



TRANSPORTATION IMPACT ANALYSIS SCOPE OF WORK

The scope must be approved prior to formal submittal of a Transportation Impact Analysis (TIA) Report. This scope acknowledges that the TIA for the following Project will be prepared in accordance with the latest version of Transportation Criteria Manual and the City of Austin's TIA Guidelines.

Date: May 19, 2021

Case # (If assigned):

Contact Information

- **Applicant's Consultant:** Bobak J. Tehrany, P.E. (BOE)
Contact: Email: bobak@bo-engineering.com Phone: 512.632.7509
- **Applicant:** Milo Burdette (Barshop & Oles Company)
Contact: Email: milo@barshop-oles.com Phone 512.632.2452

I. Project Information

- Project Name: Brodie Oaks Center
- Project Address: 4021 S Capital of Texas Hwy Austin TX 78704
- Project Jurisdiction(s): City of Austin Other: TXDOT
- Project Description: Mixed Use Development
- Submission Type: Site Plan Zoning Rezoning PUD Other - _____
- Site Zoning Code (Districts): 5

II. Project Details

- Proposed Land Use:
 Residential Commercial Mixed Use Other _____

- Site Context:

	Site Context	Max TDM Reduction	Target TDM Reduction
<input type="checkbox"/>	City Core	50%	40%
<input type="checkbox"/>	Urban Core	35%	25%
<input type="checkbox"/>	Urban	30%	20%
<input type="checkbox"/>	Suburban	10%	10%
<input checked="" type="checkbox"/>	Other	See Section 6	

- Trip Projection: ITE Trip Generation Manual, 10th Edition Other - _____

Total Daily Trips¹: 30,741 Total AM Peak Hour: 2000 Total PM Peak Hour: 2820

- Existing Year: 2021 Buildout Year: 2036

- Project to be developed in phases? Yes No

If yes, please provide an attachment with the proposed land use and trip generation by phase.

¹ Unadjusted Trips

III. Study Requirements

- 1. Study Type: Standard TIA Alternate TIA
 - a. Sections IV.1-IV.4 are not required with an Alternate TIA.
- 2. Applicable Long-range Transportation Programs/Plans/Studies: (List adopted comprehensive plans and public infrastructure improvement projects applicable to this site)
 - a. Austin Strategic Mobility Plan (ASMP)
 - b. Imagine Austin Comprehensive Plan
 - c. South Lamar Corridor Improvement Program
 - d. Project Connect
 - e. TxDOT Loop 360 Improvements
- 3. Sustainable Modes Analysis: Required Not Required
 - i. Study Area: South Lamar Blvd between Ben White Blvd and Manchaca Rd
- 4. Transportation Demand Management Proposed (*Attachment A*): Yes No
 - a. If Yes, a TDM Report is: Required Not Required
- 5. Signal Warrant Studies: Required for all proposed signal locations.
- 6. Safety and Geometric Review: Required for all site driveways and new roadway connections.
- 7. Access Management Analysis: Required Not Required
 - a. Queueing Analysis: Required Not Required

IV. Study Assumptions

- 1. **Annual Traffic Growth Rate:** 3 %
 List all the sources used for the calculation below and provide calculations in an attachment.
 - TxDOT AADT Data Obtained from Statewide Planning Maps

2. Related Background Projects

The following related projects are to be included for background traffic calculations.

Project Name	Permit Number
AISD Ann Richards School	SP-2018-0596CX.F1
Victory Medical	SP-2019-0049C

3. Trip Distribution

Provide maps in both Excel file and PDF file (aerial view) showing Project trips distribution and percentages (inbound/outbound for both AM/PM peak hours) at the project driveways, study intersections and freeways as an attachment(s). The maps must be included in the TIA and pre-approved by Transportation

Development Services Division at ATD² with the TIA scope. The maps may be subject to change after conducting thorough traffic counts at the study intersections.

