

MAR 11 2024

CITY CLERK

GENERAL ORDINANCE NO. 2, 2024

AN ORDINANCE AMENDING CHAPTER 8, TRAFFIC AND PARKING REGULATIONS, OF THE TERRE HAUTE CITY CODE.

SECTION 1. Terre Haute City Code Chapter 8, Section 8-13 is hereby amended by the deletion of the stricken text as follows:

Sec. 8-13 Signalized Intersections – Schedule D.

355	3rd Ave.	13th St.	(Gen. Ord. No. 9, 1959, 10-20-59)
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SECTION 2. Terre Haute City Code Chapter 8, Section 8-10 is hereby amended by the addition of the underlined text as follows:

	TRAFFIC ON	SHALL STOP FOR TRAFFIC ON	
4873	<u>3rd Ave.</u>	<u>13th St.</u>	

Introduced by: James P. Chalos James Chalos, Councilperson

Passed in open Council this 11th day of April, 2023.

Tammy Boland Tammy Boland, President

ATTEST: Michelle L. Edwards Michelle L. Edwards, City Clerk

Presented by me to the Mayor this 11th day of April, 2023 at 8:53pm o'clock.

Michelle L. Edwards Michelle L. Edwards, City Clerk

Approved by me, the Mayor, this 11th day of April, 2024.

Brandon C. Sakbun Brandon C. Sakbun, Mayor

ATTEST: Michelle L. Edwards Michelle L. Edwards, City Clerk



CITY OF
TERRE HAUTE
ENGINEERING
DEPARTMENT

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MARCUS MAURER, P.E.
CITY ENGINEER

MEMORANDUM

TO: Marcus Maurer
City Engineer

FROM: Josey Daugherty
Assistant City Engineer

DATE: January 31, 2024

RE: **Traffic Control Signals Removal – 13th Street and 3rd Avenue**

The removal of traffic signals, and the installation of stop signs for west and east-bound travel on 3rd Avenue has been requested at the intersection of 13th Street and 3rd Avenue to allow for uncontrolled travel of north and south-bound lanes on 13th Street. After a traffic study of the intersection, the removal of the existing traffic control signals is warranted. It is the recommendation of this office to do the following:

- Remove the existing traffic control signals and install stop signs for east and west-bound travel at the intersection of 13th Street and 3rd Avenue.
- Place "Cross Traffic Does Not Stop" placards below stop signs for east and west-bound travel.
- Place "Stop Ahead" signs on 3rd Avenue to alert drivers of approaching stop sign(s).
- Remove the existing stop bars on 13th Street at the intersection of 13th Street and 3rd Avenue.

The signals present were likely intended to alleviate school traffic when the school to the southwest was in operation. Since the building is no longer a high-traffic facility, there was no period of time in which the traffic on 3rd Ave significantly increased.

There have been 0 reported accidents at this intersection within the past year. In order to warrant a multi-way stop the MUTCD (Manual on Uniform Traffic Control Devices) warrant 7, section 4C.08 requires five or more reported crashes within a 12 month period susceptible to correction by a multi-way stop.

The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:

- A. The minimum vehicular volume (Condition A) required for a traffic control signal application is 500 vehicles per hour (VPH) for each of any 8 hours on the main approach, and 150 VPH for the same 8 hours on the minor approach (Warrant 1, MUTCD Section 4C.02). 13th St and 3rd Ave do not exceed the requirement.
- B. Where Condition A is not satisfied, the interruption of continuous traffic (Condition B) will be applicable to determine if traffic volume on the major street is creating excessive delay, conflict in entering or crossing the major street for minor street traffic. The traffic volume required is 750 VPH for each of any 8 hours on the main approach, and 75 VPH for the same 8 hours on the minor approach. 13th St and 3rd Ave do not exceed the requirement.

In order to warrant a traffic control signal, either Condition A or Condition B must be met, since neither condition was met a traffic control signal is not warranted. The highest hourly volumes recorded can be seen below in Table 1.

