Tyler Texas Transit Route Study

June 2021

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ACKNOWLEDGEMENTS

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INTRODUCTION + SUMMARY OF FINDINGS

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Introduction + Summary of Findings

Considered the manufacturing, health care, educational and retail center of East Texas, the City of Tyler is a vibrant and active city of over 108,000. Periodically the Tyler Area Metropolitan Planning Organization (MPO) in collaboration with Tyler Transit undertakes a review of the public transportation system with the twin goals of understanding its efficiency and efficacy of providing transit service, and identifying opportunities for improvement. The most recent analysis was completed in 2009.

The Tyler Area MPO requested proposals to conduct a Transit Route Study in January 2019. Work began on the study in July, several months into the global COVID-19 pandemic. The project team adapted to virtual and socially-distanced in-person meetings, solicited feedback from a steering committee, bus drivers, and the public, and conducted an in-depth technical analysis of each fixed route. As a result, the project team developed recommendations to:

- Improve service by shortening headways;
- Make the overall system simpler and easier to use for both existing and future riders;
- Better serve essential services such a healthcare, social services, and grocery stores;

- Provide better service to essential workers and the public in general;
- Serve the growing south Tyler area; and
- More effectively connect local universities to downtown Tyler and other areas.

The following chapters detail the information gathered and analyzed as part of this study, as well as specific recommendations for each route and the system overall. It should be noted that the project team, including the Tyler Area MPO and Tyler Transit, agreed at the outset to use 2019 pre-pandemic operating statistics as the baseline of analysis. Despite the uncertainty the pandemic has fostered, Tyler Transit continues fulfill its mission to provide customers with safe, friendly and reliable public transportation services.

TYLER TRANSIT TODAY

02

Tyler Transit Today

The System

Tyler Transit provides public transportation services on five fixed routes and paratransit service to qualified individuals. Fixed route service is available Monday–Friday 6 a.m. to 8:15 p.m., and on Saturday from 9 a.m. to 6 p.m. More detailed information about each of the five routes can be found beginning on page 6 in the Route Profiles section.

Tyler's Paratransit service provides curb-to-curb transportation for individuals who meet certification criteria as described by the Americans with Disabilities Act (ADA), generally including people who cannot independently travel to a bus stop, board, ride, or alight a bus. Applications for eligibility are available at Tyler Transit offices and online. While ADA requires service to be provided within ¾ of a mile of fixed route service, it is the City of Tyler's policy to provide paratransit service to all origins and destinations within city limits.

Field Observations

In early December of 2020 the consultant team conducted a site visit over the course of several days where the team rode the routes, interviewed bus drivers and transit customers and conducted field observations regarding transit service and infrastructure. This section summarizes the findings of these observations. It is important to note that the observations are made with a critical lens, specifically looking at potential areas of improvement.

Loop Routes

Several of the Tyler Transit routes consist of one or more looping routes. Long (over 30 minutes) one-way loop routes will have negative impacts on ridership. Out and back is the preferred form of fixed-route transit. If there is a stop on one side of the street there should be a stop on the other side (in most cases). Ride time on long loop routes is almost always excessive. Loop routes do not pass the informal, but practical, "ice cream test": 10 minutes to get to the store, but 50 minutes to get home. This was noted on the Blue Route while conducting field observations. A customer was interviewed who boarded the route at Four Points to go shopping at Walmart, a ten-minute ride. Their return trip was one hour and twenty minutes and many of their frozen items began to thaw.

Timed Transfers

Many of the Tyler Transit routes do not meet regularly at transfer centers. Bus drives work hard to help customers make connections when possible but often it takes a special unscheduled stop to help customers transfer. Some routes connect at a transfer center only one time a day. One of the most regular transfers throughout the day is the Green and Yellow Route which meets at the University of Texas campus. Both of these routes duplicate one another for significant portions of the route. Connections between routes that serve different areas and trip purposes (origin-based routes and destination-based routes) should be prioritized.

Unsafe Vehicle Maneuvers

Routing should avoid unprotected left turns on busy streets as well as any other difficult maneuvers. The bus must be able to easily traverse a narrow street without impediment. Backing up as part of a route should be avoided. The field observations and driver focus group revealed that there are several unsafe maneuvers drivers must make on several of the routes:

- Blue Route: At the Sam's Club stop the vehicle must make a U-turn to get back to Loop 323.
- Yellow Route: This route also has a U-turn near the senior living and an unprotected left turn on the Frankston Highway near the grocery store.
- Green Route: This route has two potentially dangerous unprotected left turns one on MLK Jr. Blvd. and the other leaving the Walmart on Highway 31.

Bus Stops and Pathways

Tyler Transit has well maintained bus stops with good accessibility. Pathways are less accessible with some serious examples. Like many cities in Texas sidewalk infrastructure is lacking in many places in Tyler. The City of Tyler should prioritize sidewalk improvement along transit routes. On the Yellow Route there are two stops that have inaccessible intersection crossings. The Yellow Route travels south along Troup Highway south of Loop 323. Along that portion of the route there are two major trip generators (Walmart and a Grocery Store) on the northbound portion of Troup Highway requiring passengers to cross the highway.

Figure 1: Tyler Transit System
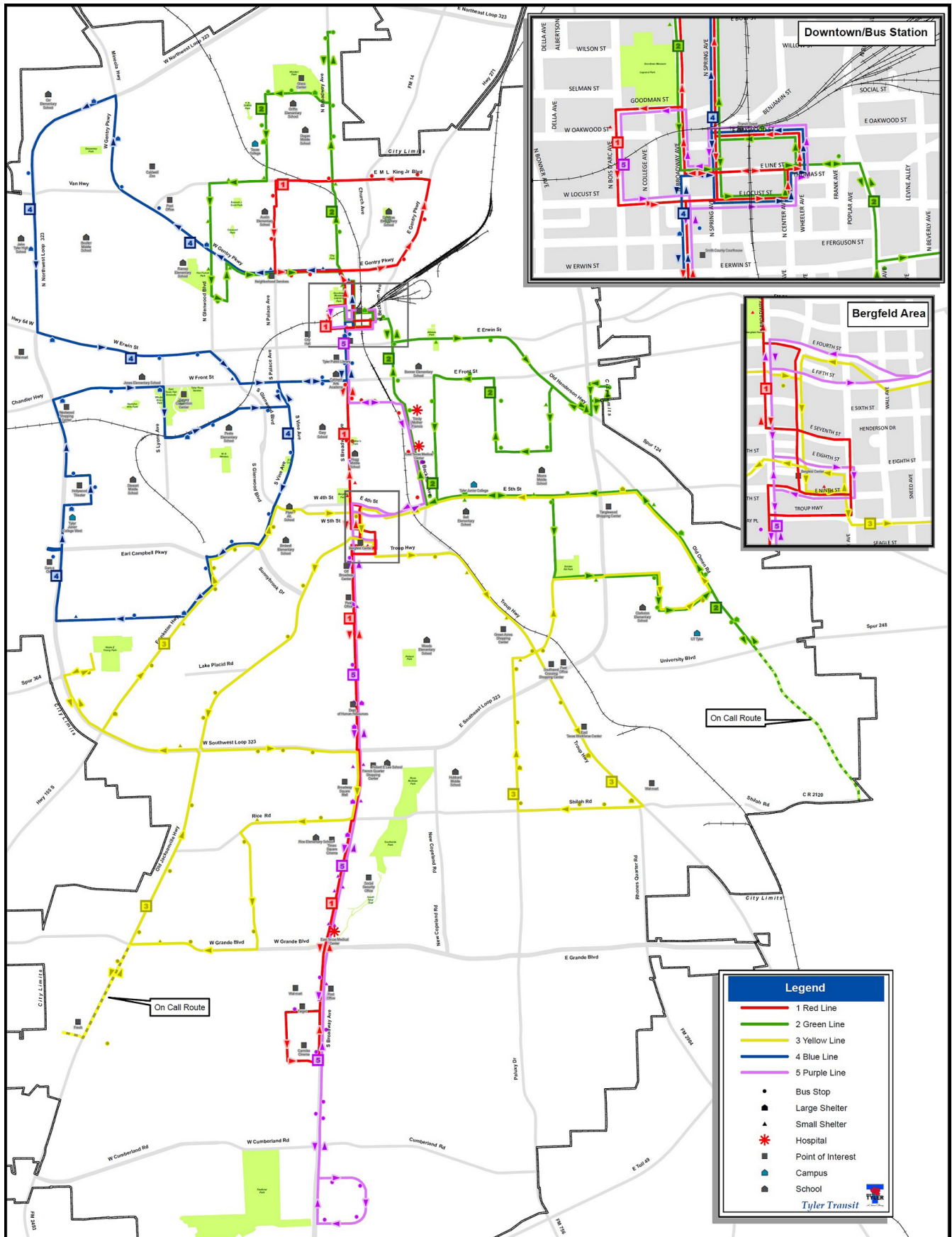
However, there are no protected pedestrian crossings near these stops making accessing the destinations dangerous if not impossible.

Meandering

Meandering can slow down routes and hurt productivity. In most cases riders should walk short distances to the bus stop rather than having the bus meander off of the main route to connect a destination. Areas of observed meandering include:

- Blue Route: The portion of the route behind the Hollywood Theater and near the grocery store off of the Frankston Highway.

- Green Route: Near the intersection of Gentry Pkwy, and Glenwood Blvd., and around the area north of Tyler Junior College.

- Yellow Route: Near grocery store off of the Frankston Highway.

Duplication

Duplication can be difficult to avoid in a hub/spine and spoke system particularly near transfer centers. Tyler Transit has a few areas of duplicative service which includes the Green and Purple routes near the medical center and the Green and Yellow routes around UT.

Route Profiles

This section evaluates performance of Tyler Transit's fixed-route system as a whole and for each route within the system. Performance measures include annual ridership, headways (the length of time between buses at stops), and on-time performance (the rate of buses arriving and leaving from stops on-time). Annual ridership data was evaluated between September 2015 and September 2020. Ridership data was unavailable for the City of Tyler's 2016-2017 fiscal year (September 2016 to August 2017), so data for this timeframe was projected from average ridership from fiscal years 2015-2016 and 2017-2018. On-time performance was evaluated between 2016 to 2020. Note that while ridership data was reported by fiscal year, on-time performance data is presented by calendar year. This means that 2020 data was received for January through September and does not reflect the full calendar year.

Figure 3: Annual Ridership Over Time
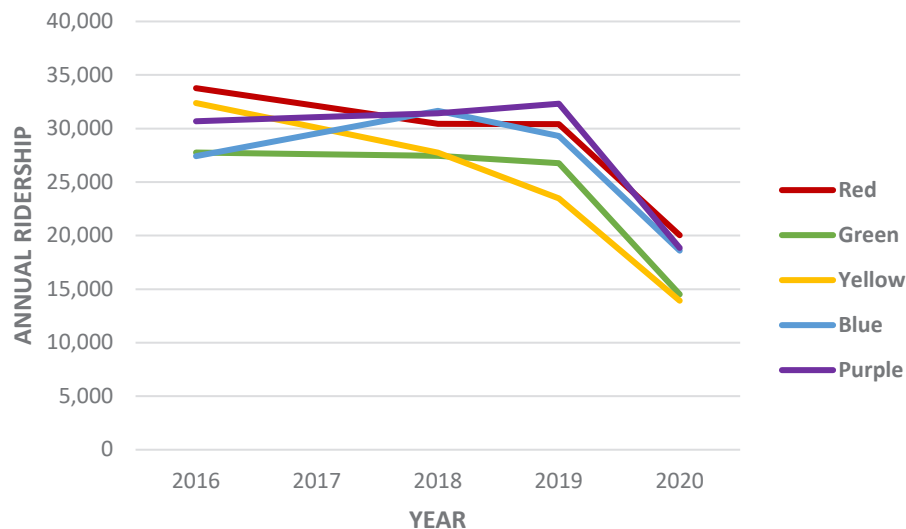
Overall Fixed-Route System Performance

Ridership

Figure 3 shows annual ridership for all five Tyler Transit fixed routes between September 2015 and September 2020. Across routes, ridership is similar, with slightly more riders on the Red and Purple lines rather than the Yellow, Green, or Blue lines on average. Ridership has seen a significant drop in fiscal year 2019-2020 (September 2019 to August 2020); during this time the COVID-19 pandemic was introduced to the United States, changing the travel patterns of people in Tyler, Texas, and across the world. More recent ridership data is not included in this analysis, as the 2020-2021 fiscal year was incomplete at the time of analysis; however, early data suggests that ridership is approaching pre-COVID-19 levels.

Service

Figure 4 presents the headways, or the length of time between buses at stops, for each route. Headways range for all routes, except for the Green Line; this range is represented by the pattern section of each bar in the figure. As an example, headways for the Red Line range from 30 to 40 minutes. The Red and Purple Lines often stop at the same bus stops and their route schedules are offset in a way that shortens their headways. While another Red Line bus may not come for another hour or so, a Purple Line bus will arrive in 30 minutes. The Green, Yellow, and Blue lines all have headways over an hour long, averaging around an hour and half.

On-time Performance

Figure 5 shows the on-time performance, or the rate of buses arriving and leaving from stops on-time, for each route between 2016 and 2020. Note that while ridership data was reported by fiscal year, on-time performance data is presented by calendar year. This means that 2020 data was received for January through September and does not reflect the full calendar year. On-time performance across all routes for the past five years averages at 81.32%, while 12.52% of buses left late and 6.16% left early. The Green and Blue lines have slightly higher on-time performance than the other routes. Given these routes travel in mixed traffic, this average is considered relatively strong for agencies of a similar size.
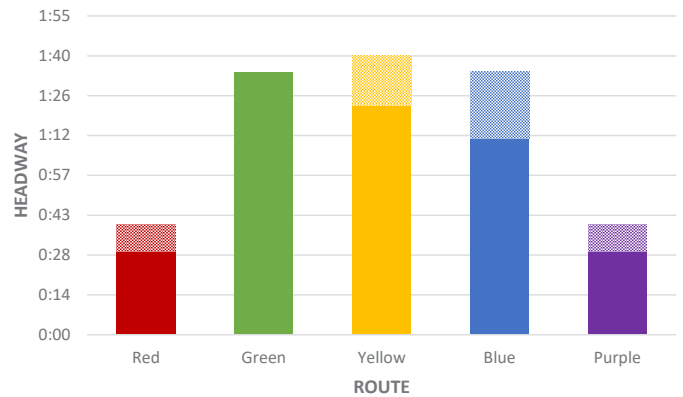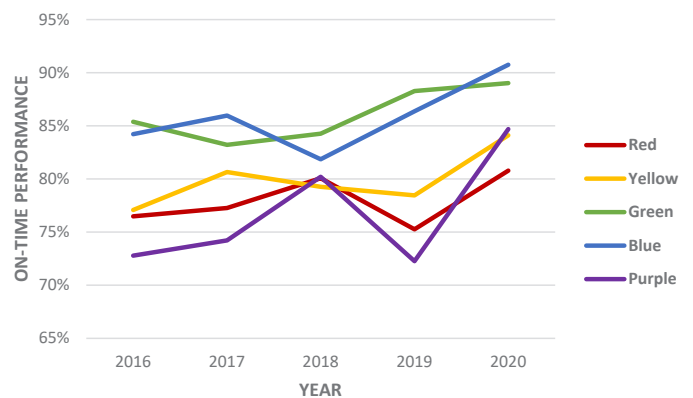

Figure 4: Headways for All Routes

Figure 5: On-time Performance for All Routes

Route 1: Red Line

Key Takeaways

The Red Line, in conjunction with the Purple Line, serves as the spine of Tyler Transit's system. Due to the complimentary scheduling of the Red and Purple Lines, the Red Line has shorter headways than other routes. It also consistently has some of the highest ridership across the system. On-time performance is lower than other routes and is an area for improvement for routes traveling on S. Broadway Avenue (Red Line and Purple Line). In particular, the number of buses leaving early from stops serving the Red Line should be addressed.

Description

The Red Line traverses Broadway Avenue from downtown Tyler to the Wal-Mart Supercenter and loops around the neighborhoods north of downtown via Gentry Parkway and Martin Luther King Jr. Boulevard. Along with the Purple Line, this route serves as the spine of Tyler Transit's fixed-route system, connecting riders to areas where they can transfer to any other route.

Points of Interest Served

- **Schools:** Austin Elementary School, Caldwell Elementary School, Douglas Elementary School, Hogg Middle School, Rice Elementary School, Tyler Legacy High School

- **Grocery Stores:** Brookshire's (Donnybrook Avenue), Brookshire's (S Broadway Avenue), Super 1 Foods

- **Community Resources:** NET Health, Neighborhood Services Department, Rose Hill Cemetery, Smith County Sherriff's Office and Courthouse, Social Services Administration and Texas Health and Human Services offices (Rieck Road), Tyler Municipal Courts, Tyler Public Library

- **Medical Centers:** Baylor Scott & White Texas Spine & Joint Hospital

- **Parks:** Goodman Park, Tyler City Square, Children's Park of Tyler, Rose Rudman Park, Southside Park, Bergfeld Park, Oak Grove Park

- **Commercial Areas and Entertainment Venues:** AMC Classic Tyler 14, Broadway Crossing, Broadway Square Mall, Downtown Tyler, Goodwill Industries (W Locust Street), Target, Times Square Grand Slam, Wal-Mart

Hours of Service

Southbound Red Line service starts at 6:00 AM Monday through Friday (9:34 AM on Saturdays) and ends at 7:11 PM Monday through Friday (5:53 on Saturdays). Northbound Red Line service starts at 6:34 AM Monday through Friday (9:21 AM on Saturdays) and ends at 7:30 PM Monday through Friday (6:12 PM on Saturdays).

Headways

Red Line buses arrive at their stops on average every one hour and fourteen minutes. However, the Purple Line schedule, which serves many of the same bus stops as the Red Line, is structured so Purple Line buses arrive at the stops 30-40 minutes after the Red Line buses. This means that riders who are waiting at a stop served by both the Red and Purple Lines have buses arrive every 30-40 minutes, but those who are waiting at a stop that is only served by the Red Line will wait the full one hour and fourteen minutes.

On-time Performance

The percentage of buses leaving stops on-time has consistently stayed around 75 to 80% over the past five years. The percentage of buses leaving stops late has decreased from nearly 20% in 2016 to around 5% in 2020. However, the percentage of buses leaving stops early has increased steadily, from around 5% in 2016 to 14% in 2020.

Ridership

The Red Line has one of the highest ridership levels (for both weekdays and weekends) out of all of Tyler Transit's routes. Average weekday ridership between 2015 to 2019 fluctuated between 2,000 and 3,200 riders, with an average of 2,339 riders Monday through Friday. Saturday ridership averaged 290 riders from 2015 to 2019. Between February to August 2020, due to the COVID-19 pandemic, weekday and weekend ridership numbers are much lower than in previous years; however, they were remained higher than ridership for most other routes during this time.

Figure 6: Existing Tyler Transit Red Line

1 - Red Route
Tyler Transit
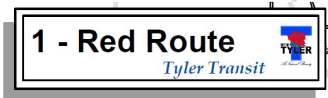
Route 2: Green Line

Key Takeaways

The Green Line has lengthy headways, but they are consistent. Ridership is lower for the Green Line than all of the other routes. On-time performance for the Green Line is one of the highest among all routes in the Tyler Transit system.

Description

The Green Line is segmented into two loops, Green Line North and Green Line South. Green Line North connects downtown Tyler with Texas College and neighborhoods and businesses near the Glass Center and Fun Forest Park. The Green Line South serves CHRISTUS Trinity Mother Francis, UT Health East Texas, Tyler Junior College, and the University of Texas at Tyler, connecting these destinations to downtown.

Points of Interest Served

Green Line North:

- **Schools:** Griffin Elementary School, Texas College

- **Grocery Stores:** N/A

- **Community Resources:** Municipal Court & Health Department (E Bow St), NET Health, Neighborhood Services (Gentry Parkway), Smith County Sherriff's Office and Courthouse

- **Medical Centers:** N/A

- **Parks:** City Park, Fun Forest Park, Goodman Park, Woldert Park

- **Commercial Areas and Entertainment Venues:** Downtown Tyler

Green Line South:

- **Schools:** Bell Elementary School, Moore Middle School, Tyler Junior College, University of Texas at Tyler

- **Grocery Stores:** Brookshire's (E 5th Street)

- **Community Resources:** Smith County Sherriff's Office and Courthouse

- **Medical Centers:** CHRISTUS Trinity Mother Francis Hospital, UT Health East Texas, UT Health East Texas Behavioral Health Center

- **Parks:** Golden Road Park, Hillside Park

- **Commercial Areas and Entertainment Venues:** Downtown Tyler, Midtown Center, Wal-Mart Supercenter (SE Loop 323)

Hours of Service

Northbound Green Line service starts at 6:00 AM Monday through Friday (9:10 AM on Saturdays) and ends at 8:15 PM Monday through Friday (5:14 on Saturdays). Southbound Green Line service starts at 6:10 AM Monday through Friday (9:20 AM on Saturdays) and ends at 8:15 PM Monday through Friday (5:39 PM on Saturdays).

Headways

Green Line buses arrive at their stops on average every one hour and thirty-five minutes. While the Yellow Line routing overlaps with the Green Line in some areas, and serves the same bus stops, the schedules of these routes are not structured so the Green and Yellow lines serve them at different times.

On-time Performance

The percentage of buses leaving stops on-time is one of the highest among all routes in Tyler Transit's system, ranging from 83 to 90% over the past five years. The percentage of buses leaving stops late saw increases in 2017 (11.2%) and 2018 (11.3%) from 2016 (6.7%) but has continued to decline since then, with 6.4% of buses leaving late in 2020. The percentage of buses leaving stops early has ranged from 4% to just over 6% over the past five years.

Ridership

The Green Line has one of the lowest ridership levels (for both weekdays and weekends) out of all of Tyler Transit's routes. Average weekday ridership between 2015 to 2019 fluctuated between 2,000 and 3,200 riders, with an average of 2,082 riders Monday through Friday. Saturday ridership is particularly lower on the Green Line than other routes, with an average ridership of 194 each Saturday between 2015 and 2019. Between March to August 2020, due to the COVID-19 pandemic, weekday and weekend ridership numbers are much lower than in previous years. However, in August of 2020 the Green Line saw an increase in weekday (but not weekend) ridership.

Figure 7: Existing Tyler Transit Green Line

Route 3: Yellow Line

Key Takeaways

The Yellow Line has the longest headways among all Tyler Transit routes. Ridership is lower for this route than all others, except the Green Line. On-time performance for the Yellow Line is average compared to the other routes; it is lower than the Green and Blue lines and higher than the Red and Purple lines.

Description

The Yellow Line is designed as two loops – the Southwest Loop and the Southeast Loop – that originate at the Bergfeld Center. The Southwest Loop serves residential areas and businesses along Frankston Highway and Old Jacksonville Highway until Grande Boulevard. The Southeast Loop travels Troup Highway, Paulxy Drive, Golden Road, McDonald Road, Old Omen Road, and 5th Street. Tyler Junior College and the University of Texas at Tyler are served by the Southeast Loop.

Points of Interest Served

Southwest Route:

- **Schools:** Birdwell Elementary School, Grace Community School, Rice Elementary School

- **Grocery Stores:** Brookshire's (E 9th Street), Brookshire's (S Broadway Avenue), Wal-Mart Neighborhood Market (Old Jacksonville Highway)

- **Community Resources:** Rose Hill Cemetery

- **Medical Centers:** Baylor Scott & White Texas Spine & Joint Hospital

- **Parks:** Noble E. Young Park, Hollytree Golf Course

- **Commercial Areas and Entertainment Venues:** Bergfeld Center, Broadway Square Mall, Goodwill Industries (SW Loop 323)

Southeast Route :

- **Schools:** Bell Elementary School, Clarkston Elementary School, Moore Middle School,

- University of Texas at Tyler, Tyler Junior College,

- **Grocery Stores:** Brookshire's (E 5th Street), Brookshire's (E 9th Street), Super 1 Foods (Troup Highway), Walmart Neighborhood Market (Paluxy Drive)

- **Community Resources:** Rose Hill Cemetery, Texas Department of Insurance – Division of Worker's Compensation

- **Medical Centers:** Baylor Scott & White Texas Spine & Joint Hospital

- **Parks:** Golden Road Park

- **Commercial Areas and Entertainment Venues:** Bergfeld Center, Midtown Centre, Wal-Mart Supercenter (Troup Highway)

Hours of Service

Southwest Yellow Line service starts at 6:00 AM Monday through Friday (9:00 AM on Saturdays) and ends at 7:19 PM Monday through Friday (5:37 on Saturdays). Southeast Yellow Line service starts at 6:45 AM Monday through Friday (9:49 AM on Saturdays) and ends at 8:02 PM Monday through Friday (6:00 PM on Saturdays).

