

November 28, 2022

EASTLAND SHOPPING CENTER – I-1 ZONE PARKING DEMAND MITIGATION STUDY

This Parking Demand Mitigation Study is provided in association with the proposed zone change for a portion of the Eastland Shopping Center from Neighborhood Business (B-1) Zone to Light Industrial (I-1) Zone consisting of 1.8 acres. The shopping center is located at 1301 Winchester Road in the northeast quadrant of New Circle Road. The portion of the property subject to the zone change fronts on Industry Road adjacent to the KAWC water tower. This parking study has been prepared to provide guidance to determine the necessary parking facilities for the project in accordance with Article 16-14 Parking Demand Mitigation Studies of the Zoning Ordinance.

The preliminary Development Plan associated with the zone change proposes 32,500 square feet of flex warehouse space with 53 parking spaces and 5 bike parking spaces. The anticipated users of the flex warehouse space are "Specialty Trade Contractors".

The study follows the format outlined in the Zoning Ordinance.

16-14 (a)

1) The *Parking Generation Manual*, 5th Edition, from the Institute of Transportation Engineers (ITE) was reviewed to provide a basis for anticipated parking for the use.

The *Parking Generation Manual* provides the following description of a specialty trade contractor.

"A specialty trade contractor is a business primarily involved in providing contract repairs and services to meet industrial or residential needs. This land use includes businesses that provide the following services: plumbing, heating and cooling, machine repair, electrical and mechanical repair, industrial supply, roofing, locksmith, weed and pest control, and cleaning."

The Manual provides parking rates for Specialty Contractors based on 1,000 square feet of gross floor area (GFA) and number of employees. For purposes of this study the GFA rates will be utilized.

Average Rate Range of Rates $33^{rd} / 85^{th}$ Percentile 1.76 0.68 - 6.25 0.96 / 4.06



Based on the proposed 32,500 square feet of flex warehouse proposed for the project the suggested parking rates indicated are as follows

Average Rate	Range of Rates	33 rd / 85 th Percentile
1.76	0.68 - 6.25	0.96 / 4.06
57 spaces	22 – 203 Spaces	31 / 132 Spaces

The Manual defines the 33rd / 85th percentiles as follows:

33rd Percentile— the point at which 33 percent of the values fall at or below and 67 percent of the values are above.

85th Percentile— the point at which 85 percent of the values fall at or below and 15 percent of the values are above.

This number is not intended to recommend a policy about the level of parking that should be supplied. It is provided solely as qualitative reference for the analyst.

The Manual indicates parking demand for specialty trade contractors to be largely during typical business hours from 8:00 a.m. to 4:00 p.m. with peak time being 11:00 a.m.

The full land use description and data points for specialty trade contractors from the Manual are included at the end of this study.

- 2) Parking demand for the project is anticipated to be consistent with the average rate indicated per the *Parking Generation Manual* with a need for approximately 57 parking spaces.
- 3) The Preliminary Development Plan proposes 53 parking spaces and 5 bike parking spaces on site. The 53 parking spaces include 9 spaces provided inside the individual warehouse buildings for business vehicles and 3 handicap parking spaces. The 5 bike parking spaces are provided for short term parking near the front doors of the businesses between the 2 buildings. Long term bike parking can be provided by the individual businesses inside the warehouse building based on business personnel needs.



Additional shared parking is available within the shopping center for peak parking demand that may arise from time to time.

- 4) Reduction of vehicle trips will be enabled by provision of on-site bike parking spaces and sidewalk improvements along Industry Road. A bus stop is provided within the Eastland Shopping Center parking lot and several other bus stop locations are provided nearby offering two different routes.
- 5) Transportation options will be evident through the provision of on-site bike parking spaces, sidewalk improvements, and on-site and near site bus stop locations.
- 6) Projected mode share options for site users other than individual private vehicles include bus, bike, walking, carpooling, and direct to off-site job location.

