Transit System currently has seven shelters in storage that can be installed in the short term once stops are selected.

The M Transit System spends nearly all funds on operations and makes capital investments with one-time grants. Installing bus shelters would require additional local capital funds or partnerships with partners and stakeholders throughout the City. Shelters could be an opportunity for local sponsorships and advertisements to provide the necessary funds. New shelters would benefit waiting riders and also act as advertisement of service throughout the system to increase visibility. Priority for the installation of shelters should be at stops where at least two routes come together to provide shelter for riders transferring outside of the two transfer centers

10

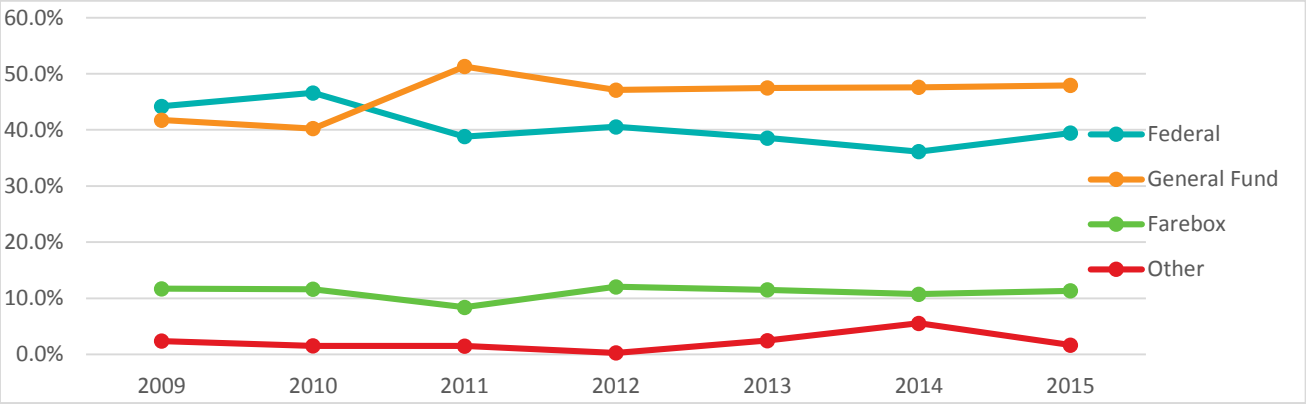
Existing Funding & Recommendation Costs

This section provides an overview of revenue sources and overall costs as well as projections based on the recommended system.

10.1 Current Revenue Sources & Expenditures

The following figure shows the sources of revenue for the M Transit System from 2009 to 2015.

Figure 35: Operating Funding Sources



The overall cost of operating the M Transit System service has gradually risen every year except between 2014 and 2015. In line with this, federal funds have been relatively constant throughout the last seven years. With the passage of the new federal transportation bill, the Federal Transit Administration's Section 5307 allocation formulas were unchanged. The amount of federal funds available to the M Transit System are based on a federal formula that takes

into account the population and revenue hours of service provided, both of which have remained constant over this time.

Fare revenue has gradually increased with slight increases in ridership over the 2009-2015 time period.

As illustrated in Figure 35, the portion of funds provided by the City of Montgomery general fund now provides more funds for transit than federal sources. Any increase in costs or unplanned costs for repairs must be covered by the City because federal funds are allocated before the fiscal year begins. Additionally, any capital expenditures, such as for buses in recent years, must be matched with local funds.