Headways

Yellow Line buses arrive at their stops on average every one hour and thirty-two minutes. While the Green Line routing overlaps with the Yellow Line in some areas, and serves the same bus stops, the schedules of these routes are not structured so the Green and Yellow lines serve them at different times.
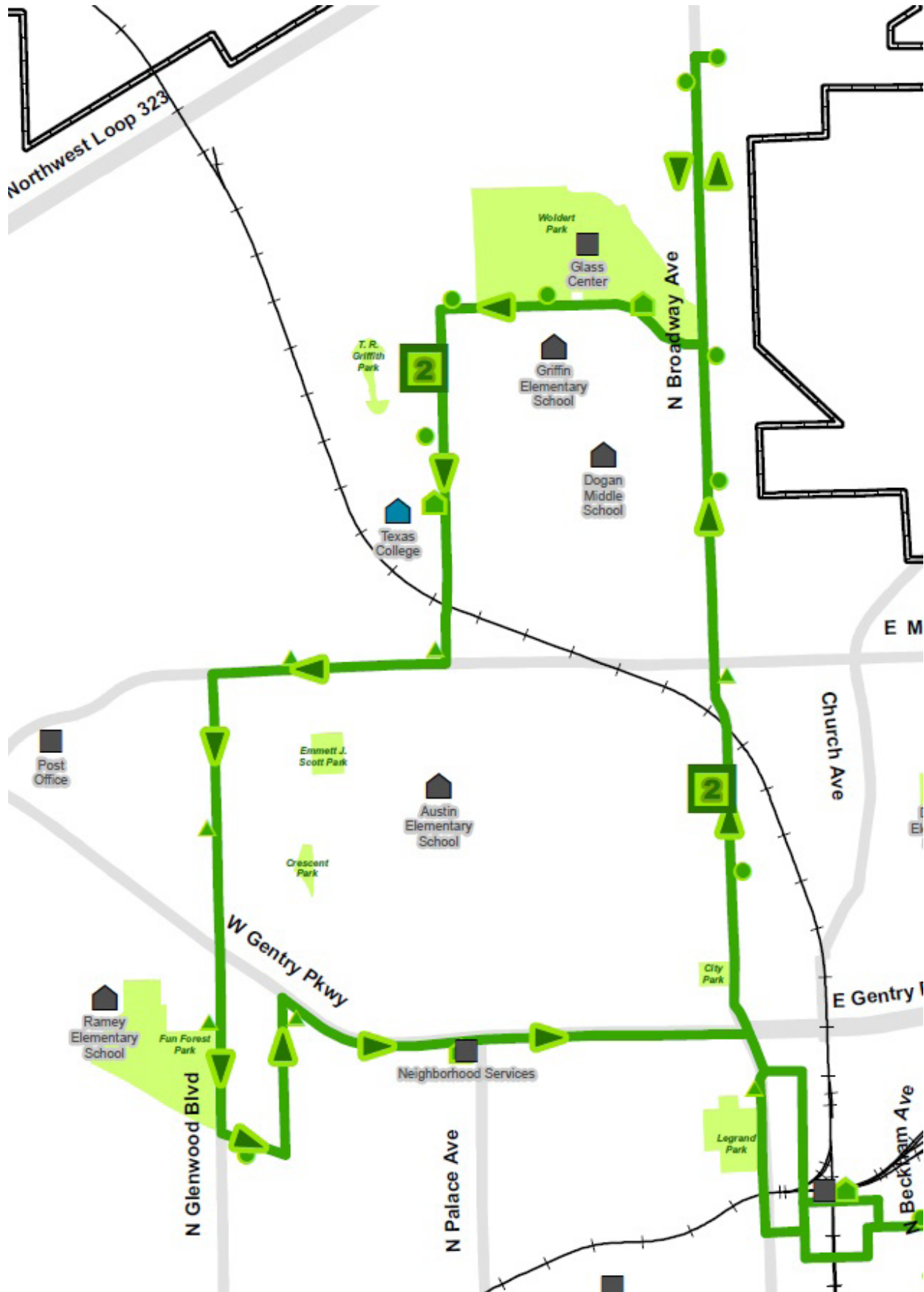
On-time Performance

The percentage of buses leaving stops on-time has ranged from 77 to 84% over the past five years. The percentage of buses leaving stops late decreased from 2016 to 2020, from 18% to around 6%. Conversely, the percentage of buses leaving stops early has increased steadily, from around 5% in 2016 to 10% in 2020.

Ridership

The Yellow Line has one of the lowest ridership levels (for both weekdays and weekends) out of all of Tyler Transit's routes. Average weekday ridership between 2015 to 2019 fluctuated widely between 1,300 and 3,000 riders, with an average of 2,098 riders Monday through Friday. Saturday ridership between 2015 and 2019 averaged 224 riders each Saturday, which is lower than all other routes except the Green Line. Between March to August 2020, due to the COVID-19 pandemic, weekday and weekend ridership numbers are much lower than in previous years. However, in August of 2020 the Yellow Line saw an increase in weekday (but not weekend) ridership.

Figure 8: Existing Tyler Transit Yellow Line

On Call Route

Route 4: Blue Line

Key Takeaways

The Blue Line has lengthy headways and also the widest range of headways out of all Tyler Transit routes. Ridership is steady for this route, which sees less riders than the Red or Purple lines but more than the Green and Yellow lines. On-time performance for the Blue Line is the best among all routes in the Tyler Transit system.

Description

The Blue Line is designed as two loops that originate in downtown Tyler, the Northwest Route and the Southwest Route. The Northwest Route connects neighborhoods, businesses, and community destinations in northwest Tyler—such as the Caldwell Zoo—with downtown. The Southwest Route travels Frankston Highway, Loop 323, and Front Street providing service to areas in southwest Tyler to downtown.

Points of Interest Served

Northwest Route:

- **Schools:** Caldwell Elementary School, Orr Elementary School, Tyler High School

- **Grocery Stores:** Super 1 Foods (Highway 64)

- **Community Resources:** East Texas Lighthouse for the Blind, NET Health, Neighborhood Services (Gentry Parkway), Municipal County and Health Department, PATH, Smith County Sherriff's Office and Courthouse, Smith County Tax Office, Texas Department of Motor Vehicles, Texas Department of State Health Services, Tyler Municipal Courts, Tyler Public Library, Tyler Transit Downtown Station

- **Medical Centers:** N/A

- **Parks:** Bois D'Arc Park, City Park, Goodman Park, Tyler City Square, Willow Brook Country Club

- **Commercial Areas and Entertainment Venues:** Caldwell Zoo, Downtown Tyler, Mike Carter Field, CHRISTUS Trinity Mother Francis Rose Stadium, Westwood Shopping Center, Hollywood Theaters,

Southwest Route:

- **Schools:** Caldwell Elementary School

- **Grocery Stores:** N/A

- **Community Resources:** East Texas Lighthouse for the Blind, East Texas State Fair Farmers Market, Harvey Hall

Convention Center, Municipal Court & Health Department (E Bow St), Neighborhood Services (Gentry Parkway), PATH, Smith County Sherriff's Office and Courthouse, Texas Department of State Health Services, Tyler Public Library

- **Medical Centers:** CHRISTUS Trinity Mother Francis Hospital, UT Health East Texas, UT Health East Texas Behavioral Health Center

- **Parks:** Bois D'Arc Park, Connally Heights Park, Peach Avenue Park, Tyler City Square, Tyler Rose Garden

- **Commercial Areas and Entertainment Venues:** CHRISTUS Trinity Mother Frances Rose Stadium, Downtown Tyler, Midtown Centre, Mike Carter Field, Wal-Mart Supercenter (SE Loop 323)

Hours of Service

Northwest Blue Line service starts at 6:10 AM Monday through Friday (9:05 AM on Saturdays) and ends at 7:45 PM Monday through Friday (6:02 on Saturdays). Southwest Blue Line service starts at 6:54 AM Monday through Friday (9:44 AM on Saturdays) and ends at 8:15 PM Monday through Friday (5:29 PM on Saturdays).

Headways

Blue Line buses arrive at their stops on average every one hour and twenty-three minutes.

On-time Performance

The percentage of buses leaving stops on-time is one of the highest among all routes in Tyler Transit's system, ranging from 82 to 91% over the past five years. The percentage of buses leaving stops late has declined since 2018, reaching 5.4% in 2020. The percentage of buses leaving stops early is the lowest amount all Tyler Transit routes, ranging from has ranged from 2.5% to just over 5% over the past five years.

Ridership

Average weekday ridership between 2015 to 2019 fluctuated between 1,600 and 3,000 riders, with an average of 2,211 riders Monday through Friday. Saturday ridership between 2015 and 2019 averaged 244 riders each Saturday. Between March to August 2020, due to the COVID-19 pandemic, weekday and weekend ridership numbers are much lower than in previous years. However, in August of 2020 the Blue Line saw increasing weekday (but not weekend) ridership approaching pre-COVID-19 levels.

Figure 9: Existing Tyler Transit Blue Line

4 - Blue Route
Tyler Transit

Route 5: Purple Line

Key Takeaways

The Purple Line, complements the Red Line as the spine of Tyler Transit's system, particularly in South Tyler. Due to the complimentary scheduling of the Red and Purple Lines, the Purple Line has shorter headways than other routes. It also consistently has some of the highest ridership across the system. On-time performance has fluctuated over time but is moving in a positive direction.

Description

The Purple Line traverses Broadway Avenue from downtown Tyler to the Village and Cumberland Park. It moves from Broadway Avenue to Beckham Avenue to serve several medical centers, including Trinity Mother Francis and UT Health East Texas. Along with the Red Line, this route serves as the spine of Tyler Transit's fixed-route system, connecting riders to areas where they can transfer to any other route.

Points of Interest Served

- **Schools:** Caldwell Elementary School, Tyler Legacy High School

- **Grocery Stores:** Brookshire's (E 9th Street), Brookshire's (S Broadway Ave), Super 1 Foods (S Broadway Ave)

- **Community Resources:** Rose Hill Cemetery, Smith County Sherriff's Office and Courthouse, Social Services Administration and Texas Health and Human Services Office (Rieck Road), Texas Health and Human Services Office, Tyler Public Library

- **Medical Centers:** Baylor Scott & White Texas Spine and Joint Hospital, CHRISTUS Mother Frances Hospital – South Tyler, CHRISTUS Trinity Mother Francis Hospital, UT Health East Texas

- **Parks:** Bergfeld Park, Goodman Park, Faulkner Park, Tyler City Square

- **Commercial Areas and Entertainment Venues:** AMC Classic Tyler 14, Bergfeld Center, Broadway Crossing, Broadway Square Mall, Downtown Tyler, Goodwill Industries (XX), Midtown Centre, Times Square Grand Slam, Target, The Village at Cumberland Park, Wal-Mart Supercenter (S Broadway Ave)

Hours of Service

Southbound Purple Line service starts at 6:37 AM Monday through Friday (9:05 AM on Saturdays) and ends at 7:39 PM Monday through Friday (5:13 on Saturdays). Northbound Purple Line service starts at 6:00 AM Monday through Friday (9:43 AM on Saturdays) and ends at 8:15 PM Monday through Friday (5:39 PM on Saturdays).

Headways

Purple Line buses arrive at their stops on average every one hour and sixteen minutes. However, the Red Line schedule, which serves many of the same bus stops as the Purple Line, is structured so Red Line buses arrive at the stops 30-40 minutes after the Purple Line buses. This means that riders who are waiting at a stop served by both the Red and Purple Lines have buses arrive every 30-40 minutes, but those who are waiting at a stop that is only served by the Purple Line will wait the full one hour and sixteen minutes.

On-time Performance

The percentage of buses leaving stops on-time has fluctuated between 73 to 84% over the past five years. The percentage of buses leaving stops late ranged between 15 to 22% from 2016 to 2019; however, in 2020 only 8% of buses left stops late. The percentage of buses leaving stops early has maintained between 5 and 7% over the past five years.

Ridership

The Purple Line has one of the highest ridership levels (for both weekdays and weekends) out of all of Tyler Transit's routes. Average weekday ridership between 2015 and 2019 fluctuated between 1,800 and 2,800 riders and averaged 2,326 riders Monday through Friday during these years. Between September 2015 and September 2019, Saturday ridership fluctuates widely and consistently between around 150 and 450 riders; however, average Saturday ridership (297 riders per Saturday) over the past five years is the highest among all routes. Between March to August 2020, due to the COVID-19 pandemic, weekday and weekend ridership numbers are much lower than in previous years. However, in August of 2020 the Purple Line saw a significant increase in weekday (but not weekend) ridership.

Figure 10: Existing Tyler Transit Purple Line

5 - Purple Route
Tyler Transit
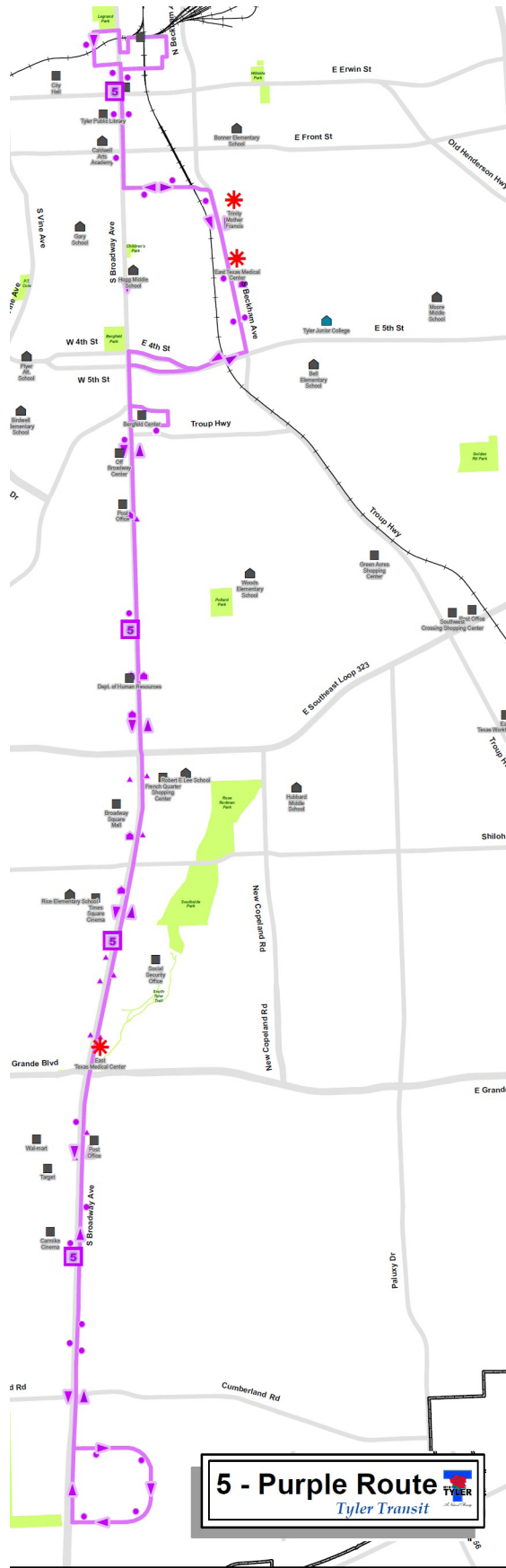
Transit-Related Infrastructure

The primary transit-related infrastructure in small urban areas such as Tyler includes bus stops and accessible pathways from bus stops to the adjacent destinations. Both are important for insuring transit customers can safely get to and from their destinations. All transit customers are also pedestrians and pedestrian safety is equally important to vehicle safety.

Bus Stops

With the possibility of realigning Tyler Transit's routes there is an opportunity to improve bus stops and ensure that new stops are safe and accessible. Regular bus stops work for visitors as this is the approach most visitors are familiar with. The addition of bus stops including any kiosks or information boards that come with stops is that it opens the door for significant local partnerships. This will be discussed in detail in the Sponsorship section of this chapter.

Bus stops should be spaced on average about 0.25 miles apart depending on the context of the area. For Tyler Transit's service area some places such as the area along Troup Highway directly adjacent to the railroad tracks more spacing will be appropriate. Other places, for example along portions of Broadway Ave. stops may need to be closer. Buses should only stop at major transfer centers, timing point if ahead of schedule or if the stop is needed for a transit customer.

Sponsor Stops

Stops adjacent property owners or other organizations that may be willing to financially support the system and/or maintain a shelter or other types of amenities are good sponsorship candidates with Tyler Transit. This type of sponsorship can include advertising on shelters, which the sponsor may wish to place at strategic locations for visibility of the advertisement in the community as part of their contract with the local jurisdiction.

Local restaurants and businesses may be able to work with Tyler Transit to come onto their property and pick up at their door. Consideration for peak season traffic must be made so that buses can enter and exit a location efficiently.

It is recommended that all bus stops be properly identified and that a program should be put in place to ensure appropriate access at all stops.

Bus Stop Guidelines

Bus stops are transit's front door and they should be inviting. Bus stops should be configured to the local area to maximize usage and productivity. The following bus stop configurations are provided as guidelines. Actual bus stop placement should take all location factors into account and be decided on a case-by-case basis.

Bus stop locations are generally defined in relation to the intersection. The types of bus stop locations as it relates to the intersections are:

- Near-side (upstream) of the intersection
- Far-side (downstream) of the intersection
- Mid-block (midway between intersections)

The relative advantages and disadvantages for each bus stop placement are presented in Table 1, in addition to the circumstances under which each location is recommended.

Table 1: Bus Stop Locations

Location Related to Intersection	Advantages	Disadvantages	Where Recommended
Far-side	• Minimizes conflicts between right turning vehicles and buses • Provides additional right turn capacity by making curb lane available for traffic • Minimizes sight distance problems on approaches to intersection • Encourages pedestrians to cross behind the bus • Creates shorter deceleration distances for buses • Results in bus drivers taking advantage of gaps in traffic flow created at traffic signals	• May result in intersections being blocked during peak periods by parked buses • May obscure sight distance for crossing vehicles • May increase sight distance problems for pedestrians • Can cause a bus to stop far- side after stopping for a red light • May increase number of rear-end accidents since drivers do not expect buses to stop again after a red light • Could result in traffic queued into intersection	• There is a high volume of turns • Route alignment requires left turn • Complex intersections with multi-phase signals or dual turn lanes • Traffic is heavier on the near-side • Existing pedestrian conditions are better on far-side • Traffic conditions and signals may cause delays if near-side • Intersections have transit signal priority treatments
Near-side	• Minimizes interference when traffic is heavy on the far side of the intersection • Allows passengers to access buses closes to the crosswalk • Results in the width of the intersection being available for the driver to pull away from the curb • Eliminates double stopping • Allows passengers to board and alight while the bus is stopped at a red light • Provides driver with opportunity to look for oncoming traffic	• Increases conflicts with right-turning vehicles • May result in stopped buses obscuring curbside traffic control devices and crossing pedestrians • May cause sight distance to be obscured for cross vehicles stopped to the right of the bus • May block the through lane during peak period with queuing buses • Increases sight distance problems for crossing pedestrians	• Traffic is heavier on the far-side • Existing pedestrian conditions are better than on the far-side • Pedestrian movements are safer on near-side • Bus route continues straight through the intersection
Mid-block	• Minimizes sight distance problems for vehicles and pedestrians • May result in passenger waiting areas experiencing less pedestrian congestion	• Requires additional distance for no-parking restrictions • Encourages jaywalking • Increase walking distance for patrons crossing intersections	• When the route alignment requires a right turn and curb radius is short • Problematic traffic conditions at the intersection • Passenger traffic generator is located mid-block • Compatible with corridor or district plan

Near-side Stops

Figure 11 provides an illustration of a typical near-side bus stop location. Stops located near-side of the intersection should be placed at least 5 feet from the crosswalk to prevent the bus from straddling the crosswalk while it is stopped to serve the stop. Near-side bus stop should be used if:

• Primary trip generator is downstream from the intersection

• Existing pedestrian facilities are greater than on the far-side

• Pedestrian movements are safer than on the far-side

• Route requires a right turn at the intersection

If curb-side parking is permitted before the stop, adequate clearances must be provided to allow the bus to align with the curb. Near-side stops at intersections with dedicated right-hand turn lanes where right-on-red turning is permitted should be avoided.

Figure 11: Typical Near-side Bus Stop Placement

60'

60'

100'

100'

Bus Stop Zone - No

5'

Parking
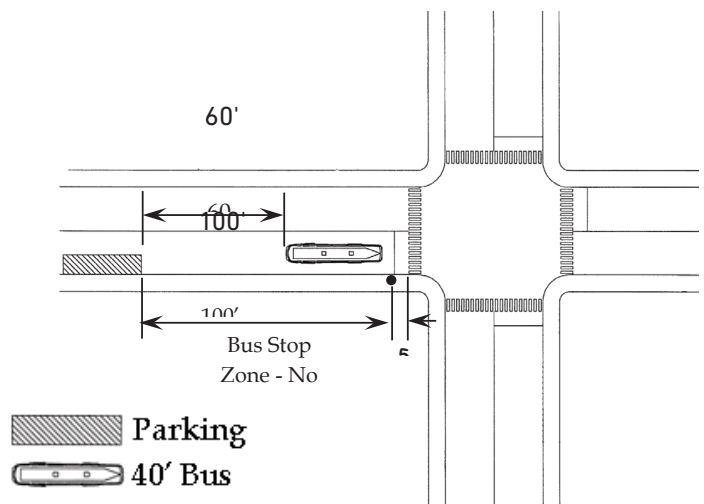
40' Bus

Far-side Stops

Figure 12 provides an illustration of a typical far-side bus stop location. For a standard 40' bus, the stop should be located at least 50' from the intersection to ensure that the rear of the vehicle does not protrude into the intersection and/or straddles the crosswalk. Far-side bus stop should be used if:

- Primary trip generator is upstream from the intersection
- Existing pedestrian facilities are greater than on the near-side
- High volume of right turns near-side of intersection
- Pedestrian movements are safer than on the near-side

If curb-side parking is permitted after the stop, adequate clearances must be provided to allow the bus to safely merge back into traffic.

Figure 12: Typical Far-side Bus Stop Placement
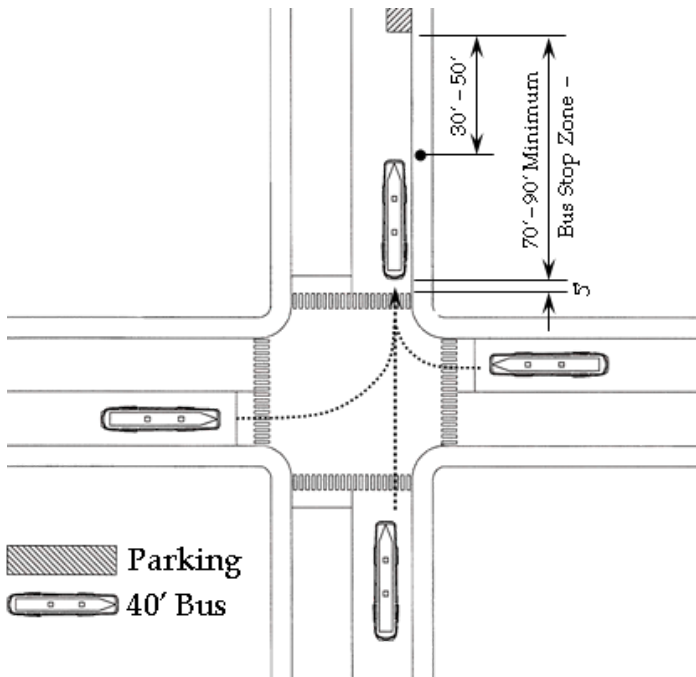
Mid-Block Stops

Figure 13 provides an illustration of a typical mid-block bus stop. Mid-block stops are generally not preferred and should be avoided whenever possible. Mid-block stops are appropriate when major trip generators are located mid-block and cannot be served at the nearest intersection

Figure 13: Typical Mid-Block Bus Stop Placement
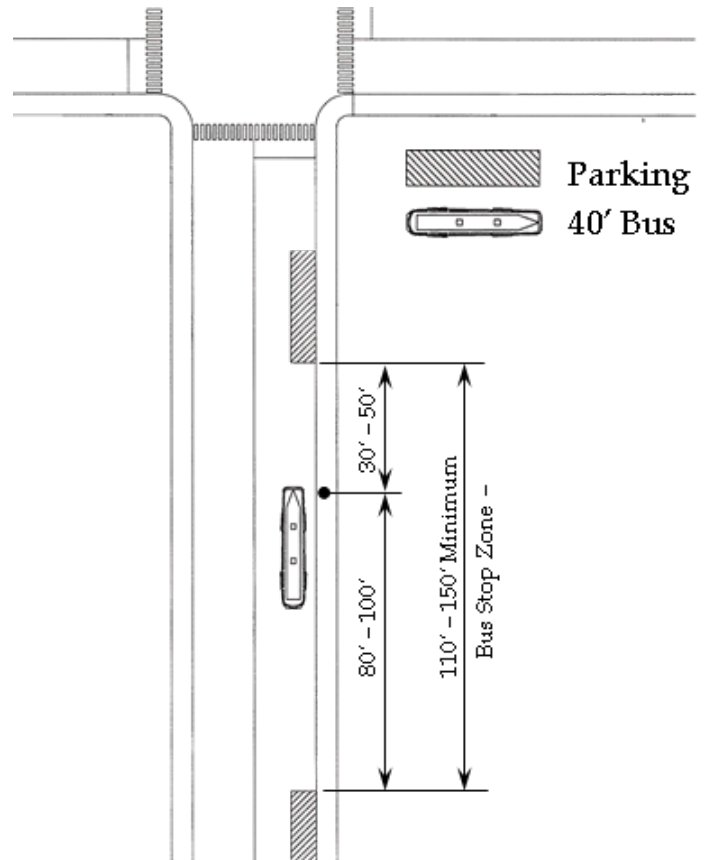
Bus Stop Hierarchy

As Tyler Transit adjusts its system it will be important to prioritize what and where improvements will be made. Table 2 below provides a hierarchy of bus stop types that will provide a guide on the provision of passenger amenities for the different bus stop types. There are three classes of bus stops: Basic Stop, Enhanced Bus Service, and Transit Center stops.

The number of boardings per day, across all routes serving the stop, including transfers, is recommended as the primary criterion for determining whether or not an amenity should be installed at a stop. This will ensure that resources are used at locations where they will benefit the greatest numbers of users.

Secondary considerations may include:

- Special populations served by the stop. For example, a stop located near an organization which serves older people or people with disabilities would be a good a candidate for a bench, since the presence of seating at the stop may make a difference as to whether an individual who has difficulty walking can use fixed-route service (instead of the Americans with Disabilities Act (ADA) paratransit).