Site users may benefit from use of two LexTran Routes that serve the property. The Eastland Route has three stops in the area and the Northside Connector provides one stop. All four transit stops are within .25 mile of the project.

Eastland Route

Eastland @ Industry Outbound – Stop 1492 Eastland @ Eastland Shopping Center – Stop 1493 Eastland Shopping Center – Stop 24

Northside Connector

Eastland Drive @ Commercial - Stop 5004

Designated bike routes are located along Eastland Drive to the north of the site and Winchester Road to the south. Both routes are within 0.1 mile of the project site.

Several residential neighborhoods are located within 1 mile of the property enabling users to walk to the job site. The Lexington Manor neighborhood including the Ashton Drive area and the Hillcrest Avenue area are located within a half mile of the site. The Henry Clay neighborhood to Liberty Road is also only a half mile away. The Eastland Park and the Meadows neighborhoods are only 1 mile away.

Specialty trade contractors are frequent carpool participants for both personal and job efficiency purposes. Additionally, it is not unusual for specialty trade contractors to go directly to the job site and not frequent the shop/warehouse on a daily basis.



Summary

The proposed project consisting of 32,500 square feet for specialty trade contractors and provides 53 vehicle parking spaces and 5 bike parking spaces. The location allows for shared parking spaces within the Eastland Shopping Center. The proposed parking is consistent with the average rate of parking suggested by the ITE Parking Generation Manual. Although the provided parking is on the lower end of the parking demand ranges of the Manual the opportunities for alternate transportation options available to the users, including bike, bus, walking, and carpooling along with shared parking available will supplement or fulfill any additional need for the project.



ATTACHMENTS

- 1. The *Parking Generation Manual*, 5th Edition, Institute of Transportation Engineers. Excerpts for Land Use: 180 Specialty Trade Contractor
- 2. Bus Stops Map
- 3. Lextran Northside Connector Route 17 brochure
- 4. Lextran Eastland Route 9 brochure
- 5. Bike Route Map
- 6. Neighborhoods Within Walking Distance Map



Parking Generation Manual 5th Edition



Parking Generation Manual, 5th Edition

The Institute of Transportation Engineers (ITE) is an international membership association of transportation professionals who work to improve safety and mobility for all transportation system users and help build smart and livable communities. Through its products and services, ITE promotes professional development and career advancement for its members, supports and encourages education, identifies necessary research, develops technical resources including standards and recommended practices, develops public awareness programs, and serves as a conduit for the exchange of professional information. ITE develops the next generation of transportation professionals through its K–12 STEM program and its more than 150 student chapters.

Founded in 1930, ITE is a community of transportation professionals including, transportation engineers, transportation planners, consultants, educators, technologists, and researchers. Through meetings, seminars, publications, and a network of more than 15,500 members working in more than 90 countries, ITE connects you to a world of ideas, people, and resources.



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Land Use: 180 Specialty Trade Contractor

Description

A specialty trade contractor is a business primarily involved in providing contract repairs and services to meet industrial or residential needs. This land use includes businesses that provide the following services: plumbing, heating and cooling, machine repair, electrical and mechanical repair, industrial supply, roofing, locksmith, weed and pest control, and cleaning.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday at 18 general urban/suburban study sites.

Hour Beginning	Percent of Weekday Peak Parking Demand
12:00–4:00 a.m.	0
5:00 a.m.	0
6:00 a.m.	. 5
7:00 a.m.	39
8:00 a.m.	83
9:00 a.m.	97
10:00 a.m.	99
11:00 a.m.	100
12:00 p.m.	91
1:00 p.m.	94
2:00 p.m.	90
3:00 p.m.	92
4:00 p.m.	88
5:00 p.m.	64
6:00 p.m.	1
7:00 p.m.	0
8:00 p.m.	0
9:00 p.m.	0
10:00 p.m.	0
11:00 p.m.	0

Additional Data

The sites were surveyed in the 2010s in Texas.