4. Study Intersections and Road Sizing Segments

To select the study intersections for TIA, the criteria mentioned in the section 4.G of TIA guidelines should be followed

a. List the study intersections below:

1. <i>Driveway A & South Lamar Blvd</i>	2. <i>Driveway B and South Lamar Blvd</i>
3. <i>Driveway C and South Lamar Blvd</i>	4. <i>Driveway D and WB Loop 360</i>
5. <i>Driveway E and WB Loop 360</i>	6. Loop 360 & Mopac NBFR
7. Loop 360 & Mopac SBFR	8. US 290/SH 71 & S Lamar Blvd (4)
9. US 290 Frontage Rd & West Gate Blvd (2)	10. US 290 Frontage Rd Victory Dr/Packsaddle (2)
11. US 290 Frontage Rd Menchaca Rd (2)	12. S Lamar Blvd & Panther Trail
13. Victory Dr & Panther Trail	14. S Lamar Blvd & Barton Skyway
15. S Lamar Blvd & Menchaca Rd	16. S Lamar Blvd & Bluebonnet Ln
17. S Lamar Blvd & Oltorf St	

b. List the roadway segments for road sizing analysis below:

1.
2.
3.
4.

5. Project Trips Details

Attach a detailed trip generation table including a description of the proposed land uses for *each of the phases*, ITE rates, estimated AM & PM peak hour volumes (ins/outs/totals), proposed trip reductions, etc. Summarize the overall trip generation in the table below.

² Austin Transportation Department (ATD)

Land Use Specific Trips Summary

ITE Land Use Type and Land Use Code		Trip Rate/FCE	Qty/Units		Daily Trips	AM Peak Trips	PM Peak Trips	Internal Trips		Pass-By Trips	
								(PM Peak)	(PM Peak)	(PM Peak)	(PM Peak)
221	Multifamily Housing (Mid-Rise)	$T = 5.45(X) - 1.75$	1,233	du	6,718	444	543	0%	0	0%	0
222	Multifamily Housing (High-Rise)	4.45	467	du	2,078	144	167				
310	Hotel	8.36	200	keys	1,672	95	124	0%	0	0%	0
710	General Office	$\ln(T) = 0.97 \ln(X) + 2.50$	1,260,000	sqft	12,391	1,462	1,449	0%	0	0%	0
820	Shopping Center	$\ln(T) = 0.68 \ln(X) + 5.57$	140,000	sqft	7,558	222	697	0%	0	0%	0
Total Unadjusted Trips											
					30,417	2,366	2,980				
Total Internal Trips											
							0				
Total Pass-By Trips											
							0				
TDM											
			0.0%		0	0	0				
Existing Trips											
					19,246	1,532	1,800				
Total Adjusted Trips											
					11,171	834	1,180				

6. List any other additional items, concerns, or comments

- a. A custom Transportation Demand Management (TDM) plan will be provided as part of the Brodie Oaks Center project which will include the various shared parking measures, TDM goals, and other information that will be required of the development. Due to our custom TDM approach, Attachment A of this TIA Scope has not been filled out. Since a custom TDM plan will be performed the TDM goal set for the project differ from the standard Site Context goals provided in this TIA Scope of Work. The TDM goal will be submitted to ATD for review and concurrence prior to proceeding with the full TIA study.
- b. Traffic Data will be captured during time in which the COVID-19 pandemic impacts to traffic are still being experienced in the roadway network. Prior to proceeding with the TIA study, BOE shall present a COVID-19 pandemic adjustment factor by comparing traffic data capture in 2021 against historic traffic data at similar intersections within the analysis network. Historic Data shall be date no earlier than 2018.

V. TIA Report Submittal Requirements

1. One digital copy of the TIA report containing a PDF of the TIA, Synchro files showing the network for all conditions analyzed, raw traffic count data, all the trip calculations in excel, and any other relevant project information must be sent to the following:
 - **Lead Development Review Engineer in the Transportation Development Services Division**
 - List applicable jurisdictional agencies whose roadways are expected to be impacted by the Project.

This TIA Scope is based upon the TIA requirement identified in the TIA Determination Worksheet dated April 29, 2019. Any change to the assumptions made in the scope is subject to approval by Transportation Development Services Division at ATD. Any discrepancies in land use and/or intensity between the TIA and site plan will require a new TIA Determination Worksheet and TIA Scope.

The applicant confirms that all the documents, reports and files strictly adhere with submittal requirements of TIA Scope and TIA Report Guidelines published by the Transportation Development Services Division at ATD.