- Stop sponsorship. A stop where an adjacent property owner or other organization is willing to finance and/ or maintain a shelter or other types of amenities may be a good candidate for this type of amenity even if total boardings fall short of minimum thresholds. This includes advertising shelters, which the shelter vendor may wish to place at strategic locations for visibility of the advertisement in the community as part of their contract with the local jurisdiction.

Table 2: Bus Stop Hierarchy

	Basic Stop	Enhanced Service Bus Stop	Transit Center
Bus Stop Sign	Yes	Yes	Yes
ADA 5'x8' Landing Pad	Yes	Yes	Yes
Sidewalk	Yes	Yes	Yes
Lighting	Evening Service	Yes	Yes
Seating	Trip Generator Based	Yes	Yes
Expanded Boarding & Alighting Area (Rear-door Access)	No	Site Specific	Yes
Bus Bay (Pull Off)	No	Site Specific	Yes
Shelter(s)	1 (50+ boardings/ day)	1	2 +
Trash Receptacle	Site Specific	Yes	Yes
Information Case	Yes	Yes	Yes
System Map	Contingent on Shelter	Yes	Yes

Bus Stop Signs

A bus stop sign should be securely mounted on its own post, at an angle perpendicular to the street. For bus stops that are served by Tyler Transit and other transit agencies, the Tyler Transit flag shall be placed at the top of the bus stop post above the other transit agency flag. Each bus stop should be marked with a bus stop sign indicating to bus operators and customers the location of the bus stop. It indicates to passengers and drivers where buses stop, as well as publicize the availability of the service. Placement of bus stop signs should take into consideration customer convenience, accessibility and safety, and stop visibility. Bus stop signs should conform to ADA requirements for height, width, and visibility. Minimum information on the bus stop sign should include system name and logo, contact phone number, and route numbers or names.

Bus Stop Sign Post

It is preferred that all bus stop locations should have their own bus stop posts. Shelters designed to accommodate bus stop signs can be used in lieu of a bus stop post. Using street sign posts, light posts, and other non-bus stop posts should be avoided whenever possible. Bus stop posts should be rust resistant, painted white and distinguishable from other posts in the same area so as to benefit customers with visual impairments. Poles must not block sidewalk accessibility.

Information Case

Route maps and schedule information should be provided at all bus stops and at stops that serve as transfer points. Shelters should be designed with panels that will accommodate customer information such as system maps, neighborhood maps, sponsor information, and/or schedule and route information. Customer information at high activity stops without bus shelters can be provided through an information case that is attached to the bus stop post. Information cases are an avenue into advertisements and system sponsorships.

Other Amenities to Consider

- Lighting - Adequate lighting at bus stop facilities allow bus drivers and approaching traffic to see waiting passengers at night.

- Benches - Benches are recommended for bus stop locations that are near sites that attract riders who may have difficulty walking and standing, particularly, stops where headways are longer than 15 minutes.

- Shelters - Shelters are recommended for all stops at which 50 or more passengers board per day, enhanced service stops, and transit centers.

- Trash Cans - Trash receptacles at bus stops should resemble other publicly owned and maintained trash cans along the corridor. Considerations should be given to maintenance and trash pick-up whenever trash receptacles are provided. Trash receptacles should be installed where they do not create an obstruction or interfere with the accessibility of the bus stop or the adjacent sidewalk.

- Vendor Boxes - Vendor boxes (also referred to as newspaper boxes) can provide passengers with reading materials while they wait for a bus. Owners of these vendor boxes generally place their boxes at locations with a high level of pedestrian activity. This is another aspect of bus stops with sponsorship implications.

Transfer Center Placement

The location of a transfer center is an important consideration for Tyler Transit and this planning effort. The proper placement of a transfer center will minimize bus mileage and travel time for the buses and customers, reduce transfers and provide better service area coverage. Wherever the transfer point is located it should meet many of the critical locational elements described as follows:

1. At or adjacent to a major destination(s) – When the transfer center is at a major destination, it reduces the number of transfers required for passengers. This reduces the time on the bus and in turn can improve ridership. Locations such as downtown, a large mall or big box stores are typical, with most transfer centers being in the downtown area.

2. Excellent access for buses – Minimal time loss related to entry to the facility is important to customers and the reach of the service. This is particularly important for intercity and regional routes that should stay close to major roads traveled.

3. Safe and inviting location – The transfer facility should be located in a well-lit location where people have no concerns about their safety.

4. Accessible/safe pathways for pedestrians and bicyclists – Clearly access is critical, avoiding inaccessible pathways and parking lots. Pedestrian access should include accessibility for all and appropriate protected crosswalks to ensure safety. Bike access should also be protected with bike securement at major stops and the transfer station.

5. Adequate space for future expansion – The space must accommodate all buses that may be on-site at one time, now and for the next 10-20 years. This will include internal service as well as other providers public and private. Space should also be included for passenger auto access to drop off customers, commonly called "Kiss and Ride" access.

6. Centrally located to each route – Where geographically feasible, the buses should be able to access the facility from a variety of roads and not have multiple routes travel on the same roads.

7. Public/private partnership potential – There are other less tangible factors at play from time to time. In this case there may be opportunities for public/private partnerships and private funding at some locations, such as a big box store, mall or medical center. Further, some locations lend themselves to leasing retail or office space.

Pathways

As noted earlier in this chapter safe and accessible pathways are essential for transit customers to be able to reach their destination once they arrive at the bus stop. In many areas of Tyler there is a dearth of sidewalk infrastructure making it difficult for some transit users to be able to use portions of the routes. Protected pedestrian crossings are also important along major throughfares. The area along Troup Highway south of Loop 323 is an area where signalized pedestrian crossings are needed at major intersections.

Regional Connections

Connections to regional providers is important for transit customers that live outside of the Tyler Transit service area that need affordable mobility options. Tyler Transit currently coordinates with GoBus, the regional rural transit system serving a large portion of East Texas around Tyler. GoBus brings transit customers into Tyler every weekday from various rural areas in the region. While the service is curb-to-curb some GoBus customers use Tyler Transit to access multiple destination in Tyler upon arrival. GoBus is in the process of updating many of their services which may include expanded fixed schedule and fixed route services into Tyler and will need to continue coordinating with Tyler Transit to ensure that meaningful connections between the transit systems are expanded.

Tyler Transit does not currently have a connection with the intercity bus network as the intercity bus station is well outside of the Tyler Transit service area.

Multimodal Access Regional Connections

Connections to regional providers is important for transit customers that live outside of the Tyler Transit service area that need affordable mobility options. Tyler Transit currently coordinates with GoBus, the regional rural transit system serving a large portion of East Texas around Tyler. GoBus brings transit customers into Tyler every weekday from various rural areas in the region. While the service is curb-to-curb some GoBus customers use Tyler Transit to access multiple destination in Tyler upon arrival. GoBus is in the process of updating many of their services which may include expanded fixed schedule and fixed route services into Tyler and will need to continue coordinating with Tyler Transit to ensure that meaningful connections between the transit systems are expanded.

Tyler Transit does not currently have a connection with the intercity bus network as the intercity bus station is well outside of the Tyler Transit service area.

Fare Structure and Collection Methods

This section summarizes Tyler Transit's fare structure and fare collection methods. See **Appendix X** for a detailed analysis comparing Tyler Transit's fare structure and collection methods with eight peer transit systems.

Tyler Transit allows users to purchase tickets, tokens, or passes to alleviate the need for exact change. Riders may purchase tickets, tokens, or passes at the Tyler Transit office in downtown Tyler. Tickets and tokens have no expiration date and can be used at any time for any trip. Table 1 presents the pass options currently available through Tyler Transit.

Regular Fares

Adults 12 and up are charged $1.00 per ride, unless they qualify for a discount (see Discounts section). All fares are on a per bus basis.

Transfer Charges

Tyler Transit does not offer discounts for transfers. Riders must pay the same fee for each bus they board.

Discounts

Children five and under ride free on Tyler Transit buses. A discounted fare of $0.50 is given to the following groups:

- Children ages 6 to 11
- Seniors (adults 65 and older)
- People with disabilities
- Medicare recipients

To take advantage of the discounted fare, riders must bring documentation to the Tyler Transit office and purchase a Tyler Transit Half Fare ID card for $2.00 to show the driver every time they board the bus.

Table 3: Tyler Transit Pass Options

Pass Type	Price
30-day pass	$40 for riders who pay regular fare; $20 for riders who receive discounted fares
Student 30-day pass	$20
Student semester pass	$50
7-day pass	$10 for riders who pay regular fare; $5 for riders who receive discounted fares
Student 7-day pass	$5
All day pass	$2

Inventory

Tyler Transit currently has a fleet of twenty-two vehicles used for both fixed route and paratransit operations. Tyler Transit closely tracks the milage and condition of the vehicles and works closely with the city to make sure all preventative maintenance is completed on-time. Tyler Transit also has a detailed Transit Asset Management Plan in place to help guide the replacement of transit vehicles. Table 4 shows the current vehicle inventory for Tyler Transit. As shown, there are four vehicles in poor condition and/or at the end of their useful life and need replacing.

Table 4: Tyler Transit Vehicle Inventory

Equipment Year	Equipment Manufacturer Description	Equipment Model Number	Description	Fuel Type	Condition	Mileage as of 4/15/21
2005	FORD MOTOR COMPANY	F250	2005 FORD F150	Unleaded	Poor	94,321
2009	INTERNATIONAL	EZ310FL	2009 INTERNATIONAL BUS	Unleaded	Poor	72,355
2010	FORD MOTOR COMPANY	FUSION	2010 FORD FUSION SEDAN	Unleaded	Good	141,144
2011	INTERNATIONAL	EZ310FL	2011 INTERNATIONAL BUS	Unleaded	Good	159,265
2015	CHEVROLET	4500	2015 CHEVY BUS Star Craft	Unleaded	Good	142,797
2015	CHEVROLET	4500	2015 CHEVY BUS Star Craft	Unleaded	Good	101,023
2016	CHEVROLET	4500	2016 CHEVY ARBOC	Unleaded	Good	102,436
2016	FORD MOTOR COMPANY	E350	2016 FRD E350 ALLSTAR BUS	Unleaded	Excellent	52,152
2016	CHEVROLET	4500	2016 CHEVY ARBOC	Unleaded	Excellent	16,644
2016	CHEVROLET	4500	2016 CHEVY ARBOC	Unleaded	Excellent	13,905
2016	CHEVROLET	4500	2016 CHEVY ARBOC	Unleaded	Excellent	12,652
2016	CHEVROLET	4500	2016 CHEVY ARBOC	Diesel	Excellent	1,809
2017	CHEVROLET	4500	2017 CHEVY ARBOC	Diesel	Poor	345,120
2017	CHRYSLER	PROMASTER	2017 RAM PROMASTER VAN	Diesel	Poor	266,449
2018	CHRYSLER	Carvan	2018 Dodge Carvan	Unleaded	Good	186,166
2020	CHRYSLER	PROMASTER	2020 RAM PROMASTER VAN	Unleaded	Good	182,638
2020	CHRYSLER	PROMASTER	2020 RAM PROMASTER VAN	Unleaded	Good	192,323
2020	CHEVROLET	4500	2020 CHEVY ARBOC	Unleaded	Good	192,425
2020	CHEVROLET	4500	2020 CHEVY ARBOC	Unleaded	Excellent	39,802
2020	CHEVROLET	4500	2020 CHEVY ARBOC	Unleaded	Excellent	44,128
2021	GILLIG	G27E	2021 GILLIG G27E	Unleaded	Excellent	42,967
2018	FORD MOTOR COMPANY	E450	2018 Ford Star Craft	Unleaded	Excellent	60,291

PUBLIC
ENGAGEMENT

03

Public Engagement

Tyler area residents and frequent visitors are the experts of their community and their voice should be carried throughout the study process and reflected in any final recommendations. This chapter summarizes the strategies used to engage the community, including a Project Advisory Committee, public meetings, a survey, and bus driver interviews.

Project Advisory Committee

A Project Advisory Committee was established to ensure input and secure buy-in from the broader community by engaging key community stakeholders. Ten members served on the committee and included representatives from the following groups and organizations: City of Tyler Disability Issues Review Committee, City of Tyler Neighborhood Services Department, Tyler Main Street, GoBus, East Texas Human Needs Network, UT Health, CHRISTUS Trinity Mother Frances, East Texas Council of Governments, East Texas Lighthouse for the Blind, Tyler Area MPO, and Tyler Transit.

The group met two times during the study period. At the first meeting in September 2020, the group was introduced to the project team, reviewed the scope of work and project schedule, and discussed critical considerations for the study. The second meeting in November 2020 included a summary of feedback from the first open house, a review of Tyler Transit's existing service and system, and best practices for route design.

Public Meetings

Two series of open houses were planned as part of the study. The first series held in September 2020 focused on listening to the community and the second series held in November 2020 focused on getting feedback on proposed recommendations. Each series of open houses involved two meetings, one in the afternoon and one in the evening. Due to the COVID-19 pandemic, both of these open house periods were held virtually.

Open House #1

The first open house series introduced project, project team, and schedule. An overview of findings from previous planning documents and general operating information about Tyler Transit was shared, which led into several discussions around accessibility, customer service, and defining a successful transit system.

Meeting Details and Attendance

Two virtual open houses were held on September 17th, 2020, from 1-2 p.m. and 6-7 p.m. CST. They were hosted through Zoom. A flyer advertising the open houses, which included a QR code link to the virtual open house, was distributed to members of the project advisory committee and placed on Tyler Transit buses and bus shelters. Eleven community members attended the 1 p.m. meeting and two community members attended the 6 p.m. meeting.

Key Takeaways

Key takeaways from open house #1 included:

- Using Tyler Transit can be intimidating and confusing for first time or infrequent riders, or even for regular riders who want to ride a new route.

- The existing system is difficult to use for those who work early morning and late-night shifts. For those who rely on transit to commute to work, the current hours of service can limit job choices.

- There is desire for more locations where riders can purchase tickets and passes in addition to the Transit Depot downtown.

- Attendees highlighted the challenges of reaching bus stops as a pedestrian, including the need to walk long distances or cross major arterial streets.

- Attendees described successful public transit as being safe, affordable, and accessible and underscored a desire for longer operating hours, reduced barriers to access destinations from bus stops, more frequent service, and regional connectivity.

Open House #2

The second open house series presented information on Tyler Transit's ridership, on-time performance, headways, and routes. In addition, a series of potential route alignments were presented for community feedback.

Meeting Details and Attendance

A virtual open house was held on November 12th, 2020, from 6-7 p.m. CST and another was held on November 14th, 2020, from 2-3 p.m. CST. They were hosted through Zoom. A flyer advertising the open houses, which included a QR code link to the virtual open house, was distributed to members of the project advisory committee and placed on Tyler Transit buses and bus shelters. Four community members attended the November 12th meeting and two community members attended the November 14th meeting.

Key Takeaways

- There was disagreement whether students at UT-Tyler, Tyler Junior College Main Campus, and Tyler Junior College West Campus typically travel to the other colleges. Further discussion with college staff and students was recommended to better understand their unique needs and travel patterns.

- Attendees felt frequency of service is as important as route design.

- Need to keep service around MLK Jr. Pkwy, as this is a lower-income area and may rely on service.

- Regardless of the final route changes, they should be communicated well to existing and future riders.

- Overall, there was strong support for a route traversing North-South along Broadway.

- Attendees stated that walking between Front Street and Erwin Street is difficult due to the area's topography.

Survey Results

A survey to gather input from Tyler residents regarding issues and opportunities relating to transit use and planning for Tyler was conducted during the Fall of 2020. A copy of the survey instrument and a full report that details the responses to each question are included in **Appendix A**. Topics addressed in the resident survey included:

- Current use of Tyler Transit.

- Reasons for not currently using transit in Tyler.

- Factors that would encourage transit use.

- Service preferences.

- Respondent demographics.

Methodology

The survey was available digitally via computer or mobile devices and hard copies were also available. The survey was publicized in the open houses, via Tyler MPO social media, by signage on buses and at bus stops, and provided to a number of community organizations.

There were 182 responses to the survey. This sample size is too low to be statistically representative of the Tyler area; fewer responses were expected as a result of the COVID-19 pandemic. Although the survey data does not provide a large enough sample to draw conclusions about the regional population, the results of the survey still provide useful information on transit preferences and served as an avenue to gain meaningful input from residents and transit users.

The following are key findings from the survey:

- **Current Users of Tyler Transit.** Although 72% of respondents reported that they never use transit in the Tyler Area, 14% use it regularly, 7% use it sometimes, and 7% use it rarely. Of those that use transit in the region, nearly half have been using it for over five years. Many of these long-time users also use the service regularly. Approximately 20% of transit-riding respondents began using transit in the Tyler Area in the last year; half of them ride regularly. Commuting was reported as the most common transit trip purpose. In addition, the top three reasons for transit use were: 1) it costs less, 2) I don't have a car available, or 3) it is good for the environment.

- **Barriers for Transit Use.** Residents were offered a list of possible reasons for not using public transit and asked to select all that applied to them. The top three reasons were: 1) I just prefer to drive, 2) service is not available near my home, and 3) it takes too long to get to destinations.

- **Factors Likely to Increase Ridership.** Comparable travel time and transit stops closer to home were the most likely to influence potential ridership, with 72% and 68% of respondents, respectively, selecting that the factor would make them likely or very likely to ride transit. Respondents were less influenced by parking issues.

- **Service Preferences.** The survey participants were presented with a series of contrasting service preferences and asked to select one from each pair. More frequent service (75%) was clearly favored over longer service hours (25%). There is substantial interest in focusing on weekday service (75%) over weekend service (25%). Additionally, shorter walks to transit stops (69%) was favored over faster service (31%). Finally, the responses for focusing on existing service (44%) were slightly outweighed by the preference to serve new areas (56%).

- **Satisfaction with Existing Service and Fares.** Existing riders were asked about their satisfaction with various aspects of bus service. The vast majority of respondents (84%), were satisfied with the pricing of transit service. Fewer respondents were satisfied with the frequency of service; 45% were "very satisfied" or "satisfied", whereas 37% were "dissatisfied" or "very dissatisfied".

- **Overall Satisfaction with Transit Service.** Overall, 60% of transit-riding respondents said they were satisfied with transit service in the Tyler area. Approximately a quarter were dissatisfied.

Drivers' Focus Group

On December 15th 2020 the consultant team held two Driver Focus Group meetings to gather information regarding the routes utilizing the institutional knowledge of the vehicle operators. Many of the bus drivers for Tyler Transit have been around for fifteen years or more, longer than most of the management and administrative staff. These employees are also the frontline workers who see what works and what doesn't on a day-to-day basis. The meetings consisted of a short presentation on the study goals by the consultant team followed by an in-depth discussion using maps to illustrate findings. Figure 14 depicts the maps that were used in both meetings.
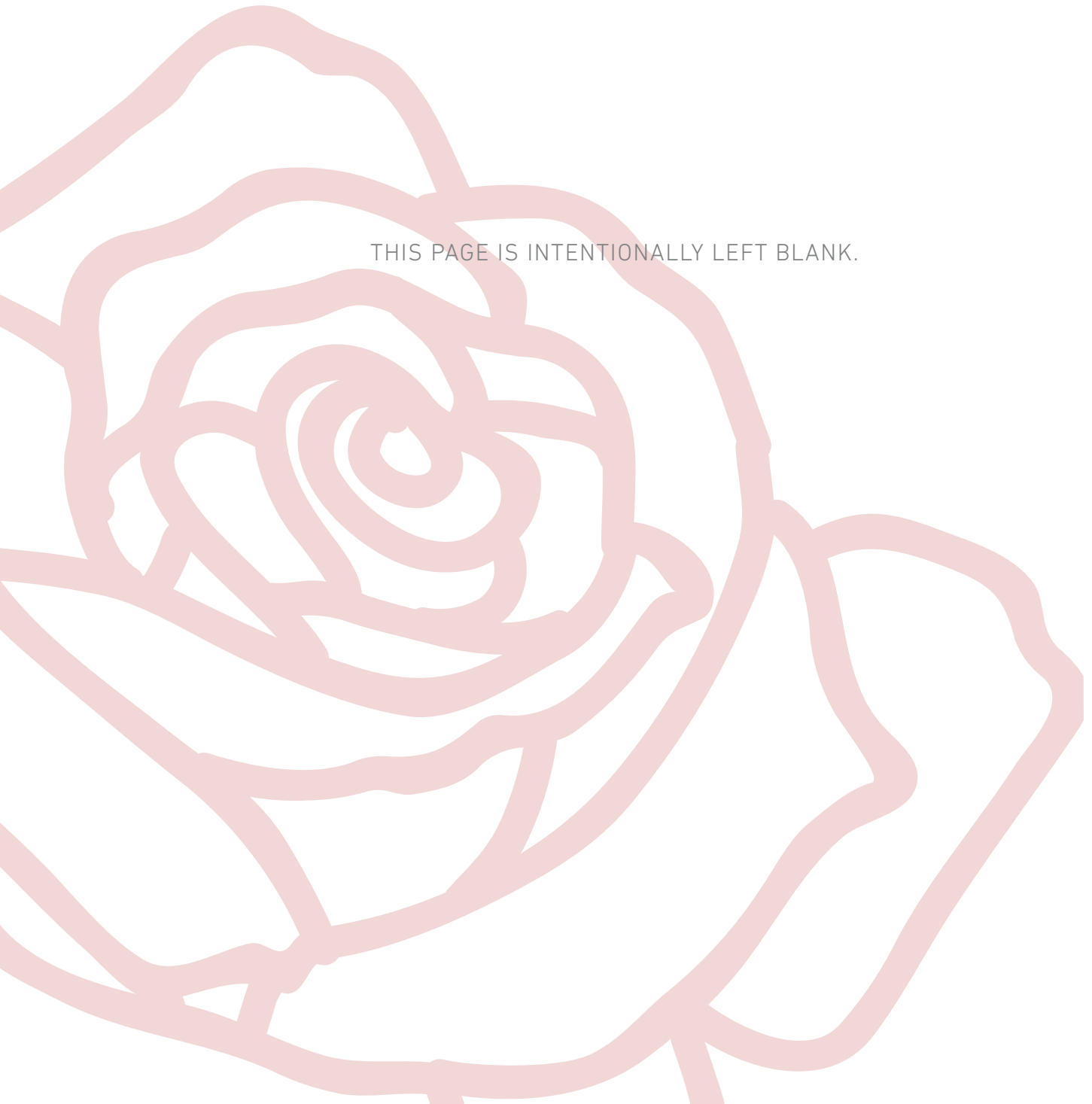
Major discussion points of the focus groups included:

- Many of the drivers that were around during the last route change noted that ridership fell, particularly amongst Tyler Junior College students when the new downtown transfer center was added. Many felt like students were unaware that they could ride fare free and that a marketing effort may help inform students of this service is needed.

- Drivers noted that many of the areas along the Frankston Highway and Old Jacksonville Highway had little ridership including some of the more affluent neighborhoods served in south Tyler.

- It was pointed out that the area between the two loops of the Blue Route on Loop 323 were used by many passengers despite no direct connection between the loops.

- Drivers noted that many customers complained about the long headways and lengths of the routes and that in many cases, when the weather is nice customers prefer to walk up to two miles instead of riding the bus because it is faster.

- Drives supported the idea of transitioning to an out-and-back system over the looping system to reduce headways.

- Drivers believed that headways less than one hour will result in more ridership.

28

Figure 14: Meeting Maps
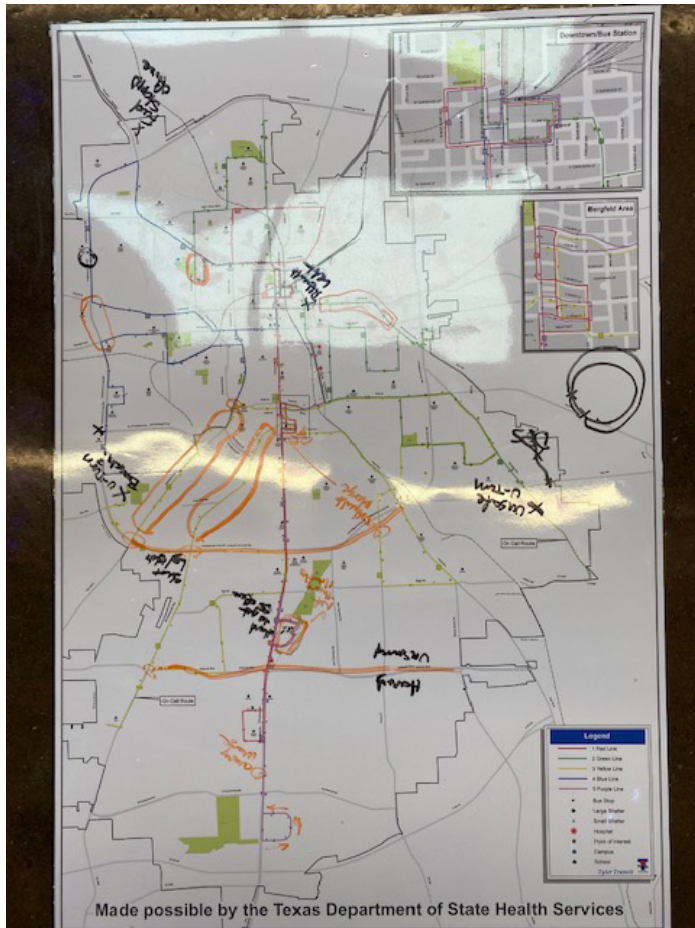
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TYLER TRANSIT IN THE FUTURE

04

Tyler Transit in the Future

Transportation is Changing

The transportation industry is going through a dramatic evolution in response to technology development and changing patterns in mobility needs. The COVID-19 pandemic has accelerated some changes, such as the number of people who are working from home some or all of the time, but it remains to be seen how dramatic and long-lasting these shifts will be after the pandemic. The following trends will likely influence transit demand and operational characteristics in the future:

- **Electric Vehicles.** Electric transit vehicles are becoming more commonplace, reliable, and cost-effective in the marketplace. Use of electric buses will dramatically lower vehicle emissions, making the passenger experience of being around buses more pleasant, and will dramatically lower fuel costs, reducing the overall cost of service.

