

SERVICE MONITORING REPORT

Monitoring of Transit Service

The following section details CapMetro's service monitoring results.

Introduction

Federal Transit Administration (FTA) Circular 4702.1B requires providers of public transportation that operate 50 or more fixed route vehicles in peak service and are located in a UZA of 200,000 or more to monitor the performance of their transit system relative to their system-wide service standards and policies at least once every three years. CapMetro meets this threshold and monitors its service every three years.

The FTA service monitoring program requires transit agencies to monitor the performance of minority routes compared to non-minority routes against their service standards. The FTA requires agencies to monitor:

1. Vehicle Load standard.
2. Vehicle Frequency standard.
3. On-Time Performance standard.
4. Service Availability standard.
5. Vehicle Assignment policy.
6. Transit Amenities policy.

Capital Metro's service monitoring process has two steps:

1. Determine minority routes.
2. Assess the performance of each selected route compared to the board approved Service Standards and Guidelines.
3. Determine if there are any disparate impacts.

Classification of Routes

The first step was to classify routes as minority and non-minority. The guidance from the FTA Circular 4702.1b regarding the definition of a minority transit route is as follows:

"A minority transit route is one in which at least one-third of the revenue miles are located in a Census block, Census block group, or traffic analysis zone where the percentage minority population exceeds the percentage minority population in the service area. Transit providers may supplement this with ridership data and adjust route designations accordingly. For example, a commuter bus that picks up passengers in generally non-minority areas and then travels through predominantly minority neighborhoods but does not pick up passengers who live closer to downtown might be more appropriately classified as a non-minority route, even if one-third of the route mileage is located in predominantly minority Census blocks or block groups. On the other hand, a light rail line may carry predominantly minority passengers to an area where employment centers and other activities are located, but the minority population in the surrounding Census blocks or block groups does not meet or exceed the area average. This route may be more appropriately classified as a minority transit route. Transit providers should ensure they have adequate ridership data before making these determinations and include that data in their analyses"
(FTA Circular 4702.1b, IV-10)

Due to rapidly changing neighborhoods and demographics in Austin, CapMetro utilized statistically significant onboard survey data to identify minority routes. Minority routes were defined as a route with minority ridership greater than the average minority population in CapMetro’s service area, which is **51.39%**. The service area average was calculated using ACS 2022 data.

Using this methodology, 59 of CapMetro’s 71 routes¹ are classified as minority routes. CapMetro chose to monitor all of its routes, as this provides a greater level of precision by avoiding “luck of the draw” issues if a random sample is used. Luck of the draw means that if well-performing routes are selected the results will be more positive; if poor-performing routes are selected, the results will be more negative. A list of all routes and their minority classification can be found in Appendix A.

The following sections assess the performance of minority routes to non-minority routes using CapMetro’s Board-approved [Service Guidelines and Standards](#) (adopted June 2023). All analyses used September 2023 data.

Vehicle Load

Vehicle Load Standards

A route exceeds CapMetro’s Vehicle Load standards when the average capacity exceeds the number of people in the table below, or when standing loads last for 20 minutes or more on a trip.

Table 1: Vehicle Load Standards

Service Type		Peak Max Load	
High Capacity	Commuter Rail	212 people	
	MetroRapid	60’ bus	110 people
		40’ bus	80 people
Frequent	60’ bus	110 people	
	40’ bus	80 people	
Local	40’ bus	80 people	
	35’ bus	60 people	
Limited and Community	40’ bus	80 people	
	35’ bus	60 people	
	Over the Road Coach	57 people	

¹ Routes 152 and 50 are Round Rock routes and CapMetro is not responsible for their Title VI processes since Round Rock is a direct recipient. Routes 214 and 990 are operated by CARTS, and consistent data is not provided for those routes.

Vehicle Load Analysis

An analysis of September 2023 passenger load data showed that:

- Neither minority nor non-minority routes exceed the service standard.
- There are more trips that exceed vehicle load on minority routes in general because there are more minority routes.
- Overcrowding has been very limited across CapMetro’s system.

There was no disparate impact in any service type or cumulatively.

The following tables detail the percentage of trips over the vehicle load limit and the percentage of trips over seated capacity for more than 20 minutes in September 2023, disaggregated by service type.

Table 2: Percent of Trips Over Load Limit

Service Type	Minority Status	Total Operated Trips	Percent Trips with Passenger Loads Over Limit	Difference	Result
High Capacity (Rail)	Not Minority Route	1097	0.09%	NA	No Disparate Impact
High Capacity (Rapid)	Minority Route	9870	0.00%	NA	No Disparate Impact
Frequent	Minority Route	34481	0.01%	NA	No Disparate Impact
Local	Minority Route	42331	0.01%	0.01%	No Disparate Impact
	Not Minority Route	2248	0.00%		
Limited	Minority Route	1867	0.00%	-0.45%	No Disparate Impact
	Not Minority Route	895	0.45%		
Community	Minority Route	19704	0.07%	0.07%	No Disparate Impact
	Not Minority Route	3502	0.00%		

Table 3: Percent of Trips Over Seated Capacity for More than 20 Minutes

Service Type	Minority Status	Total Operated Trips	Percent Trips Over Seat Capacity for 20 minutes or more	Difference	Result
High Capacity (Rail)	Not Minority Route	1097	0.18%	NA	No Disparate Impact
High Capacity (Rapid)	Minority Route	9870	0.99%	NA	No Disparate Impact
Frequent	Minority Route	34481	0.38%	NA	No Disparate Impact
Local	Minority Route	42331	0.05%	0.05%	No Disparate Impact
	Not Minority Route	2248	0.00%		
Limited	Minority Route	1867	0.00%	-0.45%	No Disparate Impact
	Not Minority Route	895	0.45%		
Community	Minority Route	19704	0.05%	0.05%	No Disparate Impact
	Not Minority Route	3502	0.00%		

Vehicle Frequency

Vehicle Frequency Standards

Frequency describes how often the bus comes. Frequencies should be matched to the needs of the community; more service will be provided where there is a high number of transit customers (i.e., ridership) and less service where there is a lower number of transit customers to use resources efficiently. As the frequency of a route decreases it becomes more difficult for a customer to plan around, so all CapMetro fixed route services maintain at least a 60-minute frequency. The frequencies listed below are typical levels for each service type.

