



Agenda Item Summary

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Agenda Item Title

A Motion to Concur with the Transportation Commission's Recommendation to Upgrade the Two-Way STOP Signs to All-Way STOP Signs at the Intersection of East Avenue and Division Street and Direct Staff to Prepare the Necessary Ordinance

Overview

The Village of Oak Park received a petition to install all-way STOP signs at the intersection of East Avenue and Division Street. The Village conducted crash analysis and traffic studies for the intersection. The Transportation Commission voted three to one to recommend upgrading to all-way STOP signs at the intersection of East Avenue and Division Street at its September 11, 2017 meeting.

Staff Recommendation

Approve the Motion.

Fiscal Impact

Staff estimates it will cost less than \$1,500 to install signage and related pavement markings to upgrade from a two-way to an all-way STOP controlled intersection. There are available funds in the FY2017 General Fund, Public Works - Street Services, account no. 1001-43740-761-550634 for this work.

Background

On October 26, 2016, the Village of Oak Park received a petition to upgrade to all-way STOP signs at the intersection of East Avenue and Division Street. Persons representing 54.6% of the street frontage on the petitioning blocks signed the petition. The petition was certified as a valid petition. Reasons provided for the petition are: the number of recent traffic accidents, severity of the accidents as well as speed of vehicles traveling eastbound and westbound on Division Street. See Attachment A for a copy of the petition and the related letter of explanation.

See Attachment B for copies of the written public testimony received by the Village for this item. There are a total of twenty-five emails included in the written public testimony. Twenty-one of the emails are in support of the upgrade to all-way STOP signs at the intersection of East Avenue and Division Street while four emails are opposed to the upgrade.

A twenty-four hour traffic volume count and speed study was conducted on Tuesday, April 11, 2017 for the 800 and 900 blocks of North East Avenue and 500 and 600 blocks of Division Street. The results were analyzed and then summarized (see Attachment E). Staff also reviewed the crash history of the intersection and generated a collision diagram based on the results (see Attachment F).

The petition was reviewed by the Transportation Commission at its September 11, 2017 meeting. Staff gave a presentation on the issue including: background on the petition, history of traffic control devices at the intersection, analysis of the collected traffic data and collision diagram. Area residents provided public testimony on the item. After hearing Staff's presentation and public testimony, the Transportation Commission deliberated on the item. The draft minutes for the September 11, 2017 Transportation Commission meeting are included as Attachment G.

At the September 11, 2017 meeting, the Transportation Commission voted 3 to 1 in favor of recommended to upgrade the intersection of East Avenue and Division Street from two-way north-south STOP controlled to all-way STOP controlled intersection.

ANALYSIS SECTION

Geometry of the Intersection and Neighborhood Context (Attachments C & D)

See Attachment C for digital aerial photographs of the East Avenue and Division Street intersection and the neighboring area. The intersection in question is one block east and two blocks south of St. Giles School and two blocks west of Taylor Park.

Attachment D shows the traffic control devices on Division Street between Oak Park Avenue and Ridgeland Avenue as well as the following other east-west streets: Thomas Street and Berkshire Street.

Traffic Study - Volume and Speed (Attachments E & F)

Reviewing the 24-hour volumes, the average daily traffic on the 800 and 900 blocks of North East Avenue was 1,334 and 1,537 vehicles, respectively. The average daily traffic was 7,786 vehicles and 7,736 vehicles for the 500 and 600 blocks of Division Street, respectively. Please see Attachment E for a summary of the vehicle traffic study results. According to the Village's most recent Comprehensive Plan, Envision Oak Park (see Attachment F), Division Street throughout the Village is classified as a minor arterial and East Avenue in this section of Oak Park is classified as a collector street. As a result, volumes on all blocks studied are within the expected norms for its street classification.

Regarding vehicular speeds, it is an accepted traffic engineering practice to set the speed limit to the 5 mile per hour increment above or below the 85th percentile speed. Village Staff holds the opinion that the majority of drivers will drive at or near the posted speed limit. In addition, it is an accepted fact that the speed indicated on speedometers can vary up to 2 percent above or below the actual speed of the vehicle.

By definition, the 85th percentile speed is the speed at which 85 percent of the vehicles are traveling at or less than. Conversely, 15 percent of the vehicles will be traveling faster than the 85th percentile

speed. It has already been stated that speed limits are typically set to the 5 mile per hour increment above or below the 85th percentile speed. This implies that it is expected that approximately 15 percent of vehicles will be traveling faster than the speed limit, if the speed limit is the 5 mile per hour increment below the 85th percentile speed.