- **Real Time Information.** A growing number of transit agencies across the country are utilizing apps or other technology to provide customers with information regarding bus schedules, location of a particular bus in real time, and/or expected arrival time at a particular stop. This increases level of confidence of riders and gives them more control of their schedule. For example, a customer may check their bus location, see that it is behind schedule, and choose to pick up coffee at a shop nearby, or wait inside longer due to rain or high temperatures. It can also reduce customer service calls as most systems report the majority of calls received have to do with schedules and/or location of their bus.

- **Active Transportation Infrastructure.** As more communities expand infrastructure supportive of active mobility, such a bicycle lanes, trails, and bicycle and scooter share, transit becomes a more viable modal option, as first and last-mile connections are safe and comfortable.

- **Shift Toward Sustainability.** More and more, younger generations are choosing less expensive and less energy-intensive options for moving around some or all of the time.

Tyler Transit and the COVID-19 Pandemic

The World Health Organization (WHO) declared COVID-19 a global pandemic on March 11, 2020 due to the aggressive spread and severity of illness caused by the novel coronavirus. Tyler Transit continued to operate throughout the pandemic, however ridership declined and schedules were reduced during the first months as a safety precaution and to respond to reduced needs as many local businesses were closed and/or workers transitioned to home. In May 2020, the City of Tyler received $5.3 million in CARES ACT funding to improve transit service. The grant supported costs associated with operations, administration, payroll, preventive maintenance, and rolling stock.

Tyler Transit returned to pre-pandemic service schedules in July 2020, limiting bus capacity to 75% to allow for social distancing and requiring masks for drivers and passengers. By the fall of 2020, ridership returned to close to pre-pandemic levels, demonstrating the importance of the service to essential workers and businesses.

As of April 2021, Tyler Transit continues to require masks of all passengers (consistent with federal order), disinfects vehicles daily, and provides public access to customer service by phone during normal business hours.

Legislative and Funding Outlook

In January 2021, Joseph R. Biden was sworn in as president of the United State. With a new presidential administration comes new leadership, programs, and policies at the Federal Transit Administration (FTA). As of the time of this report, specific details on new programs and funding opportunities are not yet available, however reports indicate that transit will be an important component of a new federal infrastructure bill. It is recommended that Tyler Area MPO and Tyler Transit staff track advancement in these topics in order to take advantage of funding opportunities when they become available. The Tyler Transit Route Study includes capital and operational recommendations that may serve a basis for funding request.

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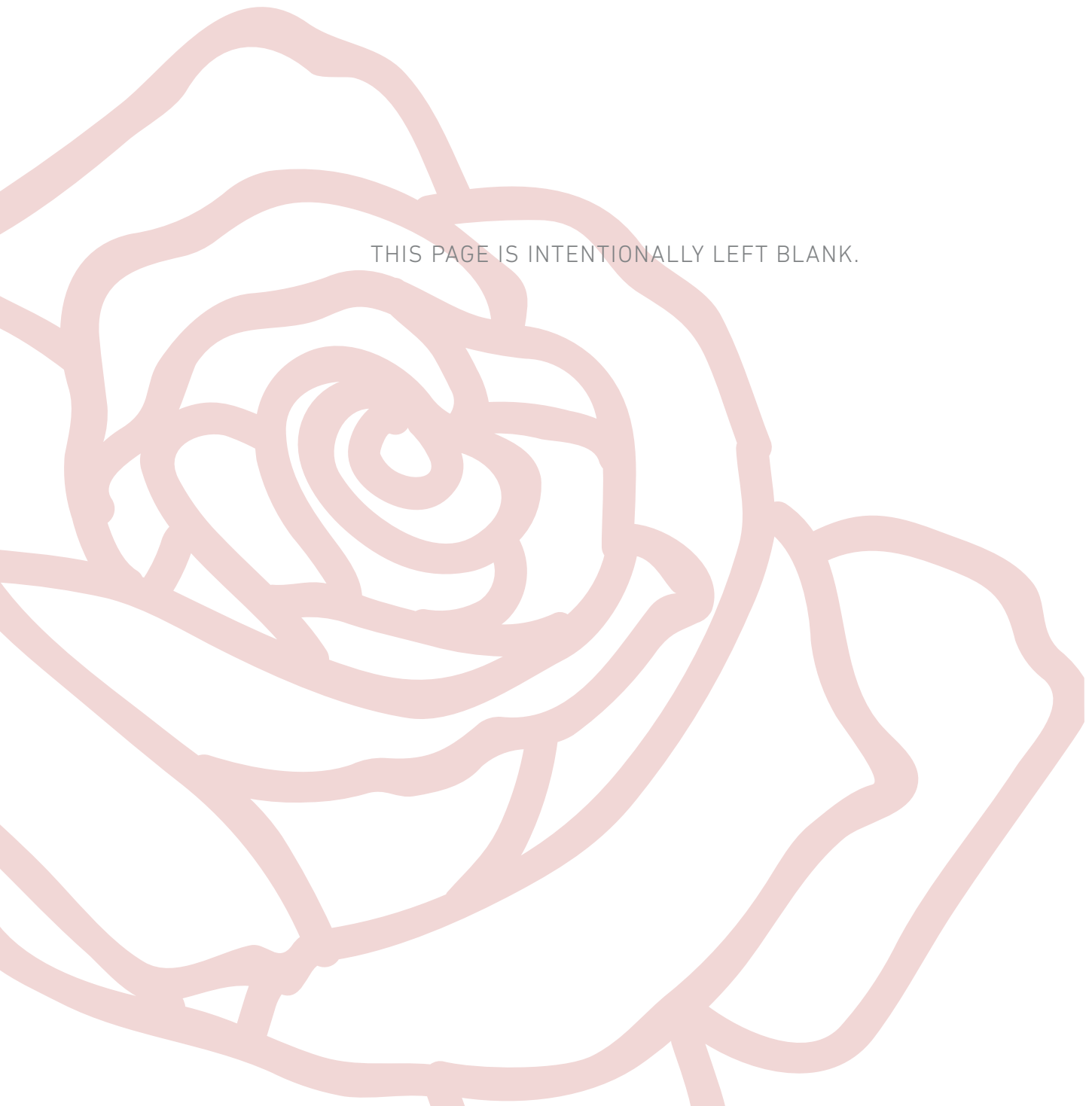
RECOMMENDATIONS

05

Recommendations

The System

Tyler Transit recommendations are intended to ensure that public transportation service aligns with the agency's mission to provide customers service that is safe, friendly, and reliable. The overall transit network consists of multiple routes throughout the City of Tyler, serving customers with a variety of origins and destinations. Guiding principles for the development of recommendations included:

- Simplify the system and service – create more direct routes and reducing headways to one hour or less.

- Serve key destinations – provide equitable access and key connections to multifamily housing, downtown Tyler, local services, and employment centers.

- Utilize existing fleet – identify strategic routes that leverage existing transit vehicles and craft a phased approach to increasing service through capital investments.

These guiding principles resulted in comprehensive recommendations that balance national best practices and operational requirements with local user needs and desires. User experience was paramount throughout recommendation development to ensure changes made to the public transportation service are thoughtful and strategic, benefitting users that need it most and attracting new choice riders. Recommendation categories include the following:

- Individual routes and phasing,

- Transfer centers,

- Customer communication and resources,

- Fares, and

- Multimodal connections.

System recommendations resulted in six routes and three transfer stations that connect neighborhoods and destinations across the entire City. The following sections describe recommendation categories in more detail along with the benefit for transit riders and key considerations for Tyler Transit for implementation.

Routes + Phasing

Establishing routes that are understandable, direct, and connect to key destinations is invaluable to Tyler Transit customers. Recommended routes reduce headways while using the existing fleet with proposed phasing that will create more frequent service along routes with the most riders. Transfer stations and routes are illustrated in Figure 15 and are described in more detail below.

Figure 15: Tyler Transit System
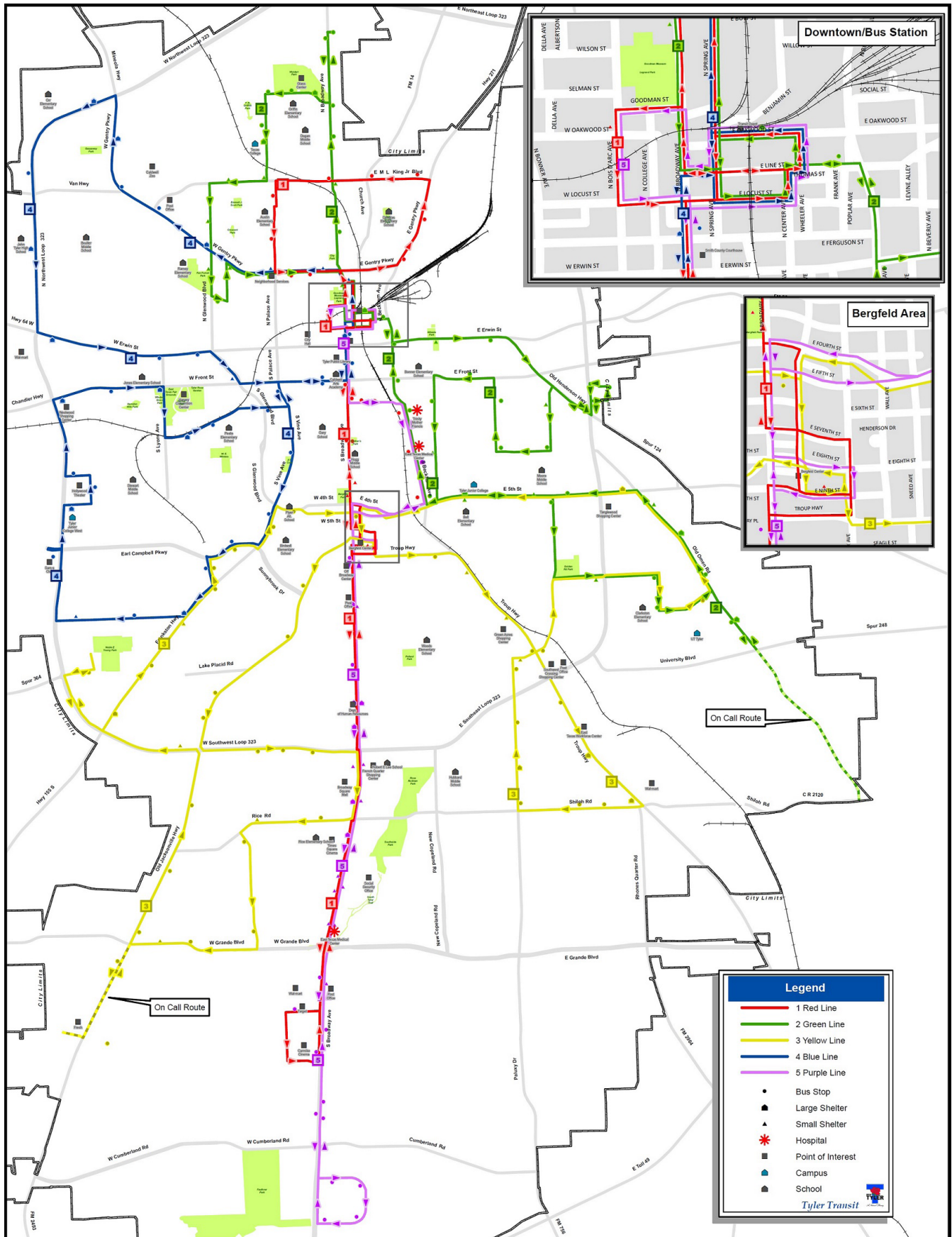
Transfers Stations:

Two key recommendations for transfer stations will increase safety, convenience, and reliability for riders of Tyler Transit.

- Adding a second shelter on the opposite side of the street at the Bergfeld Center will ensure that riders are sheltered from various weather conditions while waiting for a bus. Providing a pedestrian crossing between the shelters is important to prioritize riders as they transfer between Routes. Updating the Bergfeld Center transfer station with a shelter and pedestrian crossing allows for transit vehicles to access the site from either direction with safer and more comfortable waiting areas for customers.

- A third transfer station (South Transfer) is recommended to provide safe and reliable transfers for riders in South Tyler. The location for the proposed transfer point will be in the S. Broadway Avenue/E. Rieck Road/S. Donnybrook Avenue area and will serve Routes A, D, and F. The addition of the South Transfer along with the Transit Depot and Bergfeld Center allows riders to conveniently move between routes safely and comfortably. Tyler Transit should work with local property owners to identify the appropriate site for the South Transfer that is accessible to riders and suitable for transit vehicle movements.

Route A

Broadway Avenue is one of the key thoroughfares within the City of Tyler and links multiple destinations for residents and visitors. Route A provides service along a majority of Broadway Avenue, connecting the City from the North near Broadway Avenue and Loop 323 to the South at the Cumberland Park Mall. This route directly connects all three transfer stations and intersects with every recommended route in the Tyler Transit system.

Route B

A loop route serving communities in northern Tyler will circulate through existing neighborhoods and provide connections to the Texas College, Human Services Department, and the Caldwell Zoo. Route B intersects with Route A along Broadway Avenue in two locations and connects to the Transit Depot linking Routes C and D. This route serves customers accessing employment areas along Gentry Parkway, Martin Luther King Jr. Boulevard, or those connecting to Route A, C, and D for destinations in Downtown or and other locations throughout Tyler.

Route C

Route C connects Downtown Tyler to Loop 323 to both the East and West using Erwin Street and Front Street. In addition to linking a variety of civic destinations such as Tyler's City Hall and Public Library, this route provides riders access to multiple grocery and shopping options. Stops at the Transit Depot allow convenient transfers to Routes A, B, and D that provide access to the rest of the City.

Route D

Similar to Route A, this route connects all three transfer stations, intersecting every route in the Tyler Transit system. Traveling along Beckham Avenue, Route D establishes an essential connection into Tyler's Medical District with access to both Christus Trinity Mother Frances and UT Tyler Hospitals. Further South, Route D provides riders with access to grocery and retail options along Troup Highway and Paluxy Drive, along with S. Broadway Avenue near the proposed South Transfer location.

Route E

Access to and from the campuses of UT Tyler and Tyler Junior College (TJC) for students and faculty is a valuable service that Tyler Transit continues to provide. Route E connects these institutions with multiple residential areas and several retail centers to allow for convenient trips for everyday needs. Additionally, this route offers convenient transfers at the Bergfeld Center to Routes A and D along with access to local parks. Future phasing of the transit system recommends that Route E becomes two independent routes, one serving the east and the other the west alignment from the Bergfeld Center (see Phasing section).

Route F

Growth to the in South Tyler has spurred new development and prompted the need for additional transit service. Route F serves multiple grocery and shopping locations along a loop from the proposed South Transfer. This route also provides connections to the Cumberland Park Mall and additional health center destination is southern Tyler. The South Transfer makes connections to Routes A, D, and E safe and convenient for riders with destinations outside of South Tyler.

Legend

- ROUTE A
- ROUTE B
- ROUTE C
- ROUTE D
- ROUTE E - EAST
- ROUTE E - WEST
- ROUTE F

Loop 323

TEXAS COLLEGE

CALDWELL ZOO

E MLK J Blvd

W Gentry Pkwy

DOWNTOWN

E Oakwood St

TRANSIT DEPOT

W Erwin St

Beckham Ave

E Front St

Old Henderson Hwy

MEDICAL DISTRICT

TJC WEST

Glenwood Blvd

East Campbell Pkwy

TJC

E 5th St

Old Omen Rd

BERGFELD CENTER

E 8th St

McDonald Rd

Loop 323

Frankston Hwy

Varsity Dr

Troup Hwy

University Blvd

Paluxy Dr

UT TYLER

Broadway Ave

Shiloh Rd

SOUTH TRANSFER (NEW)

W Grande Blvd

Old Jacksonville Hwy

W Cumberland Rd

CUMBERLAND MALL

Figure 16: Proposed Tyler Transit Route A

Figure 17: Proposed Tyler Transit Route B

SHOPPING

GROCERIES

APARTMENTS

EDUCATION

MEDICAL
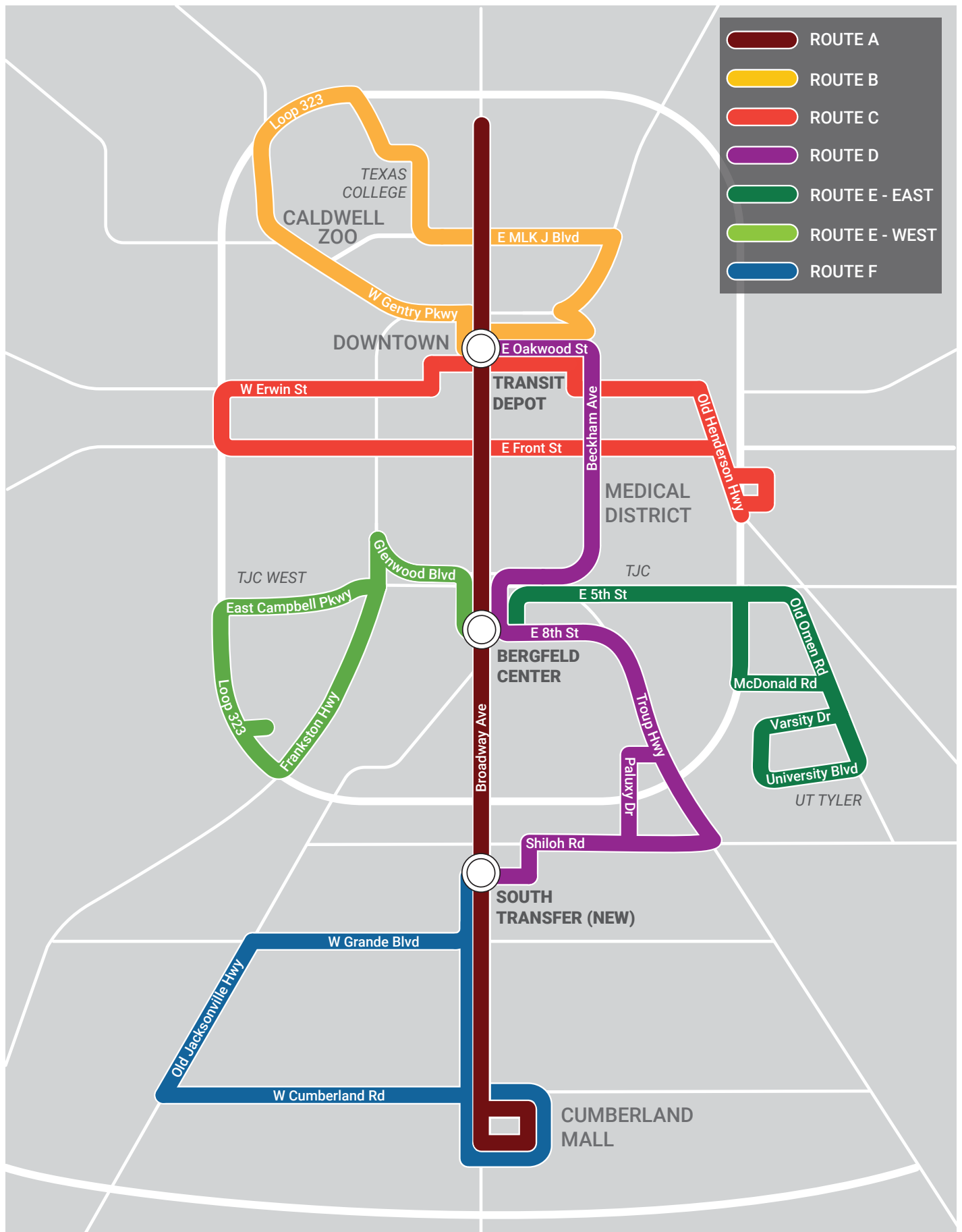
PARK
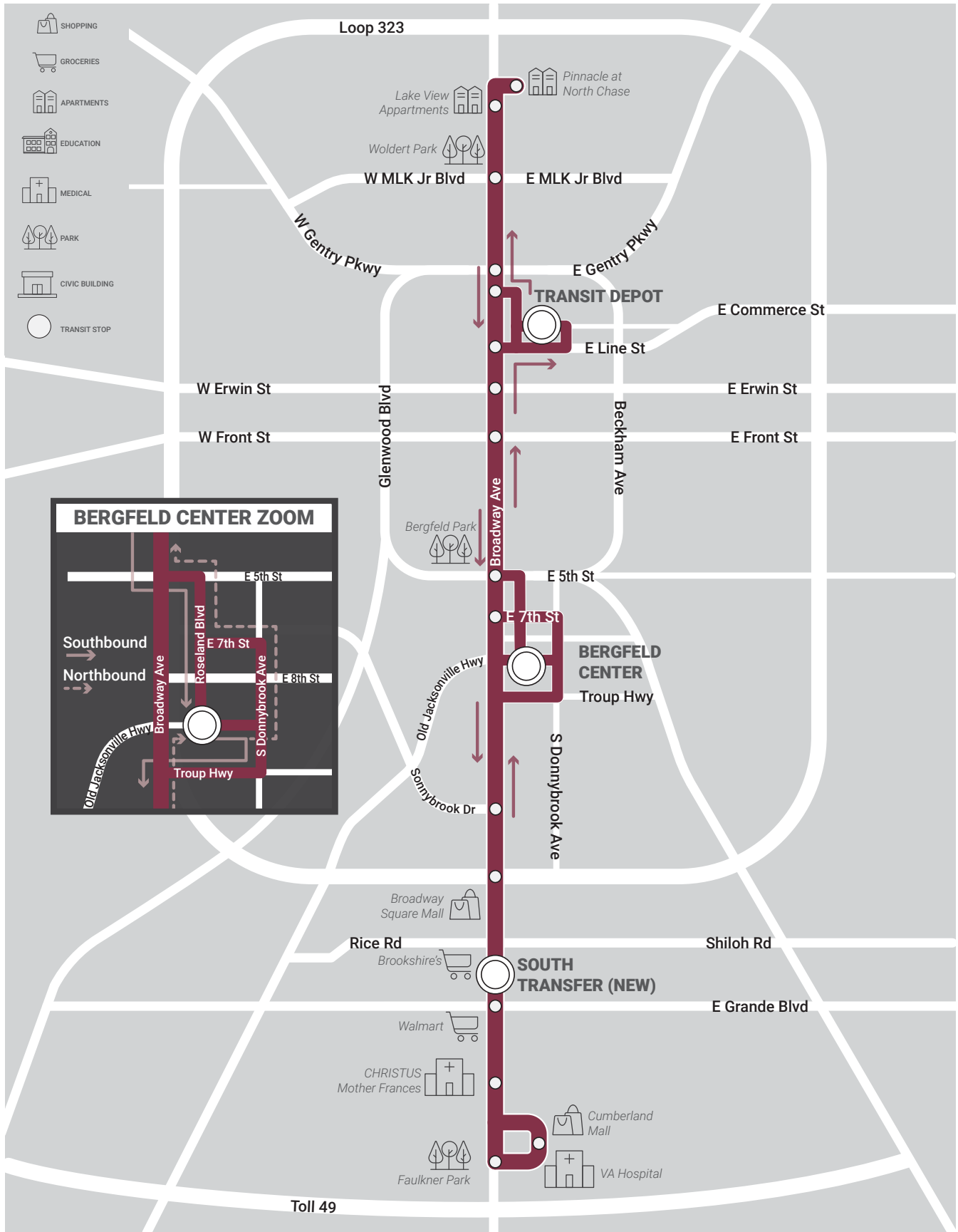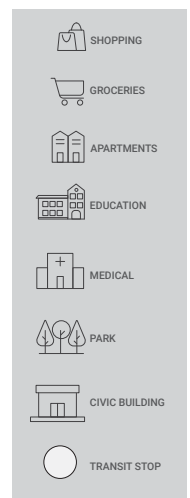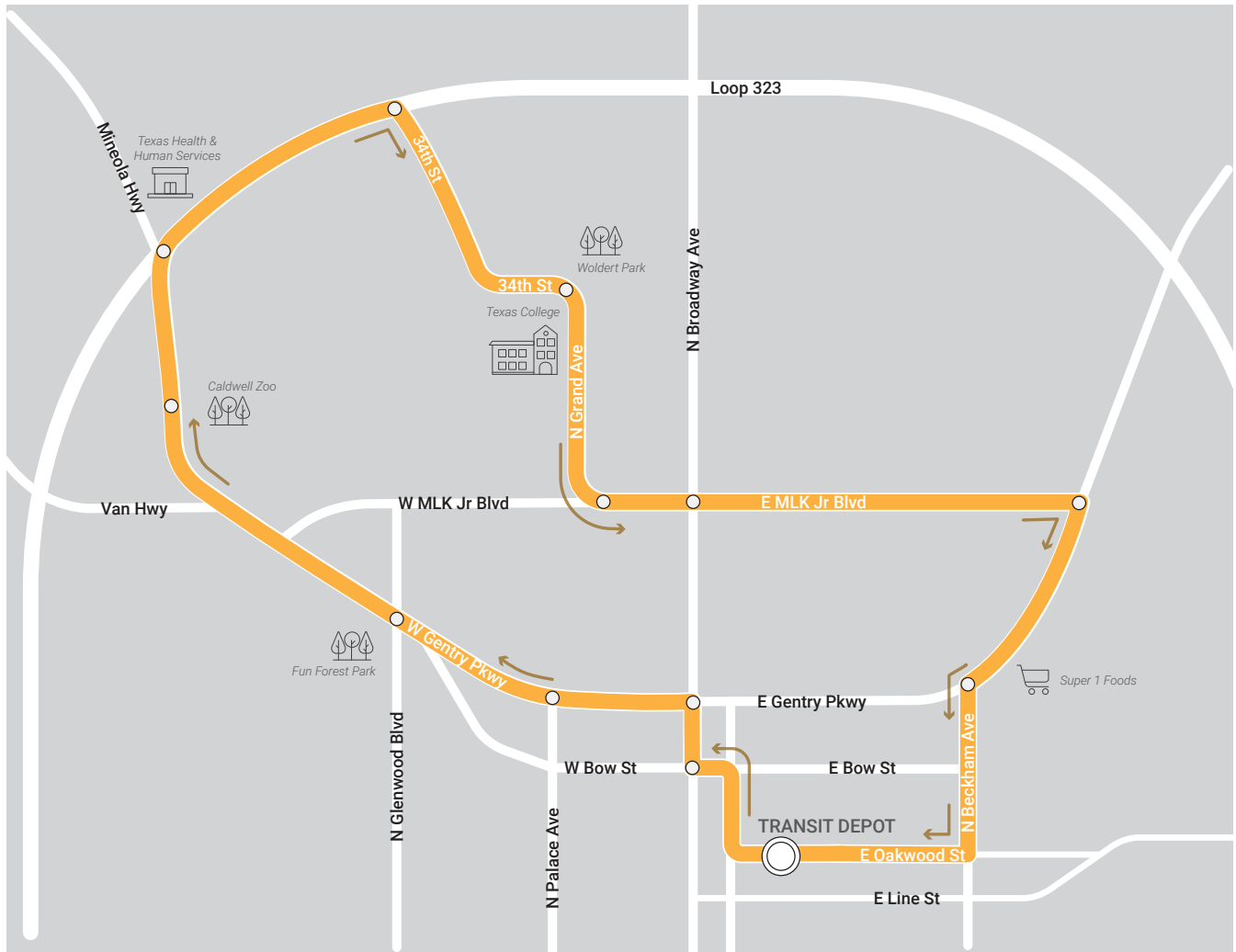
CIVIC BUILDING

