

To: Mayor & City Council

From: Damion Pregitzer, PE, PTOE; Traffic Engineer

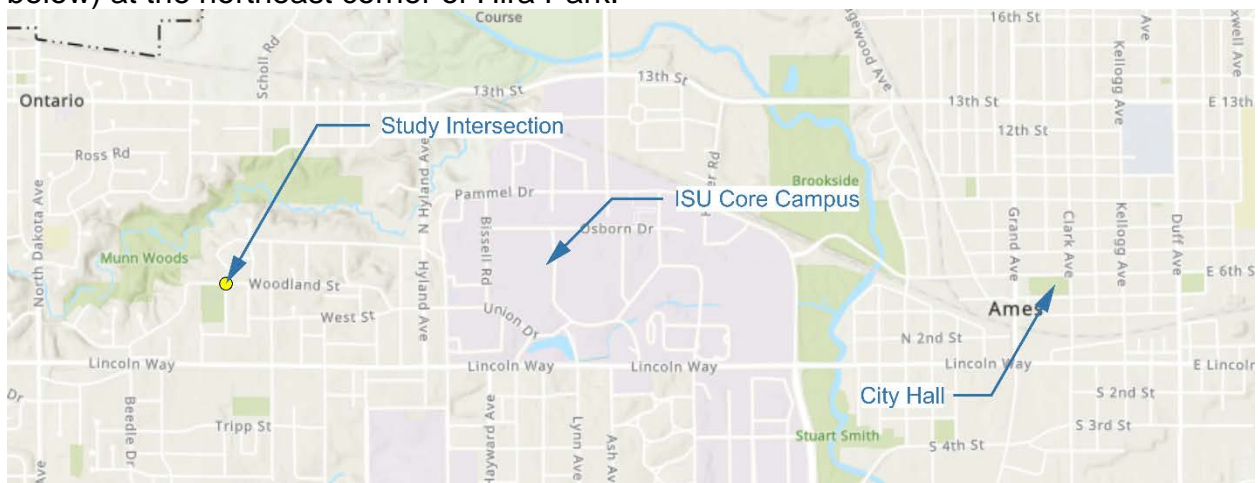
Date: August 4, 2023

Subject: Intersection Control at the intersection of Woodland Dr. and Westwood St.

This memo is in response to the June 27, 2023, email from Mr. Ken Platt of 3620 Woodland Street, which City Council referred to staff for a memo on July 11, 2023.

Background:

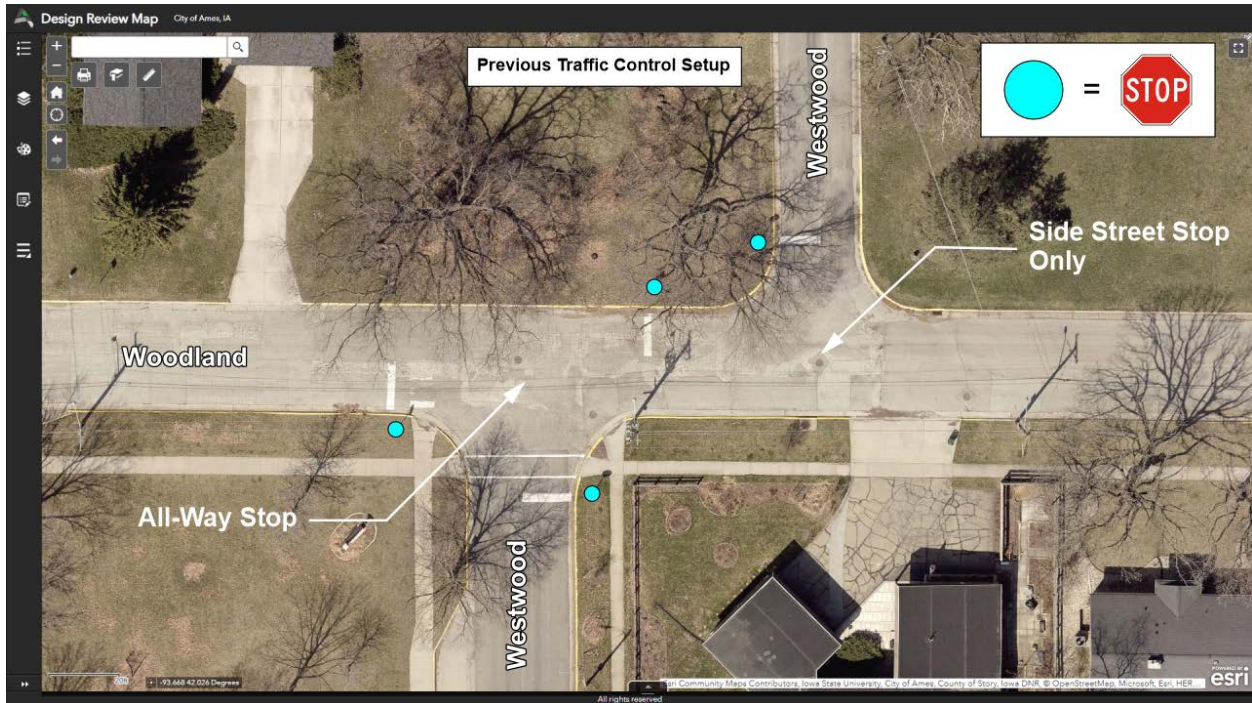
This issue was brought to the attention of City Staff by a resident who requested that the City review the East-West Stop Signs at the intersection of Woodland and Westwood. The intersection is in the neighborhood directly west of ISU's core campus area (see map below) at the northeast corner of Hira Park:



