TRAFFIC COMMITTEE AGENDA

November 19, 2025 – 7:30 P.M.

City Council Board Room – Troy City Hall – 500 West Big Beaver

1. Roll Call
2. Approval of Minutes – October 15, 2025, Traffic Committee

PUBLIC HEARINGS

3. No Public Hearings

REGULAR BUSINESS

4. Request for Traffic Control – Estates of Willowbrook
5. 2026 Traffic Committee Meeting Schedule
6. Public Comment
7. Other Business
8. Adjourn

Copy to:

Traffic Committee Members: Sgt. Brian Warzecha, Police Department; Deputy Fire Chief, Michael Koehler, Fire Department;

TRAFFIC COMMITTEE

MESSAGE TO VISITORS, DELEGATIONS, AND CITIZENS

The Traffic Committee comprises seven Troy citizens who have volunteered their time to the City to address 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.

The Committee will make final decisions on sidewalk waivers.

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 the City Council. The City Manager will place the items addressed in the Traffic Committee meeting on the City Council Agenda. The earliest date the City Council might consider these items would typically be 10 to 14 days after the Traffic Committee meeting. If you are interested, you may contact the City Manager's Office 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 comments 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 to your concerns.

2. Approval of Minutes – October 15, 2025, Traffic Committee

PUBLIC HEARING

3. No Public Hearing

REGULAR BUSINESS

4. Request for Traffic Control – Estates of Willowbrook

The Estates of Willowbrook Site Condominiums have been completed. All intersections within this development were reviewed for intersection control. OHM provided a detailed study attached and made the following recommendations: A YIELD sign on the Sandpiper Drive approach of the Osprey Drive at Sandpiper Drive intersection, implementing a STOP sign on the Osprey Drive approach at the Macaw Drive at Osprey Drive intersection, and on the Dexter Drive approach at the Wayfarer Drive at Dexter Drive intersection. Lastly, the Dexter Drive approach at the Macaw Drive intersection should be converted from a STOP sign to a YIELD sign.

SUGGESTED RESOLUTIONS:

a. RESOLVED, that the Sandpiper Drive Approach at Osprey Drive be modified from UNCONTROLLED to YEILD CONTROLLED.

b. RESOLVED, that the Osprey Drive Approach at Macaw Drive be modified from UNCONTROLLED to STOP CONTROLLED

c. RESOLVED, that the Dexter Drive Approach at Wayfarer Drive be modified from UNCONTROLLED to STOP CONTROLLED

d. RESOLVED, that the Dexter Drive Approach at Macaw Drive be modified from STOP CONTROLLED to YIELD CONTROLLED

5. 2026 Traffic Committee Meeting Schedule

According to the City of Troy Traffic Committee By-Laws, Article IV – Meetings:

"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."

There are no other bylaws or procedures that establish the actual meeting dates, but the City publishes an annual calendar of meetings, so meeting dates need to be set for this purpose.

SUGGESTED RESOLUTION:

a. Recommended dates for 2026 Traffic Committee meetings are detailed below:

- Wednesday, January 21
- Wednesday, February 18
- Wednesday, March 18
- Wednesday, April 15
- Wednesday, May 20
- Wednesday, June 17
- Wednesday, July 15
- August – NO MEETING
- Wednesday, September 16
- Wednesday, October 21
- Wednesday, November 18
- December – NO MEETING

8. Public Comment

9. Other Business

10. Adjourn

A regular meeting of the Troy Traffic Committee was held Wednesday, October 15, 2025 in the City Council Board Room at Troy City Hall. Al Petrulis called the meeting to order at 7:30 p.m.

1. Roll Call

Present: Timothy Battle
Dale Christiansen
Al Petrulis
Justin Rose

Absent: Shama Kenkre
Abi Swaminathan
Pete Ziegenfelder
Deputy Fire Chief, Michael Koehler

Also present: G. Scott Finlay, City Engineer
Sgt. Brian Warzecha, Police Department
Merissa Clark, Administrative Assistant

2. Minutes – July 16, 2025 Traffic Committee

Resolution # 2025-10-13
Moved by Christiansen
Seconded by Petrulis

To approve the July 16, 2025 minutes as printed.

Yes: Battle, Christiansen, Petrulis, Rose
No: None
Absent: Kenkre, Swaminathan, Ziegenfelder

MOTION CARRIED

PUBLIC HEARINGS

3. No Public Hearings

REGULAR BUSINESS

4. Request for No Parking – Albany Court at Heritage Drive

Several residents on Albany Court have requested that the NO PARKING ZONE be created on the south side of Albany Court, east of Heritage Drive. They have indicated that there is a safety hazard at Albany Court and Heritage Drive due to parked vehicles blocking visibility. Requesting a No Parking Zone for the first three spots to prevent accidents and protect the school drop-off area.

The Traffic Committee received 1 email in favor.

