



TRAFFIC COMMITTEE AGENDA

March 17, 2021 – 7:30 P.M.

Remote Electronic Meeting

1. Roll Call
2. Proposed Resolution to Conduct Electronic Meeting
3. Approval of Minutes – January 20, 2021 Traffic Committee

PUBLIC HEARINGS

4. No Public Hearings

REGULAR BUSINESS

5. Request for Traffic Control – Lila at Allison
6. Request for Traffic Control – Lila at Prentis
7. Request for Traffic Control – Lila Ellery
8. Request for Traffic Control – Midvale at Allison
9. Request for Traffic Calming – Firefighter's Park
10. Election of Officers
11. Public Comment
12. Other Business
13. Adjourn

Copy to:

Item 5 -8: Tom Duszynski, 5068 Tyler Drive; Properties within 300'

Item 6: Paula Kreuter, 1240 Prosper

Traffic Committee Members; Sgt. Justin Novak, Police Department; Lt. Eric Caloia, Fire Department

TRAFFIC COMMITTEE

MESSAGE TO VISITORS, DELEGATIONS AND CITIZENS

The Traffic Committee is composed of seven Troy citizens who have volunteered their time to the City to be involved in traffic and safety concerns. The stated role of this Committee is:

- a. To give first hearing to citizens' requests and obtain their input.
- b. To make recommendations to the City Council based on technical considerations, traffic surveys, established standards, and evaluation of citizen input.
- c. To identify hazardous locations and recommend improvements to reduce the potential for traffic crashes.

Final decisions on sidewalk waivers will be made by the Committee at this meeting.

The recommendations and conclusions arrived at on regular items this evening will be forwarded to the City Council for their final action. Any citizen can discuss these recommendations before City Council. The items discussed at the Traffic Committee meeting will be placed on the City Council Agenda by the City Manager. The earliest date these items might be considered by City Council would normally be 10 days to 2 weeks from the Traffic Committee meeting. If you are interested, you may wish to contact the City Manager's Office in order to determine when a particular item is on the Agenda.

Persons wishing to speak before this Committee should attempt to hold their remarks to no more than 5 minutes. Please try to keep your remarks relevant to the subject at hand. Please speak only when recognized by the Chair. These comments are made to keep this meeting moving along. Anyone wishing to be heard will be heard; we are here to listen and help in solving or resolving your particular concerns.

2. Proposed Resolution to Conduct Electronic Meeting

Public bodies may conduct public meetings remotely during the COVID-19 pandemic pursuant to Public Act 254 of 2020. The suggested resolution must be approved at the start of the meeting.

SUGGESTED RESOLUTION:

RESOLVED, that the Troy Traffic Committee hereby allows all members to participate in public meetings by electronic means as allowed by Public Act 254 of 2020, since an in person meeting could detrimentally increase exposure of board members and the general public to COVID-19, and would also be difficult to facilitate in light of the recent Michigan Department of Health and Human Services epidemic orders protecting public health and safety.

Members participating electronically will be considered present and in attendance at the meeting and may participate in the meeting as if physically present. However, members must avoid using email, texting, instant messaging, and other such electronic forms of communication to make a decision or deliberate toward a decision.

RESOLVED, that the Troy Traffic Committee hereby establishes public participation rules to provide for two methods by which members of the public can be heard by others during meetings. Email sent to HuotariWJ@troymi.gov and received by 3:00 p.m. on the day of the meeting will be read during the public comment period of the meeting. Voicemail left at 248.524.3387 and received by 3:00 p.m. on the day of the meeting will be read into the record during the public comment period of the meeting. Both email and voicemail public comments will be limited to three minutes each.

3. Approval of Minutes – January 20, 2021 Traffic Committee

PUBLIC HEARING

4. No Public Hearings

REGULAR BUSINESS

5. Request for Traffic Control – Lila at Allison

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Lila Drive at Allison Drive be **MODIFIED** from no traffic control to **ADD** a new YIELD sign on the eastbound Lila Drive approach to Allison Drive.

- b. RESOLVED, that **NO CHANGE** be made at the intersection of Lila Drive at Allison Drive.

6. Request for Traffic Control – Lila at Prentis

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Lila Drive at Prentis Drive be **MODIFIED** from no traffic control to **ADD** a new STOP sign on the northbound Prentis Drive approach to Allison Drive.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Lila Drive at Prentis Drive.

7. Request for Traffic Control – Lila at Ellery

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Lila Drive at Ellery Drive be **MODIFIED** from no traffic control to **ADD** a new YIELD sign on the southbound Ellery Drive approach to Lila Drive.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Lila Drive at Ellery Drive.

8. Request for Traffic Control – Midvale at Allison

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Midvale Drive at Allison Drive be **MODIFIED** from no traffic control to **ADD** a new YIELD sign on the eastbound Midvale Drive approach to Allison Drive.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Midvale Drive at Allison Drive.

9. Request for Traffic Calming – Firefighter’s Park

Paula Kreuter of 1240 Prosper submitted two (2) service requests through the City’s online portal regarding traffic calming measures at Firefighter’s Park. She would like Firefighter’s Park to be considered for speed bumps. Ms. Kreuter states *“the traffic from teens and golfers is very erratic and dangerous. She proposes a speed bump between the back parking lot and the restroom to slow traffic between the gazebo and playground”*. Ms. Kreuter added in her second service request *“I truly believe speed bumps are needed at Firefighter’s Park. Speed limits are not practiced and it’s becoming dangerous to cross the park safely”*.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that Firefighter’s Park speed limit be posted at 15 mph pursuant to Section 257.627 (2) (c) of the Michigan Vehicle Code.
- b. RESOLVED, that **NO CHANGE** be made at Firefighter’s Park.

10. Election of Officers

In accordance with the By-Laws of the City of Troy Traffic Committee, Article III, nomination of officers shall be made from the floor on the third Wednesday of February of each year for the purpose of electing a Chairperson and a Vice-Chairperson. There was no Traffic Committee meeting held in February so this item was moved to the March 17, 2021 meeting.

A candidate receiving a majority vote of the members present at the meeting shall be declared elected and shall serve for one year or until his or her successor shall take office. Vacancies in offices shall be filled immediately by regular election procedure.

Article II of the By-Laws speaks to the Officers and Their Duties, which states:

Section 1 - The officers of the Traffic Committee shall consist of a Chairperson and a Vice-Chairperson.

Section 2 - The Chairperson shall preside at all meetings of the Traffic Committee and shall have the duties normally conferred by parliamentary usage on such officers.

Section 3 - The Chairperson shall be one of the citizen members of the Committee and shall have the privilege of discussing all matters before the Committee and voting thereon.

Section 4 - The Vice-Chairperson shall act for the Chairperson in his or her absence. The Vice-

Chairperson shall be a citizen member of the Committee, with the rights and privileges of the Chairperson.

11. Public Comment

12. Other Business

13. Adjourn



PROPOSED RESOLUTION

February 10, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/ Traffic Engineer

SUBJECT: Proposed resolution to conduct electronic meeting

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SUGGESTED RESOLUTION:

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An electronic meeting of the Troy Traffic Committee was held remotely using GoToMeeting software on Wednesday, January 20, 2021. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

1. Roll Call

Present: Don Johnson
Richard Kilmer
Cindy Nurak
Pete Ziegenfelder
Alankar Shende, Student Representative

Absent: Al Petrulis
Sunil Sivaraman
Cynthia Wilsher

Also present: Shyamsundar Kelamangalam Ramaiah of 788 Palermo
Sgt. Justin Novak, Police Department
Bill Huotari, City Engineer/Traffic Engineer

2. Proposed Resolution to Conduct Electronic Meeting

Public bodies may conduct public meetings remotely during the COVID-19 pandemic pursuant to Public Act 254 of 2020. The suggested resolution must be approved at the start of the meeting.