Vehicle Frequency Analysis

The analysis for vehicle frequency utilized September 2023 data and averaged the actual headways within each service type, day, and time category specified by the service standards (Early AM, AM Peak, Midday, PM Peak, and Night). Once the averages for each day and time category had been calculated, staff compared minority and non-minority routes within each service type using the percentage of adherence to the standard. For example, if the standard frequency was 10 minutes on Route A, and Route A actually operated every 11.2 minutes, Route A would be operating at 112% of the standard.

CapMetro service differed slightly from the standards as they were written. For this reason, some abbreviations are used throughout the following analyses to categorize different scenarios regarding service standards. "NS" indicates that "no service" was provided despite the existence of a standard for it. "AS" signifies that "additional service" was given, even though there isn't a set standard for it. Lastly, "NA" for "not applicable" denotes that neither service was provided nor was there a standard applicable to the situation. These codes help track and evaluate service delivery against established standards, highlighting areas for improvement or adherence.

An analysis of September 2023 ridership data showed that:

- Both minority and non-minority routes exceed service standards.
- Within the local service type, minority routes run just as or more frequently than non-minority routes.
- The analysis showed disparate impacts for Night Owls and UT Shuttles. Each disparate impact is discussed below.
- Some adverse impacts may be caused by vehicle and operator shortages, making it more difficult for buses to run as frequently. CapMetro is actively working to recruit and retrain operators and mechanics and to grow the fleet of buses available for use.

Table 4: Summary of Frequency Analysis Results

Route Type	Results
Rapid	No Disparate Impacts (All Minority Routes)
Commuter Rail	No Disparate Impacts (All Non-Minority Routes)
Frequent	No Disparate Impacts (All Minority Routes)
Local Routes	Disparate Impact
Limited Routes	Disparate Impact
Night Owls	Disparate Impact
UT Shuttles	Disparate Impact
Senior Routes	No Disparate Impacts (All Minority Routes)

Rapid Routes

CapMetro Rapid routes (Routes 801 and 803) are both classified as minority routes, and thus no disparate impacts are identified. The standards and results of the analysis are shown below.

Table 5: High-Capacity Route Frequency Standards

High Capacity Routes

Rapid	Span	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	5:00 AM to 12:30 AM	15	10	10	10	20
Saturday	6:00 AM to 12:00 AM	15	15	15	15	20
Sunday	6:00 AM to 11:30 PM	15	15	15	15	20

Table 6: Rapid Routes Analysis Results

Rapid Routes - All Minority Routes						
		Early AM	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	15.1	11.8	10.6	11.6	19.5
	Saturday	15.0	15.3	15.8	16.5	20.4
	Sunday	15.7	15.3	16.4	16.8	20.6
Adherence to Standard as a Percentage	Weekday	100%	118%	106%	116%	97%
	Saturday	100%	102%	106%	110%	102%
	Sunday	104%	102%	109%	112%	103%
Differences	Not Applicable					
Disparate Impact	No Disparate Impact					

Commuter Rail

CapMetro operates one commuter rail line, which is classified as a non-minority route. No disparate impacts are identified. The standards and results of the analysis are shown below.

Table 7: Commuter Rail Frequency Standards

Commuter Rail	Span	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	6:00 AM to 8:30 PM	30	25	60	30	-
Saturday	10:00 AM to 1:00 AM	35	35	35	35	35

Table 8: Commuter Rail Analyses Results

Commuter Rail - Non-Minority Route						
		Early AM	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	NS	35.0	72.3	56.3	70.0
	Saturday	NS	NS	43.4	44.2	42.8
Adherence to Standard as a Percentage	Weekday	NS	140%	120%	188%	AS
	Saturday	NS	NS	124%	126%	122%
Differences	Not Applicable					
Disparate Impact	No Disparate Impact					

Frequent Routes

CapMetro Frequent routes (2, 4, 7, 10, 20, 300, 311, 325, 333, and 337) are all classified as minority routes, and thus no disparate impacts are identified. The standards and results of the analysis are shown below.

Table 9: Frequent Routes Frequency Standards

Frequent Routes

Frequent	Span	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	5:00 AM to 12:00 AM	30	15	15	15	30
Saturday	6:00 AM to 12:00 AM	30	15	15	15	30
Sunday	6:00 AM to 11:00 PM	30	30	30	30	30

Table 10: Frequent Route Analysis Results

Frequent Routes - All Minority Routes						
		Early AM	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	27.3	18.3	16.7	18.3	24.4
	Saturday	31.4	24.8	24.2	24.9	27.9
	Sunday		24.8	24.3	24.0	27.6
Adherence to Standard as a Percentage	Weekday	91%	122%	111%	122%	81%
	Saturday	105%	165%	161%	166%	93%
	Sunday	0%	83%	81%	80%	92%
Differences	Not Applicable					
Disparate Impact	No Disparate Impact					

Local Routes

CapMetro Local routes include minority routes 1, 3, 5, 18, 30, 201, 228, 233, 237, 243, 271, 310, 315, 318, 322, 323, 324, 335, 339, 345, 350, 383, and 392. Local non-minority routes include routes 214 and 217, and route 214 is operated by CARTS and not included in this analysis. When compared, local minority routes operate more frequently than non-minority route 217. **Though disparate impacts were identified, the disparate impacts are shown when comparing 23 minority routes to one non-minority route that is still 48 percent non-White, Route 217 Montopolis Feeder.** Of the riders on Route 217, more than 85% have low incomes, making less than \$38,000 per year.

Although headways operated during Saturday service are incongruent with service standards, it is important to note that frequency has not been fully restored since emergency service reductions that resulted from the COVID-19 pandemic. All route spans and frequencies are now being evaluated as part of the 2035 transit service plan to identify what types of service will best meet the demand for transit in the Central Texas region in the coming years.