Mr. Khatri, lives at 3071 Albany, and is in support of the No Parking being installed, because when cars park on the street it causes an obstruction to the flow of traffic.

Mr. O'Herron, lives at 3083 Heritage, and is not in favor of the no parking being installed, and stated that if his work van is in the way he will gladly park somewhere else.

Mr. Rose asked Sgt. Warzecha if the sign would be helpful, Sgt. Warzecha stated it would be helpful and since it's a court it is not heavily trafficked.

Mr. Rose asked if a two-car length No Parking sign was installed if that would be helpful, that way new residents moving in and visitors are aware of it?

Mr. Christiansen thinks it would be helpful, especially with right turns onto Albany Ct.

Mr. Petrulis is concerned that this is a very common intersection, and is wondering if it's really necessary?

Mr. Battle asked if a temporary sign could be installed, Sgt. Warzecha explained that it probably would not help anything in the long run because once removed parking would return.

Mr. O'herron stated he will switch where he parks, and not park his work vehicle in the area that is a problem.

Mr. Rose mentioned that this item could be brought back at a later time if the issue continues.

Mr. Christiansen would like to make a motion to install a "No Parking 30' from intersection"

Mr. Kahtri and Mr. O'herron explained that the street is filled with cars, and that the 30' of No Parking would be great.

Resolution # 2025-10-14
Moved by Rose
Seconded by Battle

BE IT RESOLVED, that **NO CHANGE** be made to the current parking.

Yes: Battle, Petrulis, Rose
No: Christiansen
Absent: Kenkre, Swaminathan, Ziegenfelder

MOTION CARRIED

5. Request for No Parking Zone – Locksley Court at Wolverine Drive

Adam Conrad, homeowner at 2705 Locksley Court, provided the following: Attached is a picture of what we experience when pulling out of Locksley Ct. As you can see, we are completely blind to traffic heading southbound on Wolverine. This picture was my view when pulling this past spring. My other concern is the little kids crossing. There have been times when cars heading southbound on Wolverine turn quickly onto Locksley Court, and they cannot see if little kids are crossing the street.

The Traffic Committee received 2 emails in favor, and 1 voicemail.

Ms. Wolgast lives at 3332 Wolverine, she does not see a reason for this sign to be placed, parking has not been an issue in all the years she has lived here (1988). Thinks it is not fair to all the other neighbors who are not going to be able to have guests park there.

Mr. Conrad lives at 2705 Locksley, and requested this be looked at by the Traffic Committee. He explained how hard it is to see when he and his neighbors (young, old, and new drivers) pull out onto to Wolverine. He thinks the No Parking sign being installed, when the law is already 15' from an intersection, would make this a lot safer for everyone.

Mr. Battle asked how often it happens, and Sgt. Warzecha asked if it's just one car in particular.

Mr. Conrad said no, it is just a place a lot of people like to park.

Mr. Netter, of 3346 Wolverine, asked if this item could also be tabled/no change like the previous item in the Traffic meeting.

Mr. Rose explained that this item is actually more of a safety issue than the other item.

Mr. Netter than asked if a 3-way stop sign could be installed there.

Ms. March of 3318 Wolverine, stated its most likely her son's girlfriend's car and will have her move it and not park there again, she was not aware she needed to be 15' from the intersection.

Mr. Christiansen asked Mr. Finlay if it could just be painted, Mr. Finlay stated he has not heard of that, but maybe yellow paint could be an option.

A resident asked to have the 15' measured on the GIS screen, and Mr. Finlay showed the room it would be about the center of the driveway at 3332 Wolverine.

Ms. March asked about parking on the other side of the intersection (south side of Locksley), and the board explained that 15' from that intersection is also No Parking.

Mr. Christiansen doesn't see an issue with a No Parking to the curb sign being installed, it would just be the 15' that is already required by State Law.

Mr. Petruilis explained that this issue can be pointed out at every intersection, but doesn't seem necessary since it is the law.

Mr. Christiansen made a motion to have two No Parking signs installed, indicating the 15' that

they are not allowed to park in.

Mr. Battle asked the audience if this could be discussed upon neighbors since everyone is now aware of the No Parking 15' from an intersection.

Mr. Battle made a motion for No change to be made at this time.

Resolution # 2025-10-15
Moved by Battle
Seconded by Rose

BE IT RESOLVED, that **NO CHANGE** be made to the current parking.

Yes: Battle, Petrulis, Rose
No: Christiansen
Absent: Kenkre, Swaminathan, Ziegenfelder

MOTION CARRIED

6. Request for No Parking Zone Extension – Adler Court

The Troy School District Transportation Safety Manager has requested that the No Parking Zone around Adler Court be extended north of 4874 Adler Court. The following is the concern raised: Would it be possible to move the "No Parking Ends" sign farther along on the cul-de-sac? As it stands, a car could park legally in the cul-de-sac, which would prevent my buses from safely negotiating the turnaround.