Warrant 1, 8-Hour Vehicular Volume								
8- Hour Period	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
13th St	449	496	494	541	673	646	604	453
3rd Ave	32	35	91	72	71	67	67	39

Table 1 – MUTCD Warrant 1, 8-Hour Vehicular Volume

A traffic control signal shall be considered if for each of any 4 hours, the plotted points representing the VPH on 13th St (total of both approaches) and the corresponding VPH on the higher-volume 3rd Ave approach (one direction only) all fall above the curve in Figure 1 for the existing combination of approach lanes (Warrant 2, MUTCD Section 4C.03). As seen in Figure 1, the plotted points all fall below the curve, in order to warrant a traffic control signal all of the points must fall above said curve.

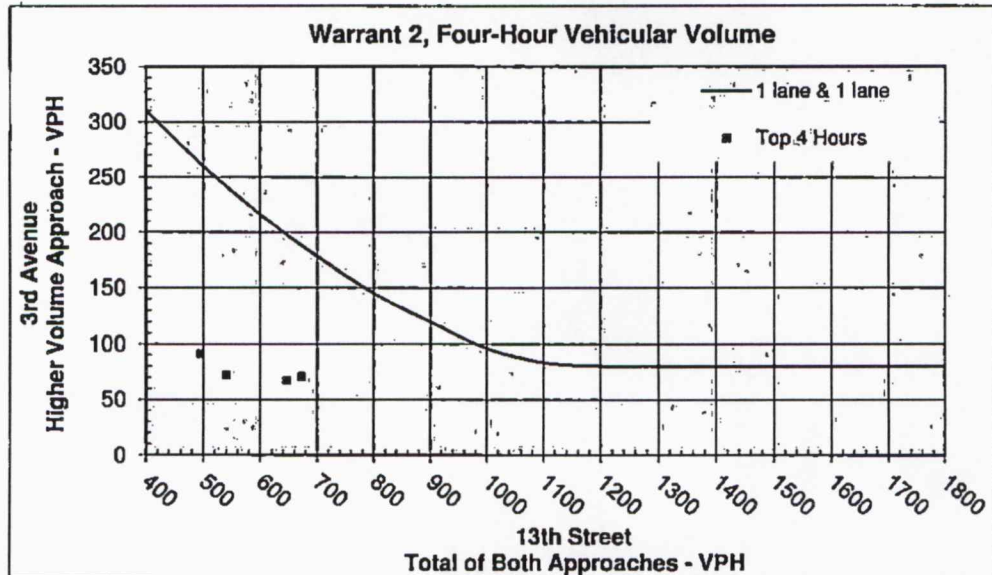


Figure 1 – MUTCD Warrant 2, 4-Hour Vehicular Volume

The peak hour warrant (Warrant 3, MUTCD Section 4C.04) required for a traffic control signal application must meet one of the two following conditions:

- A. All three of the following conditions exist for the same 1 hour period:
 1. Total stopped time delay experience by traffic on 3rd Ave controlled by a stop sign equals or exceeds 4 vehicle-hours
 2. Volume on 3rd Ave equals or exceeds 100 VPH.
 3. Total entering volume during the hour equals or exceeds 800 VPH.
- B. The plotted point representing the vehicles per hour on 13th St (total of both approaches) and the corresponding VPH on the higher-volume 3rd Ave approach (one direction only) for 1 hour falls above the applicable curve in Figure 2 for the existing combination of approach lanes (Warrant 3, MUTCD Section 4C.04).

For condition A, during the 1 hour period, the total stopped time delay experienced by traffic on 3rd Ave was 11.6 vehicle-hours, the peak volume on 3rd Ave was 91 vehicles, and the peak volume for the intersection was 585 VPH.

For condition B, 13th St and 3rd Ave do not meet the minimum VPH, the peak VPH for each of the streets was 494 and 91 respectively. In order to warrant a traffic control signal, either condition A or B must be met, neither of which have been met based on the above criteria.