Table 11: Local Routes Frequency Standards

Local Routes

Local	Span	Frequency* (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	5:00 AM to 11:00 AM	30	30	30	30	30
Saturday	6:00 AM to 11:00 AM	30	30	30	30	30
Sunday	6:00 AM to 11:00 PM	30	30	30	30	30

*Typical frequencies – some Local routes run at lower frequencies at different times of day based on demand

Table 12: Local Routes Analysis Results

		Local Routes - Minority Routes					Local Routes - Non-Minority Routes				
		Early AM	AM Peak	Midday	PM Peak	Night	Early AM	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	31.0	35.2	35.5	36.2	35.9	30.0	30.0	30.5	33.3	34.0
	Saturday	36.4	35.8	35.5	36.0	34.7		30.0	30.2	30.0	31.2
	Sunday	NS	35.6	36.0	35.6	34.0		30.5	29.8	30.0	30.0
Adherence to Standard as a Percentage	Weekday	103%	117%	118%	121%	120%	100%	100%	102%	111%	113%
	Saturday	121%	119%	118%	120%	116%	NS	100%	101%	100%	104%
	Sunday	NS	119%	120%	119%	113%	NS	102%	99%	100%	100%
Differences	Weekday	3%	18%	17%	10%	6%					
	Saturday	NS	19%	18%	20%	12%					
	Sunday	NS	17%	21%	19%	13%					
Disparate Impact		Disparate Impact	Disparate Impact	Disparate Impact	Disparate Impact	Disparate Impact					

Limited Routes

Limited routes are routes that have limited stops and/or limited times for service. These services often have a specific purpose such as providing express service for commuters at peak times or connecting to/from the high-capacity network. Limited routes operate only on weekdays and include minority routes 105, 111, 135, 171, 465, 935, 980, and 982 and non-minority routes 103, 142, 466, and 985. While some routes within this category provide service during midday or nighttime periods, only peak periods were analyzed as those are the only categories specified within the service standards.

Table 13: Limited Routes Frequency Standards

Limited Routes

Limited	Span*	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	6:00 AM to 9:00 AM 3:00 PM to 7:00 PM	-	20	-	20	-

*Minimum span – Some Limited routes operate throughout the day

Table 14: Limited Routes and Analysis Results, Minority and Non-Minority

	Minority Routes		Non-Minority Routes	
	AM Peak	PM Peak	AM Peak	PM Peak
Actual Headways	234.8	257.8	60.4	49.2
Adherence to Standard as a Percentage	872%	1289%	302%	246%
Differences	872%	1043%		
	Disparate Impact			

The standards for Limited routes state that routes should be operating at 20-minute headways during both AM and PM peak periods. For minority routes, headways average 208.7 minutes during AM peak (1043% of the standard) and 225.6 minutes during PM peak (1128% of the standard). Non-minority headways average 60.4 minutes (302%) during AM peak and 49.2 minutes (246%) during PM peak. Thus, there is a disparate impact during both the AM and PM peak. This is largely due to minority Route 980, which only runs once in each peak period, as well as a number of flyer routes that range in frequency from 50 to 115 minutes between buses. Route 985 (non-minority) has the highest ridership within the Limited Bus service type and runs between 33- and 36-minute frequencies.

As commuter travel patterns have changed after the COVID-19 pandemic, CapMetro is currently conducting a travel pattern analysis to assess the commuter transit market and identify equitable solutions that match the demand for transit. The results of this study will be used in development of the 2035 Transit Service Plan.

Night Owls

Night Owl service operates year-round from midnight until 3 a.m., Monday through Saturday nights. Buses run between late-night destinations downtown and local neighborhoods every 20 to 30 minutes, depending on the route. Minority routes include 483, 485, and 486, and non-minority routes include 481 and 484. As Night Owls only run at night, that is the only category analyzed and shown in the data below.

Table 15: Night Owl Frequency Standards

Night Owl	Span	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	12:00 AM to 3:30 AM	-	-	-	-	30
Saturday	12:00 AM to 3:30 AM	-	-	-	-	30

Table 16: Night Owl Routes and Analysis Results, Minority and Non-Minority

		Minority Routes	Non-Minority Routes	Percentage Differences
Actual Headways	Weekday	33.6	28.3	
	Saturday	33.3	27.2	
Adherence to Standard as a Percentage	Weekday	112%	94%	18%
	Saturday	118%	91%	27%
Disparate Impact on Weekdays and Saturdays				

Minority routes on weekdays run at a frequency of 33.6 minutes (112%), while non-minority routes run 28.3 minutes (94%), which amounts to difference of 18 percentage points. On Saturdays, minority routes run at a frequency of 33.3 minutes (118%) and non-minority routes run at 27.2 (91%) minutes. This amounts to a difference of 27 percentage points. Both of these exceed CapMetro’s two-percent threshold and thus result in disparate impacts. The cause of this impact is largely due to non-minority Route 481’s 20-minute frequency, which mimics the route alignments of our Rapid service.

UT Shuttles

University of Texas (UT) shuttles provide a way for students, faculty, staff and visitors to access the UT campus. Route 641 is the only non-minority route, and the remaining routes (640, 642, 656, 661, 663, 670, 671, 672) are classified as minority routes. Although the analysis showed weekday service often operating above its standards on weekdays, select time periods show disparate impacts: Weekday Midday and PM Peak Period service as well as PM Peak and Night service on Sundays.

