

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: _____ ROUTE: LOWER BROWNSVILLE ROAD
COUNTY: MADISON CITY: _____
PROJECT PIN NUMBER: 136169.00
PROJECT DESCRIPTION: BRIDGE OVER I-40 @ L.M. 4.54

[1] LOWER BROWNSVILLE ROAD TRAFFIC DATA
[2] I-40 TRAFFIC DATA

DIVISION REQUESTING:

MAINTENANCE ☐	PAVEMENT DESIGN ☐
PROJECT MANAGEMENT ☒	STRUCTURES ☐
PROG. DEVELOPMENT & ADM. ☐	SURVEY & ROADWAY DESIGN ☐
PUBLIC TRANS. & AERO. ☐	TRAFFIC SIGNAL DESIGN ☐
	OTHER ☐

YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: 2030
PROJECTED LETTING DATE: 2030

TRAFFIC ASSIGNMENT:

	BASE YEAR		DESIGN YEAR					DESIGN ROADWAY % TRUCKS		DESIGN AVERAGE DAILY LOADS	
	AADT	YEAR	AADT	DHV	%	YEAR	DIR.DIST.	DHV	AADT	FLEX	RIGID
[1]	590	2030	880	115	13	2050	65-35	8	12	51	78
[2]	48,120	2030	68,290	5,617	8	2050	55-45	24	36	6,701	10,694

REQUESTED BY: NAME EMILY BURGESS DATE 2/28/25
DIVISION PROJECT MANAGEMENT
ADDRESS 500 J. K. POLK BUILDING
NASHVILLE TN 47243

REVIEWED BY: RANDY BOGUSKIE Randy Boguskie DATE 3/4/2025
TRANSPORTATION MANAGER 1
SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG Tony Armstrong DATE 3/4/2025
TRANSPORTATION MANAGER 2
SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

FURNISH THE 2030-2050 TRAFFIC DATA.

THIS TRAFFIC IS BASED ON A 2024 CYCLE & RAMP COUNTS. THE DESIGN YEAR TRAFFIC IS BASED ON GROWTH RATE FROM THE JACKSON MPO COMPUTER ASSIGNMENT MODEL. AADT's, DHV's AND ADL's ARE INCLUDED.

DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.

SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

(REV. 6/12/24)

TENNESSEE DEPARTMENT OF TRANSPORTATION

PROJECT NO.: _____ ROUTE NO.: LOWER BROWNSVILLE [1]
 COUNTY: MADISON
 PROJECT DESCRIPTION: BRIDGE OVER I-40 @ L.M. 4.54

FAP Rural

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		457	0.001	0	0.001	0
Pick-up, Panel, Van (3)		190	0.005	1	0.004	1
Sing. Unit	Buses (4)	0	0.300	0	0.300	0
	2-axle, 6-tire (5)	17	0.240	4	0.310	5
	3-axle or more (6-7)	13	1.700	22	2.300	30
	4-axle (8)	11	1.110	12	1.500	17
Comb.	5-axle or more (9-13)	47	1.320	62	2.200	103
Totals (2036 AADT)		735		102		156

Suggested Percentages of Trucks in Design Lane

5,000 or less ADT	95%
5,000 - 10,000 ADT	90%
10,000 - 15,000 ADT	85%
15,000 - 20,000 ADT	80%
20,000 - 30,000 ADT	75%
30,000 - 40,000 ADT	70%
40,000 Plus	60%

No. of Lanes: 2

% Trucks in Design Lane: 100%

ADL in Design Lane:

FLEX:	0.5	X	1.00	X	101.8	=	51
RIGID:	0.5	X	1.00	X	156.3	=	78

ADL Calculations By: TONY ARMSTRONG Date: 3/3/2025
 Reviewed By: Randy Boguskie Date: 3/4/2025
 [REV. 6/12/24]

**TENNESSEE DEPARTMENT OF TRANSPORTATION
PLANNING DIVISION**

PROJECT NO.: _____ ROUTE NO.: I-40 [2]
 COUNTY: MADISON _____ CITY: _____
 PROJECT DESCRIPTION: LOWER BROWNSVILLE RD. ROAD BRIDGE OVER I-40 @ L.M. 4.54

Interstate

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

Type Vehicle		ADT (No. Counted)	Flexible		Rigid	
			18-kip Factor	ADL	18-kip Factor	ADL
Pass. cars and motorcycles (1-2)		23,449	0.001	23	0.001	23
Pick-up, Panel, Van (3)		13,782	0.004	55	0.005	69
Sing. Unit	Buses (4)	62	0.300	19	0.300	19
	2-axle, 6-tire (5)	2,263	0.170	385	0.170	385
	3-axle or more (6-7)	716	0.700	501	1.000	716
Comb.	4-axle (8)	228	0.700	160	0.780	178
	5-axle or more (9-13)	17,705	1.100	19,476	1.780	31,515
Totals (2040 AADT)		58,205		20,618		32,904