Looking at the 85th percentile speeds for the 800 and 900 blocks of North East Avenue, the directional speeds for the two blocks range between 27 and 31 miles per hour (mph). The 85th percentile speeds for the 500 and 600 blocks of Division Street, the directional speeds for the two blocks range between 29 mph and 32 mph. Based on the collected data, it appears there may be a speeding issue on 800 and 900 blocks of North East Avenue and 500 and 600 blocks of Division Street.

The Manual on Uniform Traffic Control Devices lists that STOP signs should not be used for speed control. Studies have shown there is little or no effect on vehicle speeds on residential roads after the installation of STOP signs. Vehicle speeds are reduced within 150 feet of the intersection otherwise the effect of STOP signs on vehicle speeds is negligible.

Crash History - Collision Diagrams (Attachment G)

Thirty-six months of vehicle crash reports covering the period of September 2014 through August 2017 were reviewed for the East Avenue and Division Street intersection. Please see Attachment G for the collision diagrams. In 1997, the intersection was studied as part of the Village-wide traffic study. At that time, the number of reported crashes at the intersection in the 36 month period totaled five, while the average daily traffic was 10,367 vehicles.

The 1997 crash rate for the East Avenue and Division Street intersection was calculated to be 0.440 accidents per million entering vehicles (Acc/MEV). This crash rate is then compared to the critical crash rate for the particular section of the Village's area-wide traffic study. For the northern section of the area-wide traffic study (Augusta Street to North Avenue and Harlem Avenue to Austin Boulevard), the critical crash rate is 0.675 Acc/MEV. If an actual accident rate exceeds the critical crash rate then it is highly probable that the accidents were caused by factors other than chance.

The number of reported crashes that occurred at the East Avenue and Division Street intersection for the thirty-six months ended August 31, 2017 totaled fifteen. All but one of the crashes was a right angle collision. The average daily traffic for the intersection as determined as part of this traffic study is 9,166 vehicles. From this data, the 2017 crash rate for the East Avenue and Division Street intersection is calculated to be 1.494 Acc/MEV.

However there was a Chicago Avenue resurfacing during 2016 and 2017. Specifically, the resurfacing project started in August 2016, shutdown for the winter in December 2016, resumed in March 2017 and essentially ended in June 2017. And Division Street was the alternate east-west route for Chicago Avenue during the resurfacing project. The majority of the East Avenue and Division Street accidents in 2016 (6 of 7) and 2017 (3 of 5) occurred during the resurfacing project.

On page 2 of Attachment G, staff has highlighted the nine accidents that occurred during nine month resurfacing project. Page 3 of Attachment G shows the accidents that occurred during the three years

ending August 31, 2017 minus the accidents that occurred while the resurfacing project was in progress. The number of crashes is reduced to six and the intersection crash rate becomes 0.598 Acc/MEV which is less than the critical crash rate of 0.675 Acc/MEV.

While staff is concerned the significant increase in accidents in 2016 and 2017 is related to the additional traffic diverted from Chicago Avenue to Division Street from the resurfacing project; staff is recommending to upgrade to all-way STOP signs at the East Avenue and Division Street intersection because 1) the 2017 crash rate without the accidents that occurred during the resurfacing project is close to the critical crash rate and 2) a right angle collision occurred subsequent to the Transportation Commission meeting that would raise the intersection's crash rate to 0.697 Acc/MEV which is above the critical crash rate of 0.675 Acc/MEV.

Alternatives

The alternative to this recommendation could be to delay action to gain additional information.

Previous Board Action

N/A.

Citizen Advisory Commission Action

The Transportation Commission recommended the following:

1. Upgrade to all-way STOP signs at the intersection of East Avenue and Division Street.
2. Install continental crosswalk pavement markings on Division Street at East Avenue.
3. Complete a six month follow up study and bring back to the Transportation Commission for review.
4. Increase police enforcement.

The motions passed three to one.

Anticipated Future Actions/Commitments

Subject to consensus of the Village Board, staff will submit an Ordinance to the Village of Oak Park Board for adoption for the installation of the east-west STOP signs at the intersection of East Avenue and Division Street at a future Board meeting.

Intergovernmental Cooperation Opportunities

None at this time.

Performance Management (MAP) Alignment

N/A.