Table 17: University Shuttle Routes Frequency Standards

University Shuttles	Span	Frequency (minutes)				
		Early AM	AM Peak	Midday	PM Peak	Night
Weekday	7:00 AM to 11:30 PM	-	15	15	15	15
Sunday	3:00 PM to 10:00 PM	-	-	-	60	60

Table 18: UT Shuttle Routes and Analysis Results, Minority and Non-Minority

UT Shuttles - Minority Routes					UT Shuttles - Non Minority Routes				
		AM Peak	Midday	PM Peak	Night	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	12.02	13.23	16.68	26.33	14.07	12.32	14.86	30.57
	Sunday	NA	NA	42.13	41.98	NA	NA	25.04	24.92
Adherence to Standard as a Percentage	Weekday	80%	88%	111%	176%	94%	82%	99%	204%
	Sunday	NA	NA	70%	70%	NA	NA	42%	42%
Differences	Weekday	-13.72%	6.07%	12.14%	-28.27%				
	Sunday	NA	NA	28.48%	28.42%				
Disparate Impact		No Disparate Impact	Disparate Impact, Weekdays	Disparate Impact, Weekdays and Saturdays	Disparate Impact, Sundays				

Weekday Disparate Impact

Though staff have identified disparate impacts, it is important to note that both minority and non-minority routes often operate with faster headways than required, providing high-frequency service to the student population.

On weekdays during midday periods, minority routes operate with an average frequency of 13.23 minutes (88%), while non-minority routes maintain a 12.32-minute (82%) frequency, resulting in a disparity of just over six percentage points. During this period, both minority and non-minority routes are receiving faster headways than required.

During PM peak periods, buses run slightly less frequently; for minority routes, the average is 16.7 minutes (111%) and for non-minority routes the average is 14.86 minutes (99%). The result is a difference of 12.14%, which exceeds CapMetro’s two percent threshold and is thus a disparate impact. Minority routes have slightly more time in between buses than dictated by the standard of 15 minutes, while non-minority routes operate within the standard.

Sunday Disparate Impacts

On Sundays during the PM peak period, minority routes operate at 42.13 minute (70%) headways and non-minority routes operate at 25.04 minute (42%) headways. The difference is 28.48 percentage points, resulting in a disparate impact.

During Sunday night service, minority routes operate at 41.99 minute (70%) headways, and non-minority routes at 24.92 minute (42%) headways. Similarly to Sunday PM peak service, the difference is 28.42 percentage points, also resulting in a disparate impact.

CapMetro has recently taken made an effort to improve east-west connections in the UT community and respond to community feedback through the proposed consolidation of Routes 640 and 641, which was approved by the board in April 2024. Once the consolidation is implemented in August of this year, staff anticipate that the disparate impacts between Route 641 and the rest of the routes will likely be rectified.

Senior Routes

Tailored to meet the needs of seniors in specific neighborhoods, specialized bus routes operate once a week, providing direct access to essential services like grocery stores. All routes in this category—routes 490, 491, 492, and 493—are classified as minority routes, and thus there are no disparate impacts identified. A 60-minute standard was used to create the percentage of adherence to the standard. The table below shows the results of the analysis.

Table 19: Senior Route Analysis Results

		Early AM	AM Peak	Midday	PM Peak	Night
Actual Headways	Weekday	NA	NA	53.22	54.88	NA
	Saturday	NA	55.04	70.51	76.96	NA
Adherence to Standard as a Percentage	Weekday	NA	NA	89%	91%	NA
	Saturday	NA	92%	118%	128%	NA
Differences	<i>Not Applicable</i>					
Disparate Impact	No Disparate Impact					

On-Time Performance

On-Time Performance Standards

CapMetro considers buses on-time if they depart a designated timepoint between 0 seconds earlier and 6 minutes later than scheduled. System-wide on-time performance (OTP) should exceed 85%.

Table 20: OTP Standards

Service Type		On-Time Window	On-Time Standard
High Capacity	Commuter Rail	0-3 minutes	90%
	MetroRapid	0-6 minutes	85%
Frequent		0-6 minutes	85%
Local		0-6 minutes	85%
Limited		0-6 minutes	85%
Community		0-6 minutes	85%

On-Time Performance Analysis

Table 21: OTP Analysis Results

	Row Labels	Sum of Total Trips	Sum of On-Time Trips	Percent On Time	Differences	Disparate Impact
High Capacity (Rail)	Not Minority Route	6483	6057	93.4%	NA	No Disparate Impact
High Capacity (Rapid)	Minority Route	270899	220464	81.4%	NA	No Disparate Impact
Frequent	Minority Route	170673	128716	75.4%	NA	No Disparate Impact
Local	Minority Route	149951	116986	78.0%	17.8%	Disparate Impact
	Not Minority Route	2236	2143	95.8%		
Limited	Minority Route	3439	2727	79.3%	0.4%	No Disparate Impact
	Not Minority Route	2846	2269	79.7%		
Community	Minority Route	18111	13364	73.8%	2.01%	Disparate Impact
	Not Minority Route	4090	3100	75.8%		
Totals	Minority Route	613073	482257	78.7%	3.24%	Disparate Impact
	Not Minority Route	9172	220464	81.9%		

Systemwide, outside of rail service, we fell below our 85% threshold for OTP in September 2023. The analysis shows a disparate impact on Local routes, but that is because all but one of the local routes are classified as a minority route. Route 217, which is 48 percent non-white, has a high OTP due to the route being much shorter than some of our other local routes. Community routes also just barely show an impact; routes 670, 663, and 656 are all classified as minority routes and had OTP ranging from 64 to 70 percent in September of 2023. The analysis shows a disparate impact in OTP between minority and non-minority routes system-wide of a little over three percentage points.

CapMetro realizes that OTP is a critical measure of the quality and reliability of its services. A task force meets monthly to identify OTP root causes and make the appropriate running time adjustments at each service change. Additionally, we've been making an effort to improve OTP through the preventable maintenance standards and working with our new provider, Keolis, to recruit and train operators in the midst of a personnel and vehicle shortage.

Service Availability

Service Availability Standards

CapMetro measures service availability to identify the parts of the service area that have enough population density to support transit service, and to determine how well the transit service provided in those areas is distributed. CapMetro’s service availability standard defines the transit-supportive service area as locations within the CapMetro service area with at least 16 people per acre (10,240 people/sq mile). The service availability standard measures the total number of residents in the transit-supportive service area that can access transit stops within a 5-minute walk or roll (1/4 mile). The target indicates that 95% of residents living within a transit-supportive area should have access to at least one transit stop within .25 miles of their residence.