Source Numbers

570, 571



Specialty Trade Contractor (180)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

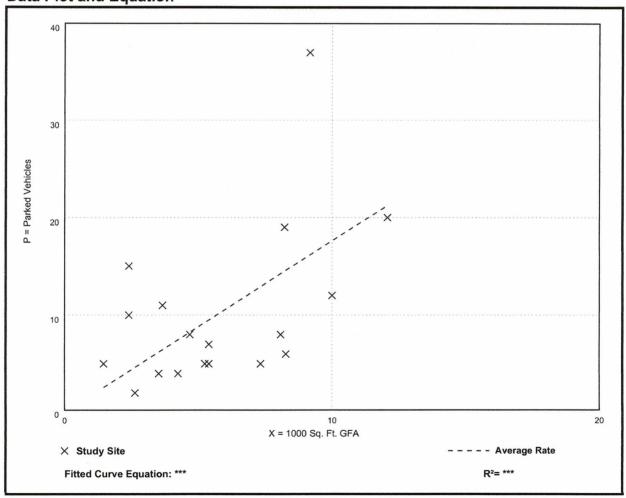
Peak Period of Parking Demand: 9:00 a.m. - 4:00 p.m.

Number of Studies: 18 Avg. 1000 Sq. Ft. GFA: 5.8

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.76	0.68 - 6.25	0.96 / 4.06	***	1.29 (73%)

Data Plot and Equation



Specialty Trade Contractor (180)

Peak Period Parking Demand vs: Employees

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

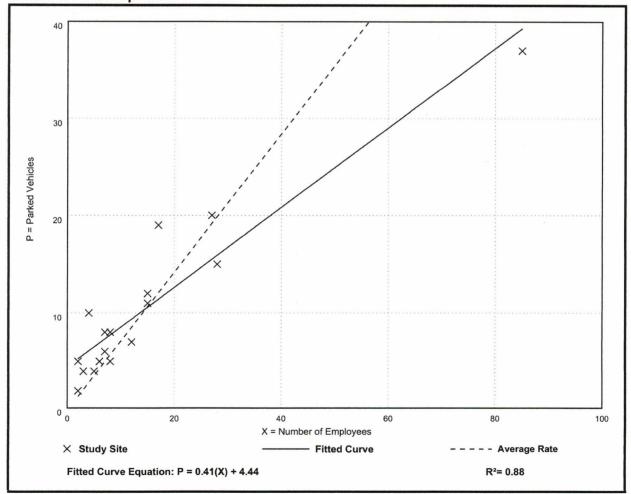
Peak Period of Parking Demand: 9:00 a.m. - 4:00 p.m.

Number of Studies: 17 Avg. Num. of Employees: 15

Peak Period Parking Demand per Employee

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.71	0.44 - 2.50	0.74 / 1.68	***	0.38 (54%)

Data Plot and Equation





Monday - Friday Schedule



	OUTBOUND					11	IBOUN	D	
Α	В	С	D	E	E	С	F	В	Α
Walmart North Park	Radcliffe @ Bishop	Parkside @ Allen	Bryan Station High School	Eastland @ Commercial	Eastland @ Commercial	Bryan Station High School	Allen @ Parkside	Radcliffe @ Bishop	Walmart North Park
-:	-:-	-:-	-:	;	:	:	6:22A	6:29A	6:35A
6:40A	6:46A	6:53A	6:59A	7:07A	7:07A	7:15A	7:22A	7:29A	7:35A
7:45A	7:51A	7:58A	8:04A	8:12A	8:12A	8:20A	8:27A	8:34A	8:40A
8:55A	9:01A	9:08A	9:14A	9:22A	9:22A	9:30A	9:37A	9:44A	9:50A
-:	-:-	-:-	-:	-:	-:	-:-	-:	-:-	-:-
1:35P	1:41P	1:48P	1:54P	2:02P	2:02P	2:10P	2:17P	2:24P	2:30P
2:45P	2:51P	2:58P	3:04P	3:12P	3:12P	3:20P	3:27P	3:34P	3:40P
3:55P	4:01P	4:08P	4:14P	4:22P	4:22P	4:30P	4:37P	4:44P	4:50P
5:05P	5:11P	5:18P	5:24P	5:32P	5:32P	5:40P	5:47P	5:54P	6:00P

