



Draft Purpose and Need

Environmental Impact Statement

Toll 49 Segment 6 from SH 110 to US 271

North East Texas Regional Mobility Authority

Date: May 2025

CSJ: 0910-00-129

County: Smith County

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 9, 2019, and executed by FHWA and TxDOT.

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Draft Purpose and Need

Need

The proposed project is needed because the current roadway network between State Highway (SH) 110 and United States Highway (US) 271 east of Tyler is inadequate to meet current and future traffic volumes, resulting in increasing congestion, inadequate Levels of Service (LOS), and longer travel times.

Supporting Facts and Data

Existing Congestion Issues

The 2023 Existing Conditions scenario network, included in the Tyler Area Metropolitan Planning Organization (MPO) 2050 Metropolitan Transportation Plan (MTP), shows congestion occurring along the highways that connect Tyler to surrounding municipalities, including SH 110, SH 31, and US 271.

The population growth of Gregg, Harrison, Smith and Upshur counties is contributing to increasing congestion and longer travel times on local roadways. The regional population of these counties has grown by 22 percent from 2000 to 2020 (U.S. Census Bureau 2000; 2020), and is predicted to grow to more than half a million people by 2060 (Texas Demographic Center 2022). This population growth has been encouraged due to the expansion of the University of Texas (UT) Medical Center and large new retail developments within the area. The Tyler Area MPO MTP indicates that strong population and employment growth is anticipated to continue in much of Tyler. Population growth in the region is shown by county in **Table 1** below.

Table 1: Population Growth

	Population		Percent Change	Projected Population
	2000 ⁽¹⁾	2020 ⁽²⁾	-	2060 ⁽³⁾
Gregg County	111,379	124,239	12%	119,010
Harrison County	62,110	68,839	11%	72,334
Smith County	174,706	233,479	34%	283,600
Upshur County	35,291	40,892	16%	41,507
Total	385,486	469,469	22%	518,511

Source: ⁽¹⁾ U.S. Census Bureau (2000), ⁽²⁾ U.S. Census Bureau (2020), ⁽³⁾ Texas Demographic Center (2022)

The largest employers in the Tyler area are the CHRISTUS Trinity Mother Frances Health System and the UT Health East Texas Medical Center (TEDC 2025). Most of the health facilities associated with these employers are in central Tyler; however, additional facilities are present in all directions surrounding the city. The city of Tyler’s influence stretches beyond the city and its extraterritorial jurisdiction. Its location effectively serves people who live within a 40 to 50 mile driving distance of Tyler, functioning as a regional center, particularly for retail, medical services, and employment for people living in Smith County and eight other counties in East Texas. The UT Health Science Center, and numerous medical facilities are destinations in the area that draw in employees, students, and the general public, contributing to traffic on roadways between SH 110 and US 271.

The region’s large and stable base of healthcare, higher education, and other key industries are expanding and sited to contribute to future growth in the area (TEDC 2025). An estimated 10 percent increase in employment is anticipated between 2018 and 2045. The 2045 No Build scenario network presented in the 2045 MTP forecasts high levels of congestion extending out along almost all major highways/principal arterials in the Tyler area if there are no transportation improvements made before that time (Tyler Area MPO 2019). The latest 2050 MTP forecasts confirm high levels of congestion for the 2050 No-Build scenario network (Tyler Area MPO 2024).

Existing and Predicted LOS

The location of the proposed project within a larger geographic region that is experiencing growth and attracting people from the greater East Texas area reflects a need for a north-south link east of Tyler. There is a lack of an efficient, direct route to US 271 and northeast Texas from the terminus of Toll 49 Segment 5 at SH 110. East of the Toll 49 terminus at SH 110 there are limited north-south routes that facilitate traffic flow, none of which are controlled-access roadways. Eastbound to northbound traffic on Toll 49 at SH 110 currently travels northwest on SH 110 to State Loop (SL) 323 towards central Tyler and into more traffic-congested areas. Based on the LOS and travel time data presented below, travel times and congestion on existing roadways that facilitate this north-south connection are projected to increase substantially by 2045.