Table 22: Service Availability Standards

Service Area Definition	Density Threshold	Walk/Roll Distance from Transit Stop or Station	Target Percent of Residents
Transit-Supportive Area	16 people/acre (10,240 people/sq mi)	.25 miles	95%

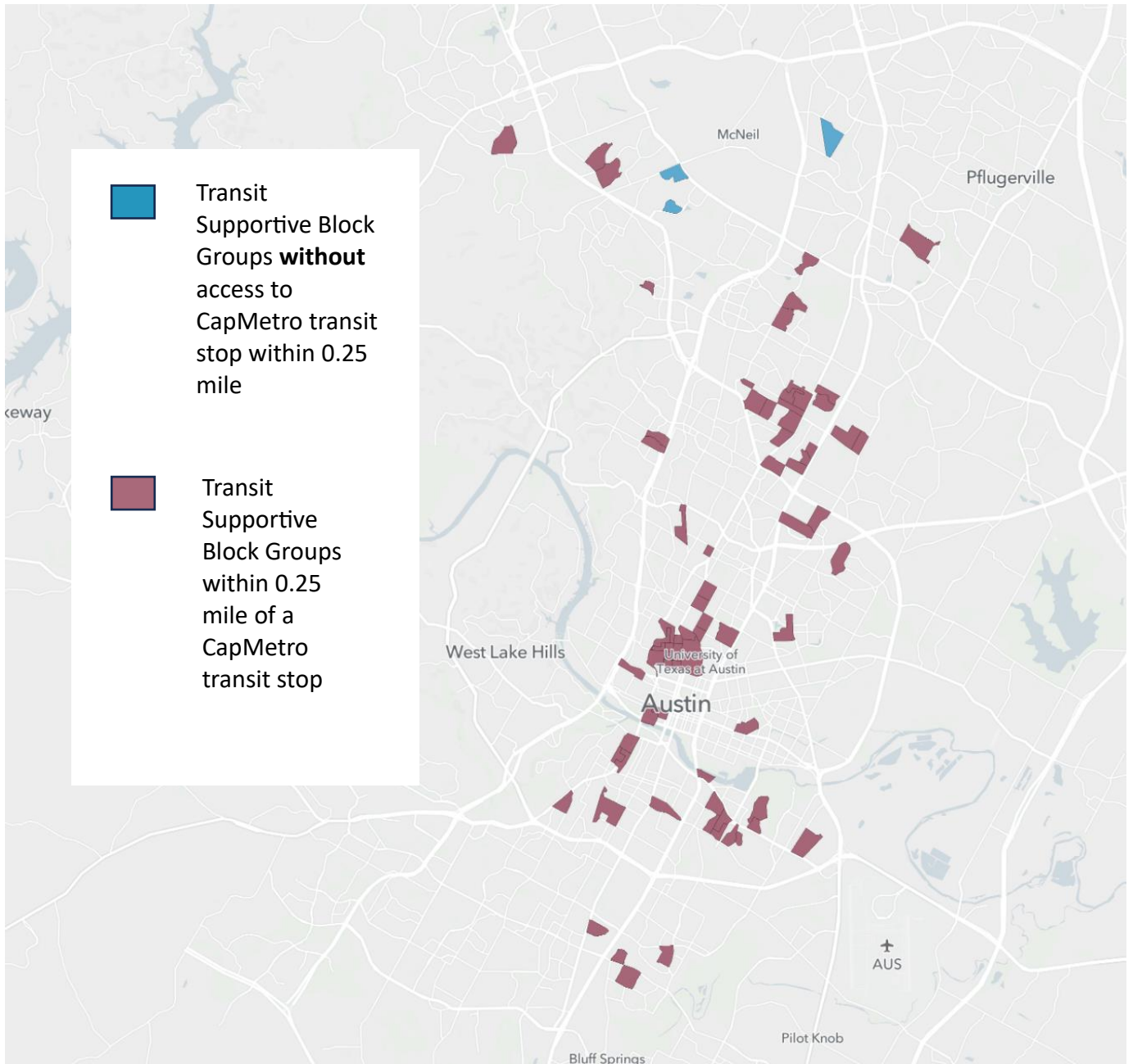
Service Availability Analysis

In total, 139,519 people reside in the transit supportive area, which is defined as a block group in CapMetro’s service area with density of 10,240 people per square mile. Minority residents make up 88,854 people within the transit supportive area, and White residents account for the remaining 50,665 people. In the transit supportive area, 95.4% of residents reside in a block group that is within a quarter mile of a CapMetro transit stop, including 95.14% of minority residents and 95.89% of non-minority residents. The difference results in 0.75 percentage points, so there is no disparate impact. Table 9 shows a map of transit-supportive block groups and their proximity to active CapMetro transit stops.

Table 23: Percent of Minority and Non-Minority Residents in Transit Supportive Area

	Minority Residents	Non-Minority Residents	Totals
People in Transit Supportive Area	88,854	50,665	139,519
People in Transit Supportive Area with Access to Transit Stops	84,543	48,587	133,130
People in Transit Supportive Area with Access to Transit Stops Percent	95.14%	95.89%	95.4%
Difference		-0.75	
	No Disparate Impact		

Figure 1: Map of Transit Supportive Block Groups and Proximity to Transit Stops



Vehicle Assignments

Vehicle Assignments Standards

Vehicle assignment refers to the process by which transit vehicles are allocated to routes throughout the CapMetro network. Several factors are considered when determining the type of vehicle most appropriate for a route, including:

- **Service Type** – Generally, a fixed route bus service will require a 40’ or 60’ bus, while Commuter Rail routes require train cars known as diesel multiple units (DMUs). However, there are occasionally exceptions to this rule to meet community or operational needs. For example, express routes require a 45’ Over the Road Coach (ORC). These vehicle types offer seating more suited for long distance travel.
- **Ridership and Vehicle Capacity** – Vehicle assignments are typically determined based on Automatic Passenger Counter (APC) data in CapMetro’s scheduling software. The software ensures that vehicles that are the right size are available based on ridership data, service type, and any customer or operator feedback about crowded buses. For example, low ridership routes may be assigned a 35’ bus whereas high ridership routes may be assigned a 40’ bus.
- **Compliance with Grant Awards** – CapMetro is a proud recipient of discretionary federal grant funding, and as a result, must align with what was outlined in the original grant application. For example, current Rapid routes require specialized branding, and some future routes may require electric vehicles based on federal grant funding received.

