

LATR Study Outline

Updated January 27, 2025

This document outlines the expected components of an LATR Study, including tables and sections. Following the outline makes submittals more consistent and easier to review.

Read the [LATR Guidelines](#) to ensure compliance with all requirements. An LATR Study will not be reviewed until all documents are submitted and requirements are met.

LATR Study Outline

Executive Summary

1. Project Overview
2. Vision Zero
3. Non-Motor Adequacy
4. Motor Vehicle Adequacy
5. Mitigation

Appendices

Executive Summary

- A. Concise summary of the proposed project
 - Units/Square Footages Proposed
 - Net New Trips Summary Table. See **Example Table 1.**
- B. Overview of Study Scope with summary of each modal test findings. See **Example Table 2.**
- C. Identify Proportionality Guide amount, if applicable
- D. Table and map of proposed prioritized mitigation projects to address inadequacies. See **Example Table 3.**

Example Table 1. Net New Trips Summary

	Land Use	Land Use Code	Units or Square Feet	Peak Hour Motor Vehicle Trips		Daily Motor Vehicle Trips
				AM	PM	
Existing Use	Strip Retail Plaza (<40k)	822	30,000 SF	70	168	991
Proposed Use	Multifamily Housing (Mid-Rise)	221	300 units	116	113	954
	General Office Building	710	40,000 SF	74	76	536
Net New Trips				+120	+21	+499

Example Table 2. LATR Study Findings Summary

Adequacy		Study Area	Summary of Findings
Vision Zero	Speed Studies	Maximum 2 speed studies within 400' of site	Conducted one speed study on Street A between Avenue X and Avenue Y. Speed was within an acceptable range.
Non-Motor Vehicle	PLOC	400'	Street A has no street buffer between the sidewalk and roadway. All other roadways are adequate.
	Illuminance	400'	Street A (south side) between driveway and study area boundary has inadequate lighting. All other areas are adequate.
	ADA	200'	Two inadequate curb ramps. All other areas are adequate.
	Bicycle	750'	Street B has a high speed limit with an on-street striped bike lane. All other roads are adequate.
	Bus Transit	1000'	One bus stop on Street D (mid-block, north side) without a pad, shelter, or other amenities.
Motor Vehicle	HCM	1 intersection tier, 2 intersections and site driveway	One intersection (Street A/ Street B) operates above the standard in the future condition.

Example Table 3. Proposed Mitigations

ID	Location	Adequacy Type	Inadequacy Description	Recommended Mitigation	Linear Feet	Cost Estimate
A1	Street A/C intersection, NS crossing, NE corner	ADA	Curb ramp exceeds cross slope	Remove and replace curb to meet ADA standard for crossing slope	N/A	\$ X,XXX
L1	Street A (south side) between driveway and study area boundary	Illuminance	Deficient illuminance levels	Add 1 streetlight	N/A	\$ X,XXX
B1	Street B (east side) between Street A and Street D	Bicycle	Segment has a high speed limit with an on-street striped bike lane	Construct a two-way separated bike lane with transitions at both ends to the existing bike lane	350	\$ X,XXX
T1	Street D (north side), mid-block	Bus Transit	Flag bus stop without a pad or shelter	Construct a bus shelter and bus pad	N/A	\$ X,XXX

1. Project Information

- A. Concise summary of the proposed project (1-2 paragraphs: This should cover land use, unit count, square footage, project phasing, applicable zoning/subdivision regulations, transportation policy area (name and color), and Complete Streets Area Type)
- B. Existing use & prior approval (1-2 paragraphs: Outline the current uses of the site, including land use categories, unit count or square footage, site activities, construction year, and any other pertinent details. Note any prior approvals or proposals.)
- C. Net new motor vehicle trip table. See **Example Table 1**.
- D. Site access description (1-2 paragraphs: Describe proposed site access points for all modes. Include roadway frontages, point(s) of access and roadway ownership. Include graphics showing curb cut locations (proposed and existing), access controls (e.g., right-in/out, signalized), connections between parcels, internal movement, private roads, parking/loading areas, and other site access details.)
- E. Map of project site (not a point, a boundary).
- F. List of programmed transportation projects and corresponding map, if applicable. **Example Table 4**.