SIGNED:
 (ATD Engineer) 
 Justin Good, P.E. May 19, 2021

SIGNED:
 (Applicant) 
 Bobak J. Tehrany, P.E. May 4, 2021

TIA Scope – Checklist

(Items To be attached to scope by Applicant)

- | | | |
|--|---|---|
| 1) Signed TIA Determination Worksheet | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 2) Detailed phases of the development (II.5) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 3) Project site plan/area map | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 4) Traffic growth rate calculations sheet (IV.1) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 5) Map of study intersections (IV.3) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 6) Trip distribution and assignment (IV.3) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 7) Trip generation calculations sheet (IV.5) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A |
| 8) Identify TDM Measures (Attachment A) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> N/A |

TRANSPORTATION IMPACT ANALYSIS SCOPE OF WORK

Attachment A – Transportation Demand Management

Date: May 19, 2021

Case # (If assigned): _____

At TDM Reduction target of TDB % is proposed. TDM reductions equate to a vehicle trip reduction below the approved ITE land use code and associated trip generation, and do not necessary represent mode split.

Required TDM reduction:

	Site Context	Max TDM Reduction	Target TDM Reduction
<input type="checkbox"/>	City Core	50%	40%
<input type="checkbox"/>	Urban Core	35%	25%
<input type="checkbox"/>	Urban	30%	20%
<input type="checkbox"/>	Suburban	10%	10%

Select proposed TDM strategies from the following list. Additional information and TDM measures can be found on the future City of Austin’s TDM website.

	TDM Measure	CC	UC	U	S
<input type="checkbox"/>	Transit Elements	Up to 15%	Up to 12%	Up to 7%	Up to 5%
<input type="checkbox"/>	Pedestrian Access and Connectivity	5%	5%	5%	5%
<input type="checkbox"/>	Bicycle Access and Connectivity	5%	5%	5%	5%
<input type="checkbox"/>	Bicycle Parking	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Showers & Lockers	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Bike Share Membership	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Bike Share Station	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Bicycle Repair Station	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Bicycle Maintenance Services	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Fleet of Bicycles	0.5%	0.5%	0.5%	0.5%
<input type="checkbox"/>	Car Share Parking	1%	1%	1%	1%
<input type="checkbox"/>	Multimodal Wayfinding Signage	1%	1%	1%	1%
<input type="checkbox"/>	Real Time Transportation Information Displays	1%	1%	1%	1%
<input type="checkbox"/>	Transit-Oriented Development	2%	2%	2%	2%
<input type="checkbox"/>	Unbundled Parking	6%	6%	6%	6%
<input type="checkbox"/>	Short Term Daily Parking Provision	10%	8%	7%	3%
<input type="checkbox"/>	Peak Period Pricing	10%	8%	7%	3%
<input type="checkbox"/>	Priced Parking	10%	8%	7%	3%
<input type="checkbox"/>	Parking Cash Out: Non-residential Tenants	5%	4%	3%	2%

	TDM Measure	CC	UC	U	S
<input type="checkbox"/>	Parking Supply (Reduction = 25% x [LDC parking reduction])	Up to 12.5%			
<input type="checkbox"/>	TDM Coordinator	1%	1%	1%	1%
<input type="checkbox"/>	Car Share Membership**	1%	1%	1%	1%
<input type="checkbox"/>	Carpool Program**	7%	5%	3%	2%
<input type="checkbox"/>	Shuttle Service**	Up to 7%			
<input type="checkbox"/>	Vanpool Program**	Up to 7%			
<input type="checkbox"/>	TMA Membership**	3%	3%	3%	3%
<input type="checkbox"/>	Telecommuting***	2%	2%	2%	2%
<input type="checkbox"/>	Universal Transit Pass***	5%	5%	5%	5%
<input type="checkbox"/>	Sustainable Mode Subsidy***	8%	8%	8%	8%
<input type="checkbox"/>	Off-Peak Work Hours/Compressed Work Week***	2%	2%	2%	2%
Total (reductions are additive)					

