

# Memorandum

## City of Lawrence

### Public Works Department

TO: David Cronin, City Engineer  
FROM: Zach Baker, Project Engineer  
DATE: 02 June 2017  
RE: Agenda Item for Transportation Commission 6/5/2017:  
4-Way Stop Sign Request – 10<sup>th</sup> Street & Indiana Street Intersection

#### **Background**

In June, 2016, the Traffic Safety Commission received a request for a 4-Way stop controlled intersection at 10<sup>th</sup> Street and Indiana Street.

#### **Details**

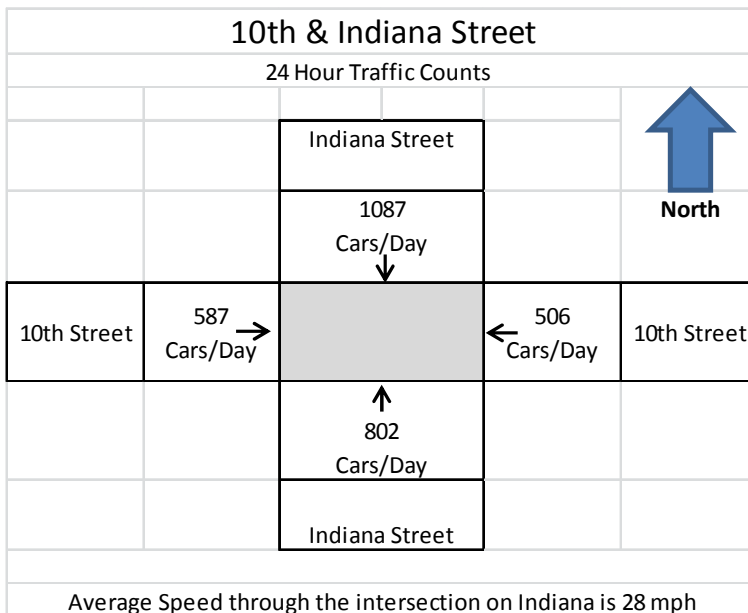
##### 10<sup>th</sup> & Indiana Street

Currently the intersection is a 2-way stop controlled intersection with stop signs placed on the east and westbound approaches of 10<sup>th</sup> Street. Indiana Street and 10<sup>th</sup> Street are classified as “local” streets in a residential area at this location, paved approximately 27 feet wide, with a speed limit of 30 mph as provided in State Law. Indiana Street and 10<sup>th</sup> Street are not identified as a Safe Route to School and are not identified as a bike route on the Countywide Bikeway Study. Sidewalk is on the north side of 10<sup>th</sup> Street and on the west side of Indiana Street. Parking is restricted on the northbound side of Indiana Street and is restricted on the eastbound side of 10<sup>th</sup> Street.

Traffic counts and 85<sup>th</sup> percentile speed data were obtained for Indiana Street through the intersection with 10<sup>th</sup> Street in May of 2017. The 85<sup>th</sup> percentile speed of traffic on Indiana Street through the intersection is approximately 28mph, and, the 24-hour two-way traffic volume is approximately 1889 vehicles per day. The 24-hour two-way traffic volume for 10<sup>th</sup> Street is approximately 1093 vehicles per day. Crash History for the intersection was obtained for the past 5 years. Traffic volumes and crash data are illustrated on the tables below.

10th & Indiana Street					
Crash Data					
Year	2017	2016	2015	2014	2013
Crashes	0	5	3	0	1

10th & Indiana Street		
Crash Data		
Crash Date	Accident Type	Description
Sept. 11, 2016	Right-Angle	EB Car on 10th stopped, pulled out in front of NB Car
Sept. 3, 2016	Right-Angle	EB Car on 10th stopped, pulled out in front of NB Car
July 25, 2016	Right-Angle	WB Car on 10th ran stop sign and hit SB Car
July 22, 2016	Right-Angle	EB Car on 10th ran stop sign and hit NB Car
June 9, 2016	Right-Angle	General Description is Right-Angle, Police Report NA
Dec. 13, 2015	U-Turn	SB Indiana Car performed U-turn in intersection was hit
Sept. 9, 2015	Right-Angle	WB Car on 10th stopped, pulled out in front of SB Car
April 14, 2015	Right-Angle	EB Car on 10th stopped, pulled out in front of SB Car
Nov 3, 2013	NA	Police Report Not Available
.= 5 accidents within a 12 month period		



The Manual on Uniform Traffic Control Devices (MUTCD) states the following criteria should be considered for a multi-way STOP sign installation:

- A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
- B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.
- C. Minimum volumes:
  1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and

2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but
  3. If the 85<sup>th</sup> percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.
- D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.

