



# **TRAFFIC COMMITTEE AGENDA**

**March 18, 2020 – 7:30 P.M.**

**Lower Level Conference Room – Troy City Hall, 500 West Big Beaver Road**

1. Roll Call
2. Minutes – February 19, 2020

## **PUBLIC HEARINGS**

3. No Public Hearings

## **REGULAR BUSINESS**

4. Request for No Parking – Lakeside Drive at Shoreline Drive
5. Request for Traffic Control – Kirkton Drive at Starr Drive
6. Public Comment
7. Other Business
8. Adjourn

Copy to:

Item 4: Properties within 300'

Item 5: Samantha Shelton, 2351 Kirkton  
Properties within 300'

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.

**PUBLIC HEARING****3. No Public Hearings****REGULAR BUSINESS****4. Request for No Parking – Lakeside Drive at Shoreline Drive**

Troy Police request that the eyebrow and island area be posted as a No Parking zone at Lakeside Drive and Shoreline Drive. Troy Police recently responded to a crash in this area and found that parked vehicles were creating a hazardous condition and could potentially block the flow of traffic for large vehicles, delivery trucks, emergency vehicles, etc.

The south side of Lakeside Drive and the east side of Shoreline Drive is currently posted as No Parking due to fire hydrants located along the road.

In an effort to keep the eyebrow open for all travel, the recommendation is to install an additional sign within the eyebrow and two signs on the island. This would prohibit all parking in the eyebrow area.

**SUGGESTED RESOLUTIONS:**

- a. RESOLVED, that the eyebrow area of Lakeside Drive at Shoreline Drive be **MODIFIED** to prohibit all parking within the eyebrow area including around the island.
- b. RESOLVED, that **NO CHANGE** be made to the eyebrow area of Lakeside Drive at Shoreline Drive.

**5. Request for Traffic Control – Kirkton Drive at Starr Drive**

Samantha Shelton of 2351 Kirkton Drive states that the lack of ALL-WAY STOP control at the intersection of Kirkton Drive and Starr Drive creates a hazardous condition.

**SUGGESTED RESOLUTIONS:**

- a. RESOLVED, that the intersection of Kirkton Drive at Starr Drive be **MODIFIED** from Stop signs on the Kirkton Drive approaches to ALL-WAY STOP control at the intersection of Kirkton Drive at Starr Drive.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Kirkton Drive at Starr Drive.

**6. Public Comment****7. Other Business****8. Adjourn**

A regular meeting of the Troy Traffic Committee was held Wednesday, February 19, 2020 in the Lower Level Conference Room at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

**1. Roll Call**

Present: Don Johnson  
Richard Kilmer  
Cindy Nurak  
Sunil Sivaraman  
Cynthia Wilsher  
Pete Ziegenfelder  
Alankar Shende, Student Representative

Absent: Al Petrulis

Also present: Rachel & Lilianna Giuffrida 2666 Creek Bend  
Sgt. Justin Novak, Police Department  
Lt. Eric Caloia, Fire Department  
Bill Huotari, City Engineer/Traffic Engineer

**2. Minutes – January 15, 2020**

Resolution # 2020-02-03  
Moved by Kilmer  
Seconded by Nurak

To approve the minutes as printed.

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

**MOTION CARRIED**

**PUBLIC HEARINGS**

**3. No Public Hearings**

**REGULAR BUSINESS**

**4. Request for Traffic Control – Crooks Road at Wilshire Drive**

The traffic signal at the intersection of Crooks Road and Wilshire Drive is currently undergoing a modernization. During the design phase of this project, Road Commission for Oakland County (RCOC) and the City of Troy agreed that left turns allowed at this intersection during off peak traffic periods when the signal is in the flash mode of operation should be prohibited to improve safety.

With recent development on Wilshire Drive more traffic is being generated that uses this intersection. This additional traffic has the potential to cause significant conflicts with opposing left turning traffic movements due to the boulevard geometry of the intersection. The crossovers on Wilshire Drive, west and east of Crooks Road, provide a convenient location for indirect left turn movements.