General Information

Fare & Pass Menu Menu de Tarifas y Pases de Autobús

	Adult Youth* Senior Citizens**, People v (Ages 7-18) Disabilities*, Medicare Cardholders* and Veteran:			
	Adulto	Jovenes+ (Edad 7-18)	Mayores*^, Discapacitados*, Medicare* y Veteranos*<	
Standard Ride Fare Tarifa Estándar de Viaje	\$1.00	\$0.80	\$0.50	
Day Pass Pase de un Día	\$3.00	\$3.00	\$1.50	
20 Ride Pass Pase de 20 Viajes	\$15.00	\$15.00	\$15.00	
30 Day Pass Pase de 30 Días	\$30.00	\$20.00	\$15.00	
Class Pass Pase de Clase (Estudiante)	One Semester - \$50.00 Un Semestre - \$50.00			

- * Requires ID or Other Verification
- * Requieren Identificación Válida o Otra Verificación
- ^ Age 62 and Above
- ^ Edad 62 y Mayor + - Edad 6 y Menos Gratis
- + Age 6 and Under Free

Transfers are free and valid for 90 minutes. Transferencias son gratis y válidas por 90 minutos.

Photo ID Cards / Tarjeta de Identificación

Photo ID Cards may be obtained at the Transit Center on Vine Street, Monday - Friday 8:30 a.m. - 4:00 p.m. for a \$5.00 charge.

Puede obtener una tarjeta de identificación con foto en el Centro de Transito ubicado en Vine St. Lunes a Viernes 8:30 a.m. - 4:00 p.m. para una carga de \$5.00.

Transit Center Customer Service

150 E. Vine Street Monday - Friday: 6:00 a.m. - 6:00 p.m. Saturday: 8:00 a.m. - 4:00 p.m.

Sunday: Closed (859) 253-4636

Text for Next System

Text "LX" plus your stop number (Example: LX123) to 321-123 for the next departure times for your stop.

Administrative Office

200 W. Loudon Avenue Monday - Friday: 8:00 a.m. - 5:00 p.m. Saturday - Sunday: Closed (859) 255-7756

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Effective December 23, 2018

Northside Connector



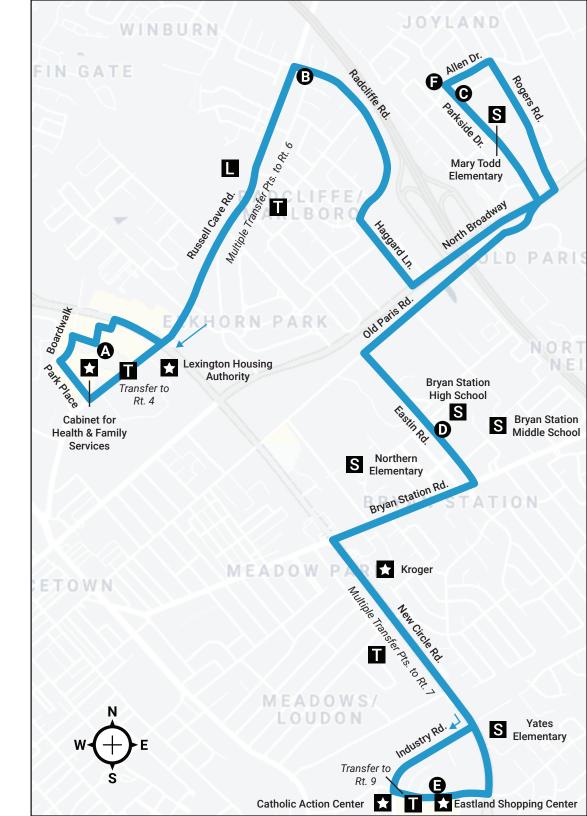
Serving

- Walmart North Park
- Northside Library
- Bryan Station High School
- Bryan Station Middle School
- Kroger Bryan Station
- Eastland Shopping Center
- Catholic Action Center