Example Table 4. Programmed Conditions

ID	Project Name	CIP Project ID or Development Plan Number(s)	Anticipated Construction Year	Project Description	Project Status
C1	Bikeway and Safety Improvement #1	P#####	2026	Pedestrian and bicycle improvements for dual bicycle facilities and enhanced continuous pedestrian facilities along Street D from Street A to Street E	Preliminary Design Stage
C2	ADA Improvement #1	12023###	2029	Remove and replace broken curb ramp at Street A/C intersection, EW crossing, SE corner	Site Plan Approved

2. LATR Vision Zero Statement

- A. Brief Summary of Speed Studies (2-3 paragraphs: Include roadways and their posted speeds and a summary of the methodology)
- B. Map of speed study locations
- C. Table of observed speeds (See **Example Table 5**)
- D. Brief discussion of potential solutions, if applicable (1-2 paragraphs)

Example Table 5. Speed Study Summary

Location	Direction	Posted Speed Limit	50th Percentile Speed	85th Percentile Speed	10-mile per hour Pace	Speed Limit Exceeded by 20% (Y or N)
Street A, mid-block	NB	35	35	38	30-40	No

3. Non-Motor Vehicle System Adequacy

- A. Table listing any inadequacies identified in the non-motor vehicle system adequacy assessment (PLOC, Illuminance, ADA, Bicycle, and Bus Transit) with rows corresponding to locations in the maps, and columns that include the information shown in the **Example Table 6**.
- B. For each component, a map depicting the project site showing:
- The network distance study area for the component.
 - A buffer from the property boundary equal to the network distance.
 - Any programmed conditions, labeled or marked with a numeric identifier.
 - Any inadequacies for that component, marked with a numeric identifier.

Example Table 6. Non-Motor Vehicle Inadequacies

ID	Location Description	Adequacy Type and Existing Condition	Proposed Mitigation	Linear Feet	Feasible to Implement (Yes or No)	Notes on Feasibility (ROW with plat #, etc.)	Estimated Mitigation Cost
P1	Street A (north side)	PLOC: Segment 4-foot sidewalk with no buffer	Widen sidewalk to 6-feet and widen street buffer to 6-feet.	500	No	No additional ROW. Plat #XXXX	N/A
P2	Street A, mid-block crossing	PLOC: Crossing No marked crossing, but identified on PLOC map as a crossing location	Construct bulb-outs and stripe high visibility crosswalk.	25	Yes	N/A	\$X,XXX

L1	Street A (south side) between driveway and study area boundary	Illuminance Inadequate lighting levels	Add 1 streetlight	N/A	Yes	N/A	\$ X,XXX
A1	Street A/C intersection, NS crossing, NE corner	ADA: Curb ramp Curb ramp exceeds cross-slope	Remove and replace curb to meet ADA standard for crossing slope	N/A	Yes	N/A	\$X,XXX
A2	Street A/B intersection, NS crossing, NE corner	ADA: Curb ramp Broken curb ramp with no DWS	Reconstruct the curb ramp and add DWS	N/A	Yes	N/A	\$ X,XXX
B1	Street B (east side) between Street A and Street D	Bicycle Segment has a high speed limit with an on-street striped bike lane	Construct a two-way separated bike lane with transitions at both ends to the existing bike lane.	350	Yes	ROW available. See Plat #XXXX	\$ X,XXX
T1	Street D (north side), mid-block	Bus Transit Flag bus stop without a pad or shelter	Construct a bus shelter and bus pad	N/A	Yes	ROW available. See Plat #XXXX	\$ X,XXX

4. Motor Vehicle System Assessment (if applicable)

- A. Map and list of study intersections.
- B. Summary table of multimodal counts (motor vehicle, bicycle, pedestrian) for study intersections.
- C. Pipeline developments (map and table). See **Example Table 7**.
- D. Concise summary of analysis methods and inputs, including site trip distribution, site trip assignment, CLV/HCM, and any additional analysis requested (queuing, gap analysis, etc.).
- E. Summary table of vehicular analysis highlighting any intersections above the delay standard. See **Example Table 8**.
- F. Map of intersections above the delay standard, if applicable.
- G. Table and map of proposed mitigations. See **Example Table 9**.