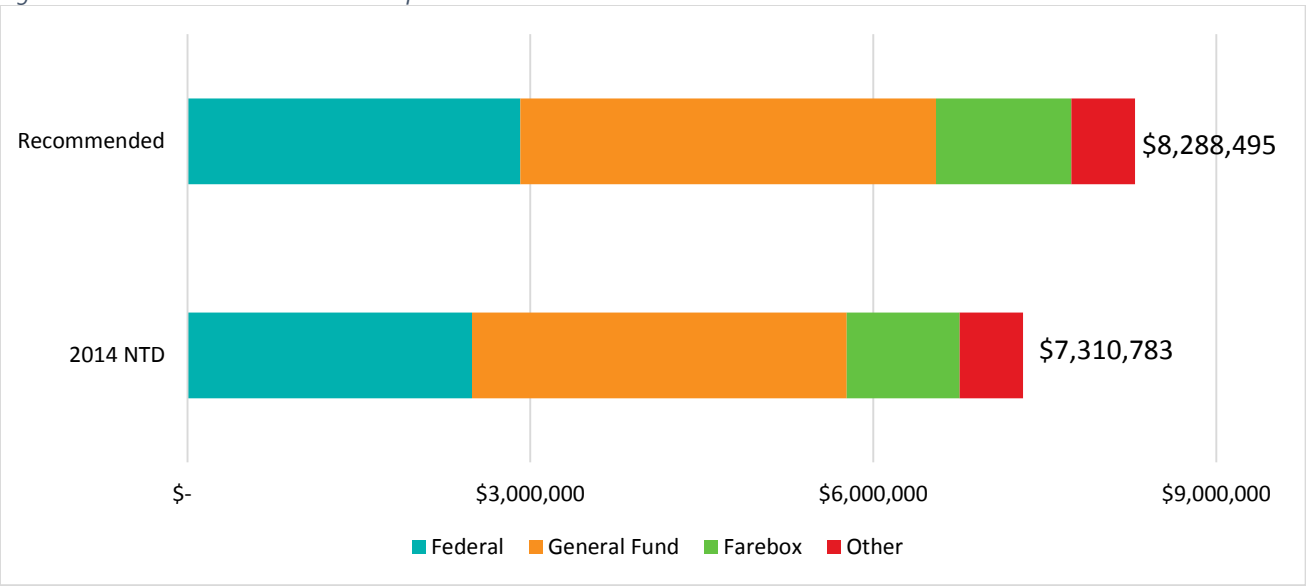
The M Transit System is a small enough system that it qualifies to use a portion of its federal funds to spend on operations expenditures, unlike large systems that operate over 100 buses daily. However, by spending federal funds on operations, it leaves the M Transit System with fewer dollars to spend on capital investments. In 2015, less than 5% of these funds were spend on capital investments. In the past, when the M Transit System has purchased new vehicles it was done through additional grants and not the apportioned Federal Transit Administration's 5307 program. The lack of funds to spend on capital expenses, such as vehicles, has caused the M Transit System to fall behind in replacing vehicles. While federal grants often provide 80% of the funds for these purchases, identifying the 20% local match can be difficult when local funds are being used to operate the system. Replacing the vehicles will require additional local funds to match beyond those used to operate the system day to day.

10.2 Recommendation Cost Discussion

The total operating cost for the M Transit System in 2014 according to the National Transit Database (NTD) was $7,310,783. Of this, approximately 80% of these costs ($5,735,083) went to fixed route services, with the other 20% supporting operations of paratransit services.

Using the revenue hours projected from the TBEST model and proposed headways, along with the fully allocated cost of $86.16 per revenue hour, the estimated cost for fixed route services is $6,712,800. This is an increase of fixed route operating cost of 17%, and totals an overall increase of $977,717. However, with the higher ridership projections, additional farebox recovery is anticipated.

Figure 36: Recommendations Cost Comparison



Looking forward, it is assumed that the revenue sources will remain relatively stable. The recent federal transportation funding bill, Fixing America's Surface Transportation (FAST) Act continues to allocated funds to transit through the Section 5307 and Section 5311 programs using the same formulas.

The above chart assumes that federal funding will increase approximately 15% with the increase in vehicle revenue hours for the additional service. Funding from other sources was assumed to remain the same. The comparison also accounts for the costs for paratransit to remain the same. A 20% increase in fare revenue is assumed[4]. To make up for the remaining costs, the general fund amount is assumed to increase 10% to cover operations of the recommended system.

The City of Montgomery is committed to providing the current funding levels with the potential for small increases to improve local mobility in a cost-effective manner. The recommended system provides an increase in ridership and connectivity for a small increase in overall costs and required local funding.

Finally, this system cost estimate accounts only for operations costs. The initial roll-out headways can be completed with the existing fleet. However, future improvements to the fleet and frequency of service will require an additional annual investment in new vehicles. Each vehicle costs approximately $400,000.

