

Randolph Road from Judson Road to Livingston Road. A summary of the traffic signal warrants is presented in Table 4. A detailed analysis of the warrants is included in the Appendix.

Table 3. Traffic Volumes for Signal Warrant Evaluation

Period	Randolph Road – EB and WB		Livingston Road - highest approach	
	Existing	Proposed ¹	Existing	Proposed ²
7-8 am	2344	2435	41	150
8-9 am	2616	2692	34	87
9-10 am	1982	2024	12	36
10-11 pm	1745	1774	12	21
11-12 pm	1686	1718	11	21
12-1 pm	1639	1699	12	22
1-2 pm	1767	1802	16	22
2-3 pm	1940	1991	12	16
3-4 pm	2180	2237	16	23
4-5 pm	2478	2566	24	47
5-6 pm	2716	2840	20	60
6-7 pm	2503	2594	23	56

1. Proposed volumes include left turning traffic diverted from Randolph Road at Judson Road

2. Proposed volumes include left and through traffic diverted from Judson Road

Table 4. Summary of the Signal Warrant Analysis

Warrant	Description	Criteria	Warrant Met?	
			Existing	Proposed
1	Eight Hour Vehicular Volume	CONDITION A ➤ 105 vph on Minor Street ➤ 420 vph on Major Street	No	No
		CONDITION B ➤ 53 vph on Minor Street ➤ 630 vph on Major Street	No	No
		CONDITION C Combination of: {120 vph on Minor Street & 480 vph on Major Street for 8 hours} & {60 vph on Minor Street & 720 vph on Major Street}	No	No
2	Four Hour Vehicular Volume	Plotted Points (major street, minor street) Fall above Curve in Figure 4C-1 for 4 Hours (>60 vph)	No	NO*

Warrant	Description	Criteria	Warrant Met?	
			Existing	Proposed
3	Peak Hour	Delay > 4 veh-hours & > 100 Vehicles on Minor Street & > 800 Vehicles for all three approaches in Peak Hour OR Plotted Points (major street, minor street) Fall above Curve in Figure 4C-3 for 1 Hour (>75 vph)	No	YES
4	Pedestrian Volume	Avg. Pedestrian Volume > 100 for 4 Hours & < 60 Acceptable Gaps	No	No
5	School Crossing	# Of Available Gaps < Time Period When Students are Crossing	Not Applicable	Not Applicable
6	Coordinated Signal System	Existing Signals do not Provide the Necessary Degree of Platooning	No	Not Evaluated
7	Crash Experience	> 5 Accidents Susceptible to Correction by Signalization in 3 Years	Not Evaluated	Not Evaluated
8	Roadway Network	Applies when Both Roads are Major Roadways	No	No

*Warrant No. 2 is met for 3 hours and is 4 vehicles short of meeting for a 4th hour, which would satisfy the warrant.