The recommended treatment is to prohibit all left turns to/from Wilshire Drive to/from Crooks Road.

Mr. Kilmer led a discussion of what the issue is and what the recommendation would do. He agrees that left turns should be made east and west, within the existing boulevard section, just like other boulevard intersections.

Mr. Johnson asked about the process as the Committee has not reviewed many of these types of requests.

RCOC Traffic Control Order No. TP 102-22-86, Revision #2, prohibits all left turns for northbound Crooks Road at eastbound Wilshire Drive and southbound Crooks Road at westbound Wilshire Drive, and further prohibits all turns for northbound Crooks Road at westbound Wilshire Drive and southbound Crooks Road at eastbound Wilshire Drive.

The RCOC approved the turn prohibitions at their meeting of January 9, 2020. Wilshire Drive is a City road so a Traffic Control Order is required to prohibit left turns to/from Wilshire Drive and make it enforceable.

Essentially, the intersection will now perform as boulevard intersections are designed with indirect left turns. All left turn movements will now be required on Wilshire Drive within the existing boulevard.

Mr. Sivaraman discussed operational issues at the intersection and traffic.

Sgt. Novak stated that the new traffic signal is now in place.

Resolution # 2020-02-04  
Moved by Sivaraman  
Seconded by Johnson

RESOLVED, that intersection of Crooks Road at Wilshire Drive be **MODIFIED** to prohibit all left turns to/from Wilshire Drive to/from Crooks Road.

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

**MOTION CARRIED**

**5. Request for Traffic Control – Crooks Road at Premier Drive**

Crooks Road at Premier Drive was identified as an intersection where prohibiting certain turning movements during some specified hours of the day may help to reduce the pattern of crashes being reported as part of the Road Commission for Oakland County (RCOC) Annual Safety Review for the years 2016-2018.

Eastbound Premier Drive at Crooks Road had seven (7) crashes involving left turning traffic accessing Crooks Road to head north. Two (2) of the crashes occurred during the lunch time period, 12:00 to 1:00 PM, with the remainder occurring during the peak hour period of 4:00 to 7:00 PM.

Crooks Road is under the jurisdiction of the RCOC. Premier Drive is a City road so a TCO is required to prohibit left turns from Premier Drive to Crooks Road and make it enforceable.

The recommended treatment is to prohibit left turns from eastbound Premier Drive to northbound Crooks Road, between the hours of 4PM and 7PM, Monday through Friday.

Ms. Wilsher discussed traffic in and around this area.

Mr. Kilmer requested clarification on the request and the process.

Ms. Nurak noted that the request was for specific hours (i.e. peak hour from 4:00 PM – 7:00 PM)

Resolution # 2020-02-05  
Moved by Sivaraman  
Seconded by Nurak

RESOLVED, that the intersection of Crooks Road at Premier Drive be **MODIFIED** to prohibit left turns from eastbound Premier Drive to northbound Crooks Road, between the hours of 4PM and 7PM, Monday through Friday.

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

**MOTION CARRIED**

**6. Public Comment**

No public comment

**7. Other Business**

Mr. Kilmer discussed the new IHOP on Rochester Road and Urbancrest and his concerns about off-site parking along Urbancrest. The south side of Urbancrest is already posted as No Parking. The north side of Urbancrest is posted No Parking from approximately the end of the residential area at the east end to Rochester Road.

Additional no parking restrictions, on the north side of Urbancrest, would impact the existing residential properties on the east end of Urbancrest. If additional no parking is desired it should be initiated by the property owners on the east end of Urbancrest.

Mr. Kilmer requested information on several new developments and discussed traffic related issues.

Mr. Kilmer noted that the Stop signs placed over the past few months have helped in his neighborhood.

Mr. Johnson requested information on the pedestrian cross walk locations discussed last year (i.e. Altair/Troy Sports, City Hall and Somerset Collection). The pedestrian crossing at Altair/Troy Sports was partially completed with the traffic signal on the north side. The median improvements and traffic signal improvements on the south side are on hold while Altair works on redevelopment plans. The other two locations are on hold pending completion of I75 construction and further design considerations.