[4] The model projected between 17% and 32%increase in unlinked trips. The 20% accounts for free transfers as well as any reduced fare tickets and monthly passes and to be conservative.

Leveraging federal funds for capital, this would require a local match of 20%, totaling $80,000 per vehicle.

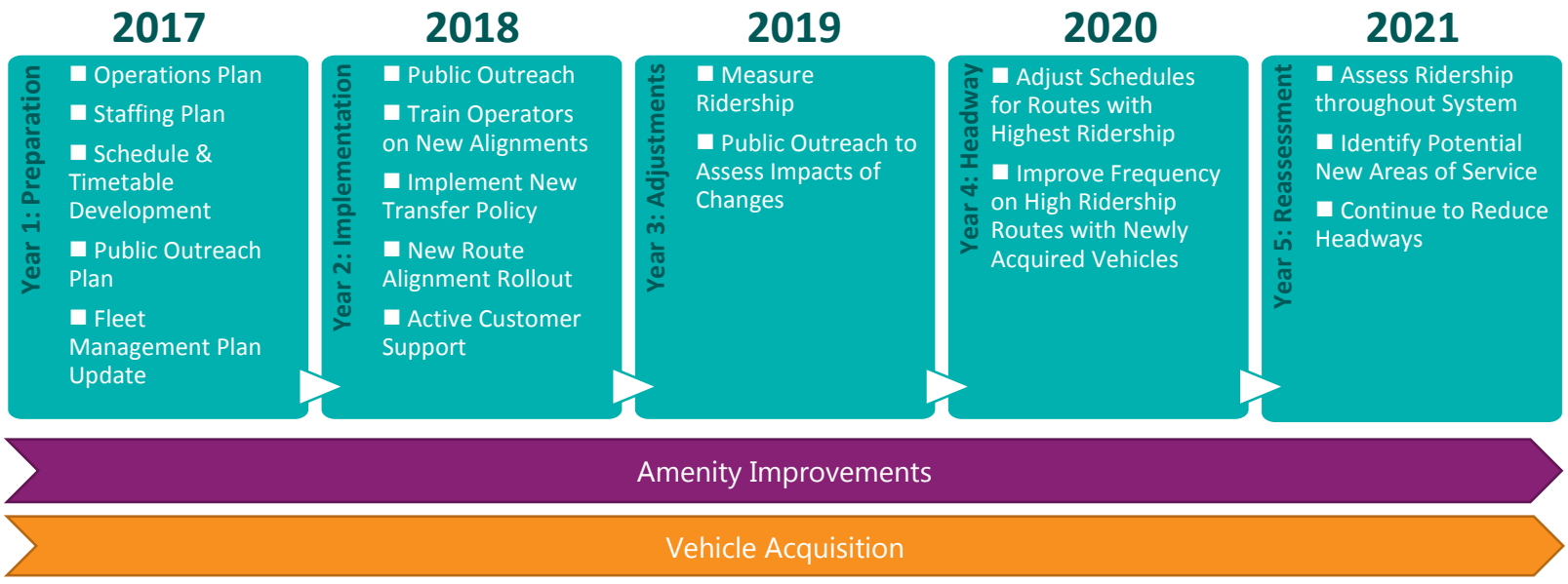
11 Implementation Plan

This section provides a plan to implement the system recommendations for the M Transit System over the next five years as well as additional strategies and policies that should be considered in the future. Implementing transit changes, especially removing routes, requires significant outreach to the community, as described below.

11.1 Implementation Action Items

The action items for the five years of this plan include preparation for the systemwide route alignment changes, improving amenities, and continuing improvements for headways and frequencies to reduce wait and travel time for riders and potentially draw in new riders.

Figure 37: TDP 5 Year Action Items & Schedule



Important Public Engagement Items:

- Stakeholder meetings
- Working with local neighborhood associations
- Target local universities to identify potential partnerships
- Flyers and poster information in transfer centers and on board buses
- Assistance route planning with the new route structure
- Clear overview of the new transfer policy

2017: Preparation

Implementing significant service changes, particularly where entire routes are changing or being removed/added require detailed operations planning and significant outreach to engage existing and potential riders.