Staff informed the resident that an engineering study would be required. Below is a brief summary of those findings.

Engineering Study:

When staff began the study, the traffic control conditions were as shown in the diagram below:



Staff reviewed the requirements found within the Manual on Uniform Traffic Control Devices (MUTCD) Chapter 2B “Regulatory Signs”. It should be noted that MUTCD is the Federal standard for all traffic control, which has been adopted by the State of Iowa (761 IAC 130.1) for application on all public roadways.

Below is the guidance provided by the MUTCD for stop or yield control:

Guidance:

02. *Engineering judgment should be used to establish intersection control. The following factors should be considered:*
 - A. *Vehicular, bicycle, and pedestrian traffic volumes on all approaches;*
 - B. *Number and angle of approaches;*
 - C. *Approach speeds;*
 - D. *Sight distance available on each approach; and*
 - E. *Reported crash experience.*
03. *YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist:*
 - A. *An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;*
 - B. *A street entering a designated through highway or street; and/or*
 - C. *An unsignalized intersection in a signalized area.*
04. *In addition, the use of YIELD or STOP signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:*
 - A. *The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;*
 - B. *The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding is necessary; and/or*
 - C. *Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported within a 2-year period.*
- 05. *YIELD or STOP signs should not be used for speed control.***

Looking at traffic volumes, the most recent daily counts showed that Westwood was ~300 trips per day, while Woodland Street was ~1270-1660. Traffic control recommendations

are typically based on peak-hour traffic. Therefore, the two offset "T" intersections would see approximately 64-83 vehicles per hour on Woodland and about 15 vehicles per hour on Westwood. **The study looked at whether the multi-way stop conditions were still warranted, and it was determined that warrants were unmet.** The warrant criteria for a multi-way stop from the MUTCD are as follows:

04 *The following criteria should be considered in the engineering study 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 85th-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.*

The stop signs on Woodland were likely installed at some point to facilitate a school crossing staffed by a crossing guard in the past when this was the site of Edwards Elementary school. Google street view (below) shows how the intersection looked in the past when the school was in service and then what it looks like today after the school was transformed into a neighborhood park.