In addition, the 2023 vehicle assignment standards were developed with the fleet plan in mind, which does not include 35’ buses in the long-term. Thus, the actual vehicle assignments include 35’ buses that have not met their useful life and thus are still regularly used to provide service.

Figure 2: Vehicle Assignment Standards

Service Type		Vehicle Type	Appropriate Assignment Rate
High Capacity	Commuter Rail	DMU	100%
	MetroRapid	60’ or 40’ bus	80%
Frequent		60’ or 40’ bus	80%
Local		60’ or 40’ bus	80%
Limited	Express	45’ Over the Road Coach*	80%
	Flyer & Rail Connector	60’ or 40’ bus	80%
Community		60’ or 40’ bus	80%

*These vehicles offer seating more suited for long distance travel. ORCs cannot be used for interlining due to their size.

Vehicle Assignments Analysis

CapMetro vehicle assignments are guided by a memorandum previously reviewed by the FTA (see Attachment A on page 98). Planning compared actual vehicle assignments to recommended assignments for September 2023. There were 5,659 total vehicle assignments with 1,101 incorrect assignments. Parts and mechanic labor shortages resulted in vehicle shortages during the fall of 2023.

In order to provide reliable service for our customers, CapMetro chose to use any available vehicle on a route regardless of the actual vehicle assignment. This resulted in more instances of the wrong vehicle assigned to the route. However, CapMetro felt it was important to operate service even if it was with the wrong vehicle.

Table 24: Vehicle Assignments Analysis Summary

		Total Vehicle Assignments	Wrong Vehicle Assigned	Incorrect Assignment Percentage	Difference	Disparate Impact
Community	Minority	630	228	36.2%	36.2%	Disparate Impact
	Non-Minority	37	0	0.0%		
Frequent	Minority	1966	73	3.7%	Not Applicable	No Disparate Impact
	Non-Minority	0	0	Not Applicable		
High Capacity	Minority	808	579	71.7%	Not Applicable	No Disparate Impact
	Non-Minority	0	0	Not Applicable		
Limited	Minority	454	50	22.5%	-8.9%	No Disparate Impact
	Non-Minority	92	92	24.7%		
Local	Minority	1604	79	4.9%	4.9%	Disparate Impact
	Non-Minority	20	0	N/A		
TOTAL	Minority	5,462	1,009	18.5%	-43.3%	No Disparate Impact
	Non-Minority	149	92	61.7%		

Overall, there were 5,462 instances of vehicle assignment to minority routes with 1,009 instances of the wrong vehicle being assigned (18.5%). When examining vehicle assignments by Service Type, there is a disparate impact for the Community & Local service type.

There were 630 instances of vehicle assignments to minority Community routes with 228 instances of the wrong vehicle assigned (36.2%). Since there are no incorrect vehicle assignments for the non-minority Community routes, the difference is 36.2%. This exceeds the 2% threshold for a Disparate Impact. However, there were 207 (91%) instances of a larger vehicle assigned to the route. This is when a 40' or 45' ORC vehicle is assigned to a route that typically operates with a 35' vehicle. CapMetro generally considers this an improvement as the vehicle is larger and/or more comfortable.

There were 1604 instances of vehicle assignments to minority Local routes with 79 instances of the wrong vehicle assigned (4.9%). Since there are no incorrect vehicle assignments for the non-minority Local routes, the difference is 4.9%. This exceeds the 2% threshold for a Disparate Impact. However, there were 39 (49%) instances of a larger vehicle assigned to the route.

The High Capacity service type experienced the incorrect vehicle assigned 72% of all instances. This occurred only on CapMetro Rapid service since vehicle assignments were not analyzed for rail. CapMetro owns only one rail vehicle (Stadler Diesel Multiple Unit) and it is impossible to assign the

incorrect vehicle to the rail service. When reviewing Rapid vehicle assignments, the following vehicle assignments were observed:

- 334 instances of a non-branded 40' vehicles assigned to Rapid 803. These vehicles are similar to the 40' branded vehicle that typically operate on Rapid.
- 245 instances of a smaller vehicle assigned to Rapid 801. CapMetro's 60' vehicle fleet, manufactured by Nova Bus, is less reliable and subject to more preventive maintenance and breakdowns resulting in fewer 60' vehicles available for service. CapMetro instead assigned 40' vehicles. The smaller vehicle has not resulted in increased overloaded trips as observed in the Vehicle Load section of this analysis.

Amenity Distribution

Standards

In June 2023, CapMetro adopted new Service Standards and Guidelines that included significantly lower standards for distribution of shelters and benches, as well as additional standards for amenities that were previously not included in the standards. Much of this resulted from engagement with the community, who expressed a desire for improved bus stop conditions and a clearer process for equitable distribution. CapMetro also developed a way of prioritizing transit stop improvements, including a scoring process in which 60% of the score weight is based on demographic data that indicate populations where people are more likely to need transit. The results of this service monitoring are provided just under one year after the adoption of the new standards and guidelines, so levels of adherence to the guidelines may vary as CapMetro implements a new, robust Bus Stop Program.

Transit stops and station types are defined according to their operational, service, land use and utilization characteristics. All stops and stations are assigned a type and subsequent amenity level (Levels 1 – 4). These types provide CapMetro with a clear starting point and practical guidelines for the provision of amenities at stops and stations and a structured process to improve the customer experience across the transit system.