Resolution # 2021-01-01
Moved by Ziegenfelder
Seconded by Johnson

RESOLVED, that the Troy Traffic Committee hereby allows all members to participate in public meetings by electronic means as allowed by Public Act 254 of 2020, since an in person meeting could detrimentally increase exposure of board members and the general public to COVID-19, and would also be difficult to facilitate in light of the recent Michigan Department of Health and Human Services epidemic orders protecting public health and safety.

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Yes: Johnson, Kilmer, Nurak, Ziegenfelder
No: None
Absent: Petrulis, Sivaraman, Wilsher

MOTION CARRIED

3. Minutes – November 18, 2020

Resolution # 2021-01-02
Moved by Kilmer
Seconded by Nurak

To approve the November 18, 2020 minutes as printed.

Yes: Johnson, Kilmer, Nurak, Ziegenfelder
No: None
Absent: Petrulis, Sivaraman, Wilsher

MOTION CARRIED

PUBLIC HEARINGS

4. Request for Sidewalk Waiver – 795 West Wattles (Sidwell # 88-20-21-101-025)

Shyamsundar Kelamangalam Ramaiah of 788 Palermo requests a sidewalk waiver for the sidewalk at 795 West Wattles (Sidwell # 88-20-21-101-025). Shyamsundar states *“the site is in the corner lot of Wattles Road and Finch Drive. There is already a sidewalk for this site on the Wattles Road side, i.e. NORTH side of the site and there is also a sidewalk for this site on the other side of the Finch Drive, i.e. EAST side of the site. Also, there is no sidewalk for this site next to this site along the Finch Drive and may need to cut quite a few trees to lay over the sidewalk. Hence, we request for waiver for Sidewalk running through our site on the Finch Drive side, i.e. EAST side of site”*.

The Department of Public Works (DPW) recommends approving the waiver request and not requiring the installation of sidewalk *“Due to the lack of sidewalk on the surrounding parcels, the open drainage ditches and grading of the area”*, contingent upon the submission of a cash deposit for future construction and to assure consent and participation in any future sidewalk installation.

Shyamsundar Kelamangalam Ramaiah of 788 Palermo was present at the meeting. Mr. Ramaiah stated that the sidewalk waiver is for the area on the west side of Finch. He added that a new sidewalk would lead to nowhere and connect to no other sidewalks. He has concerns about a pedestrian using a new sidewalk from Wattles and walking south only to have to stop at the south end of the property and then have to cross Finch to the east to get to the existing sidewalk on the east side.

One (1) phone call and (3) emails were read into the record as public comment:

Ken Muskin of 3869 Appaloosa called to state: *That he opposes the sidewalk waiver and would like to see sidewalk installed on the Finch side of this property. Finch is the approach to Wattles and sidewalk should be installed. Mr. Muskin is strongly opposed to the waiver. He would like to see sidewalks installed at all locations in the city where it is required. The Wattles/Crooks intersection is becoming commercialized and residents would like to be able to walk or bike to the area.*

Rose Ann Brasille stated: *I received notification on this matter and oppose this request.*

Caryn Hall of 710 Seabiscuit stated: *I live in the Weston Downs condo community, where the entrance is at Finch & Wattles. I fully oppose granting the waiver. A sidewalk is necessary. Too many people walk along Wattles to reach the 7-11 at the corner. The summertime traffic with families and kids on bikes is especially high. People on a sidewalk are safer than people on the road. If there is no sidewalk, are we to assume grass? And if a new homeowner plants and mows grass, will they not be upset by foot traffic on their lawn? If avoiding a sidewalk was such a priority, the new homeowner should have sought out a different piece of property upon which to build.*

Barbara Conway of 710 Seabiscuit stated: *Troy residents walk on Wattles Road all the time. I do not agree to no sidewalk there. It is needed.*

Mr. Ziegenfelder stated that he is in favor of sidewalks everywhere as they will connect to sidewalk in the future.

Mr. Kilmer stated that the sidewalk should be connected to Wattles Road.

Mr. Johnson stated that some of the public comment appears to be confusing the proposed sidewalk on the west side of Finch with the existing sidewalk on Wattles that will not be removed. He does agree that placing a new sidewalk on the west side of Finch, only along the corner property, may create a situation where a pedestrian could get stuck at the south end and have to cross Finch to get to the existing sidewalk on the east side.

Ms. Nurak agrees with Mr. Johnsons' statements.

Resolution # 2021-01-03

Moved by Johnson

Seconded by Nurak

WHEREAS, City of Troy Ordinances, Chapter 34, allows the Traffic Committee to grant waivers of the City of Troy Design Standards for Sidewalks upon a demonstration of necessity; and

WHEREAS, Shyamsundar Kelamangalam Ramaiah has requested a waiver of the requirement to construct sidewalk based on lack of sidewalk on surrounding parcels; and

WHEREAS, the Traffic Committee has determined the following:

- a. A waiver will not impair the public health, safety or general welfare of the inhabitants of the City and will not unreasonably diminish or impair established property values within the surrounding area, and
- b. A strict application of the requirements to construct a sidewalk would result in practical difficulties to, or undue hardship upon, the owners, and
- c. The construction of a new sidewalk would lead nowhere and connect to no other walk, and thus will not serve the purpose of a pedestrian travel-way.

NOW THEREFORE, BE IT RESOLVED, that the Traffic Committee **GRANTS** a waiver of the sidewalk requirement for 795 West Wattles (Sidwell # 88-20-21-101-025) contingent upon the receipt of a cash deposit commensurate with the cost of sidewalk construction.

Yes: Johnson, Nurak, Ziegenfelder
No: Kilmer
Absent: Petrulis, Sivaraman, Wilsher

MOTION CARRIED

REGULAR BUSINESS

5. No Regular Business

There were no Regular Business items.

6. Public Comment

There was no further public comment at the meeting.

7. Other Business

Traffic Committee members discussed speed humps.

General discussion of I75 construction. 3 lanes in each direction are open on I75.

Big Beaver DDI is anticipated to re-open by mid-March 2021. 14 Mile DDI is anticipated to re-open in June 2021.

A landscape phase is in the works by MDOT for I75 Segment 2 (13 Mile to Coolidge). Plans will be submitted for a March bid letting by MDOT. Plantings are anticipated to start in the fall of 2021.

Mr. Johnson noted that his appointment to the Traffic Committee expires at the end of January 2021. He has not requested re-appointment. The Traffic Committee members expressed their gratitude for his work over the last four years as a member.

8. Adjourn

The meeting adjourned at 7:48 p.m.

Pete Ziegenfelder, Chairperson

William J. Huotari, City Engineer/Traffic Engineer

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TRAFFIC COMMITTEE REPORT

March 3, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control
Lila at Allison

Background:

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

The posted speed limit on both streets is 25 mph.

The intersection is currently uncontrolled.

Allison Drive would be considered the major road as it is a "half-mile" road that serves as a connection to other areas of the neighborhood.

There was one (1) crash in the past five (5) years within 250' radius of the intersection.

The major potential sight distance obstruction at the intersection of Lila Drive at Allison Drive, for a motorist traveling eastbound, would be the tree next to the house corner on the northwest quadrant and the house corner on the southwest quadrant of the intersection.

The safe approach speed on Lila Drive is 12.3 mph for eastbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest quadrant.

OHM recommends that a YIELD sign be installed on the Lila Drive approach to the intersection.

The city requested that OHM review the intersection and provide their findings and recommendations (copy attached).



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=358

Created: March 3, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

March 2, 2021

Mr. William Huotari, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for
Lila Drive at Allison Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Lila Drive at Allison Drive to determine the proper traffic control. Lila Drive at Allison Drive is a 3-legged tee intersection located in the City of Troy. The speed limit on both streets under investigation is 25 mph. There are no controlled approaches at the intersection. Attached are aerial and intersection photos.

Types of Roadways

Both Lila Drive and Allison Drive are considered local streets. Lila Drive runs east to west with residential homes fronting both sides of the street. Allison Drive runs north to south and provides key access to the East Long Lake Estates neighborhood. Residential homes front both sides of Allison Drive.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the south side of Lila Drive and the west side of Allison Drive. Lila Drive would be considered the minor road at the intersection (stem of tee), while Allison Drive would be considered the major road as it is a "half-mile" road that serves as a connection to other areas of the neighborhood.