Other optional criteria that may be considered in an engineering study include:

- a. The need to control left-turn conflicts;
- b. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
- c. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
- d. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

The intersection traffic volumes do not warrant a traffic signal installation so criterion "A" is not applicable.

There has been a 12 month period where 5 or more crashes susceptible to correction by a multi-way stop installation. Between June 9, 2016 and September 11, 2016 there were 5 crashes of the right-angle type that potentially could have been avoided with a multi-way stop installation. Therefore, criterion "B" is met for installation of a multi-way stop. However, in late October of 2016 signs were added beneath the two stop signs on 10<sup>th</sup> Street that read "Cross Traffic Does Not Stop". Since those sign installations there have been zero crashes at this intersection for a period of 7 months.

Traffic volumes at this intersection are low enough on both major and minor street approaches that none of the "C.1 – C.3" criteria or criterion "D" are met for the installation of a multi-way stop. There are no hours during the day where 300 vehicles per hour on the major street and 200 vehicles on the minor street approach this intersection. There are no hours during the day where 70% or 80% of the approach volumes meet the criteria as well.

The optional criteria "a" and "b" are not factors at this intersection. The "c" criterion could potentially be a factor at this intersection. Parking is allowed on Indiana Street on the southbound side of the road; however, parking is restricted for 100 feet north of the intersection and approximately 65 feet south of the intersection. Criterion "d" does not apply as these two streets are classified as "local" streets.

The window of accidents that warrant a multi-way stop installation occurred in approximately a 4 month period in the summer of 2016. Shortly after the last accident occurred additional signage was added underneath the stop signs on 10<sup>th</sup> Street. Since that time there have been zero accidents. It is staff's recommendation that no additional stop signs be added to Indiana Street at 10<sup>th</sup> Street at this time. Staff will continue to monitor accident data at this intersection and will reevaluate this multi-way stop request if additional data determines there is a need.