** Select only if TDM Coordinator will be appointed for the site

***Select only if TMA Membership is selected



**CITY OF AUSTIN
TRAFFIC IMPACT ANALYSIS (TIA) DETERMINATION WORKSHEET**

APPLICANT MUST FILL IN WORKSHEET PRIOR TO SUBMITTING FOR TIA DETERMINATION

PROJECT NAME: Brodie Oaks Center

LOCATION: 4021 S Capital of Texas Hwy, Austin, TX 78704

APPLICANT'S AGENT: Bobak J. Tehrany, P.E. / BOE TELEPHONE NO: 512-632-7509

APPLICATION STATUS: DEVELOPMENT ASSESSMENT: X ZONING: _____ SITE PLAN: _____

EXISTING:

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	INTENSITY	ZONING	LAND USE	I.T.E CODE	TRIP RATE	TRIPS PER DAY
1	37.59		CS, GR, CS-1	Various Uses (See attached breakdown)	Various	Various	19,246
Total Existing							19,246

PROPOSED

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	INTENSITY	ZONING	LAND USE	I.T.E CODE	TRIP RATE/EQ	TRIPS PER DAY
1	37.59	1,233 du	PUD	Multifamily Housing (Mid-Rise)	221	T=5.45(X) - 1.75	6,718
		467 du	PUD	Multifamily Housing (High-Rise)	222	4.45/du	2,078
		200 keys	PUD	Hotel	310	14.34/key	1,672
		1,260,000 sf	PUD	General Office	710	$\text{Ln}(T) = 0.97 \text{Ln}(X) + 2.50$	12,391
		140,000 sf	PUD	Shopping Center	820	$\text{Ln}(T) = 0.68 \text{Ln}(X) + 5.57$	7,558
Total Proposed							30,417
Net Change in Trips							11,171

ABUTTING ROADWAYS

FOR OFFICE USE ONLY

STREET NAME	PROPOSED ACCESS?	PAVEMENT WIDTH	CLASSIFICATION
South Lamar Boulevard	Yes		
Loop 360 Frontage Road	Yes		

FOR OFFICE USE ONLY

- A traffic impact analysis is required. The traffic consultant must meet with staff from Development Services/Land Use Review to discuss the TIA scope and requirements before beginning the study.
- A traffic impact analysis is NOT required. The traffic generated by the proposal does not exceed the thresholds established in the Land Development Code. **Mitigation of the site traffic may be required based on Land Use Review/Transportation Review staff review.** See Land Use Review/Transportation Review staff for additional information.
- The traffic impact analysis has been waived for the following reason: _____
- A neighborhood traffic analysis will be performed by the City for this project. The applicant may have to collect existing traffic counts. See a transportation planner for information.

REVIEWED BY:  Justin Good, P.E. (ATD) DATE: 4/29/2021

DISTRIBUTION:
 _____ FILE _____ CAP. METRO _____ SDHPT _____ TRANS. REV. _____ TRAVIS CO. _____ TPSD
 _____ TOTAL

COPIES: _____

**BRODIE OAKS CENTER
GROWTH RATE CALCULATIONS**

TXDOT AADT ⁽¹⁾		GROWTH FACTOR	
2019	155,553		
		0.9873748	2%
2018	157,542		
		1.02442355	2%
2017	153,786		
		AVERAGE	2%

(1): TXDOT AADT is obtained from Statewide Planning Maps

TXDOT AADT ⁽¹⁾		GROWTH FACTOR ⁽²⁾	
		0.93974225	-6%
2016	163,647		
		1.06437073	6%
2015	153,750		
		1.07654497	8%
2014	142,818		
		0.75070962	-25%
2013	190,244		
		1.00128421	0%
2012	190,000		
		1.41791045	42%
2011	134,000		
		0.95035461	-5%
2010	141,000		
		AVERAGE	3%

(1): TXDOT AADT is obtained from Statewide Planning Maps

(2): Although the growth factor calculated based on historical data is negative, a growth factor of 1% per year will be applied within the TIA as this area is majorly built out.

Growth Factor Calculation:

$$F = P \cdot (1+i)^n$$

$$i = \left[\left(\frac{F}{P} \right)^{\frac{1}{n}} \right] - 1$$

F = Forecasted Year; P= Base year; i= Growth Factor (%);

n = Difference between Forecasted Year and Base Year