Traffic Control Analyses

Traffic control analyses described herein adheres to the requirements presented in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) that are considered mandates of state law. A reference document explaining the background behind the analyses is attached to this memo.

Crash Analysis

Based on information obtained through the Traffic Improvement Association of Michigan, there was one crash recorded in the past full five (5) years within a 250' radius of the intersection. Details from the crash report indicate that the collision involved an animal. Therefore, the crash history does not constitute a compelling case for modifying the existing controls.

Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection due to the ongoing COVID-19 pandemic response and the subsequent effect of diminished traffic volumes. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood.



It is therefore extremely unlikely that Allison Drive meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from Lila Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not likely been met.

Based on the residential nature and the number of homes in the surrounding area it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

Approach Speed Limits

The approach speed limit on all study streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

Sight Distance

The major potential sight distance obstruction at the intersection of Lila Drive at Allison Drive for a motorist traveling eastbound would be the tree next to the house corner on the northwest quadrant and the house corner on the southwest quadrant of the intersection.

When the safe approach speed is found to be less than 10 mph, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. In this case, the safe approach speed on Lila Drive is 12.3 mph for eastbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest quadrant. Thus, based on the safe approach speed calculations, YIELD-control is appropriate for the Lila Drive approach. The safe approach speed calculation spreadsheet for the intersection is attached for reference.

Recommendation

The preceding analysis did not determine that any criteria were met for all-way STOP-control. The safe approach speed calculations determined that YIELD-control would be the appropriate traffic control treatment on the Lila approach.

OHM recommends implementing a YIELD sign on the Lila Drive approach. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,

OHM Advisors

Megan Hoke, EIT
Engineer

Attachments:

Aerial Photo



Safe Approach Speed Calculation Spreadsheets
Intersection Photos
Traffic Control Determination Reference Guide

Safe Approach Speed Calculation

Lila at Allison
City of Troy

Measured:

Width of Roads

Road 1 = 24 (ft)

Road 2 = 24 (ft)

Distance to Obstruction

a = 40 (ft)

b = 41 (ft)

c = 42 (ft)

d = 26 (ft)

Angle of Intersection

Delta = 90 (degrees, measure counterclockwise)

Road 1 Posted

Speed Limit = 25 (mph)

Assumed:

Speed of Vehicle A = Speed of Vehicle C

= Posted Speed Limit on Road 1

+ 5 (mph)

$V_1 = 30$ (mph)

Perception / Reaction Time (AASHTO)

$t = 2.5$ (sec)

Deceleration rate (AASHTO)

$A = 11.20$

Clearance distance in excess of safe stopping distance (AAA)

$EC = 0$ (ft)

Calculated Safe Approach Speed for Vehicle B

Approaching on Road 2

12.9 (mph) [Based on Veh. A]

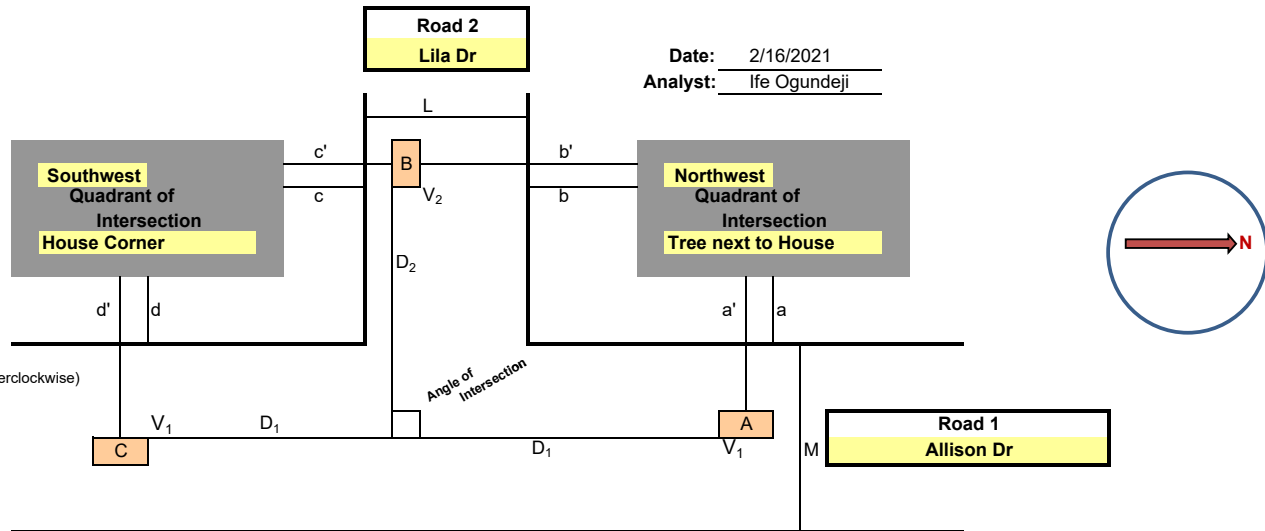
or $V_2 = 12.3$ (mph) [Based on Veh. C]

Threshold of Safe Approach Speed (AAA, FHWA & NSC)

to Recommend STOP Control 10.0 (mph)

to Recommend YIELD Control 25.0 (mph)

Otherwise Recommends NO CONTROL.



Intermediate Calculations:

$D_1 = 196$

$D_{2A} = 63$

$D_{2C} = 59.5$

$a' = 46$

$b' = 53$

$c' = 48$

$d' = 38$

Based On $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$

$D_{2A} = \frac{a' * D_1}{(D_1 - b')}$ or $D_{2C} = \frac{c' * D_1}{(D_1 - d')}$

Notes: Enter field measurements in yellow highlighted area.

Blue fields are std. default values; change only for cause.

Calculated by spreadsheet

Recommended ROW control for Road 2

based on safe approach speed: **YIELD SIGN**



Photograph No. 1: Allison Drive- Heading North
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 2: Allison Drive- Heading North looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 3: Allison Drive- Heading South
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 4: Allison Drive- Heading South and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 5: Lila Drive- Heading East
Date: 02/19/2020 **Photographer:** Ife Ogundeji



Photograph No. 6: Lila Drive- Heading East and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 7: Lila Drive- Heading East and Looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji

Reference Guide on Traffic Control Determination in the State of Michigan

Background

This document is intended to be used as a reference guide for performing intersection traffic control studies of intersections on public roadways in Michigan. The document explains the procedure and requirements necessary to implement traffic control at an intersection as stipulated by the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). Act 300 of Public Acts of 1949 (as amended) requires the adoption of this Manual, and further requires conformance to the manual for all state highways, county roads and local streets open to public travel.

Generally, the starting premise is an uncontrolled intersection. The first step would then be to verify if the intersection should remain uncontrolled or if YIELD or STOP controls on the minor street approach(es) should be provided. For locations with higher traffic volumes and /or crash issues, then an evaluation of the location for all-way STOP warrants would be performed. The appropriate analysis for each level of control described below.

YIELD Traffic Control Guidance

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- Traffic Volumes: Normally, the heavier volume of traffic should be given the right-of-way.
- Approach Speeds: The higher speed traffic should normally be given the right-of-way.
- Types of Highways: When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- Sight Distance: Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

STOP Traffic Control Guidance

Based on the MMUTCD there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

In many cases STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

There is also an explicit restriction in the MMUTCD that STOP signs are not to be used for speed control, in Section 2B.04.

Evaluation of All-Way STOP Traffic Control

Based on the MMUTCD there are four conditions where **all-way** STOP signs may be warranted:

- 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.*



TRAFFIC COMMITTEE REPORT

March 3, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control
Lila at Prentis

Background:

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

The posted speed limit on both streets is 25 mph.

The intersection is currently uncontrolled.

Lila Drive would be considered the major road as it is a "quarter-mile" road providing connection to other areas of the neighborhood.

There were no crashes in the past five (5) years within 250' radius of the intersection.

