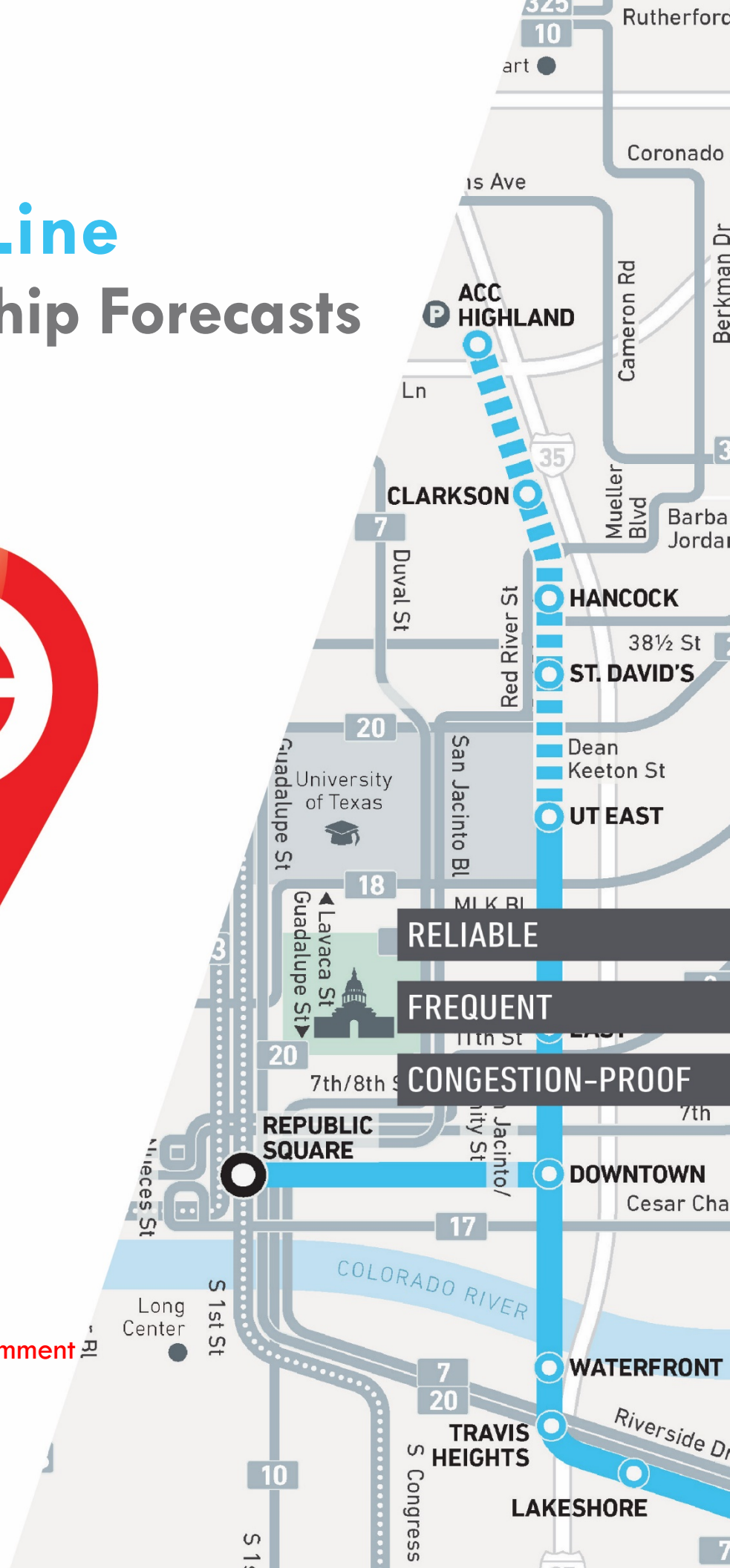
Blue Line
Ridership Forecasts



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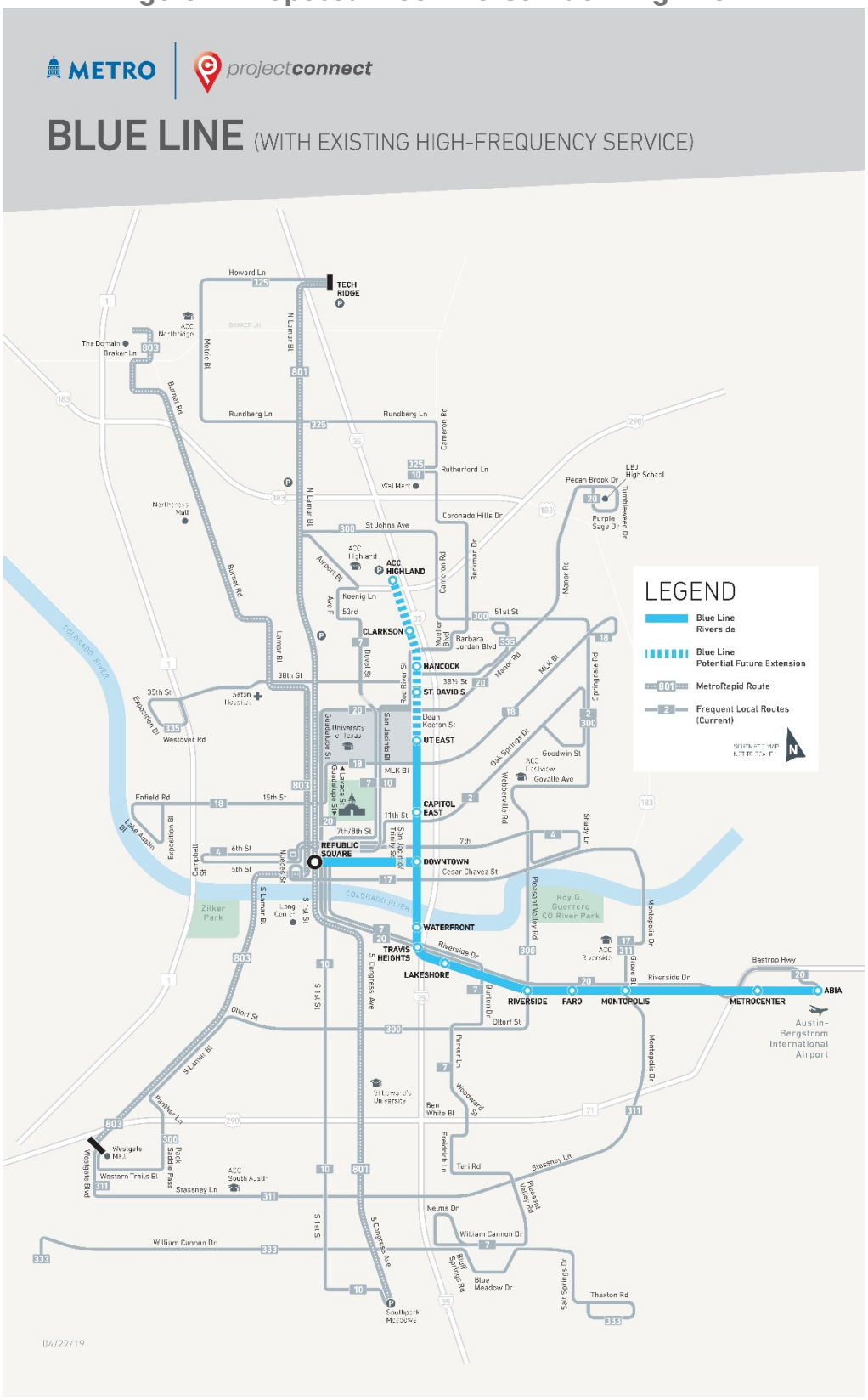
1.0 STOPS Ridership Forecasting Overview