A detailed Operations Plan will take the alignments recommended in this TDP to test the time of runs, ensure that both size buses can fit around all turns, and that routes have an adequate and safe location to turn around. The Operations Plan would also include a plan for when buses arrive at transfer centers. Buses should be scheduled to keep regular headways that are easier for riders to remember and do not necessarily need to meet on a pulse at transfer centers. This plan would also determine which routes would be best suited for which size buses. Along with the Operations Plan, a Staffing Plan will be necessary, to determine the number of part-time and full-time drivers necessary to provide the service, and how they will be scheduled on a typical weekday and Saturday.

A detailed Public Engagement Plan will be critical to reaching riders and stakeholders about the changes, and why they are happening. Setting a schedule to reach out to riders, stakeholder groups, and specific neighborhoods that are most adversely being affected will be important to help everyone understand how the new system schedule will function, where the routes will be, and how transfers will be used. At this time, an announcement that service changes will be coming within six months should be provided along with the planned public engagement activities.

2018: Implementation

Once the routes are completed and the Public Engagement Plan is set, reaching out to the public should begin approximately 3 months prior to service rollout. The three month timeframe should allow time to reach out to major employers and agencies with a large number of riders, as well as local neighborhoods that will experience the most change, particularly those who will be losing service. This will allow enough time for riders to understand changes affecting them, as well as implement the changes before riders have forgotten issues and conversations they had with M Transit representatives about why and how the changes will be occurring. 2018 will include initial public outreach about changes, increased customer service staff to address questions and assist passengers when the changes are made and for the first few months of new service.

At this time, the Operations Plan will have been completed. Any staffing changes that need to happen to provide the required number of part-time and full-time drivers should begin to be addressed at this time. With regards to fare technology, transferring throughout the system will have to be tested.

One of the intentions of the recommended system was to provide more opportunities for connections throughout the system outside of the existing transfer centers. This will allow riders to take more direct routes as they travel throughout the City. Currently, drivers provide transfer passes only at the four existing transfer locations. Moving forward, riders could request transfer passes at any location where more than one bus stops. Typically, limits are put on these transfer that place a time limit (45-120 minutes, depending on the system to allow for the existing headways) and are not allowed to be used on board the same route they were issued from. This prevents riders from using transfers as a pass on a return trip for free.

Finally, in the last month prior to service rollout, it will be important to have route-specific flyers available at transfer stations and onboard buses as well as representatives available at transfer stations to talk through how riders will be able to plan and take their trip. Announcements about the timing of the new service should be posted throughout the system so all riders and staff are aware of the impending changes and when to expect them.

It is important to engage the public and change the system at once, ideally within a year of plan adoption. The short timeframe will allow the public remembers the conversations they heard about why and when the changes are occurring. Changing the alignment of all affected routes at once will be a significant change, but making at once will require riders to only learn their new routing options once, instead of gradually changing routes and requiring riders to constantly learn new paths and transfers they must take through the system.

2019: Adjustments

Once service is implemented, it will be important not to make too many, if any, reactionary changes within a short period of time. It will take a few months for riders to get used to the new system, how their trips are affected, and ways to make their trip most efficiently. It will be important to have staff ready to answer questions during the first few months of service to assist riders in adjusting to the new schedules and answer questions.

Ideally, the adjustments made in 2018 will be minimal to reduce additional route and schedule changes for riders. 2018 will be spend assessing the ridership throughout to identify routes with high ridership for the improvement of headways as well as popular stops for installation of new shelters and/or benches.

2020: Headway Improvements

Reducing headways for routes with high ridership, such as Routes 2 and 12 are projected to be, could improve service and satisfaction for riders. Reducing

wait time along busy routes also shows investment in the system and continued improvement. Working to provide more frequent service will not only better provide service to existing riders, but may draw additional riders as well. Vehicles acquired in 2018 and 2019 should be put into service to improve the headways of the routes with the highest ridership.