TRANSIT STOP

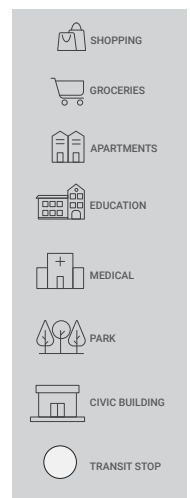Figure 18: Proposed Tyler Transit Route C

Figure 19: Proposed Tyler Transit Route D

Figure 20: Proposed Tyler Transit Route E - East
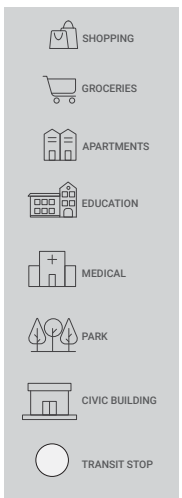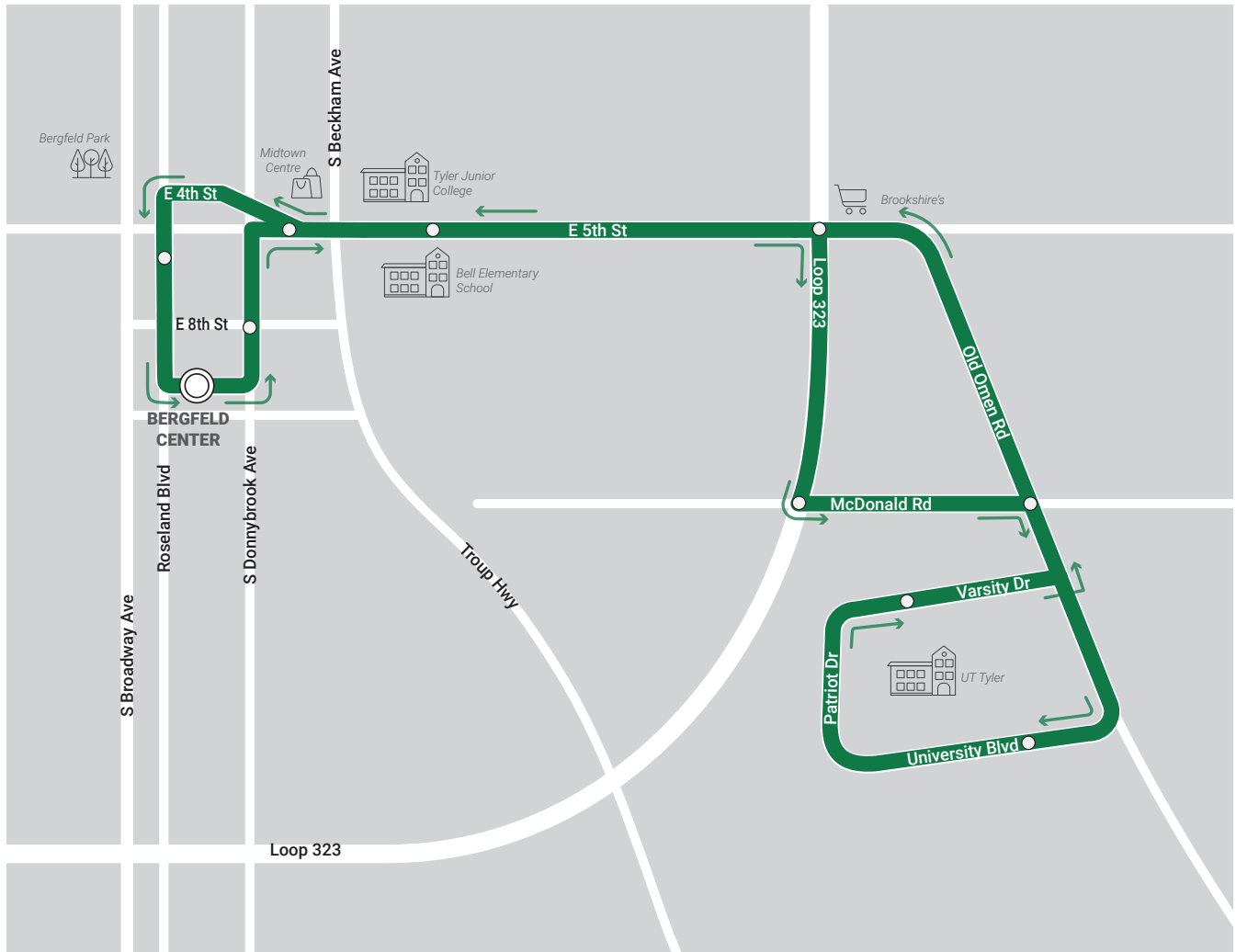
Figure 21: Proposed Tyler Transit Route E - West
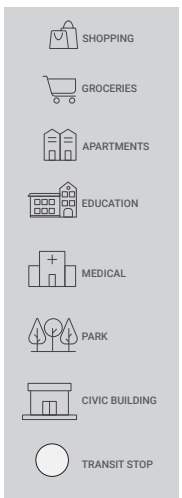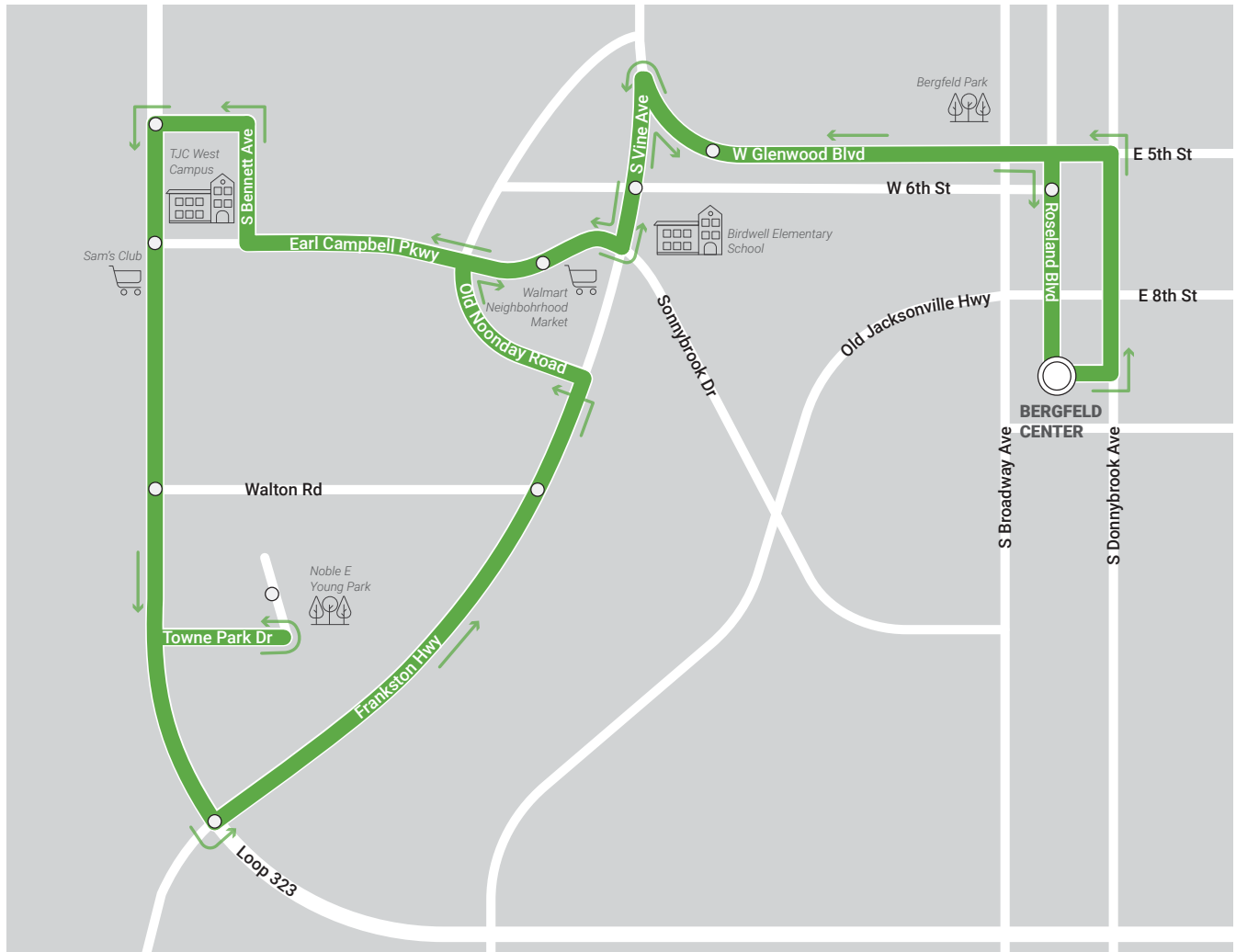
Figure 22: Proposed Tyler Transit Route F
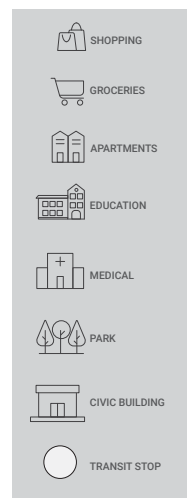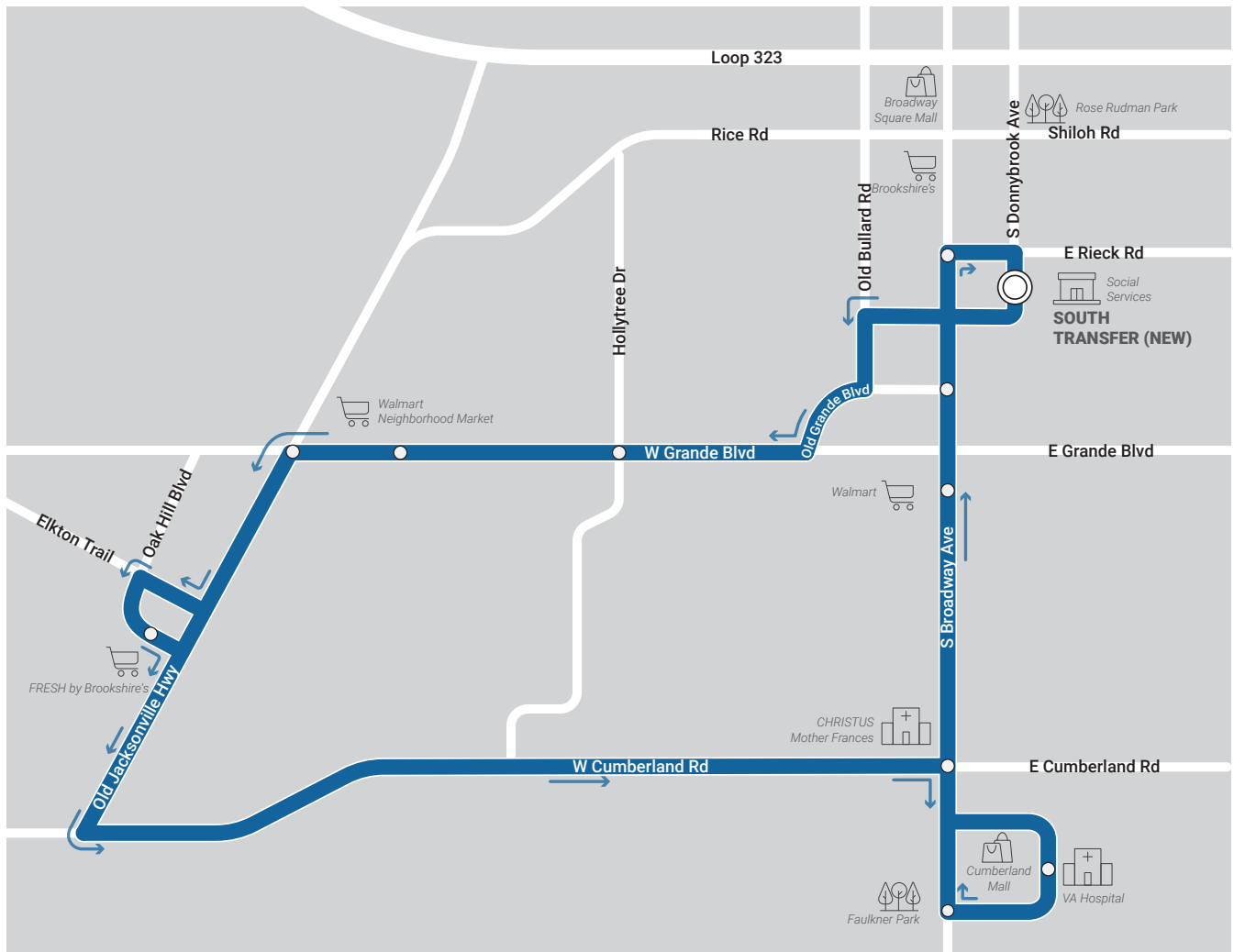
Phasing

A phased approach to implementing recommendations and providing more frequent and reliable service in the future is critical. Figure 23 illustrates the proposed routes and recommendations that should be implemented immediately along with strategic changes that can be made as additional resources are available. Full implementation of routing recommendations will reduce headways on several routes along with formalize the proposed South Transfer for convenient connections to routes throughout the system.

Figure 23: Proposed Routes and Recommendations
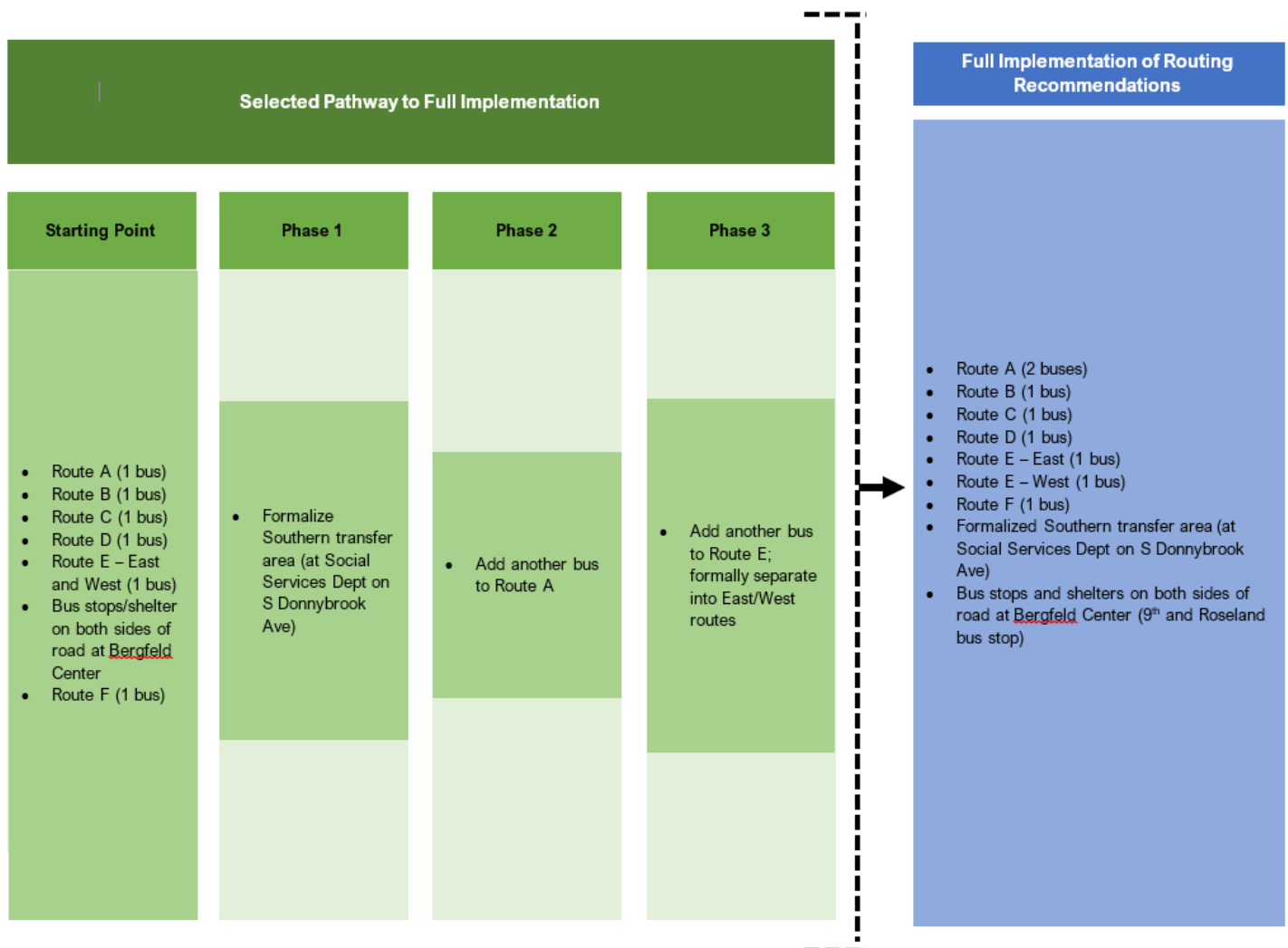
Maps and Tools for the Customer

Tyler Transit is more than the routes and stops. The system includes the local customers, bus drivers, and local operations and maintenance staff. Essential to the system are tools and resources break down barriers to transit and increase convenience. The following recommendations are focused on not only clarifying information to existing and potential riders but also providing tools for transit staff to clearly articulate system details to the daily riders, decisions makers, or the general public.

- Simplified system map – although details are important, the system map should highlight key destinations that are accessible through public transportation. This map must show the extents of service along with transfer locations and intersection routes. Individual route maps can provide a greater degree of detail and should be easy to find online and in print as applicable.

- Updated Route Maps – street names along with route direction should be noted on individual route maps. Major destinations noted in the system map should be identified along with minor destinations and landmarks that are directly connected or in close proximity to the specific route.

- Communication – planned changes to service due to maintenance or seasonal activity should be communicated frequently and in advance. A protocol for messaging unplanned changes in service should be developed and communicated through a variety of methods. Considerations should be given to how communication can reach customers online, waiting at transfer stations, and on-board unaffected transit vehicles.

- Online/Mobile Access to Transit Maps – a system map should be convenient for existing and potential riders to access online and mobile device format. Tyler Transit may consider interactive mapping that allows users to click on routes to see more details. Future considerations may include live tracking of transit vehicles to assist riders in daily trip planning and a route planning function.

Developing tools and resources for riders is advantageous for Tyler Transit as it continues to serve existing customers and seeks to attract new choice riders. The addition of a simplified system map, updated routes maps, communication protocols, and online tools create

legibility to the transit system, overcoming barriers that may exist or be perceived by local residents and visitors. Recommendations can also assist bus drivers and operations staff by giving them effective tools for communicating the value of the system to the City.

Fares

A review of Tyler Transit's fare structure and collection methods in comparison to eight peer transit agencies (see **Appendix X** for the full analysis) found that Tyler Transit's fares are lower than many peer systems even though the City of Tyler's had the highest median income and a lower percent of population in poverty than other cities included in the analysis. In addition, many peer agencies offer partial or complete discounts for transfer trips, while Tyler Transit does not. Lastly, while Tyler Transit provides discounted single-trip fares to many of the same groups as peer transit agencies (e.g., seniors, people with disabilities, Medicare recipients), there is an opportunity to provide a discounted single-trip fare to students.

Tyler Transit should consider a fare increase with regular fares at $1.50 and discounted fares at $0.75. In addition, Tyler Transit should consider discounting transfer trips, partially or entirely. Tyler Transit should also consider discounting fares for all students. During public engagement for this Study, many community members expressed a desire to be able to purchase tickets, tokens, and passes at multiple locations; making a trip to the Transit Depot for the sole purpose of acquiring passes is inconvenient for many riders. Tyler Transit should consider providing additional locations for riders to purchase tickets, tokens, and passes, such as at transfer areas (e.g., Bergfeld Center), other civic destinations (e.g., Health and Human Services), or online.

Coordinating with Regional Providers

Coordination with regional providers can help improve the regional network of services and improve customer experience with seamless connections and better coverage. Tyler Transit and the regional rural transit provider (GoBus) have an excellent working relationship and should build upon the successes this coordination has brought to the region.

GoBus and Tyler Transit have already identified some potential coordination activities to improve regional transit service. There are portions of the Tyler urbanized area that are well beyond the Tyler Transit service area that GoBus cannot serve using "rural" transit funding. A memorandum or understanding, contract for service or other solution to allow GoBus to bring these transit customers to Tyler Transit services should be developed through coordination with Tyler Transit, GoBus and TxDOT. Additionally, GoBus is exploring new services that may include additional service into the Tyler area. Coordinated activities should focus on meaningful connections between the two providers.

Coordination activities should also include exploring way to connect Tyler Transit to the intercity bus network. The current intercity bus station is well beyond the current Tyler Transit service area and coordinated activities may be able to find mobility options to connect the transit customers in Tyler to the national intercity bus network.

Active Tyler and Master Streets Plans

Transit is one of the components of a growing multimodal system in Tyler and in the greater Tyler area. Recent MPO planning efforts that include the *Active Tyler Transportation Plan* (2019) and the *Master Street Plan* (2021) establish a vision for multimodal streets and will guide transportation investments for years to come. Both of these recent plans are important to the Tyler Transit system and should be considered in the future as routes are modified and streets upgraded to include comfortable facilities for pedestrians and bicyclists. The following recommendations emphasize the need for Tyler Transit to partner with the City of Tyler, TXDOT, and Smith County to increase safety for transit users.

- Create Multimodal hubs at Transfer Stations – ensure that people that walk or bicycle have accessible routes to shelters and consider bicycle parking facilities adjacent to each transfer station. Note that covered bicycle parking could add value to riders that have multiple transfers and use a bicycle between their origin and first transit stop location.

- Develop training for drivers regarding bicyclist safety – as new bikeways are installed intersecting and along transit routes, new conflict areas are created between bicyclists and transit vehicles. Routine trainings can educate on how to safely pass bicyclists and can cultivate respect and increase comfort for the more vulnerable people on bicycles.

- Install effective crossing facilities – collaboration with the transportation agencies is critical to identify transit stops and informal transfer locations that are dangerous or have a history of crashes that involve transit users. Effective countermeasures should be considered including but not limited to:

- High-visibility crosswalks (intersections and strategic mid-block locations)

- Curb extensions

- Floating bus islands

- Modified stop locations (near- or far-side) to accommodate high-frequency transfers without a street crossing.

- Establish first- and last-mile connections – prioritize stop locations that connect to sidewalk and bikeway infrastructure to allow customers to walk or bike to and from transit. Coordinate with City of Tyler and TXDOT to fill sidewalk and bikeway gaps that access transit stops and transfer stations.

- Explore increasing bicycle storage on transit vehicles and transit stops – transit plays a vital role in multimodal trips. Although transit vehicles currently accommodate two bicycles, future development of bikeways throughout the City may necessitate additional storage on vehicles along with bike parking/storage at high-volume stops and transfer stations.

Connecting Effectively with the Community

Effective community engagement can reap many benefits for Tyler Transit and the greater Tyler area, including:

- Public ownership and support of projects, policies, and decisions;

- Decisions that reflect community values;

- Efficient implementation of transit decisions; and

- Enhanced agency credibility.

This section will provide recommendations for Tyler Transit that build on existing efforts and aim to strengthen the agency's relationship with the greater Tyler community, increase awareness of transit service, and strive for excellence in customer service.

Building Community Connections and Increasing Agency Presence and Credibility

- **Continue to partner with universities, major employers, and other key community organizations and partners.** These relationships can help Tyler Transit tap into specific user groups (e.g., students, employees, low-income residents)—and ultimately better understand the needs of these populations—by using organizations' existing engagement methods and network. In addition, partnerships can increase awareness of Tyler Transit by providing additional, and potentially lower-cost, avenues for marketing.

