



MAPLE AND JEFFERSON TRAFFIC SIGNAL

Removal and Replacement with Four-Way Stop

History

In 2019, it was brought to the City's attention that the traffic signal at this intersection need to be replaced as the parts are no longer available to maintain this type of traffic signal. When it a signal is replaced, it is standard practice to do a traffic study to determine the replacement and there had been concerns for years that the signal was no longer warranted at this location.

The study was planned for 2020, but was delayed due to COVID until March of 2021. The City had a traffic study performed by R.S. Engineering to determine if a traffic signal is appropriate for the daily flow of traffic at this intersection.

Frequently Asked Questions

What was the motivation behind this improvement? Who reviewed it?

While there are cost savings associated with this recommended action compared to a replacement light with cross walk indicators, the driving factor was whether the intersection met the warrants to dictate a traffic signal for safety.

A warrant for any traffic control device is the minimum criteria that must be met before such a device can be installed, but it does not require a signal to be put in place where one does not exist. The Michigan Manual of Uniform Traffic Control Devices (MMUTCD) spells out these warrants stating the number of vehicles, pedestrians, crashes or combination of these that must exist before a signal can be installed.

Traffic signals have nine warrants, at least one of which must be met before a signal can be installed. The decision to install a traffic control device is made on the basis of an engineering study, the warrants and engineering judgment by a qualified traffic engineer. Improper or unjustified traffic control signals can result in the following consequences:

- Excessive delays;
- Excessive disobedience of the signal indications;
- Increased use of less adequate routes to avoid the traffic control signal; and
- Increases in frequency of collisions.

Many of these consequences are already being experienced with the existing light, including complaints from adjacent neighborhoods that are being used to cut through.

After the study was completed, it was determined that only one warrant was met and it was Warrant 3, Peak Hours Volume. The MMUTCD notes this warrant should ONLY be applied in unusual cases such as an office complex, manufacturing plant, or industrial complex that discharge a large number of vehicles over a short time. This intersection would not qualify for that circumstance and would not determine a need for a signal.

The study results were reviewed and supported by the City Engineer. It was than reviewed by the Public Works Director, Police Chief, City Manager and the Downtown Development Authority to ensure all public aspects were considered. All recommended moving forward with the four way stop to improve safety at this intersection based on the data and their own professional experiences.

How did we make sure COVID impacts were considered in the study?

The study did occur during some COVID partial lockdowns and that was taken into account. The adjusted factor compared data from an adjacent intersection prior to COVID compared to the traffic at the time of the study (30% decrease). It also included a growth factor rate of 0.5%. This adjusted factor was 1.43 to account for any COVID decline plus an annual growth rate.

I want Mason to be efficient for vehicles. Will this cause more backups than the existing light?

Data shows that the delay related to a traffic light instead of a four-way stop is actually longer. We believe this will actually improve backed up traffic during busy times, especially when there is a vehicle trying to turn left, as the intersection has no left turn lane and creates a backup of traffic.

I want Mason to be safe for pedestrians. Were pedestrians considered as part of this evaluation?

Yes, the City has received complaints about this intersection related to pedestrians for years mainly due to them not feeling safe when someone is rushing through the light, especially turning left.

Research has shown the four-way stops are actually safer for pedestrians than traffic lights. A study out of Philadelphia noted that after removing 462 lights and replacing them with four-way stops their crashes reduced by 24% and severe pedestrian injury crashes reduced by 68%. Four-way stops are now recommended as a way to make a city more walkable, if the warrants allow. This greater safety has multiple causes as generally no law-abiding driver ever passes an all-way stop sign at more than a very low speed, and there is considerable increase in eye contact among users and pedestrians.

I'm interested in more detailed information. Can I review the traffic study? Definitely, the traffic study performed by R.S. Engineering and is available [here](#).

Implementation

May 2, 2022: Council consideration of a Traffic Control Order to convert the light.

May 13, 2022: Convert the existing traffic signals to four-way flashing red lights and installing temporary stop signs at the intersection for approximately 45 days.

After July 4: New poles, flashing red lights, and permanent stop signs will be installed (start date has not yet been selected). The construction portion of the project will take a total of five days of work broken up into two segments over several weeks. The first portion will consist of installing the concrete pole foundation (approximately 2 days to install and up to two weeks to cure), second portion will be the removal of the old traffic lights and poles, then the installation of the new lights, poles, and stop signs (approximately 3 days).

We appreciate your patience throughout this improvement transition.

Resources

If you have any questions or concerns, please contact Customer Service at 517.676.9155 or info@mason.mi.us.