Discussion of I75 Segment 2 took place. New information has been added to the MDOT website ([www.modernize75.com](http://www.modernize75.com)) including additional information on the DDI at 14 Mile and Big Beaver as well as 2020 construction information.

MDOT is holding an Open House in Room 305 of the Community Center on Thursday, February 20, 2020 from 4PM – 7PM.

## **8. Adjourn**

The meeting adjourned at 8:11 p.m.

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Pete Ziegenfelder, Chairperson

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William J. Huotari, City Engineer/Traffic Engineer



## TRAFFIC COMMITTEE REPORT

March 3, 2020

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/ Traffic Engineer

SUBJECT: Request for No Parking  
Lakeside Drive at Shoreline Drive

### Background:

Troy Police request that the “eyebrow” and island area be posted as a No Parking zone at Lakeside Drive and Shoreline Drive.

Troy Police recently responded to a crash in this area and found that parked vehicles were creating a hazardous condition and could potentially block the flow of traffic for large vehicles, delivery trucks, emergency vehicles, etc.

The south side of Lakeside Drive and the east side of Shoreline Drive is currently posted as No Parking due to fire hydrants located along the road.

In an effort to keep the “eyebrow” open for all travel, the recommendation is to install an additional sign within the “eyebrow” and two signs on the island. This would prohibit all parking in the “eyebrow” area.



### Legend:

#### Fire Hydrant

- Out of Service
- Online

#### Water Valve

- Pressure Reducing Valve
- Air Release Valve
- Isolation Valve
- Gate Valve
- Butterfly Valve
- Tapping Sleeve and Valve
- Blow Off Valve
- Post Indicator Valve
- Service Valve
- Vault

#### Water Main

- Transmission Main
- Proposed, Out of Service or Standby
- Distribution Main

- Water Pressure Reducing Valve
- Road Centerline Text

Notes:

Map Scale: 1=252

Created: February 13, 2020



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.

**Lakeside Looking East**



**Eyebrow Looking South**



**Eyebrow Looking North**



**Shoreline Looking North**





## TRAFFIC COMMITTEE REPORT

March 3, 2020

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/ Traffic Engineer

SUBJECT: Request for Traffic Control  
Kirkton Drive at Starr Drive

### Background:

Samantha Shelton of 2351 Kirkton Drive states that the lack of ALL-WAY STOP control at the intersection of Kirkton Drive and Starr Drive creates a hazardous condition.

Kirkton Drive is currently controlled by Stop signs, while Starr Drive is uncontrolled.

There were two (2) crashes recorded in the past five (5) years.

The posted speed limit on both streets is 25 mph.

Starr Drive would be considered the major road as it provides access to Livernois Road.

The major potential sight distance obstruction at the intersection is the northeast house corner at the southwest quadrant of the intersection.

For a vehicle traveling on Kirkton Drive, the safe approach speed was found to be 9.0 mph and 11.3 mph for southbound and northbound vehicles, respectively. Stop-control is appropriate for the Kirkton Drive approaches.

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

February 25, 2020

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

RE: Traffic Control Recommendation for  
Kirkton Drive at Starr Drive  
OHM JN: 0128-19-0240

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Kirkton Drive at Starr Drive to determine the proper traffic control. Kirkton Drive at Starr Drive is a 4-legged intersection located approximately 3,200 feet north of Maple Road and about 2,200 feet east of Livernois Road. The speed limit on both streets under investigation is 25 mph. Kirkton Drive is STOP-controlled on both approaches to Starr Drive. Attached are aerial and intersection photos.

### **Types of Roadways**

Both Kirkton Drive and Starr Drive are considered local streets. Starr Drive runs east / west, providing access to / from the local neighborhood and Livernois Road (minor arterial) via Plum Drive and Kirkton Drive. Kirkton Drive runs north / south, providing indirect access to Morse Elementary school to the east and Livernois Road to the west via Starr Drive, Hickory Drive and Cherry Drive. Both Kirkton Drive and Starr Drive dead end only a few hundred feet north and east of the subject intersection respectively.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the south side of Starr Drive west of the intersect and on the north side of Starr Drive east of the intersection. Parking is also allowed on the east side of Kirkton Drive in the vicinity of the intersection. Kirkton Drive is currently under STOP-control and would be considered the minor road at the intersection, while Starr Drive would be considered the major road as it provides direct access to Livernois Road and its dead end provides access to more houses.