- **Invest in bilingual staff.** The greater Tyler area has a prominent Hispanic and Latino/a/x presence; just under a quarter of the population identifies as Hispanic or Latino and 14% of households in Tyler speak Spanish at home.[1] Prioritizing language ability in Tyler Transit staff can ensure that the needs of Spanish speakers, particularly those who speak limited English, are met and that they are able to navigate the transit system effectively and conveniently.

- **Use buses for charitable events.** Transportation and storage are significant needs for service-oriented events, particularly "drives" focused on gathering a large quantity of goods (e.g., food drives, toy drives). Providing buses to store and transport these items is a great benefit for community organizations and would allow Tyler Transit to give back to the community, strengthening connections with community partners and increasing its presence and credibility within Tyler. Some examples of successful charitable events where buses played a prominent role include:

- A [hurricane relief drive](#) to provide food and supplies to Eastern North Carolina communities impacted by Hurricane Florence.

- Annual holiday toy drives hosted by transit agencies across the country, including: [Antelope Valley Transit Authority](#), [Ben Franklin Transit](#), [Valley Regional Transit](#), [Palm Trans](#), [Jefferson Transit](#), [Sonoma-Marin Area Rail Transit](#), and [Dallas Area Rapid Transit](#).

- Book drives hosted by [Golden Empire Transit](#) and [New Mexico Rail Runner Express](#) to promote literacy and gather books for families in need. [Red Deer Transit](#) hosts a Books on the Bus program to connect riders with free reading material during their ride.

- Annual food drives hosted by transit agencies across North America, including: [GoCary](#), San Diego's [Metropolitan Transit System](#), [Concord Kannapolis Area Transit](#), [Montgomery County Transit](#), New York City's [Metropolitan Transit Authority](#), [Galesburg Transit](#), [Calgary Transit](#), [Valley Metro](#), and [Capital Metro](#).

- Reduce financial barriers to transit for low-income riders. Tyler Transit must balance revenue generation and a healthy fare box recovery ratio with ensuring that those who need transit the most are able to use it without facing financial stress. While this Study recommends an overall increase in fares, Tyler Transit can mitigate impacts for lower-income riders by offering additional discounts or free passes to riders below a certain income threshold (similar to the City of Columbia's [bus pass assistance program](#)). Tyler Transit can also model Biddeford Saco Old Orchard Beach Transit's [Transit Angel Project](#), a program for businesses or organizations to donate money towards the purchase of bus passes to be awarded to specific organizations with populations in-need.

Enhancing Awareness of Tyler Transit

- **Provide "How to Ride" trainings for partner organizations.** Many agencies across the country partner with community organizations to host "how to ride" training events for their employees or the people they serve. These events provide an introduction to the transit system and answer questions for new or infrequent riders who may feel intimidated by the system. These trainings can be provided to address the needs and questions of very specific groups (such as the Regional Transportation Commission of Southern Nevada's [training program for refugees](#)) or they can be broader and generalized. Some agencies have created Travel Training programs where any group can request a training session (e.g., [Wave Transit](#), [Jacksonville Transportation Authority](#), [OmniRide](#)). Others provide their Travel Training program for free only to older adults and people with disabilities (e.g., Chicago's [Regional Transportation Authority](#), [Utah Transit Authority](#), [South Metro Area Regional Transit](#)).

- **Continue to provide services that celebrate seasonal and cultural events.** The Holiday Express Shuttle is a great success in Tyler during the holiday season. Tyler Transit should continue this service and explore additional opportunities to provide "fun" transit experiences

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1   U.S. Census Bureau (2019). *2019: ACS Supplemental Estimates Detailed Tables.* Retrieved from: https://data.census.gov/cedsci/table?q=spanish%20language%20tyler%20texas&tid=ACSSE2019.K201601&hidePreview=false

that align with seasonal and cultural celebrations throughout Tyler. Associating transit experiences with enjoyable events and activities can increase awareness of the transit system among choice riders. Some examples include:

- Santa Clarita Transit creates a route during the holiday season that tours local light displays.

- Muncie Indiana Transit System organizes a holiday scavenger hunt each year.

- Several transit agencies across the country provide transit services to special events, such as cultural festivals (VIA Metropolitan Transit), sports games (Metro Transit, GoCOMO, Blacksburg Transit, Mountain Line Transit Authority), and state fairs (GoDurham, ABQ RIDE). Some, such as Metro Transit, also partner with event organizers to provide prizes to event attendees who present proof of transit ridership to incentivize transit use.

- King County Metro Transit and Sound Transit's Poetry on Buses collaboration to bring poetry written by residents – from professional poets to kindergarteners – in over nine languages to bus riders.

- Valley Metro organized a scavenger hunt for local art and offered location clues using transit services that would take them to each art piece.

- **Establish a "Try Transit" month or week.** Transit agencies are employing Try Transit initiatives to educate residents about the economic and environmental benefits of public transit and encourage those who don't typically use transit services to try it out. Try Transit Month or Week initiatives usually involves a variety of events and promotions, including: Riding the Bus 101 events, free ride days, photo contests, story time with a bus driver events, trip log contests with prizes, scavenger hunts, and panel discussions. Transit agencies with well-regarded Try Transit initiatives include Greenlink, Pierce Transit, and Intercity Transit.

- **Celebrate "Dump the Pump" Day.** The American Public Transportation Association (APTA) launched the Dump the Pump campaign in 2006 as a way to highlight public transportation as a convenient travel option that also helps people save money. Transit agencies across the country have been celebrating the national Dump the Pump Day on the third Thursday in June ever since by offering free rides (and snow cones in the case of Metro McAllen) and hosting contests or prize giveaways.

- **Bolster marketing efforts.** Successful marketing campaigns can counteract social stigma around transit use, transform a community's perception of their transit agency, and better educate and inform existing and potential riders of changes being made to enhance the user experience. Tyler Transit should consider what goals they wish to achieve, the message(s) they wish to convey, and the resources available (monetary, staffing, time, partnerships) to define their marketing strategy. There are a variety of marketing strategies Tyler Transit can explore, including:

  - Capital-based marketing investments, which use capital dollars to create long-term visibility in the community. Examples include vehicle design/agency branding, bus stop signage and wayfinding, bus stop amenities, and transit center quality.

  - Community-based marketing, in which community partners support marketing efforts. This may involve training volunteer transit ambassadors or community organization partners on transit services, developing targeted marketing materials, and working through ambassadors or community partners to reach potential riders. Tyler Transit may provide passenger information guides or customized displays for lobbies or high traffic locations.

  - Media marketing that uses media platforms (e.g., TV, radio, social media, newspapers) to build awareness. TV, radio, and news media provide an opportunity to raise awareness for specific events or initiatives (e.g., Dump the Pump Day, the Holiday Shuttle). Social media platforms can allow the agency to reach and interact with more people and are particularly useful for having interactive conversations (Facebook posts), providing immediate updates (Twitter), and host educational video content or rider testimonials (YouTube).

- **Emphasize transit as an option to attend special events.** Choice riders may not be aware of the opportunity to attend special events using Tyler Transit. If they have an enjoyable and convenient experience, many choice riders may elect to use transit services more often in the future. Tyler Transit can emphasize these options by including a section on their website that highlights which routes and stops serve special events throughout the year. They may also consider creating marketing materials targeted towards specific entertainment venues; for example, DART has separate rider guides on their website for Special Events, Arts & Science, Theater & Dance, Music, Sports, and Trails.

- **Develop a commuter benefits program for employers.** Some transit agencies have implemented partnership programs that provide employers discounts to provide commuter benefits to their employees, which may include covering employee transit fares, a guaranteed ride home program, or sponsoring vanpools. Example programs include:
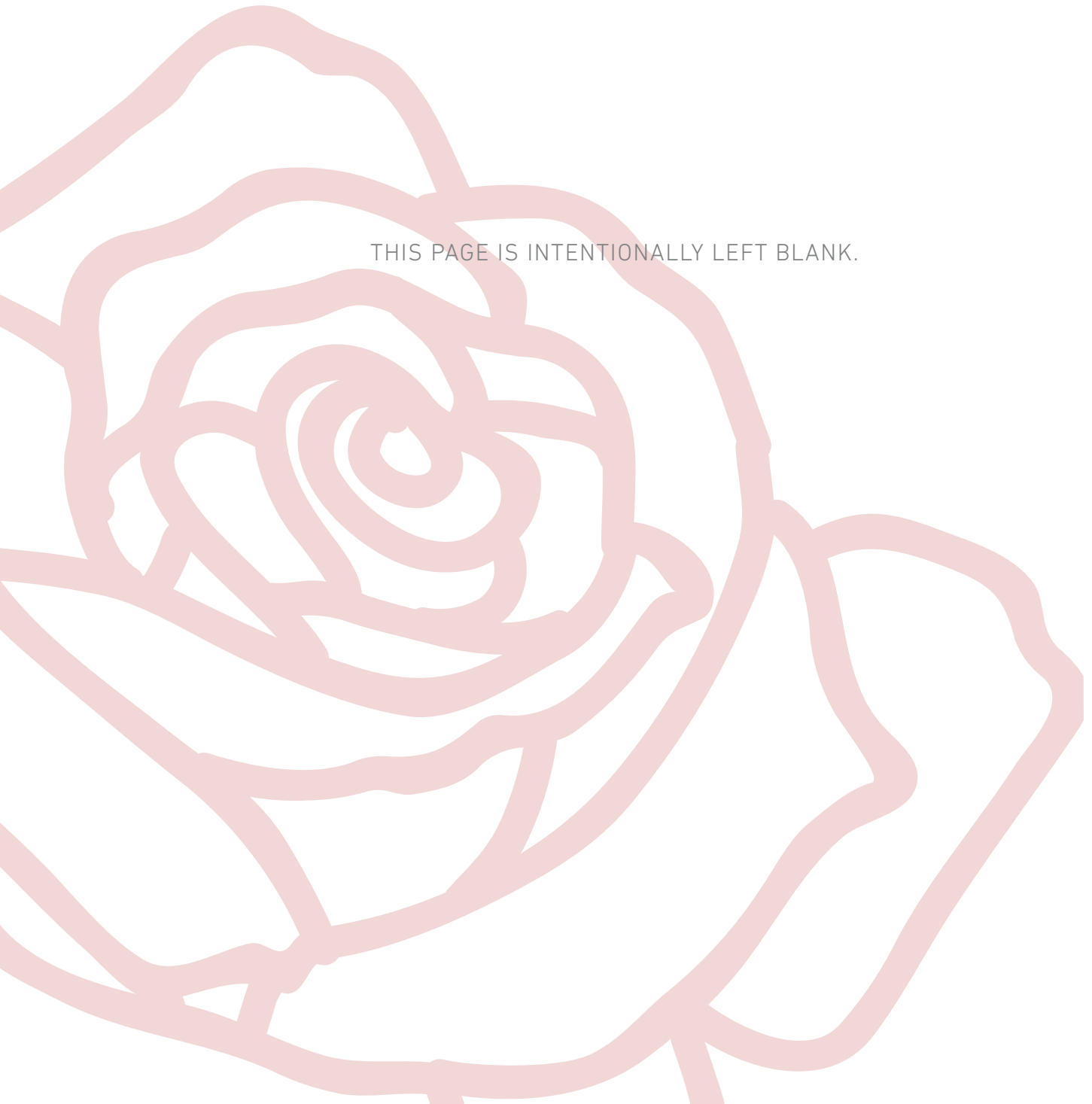
  - Metropolitan Atlanta Rapid Transit Authority's [Partnership Program](#)

  - New Jersey Transit [Employer Programs](#)

  - GoTriangle's [Employer Services](#)

  - Chicago Transit Authority's [Transit Benefit Program](#)

  - Dallas Area Rapid Transit's [Commuter Benefit Program](#)

  - Metropolitan Transit Authority of Harris County's [Employer Incentives](#)

  - VIA Metropolitan Transit's [Business Pass](#)

- **Weave transportation demand management throughout all marketing and partnership efforts.** Transportation demand management (TDM) aims to maximize traveler choices, with the ultimate goal of reducing traffic congestion and trips in single-occupancy vehicles. For example, the North Central Texas Council of Governments has a [Regional Employer Trip Reduction Program](#) that provides outreach for events, educational materials, assistance and training, and program coordination for employers to develop a company-specific trip reduction program. Resources for better understanding TDM and which approaches may be most appropriate for Tyler Transit include the Federal Highway Administration's [TDM Toolbox](#), the Victoria Transport Policy Institute's [Online TDM Encyclopedia](#), and the Association for Commuter Transportation's [compiled list of example TDM Plans](#).

Excellence in Customer Service

- **Proactively communicate service changes.** It is important to alert passengers and the public of service changes so that they know to alter their personal travel plans to adjust for the transit system changes. In addition to printed materials posted at stops, on all buses, and at the Transit Depot, Tyler Transit should utilize a variety of methods to actively spread the word that routes are changing. These may include social media, email blasts, messages on the bus LED displays, mailing service change notices with water bills, and leveraging community partners and their networks. Dallas Area Rapid Transit (DART) uses a direct customer outreach program to smooth the introduction of service changes. Transit staff are positioned at key bus stops that provide the greatest impact and reach affected customers. The staff members are at stops during peak periods the week before the change of service and the day of the change. DART ensures bilingual staff are at the bus stops. The Niagara Frontier Transportation Authority in Buffalo, NY, offered a special weekly pass valid the week before and the first week after the change in service in order to lessen the impact of a change in service on customers.

- **Develop a service alerts program.** Real-time predictions do not just inform customers when the bus will arrive—they reassure them that the bus is on the way. Service alerts about schedule changes, detours, and stop closures further reduce uncertainty, building trust that Tyler Transit will get riders to their destination even if their normal stop is closed. However, the usefulness of an alert system is only as strong as staff's ability to maintain it.

- **Regularly conduct on-board customer satisfaction surveys.** Surveying passengers is valuable to understand rider concerns and customer service issues so they can be addressed or mitigated. They provide the opportunity for Tyler Transit to gather ongoing information for service evaluation, rather than public hearings or meetings which often focus on a specific policy or planning initiative. While these surveys can be combined with route studies or other planning purposes as timing allows, they can also be conducted on their own. Tyler Transit should aim to conduct a basic survey of customer satisfaction on an annual basis and a more in-depth, detailed survey every three to five years.

- **Establish a user-friendly website for online trip planning.** There are two basic trip planning components that Tyler Transit should consider including on its website: a "how-to-ride" section and a trip planning tool. A "how-to-ride" section on Tyler Transit's website can ease potential anxiety for new riders and make the travel experience more user-friendly, convenient, and seamless. The trip planning tool, useful for new and experienced riders alike, will allow riders to plan trips between destinations and better understand what route(s) they need to use, where their stop is, and if they need to transfer routes. Trip planning tools are especially useful for learning how to reach new destinations. Best practice trip planning website features include:

  - Regional Transportation District's **Trip Planner**
  - TriMet's **Trip Planner**
  - King County Metro's **Trip Planner**
  - Chicago Transit Authority's **Trip Planner**
  - Valley Regional Transit's **How to Ride page**
  - Piedmont Authority for Regional Transportation's **How to Ride page**
  - GoTriangle's **How to Ride page**
  - SunLine Transit Agency's **How to Ride page**

- **Celebrate your riders and drivers.** While Tyler Transit provides a valuable public service, their purpose and presence would be much less significant without any riders or bus drivers. Tyler Transit should consider ways in which it can convey its appreciation to riders for choosing to use transit and bus drivers for providing such an essential community service. Some examples of transit customer and driver appreciation initiatives include:

  - Regional Transportation Commission of Southern Nevada's **Rider Appreciation Week**
  - CityLink's **Passenger Appreciation Day**
  - Charlotte Area Transit System's **Transit Driver Appreciation Day**
  - Pierce Transit's **Transit Driver Appreciation Day**

- As part of the agency's 30th anniversary celebration, the Kalamazoo Metro Transit System (Metro Transit) of Kalamazoo, MI, introduced the "I Have Connections" campaign. Passengers paying a fare were given a button. Once a month thereafter, an "I Have Connections" customer appreciation day was designated. Any passenger wearing the button was allowed to ride for free. During the customer appreciation day, new buttons were distributed to paying passengers. Customers would wear their button throughout the day, identifying themselves as Metro Transit riders.

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ROUTE-LEVEL SCENARIO COST ESTIMATES

06

Route Level Scenario Cost Estimates

Cost estimates provided here are intended to provide an order-of-magnitude idea of what changes may cost and how changes may be phased as new funding becomes available through grants or other sources. Fiscal Year (FY) 2019 is used as the base line because pandemic-related impacts to FY20 are considered (or anticipated to be) an anomaly. However, supply chain issues are widely experienced in every sector in 2021 (including rolling stock, computer chips, and construction materials) and may have an effect on capital purchases. For these reasons, cost estimates should be re-evaluated periodically, and particularly when planning for implementation of any of the recommendations contained within this report.

Existing Routes

Using Tyler Transit ridership and operating cost data, route-level operating costs were estimated using the following steps:

- Sum revenue miles for each route for fiscal year 2019 (October 1, 2018 to September 30, 2019).

- Calculate the operating cost per vehicle revenue mile for fixed-route service by dividing the FY19 Tyler Transit operating costs by the system-wide FY19 total revenue miles.

- Multiply the annual FY19 revenue miles for each route by the operating cost per revenue mile for fixed-route service.

Scenarios

Cost estimation for proposed routes involved a similar process to that used for existing routes, albeit with more assumptions about vehicle revenue miles, service frequency, and operating costs per revenue mile. For proposed routes, route-level operating costs were estimated using the following steps:

- The mileage was calculated for each route.

- Service frequency was estimated based upon the number of buses available per route and the trip length captured during turn-by-turn driver analysis of the proposed routes. Table 7 details the estimated service frequency for each route during each scenario phase. Note that all span of service is not proposed to change for any of the routes.

- Based upon Tyler Transit's existing span of service and estimated service frequencies for each route, the number of trips per weekday and Saturday was calculated. The number of trips was multiplied by the route length to determine the daily vehicle revenue miles for a weekday and a Saturday. Weekday vehicle revenue miles were multiplied by five and added to the Saturday vehicle revenue miles to estimate weekly vehicle revenue miles. Annual vehicle revenue miles were calculated by multiplying the weekly vehicle revenue miles by 52 and subtracting the days that Tyler Transit is not in service (typically nine days per year with one Friday on Saturday-level service).

- Route-level operating costs were estimated by multiplying the annual vehicle revenue hours by the FY19 operating cost per vehicle revenue mile. Table 8 details the estimated annual vehicle revenue miles and operating costs for each route and at the system-level during each recommendation phase.

Table 5: FY19 Vehicle Revenue Miles and Operating Costs

Route	FY19 Vehicle Revenue Miles	FY19 Operating Cost
Red	64,026.21	$294,520.57
Blue	57,524.00	$264,610.40
Purple	60,246.00	$277,131.60
Green	61,266.00	$281,823.60
Yellow	70,240.00	$323,104.00
TOTAL	**313,302.21**	**$1,441,190.17**

Table 6: Estimated Service Frequencies for Proposed Routes

Route	Phase 1	Phase 2	Phase 3
A	45	22.5*	22.5*
B	30	30	30
C	40	40	40
D	60	60	60
E – East	60	60	30**
E – West	60	60	30**
F	30	30	30

*A bus is proposed to be added to Route A during Phase 2, which would allow service frequencies to double.

**A bus is proposed to be added to Route E during Phase 3, allowing the East and West sections to each have a dedicated bus. This would allow service frequencies to double on both routes.

Table 7: Estimated Annual Vehicle Revenue Miles (VRM) and Operating Costs by Route and Scenario Phase

Route	Phase 1		Phase 2		Phase 3	
	VRM	Operating Cost	VRM	Operating Cost	VRM	Operating Cost
A	54,570	$251,022.00	108,070	$497,122.00	108,070	$497,122.00
B	66,830	$307,418.00	66,830	$307,418.00	66,830	$307,418.00
C	66,080	$303,968.00	66,080	$303,968.00	66,080	$303,968.00
D	64,385	$296,171.00	64,385	$296,171.00	64,385	$296,171.00
E – East	39,105	$179,883.00	39,105	$179,883.00	76,230	$350,658.00
E – West	37,920	$174,432.00	37,920	$174,432.00	73,920	$340,032.00
F	101,060	$464,876.00	101,060	$464,876.00	101,060	$464,876.00
TOTAL	429,950	$1,977,770.00	483,450	$2,223,870.00	556,575	$2,560,245.00

Comparing Existing and Proposed Route Costs

None of the proposed routes exactly mirrors an existing Tyler Transit route, however many do share similar segments. Overall, service is streamlined in the proposed routes, providing the ability to better balance reach with efficiency and frequency. Table 8 compares existing route characteristics with the proposed route that is most alike. Note that two additional routes are proposed that do not closely align with existing service, Route C and Route F. Route C would provide a circulator loop in central Tyler and Route F would provide new service to southwestern Tyler. Table 9 highlights the route characteristics for these proposed routes but does not provide a comparison to existing routes as one does not exist.

Table 8: Existing and Proposed Routes: Comparing Characteristics

Existing Route	Closest Match Proposed Route	Route Length (miles)		Route Frequency (min)	
		Existing	Proposed	Existing	Proposed
Red	Route A	18.7	21.4	75*	Phase 1: 45 Phases 2 and 3: 22.5
Blue	Route B	17.9	8.2	75-90	All Phases: 30
Purple	Route D	19.3	16.3	75*	All Phases: 60
Green	Route E – East	23.3	9.9	95	Phases 1 and 2: 60 Phase 3: 30
Yellow	Route E – West	26.8	9.6	85-100	Phases 1 and 2: 60 Phase 3: 30
TOTAL	-			-	-

*The Red and Purple Lines serve many of the same stops on complimentary schedules; many riders experience 35- or 40- minute frequencies at stops along Broadway Avenue.

Table 9: New Proposed Route Characteristics

Proposed Route	Route Length (miles)	Route Frequency (min)
C	9.9	All Phases: 40
F	9.6	All Phases: 30

Tables 8 and 9 illustrate a few key differences between existing service and proposed service that have direct implications to estimated operating costs, including:

- Proposed frequencies are higher, often by more than double, for all routes. This means that buses are proposed to serve stops more frequently, run more trips throughout the day, and, ultimately, generate more vehicle revenue miles.

- The proposed routes will require one additional bus, if the Route E – East and Route E – West share a bus until another is acquired.

- Most proposed routes are shorter than their existing counterparts, meaning that fewer operating costs are expended per trip.

Table 10 compares existing and proposed route-level costs for each phase within the recommended route scenario.

Table 10: Operating Cost Comparison: Existing and Proposed Routes

Proposed Route	Closest Match Existing Route	Existing Route FY19 Operating Cost	Estimated Annual Operating Costs		
			Phase 1	Phase 2	Phase 3
A	Red	$294,520.57	$251,022.00	$497,122.00	$497,122.00
B	Blue	$264,610.40	$307,418.00	$307,418.00	$307,418.00
C	N/A	-	$303,968.00	$303,968.00	$303,968.00
D	Purple	$277,131.60	$296,171.00	$296,171.00	$296,171.00
E – East	Green	$281,823.60	$179,883.00	$179,883.00	$350,658.00
E – West	Yellow	$323,104.00	$174,432.00	$174,432.00	$340,032.00
F	N/A	-	$464,876.00	$464,876.00	$464,876.00
TOTAL		$1,441,190.17	$1,977,770.00	$2,223,870.00	$2,560,245.00

Alternative Service Frequency Options to Lower Proposed Operating Costs

The service frequencies provided for proposed routes may not be immediately realistic for Tyler Transit given the existing operating budget. Tables 11 and 12 show two options for lowering estimated operating costs for the proposed routes by providing less frequent service than detailed in Table 11. Note that the alternative options are still more frequent than existing service and allow for incremental improvements in service frequency.

In Alternative One (Table 11), routes B, C, and F are changed to have 60-minute, instead of 30-minute, frequencies. This alternative is closest to the existing operating costs. Further changes could be made by decreasing the service frequency of Route A; however, this would provide less frequent service for many existing riders of the Red and Purple lines because of their complimentary schedules and overlapping stops.