The purpose of this memorandum is to document the ridership results that the Blue Line Corridor modeling team developed utilizing the Federal Transit Administration's (FTA) Simplified Trips-on-Project Software (STOPS) Model. STOPS is a standalone ridership model created by FTA specifically for evaluating Capital Investment Grant (CIG) candidate transit projects. It is similar to a conventional four-step model that evaluates zone-to-zone travel markets based on socioeconomic characteristics and the existing transit network. STOPS produces base year average weekday ridership forecasts for CIG mobility, congestion relief, and cost effectiveness measures; and quantifies the projected change in daily automobile Person Miles Travelled (PMT) resulting from implementation of the proposed project. STOPS has been calibrated and validated using actual ridership experience on transitways including Bus Rapid Transit (BRT), Light Rail transit (LRT), and commuter rail across the country.

The forecasts generated by the STOPS model are being used as part of the Alternatives Analysis (AA) and to inform the selection of the Locally Preferred Alternative (LPA) for the proposed Blue Line High Capacity Transit Project (Blue Line Corridor)[1]. The Blue Line Corridor is an approximately 15.5-mile corridor connecting the Austin Community College (ACC) Highland campus, Downtown Austin, and Austin-Bergstrom International Airport (AUS), shown in **Figure 1**.

[1] Federal Highway Administration. Accessed on 6/2019. https://www.federalregister.gov/documents/2019/04/19/2019-07855/notice-of-early-scoping-for-the-capital-metro--line-high-capacity-transit-corridor-in-austin.

Figure 1. Proposed Blue Line Corridor Alignment



1.1 Model Setup

The modeling team utilized Capital Metropolitan Transportation Authority's (Capital Metro) STOPS model developed as part of Project Connect for the ridership forecasts. This model was updated to the latest version of STOPS (version 2.5) by the Orange Line and provided to Blue Line Corridor. The Blue Line Corridor modeling team utilized the existing and No Build networks defined in the model and did not make any modifications to these networks. The 2018 Cap Remap transit network was included as the No Build scenario. The build network was developed and modified based on the assumptions listed in the following sections. The modeling team produced forecasts using the STOPS model for the existing year, defined in the model as 2015, and the forecast years 2025, and 2040. Since the earliest the route would open is 2028, the results were interpolated between 2025 and 2040 to determine the 2028 forecast year.

1.2 Districts and Station Groups

The modeling efforts included reviewing the districts and station groups defined in the model and identified changes that are required. The existing district that contains Austin-Bergstrom International Airport (AUS) encompassed most of the eastern side of Austin. To focus in on the Blue Line Corridor this district was subdivided to isolate the airport area.

1.3 Fixed Guideway Setting

The STOPS model utilizes a Fixed Guideway Setting (FGS) to differentiate the attractiveness of various modes in the model, as measured relative to the attractiveness of full fixed guideway modes such as heavy rail. The FGS is used to indicate a higher level of attractiveness of fixed guideway transit which attracts higher ridership than would be accounted for by only including improvements to the service plan. Build scenario forecasts used the Partial FGS to represent LRT and BRT modes. Using a range of FGS values is intended to demonstrate the potential range of likely ridership results, which will be influenced not only by selected mode but also by the characteristics and amenities of the service. Depending on specific design criteria, the final FGS for BRT may be higher or lower, just as the final FGS for LRT could vary as well. For the purposes of these forecasts, BRT Light (MetroRapid) was coded as bus with no FGS and the forecast represents the improvements in service level only. FGS factors of 0.3, 0.6, and 0.8 were used to represent fixed guideway BRT and LRT. An FGS of 0.6 for BRT and 0.8 for LRT would represent the high end of a potential ridership forecast at this stage of the project. For the Blue Line Corridor forecasts, BRT schedules were modeled in STOPS using an FGS of 0.3 and 0.6, while an FGS of 0.8 was used with LRT schedules. The 0.3 and 0.6 represent a reasonable range of forecasts for BRT dependent on the design elements. The difference in the 0.6 BRT forecast and the 0.8 LRT forecast represent the range of forecasts that are reasonable for LRT. It is important to note that once the forecasts have been submitted to FTA for review, concurrence and final acceptance of the forecasts could be materially different. It is recommended that a range of factors be carried forward.