Stop Levels

Stops and stations are classified based on the average number of people who use the stop or station each day, the number of trips at a stop where people might experience wait times longer than 30 minutes or more and the type of transit service. Stops and stations are classified according to the following three types:

- **Transit Stop – Level 1:** These stops serve the lowest daily ridership and provides the most basic level of amenities.
 - **Average Ridership:** 0 – 14 riders per day
- **Transit Stop – Level 2:** These stops serve a mid-level of daily riders or riders who might have to wait a long time for the next bus or train, and therefore have additional amenities such as seating and a shelter.
 - **Average Ridership:** 15 – 50 riders per day
- **Transit Station – Level 3:** This level of station serves a high level of daily riders and high frequency routes. The highest level of amenities are provided at transit stations.
 - **Service Type:** Includes a MetroRapid or MetroRail service, and/or;
 - **Average Ridership:** More than 50 riders per day Many transit agencies across the nation use riders per day to determine the level of amenities to provide at a stop.

After the initial classification of stops and stations, additional site context information is reviewed to inform what amenities should be present at a particular location. There are two additional definitions of transit facilities to consider depending on the location's context. Both of these types would increase the expectations of amenities provided to Level 4. Transit Center – This is for stops or stations that support multiple transit routes and are typically owned or leased by CapMetro for an off-street location to support operational service needs.

- **Transit Hub – Level 4:** This is for stops that are located near dense, mixed-use areas or major community destinations that benefit from additional mobility options to support transit use. For example, a transit station might be located near a lot of mixed-use development and be recategorized in this step as a transit hub so that the appropriate level of amenities are provided. This additional step helps CapMetro to assess the needs of their different types of facilities based on their surroundings. Currently, CapMetro is still in the process of identifying and labeling stops that qualify for Level 4.

Required Amenities

The table below shows the required, vital and optional amenities for each stop and station type. CapMetro will consider the area constraints and fiscal constraints when placing amenities. Every reasonable effort should be made to meet the required amenities below, and thorough documentation should be recorded for any stop that does not meet required amenity levels. For vital amenities, good faith efforts should be made to include them at every stop, however physical or fiscal constraints may intervene, and should be recorded. Optional amenities should be included if the context of the stop allows. Refer to the Stop and Station Amenities section of the Service Standards and Guidelines for descriptions of each of these amenities.

Table 25: Amenity Standards

Amenity		Level 1	Level 2	Level 3	Level 4
		Transit Stop	Transit Stop	Transit Station	Transit Center or Hub
Access	Landing Pad/Platform	Required	Required	Required	Required
	Shared Mobility	Optional	Optional	Vital	Vital
	Bike Racks	Optional	Vital	Vital	Required
	Wheelchair Charging	Optional	Optional	Vital	Vital
Comfort & Safety	Seating	Vital	Required	Required	Required
	Shelter	Vital	Vital	Required	Required
	Lighting	Vital	Vital	Required	Required
	Waste Receptacles	Vital	Required	Required	Required
	Landscaping	Optional	Optional	Vital	Required
	Security Camera	Optional	Optional	Required	Required
	Security Booth/Attendant	N/A	N/A	Optional	Optional
Information	Sign and Pole	Required	Required	Required	Required
	Real Time Info	Optional	Optional	Required	Required
	Wayfinding	Optional	Optional	Vital	Vital
	Personal Charging	Optional	Optional	Vital	Vital
	Public Wifi	Optional	Optional	Vital	Vital
	Fare Machine	Optional	Optional	Vital	Vital

Analysis

The 2023 update to the Service Standards and Guidelines lowered the standards for some amenities, so what may have been compliant in the past now shows as non-compliant. CapMetro worked with the community to lower standards (particularly for shelters and seating) and anticipated the likelihood of a disparate impact finding due to the recent changes.

Staff analyzed transit stops that were located in a Census block with **above average** minority population when compared to all other stops in the system. Each stop was evaluated on its level of adherence to the Service Standards and Guidelines’ required amenities, as shown in Figure x above.

- The analysis results are shown below. Out of the 2204 active stops in CapMetro’s service area, 1185 are minority stops, and 1019 are non-minority stops. Level 1 and 2 stops did not show a disparate impact. Level 3 stops showed a disparate impact, as 15.5% of Level 3 minority stops adhered to the Service Standards and Guidelines’ amenity requirements while 31.5% of Level 3 non-minority stops adhered to these requirements. While Level 3 stops overall had a lower

percentage of adherence to the guidelines of 21.8%, all Level 3 stops did adhere to Level 2 guideline requirements at a rate of 79.3%. When also including shelters, this adherence rate fell only to 72.1%.

Table 26: Total Amenities Analysis Results

Amenity Level	Amenities Required in Guidelines	Total Number of Stops	Stops Adhering to Guidelines	Percentage
Level 1	Landing Pad/Platform, Sign and Pole	792	792	100.0%
Level 2	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles	1050	646	61.5%
Level 3	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles, Shelter, Lighting, Real Time Info, Security Camera*	362	79	21.8%
Total		2204	1517	68.8%

Table 27: Analysis Results for Stops in Minority Block Groups

Amenity Level	Amenities Required in Guidelines	Minority Stops	Stops Adhering to Guidelines	Percentage
Level 1	Landing Pad/Platform, Sign and Pole	391	391	100.0%
Level 2	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles	575	370	64.3%
Level 3	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles, Shelter, Lighting, Real Time Info, Security Camera*	219	34	15.5%
Total		1185	795	67.1%

Table 28: Analysis Results for Stops in Non-Minority Block Groups

Amenity Level	Amenities Required in Guidelines	Non-Minority Stops	Stops Adhering to Guidelines	Percentage
Level 1	Landing Pad/Platform, Sign and Pole	401	401	100.0%
Level 2	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles	475	275	57.9%
Level 3	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles, Shelter, Lighting, Real Time Info, Security Camera*	143	45	31.5%
Total		1019	721	70.8%

Table 29: Summary of Transit Amenities Results

Amenity Level	Amenities Required in Guidelines	Minority Stops Adhering to Guidelines	Non-Minority Stops Adhering to Guidelines	Difference	Disparate Impact
Level 1	Landing Pad/Platform, Sign and Pole	100.00%	100.00%	0.00%	No Disparate Impact
Level 2	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles	64.30%	57.90%	-6.40%	No Disparate Impact
Level 3	Landing Pad/Platform, Sign and Pole, Seating, Waste Receptacles, Shelter, Lighting, Real Time Info, Security Camera*	15.50%	31.50%	16.00%	Disparate Impact

*Security Camera data is incomplete and excluded from the analysis.