Table 11: Alternative One: Proposed Service Frequencies and Operating Costs by Route and Scenario Phase

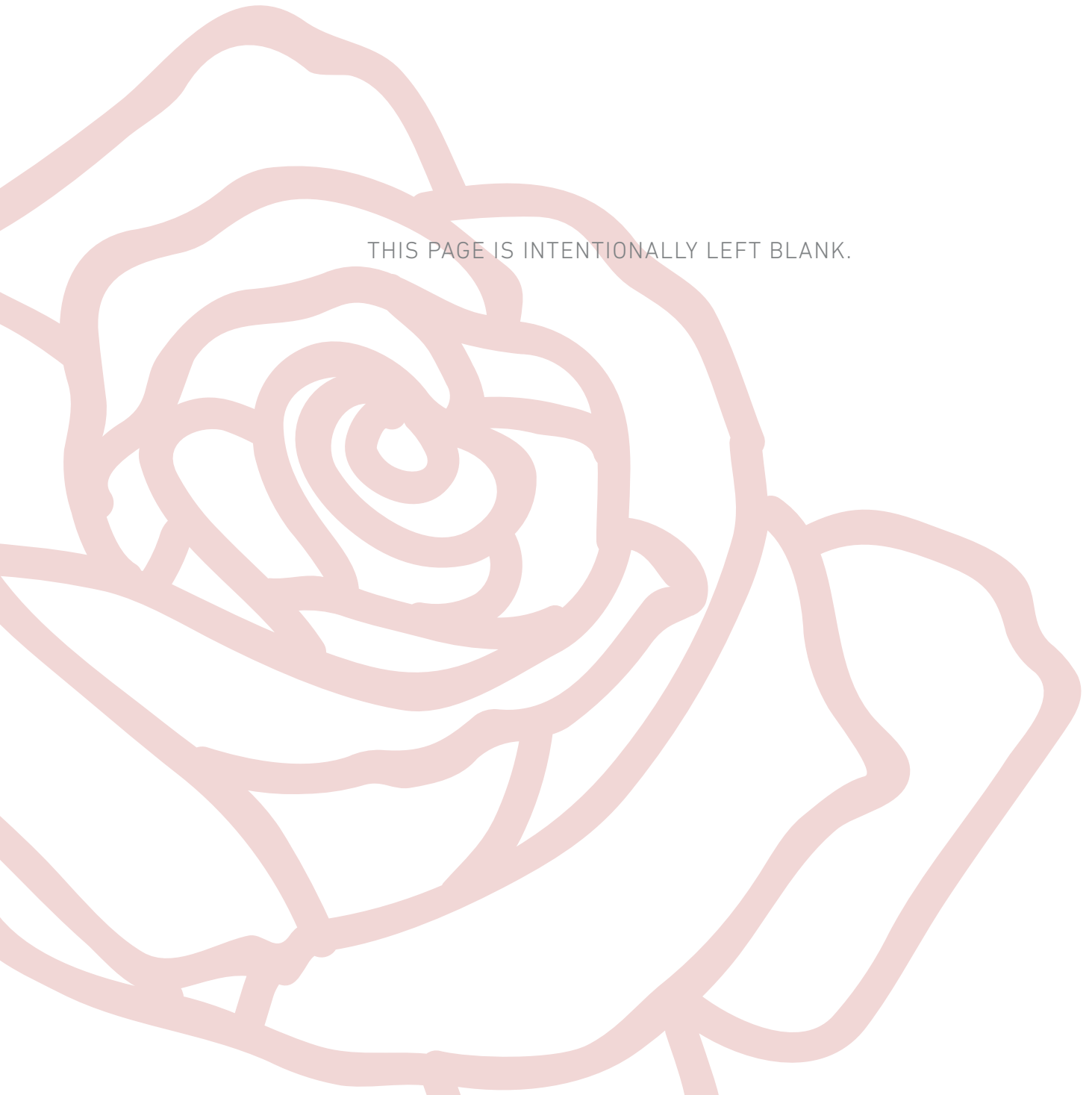| Route	Phase 1		Phase 2		Phase 3	
	Frequency	Operating Cost	Frequency	Operating Cost	Frequency	Operating Cost
A	45	$251,022.00	22.5	$497,122.00	22.5	$497,122.00
B	60	$148,994.00	60	$148,994.00	60	$148,994.00
C	60	$203,504.00	60	$203,504.00	60	$203,504.00
D	60	$296,171.00	60	$296,171.00	60	$296,171.00
E – East	60	$179,883.00	60	$179,883.00	30	$350,658.00
E – West	60	$174,432.00	60	$174,432.00	30	$340,032.00
F	60	$225,308.00	60	$225,308.00	60	$225,308.00
TOTAL	-	$1,479,314.00	-	$1,725,414.00	-	$2,061,789.00

In Alternative Two (Table 12), routes B, C, and F are changed to have 45-minute, instead of 30-minute, frequencies. This alternative is still more expensive than existing operating costs but is less expensive than operating these routes at 30-minute frequencies.

Table 12: Alternative Two: Proposed Service Frequencies and Operating Costs by Route and Scenario Phase

Route	Phase 1		Phase 2		Phase 3	
	Frequency	Operating Cost	Frequency	Operating Cost	Frequency	Operating Cost
A	45	$251,022.00	22.5	$497,122.00	22.5	$497,122.00
B	45	$201,802.00	45	$201,802.00	45	$201,802.00
C	45	$275,632.00	45	$275,632.00	45	$275,632.00
D	60	$296,171.00	60	$296,171.00	60	$296,171.00
E – East	60	$179,883.00	60	$179,883.00	30	$350,658.00
E – West	60	$174,432.00	60	$174,432.00	30	$340,032.00
F	45	$305,164.00	45	$305,164.00	45	$305,164.00
TOTAL	-	$1,684,106.00	-	$1,930,206.00	-	$2,266,581.00

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APPENDIX

Tyler Area Transit Survey

Welcome!

Thank you for taking our survey!

We are asking people in the Tyler Area to tell us about your transit use. This survey is a part of the Tyler Area MPO Transit Route Study and we will use the information you provide to make improvements to Tyler Area transit service.

The survey will take 5 to 10 minutes to complete. **The survey closes 10/16/2020.**

If you have any questions, please reach out to Andrea Ostrodka at aostrodka@tooledesign.com.

Household Travel Patterns

Tell us about how you get around.

1) Including yourself, how many people currently live in your household? _____

      How many are children (age 17 or younger)? _____

2) How many vehicles (cars, trucks, vans, etc.) do you have in running order and available for your use?

( ) 0

( ) 1

( ) 2

( ) 3

( ) More than 3

3) How many workers live in your household? _____

How do workers in your household typically travel to work? (select all that apply)

[ ] Drive alone

[ ] Driven

[ ] Carpool

[ ] Walk

[ ] Bicycle

[ ] Transit

[ ] Taxi

[ ] Uber/Lyft

[ ] Work at home

What zipcode do workers in you household work in? (select all that apply)

[ ] 75701 - inside Loop 323, southern half

[ ] 75702 - inside Loop 323, northern half

[ ] 75703 - Tyler, south of Loop 323

[ ] 75704 - northwest Tyler area

[ ] 75705 - east of Tyler, along Highway 31

[ ] 75706 - Tyler, north of Loop 323

[ ] 75707 - southwest Tyler, along Highway 64 east

[ ] 75708 - northeast Tyler

[ ] 75709 - southwest Tyler

[ ] 75750 - Arp

[ ] 75757 - Bullard

[ ] 75756 - Brownsboro

[ ] 75758 - Chandler

[ ] 75762 - Flint

[ ] 75763 - Frankston

[ ] 75771 - Lindale

[ ] 75789 - Troup

[ ] 75791 - Whitehouse

[ ] 75798 - Tyler Junior College

[ ] 75799 - University of Texas at Tyler

[ ] Other

2

4) Other than for work, how many trips do people in your household make in a typical week, including weekends? (For example, grocery/clothing/household shopping, school, doctor's appointments, visiting friends/family, errands, religious activities, social activities, recreation, etc.)

( ) Less than 5

( ) 5-10

( ) 10-20

( ) Over 20

5) How do people in your household usually complete the majority of these non-work trips? (select all that apply)

[ ] Drive alone

[ ] Driven

[ ] Carpool

[ ] Walk

[ ] Bicycle

[ ] Transit

[ ] Taxi

[ ] Uber/Lyft

Transit Activity

Tell us how you use transit in the Tyler Area.

6) How often do you use transit in the Tyler Area?

( ) Never

( ) Rarely (less than once a month)

( ) Sometimes (1-3 times a month)

( ) Regularly (1-5 times a week)

3

7) When did you begin riding transit in the Tyler Area?

( ) Less than 1 year ago

( ) 1-2 years ago

( ) 2-3 years ago

( ) 4-5 years ago

( ) More than 5 years ago

8) What is your primary use for transit service?

( ) Go to/from work

( ) Go to/from school

( ) Medical appointments

( ) Run errands/go shopping, etc.

( ) Social activities

( ) Other - Write In: _____

9) What are your main reasons for using transit? (select all that apply)

[ ] Costs less

[ ] Better use of time

[ ] Faster than driving

[ ] Allows someone else to use the car

[ ] Fewer problems than using car

[ ] Don't drive

[ ] Don't have a car available

[ ] Don't have a license

[ ] Cannot drive my car for medical reasons

[ ] Good for the environment

[ ] Unavailable or expensive parking

[ ] Other - Write In: _____

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10) How satisfied are you with the FREQUENCY (how often bus comes) of the transit service in the Tyler Area?

( ) Very Dissatisfied   ( ) Dissatisfied   ( ) Neutral   ( ) Satisfied   ( ) Very Satisfied

11) How satisfied are you with the COST of the transit service in the Tyler Area?

( ) Very Dissatisfied   ( ) Dissatisfied   ( ) Neutral   ( ) Satisfied   ( ) Very Satisfied

12) How satisfied are you OVERALL with the transit service in the Tyler Area?

( ) Very Dissatisfied   ( ) Dissatisfied   ( ) Neutral   ( ) Satisfied   ( ) Very Satisfied

Transit Preferences

Tell us about your transit preferences.

13) Have you ever used transit outside of the Tyler Area?

( ) Yes
( ) No

14) Why don't you use transit in the Tyler Area more? (select all that apply)

[ ] Service is not available near my home
[ ] Service doesn't go where I need it to go
[ ] I don't know how to use the service
[ ] I had a bad experience with the service
[ ] It takes too long to get to destinations
[ ] Service is not offered at the time I need it
[ ] Buses do not come by frequently enough
[ ] I don't feel safe riding the bus
[ ] I just prefer to drive
[ ] No park and ride lots nearby
[ ] Other - Write In: _____

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15) I'm likely to use transit if...

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
I do not have to park at destination	( )	( )	( )	( )	( )
I can avoid driving in traffic congestion	( )	( )	( )	( )	( )
There is readily available park and ride lots	( )	( )	( )	( )	( )
Transit stops are located closer to my home and where I frequently go	( )	( )	( )	( )	( )
There is express bus service	( )	( )	( )	( )	( )
Real time arrival information is provided at stops or on an app	( )	( )	( )	( )	( )
There are amenities at stops like shelters	( )	( )	( )	( )	( )
Trip planning is on a website	( )	( )	( )	( )	( )
I have employer-provided incentives to use transit services, such as discounted passes	( )	( )	( )	( )	( )
There are low transit fares	( )	( )	( )	( )	( )
Transit times are comparable to driving time	( )	( )	( )	( )	( )

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16) Which is more important to you?

( ) More frequent bus service ( ) Longer service hours

17) Which is more important to you?

( ) Investment/Focus for weekday service   ( ) Investment/Focus for weekend service

18) Which is more important to you?

( ) More bus stops for shorter walking distance to/from bus stops   ( ) Fewer bus stops for faster service

19) Which is more important to you?

( ) Focus on existing service   ( ) Serve new areas

About You

Please tell us about yourself.

20) What is your household zipcode? _____

21) What gender do you identify with?

( ) Male
( ) Female
( ) Transgender
( ) Nonconforming
( ) Prefer not to answer

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22) What is your age?

( ) 18-24 years old

( ) 25-34 years old

( ) 35-44 years old

( ) 45-54 years old

( ) 55-64 years old

( ) 65-74 years old

( ) 75 years or older

23) How do you identify your race and ethnicity? (check all that apply)

[ ] White

[ ] Black / African American

[ ] Native American / American Indian

[ ] Asian or Pacific Islander

[ ] Hispanic / Latino

[ ] Not listed

24) What is your average annual household income?

( ) Under $15,000

( ) $15,000 - $24,999

( ) $25,000 - $34,999

( ) $35,000 - $49,999

( ) $50,000 - $74,999

( ) $75,000 - $99,999

( ) $100,000 - $149,999

( ) $150,000 - $199,999

( ) $200,000 and over

Thank You!

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Memorandum on Survey Results

TOOLE DESIGN

MEMORANDUM

January 2021

To: Michael Howell
Organization: Tyler Area Metropolitan Planning Organization
From: Stefanie Brodie, PhD and Andrea Ostrodka, AICP
Project: Tyler Area Transit Study

Re: Survey results

As a component of outreach for the Tyler Area Transit Study, the project team conducted a survey of residents and transit riders in the region. The intention of the survey was to collect information on how people in the region travel, how they use transit, and their thoughts and impressions of transit service in and around Tyler.

Survey Deployment and Response

The survey opened September 17, 2020 after the first open house and closed officially at the end of October. Several responses were submitted in November and they were included in the results. The survey was publicized in the open houses, via Tyler MPO social media, by signage on buses and at bus stops, and provided to a number of community organizations. The survey was available digitally via computer or mobile devices and hard copies were also available.

Both completed and partial responses were included in the analysis. The data was cleaned to remove any submission with no responses and submissions from outside of the United States. Multiple submissions were accepted from one IP addresses; however, the responses were reviewed to check that there were not duplicate entries.

Survey Respondent Demographics

The sample size target for a statistically representative survey was a minimum of 270 responses. Within this sample, critical demographic factors such as race and income should be represented in proportions similar to the regional population. Smaller demographic segments, such as Native-American or Asian-American populations, need to be over sampled, which means more surveys are required from these populations than the number calculated to meet the regional representation. Meeting these sample size targets allows us to draw conclusions about the population of the Tyler Region.

The cleaned sample provided 182 responses. While this sample size is lower than the consultant team targeted, fewer responses were expected as a result of the significantly lower ridership resulting from the ongoing COVID-19 pandemic. Fewer riders overall meant fewer people seeing survey notices at bus stops and on buses. Furthermore, the safety precautions and personal distance advisories (specifically, the Center for Disease Control's advisement to maintain at least six feet of separation between people not in the same household) associated with the pandemic limited the ability of consultant staff to directly engage with riders in person. As a

result of these circumstances, the sample did not achieve target size. Findings presented in this memo reflect the people who responded to the survey and cannot be extrapolated to the population of the Tyler metropolitan area. **Although the survey data does not provide a large enough sample to draw conclusions about the regional population, the results of the survey still provide useful information on transit preferences and serve as an avenue to gain input from residents and transit users.**

It should be noted that Census data does not consider "Hispanic/Latino" independent of race and the survey allowed respondents to select "Hispanic/Latino" without additional racial distinctions. Figure 1 shows the racial and ethnic breakdown of the survey respondents and the region. There were no respondents who were Asian or Pacific Islander (alone) and the representation from Hispanic/Latino respondents was low.
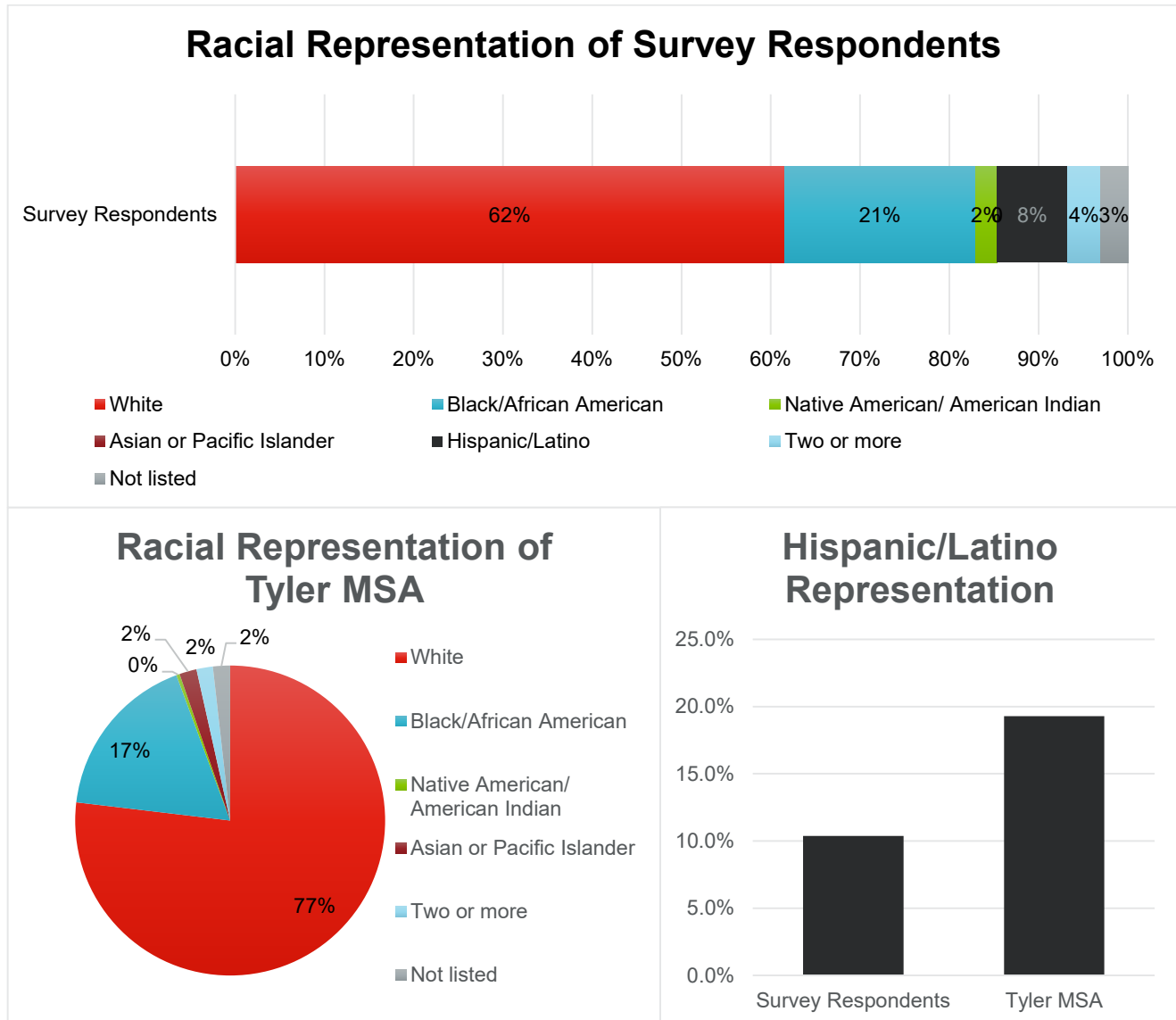
Figure 1 Racial and ethnic breakdown of survey respondents and Tyler MSA. (source: ACS 2018 5-year estimates)

Comparing the household income of respondents to the regional income distribution reveals that the survey respondents skew higher income (Figure 2).
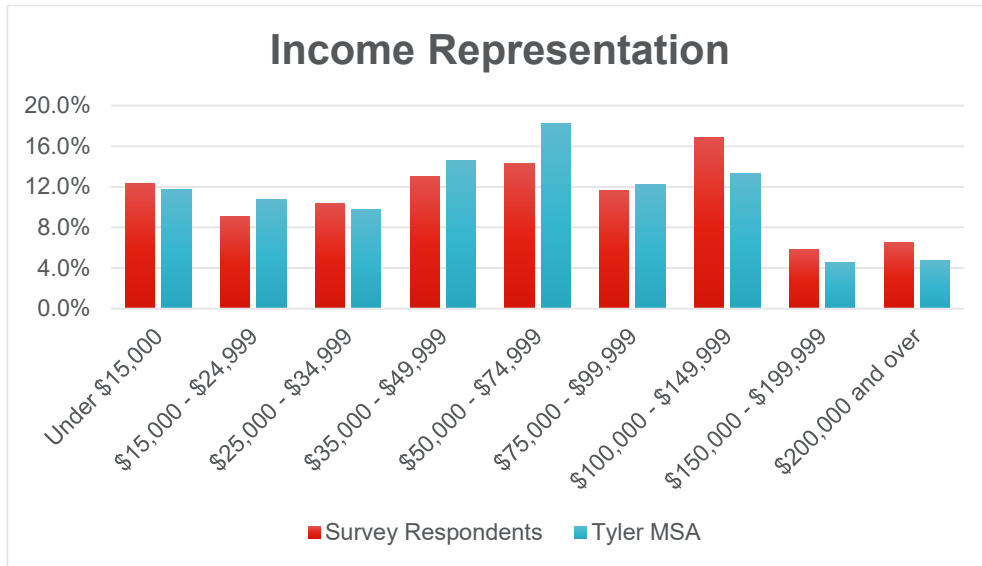

Figure 2 Household income comparison of survey respondents and Tyler MSA. (source: ACS 2018 5-year estimates)

The gender and age breakdown of the respondents can be found in Figure 3.
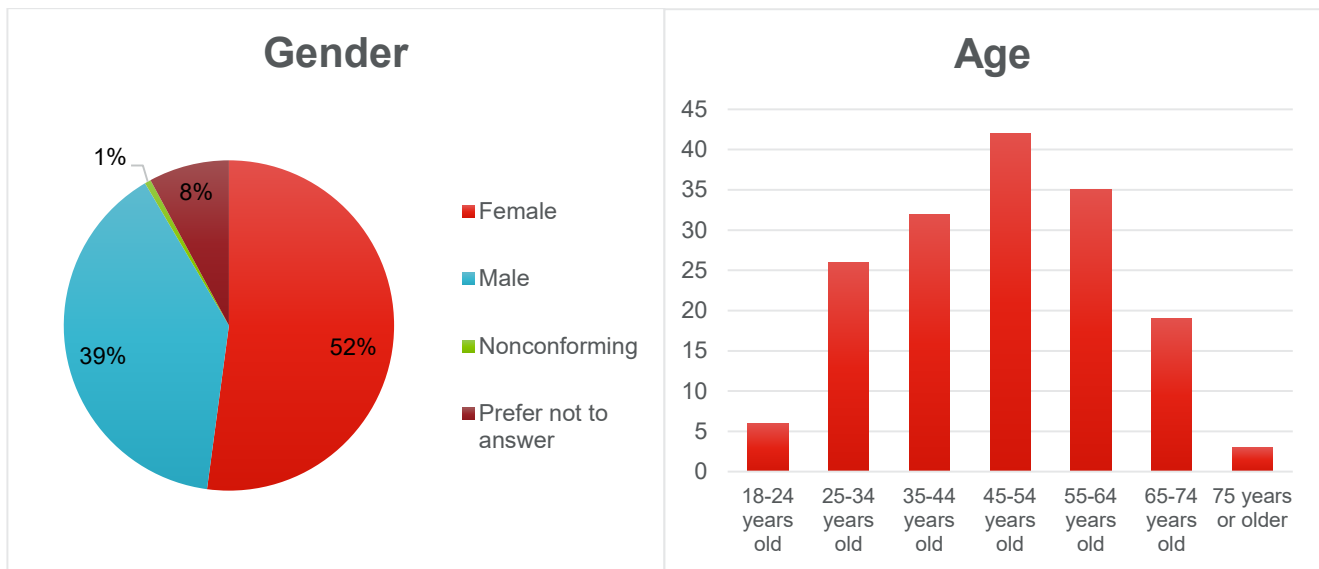

Figure 3 Gender and age breakdown of survey respondents.

Household Characteristics

Several questions in the survey focused on household make up to explore the impact on travel behavior and preferences. These were questions on household size and composition and vehicle availability.

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Among the respondents, the average household size was 2.6. Over half the households were either one or two persons (Figure 4). Over three-quarters of households have two or fewer cars, with many having two vehicles available (Figure 5).
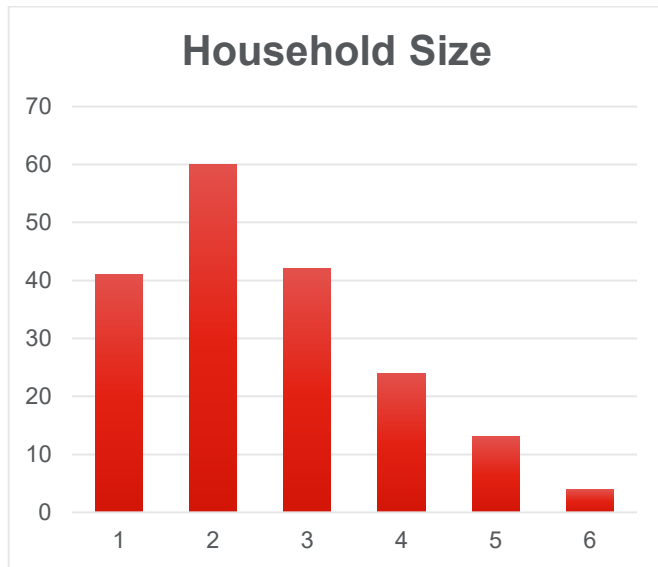
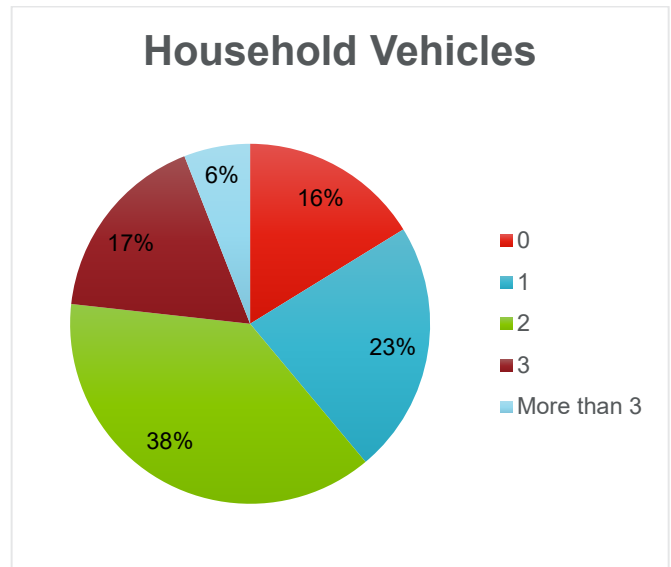**Figure 4 Household size of survey respondents.**

Figure 5 Number of vehicles available to survey respondents.