LEGEND	
Timepoints	Points of Interest
A Walmart North Park	H Hospital
B Radcliffe @ Bishop	L Library
• Parkside @ Allen	S School
Bryan Station High School	P Post Office
-	Transfer Point
E Eastland @ Commercial	★ Point of Interest
Allen @ Parkside	

Route 17 Serves the Loudon Bus Stop				
DAY	OUTBOUND	INBOUND		
Monday -	6:12 AM	9:55 AM		
Friday	1:30 PM	6:05 PM		
Customers	may board tl	he bus in		
route to	the end of th	e line.		

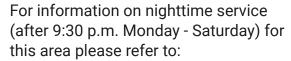


Monday - Friday Schedule



	OU	TBOU	ND		INBO	UND		
тс	Α	В	С	D	D	В	Α	тс
Transit Center (Vine St.)	Race @ 4th	7th @ Shropshire	Eastland Shopping Center	Post Office - Creative Dr.	Post Office - Creative Dr.	7th @ Shropshire	4th @ Race	Transit Center (Vine St.)
-:	-:-	-:-	-:-	-:-	5:50A	5:58A	6:02A	6:10A
-:	-:-	-:-	-:-	-:-	6:20A	6:28A	6:32A	6:40A
6:20A	6:26A	6:31A	6:38A	6:46A	6:50A	6:58A	7:02A	7:10A
6:50A	6:56A	7:01A	7:10A	7:18A	7:22A	7:32A	7:37A	7:45A
7:20A	7:26A	7:31A	7:40A	7:48A	7:55A	8:05A	8:10A	8:20A
7:55A	8:01A	8:06A	8:15A	8:23A	8:30A	8:40A	8:45A	8:55A
8:30A	8:36A	8:41A	8:50A	8:58A	9:05A	9:15A	9:20A	9:30A
9:05A	9:11A	9:16A	9:25A	9:33A	9:40A	9:50A	9:55A	10:05A
9:40A	9:46A	9:51A	10:00A	10:08A	10:15A	10:25A	10:30A	10:40A
10:15A	10:21A	10:26A	10:35A	10:43A	10:50A	11:00A	11:05A	11:15A
10:50A	10:56A	11:01A	11:10A	11:18A	11:25A	11:35A	11:40A	11:50A
11:25A	11:32A	11:37A	11:46A	11:54A	12:00P	12:10P	12:15P	12:25P
12:00P	12:07P	12:12P	12:21P	12:29P	12:35P	12:45P	12:50P	1:00P
12:35P	12:42P	12:47P	12:56P	1:04P	1:10P	1:20P	1:25P	1:35P
1:10P	1:17P	1:22P	1:31P	1:39P	1:45P	1:55P	2:00P	2:10P
1:45P	1:52P	1:57P	2:06P	2:14P	2:20P	2:30P	2:35P	2:45P
2:20P	2:27P	2:33P	2:42P	2:50P	2:55P	3:05P	3:10P	3:20P
2:55P	3:02P	3:08P	3:17P	3:25P	3:30P	3:40P	3:45P	3:55P
3:30P	3:37P	3:43P	3:52P	4:00P	4:05P	4:15P	4:20P	4:30P
4:05P	4:12P	4:18P	4:27P	4:35P	4:40P	4:50P	4:55P	5:05P
4:40P	4:47P	4:53P	5:02P	5:10P	5:15P	5:25P	5:30P	5:40P
5:15P	5:22P	5:28P	5:37P	5:45P	5:51P	6:01P	6:05P	6:15P
5:50P	5:57P	6:03P	6:12P	6:20P	6:26P	6:36P	6:40P	6:50P
7:00P	7:06P	7:12P	7:21P	7:29P	7:38P	7:46P	7:50P	8:00P
8:10P	8:16P	8:22P	8:31P	8:39P	8:48P	8:56P	9:00P	9:10P