The major potential sight distance obstruction at the intersection of Prentis Drive at Lila Drive, for a motorist traveling northbound, would be the tree next to the house corner on the southeast quadrant of the intersection.

The safe approach speed on Prentis Drive is 8.9 mph for northbound vehicles due to the permanent sight distance obstruction from the tree next to the house corner on the southeast quadrant.

OHM recommends that a STOP sign be installed on the Prentis Drive approach to the intersection.

The city requested that OHM review the intersection and provide their findings and recommendations (copy attached).



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=358

Created: March 3, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

March 2, 2021

Mr. William Huotari, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for
Prentis Drive at Lila Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Prentis Drive at Lila Drive to determine the proper traffic control. Prentis Drive at Lila Drive is a 3-legged tee intersection located in the City of Troy. The speed limit on both streets under investigation is 25 mph. There are no controlled approaches at the intersection. Attached are aerial and intersection photos.

Types of Roadways

Both Prentis Drive and Lila Drive are considered local streets. Prentis Drive runs north to south and serves as an entrance to the East Long Lake Estates neighborhood. Residential homes front both sides of Prentis Drive. Lila Drive runs east to west with residential homes fronting both sides of the street.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the west side of Prentis Drive and on the south side of Lila Drive. Prentis Drive would be considered the minor road at the intersection (stem of tee), while Lila Drive would be considered the major road as it is a “quarter-mile” road providing connection to other areas of the neighborhood.

Traffic Control Analyses

Traffic control analyses described herein adheres to the requirements presented in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) that are considered mandates of state law. A reference document explaining the background behind the analyses is attached to this memo.

Crash Analysis

Based on information obtained through the Traffic Improvement Association of Michigan, there were no crashes recorded in the past full five (5) years within a 250’ radius of the intersection. Therefore, the crash history does not constitute a compelling case for modifying the existing controls.

Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection due to the ongoing COVID-19 pandemic response and the subsequent effect of diminished traffic volumes. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood.



It is therefore extremely unlikely that Lila Drive meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from Prentis Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not likely been met.

Based on the residential nature and the number of homes in the surrounding area it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

Approach Speed Limits

The approach speed limit on all study streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

Sight Distance

The major potential sight distance obstruction at the intersection of Prentis Drive at Lila Drive for a motorist traveling northbound on Prentis Drive would be the tree next to the house corner on the southeast quadrant and the house corner on the southwest quadrant of the intersection.

When the safe approach speed is found to be less than 10 mph, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. In this case, the safe approach speed on Prentis Drive is 8.9 mph for northbound vehicles due to the permanent sight distance obstruction from the tree next to the house corner on the southeast quadrant. Thus, based on the safe approach speed calculations, STOP-control is appropriate for the Prentis Drive approach. The safe approach speed calculation spreadsheet for the intersection is attached for reference.

Recommendation

The preceding analysis did not determine that any criteria were met for all-way STOP-control. The safe approach speed calculations determined that STOP-control would be the appropriate traffic control treatment on the Prentis approach.



OHM recommends implementing a STOP sign on the Prentis Drive approach. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,

OHM Advisors

Megan Hoke, EIT
Engineer

Attachments:

- Aerial Photo
- Safe Approach Speed Calculation Spreadsheets
- Intersection Photos
- Traffic Control Determination Reference Guide

Safe Approach Speed Calculation

Prentis at Lila
City of Troy

Measured:

Width of Roads

Road 1 = 24 (ft)

Road 2 = 24 (ft)

Distance to Obstruction

a = 47 (ft)

b = 53 (ft)

c = 25 (ft)

d = 34 (ft)

Angle of Intersection

Delta = 90 (degrees, measure counterclockwise)

Road 1 Posted

Speed Limit = 25 (mph)

Assumed:

Speed of Vehicle A = Speed of Vehicle C

= Posted Speed Limit on Road 1

+ 5 (mph)

$V_1 = 30$ (mph)

Perception / Reaction Time (AASHTO)

t = 2.5 (sec)

Deceleration rate (AASHTO)

A = 11.20

Clearance distance in excess of safe stopping distance (AAA)

EC = 0 (ft)

Calculated Safe Approach Speed for Vehicle B

Approaching on Road 2

15.4 (mph) [Based on Veh. A]

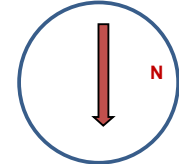
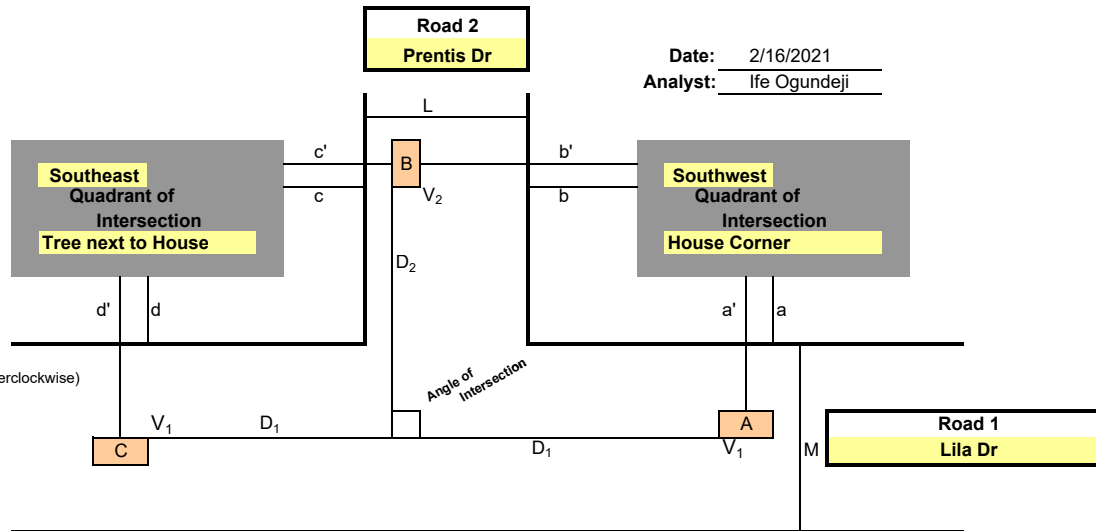
or $V_2 = 8.9$ (mph) [Based on Veh. C]

Threshold of Safe Approach Speed (AAA, FHWA & NSC)

to Recommend STOP Control 10.0 (mph)

to Recommend YIELD Control 25.0 (mph)

Otherwise Recommends NO CONTROL.



Intermediate Calculations:

$D_1 = 196$

$D_{2A} = 79.2$

$D_{2C} = 40.5$

$a' = 53$

$b' = 65$

$c' = 31$

$d' = 46$

Based On $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$

$D_{2A} = \frac{a' * D_1}{(D_1 - b')}$ or $D_{2C} = \frac{c' * D_1}{(D_1 - d')}$

Notes: Enter field measurements in yellow highlighted area.

Blue fields are std. default values; change only for cause.

Calculated by spreadsheet

Recommended ROW control for Road 2
based on safe approach speed:

STOP Sign



Photograph No. 1: Lila Drive- Heading East
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 2: Lila Drive- Heading East looking right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 3: Lila Drive- Heading West
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 4: Lila Drive- Heading West and Looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 5: Prentis Drive- Heading North
Date: 02/19/2020 **Photographer:** Ife Ogundeji



Photograph No. 6: Prentis Drive- Heading North and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 7: Prentis Drive- Heading North and Looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji

Reference Guide on Traffic Control Determination in the State of Michigan

Background

This document is intended to be used as a reference guide for performing intersection traffic control studies of intersections on public roadways in Michigan. The document explains the procedure and requirements necessary to implement traffic control at an intersection as stipulated by the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). Act 300 of Public Acts of 1949 (as amended) requires the adoption of this Manual, and further requires conformance to the manual for all state highways, county roads and local streets open to public travel.