1.4 No Build Scenario

The modeling team utilized the 2019 Capital Metro existing network which includes the 2018 Cap Remap system changes as the No Build network.

1.5 Build Scenarios

The following is a description of the Build Scenarios and assumptions utilized by the modeling team in the development of the forecasts. The BRT and LRT scenarios assume that the Blue Line Corridor will utilize fully dedicated guideway (i.e. transitway). The project team developed detailed running time estimates for each mode for both Street-Level and Grade Separated scenarios. The peak service frequencies are assumed to be 10 minutes. Each scenario is assumed to have a park and ride located at ACC Highland

and AUS. As the project advances the park and ride locations may change and the ridership forecasts will be updated.

Local Service Modifications

The modeling team coordinated with Capital Metro service planning staff to identify modifications to the local bus network that should be included in each build alternative. Route 20 was modified to 15-minute service north of the downtown, and 30-minute service to AUS. The routes (217,271, 310, and 350) that currently terminate at ACC Riverside were realigned to terminate at Montopolis and Riverside. Route 311 was realigned to connect at Montopolis and Riverside and then continue to terminate at ACC Riverside.

Transportation System Management Alternative (TSM)

This TSM Alternative would provide enhanced transit service along the Blue Line Corridor without any dedicated transitways. The service provided in this alternative would be similar to the existing MetroRapid routes, and closely follow a recommendation from Capital Metro's latest short-term service planning process to implement a MetroRapid route. This alternative's service would be based on MetroRapid operating characteristics and follow the alignment of the Blue Line Corridor. Local Routes 7 and 10 would retain their current frequencies. Route 20 would operate with split trips with 15-minute frequency north of Downtown (from Downtown to the existing northern terminus at Lyndon B. Johnson High School). Every other Route 20 trip would travel to AUS, effectively providing 30-minute frequency south of Downtown. The modeling team worked with Capital Metro service planning staff to identify the alignment and station locations for this alternative.

Table 1. TSM Assumptions

Configuration	Mixed Traffic	
Station Pairs	28	
Weekday Headway (5:00am – 6:30am)	15 minute	
Weekday Headway (6:30am – 7:30pm)	10 minute	
Weekday Headway (7:30pm – 3:50am)	15 minute	
End to End Travel Time	**Northbound**	**Southbound**
	54:39	57:08

Build Alternative 1 – Trinity Street

Build Alternative 1 (**Figure 2**) alternative follows East Riverside Drive until just beyond East Bouldin Creek, where it would turn along a currently unnamed street at the existing signalized intersection. From here, the Blue Line Corridor crosses the Colorado River roughly in-line with Trinity Street, with the most direct path compared to other alternatives landing on the northern shore of the Colorado River roughly at the site of the current Waller Creek Boathouse. From there, the Blue Line Corridor would continue along Trinity Street through Downtown to connect to the corridor north of the University of Texas at Austin and then terminates at ACC Highland. The alternative also includes an alignment of the Blue Line Corridor along 4th Street connecting the Trinity alignment to Republic Square on the western side of the Central Business District.

Figure 2. Blue Line Build Alternative 1 Trinity (With Alignment Options)