**Action Request**

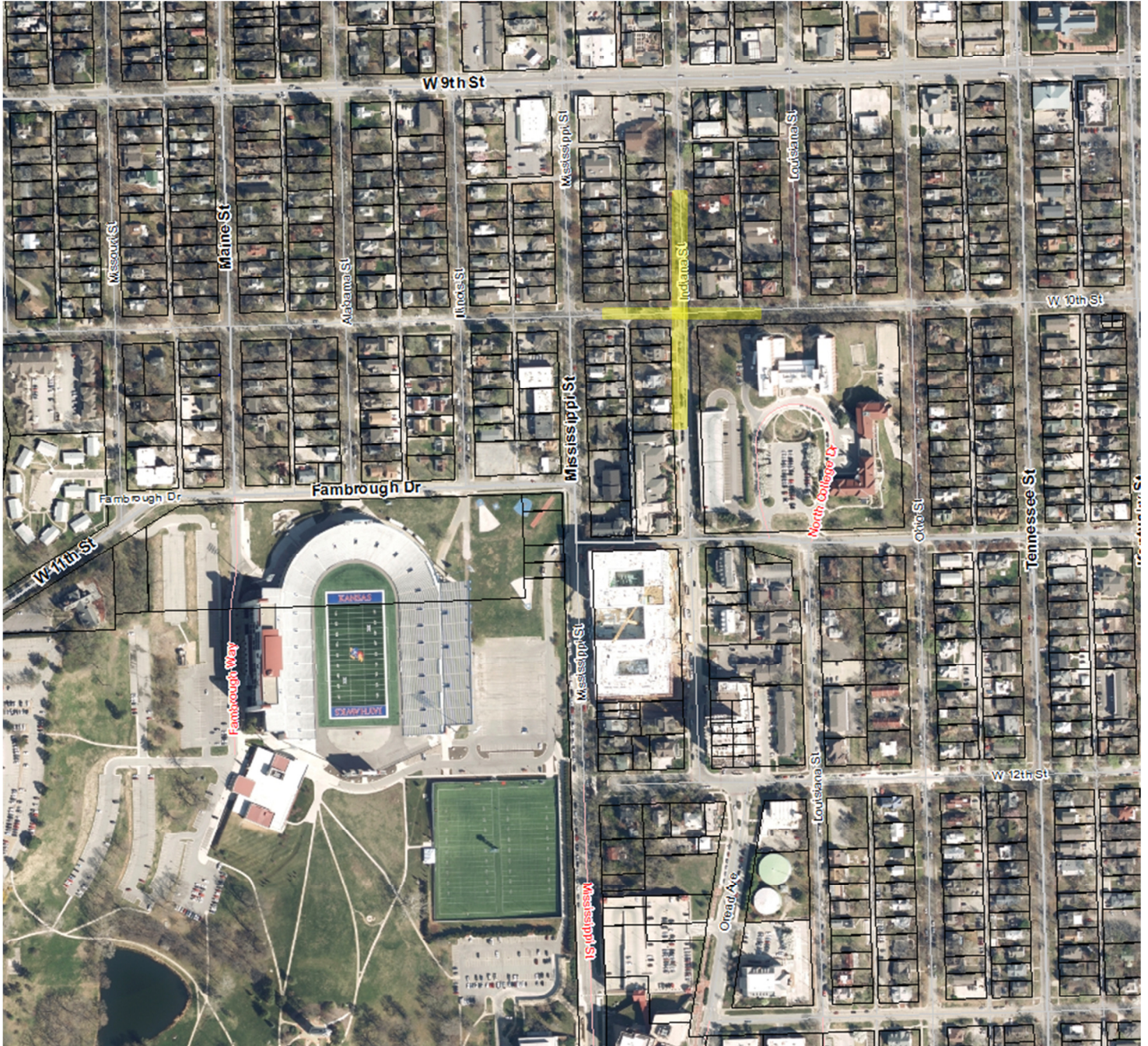
It is recommended that the Transportation Commission deny the request for a 4-way stop controlled intersection at the intersection of 10<sup>th</sup> Street and Indiana Street.

**Attachments**

Location Map  
Email Request



# 10<sup>th</sup> and Indiana Street



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Miles

## Zachary Baker

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**From:** Chandler Schmidt <chandlerschmidt@gmail.com>  
**Sent:** Thursday, June 23, 2016 12:29 PM  
**To:** David Woosley  
**Subject:** Tenth & Indiana

To Whom it May Concern,

I live at 10th and Indiana. It is a two-way stop for east-west traffic at the 10th and Indiana intersection. North-south traffic does not stop at the intersection.

I have lived here for about a year and have witnessed wrecks and many, many near-wrecks. In fact today since 8 AM, I have heard tires screech and cars nearly wreck 3 times today.

What usually happens is that east-bound traffic on 10th street pulls out in front of cars travelling north or south on Indiana. It is my belief that they assume it is a four-way stop for whatever reason (sometimes the empirical data involving humans can't be explained).

For example, I witnessed a wreck only two weeks ago because an east-bound SUV on 10th pulled right out in front of a south-bound car on Indiana. It was clear daylight and there were (and currently are) no objects obstructing a view of oncoming south-bound traffic. Thus, I believe it is reasonable to guess that the SUV assumed that the intersection is a four-way stop.

Further, today there were three near-wrecks. I work from home at my computer facing a window looking out onto the intersection. Two of the three near-wrecks I witnessed today followed the same pattern: east-bound traffic on 10th pulled out in front of oncoming south-bound traffic. It is clear daylight, and again there are no obstructions of view.

While I hate stop signs myself, I think it may be necessary to make this a four-way intersection, or at least somehow make it clear that north-south traffic does not stop. However, you guys are the experts, and I trust your judgment, so there may be some other option I am not seeing.

Sincerely,  
Chandler Schmidt  
A Concerned Resident