### **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 two (2) crashes recorded in the past full five (5) years at the intersection of Kirkton Drive at Starr Drive. Key information on the crashes are described below. Given that less than the recommended minimum of five



(5) crashes susceptible to correction by all-way STOP-control did not occur during a 12-month period, the crash data does not compel OHM Advisors to modify the existing controls.

In any case, both crashes that occurred in the vicinity of this intersection were trucks backing and colliding with legally parked vehicles, unrelated to the traffic control at the intersection.

### Traffic Volumes

Traffic counts were not collected in the vicinity of the intersection. Traffic volumes in residential areas are predominantly driven by the number of single-family residential homes in the neighborhood. Based on the residential nature and the number of homes in the surrounding area, as well as the fact that both Starr Drive and Kirkton Drive are dead-end streets, it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP. Further explanation within the context of the minimum volume constraints is provided next.

It is extremely unlikely that Starr 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 Plum Drive is similarly unlikely to average at least 200 units for any 8 hours. Additionally, since the posted speed limit is only 25 mph, it is reasonable to assume that the 85th percentile approach speed does not exceed 40 mph on either road; thus, the minimum vehicular volume warrants cannot be discounted to 70 percent of the values described previously. Finally, the study intersection is likely to fall significantly shy even of the reduced 80 percent volumes, based on expected trip generation for this neighborhood. Therefore, the minimum volume criteria for an all-way STOP has not been met.

### 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 Kirkton Drive at Starr Drive for a motorist traveling southbound on Kirkton Drive is the southwest house corner of the property on the northeast quadrant of the intersection. The major potential sight distance obstruction for a motorist traveling northbound on Kirkton Drive is the northeast house corner at the southwest quadrant of the intersection. Reference the attachments for intersection photos. These obstructions impact calculating the safe approach speeds for the intersection. The safe approach speed is the speed at which a vehicle can approach an intersection and still stop in time to avoid a collision with a vehicle seen on the cross street.

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 speeds on Kirkton Drive were 9.0 mph and 11.3 mph for southbound and northbound vehicles, respectively. Thus, based on the safe approach speed calculations, STOP-control is appropriate for the Kirkton Drive approaches. The safe approach speed calculation spreadsheets for the intersection is attached for your reference.

### Recommendation

The preceding analyses did not determine that any criteria were met for all-way STOP-control. Additionally, the safe approach speed approach calculations determined that STOP-control would be the appropriate traffic control treatment on the Kirkton Drive approaches. OHM recommends retaining the



existing STOP signs. The intersection should be reevaluated if traffic volumes increase or more crashes begin to occur.

Sincerely,  
**OHM Advisors**

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Stephan Maxe, PE  
Project Engineer