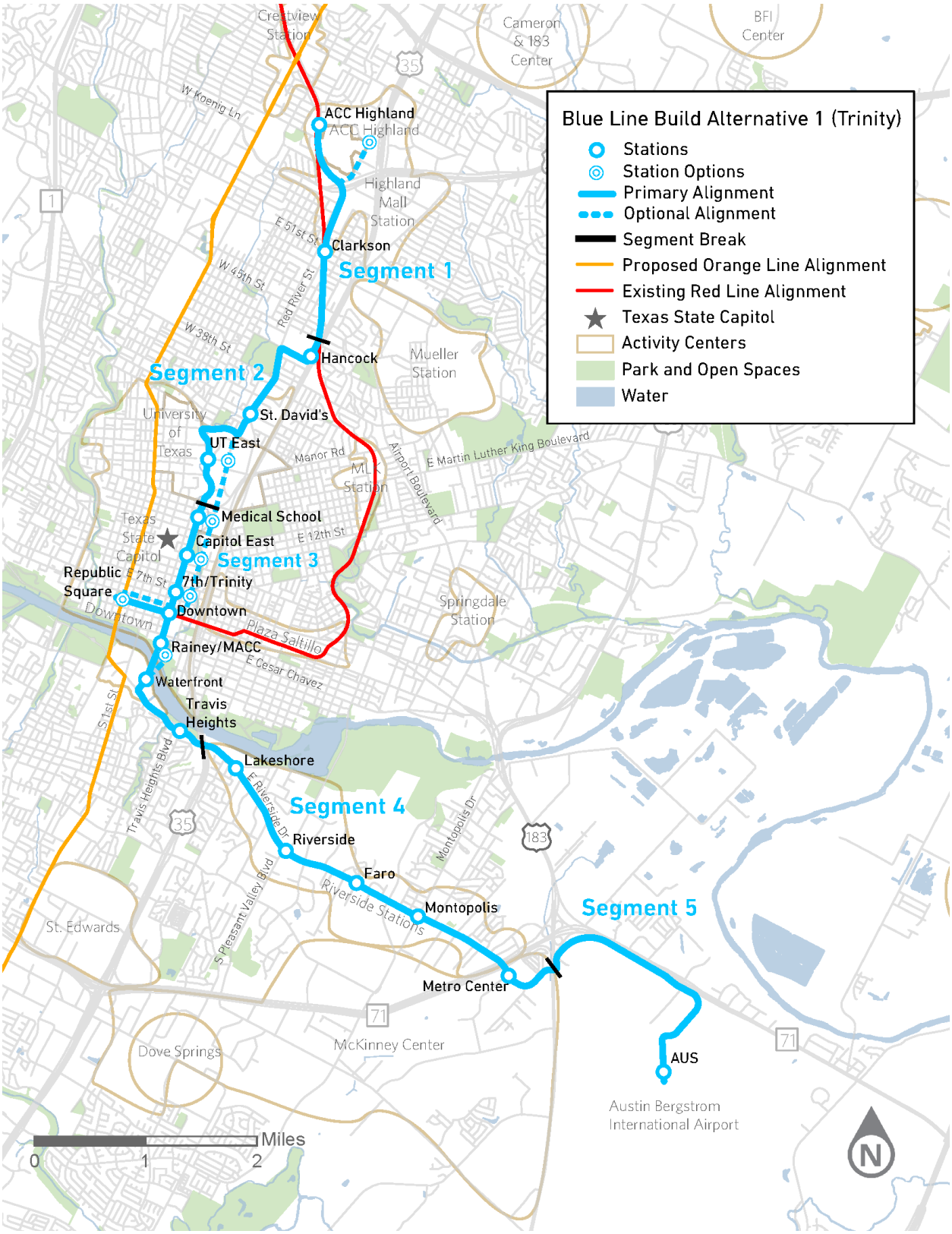


Figure 3. Blue Line Build Alternative 2 South 1st Street (With Alignment Options)

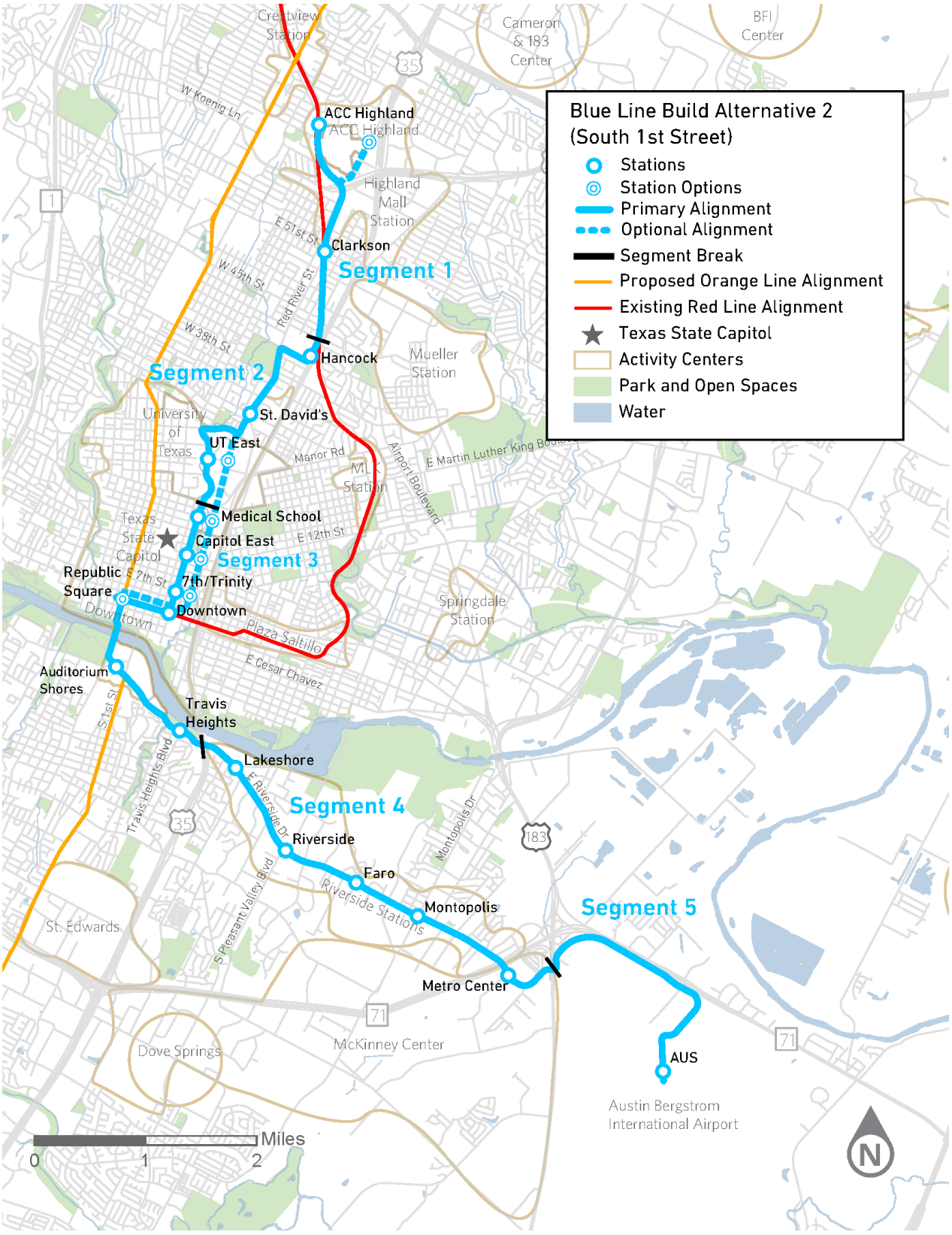


Table 2. Build Alternative 1 (Trinity) Assumptions

Configuration	Fixed Guideway	
Station Pairs	19	
Weekday Headway (5:00am – 6:30am)	15 minute	
Weekday Headway (6:30am – 7:30pm)	10 minute	
Weekday Headway (7:30pm – 3:50am)	15 minute	
End to End Travel Time (Street-Level)	**Northbound**	**Southbound**
BRT	43:02	41:52
LRT	45:52	44:12
End to End Travel Time (Grade Separated)	**Northbound**	**Southbound**
BRT	35:06	33:56
LRT	37:44	36:04

Build Alternative 2 – South 1st Street River Crossing

Build Alternative 2 (see **Figure 3**) would take the Blue Line Corridor further along Riverside Drive, meeting the Orange Line at South Congress Avenue, and then sharing the Orange Line Corridor alignment across the Colorado River. In this alternative, the Blue Line Corridor would then diverge from the Orange Line Corridor at or near Republic Square, with either a shared station or separate station facilitating transfers to and from each dedicated transitway, that could also facilitate transfers to local buses. The Blue Line Corridor would continue along or near 4th Street to reach the east side of the Central Business District and connect to the Downtown Station of the Red Line. The Blue Line Corridor would then continue north along the same alignment assumed in the Vision Plan to reach UT and terminate at ACC Highland.