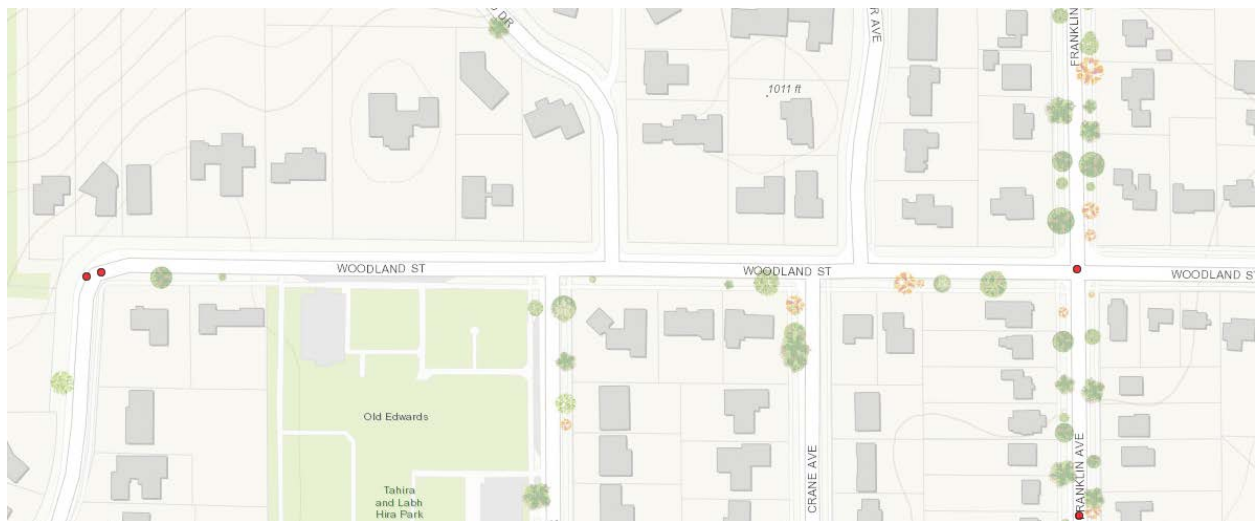


Woodland in 2013



Woodland in 2022

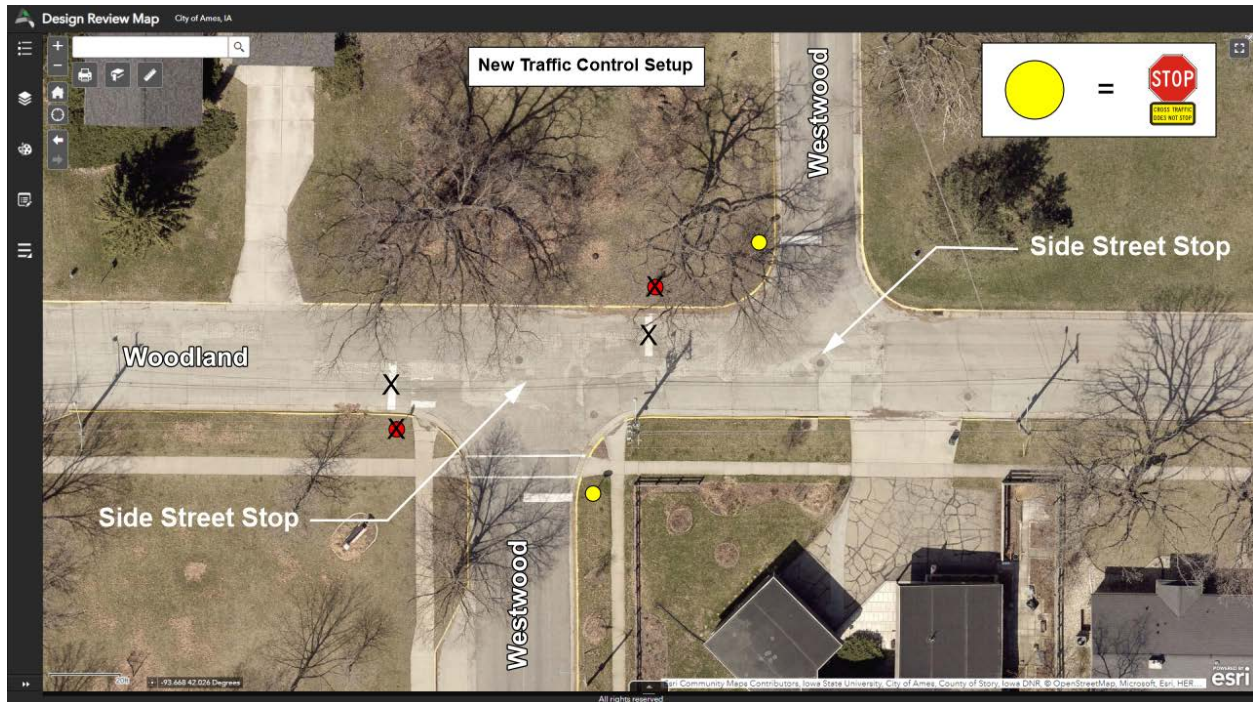
It should be noted that within the study area, **there were no reportable vehicle, bike, or pedestrian crashes in the Iowa DOT crash database (2013-2023)**. Below is a study area map, where crashes are shown as red dots.