Appendix A

Name	Route Number	Service Standards Categories	Final Minority Status	Final Minority Percentage
490-HEB SHUTTLE - Wed/Thu	490	Community	Minority Route	100.0%
491-ALLANDALE - Sat	491	Community	Minority Route	100.0%
152/50 -ROUND ROCK TECH RIDGE	152	Community	Minority Route (Round Rock)	90.9%
493-EASTVIEW - Mon	493	Community	Minority Route	90.2%
135-DELL LIMITED	135	Limited	Minority Route	85.7%
672-LAKESHORE	672	Community	Minority Route	82.8%
661-FW FAR WEST/UT	661	Community	Minority Route	80.6%
325-METRIC/RUNDBERG	325	Frequent	Minority Route	80.1%
324-GEORGIAN/OLHEN	324	Local	Minority Route	79.9%
339-TUSCANY	339	Local	Minority Route	79.3%
50/152-ROUND ROCK TECH RIDGE	50	Community	Minority Route (Round Rock)	79.1%
300-SPRINGDALE/OLTORF	300	Frequent	Minority Route	78.8%
7-DUVAL / DOVE SPRINGS	7	Frequent	Minority Route	78.2%
111-SOUTH MOPAC FLYER	111	Limited	Minority Route	78.0%
492-DELLWOOD - Fri	492	Community	Minority Route	77.2%
392-BRAKER	392	Local	Minority Route	76.7%
271-DEL VALLE FEEDER	271	Local	Minority Route	76.4%
201-SOUTHPARK MEADOWS	201	Local	Minority Route	76.1%
2-ROSEWOOD	2	Frequent	Minority Route	75.3%
670-CP CROSSING PLACE	670	Community	Minority Route	75.2%
310-PARKER/WICKERSHAM	310	Local	Minority Route	74.6%
311-STASSNEY	311	Frequent	Minority Route	74.5%

671-NORTH RIVERSIDE	671	Community	Minority Route	72.0%
642-WC WEST CAMPUS/UT	642	Community	Minority Route	71.6%
990-MANOR/ELGIN EXPRESS	990	Limited	Minority Route (CARTS)	71.4%
345-45TH	345	Local	Minority Route	71.1%
243-WELLS BRANCH	243	Local	Minority Route	70.8%
233-Decker/Daffan Ln	233	Local	Minority Route	70.7%
350-AIRPORT BLVD	350	Local	Minority Route	70.5%
4-7TH STREET	4	Frequent	Minority Route	70.1%
20-MANOR RD/RIVERSIDE	20	Frequent	Minority Route	69.7%
171-OAK HILL FLYER	171	Limited	Minority Route	69.7%
801-N LAMAR/S CONGRESS	801	High Capacity (Rapid)	Minority Route	69.5%
640-FA FORTY ACRES	640	Community	Minority Route	69.4%
663-LA LAKE AUSTIN/UT	663	Community	Minority Route	68.9%
337-KOENIG/COLONY PARK	337	Frequent	Minority Route	68.1%
383-RESEARCH	383	Local	Minority Route	67.2%
486-NIGHT OWL SOUTH CONGRESS	486	Community	Minority Route	66.6%
483-NIGHT OWL RIVERSIDE	483	Community	Minority Route	66.6%
465-MLK-UT	465	Limited	Minority Route	66.3%
10-SOUTH 1ST/RED RIVER	10	Frequent	Minority Route	65.9%
1-NORTH LAMAR/SOUTH CONGRESS	1	Local	Minority Route	64.0%
333-WILLIAM CANNON	333	Frequent	Minority Route	62.4%
5-WOODROW/LAMAR	5	Local	Minority Route	62.3%
935-TECH RIDGE EXPRESS	935	Limited	Minority Route	62.2%
30-BARTON CREEK SQ	30	Local	Minority Route	62.2%
335-35TH/38TH	335	Local	Minority Route	61.6%

18-MARTIN LUTHER KING	18	Local	Minority Route	59.4%
315-BEN WHITE	315	Local	Minority Route	59.1%
228-VA CLINIC	228	Local	Minority Route	59.0%
105-SOUTH 5TH FLYER	105	Limited	Minority Route	58.9%
982-PAVILLION EXPRESS	982	Limited	Minority Route	58.4%
3-BURNET/MANCHACA	3	Local	Minority Route	58.2%
803-BURNET/S LAMAR	803	High Capacity (Rapid)	Minority Route	57.9%
318-WESTGATE/SLAUGHTER	318	Local	Minority Route	57.8%
485-NIGHT OWL CAMERON	485	Community	Minority Route	57.8%
323-ANDERSON	323	Local	Minority Route	56.3%
980-NORTH MOPAC EXPRESS	980	Limited	Minority Route	54.5%
322-CHICON/CHESTNUT	322	Local	Minority Route	54.5%
237-NORTHEAST FEEDER	237	Local	Minority Route	53.0%
656-IF INTRAMURAL FIELDS/UT	656	Community	Minority Route	52.2%
214-NORTHWEST FEEDER	214	Local	Not Minority Route (CARTS)	50.0%
217-MONTOPOLIS FEEDER	217	Local	Not Minority Route	48.3%
550-METRORAIL RED LINE	550	High Capacity (Rail)	Not Minority Route	47.2%
985-LEANDER LAKELINE DIRECT	985	Limited	Not Minority Route	46.6%
641-EC EAST CAMPUS	641	Community	Not Minority Route	45.8%
142-METRIC FLYER	142	Limited	Not Minority Route	45.3%
466-KRAMER/DOMAIN	466	Limited	Not Minority Route	44.7%
481-NIGHT OWL NORTH LAMAR	481	Community	Not Minority Route	39.3%
484-NIGHT OWL SOUTH LAMAR	484	Community	Not Minority Route	21.8%
103-MANCHACA FLYER	103	Limited	Not Minority Route	0.0%