Table 3. Build Alternative 2 (South 1st Street) Assumptions

Configuration	Fixed Guideway	
Station Pairs	18	
Weekday Headway (5:00am – 6:30am)	15 minute	
Weekday Headway (6:30am – 7:30pm)	10 minute	
Weekday Headway (7:30pm – 3:50am)	15 minute	
End to End Travel Time (Street-Level)	**Northbound**	**Southbound**
BRT	40:45	39:05
LRT	40:35	38:55
End to End Travel Time (Grade Separated)	**Northbound**	**Southbound**
BRT	33:07	31:47
LRT	32:54	31:14

1.6 STOPS Ridership Forecast Results

The following section summarizes the ridership results from the STOPS model for each alternative. The results for each alternative and each FGS is provided below.

No Build

The following table summarizes the No Build ridership results. The results shown in this table are used to determine the net increase in ridership in each of the build scenarios. The Blue Line Corridor ridership is compared to Route 20 and 7 in the summary tables for each scenario.

Table 4. No Build Ridership Results

Corridor Ridership	2015	2028	2040
Route 20	4,500	7,900	14,100
Route 7	6,200	7,700	9,300
System	**104,600**	**147,100**	**192,800**

TSM

The TSM scenario was modeled without using a fixed guideway setting to represent a MetroRapid level of investment. This scenario results in an increase in ridership in the Blue Line Corridor of 3,900 in 2015 and 4,800 in 2040.

Table 5. TSM Ridership Results

Corridor Ridership	2015	2028	2040
Blue Line (MetroRapid)	4,500	6,100	9,100
Route 20	4,600	7,500	11,200
Route 7	5,500	6,800	7,900
Corridor Net Increase	**3,900**	**6,300**	**4,800**
System	**106,100**	**149,300**	**196,300**
Systemwide Net Increase	***1,500***	**2,200**	**3,500**

Build Alternative 1 – Trinity Street

The following tables summarize the ridership results for Alternative 1 for BRT and LRT using both Street-Level and Grade Separated stations. In each alternative large growth is projected between the base year (2015) and horizon year 2040. The increase in systemwide ridership ranges from 92% to 94%. The increase in corridor ridership ranges from 122% to 146%. These significant increases are driven by the socio-economic data that STOPS utilizes from the CAMPO model.

Table 6. Build Alternative 1 (Trinity) Street-Level Ridership Results

Corridor Ridership	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Corridor Ridership	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
Blue Line	12,400	18,700	30,500	16,700	24,500	38,400	20,800	30,300	46,100
Route 20	3,600	6,200	9,300	3,600	6,100	9,100	3,600	6,200	9,200
Route 7	5,200	6,400	7,400	5,200	6,300	7,300	5,200	6,300	7,400
Corridor Net Increase	***10,500***	***17,200***	***23,800***	***14,700***	***22,800***	***31,400***	***18,900***	***28,700***	***39,300***
System	**111,300**	**159,100**	**213,700**	**114,000**	**163,200**	**222,000**	**118,100**	**170,100**	**229,000**
Systemwide Net Increase	***6,700***	***12,000***	***20,900***	***9,400***	***16,100***	***27,200***	***13,500***	***23,000***	***36,200***

Table 7. Build Alternative 1 (Trinity) Grade Separated Results

Corridor Ridership	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Corridor Ridership	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
Blue Line	14,600	22,000	35,800	19,700	28,400	44,000	21,100	30,300	45,900
Route 20	3,600	6,100	9,100	3,500	6,100	9,100	3,600	6,200	9,200
Route 7	5,000	6,200	7,000	5,100	6,200	7,100	5,000	6,100	7,200
Corridor Net Increase	**12,500**	**20,200**	**28,500**	**17,600**	**26,600**	**36,800**	**19,000**	**28,500**	**38,900**
System	**112,700**	**161,500**	**217,700**	**116,200**	**166,900**	**225,400**	**117,400**	**168,800**	**227,600**
Systemwide Net Increase	**8,100**	**14,400**	**24,900**	**11,600**	**19,800**	**32,600**	**12,800**	**21,700**	**34,800**

The forecasts for Alternative 1 (Trinity) LRT 0.8 show the Grade Separated options producing similar ridership as the Street-Level options, in contrast to other alternatives where Grade Separated produced ridership increases over Street-Level. When modeling Grade Separated stations, it was assumed that these stations would be one level above ground and were coded accordingly. For a station one level above grade STOPS adds 30 seconds to the travel time to account for the walk time. STOPS also weights walk time more heavily than in-vehicle time, such that one minute of additional walk time is treated as 1.5 minutes of additional overall travel time. With a 30-second walk time penalty at each end of a trip, the weighted additional travel time is 1.5 minutes for grade separated. Grade Separated alternatives are also assumed to have faster speeds, and this tends to offset the additional walk time, especially for longer trips. A review of the station to station matrices showed a reduction in some shorter trips in the model. These are trips that only ride a few stops on the route, where the increased walk time may not be offset by the faster in-vehicle running time. There is also some model noise occurring related to how STOPS determines trip paths. STOPS chooses a random time for the end of a trip in the peak and off peak times. When a route is introduced that has a faster running time this can cause some missed transfer connections, resulting in longer travel times for trips that involve a transfer. A review of the transfers at the stations showed a reduction in transfers between the Street-Level and Grade Separated alternatives. Overall, the difference in the Alternative 1 (Trinity) LRT Street-Level and Grade Separated results is very small, and the forecasts should be treated as virtually the same.