Generally, the starting premise is an uncontrolled intersection. The first step would then be to verify if the intersection should remain uncontrolled or if YIELD or STOP controls on the minor street approach(es) should be provided. For locations with higher traffic volumes and /or crash issues, then an evaluation of the location for all-way STOP warrants would be performed. The appropriate analysis for each level of control described below.

YIELD Traffic Control Guidance

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- Traffic Volumes: Normally, the heavier volume of traffic should be given the right-of-way.
- Approach Speeds: The higher speed traffic should normally be given the right-of-way.
- Types of Highways: When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- Sight Distance: Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

STOP Traffic Control Guidance

Based on the MMUTCD there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

In many cases STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

There is also an explicit restriction in the MMUTCD that STOP signs are not to be used for speed control, in Section 2B.04.

Evaluation of All-Way STOP Traffic Control

Based on the MMUTCD there are four conditions where **all-way** STOP signs may be warranted:

- 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.*



TRAFFIC COMMITTEE REPORT

March 3, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control
Lila at Ellery

Background:

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

The posted speed limit on both streets is 25 mph.

The intersection is currently uncontrolled.

Lila Drive would be considered the major road as it is a "quarter-mile" road providing connection to other areas of the neighborhood.

There were no crashes in the past five (5) years within 250' radius of the intersection.

The major potential sight distance obstruction at the intersection of Ellery Drive at Lila Drive, for a motorist traveling southbound, would be the tree next to the house corner on the northwest quadrant and the house corner on the northeast quadrant of the intersection.

The safe approach speed on Ellery Drive is 14.8 mph for southbound vehicles due to the permanent sight distance obstruction from the tree next to the house corner on the northwest quadrant.

OHM recommends that a YIELD sign be installed on the Ellery Drive approach to the intersection.

The city requested that OHM review the intersection and provide their findings and recommendations (copy attached).



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=358

Created: March 3, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

March 2, 2021

Mr. William Huotari, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for
Ellery Drive at Lila Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Ellery Drive at Lila Drive to determine the proper traffic control. Ellery Drive at Lila Drive is a 3-legged tee intersection located in the City of Troy. The speed limit on both streets under investigation is 25 mph. There are no controlled approaches at the intersection. Attached are aerial and intersection photos.

Types of Roadways

Both Ellery Drive and Lila Drive are considered local streets. Ellery Drive runs north to south and provides access to the northeast section of the East Long Lake Estates neighborhood. Lila Drive runs east to west with residential homes fronting both sides of the street.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the east side of Ellery Drive and on the south side of Lila Drive. Ellery Drive would be considered the minor road at the intersection (stem of tee), while Lila Drive would be considered the major road as it is a “quarter-mile” road which provides access to other areas of the neighborhood.

Traffic Control Analyses

Traffic control analyses described herein adheres to the requirements presented in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) that are considered mandates of state law. A reference document explaining the background behind the analyses is attached to this memo.

Crash Analysis

Based on information obtained through the Traffic Improvement Association of Michigan, there were no crashes recorded in the past full five (5) years within a 250’ radius of the intersection. Therefore, the crash history does not constitute a compelling case for modifying the existing controls.

Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection due to the ongoing COVID-19 pandemic response and the subsequent effect of diminished traffic volumes. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood.



It is therefore extremely unlikely that Lila Drive meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from Ellery Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not likely been met.

Based on the residential nature and the number of homes in the surrounding area it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

Approach Speed Limits

The approach speed limit on all study streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

Sight Distance

The major potential sight distance obstruction at the intersection of Ellery Drive at Lila Drive for a motorist traveling southbound on Ellery Drive would be the tree next to the house corner on the northwest quadrant and the house corner on the northeast quadrant of the intersection.

When the safe approach speed is found to be less than 10 mph, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. In this case, the safe approach speed on Ellery Drive is 14.8 mph for southbound vehicles due to the permanent sight distance obstruction from the tree next to the house corner on the northwest quadrant. Thus, based on the safe approach speed calculations, YIELD-control is appropriate for the Ellery Drive approach. The safe approach speed calculation spreadsheet for the intersection is attached for reference.

Recommendation

The preceding analysis did not determine that any criteria were met for all-way STOP-control. The safe approach speed calculations determined that YIELD-control would be the appropriate traffic control treatment on the Ellery approach.

OHM recommends implementing a YIELD sign on the Ellery Drive approach. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,

OHM Advisors

Megan Hoke, EIT
Engineer



Attachments:

- Aerial Photo
- Safe Approach Speed Calculation Spreadsheets
- Intersection Photos
- Traffic Control Determination Reference Guide

Safe Approach Speed Calculation

Ellery at Lila
City of Troy

Measured:

Width of Roads

Road 1 = 24 (ft)

Road 2 = 24 (ft)

Distance to Obstruction

a = 49 (ft)

b = 41 (ft)

c = 48 (ft)

d = 43 (ft)

Angle of Intersection

Delta = 90 (degrees, measure counterclockwise)

Road 1 Posted

Speed Limit = 25 (mph)

Assumed:

Speed of Vehicle A = Speed of Vehicle C

= Posted Speed Limit on Road 1

+ 5 (mph)

$V_1 = 30$ (mph)

Perception / Reaction Time (AASHTO)

$t = 2.5$ (sec)

Deceleration rate (AASHTO)

$A = 11.20$

Clearance distance in excess of safe stopping distance (AAA)

$EC = 0$ (ft)

Calculated Safe Approach Speed for Vehicle B

Approaching on Road 2

14.8 (mph) [Based on Veh. A]

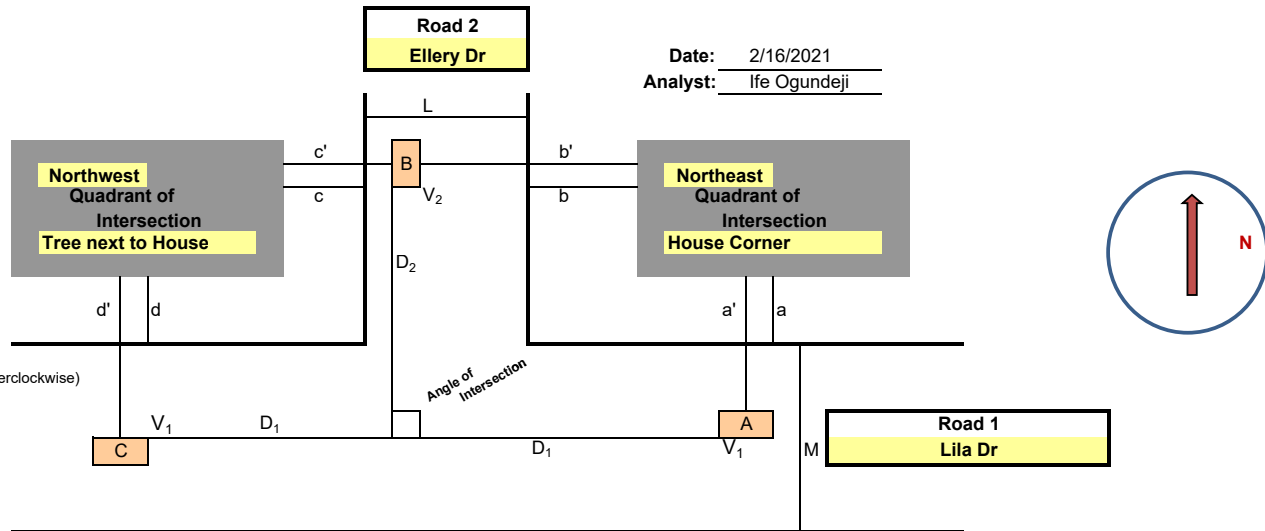
or $V_2 = 14.8$ (mph) [Based on Veh. C]

Threshold of Safe Approach Speed (AAA, FHWA & NSC)

to Recommend STOP Control 10.0 (mph)

to Recommend YIELD Control 25.0 (mph)

Otherwise Recommends NO CONTROL.