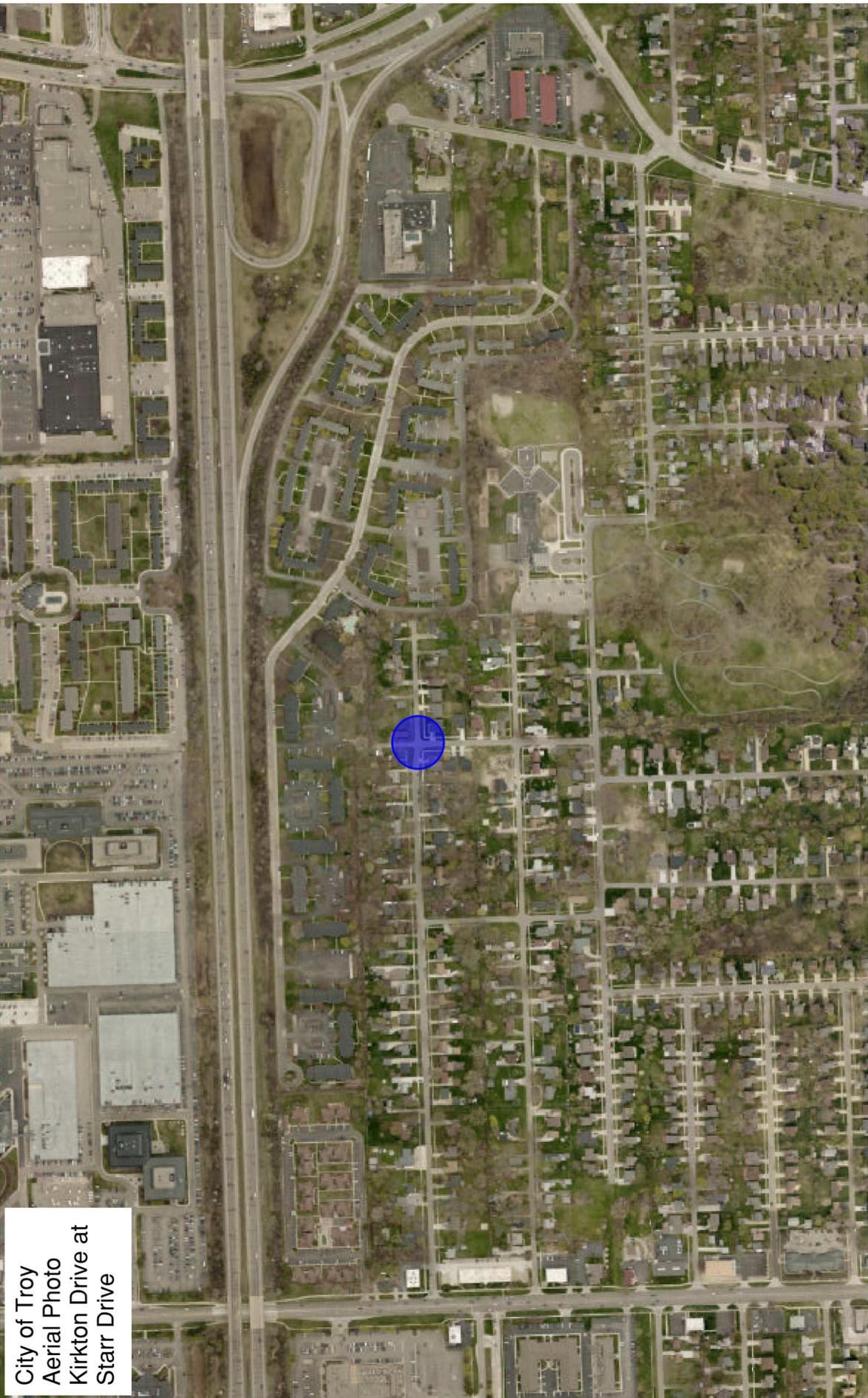
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Sara Merrill, PE, PTOE  
Traffic Project Manager

Attachments:

- Aerial Photo
- Safe Approach Speed Calculation Spreadsheets
- Intersection Photos
- UD-10 Crash Reports (2)
- Traffic Control Determination Reference Guide

City of Troy  
Aerial Photo  
Kirkton Drive at  
Starr Drive



# Safe Approach Speed Calculation

**Starr Dr and Kirkton**  
Your City

Measured:

Width of Roads

Road 1 = 22 (ft)

Road 2 = 22 (ft)

Distance to Obstructions

a = 28 (ft)

b = 23 (ft)

c = 34 (ft)

d = 67 (ft)

e = 33 (ft)

f = 43 (ft)

g = 36 (ft)

h = 39 (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<sub>1</sub> = 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

V<sub>2</sub> = 9.0 (mph) [Based on Veh. A]

or V<sub>2</sub> = 13.3 (mph) [Based on Veh. C]

Calculated Safe Approach Speed for Vehicle D

Approaching on Road 2

V<sub>3</sub> = 11.7 (mph) [Based on Veh. A]

or V<sub>3</sub> = 11.3 (mph) [Based on Veh. C]