An LOS analysis was performed by comparing model-based travel speeds to model-based free-flow speeds to examine existing and future operating conditions along the roadway network between SH 110 at Toll 49 and US 271. LOS is the qualitative measure used to evaluate the effectiveness of a roadway system to provide adequate capacity and is a term used to describe the operating conditions of a roadway based on factors including speed, travel time, maneuverability, delay, and safety. LOS ranges from “A” to “F,” with “A” being the best operating conditions and “F” representing the worst congested conditions. **Table 2** provides a brief summary description of each LOS condition.

Table 2: Levels of Service (LOS)

LOS	Description
A	Free flow conditions. Freedom to select desired speed is extremely important. Freedom to maneuver within the traffic stream is extremely high. General level of comfort/convenience for motorists is excellent.
B	Stable flow conditions. Presence of other vehicles in the traffic stream becomes noticeable. Slight decline in the freedom to maneuver within the traffic stream.
C	Stable flow conditions. Ability to maneuver and operating speed in the traffic stream is significantly affected by other vehicles. General level of comfort/convenience declines noticeably at this level.
D	High density, but stable flow—approaching unstable traffic flow. Speeds and freedom to maneuver are severely restricted. General level of comfort/convenience is poor. Small increases in traffic flow will generally cause operational problems at this level.

LOS	Description
E	Unstable flow. Speeds reduced to a low, but relatively uniform value. Volumes at or near capacity level. Freedom to maneuver within the traffic stream is extremely difficult. Small increases in traffic flow or minor perturbations within the traffic stream will cause breakdowns.
F	Forced or breakdown flow conditions. Volumes exceed roadway capacity. Formation of unstable queues. Operations within the queue are characterized by stop-and-go conditions. Stoppages for long periods of time because of traffic congestion.

Source: Transportation Research Board, Highway Capacity Manual, Special Report #209, 1994.

There is not a direct route to US 271 from the terminus of Toll 49 at Segment 5 (SH 110); motorists using existing Toll 49 exit the existing unsignalized free-flow facility and travel through the city when continuing northeast. Therefore, the traffic analysis focused on the three existing routes that currently support this north-south connection. The three existing routes are depicted on **Illustration 1** and generally are described as follows. Route 1 utilizes SL 323 in Tyler and is comprised of SH 110, SL 323, and US 271; Route 2 carries traffic through the central portion of Tyler and is comprised of SH 110, Beckham Avenue, Gentry Parkway, and US 271. Route 3 utilizes a local roadway network east of the city and follows SH 110, Shiloh Road, FM 848, CR 210/FM 850, SH 31, FM 2908, and US 271.