Nighttime Service for Rt. 9





General Information



	Adu l t	Student*	Youth+ (Ages 7-18)	Senior Citizens*^ AND People with Disabilities*^	Medicare Cardholders*	
	Adulto	Estudiante*	Jovenes+ (Edad 7-18)	Mayores*^ Y Discapacitados*^	Medicare*	
Standard Ride Fare Tarifa Estándar de Viaje	\$1.00	\$0.80	\$0.80	\$0.50	\$0.50	
Day Pass Pase de un Día	\$3.00	\$3.00	\$3.00	\$1.50	\$1.50	
20 Ride Pass Pase de 20 Viajes	\$15.00	\$15.00	\$15.00	\$15.00	\$15.00	
30 Day Pass Pase de 30 Días	\$30.00 \$20.00		\$20.00	\$15.00	\$15.00	
Class Pass Pase de Clase (Estudiante)		e Semester - S Semestre - \$5		One School Year - S Un Año Escolar - S		

- * Requires ID or Other Verification
- * Requieren Identificación Válida o Otra Verificación
- ^ Age 62 and Above
- ^ Edad 62 y Mayor
- + Age 6 and Under Free
- + Edad 6 y Menos Gratis

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Transferencias son gratis y válidas por 90 minutos.

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Transit Center Customer Service

150 E. Vine Street Monday - Friday: 6:00 a.m. - 6:00 p.m. Saturday: 8:00 a.m. - 4:00 p.m.

Sunday: Closed (859) 253-4636

Service Administrative Office

200 W. Loudon Avenue Monday - Friday: 8:00 a.m. - 5:00 p.m. Saturday - Sunday: Closed

(859) 255-7756

Interactive Voice Response System / Text for Next

Call (859) 244-2020, follow the instructions, and either say your stop number or enter it using your keypad. Text "LX" plus your stop number to 321-123 for the next departure times.

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and Android devices.

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Effective May 29, 2022



Serving:

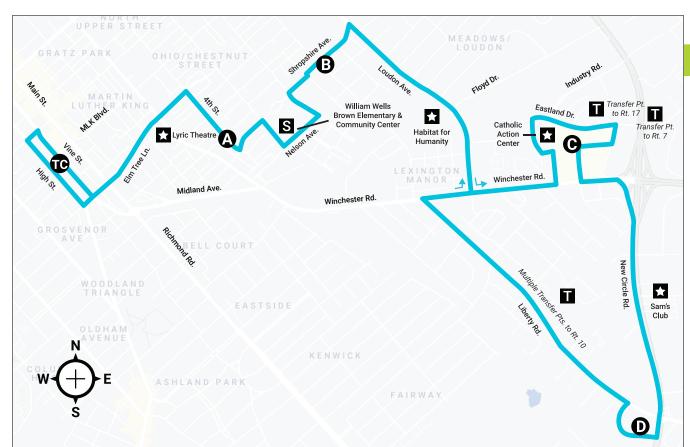
- Lyric Theatre
- William Wells Brown Elementary
- & Community Center
- Habitat for Humanity
- Catholic Action Center
- Eastland Shopping Center
- · Sam's Club
- U.S. Post Office





Route 9 Serves the Loudon Bus Stop					
DAY	OUTBOUND	INBOUND			
Monday - Friday	5:35 AM 6:05 AM	6:25 PM			
Saturday	5:38 AM	-:-			
Sunday 5:38 AM 9:25 PM					
Customers may board the bus in route to the end of the line.					