Table 8. Build Alternative 1 (Trinity) Street-Level Station Results

	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Station	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
AUS Terminal	600	870	1,260	760	1,080	1,570	840	1,200	1,700
Metro Center (WB)	70	100	150	80	130	190	70	140	210
Metro Center (EB)	180	270	350	200	310	410	220	350	430
Montopolis (WB)	360	550	670	430	630	790	460	720	870
Montopolis (EB)	220	540	1,320	300	730	1,610	440	1,050	2,140
Faro (WB)	490	590	760	1,190	1,300	1,440	1,510	1,570	1,610
Faro (EB)	170	790	1,630	250	1,070	2,130	310	1,270	2,470
Riverside/Pleasant Valley (WB)	540	750	1,290	670	910	1,810	690	910	1,130
Riverside/Pleasant Valley (EB)	610	800	1,430	800	1,090	1,850	950	1,300	2,190
Lakeshore (WB)	300	500	870	370	580	990	440	740	1,910
Lakeshore (EB)	180	250	310	240	340	410	290	430	520
Travis Heights (WB)	40	70	120	50	90	140	90	120	170
Travis Heights (EB)	290	290	360	350	360	430	400	460	500
South Central Waterfront (NB)	80	100	130	110	130	170	110	130	180
South Central Waterfront (SB)	60	140	620	100	200	760	110	220	840
Rainey/MACC (NB)	50	50	40	60	60	60	50	60	80
Rainey/MACC (SB)	60	30	50	80	40	60	80	60	100
Republic Square (NB/SB)	920	1,600	2,760	1,190	2,090	3,600	1,610	2,820	5,010
Downtown Station (SB)	680	770	1,270	750	840	1,360	770	910	1,310
Downtown Station (NB)	400	690	1,410	420	710	1,430	370	610	1,180
7th & Trinity (SB)	220	330	400	280	420	520	260	420	480
7th & Trinity (NB)	180	160	180	210	190	210	320	290	350
Capitol East (SB)	190	210	280	250	300	370	370	480	640
Capitol East (NB)	50	90	220	60	110	280	110	170	250
Medical School (SB)	320	470	430	440	640	590	560	780	730
Medical School (NB)	370	440	830	590	720	1,160	620	820	1,560
UT East (SB)	1,130	1,650	2,170	1,380	1,950	2,530	1,650	2,200	2,800
UT East (NB)	480	720	2,320	1,170	1,540	3,550	1,680	2,150	4,000
St. David's (SB)	270	320	440	370	430	590	540	640	840
St. David's (NB)	230	340	660	350	500	870	720	1,020	1,510
Hancock (SB)	570	670	820	650	800	970	790	970	1,160
Hancock (NB)	170	150	170	200	170	210	260	240	330
Clarkson (SB)	350	500	680	480	660	820	580	800	970
Clarkson (NB)	110	210	220	150	260	280	210	340	380
ACC Highland	1,480	2,560	3,840	1,780	2,980	4,300	2,290	3,760	5,590

Table 9. Build Alternative 1 (Trinity) Grade Separated Station Results

	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Station	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
AUS Terminal	640	930	1,410	810	1,160	1,730	870	1,240	1,830
Metro Center (WB)	70	100	160	80	130	190	90	160	230
Metro Center (EB)	180	260	330	210	320	400	240	390	490
Montopolis (WB)	480	760	950	570	890	1,110	560	810	1,000
Montopolis (EB)	340	720	1,570	440	950	1,920	430	990	1,730
Faro (WB)	750	910	1,100	1,760	1,790	1,810	1,940	1,940	1,880
Faro (EB)	200	880	1,650	290	1,170	2,190	380	1,430	2,580
Riverside/Pleasant Valley (WB)	620	850	1,600	750	1,020	2,070	780	1,040	2,180
Riverside/Pleasant Valley (EB)	650	860	1,550	820	1,120	1,960	1,000	1,350	2,130
Lakeshore (WB)	320	530	900	390	600	1,020	390	610	1,030
Lakeshore (EB)	220	320	400	290	420	520	300	450	570
Travis Heights (WB)	150	200	260	180	240	300	90	140	200
Travis Heights (EB)	260	320	350	330	390	420	220	280	320
South Central Waterfront (NB)	90	110	150	120	140	190	140	160	210
South Central Waterfront (SB)	40	120	600	80	170	740	110	230	880
Rainey/MACC (NB)	40	40	40	50	40	50	70	50	60
Rainey/MACC (SB)	60	30	60	80	50	80	120	110	150
Republic Square (NB/SB)	1,030	1,750	3,170	1,300	2,220	3,960	1,530	2,540	4,440
Downtown Station (SB)	590	750	1,140	660	830	1,240	520	630	950
Downtown Station (NB)	310	710	1,400	330	720	1,410	360	690	1,170
7th & Trinity (SB)	220	310	380	290	400	520	400	530	670
7th & Trinity (NB)	220	190	240	250	210	270	210	170	190
Capitol East (SB)	220	270	380	280	350	470	260	340	430
Capitol East (NB)	90	160	280	120	190	330	100	170	280
Medical School (SB)	450	560	600	570	730	780	640	820	880
Medical School (NB)	300	410	1,090	450	600	1,440	490	600	910
UT East (SB)	1,030	1,360	1,740	1,280	1,670	2,070	1,480	2,000	2,630
UT East (NB)	860	1,330	3,060	1,880	2,340	4,190	2,120	2,610	4,820
St. David's (SB)	280	310	470	380	430	620	460	530	750
St. David's (NB)	520	790	1,220	680	980	1,470	490	680	1,160
Hancock (SB)	580	720	870	680	870	1,030	790	1,030	1,240
Hancock (NB)	230	190	260	260	230	300	270	240	310
Clarkson (SB)	390	550	770	510	710	900	600	840	1,000
Clarkson (NB)	140	260	330	180	320	390	190	310	350
ACC Highland	2,010	3,280	5,290	2,370	3,820	5,920	2,450	4,000	6,210

The highest ridership occurs at the stops between Montopolis and Pleasant Valley, Republic Square, Downtown Station, Texas Memorial Stadium, and ACC Highland. ACC Highland produces the highest ridership across all stops. Part of this is a result of this location having a park and ride coded into the model. The park and ride catchment area was reduced to limit some of the demand at the location. Left unconstrained, STOPS will look at the trips and allow a large portion to park and ride if it is more

competitive than using an automobile for the entire trip. As the project advances, the park and ride at this location should be further constrained to match the size and daily parking cost of the facility.