2021: Reassessment

Continued improvement of headways is recommended until all routes have at least 30 or 60 minute headways for the top and bottom half of routes when accounting for overall ridership, trips per mile, and cost per trip.

Continuous Amenity Improvements

The amenity mentioned the most through public engagement was shelters. During rain and heat, riders desire shelters and/or benches to wait for the bus, particularly along routes with low frequencies. Additionally, benches and shelters can increase system visibility. Stop amenities also improve rider satisfaction and can improve ridership experience.

Vehicle Acquisition

As discussed in Section 9.1, the M Transit System is behind in replacing vehicles within its fleet. It is recommended that in 2017 the M Transit System update its Fleet Management Plan to update the age of vehicles and secure funding to replace vehicles that have passed their useful life. Therefore, while the schedule shows vehicle acquisition in all five years, vehicles acquired in 2017-2018 will be used to replace the oldest vehicles in the system. Vehicles acquired in 2019-2021 will be used to increase services through headway improvements on the most heavily ridden routes.

11.2 Additional Improvement Considerations

Based on observations during data collection, conversations with drivers, and public outreach, the following additional improvements throughout the system should be considered if funding becomes available:

Permanent Stops

Many bus drivers discussed the issues that are caused by the existing flagged stops. While flagged stops were implemented to allow those with physical disabilities to board the bus where they are best able to, this also adds complications. Any rider can flag down a bus to stop and different bus drivers approach this mandate differently. Some stop only where there is a safe place to pull over to the side, while some will allow boardings anywhere along the

route. This does not send a consistent message to riders who expect to be able to board anywhere along routes. Additionally, riders will flag stops where convenient to them, sometimes having a bus stop multiple times within a quarter mile stretch. Multiple stops where one stop could serve multiple individuals adds to the drive time of routes and can negatively effect on-time performance.

It is recommended that the M Transit System transition to fixed, signed stops. This would include assessing safety along routes to identify stop locations and implementing policies about stop locations, i.e. nearside, far side, midblock, and setting a standard distance between stops.

Flex Routes for Low Ridership Areas and Potential New Service Areas

Providing service throughout the City of Montgomery is difficult because of the low residential density. Routes eliminated in the recommendations were too expensive to warrant regular, fixed route service. However, these areas could be served by flex routes. Flex routes provide service to an area and anyone in that area can schedule a trip. This provides the accessibility of a paratransit vehicle with a schedule of a fixed route. In areas such as Hunter Station and Allendale, vehicles could provide flex service during various parts of the day, or make trips only as schedule and requested by riders. If funds are available to invest in an additional vehicle to provide this service, or allow paratransit vehicles to also provide flex service in designated areas along with providing the complementary service that is federally required, it could bring service back to these low density, low ridership areas.

Potential Partnerships within City Limits

Service to the Hyundai Plant and Veteran's Affairs Hospital on Chantilly Parkway were discussed during stakeholder outreach. However, because these locations are on the border of the City, requiring vehicles to travel on roads outside City limits to reach them was a barrier. It is recommended that the M Transit System reach out to these facilities to discuss partnerships for service that could be added onto nearby routes to efficiently provide access to these locations, and other major employers or destinations that desire connectivity.

Connections beyond City Limits

Public outreach identified the Wind Creek Montgomery Casino as destination riders and potential riders need to access for employment. Currently, all local funding for the M Transit System comes from the City of Montgomery, limiting service to within the City limits. The casino presents an opportunity for a partnership to cross the municipal boundary and increase access. The M Transit System should pursue discussions with the Casino to operate a shuttle from the casino to either a location just within the City or a transfer point. Success working with an employer outside of City limits could open the door

for additional partnerships and/or longer distance commuter service into/out of Montgomery.

Stakeholders also identified commuter and express buses as something desired by those commuting into the Montgomery Central Business District from bordering communities. In the long term, the M Transit System should pursue partnerships with bordering municipalities with a significant number of commuters. This could include nearby cities and/or counties. This type of partnership would require a financial component to allow M Transit System vehicles to provide service outside of the Montgomery City limits. This would require a study concerning the number of commuters from nearby communities, demographics, and what transit amenities would affect their travel mode decisions.