Intermediate Calculations:

$D_1 = 196$

$D_{2A} = 75.3$

$D_{2C} = 75.0$

$a' = 55$

$b' = 53$

$c' = 54$

$d' = 55$

Based On $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$

$D_{2A} = \frac{a' * D_1}{(D_1 - b')}$ or $D_{2C} = \frac{c' * D_1}{(D_1 - d')}$

Notes: Enter field measurements in yellow highlighted area.

Blue fields are std. default values; change only for cause.

Calculated by spreadsheet

Recommended ROW control for Road 2

based on safe approach speed: YIELD SIGN



Photograph No. 1: Lila Drive- Heading East
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 2: Lila Drive- Heading East looking left
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 3: Lila Drive- Heading West
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 4: Lila Drive- Heading West and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 5: Ellery Drive- Heading South
Date: 02/19/2020 **Photographer:** Ife Ogundeji



Photograph No. 6: Ellery Drive- Heading South and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 7: Ellery Drive- Heading South and Looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji

Reference Guide on Traffic Control Determination in the State of Michigan

Background

This document is intended to be used as a reference guide for performing intersection traffic control studies of intersections on public roadways in Michigan. The document explains the procedure and requirements necessary to implement traffic control at an intersection as stipulated by the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). Act 300 of Public Acts of 1949 (as amended) requires the adoption of this Manual, and further requires conformance to the manual for all state highways, county roads and local streets open to public travel.

Generally, the starting premise is an uncontrolled intersection. The first step would then be to verify if the intersection should remain uncontrolled or if YIELD or STOP controls on the minor street approach(es) should be provided. For locations with higher traffic volumes and /or crash issues, then an evaluation of the location for all-way STOP warrants would be performed. The appropriate analysis for each level of control described below.

YIELD Traffic Control Guidance

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- Traffic Volumes: Normally, the heavier volume of traffic should be given the right-of-way.
- Approach Speeds: The higher speed traffic should normally be given the right-of-way.
- Types of Highways: When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- Sight Distance: Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

STOP Traffic Control Guidance

Based on the MMUTCD there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

In many cases STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

There is also an explicit restriction in the MMUTCD that STOP signs are not to be used for speed control, in Section 2B.04.

Evaluation of All-Way STOP Traffic Control

Based on the MMUTCD there are four conditions where **all-way** STOP signs may be warranted:

- 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.*



TRAFFIC COMMITTEE REPORT

March 3, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control
Midvale at Allison

Background:

Tom Duszynski of 5068 Tyler Drive states that the lack of YIELD signs at the intersections of Lila Drive at Allison Drive, Lila Drive at Prentis Drive, Lila Drive at Ellery Drive and Midvale Drive at Allison Drive creates a hazardous condition with the new Whispering Park development in place. He reports that there are existing YIELD signs in this subdivision to the west at the intersections of Lila Drive at Babbitt Drive and Lila Drive at Hale Drive. Mr. Duszynski states that all of the intersections should be posted the same way for consistency in the neighborhood.

The posted speed limit on both streets is 25 mph.

The intersection is currently uncontrolled.

Allison Drive would be considered the major road as it is a "half-mile" road that serves as a connection to other areas of the neighborhood.

There was one (1) crash in the past five (5) years within 250' radius of the intersection.

The major potential sight distance obstruction at the intersection of Midvale Drive at Allison Drive, for a motorist traveling eastbound, would be the tree next to the house corner on the northwest quadrant and the house corner on the southwest quadrant of the intersection.

The safe approach speed on Midvale Drive is 15.7 mph for eastbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest quadrant.

OHM recommends that a YIELD sign be installed on the Midvale Drive approach to the intersection.

The city requested that OHM review the intersection and provide their findings and recommendations (copy attached).



GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=358

Created: March 3, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.

March 2, 2021

Mr. William Huotari, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for
Midvale Drive at Allison Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Midvale Drive at Allison Drive to determine the proper traffic control. Midvale Drive at Allison Drive is a 3-legged tee intersection located in the City of Troy. The speed limit on both streets under investigation is 25 mph. There are no controlled approaches at the intersection. Attached are aerial and intersection photos.

Types of Roadways

Both Midvale Drive and Allison Drive are considered local streets. Midvale Drive runs east to west and provides access to the northeast portion of the neighborhood. Allison Drive runs north to south and serves as a key access to the East Long Lake Estates neighborhood. Residential homes front both sides of Allison Drive.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the north side of Midvale Drive and the west side of Allison Drive. Midvale Drive would be considered the minor road at the intersection (stem of tee), while Allison Drive would be considered the major road as it is a "half-mile" road that serves as a connection to other areas of the neighborhood.

Traffic Control Analyses

Traffic control analyses described herein adheres to the requirements presented in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD) that are considered mandates of state law. A reference document explaining the background behind the analyses is attached to this memo.

Crash Analysis

Based on information obtained through the Traffic Improvement Association of Michigan, there was one crash recorded in the past full five (5) years within a 250' radius of the intersection. Details from the crash report indicate that the collision occurred in dark-unlighted conditions and that the driver of unit 1 was distracted just before striking unit 2 which was parked on the west side of Allison Drive. As a result, this crash does not constitute a compelling case for modifying the existing controls.



Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection due to the ongoing COVID-19 pandemic response and the subsequent effect of diminished traffic volumes. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood.

It is therefore extremely unlikely that Allison Drive meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from Midvale Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not likely been met.

Based on the residential nature and the number of homes in the surrounding area it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

Approach Speed Limits

The approach speed limit on all study streets is 25 mph. Speed limits alone cannot be used in this case to determine which direction of traffic should be assigned the right-of-way.

Sight Distance

The major potential sight distance obstruction at the intersection of Midvale Drive at Allison Drive for a motorist traveling eastbound would be the tree next to the house corner on the northwest quadrant and the house corner on the southwest quadrant of the intersection.

When the safe approach speed is found to be less than 10 mph, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. In this case, the safe approach speed on Midvale Drive is 15.7 mph for eastbound vehicles due to the permanent sight distance obstruction from the house corner on the southwest quadrant. Thus, based on the safe approach speed calculations, YIELD-control is appropriate for the Midvale Drive approach. The safe approach speed calculation spreadsheet for the intersection is attached for reference.

Recommendation

The preceding analysis did not determine that any criteria were met for all-way STOP-control. The safe approach speed calculations determined that YIELD-control would be the appropriate traffic control treatment on the Midvale approach.



OHM recommends implementing a YIELD sign on the Midvale Drive approach. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,

OHM Advisors

Megan Hoke, EIT
Engineer

Attachments:

- Aerial Photo
- Safe Approach Speed Calculation Spreadsheets
- Intersection Photos
- Traffic Control Determination Reference Guide

Safe Approach Speed Calculation

Midvale at Alison
City of Troy

Measured:

Width of Roads

Road 1 = 24 (ft)

Road 2 = 24 (ft)

Distance to Obstruction

a = 54 (ft)

b = 49 (ft)

c = 49 (ft)

d = 51 (ft)

Angle of Intersection

Delta = 90 (degrees, measure counterclockwise)

Road 1 Posted

Speed Limit = 25 (mph)

Assumed:

Speed of Vehicle A = Speed of Vehicle C

= Posted Speed Limit on Road 1

+ 5 (mph)

$V_1 = 30$ (mph)

Perception / Reaction Time (AASHTO)

$t = 2.5$ (sec)

Deceleration rate (AASHTO)

$A = 11.20$

Clearance distance in excess of safe stopping distance (AAA)

$EC = 0$ (ft)

Calculated Safe Approach Speed for Vehicle B

Approaching on Road 2

16.6 (mph) [Based on Veh. A]