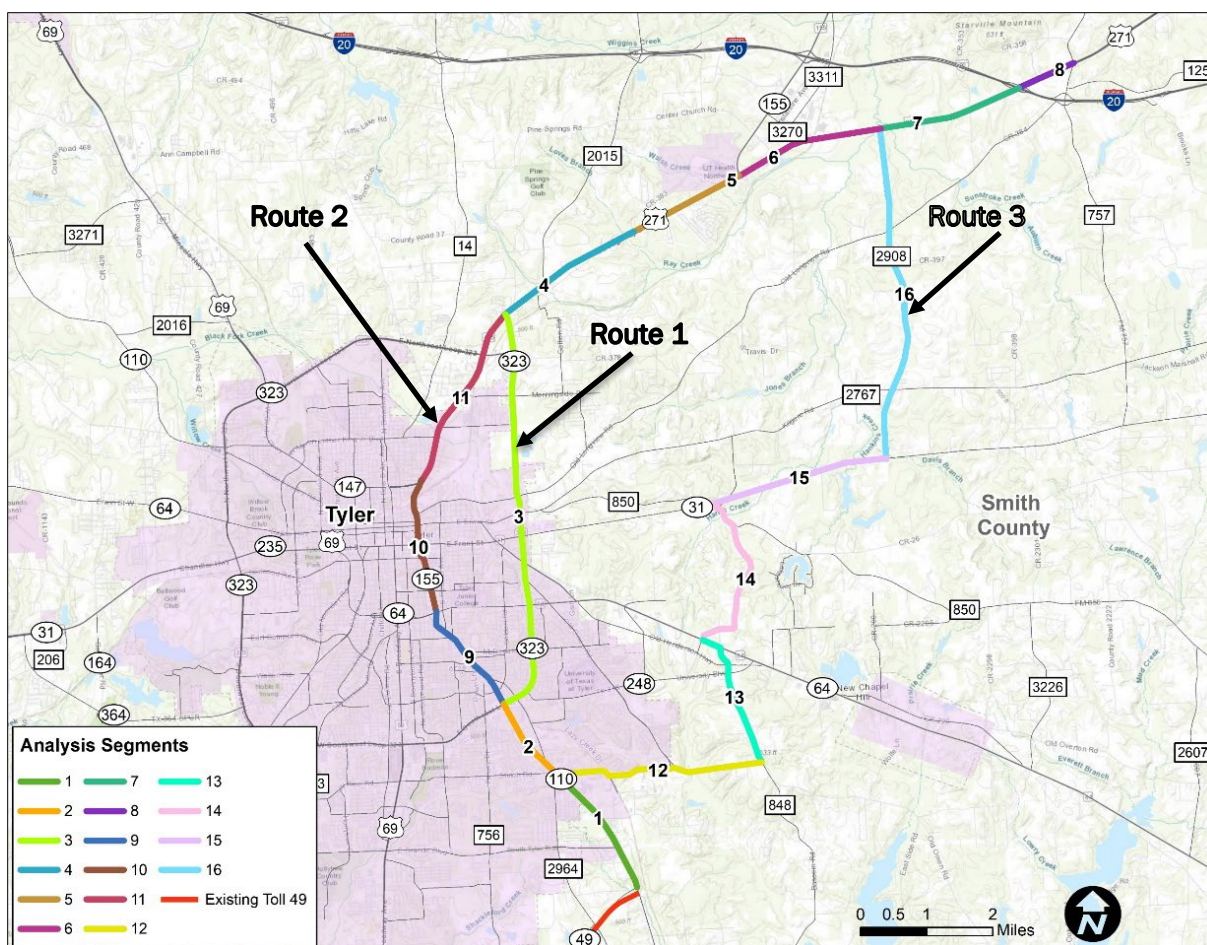


Illustration 1: Routes and Analysis Segments

Although many of the segments that comprise each of the three travel routes operate at LOS A and B, 2019 LOS ranges from “A” to “E” on all three routes. LOS deteriorates on specific segments along each route and is not concentrated at one specific location, which suggests a broader, more regional congestion problem.

The LOS analysis shows that in 2045, several segments along each of the routes would operate at a poorer level of service compared to existing conditions, with an increasing number of segments operating at LOS E or F. Regardless of the route, motorists will encounter LOS E along a portion of each route under both the existing and future conditions. A breakdown of LOS by segment and route is presented in the table included in **Appendix A**.

Existing and Predicted Travel Time

Travel times were determined along the individual 16 segments that comprise each of the three routes to obtain an average total travel time for each route. **Table 3** presents the average travel time by route during the AM and PM periods and in both directions; the data included for 2019 represents existing conditions. The total lengths of the routes range from 19.1 to 21.2 miles and existing travel times are reported as 26.6 to 30.1 minutes to travel these routes. The shortest route, Route 1, which follows SL 323, has 18 signalized intersections (Google Earth 2024). While traffic signals help

manage the flow of vehicular traffic, signals and corresponding stop conditions also contribute to travel delays.

Consistent with LOS data, the traffic analysis shows that travel times for trips between SH 110 at Toll 49 and US 271 at FM 757 will increase substantially by 2045. The largest change is evident during the morning peak. Travel times during PM travel will also increase, but to a lesser extent, as shown in **Table 3** below.

Table 3: Comparison of Travel Times

Existing Route*	Direction	Average Travel Time (minutes)		-		Average Travel Time (minutes)		-	
		AM				PM			
		Existing 2019	No Build 2045	Change in Travel Time	Percent Change	Existing 2019	No Build 2045	Change in Travel Time	Percent Change
Route 1 (19.1 mi.)	NB/EB	26.7	42.4	15.7	59%	26.7	34.5	7.8	29%
	SB/WB	26.6	40.2	13.6	51%	26.6	32.4	5.8	22%
Route 2 (19.6 mi.)	NB/EB	29.5	43.9	14.4	49%	29.2	38.8	9.6	33%
	SB/WB	29.2	37.6	8.4	29%	29.3	33.3	4.0	14%
Route 3 (21.2 mi.)	NB/EB	30.0	45.3	15.3	51%	30.0	33.2	3.2	11%
	SB/WB	30.1	39.6	9.5	32%	29.9	34.8	4.9	16%

*The preliminary 2045 Tyler Area MPO model was used for the analysis; results are included in the draft Preliminary Travel Time and LOS Analysis and subject to change.