The Woodland and Oliver/Crane intersection is located just a block to the east and is configured similarly to the Woodland/Westwood group of “T” intersections. The Woodland and Oliver/Crane intersection is adequately controlled for its configuration with side street (north-south) stops without any reported crashes during the database timeframe (2013-2023).

Study Results/Staff Action:

In conclusion, **staff kept the North and South stops on Westwood at Woodland, only removing the unwarranted East/West stops (and stop bars).** This makes the intersection control conform to MUTCD standards and also matches the adjacent intersection control at the Woodland and Oliver/Crane intersection. Staff also added “Cross Traffic Does Not Stop” warning signs to the remaining Stops to help with the transition. The new traffic control set up is as shown below (“X” indicates what was removed):



Next Steps:

As mentioned earlier in this memo, according to MUTCD standards and practice, using a stop sign to control speed is inappropriate. To address Mr. Platt’s concern regarding speeding around the neighborhood park, after traffic has acclimated to the new traffic control conditions, speed data can be collected following the regular process for evaluating excessive speeding. If traffic calming measures are warranted, the appropriate traffic calming devices can be installed at that time.

If further explanation or discussion is desired, the City Council can direct staff to place this matter on a future meeting agenda.

COUNCIL ACTION SUMMARY

Meeting Date: July 11, 2023

Agenda Item #: Dispositions

SUBJECT: Safety Concern Regarding Removal of Stop Sign at the Intersection of Woodland Street and West Street

ACTION TAKEN: Moved to request a memo from staff

MOTION BY: Gartin

SECOND BY: Junck

VOTING AYE: Beatty-Hansen, Corrieri, Gartin, Junck, Rollins

VOTING NAY: None

ABSENT: Betcher

By: Carly M. Watson, Deputy City Clerk

Sent to: John Joiner, Director of Public Works

Cc: Damion Pregitzer, Traffic Engineer

From: [Platt, Kenneth B. \[V MPM\]](#)
To: [City Council and Mayor](#)
Subject: Removal of Stop Sign at Woodland /Westwood street intersection
Date: Tuesday, June 27, 2023 11:32:35 PM

[External Email]

I live at 3620 Woodland Street on the corner of the intersection of Woodland street and Westwood street, directly across from the Hira city park where Edwards Elementary School once stood. The recent removal of the Stop Signs on Woodland Street is problematic, and in my opinion a safety hazard for the children and others using the park. The stop signs, although ignored by some, slowed traffic through this residential neighborhood and contributed to the safety of the children travelling to and from the park. Woodland street is frequently used as an exit route from the University. I believe that this route will become even more popular as awareness grows of it being more of a thoroughfare than a neighborhood street.

Adding to this potential safety hazard is the growing number of deer residing in the neighborhood that casually cross the street 24/7. At least the stop signs reduced the overall speed of traffic and provided some degree of protection from vehicle /deer interactions. The continuous increase in the local deer population and the increased average vehicle speed due to the removal of the stop signs create an additional safety hazard.

I ask the council to consider replacing those Stop Signs.

Thank you.

Ken Platt
3620 Woodland Street
Ames