VII. CONCLUSIONS

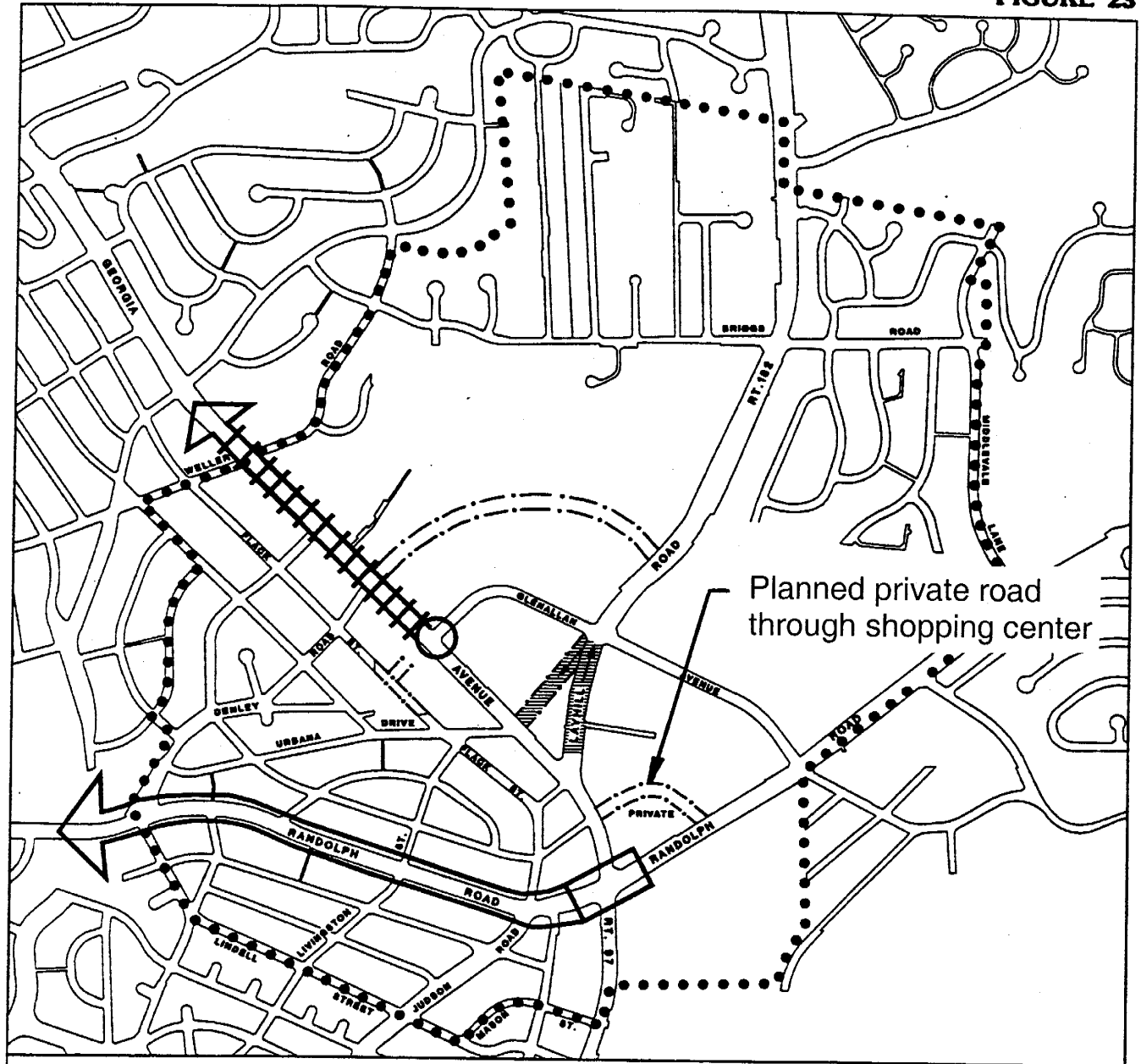
Based on the results of the MUTCD warrant analysis, a signal is not warranted at the intersection of Randolph Road and Livingston Street under existing conditions. However, if the Randolph Road median is closed at Judson Road, thereby diverting left and through traffic to Livingston Street, Warrant #3 would be met, and Warrant #2 would be nearly met. Warrant #2 is met when 4 hours on Livingston Street have volumes of 60 vph or more. Three hours satisfy this requirement; the 4th hour is 4 vehicles short of meeting this requirement.

According to the MUTCD, Warrant 3 shall only be used to warrant a signal in unusual cases, such as at office complexes, manufacturing plants, or industrial complexes that attract or discharge large numbers of vehicles over a short time. Although Warrant #2 does not technically meet the minimum requirements, consideration may be given to installing a signal at this intersection under the proposed conditions since it is nearly met.

An analysis of intersection operations under the proposed scenario with a traffic signal was performed using Synchro. The analysis showed that the intersection would operate at LOS B in the AM and PM peak periods. The worksheets are included in the **Appendix**. *If a traffic signal is installed, the left turn lane length on Randolph Road at Livingston Road should be increased to provide 150 feet of storage.* If a traffic signal is not installed, and the median at Judson Road is closed, the left turn lane length should be increased to provide 75 feet of storage.

PROPOSED LONG TERM TRANSPORTATION IMPROVEMENTS

FIGURE 23



Planned private road through shopping center

- SECTOR PLAN BOUNDARY
- ▨ BIFURCATION OF LAYHILL ROAD
- ADD TURN LANE
- :— EXTENDED/NEW ROADS (PUBLIC OR PRIVATE)
- ▭ GRADE SEPARATION OF GEORGIA AVENUE AND RANDOLPH ROAD
- ▮➔ TRANSITWAY/BUSWAY
- ➔➔➔ BUS OPERATION IMPROVEMENTS