Under existing conditions (2019), the average travel time for each route is generally the same in both directions and during both time periods, ranging from approximately 26.6 minutes to travel 19.1 miles and 30.1 minutes to travel 21.2 miles. In 2045, conditions are projected to deteriorate in both directions along all three routes, with considerably greater deterioration evident in the AM period. In 2045, the 19.1-mile trip in the NB/EB direction along Route 1 is projected to take 42.4 minutes in the AM peak period compared to the existing travel time of 26.7 minutes, which is an increase of 59%. Overall, travel time in 2045 is projected to increase between 29% and 59% during AM travel and 11% to 33% during the PM period compared to existing conditions.

Purpose

The purpose of the proposed project is to relieve congestion and provide shorter travel times for regional and local traffic traveling between SH 110 and US 271 east of Tyler.

References

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Appendix A

Draft Preliminary Toll 49 Level of Service (LOS)

Roadway Segment ID	Roadway Segments	From	To	Distance (miles)		Base Year (2019)				No Build 2045			
						AM		PM		AM		PM	
				NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
	Level of Service (LOS)*												
Route 1	Route 1												
1	SH 110	Toll 49	Shiloh Rd	2.1	2.1	A	A	A	A	E	A	A	A
2	SH 110	Shiloh Rd	Loop 323	1.3	1.3	B	A	A	A	E	A	A	A
3	Loop 323	SH 110	US 271	6.2	6.2	A	A	A	A	B	C	A	A
4	US 271	Loop 323	FM 383	2.3	2.3	E	E	A	C	F	F	F	E
5	US 271	FM 383	SH 155	1.8	1.8	D	C	A	B	F	F	D	C
6	US 271	SH 155	FM 2908	2.3	2.3	A	A	A	A	A	A	A	A
7	US 271	FM 2908	I-20	2.2	2.2	A	A	A	A	A	B	A	A
8	US 271	I-20	FM 757	0.9	0.9	A	A	A	A	A	A	A	A
-													
Route 2	Route 2												
1	SH 110	Toll 49	Shiloh Rd	2.1	2.1	A	A	A	A	E	A	A	A
2	SH 110	Shiloh Rd	Loop 323	1.3	1.3	B	A	A	A	E	A	A	A
9	SH 110	Loop 323	E 5th St	1.8	1.8	E	C	D	D	D	A	B	B
10	Beckham Ave	E 5th St	SH 147	2.0	2.0	B	A	B	A	C	A	B	A
11	Gentry Pkwy	SH 147	Loop 323	2.9	2.9	A	A	A	A	B	A	B	A
4	US 271	Loop 323	FM 383	2.3	2.3	E	E	A	C	F	F	F	E
5	US 271	FM 383	SH 155	1.8	1.8	D	C	A	B	F	F	D	C
6	US 271	SH 155	FM 2908	2.3	2.3	A	A	A	A	A	A	A	A
7	US 271	FM 2908	I-20	2.2	2.2	A	A	A	A	A	B	A	A
8	US 271	I-20	FM 757	0.9	0.9	A	A	A	A	A	A	A	A
-													
Route 3	Route 3												
1	SH 110	Toll 49	Shiloh Rd	2.1	2.1	A	A	A	A	E	A	A	A
12	Shiloh Rd	SH 110	FM 848	3.2	3.2	A	C	A	A	B	D	B	A
13	FM 848	Shiloh Rd	SH 64	2.2	2.2	B	A	A	A	E	A	A	A
14	FM 210/FM 850	SH 64	SH 31	2.7	2.7	A	A	A	A	A	A	A	A
15	SH 31	FM 850	FM 2908	2.7	2.7	E	E	E	E	F	F	F	F
16	FM 2908	SH 31	US 271	5.1	5.1	A	A	A	A	A	B	A	A
7	US 271	FM 2908	I-20	2.2	2.2	A	A	A	A	A	B	A	A
8	US 271	I-20	FM 757	0.9	0.9	A	A	A	A	A	A	A	A
-	*LOS was determined by comparing model-based travel speeds to model-based free flow speeds.												

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LOS data extracted from draft Preliminary LOS Analysis