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

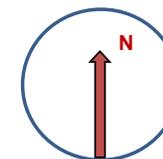
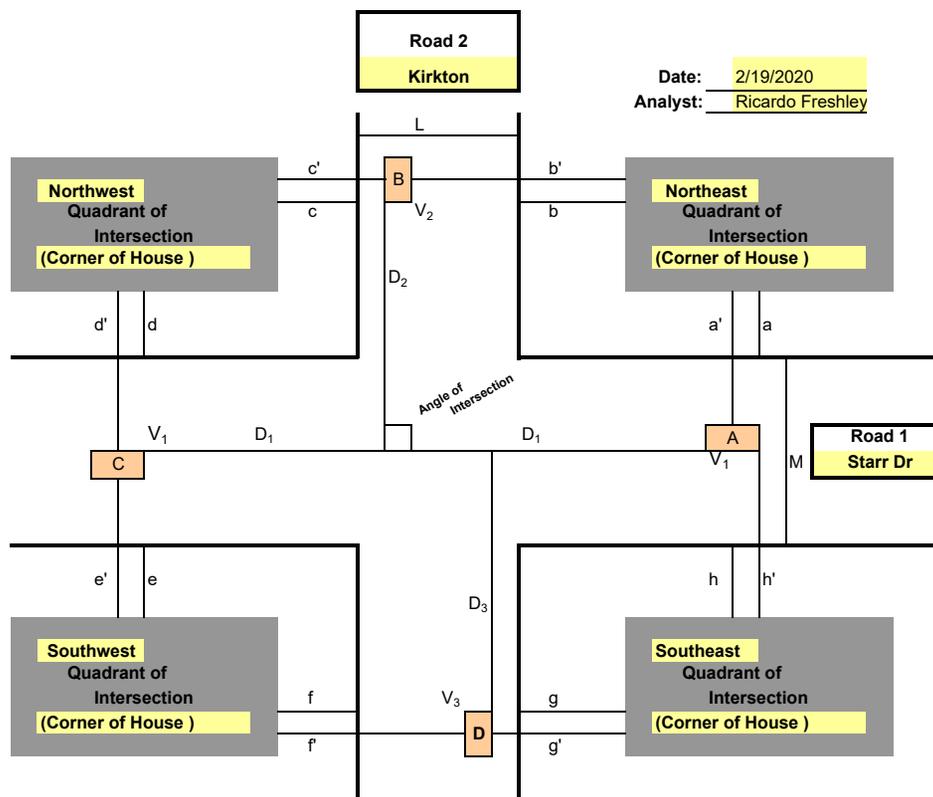
to Recommend STOP Control 10.0 (mph),

to Recommend YIELD Control 25.0 (mph),

Otherwise Recommends NO CONTROL.

Date: 2/19/2020

Analyst: Ricardo Freshley



Intermediate Calculations:

D<sub>1</sub> = 196

a' = 34

e' = 39

D<sub>2A</sub> = 40.9

b' = 33

f' = 53

D<sub>2C</sub> = 65.8

c' = 40

g' = 42

D<sub>3A</sub> = 56.0

d' = 77

h' = 49

D<sub>3C</sub> = 53.4

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  $D_{2C} = \frac{c' * D_1}{(D_1 - d')}$  or  $D_{3A} = \frac{g' * D_1}{(D_1 - h')}$  or  $D_{3C} = \frac{e' * D_1}{(D_1 - f')}$

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:** Kirkton Drive – Heading North  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 2:** Kirkton Drive - Heading North and Looking Left  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 3:** Kirkton Drive - Heading North and Looking Right  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 4:** Kirkton Drive - Heading South  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 5:** Kirkton Drive - Heading South and Looking Left  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 6:** Kirkton Drive - Heading South and Looking Right  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 7:** Starr Drive – Heading East  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 8:** Starr Drive – Heading East and Looking Left  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 9:** Starr Drive – Heading East and Looking Right  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 10:** Starr Drive - Heading West  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 11:** Starr Drive - Heading West and Looking Left  
**Date:** 2/19/2020      **Photographer:** Ife Ogundeji



**Photograph No. 12:** Starr Drive - Heading West and Looking Right  
**Date:** 2/19/2020      **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.*