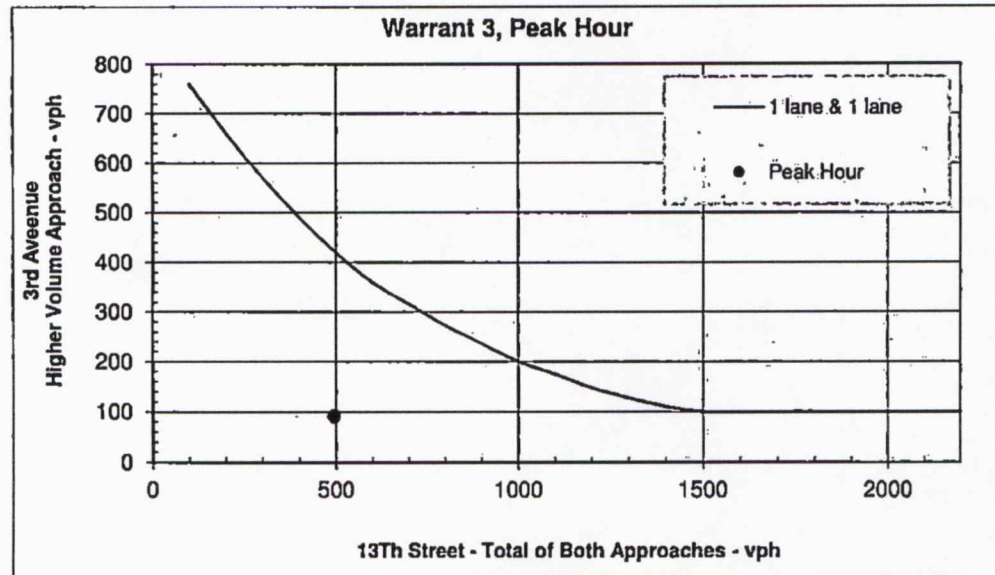


Figure 2 – MUTCD Warrant 3, Peak Hour

The minimum traffic volume required for an all-way stop application is 300 VPH for any 8 hour period on the main approach, and 200 vehicles/pedestrians per hour for the same 8 hour period on the minor approach (MUTCD Section 2B.07). As seen in Table 2 below, 13th St exceeds this requirement, but 3rd Ave does not. The highest hourly volume recorded on Third Avenue was 145 VPH. In order to warrant a multi-way stop both of the streets must meet the minimum traffic volumes.

Multi-Way Stop Minimum Volume, 8-Hour Vehicular Volume								
8- Hour Period	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00
	AM	PM	PM	PM	PM	PM	PM	PM
13th St	449	496	494	541	673	646	604	453
3rd Ave	68	69	145	140	126	118	112	69

Table 2 – Multi-way Stop Minimum Volume, 8-Hour Vehicular Volume

According to the MUTCD, which was compiled by the Federal Highway Administration (FHWA) as a standard for the implementation of traffic control devices, such as stop signs, multi-way stops should be used on intersections with approximately equal volumes of traffic and should not be used for speed control. The average daily traffic (ADT) for 13th St is approximately five and a half times the ADT on 3rd Ave, so a multi-way stop should not be implemented for 13th St traffic. The average daily traffic on 13th Street is approximately 7,621 vehicles per day and the average daily traffic on 3rd Avenue is approximately 1,395 vehicles per day.

The MUTCD also recommends that stop signs and signals be used in a manner that minimizes the number of vehicles required to stop at an intersection. The removal of the signals would reduce, during a typical day, the total stopped time by 22.8 hours for north and south-bound traffic.

In summary, this intersection meets the warrant to remove an existing traffic control signals in terms of traffic volume and accident history. It is my recommendation to remove the traffic signals, allowing for uncontrolled travel for north and south-bound travel and install stop signs for west and east-bound travel.