Among the respondents, the average number of workers per household was 1.6, with over 50 percent of households having two workers (Figure 6). There is not a distinct relationship between the number of workers per household and the number of vehicles a household has available, but the a comparison of workers and vehicles per household is shown in Table 1.
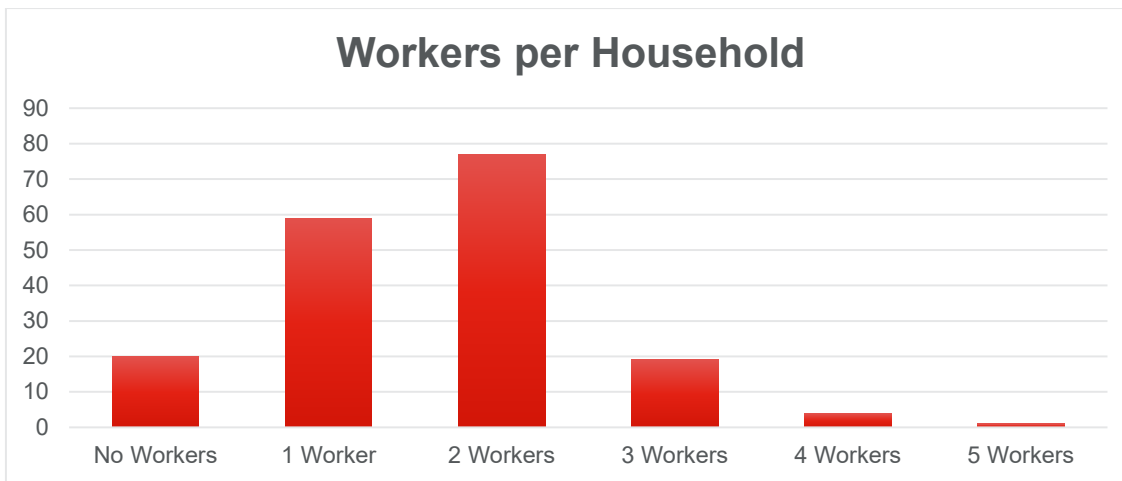

**Figure 6 Number of workers per household of survey respondents.**

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Table 1 Comparison of Number of Workers and Vehicles per Household

Vehicles	Workers						Grand Total
	0	**1**	**2**	**3**	**4**	**5**	
0	8	14	5				27
1	3	27	9	2	1		42
2	7	11	47	2	1		68
3	1	5	14	10	2		32
More than 3	1	2	2	5		1	11
Grand Total	**20**	**59**	**77**	**19**	**4**	**1**	**180**

The survey also asked the zip code of residence and workplace. The majority of respondents live and work inside Loop 323 and south of Loop 323 in zip codes 75701, 75702, and 75703.

Travel Behavior

All respondents were asked about their travel behavior, including how they travel to work and other destinations, and how often they use Tyler Area Transit. **Respondents reported that the majority of their trips are made by personal vehicle.** The most common travel mode was driving alone, with 96 percent of respondents commuting alone by car and 74 percent of households driving alone to complete the majority of non-work trips. Figure 1 shows the travel modes used for work and non-work trips (respondents were able to select multiple modes).
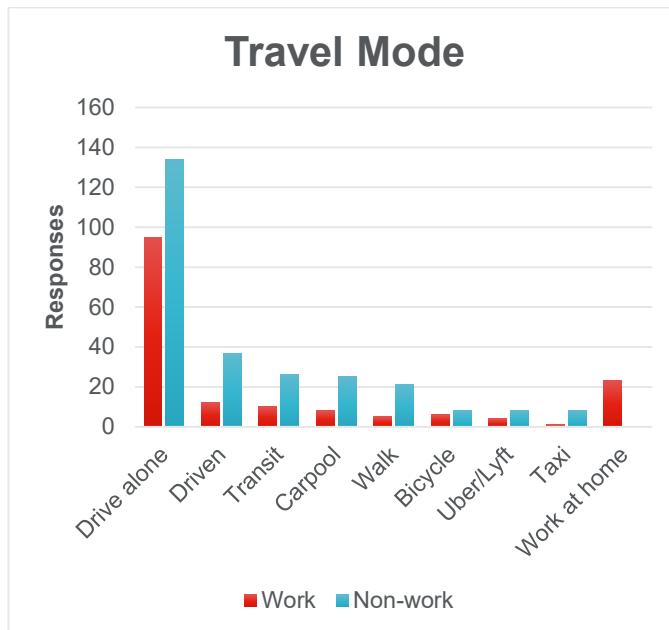
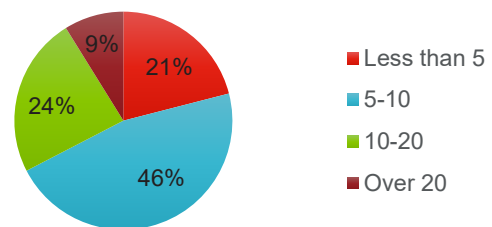*Two-thirds of households reported taking 10 or fewer non-work trips a week.*

Figure 7 Travel modes for work and non-work trips.

Next to driving or being driven, transit was reported as the next most frequently used mode. Although 72 percent of respondents never use transit in the Tyler Area, 14 percent use it regularly (Figure 2). **Of those that use transit in the region, nearly half have been using it for over five years. Many of these long-time users also use the service regularly.** Approximately 20 percent of transit-riding respondents began using transit in the

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Tyler Area in the last year; half of them ride regularly. This suggests that although the majority of the riders are long time riders, there is a meaningful segment of new users as well.
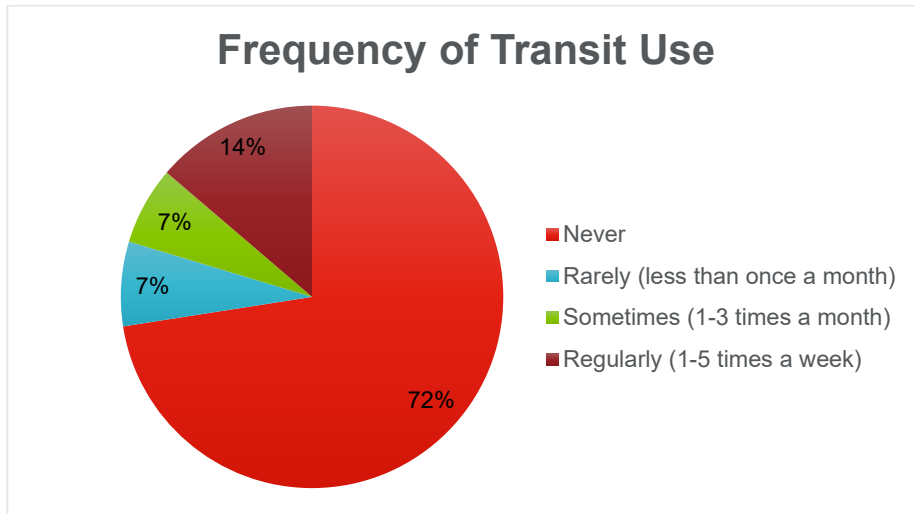
Frequency of Transit Use

- Never
- Rarely (less than once a month)
- Sometimes (1-3 times a month)
- Regularly (1-5 times a week)

14%

7%

7%

72%

Figure 8 Frequency of transit use.

The survey asked if respondents had used transit outside of Tyler. The responses do not show a relationship between having used transit outside Tyler and use of transit in the Tyler area.

Transit Preferences

As subset of survey questions were posed to respondents that have used Tyler Area Transit. These questions provide insight into the customer opinions of Tyler Area Transit. They reveal the uses and reasons for riding transit along with areas for improvement.

Commuting was reported as the most common transit trip purpose (Figure 3). Ten percent of all respondents used transit to commute. Running errands was the second most identified response and many of the respondents that selected "Other" used it to choose more than one of the suggested trip purposes.
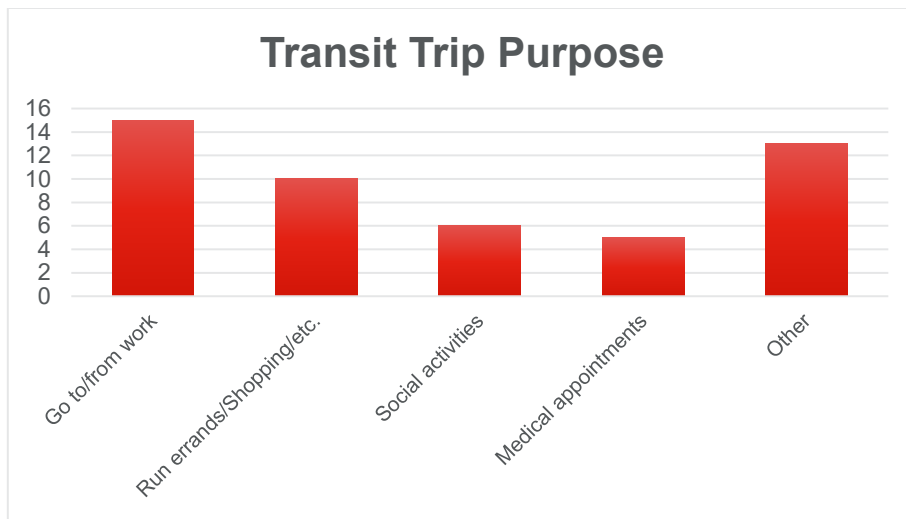
6

Transit Trip Purpose

Figure 9 Primary trip purpose for transit trips. Respondents were asked to select one, but some wrote in multiple of the given purposes in "Other."

Respondents were asked to select all the applicable reasons that they use transit (Figure 4). The main reason was that it costs less than driving. Other top reasons were transit dependence (there was not a car or they did not drive) and that transit is an environmentally friendly mode choice.
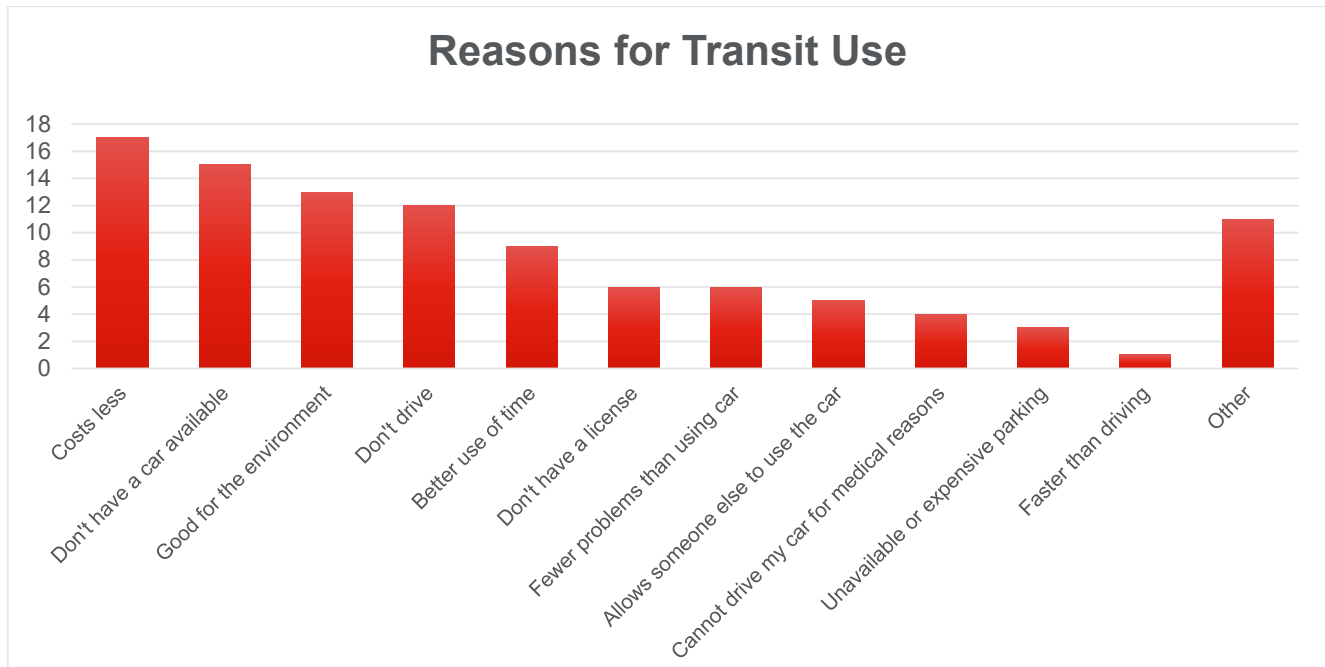
Reasons for Transit Use

Figure 10 Reasons for riding transit. Respondents could select all that applied.

Overall, 60 percent of transit-riding respondents said they were satisfied with transit service in the Tyler area (Figure 5). Approximately a quarter were dissatisfied. **The vast majority of respondents (84 percent), were satisfied with the pricing of transit service. This aligns with affordability as the top ranked reasoning for**

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riding transit. Fewer respondents we satisfied with the frequency of service; 45 percent were satisfied, and 37 percent were dissatisfied.
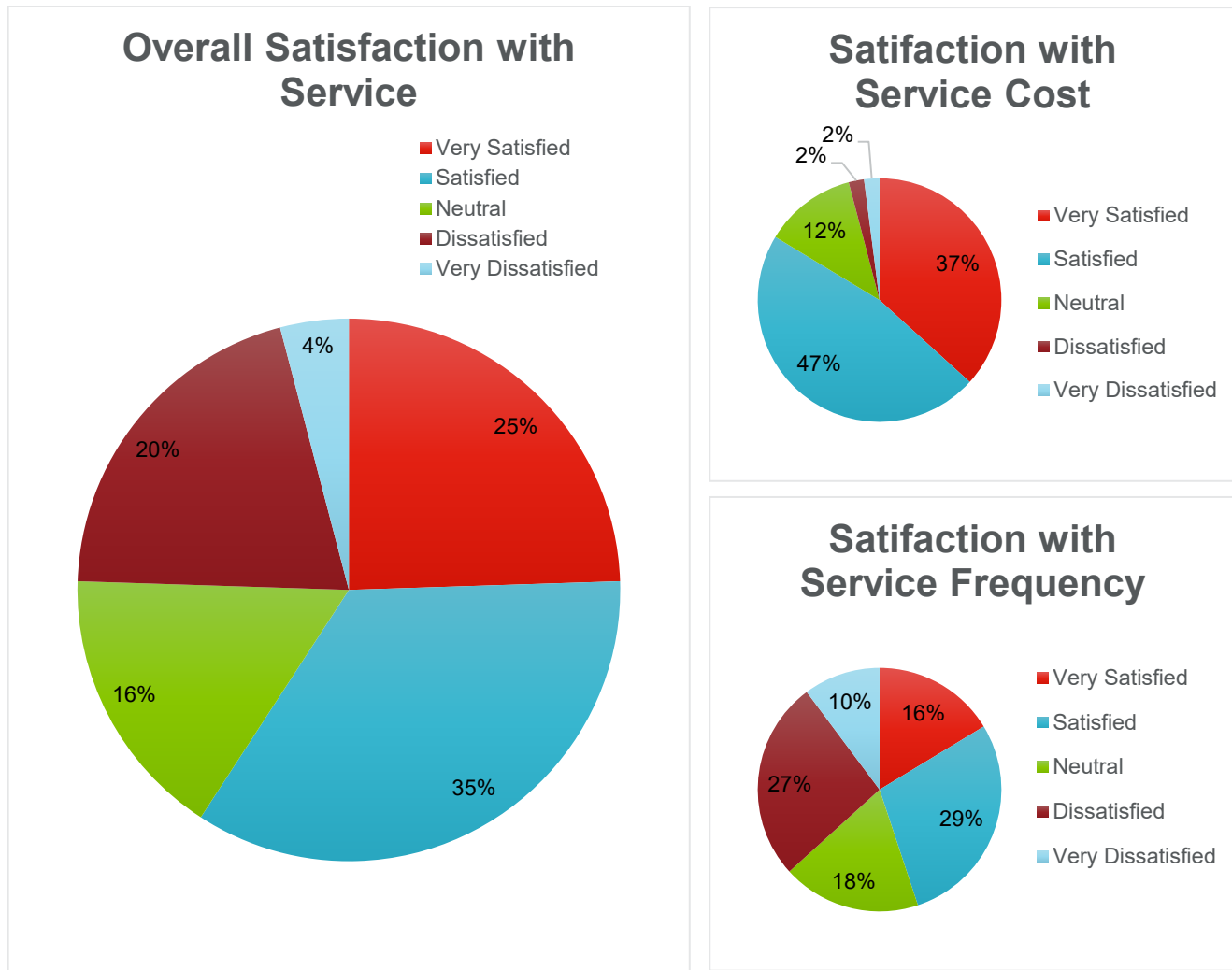

Figure 11 Satisfaction with transit service (overall, frequency, and cost).

All survey participants were asked to provide reasons for not using transit (Figure 6). The most frequently given response was that they prefer to drive. **The next two responses were that service was not available near their home and that transit takes too long to get to their destination.** Although a preference for driving might not be addressed by service improvements, expanded service or increased speed and reliability are within the purview of Tyler Area Transit. Notably, 32 respondents said they did not know how to use the transit service.
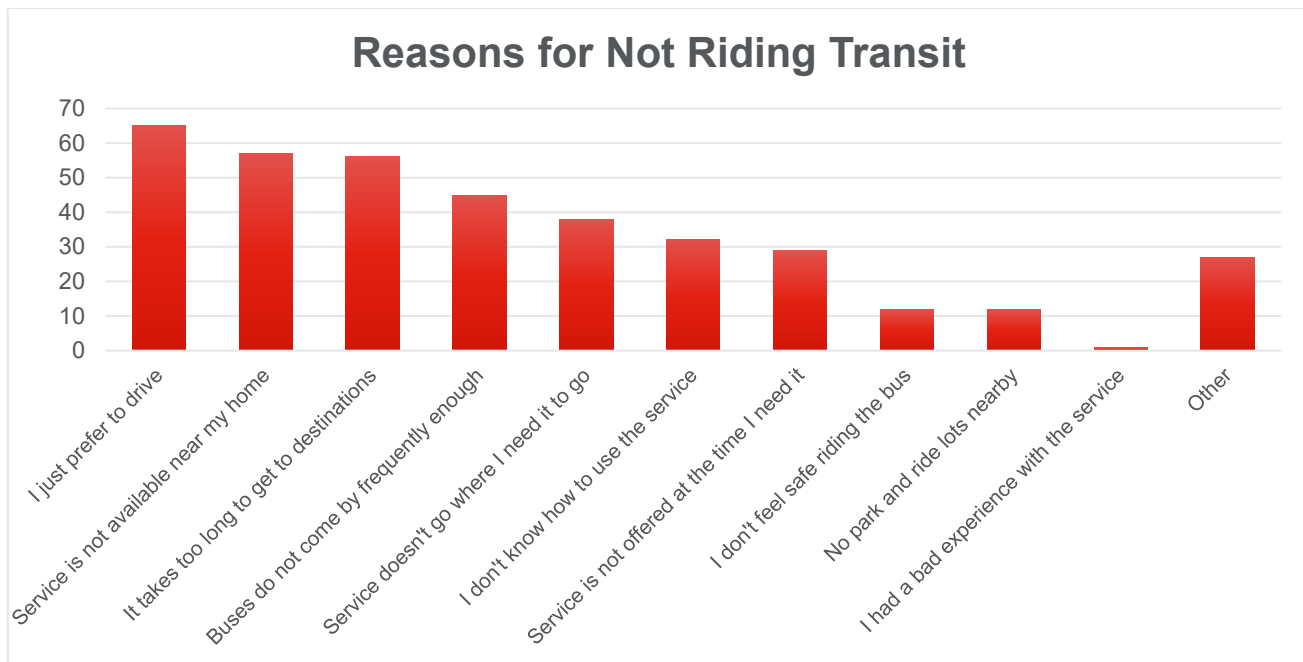
Reasons for Not Riding Transit

Figure 12 Reasons for not riding transit. Respondent could select all that applied.

The survey participants were presented with a series of contrasting preferences and asked to select one from each pair (Figure 7). The respondents' preferences were distinct in some cases. More frequent service was clearly favored over longer service hours. There is substantial interest in focusing on weekday service over weekend service. This aligns with commuting as the most frequent transit trip purpose. Additionally, shorter walks to transit stops was favored over faster service. This preference, however, conflicts with one of the top reasons to not use service – it takes too long to get to destinations. Finally, the responses for focusing on existing service were slightly outweighed by the preference to serve new areas.
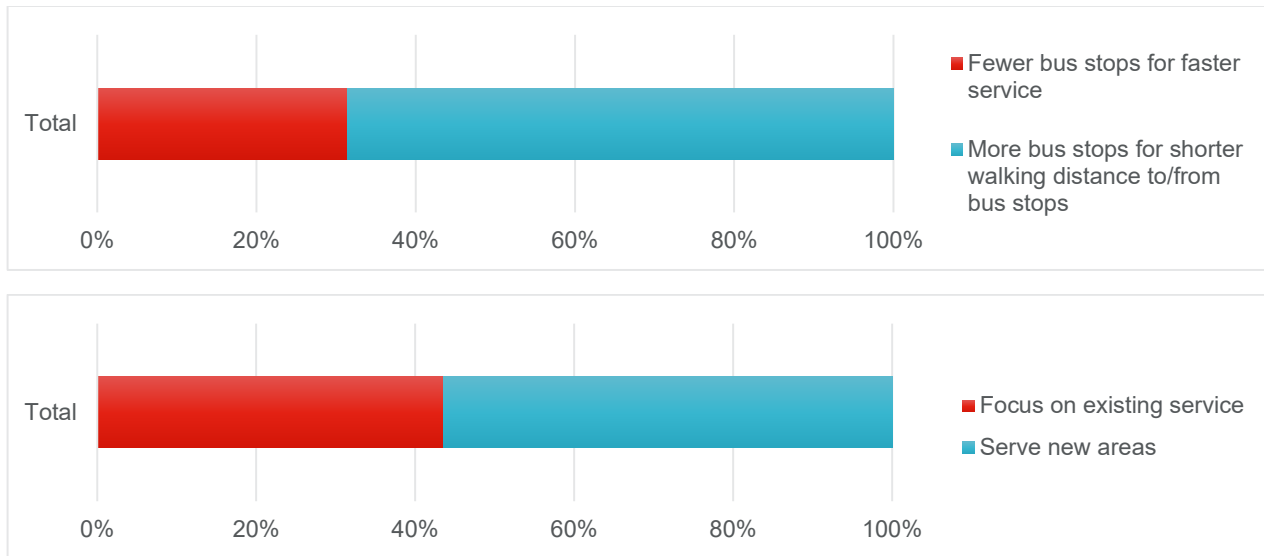
Service Preferences

9
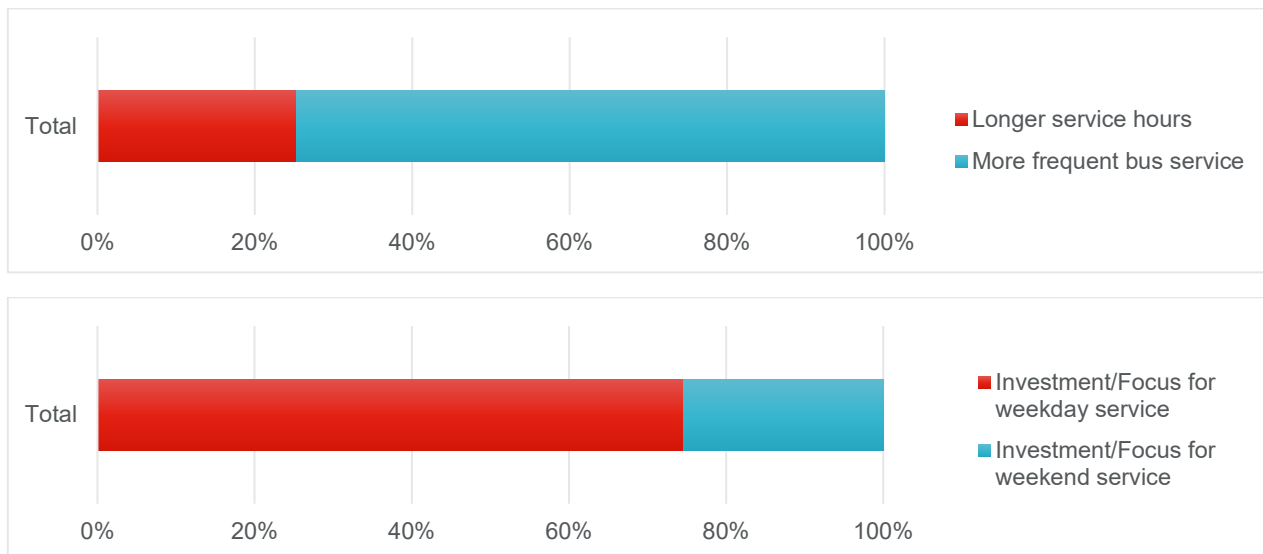
Figure 13 Responses to pairs of service preferences.

Finally, the survey asked respondents how likely they would be to ride transit given a series of conditions. The conditions and the percent of respondents who said they would be likely or very likely to ride transit are in Table 2. **Comparable travel time and transit stops closer to home were the most likely to influence potential ridership.**

Table 2 Conditions Likely to Increase Transit Ridership

CONDITION	RESPONDENTS ANSWERING VERY LIKELY/LIKELY	
	COUNT	PERCENTAGE
I do not have to park at destination	62	42%
I can avoid driving in traffic congestion	87	58%
There is readily available park and ride lots	82	55%
Transit stops are located closer to my home and where I frequently go	102	68%
There is express bus service	83	56%
There are amenities at stops like shelters	81	54%
Trip planning is on a website	91	61%
I have employer-provided incentives to use transit services, such as discounted passes	80	54%
There are low transit fares	95	64%
Transit times are comparable to driving time	108	72%

Conclusion

The survey provides insight into preferred areas of improvement among the respondents. Although it is not a representative sampling of residents and transit riders in the Tyler metropolitan area, it is a useful tool for public input. Throughout this memo, interesting findings are highlighted to draw attention to useful takeaways.

Sincerely,

Stefanie Brodie, PhD | Research Practice Lead

TOOLE DESIGN
sbrodie@tooledesign.com | 407.214.6436