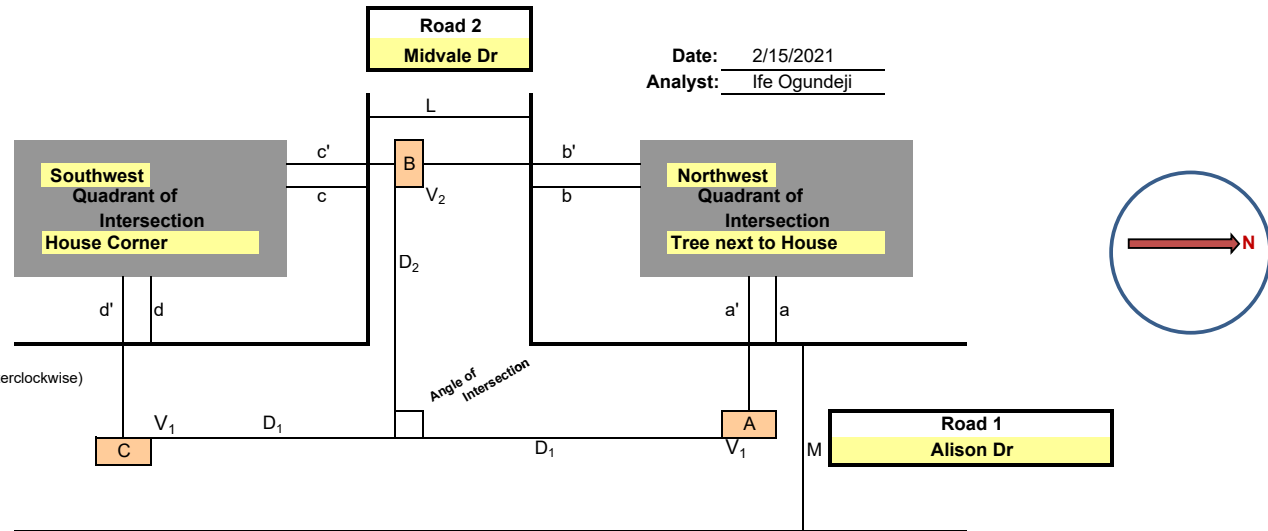
or $V_2 = 15.7$ (mph) [Based on Veh. C]

Threshold of Safe Approach Speed (AAA, FHWA & NSC)

to Recommend STOP Control 10.0 (mph)

to Recommend YIELD Control 25.0 (mph)

Otherwise Recommends NO CONTROL.



Intermediate Calculations:

$D_1 = 196$

$D_{2A} = 87$

$D_{2C} = 81.0$

$a' = 60$

$b' = 61$

$c' = 55$

$d' = 63$

Based On $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$

$D_{2A} = \frac{a' * D_1}{(D_1 - b')}$ or $D_{2C} = \frac{c' * D_1}{(D_1 - d')}$

Notes: Enter field measurements in yellow highlighted area.

Blue fields are std. default values; change only for cause.

Calculated by spreadsheet

Recommended ROW control for Road 2
based on safe approach speed: **YIELD SIGN**



Photograph No. 1: Allison Drive- Heading North
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 2: Allison Drive- Heading North looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 3: Allison Drive- Heading South
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 4: Allison Drive- Heading South and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 5: Midvale Drive- Heading East
Date: 02/19/2020 **Photographer:** Ife Ogundeji



Photograph No. 6: Midvale Drive- Heading East and Looking Right
Date: 02/19/2021 **Photographer:** Ife Ogundeji



Photograph No. 7: Midvale Drive- Heading East and Looking Left
Date: 02/19/2021 **Photographer:** Ife Ogundeji

Reference Guide on Traffic Control Determination in the State of Michigan

Background

This document is intended to be used as a reference guide for performing intersection traffic control studies of intersections on public roadways in Michigan. The document explains the procedure and requirements necessary to implement traffic control at an intersection as stipulated by the Michigan Manual on Uniform Traffic Control Devices (MMUTCD). Act 300 of Public Acts of 1949 (as amended) requires the adoption of this Manual, and further requires conformance to the manual for all state highways, county roads and local streets open to public travel.

Generally, the starting premise is an uncontrolled intersection. The first step would then be to verify if the intersection should remain uncontrolled or if YIELD or STOP controls on the minor street approach(es) should be provided. For locations with higher traffic volumes and /or crash issues, then an evaluation of the location for all-way STOP warrants would be performed. The appropriate analysis for each level of control described below.

YIELD Traffic Control Guidance

The use of a YIELD sign is intended to assign the right-of-way at intersections where it is not usually necessary to stop before proceeding into the intersection. Conversely, the STOP sign is intended for use where it is usually necessary to stop before proceeding into the intersection.

The following conditions should be fully evaluated to determine how the right-of-way should be assigned:

- Traffic Volumes: Normally, the heavier volume of traffic should be given the right-of-way.
- Approach Speeds: The higher speed traffic should normally be given the right-of-way.
- Types of Highways: When a minor highway intersects a major highway, it is usually desirable to control the minor highway.
- Sight Distance: Sight distance across the corners of the intersection is the most important factor and is critical in determining safe approach speeds.

STOP Traffic Control Guidance

Based on the MMUTCD there are four conditions where STOP signs may be warranted:

- At the intersection of a less important road with a main road where application of the normal right-of-way rule is unduly hazardous.
- On a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At other intersections where a combination of high speed, restricted view, or crash records indicate a need for control by the STOP sign.

In many cases STOP signs are installed where they may not be warranted. Traffic experts agree that unnecessary STOP signs:

- Cause accidents they are designed to prevent.
- Breed contempt for other necessary STOP signs.
- Waste millions of gallons of gasoline annually.
- Create added noise and air pollution.
- Increase, rather than decrease, speeds between intersections.

There is also an explicit restriction in the MMUTCD that STOP signs are not to be used for speed control, in Section 2B.04.

Evaluation of All-Way STOP Traffic Control

Based on the MMUTCD there are four conditions where **all-way** STOP signs may be warranted:

- 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.*



TRAFFIC COMMITTEE REPORT

February 10, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Calming
Firefighter's Park

Background:

Paula Kreuter of 1240 Prosper submitted two (2) service requests through the City's online portal regarding traffic calming measures at Firefighter's Park. She would like Firefighter's Park to be considered for speed bumps. Ms. Kreuter states that *"the traffic from teens and golfers is very erratic and dangerous"*. She proposes a speed bump between the back parking lot and the restroom to slow traffic between the gazebo and playground. Ms. Kreuter added in her second service request *"that I truly believe speed bumps are needed at Firefighter's Park. Speed limits are not practiced and it's becoming dangerous to cross the park safely"*.

A winter field investigation would not provide meaningful data due to the weather and lower activity levels at the park.

In the interim, we do have some options in accordance with the Michigan Vehicle Code (MVC):

Section 257.627 (2) Except as provided in subsection (1), it is lawful for the operator of a vehicle to operate that vehicle on a highway at a speed not exceeding the following:

(c) 25 miles per hour on a highway segment within the boundaries of a public park. A local authority may decrease the speed limit to not less than 15 miles per hour in a public park under its jurisdiction.

The way the MVC reads is that 25 mph is the default speed limit with 15 mph optional. The lower 15 mph speed limit would require a Traffic Control Order (TCO) and the reason why this item is before the Traffic Committee.



The net effect is to have an enforceable speed limit within Firefighter's Park, but reserves the option of additional studies and possibility of future actions if needed.