LEGEND	
Timepoints	Points of Interest
Transit Center	H Hospital
A Race @ 4th	L Library
3 7th @ Shropshire	S School
Eastland Shopping Center	P Post Office
D Post Office - Creative Dr.	T Transfer Point
	★ Point of Interest



Saturday Schedule

OUTBOUND						INBOUND				
тс	Α	В	С	D		D	В	Α	тс	
Transit Center (Vine St.)	Race @ 4th	7th @ Shropshire	Eastland Shopping Center	Post Office - Creative Dr.		Post Office - Creative Dr.	7th @ Shropshire	4th @ Race	Transit Center (Vine St.)	
-:	-:	-:	-:-	-:-		5:53A	5:59A	6:03A	6:10A	
6:20A	6:25A	6:29A	6:35A	6:43A		6:48A	6:54A	6:58A	7:05A	
7:20A	7:25A	7:29A	7:35A	7:43A		7:52A	7:58A	8:03A	8:10A	
8:30A	8:35A	8:39A	8:45A	8:53A		8:59A	9:05A	9:10A	9:20A	
9:40A	9:45A	9:49A	9:55A	10:03A		10:09A	10:15A	10:20A	10:30A	
10:50A	10:56A	11:00A	11:07A	11:15A		11:21A	11:30A	11:35A	11:45A	
12:00P	12:06P	12:10P	12:17P	12:25P		12:31P	12:40P	12:45P	12:55P	
1:10P	1:16P	1:20P	1:27P	1:35P		1:41P	1:50P	1:55P	2:10P	
2:20P	2:26P	2:30P	2:37P	2:45P		2:51P	3:00P	3:05P	3:15P	
3:30P	3:36P	3:40P	3:47P	3:55P		4:01P	4:10P	4:15P	4:25P	
4:40P	4:46P	4:50P	4:57P	5:05P		5:11P	5:20P	5:25P	5:35P	
5:50P	5:56P	6:00P	6:06P	6:14P		6:17P	6:26P	6:30P	6:40P	
7:00P	7:06P	7:10P	7:16P	7:24P		7:27P	7:36P	7:40P	7:50P	
8:10P	8:16P	8:20P	8:26P	8:34P		8:37P	8:46P	8:50P	9:00P	

Sunday Schedule

OUTBOUND						INBOUND				
тс	Α	В	С	D		D	В	Α	тс	
Transit Center (Vine St.)	Race @ 4th	7th @ Shropshire	Eastland Shopping Center	Post Office - Creative Dr.		Post Office - Creative Dr.	7th @ Shropshire	4th @ Race	Transit Center (Vine St.)	
-:	-:	-:	-:-	:		5:53A	5:59A	6:03A	6:10A	
6:20A	6:26A	6:30A	6:37A	6:43A		6:48A	6:54A	6:58A	7:05A	
7:30A	7:36A	7:40A	7:47A	7:53A		7:58A	8:04A	8:08A	8:15A	
8:40A	8:46A	8:50A	8:57A	9:03A		9:10A	9:16A	9:20A	9:30A	
9:50A	9:56A	10:00A	10:07A	10:13A		10:18A	10:26A	10:30A	10:40A	
11:00A	11:06A	11:10A	11:17A	11:23A		11:28A	11:36A	11:40A	11:50A	
12:10P	12:16P	12:20P	12:27P	12:33P		12:38P	12:46P	12:50P	1:10P	
1:20P	1:26P	1:30P	1:37P	1:43P		1:48P	1:56P	2:00P	2:10P	
2:30P	2:36P	2:40P	2:47P	2:53P		2:58P	3:06P	3:10P	3:20P	
3:40P	3:46P	3:50P	3:57P	4:03P		4:08P	4:16P	4:20P	4:30P	
4:50P	4:56P	5:00P	5:07P	5:13P		5:18P	5:36P	5:30P	5:40P	
6:00P	6:06P	6:10P	6:17P	6:23P		6:28P	6:36P	6:40P	6:50P	
7:10P	7:16P	7:20P	7:27P	7:33P		7:38P	7:46P	7:50P	8:00P	
8:30P	8:36P	8:40P	8:47P	8:53P		8:56P	9:02P	9:06P	9:15P	