Suggested Percentages of Trucks in Design Lane

	4 Lane	6 Lane	8 Lane
5,000 or less ADT	90%	75%	70%
5,000 - 10,000 ADT	80%	70%	65%
10,000 - 15,000 ADT	75%	65%	60%
15,000 - 20,000 ADT	75%	65%	55%
20,000 - 30,000 ADT	70%	60%	50%
30,000 Plus ADT	65%	60%	50%

No. of Lanes: 4

% Trucks in Design Lane: 65%

ADL in Design Lane:

FLEX:	0.5	X	0.65	X	20618.2	=	6,701
RIGID:	0.5	X	0.65	X	32904.4	=	10,694

ADL Calculations By: TONY ARMSTRONG Date: 3/3/2025
 Reviewed By: _____ Date: _____
 [REV. 7-1-14]



Madison County
Lower Brownsville Road @ L.M. 4.54
Bridge over I-40



AADT

Madison County
I-40 @ Lower Brownsville Rd.

Legend:

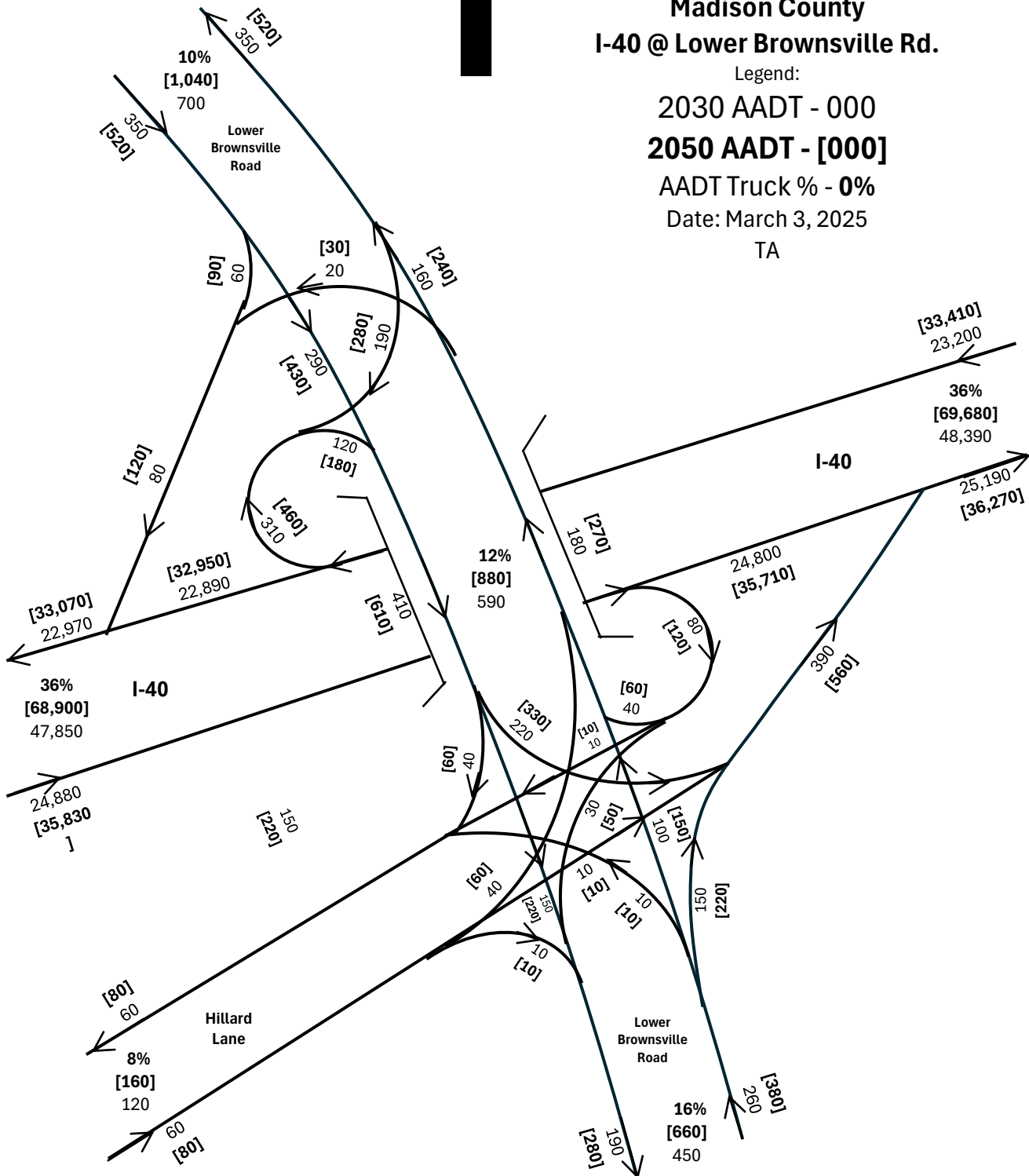
2030 AADT - 000

2050 AADT - [000]

AADT Truck % - **0%**

Date: March 3, 2025

TA





2050 DHV

**Madison County
I-40 @ Lower Brownsville Rd.**

**2050 DHV
PM
[AM]**

Date: March 3, 2025
TA