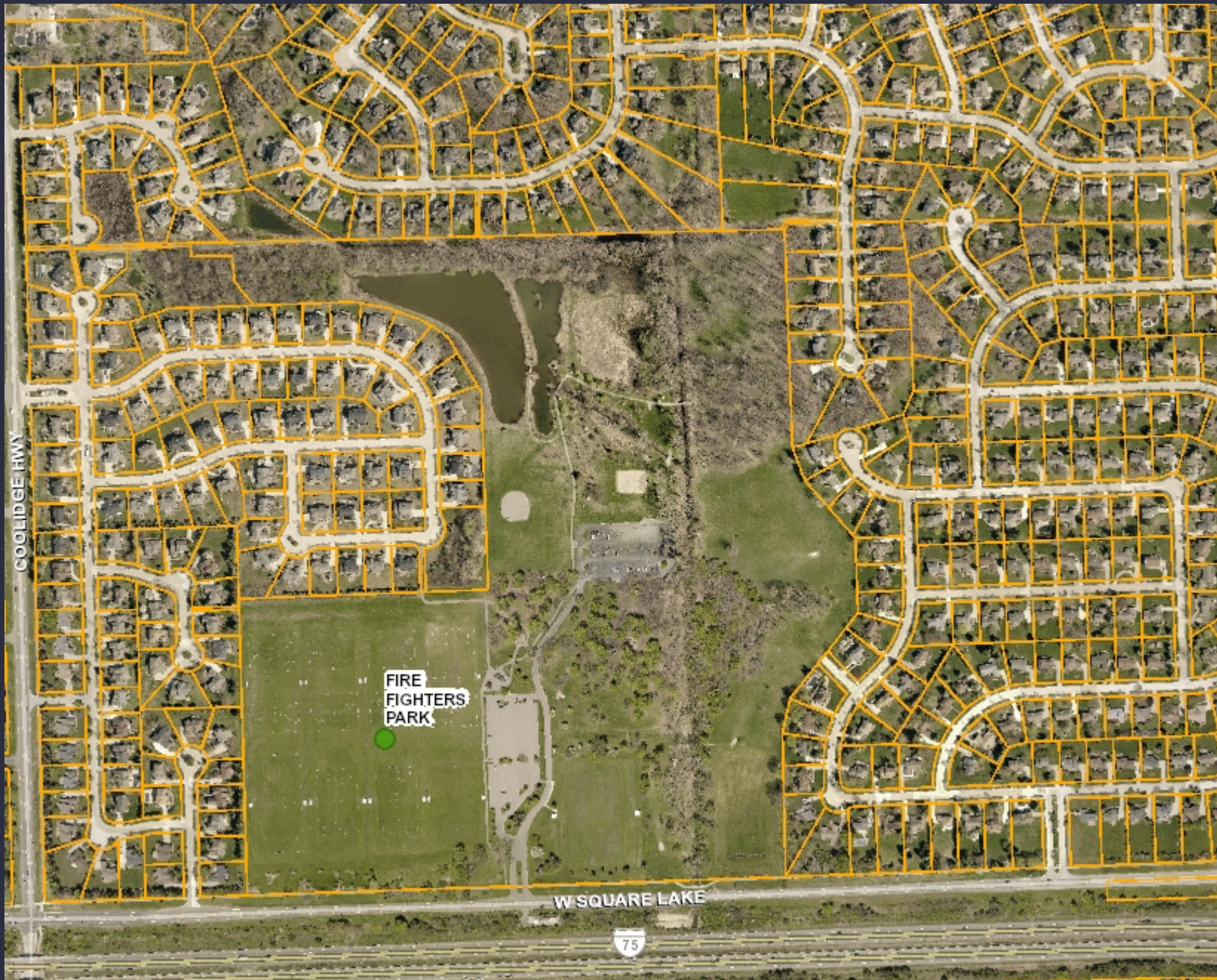
The intent would be to follow-up with a traffic study in mid to late spring when the weather is more conducive to activity at the park and overall pedestrian activity and traffic is at normal levels.



GIS Online

Legend:

-  Tax Parcel
-  Parks



Notes:

Map Scale: 1=716

Created: February 26, 2021



Note: The information provided by this application has been compiled from recorded deeds, plats, tax maps, surveys, and other public records and data. It is not a legally recorded map survey. Users of this data are hereby notified that the source information represented should be consulted for verification.



TRAFFIC COMMITTEE REPORT

February 10, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/ Traffic Engineer

SUBJECT: Election of Officers

Background:

In accordance with the By-Laws of the City of Troy Traffic Committee, Article III, nomination of officers shall be made from the floor on the third Wednesday of February of each year for the purpose of electing a Chairperson and a Vice-Chairperson. A February meeting was not held, so this action was moved to the March Traffic Committee meeting.

A candidate receiving a majority vote of the members present at the meeting shall be declared elected and shall serve for one year or until his or her successor shall take office. Vacancies in offices shall be filled immediately by regular election procedure.

Article II of the By-Laws speaks to the Officers and Their Duties, which states:

Section 1 - The officers of the Traffic Committee shall consist of a Chairperson and a Vice-Chairperson.

Section 2 - The Chairperson shall preside at all meetings of the Traffic Committee and shall have the duties normally conferred by parliamentary usage on such officers.

Section 3 - The Chairperson shall be one of the citizen members of the Committee and shall have the privilege of discussing all matters before the Committee and voting thereon.

Section 4 - The Vice-Chairperson shall act for the Chairperson in his or her absence. The Vice-Chairperson shall be a citizen member of the Committee, with the rights and privileges of the Chairperson.

**BY-LAWS OF THE
CITY OF TROY TRAFFIC COMMITTEE**

Article I – Objectives and Membership

The objectives and membership of the City of Troy Traffic Committee are those set forth in Chapters 35 and 106 of the Troy City Code.

The Traffic Committee is composed of seven Troy citizens who have volunteered their time to the City to be involved in traffic and safety concerns. The stated role of this Committee is:

- a. To give first hearing to citizens' requests and obtain their input.
- b. To make recommendations to the City Council based on technical considerations, traffic surveys, established standards, and evaluation of citizen input.
- c. To identify hazardous locations and recommend improvements to reduce the potential for traffic accidents.

Final decisions on sidewalk waivers will be made by the Committee.

Article II – Officers and Their Duties

- Section 1 The officers of the Traffic Committee shall consist of a Chairperson and a Vice-Chairperson.
- Section 2 The Chairperson shall preside at all meetings of the Traffic Committee and shall have the duties normally conferred by parliamentary usage on such officers.
- Section 3 The Chairperson shall be one of the citizen members of the Committee and shall have the privilege of discussing all matters before the Committee and voting thereon.
- Section 4 The Vice-Chairperson shall act for the Chairperson in his or her absence. The Vice-Chairperson shall be a citizen member of the Committee, with the rights and privileges of the Chairperson.

Article III – Election of Officers

- Section 1 Nomination of officers shall be made from the floor of citizen members at the annual organization meeting, which shall be held on the third Wednesday of February of each year, and the election shall follow immediately thereafter.
- Section 2 A candidate receiving a majority vote of the members present at the annual organization meeting of the Traffic Committee shall be declared elected and shall serve for one year or until his or her successor shall take office.

Section 3 Vacancies in offices shall be filled immediately by regular election procedure.

Article IV – Meetings

Section 1 Regular meetings will be held on the third Wednesday of each month at 7:30 p.m. at the Troy City Hall, 500 West Big Beaver Road, Troy, Michigan.

Section 2 A majority of the voting membership of the committee shall constitute a quorum. A record of the roll call vote shall be kept as part of the minutes.

Section 3 Special meetings may be called by the Chairperson. It shall be the duty of the Chairperson to call such a meeting when requested to do so by the Traffic Engineer or by a majority of the members of the Committee. The notice of such a meeting shall specify the purposes of the meeting and no other business may be considered except by majority consent of the Committee members present. The Traffic Engineer shall notify all members of the Committee not less than 24 hours in advance of such a special meeting.

Section 4 All meetings at which official action is taken shall be open to the general public.

Section 5 The Traffic Engineer of the City of Troy shall keep the minutes and records of the Committee, prepare the agenda of regular and special meetings with the Chairperson, provide notice of the meetings to Committee members, and attend to correspondence of the Committee.

Section 6 Unless otherwise specified in these by-laws, rules of procedure for meetings will be in accordance with the most recent version of Roberts Rules of Order.

Section 7 The committee shall act to make a recommendation to City Council on any petition within three consecutive official meetings from the first presentation of any petition on the Traffic Committee Meeting agenda.

Article V – Order of Business

Roll Call
Approval of Minutes of Previous Meeting
Public Hearings
Tabled Items
Regular Business
Public Comment
Other Business
Adjourn

Article VI – Committees

Special committees may be appointed by the Chairperson or Vice-Chairperson for purposes and terms which the Committee approves.

Article VII – Amendments

These by-laws may be amended by a two-thirds vote of the entire voting membership of the Traffic Committee.