The model is likely under-projecting the ridership that would occur at South Waterfront, Rainey Street and AUS. With respect to South Waterfront and Rainey Street, the 2040 CAMPO model does not yet reflect the projected development anticipated to occur near these two stations. For AUS, the model is likely under-projecting because the current model is calibrated to the existing transit ridership that occurs on Route 20. A fixed guideway system would provide a more appealing option to users (i.e. employees, passengers) of the airport when they are arriving and leaving.

Build Alternative 2 – South 1st Street River Crossing

The following tables summarize the ridership results for Alternative 2 (South 1st Street) for BRT and LRT using both Street-Level and Grade Separated stations. The Alternative forecasts a slightly higher ridership than Alternative 1 for all options. This is a result of the faster travel time and better connectivity between key destination that results from the decreased travel time. In each alternative, large growth is projected between the base year 2015 and 2040. The increase in systemwide ridership ranges from 93% up to 96%. The increase in Blue Line Corridor ridership ranges from 113% to 147%.

Table 10. Build Alternative 2 (South 1st Street) Street-Level Results

Corridor Ridership	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Corridor Ridership	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
Blue Line	13,100	20,200	32,400	18,000	26,500	41,100	22,000	32,100	48,500
Route 20	3,600	6,100	9,100	3,500	6,000	8,900	3,500	6,100	9,000
Route 7	5,000	6,100	7,200	4,900	6,100	7,300	4,900	6,100	7,300
Corridor Net Increase	**11,000**	**18,300**	**25,300**	**15,700**	**24,500**	**33,900**	**19,700**	**30,200**	**41,400**
System	**111,400**	**159,700**	**214,500**	**114,400**	**164,700**	**221,900**	**118,100**	**170,600**	**230,400**
Systemwide Net Increase	**6,800**	**12,600**	**21,700**	**9,800**	**17,600**	**29,100**	**13,500**	**23,500**	**37,600**

Table 11. Build Alternative 2 (South 1st Street) Grade Separated Results

Corridor Ridership	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Corridor Ridership	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
Blue Line	15,600	23,300	37,300	20,800	29,600	45,400	24,500	34,800	52,300
Route 20	3,500	6,000	9,000	3,500	6,000	9,000	3,500	6,000	8,900
Route 7	5,000	6,100	7,000	5,100	6,200	7,200	5,200	6,300	7,400
Corridor Net Increase	***13,400***	***21,300***	***29,900***	***18,700***	***27,700***	***38,200***	***22,500***	***33,000***	***45,200***
System	**113,500**	**162,500**	**218,800**	**117,200**	**168,000**	**226,700**	**121,200**	**174,100**	**235,000**
Systemwide Net Increase	***8,900***	***15,400***	***26,000***	***12,600***	***20,900***	***33,900***	***16,600***	***27,000***	***42,200***

Table 12. Build Alternative 2 (South 1st Street) Street-Level Station Results

	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Station	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
AUS	630	910	1,360	790	1,120	1,660	910	1,290	1,890
Metro Center (WB)	80	120	170	90	160	220	100	190	260
Metro Center (EB)	170	260	330	200	310	410	220	380	490
Montopolis (WB)	400	610	720	480	710	840	550	780	940
Montopolis (EB)	310	680	1,270	400	930	1,700	500	1,170	2,130
Faro (WB)	620	750	950	1,520	1,600	1,700	2,060	2,090	2,110
Faro (EB)	220	940	1,740	320	1,270	2,270	390	1,510	2,690
Riverside/Pleasant Valley (WB)	540	750	1,510	670	910	1,980	800	1,130	2,360
Riverside/Pleasant Valley (EB)	630	820	1,370	820	1,100	1,780	970	1,340	2,130
Lakeshore (WB)	300	500	870	360	570	980	410	640	1,070
Lakeshore (EB)	200	290	370	260	380	480	300	450	570
Travis Heights (WB)	50	90	160	70	120	190	100	140	220
Travis Heights (EB)	160	160	240	210	210	340	290	300	450
South Central Waterfront (NB)	300	440	540	350	500	650	410	610	830
South Central Waterfront (SB)	110	280	760	160	370	980	210	450	1,140
Republic Square (SB)	530	980	1,320	680	1,220	1,680	830	1,470	2,090
Republic Square (NB)	470	780	1,770	580	1,000	2,300	710	1,240	2,750
Downtown Station (SB)	570	730	990	640	810	1,070	710	900	1,200
Downtown Station (NB)	360	750	1,660	380	770	1,710	400	790	1,760
7th/Trinity (SB)	180	260	440	240	360	590	310	450	690
7th/Trinity (NB)	150	120	140	180	140	170	210	170	200
Capitol East (SB)	190	230	300	250	310	390	290	360	460
Capitol East (NB)	60	90	170	70	120	210	90	150	360
Medical School (SB)	400	580	570	520	740	730	640	880	860
Medical School (NB)	270	370	620	450	580	920	560	720	1,090
UT East (SB)	1,100	1,440	1,810	1,360	1,770	2,210	1,570	2,020	2,470
UT East (NB)	760	1,210	3,150	1,670	2,180	4,420	2,260	2,790	5,250
St. David's (SB)	300	350	490	410	480	650	550	660	870
St. David's (NB)	260	410	790	400	590	1,020	630	930	1,420
Hancock (SB)	630	780	960	720	930	1,140	830	1,090	1,320
Hancock (NB)	190	160	190	220	190	240	250	210	280
Clarkson (SB)	360	520	690	490	680	840	600	830	1,000
Clarkson (NB)	110	200	210	160	260	270	200	320	370
ACC Highland	1,570	2,530	3,820	1,900	2,990	4,350	2,220	3,430	4,850