Example Table 7. Pipeline Development

ID	Development Name	Development Plan Number(s)	Number of Residential Units	Non-Residential Square Footage	AM Peak Hour Vehicle Trips	PM Peak Hour Vehicle Trips
D1	Pipeline Development #1	12023###	400 multifamily (mid-rise)	5,000	165	241

Example Table 8. Motor Vehicle Analysis Summary Table

ID	Intersection	Signalized or Unsignalized	Delay Standard (CLV or HCM)	Existing Conditions		Future Background Conditions		Total Future Conditions	
				AM	PM	AM	PM	AM	PM
M1	Street A / Street B	Signalized	HCM, 80 sec./veh.	40	65	60	75	67	85
M2	Street A / Street C	Signalized	HCM, 80 sec./veh.	30	40	50	55	60	68

Example Table 9. Proposed Motor Vehicle Mitigation

ID	Intersection	Signalized or Unsignalized	Inadequacy	Proposed Mitigation		Conditions After Mitigation (HCM) (AM)		Total Future Conditions After Mitigation (HCM)	
								AM	PM
M1	Street A / Street B	Signalized	Operates above the delay standard of HCM, 80 sec./veh.	40	65	60	75	67	75

5. Mitigation (if applicable)

- A. Proportionality Guide calculation and amount.
- B. Summary of off-site mitigation considerations.
- C. A prioritized list of proposed off-site mitigations with cost estimates (table and map). See **Example Table 10**.
- D. A prioritized list of alternate (“back up”) mitigation projects. See **Example Table 11**.
 - If proposing a mitigation payment, provide justification.

Example Table 10. Proposed Mitigations

ID	Location	Adequacy Type	Inadequacy Description	Recommended Mitigation	Linear Feet	Cost Estimate
A1	Street A/C intersection, NS crossing, NE corner	ADA: Curb ramp	Curb ramp exceeds cross slope	Remove and replace curb to meet ADA standard for crossing slope	N/A	\$ X,XXX
L1	Street A (south side) between driveway and study area boundary	Illuminance	Inadequate lighting levels	Add 1 streetlight	N/A	\$ X,XXX
B1	Street B (east side) between Street A and Street D	Bicycle	Segment has a high speed limit with an on-street striped bike lane	Construct a two-way separated bike lane with transitions at both ends to the existing bike lane	350	\$ X,XXX
T1	Street D (north side), mid-block	Bus Transit	Flag bus stop without a pad or shelter	Construct a bus shelter and bus pad	N/A	\$ X,XXX

Example Table 11. Proposed Alternate Mitigations

ID	Location	Adequacy Type	Inadequacy Description	Recommended Mitigation	Linear Feet	Cost Estimate
A2	Street A/B intersection, NS crossing, NE corner	ADA: Curb ramp	Broken curb ramp with no DWS	Reconstruct the curb ramp and add DWS	N/A	N/A
P2	Street A, mid-block crossing	PLOC: Crossing	Unmarked crossing	Construct bulb-outs and stripe high visibility crosswalk.	25	\$X,XXX

Appendices

- a. Approved *Transportation Adequacy Form*
- b. LATR Study Checklist
- c. LATR Study review fee receipt (proof of payment)
- d. Detailed project trip generation (including initial ITE outputs, reductions, Policy Area Adjustment Factors, and trip credits)
- e. Speed study data
- f. ADA compliance survey data

- g. Illuminance adequacy photometric plan sheet, legend, and tables (existing and proposed conditions) See information on illuminance and streetlighting on Montgomery Planning's [webpage](#).
- h. Cost estimates and associated 10% design, if applicable

For projects with motor vehicle assessments:

- i. Multimodal intersection count data
- j. Pipeline project trip generation, distribution, and assignment figures (if applicable)
- k. Site vehicle trip distribution and assignment figures
- l. CLV Results (if applicable)
- m. HCM Results (if applicable)

Other analysis:

- n. Queuing reports (if applicable)
- o. Signal warrant analysis (if applicable)
- p. Weaving/merge analysis (if applicable)

Notes

- **Read the [LATR Guidelines](#) to ensure compliance with all requirements.**
- Send traffic model files (Synchro, VISSIM, SimTraffic etc.) to MCDOT and SHA, when applicable.
- Send an electronic copy of the LATR Study and appendices to Planning staff via transportation.review@montgomeryplanning.org.
- **An LATR Study will not be reviewed until all documents are submitted and requirements are met.**