Table 13. Build Alternative 2 (South 1st Street) Grade Separated Station Results

	BRT Fixed Guideway Setting 0.3			BRT Fixed Guideway Setting 0.6			LRT Fixed Guideway Setting 0.8		
Station	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**	**2015**	**2028**	**2040**
AUS	700	1,000	1,500	880	1,240	1,830	1,020	1,430	2,100
Metro Center (WB)	80	120	180	90	150	210	100	170	250
Metro Center (EB)	190	280	350	220	330	420	250	400	520
Montopolis (WB)	520	810	1,020	610	930	1,170	710	1,090	1,390
Montopolis (EB)	330	710	1,480	420	930	1,800	500	1,140	2,080
Faro (WB)	870	1,030	1,230	1,870	1,890	1,910	2,300	2,230	2,130
Faro (EB)	230	990	1,830	310	1,270	2,320	370	1,490	2,730
Riverside/Pleasant Valley (WB)	610	820	1,760	740	990	2,230	830	1,100	2,510
Riverside/Pleasant Valley (EB)	670	890	1,550	850	1,140	1,950	990	1,370	2,310
Lakeshore (WB)	350	570	970	410	650	1,090	450	720	1,190
Lakeshore (EB)	220	330	410	290	430	520	350	520	630
Travis Heights (WB)	150	220	300	190	260	350	220	290	400
Travis Heights (EB)	380	370	450	460	430	540	550	530	660
South Central Waterfront (NB)	280	430	540	330	480	590	380	560	690
South Central Waterfront (SB)	260	450	910	320	540	1,090	370	620	1,240
Republic Square (SB)	560	1,000	1,530	710	1,230	1,840	860	1,480	2,040
Republic Square (NB)	620	980	2,190	760	1,230	2,730	840	1,390	3,110
Downtown Station (SB)	630	840	1,300	700	920	1,400	780	1,010	1,520
Downtown Station (NB)	300	590	1,130	320	610	1,160	330	610	1,200
7th/Trinity (SB)	250	320	410	320	420	550	420	550	760
7th/Trinity (NB)	190	150	170	220	170	190	240	180	240
Capitol East (SB)	220	260	350	290	330	430	340	400	550
Capitol East (NB)	70	120	210	100	150	250	120	190	300
Medical School (SB)	520	650	670	640	820	840	740	950	970
Medical School (NB)	390	490	1,120	580	730	1,440	730	920	1,700
UT East (SB)	1,000	1,420	1,920	1,240	1,720	2,250	1,470	2,020	2,610
UT East (NB)	860	1,290	2,820	1,830	2,200	3,910	2,300	2,660	4,480
St. David's (SB)	280	320	470	380	440	620	470	550	770
St. David's (NB)	520	750	1,150	670	930	1,390	820	1,120	1,660
Hancock (SB)	590	750	900	690	900	1,070	800	1,070	1,280
Hancock (NB)	210	180	230	230	210	280	260	250	320
Clarkson (SB)	400	570	790	520	730	930	630	880	1,080
Clarkson (NB)	150	250	300	180	300	350	210	330	380
ACC Highland	2,040	3,270	5,190	2,410	3,790	5,780	2,810	4,400	6,470

Similar to Alternative 1, the highest ridership occurs at the stops between Montopolis and Pleasant Valley, Republic Square, Downtown Station, Texas Memorial Stadium, and ACC Highland. The same approach regarding the park and ride at ACC Highland in Alternative 1 was used in the modeling of Alternative 2. As discussed in the Alternative 1 results, the station ridership for the airport is likely under-projected due to the transit trips being based on the existing ridership to the airport.

1.7 Ridership Summary

The ridership forecasts represent a range of reasonable results for the implementation of either fixed guideway BRT or LRT. The forecasts shown using an FGS of 0.3 to 0.6 represent the reasonable range of ridership potential for BRT. The forecasts using an FGS of 0.6 to 0.8 should be considered to represent the reasonable range of ridership potential for LRT.

Of the two alignments, Alternative 2 results in the higher ridership. Alternative 1 has a longer travel time due to the segment that goes to Republic Square from Trinity Street. The time for the vehicle to turn around and return to Trinity Street causes the slower travel time. Due to the faster travel times and direct routing of Alternative 2, it results in better connectivity to key destinations resulting in the higher ridership.

The Grade Separated scenarios result in estimated ridership that is typically 10% to 18% higher than Street-Level. This is attributable to somewhat faster travel times assumed under the Grade Separated alternatives, which is partly offset by the longer walk times associated with Grade Separated stations. One scenario (Alternative 1 LRT) resulted in almost no increase in ridership between Street-Level and Grade Separated. Generally, the offsetting effects of shorter running times and longer walking times may produce unpredictable results, compounded by unintended "model noise" related to transfer connections and to the way STOPS determines travel paths based on random departure times. In general, the Grade Separated alternatives should be assumed to produce modestly higher ridership than Street-Level.

The large growth in the forecasts between 2015 and 2040 is a result of the underlying demographic projections contained in the CAMPO regional model. STOPS utilize the population and employment from the CAMPO model as an input. In developing the future year forecasts, STOPS utilizes this input in developing the growth rates for the forecasts. The large growth projections for population and employment are carried into the ridership forecasts.

1.8 CAMPO Model

The modeling team coordinated closely with Capital Metro staff and the Orange Line modeling team. All parties agree that the STOPS model should be utilized to develop transit ridership forecasts. STOPS is a stand-alone ridership model specifically created by FTA to evaluate new transit projects. The Blue Line Corridor STOPS model uses the 2015 Capital Metro Origin-Destination (OD) Survey to inform local transit travel behavior and uses Census Transportation Planning Products data to inform non-transit travel behavior. STOPS also utilizes demographic data from the CAMPO model to understand existing development and growth projections in the Austin area. The CAMPO model is not tailored to forecast transit ridership on modes that do not exist in the base year, whereas STOPS pulls from the experience of other regions that have implemented projects on such modes. As the FTA-preferred model, it was determined that STOPS is better suited to forecast transit ridership and should be carried forward for use on the Blue Line Corridor Project.