Mr. Chol lives at 4851 Adler Ct, and explained it's the drivers, and the design of the cul-de-sac in this subdivision.

Mr. Rose asked Mr. Finlay if this particular development met City Standards when it was built, Mr. Finlay it was built to our City Standards and explained that the No Parking signs are always installed on the Water Main side in Troy.

Mr. Rose asked if the Fire Trucks are able to make the turns with or without parking.

A resident in the sub stated without parking they can, and that it's the design of the cul-de-sac. Mr. Finlay showed a few existing cul-de-sac's in the area.

Mr. Rose added, that typically buses don't use cul-de-sac's for drop off, but the Mr. Chol explained that they have two special needs children in the sub so they do use the cul-de-sac on school days.

Mr. Chol asked if could be limited to certain days and times?

Sgt. Warzecha pointed out that it would need to be two No Parking signs installed.

The resident at 4862 Adler asked if he could put up a speed limit sign in the subidivsion.

Mr. Christiansen stated that if it's just coming down to parking spots, he doesn't see a reason why the two signs should not be added if it's going to help the bus drivers.

Resolution # 2025-10-16
Moved by Battle
Seconded by Rose

> BE IT RESOLVED, that a NO PARKING ZONE be established in front of 4862 & 4874 Adler Ct on School days between 7:00 AM-9:00AM and 3:00PM-5:00PM.

Yes: Battle, Christiansen, Petrulis, Rose
No: None
Absent: Kenkre, Swaminathan, Ziegenfelder

7. Request for Traffic Control – Warwich Drive at Folkstone Drive

Toby Gosselin of 5190 Folkstone requested that the intersections be reviewed for the purpose of updating the traffic control at the intersection. Toby provided the following comment: We need a Yield Sign for Harwich at Folkstone Drive as soon as possible. There have been several close calls at this intersection as Harwich drivers speed through, failing to yield to oncoming traffic. This is a busy school route in Sylvan Glen subdivision.

Mrs. Pelliccia asked for an explanation on how this was started, how the traffic study was done, and asked how it's determined for how many signs are installed. She also added that the street is very busy street, and very short. She has lived in this subdivision for 40 years and doesn't think a stop sign is needed.

The Traffic Committee read her OHM's recommendation, and explained the process for how this was brought to the committee, and how the study was done.

Mr. Rose explained that he agrees with what OHM suggested about installing a Yield sign at this intersection, and that it would be very clear to the drivers.

Mr. Battle agrees with Mr. Rose and stated that he lives in the area and does see the issue.

> RESOLVED, that the Warwich Drive Approach at Folkstone Drive be modified from UNCONTROLLED to YIELD CONTROLLED.

Resolution # 2025-10-17
Moved by Rose
Seconded by Battle

Yes: Battle, Christiansen, Petrulis, Rose
No: None
Absent: Kenkre, Swaminathan, Ziegenfelder

8. Public Comment

No public comment.

9. Other Business

No other business.

9. Adjourn

The meeting adjourned at 9:05 PM.

Pete Ziegenfelder -Chairperson

G. Scott Finlay, City Engineer/Traffic Engineer

G:\Traffic\aaa Traffic Committee\2025\15_October_20251015_Minutes_Traffic Committee DRAFT

October 27, 2025

Mr. Scott G Finlay, PE
City Engineer
City of Troy
500 W. Big Beaver Rd
Troy, MI 48084

RE: Traffic Control Recommendation for the Estates of Willowbrook

Dear Mr. Finlay:

As requested, we have reviewed four intersections within the Estates of Willowbrook subdivision to determine the proper traffic control. The intersections include Osprey Drive at Sandpiper Drive, Macaw Drive at Osprey Drive, Macaw Drive at Dexter Drive, and Wayfarer Drive at Dexter Drive. All of the study intersections are three legged intersections located in the City of Troy. The speed limit on all streets under investigation is 25 mph. The intersections of Osprey Drive at Sandpiper Drive, Macaw Drive at Osprey Drive, and Wayfarer Drive at Dexter Drive do not have any stop-controlled approaches. The intersection of Macaw Drive at Dexter Drive has the Dexter Drive approach under stop control, while the Macaw Drive approaches are uncontrolled under existing conditions. Attached are aerial and intersection photos.

Types of Roadways

Osprey Drive, Macaw Drive, Dexter Drive, and Wayfarer Drive are considered local streets. Osprey Drive and Dexter Drive run east to west. Osprey Drive offers access to the neighborhood off of John R Road. Dexter Drive offers access to the neighborhood between Macaw Drive and Wayfarer Drive. Macaw Drive and Wayfarer Drive run north to south. Wayfarer Drive offers access to the neighborhood off of Wattles Road. Macaw Drive offers access within the neighborhood.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the north side of Osprey Drive, the west side of Macaw Drive, the south side of Dexter Drive, and the west side of Wayfarer Drive. There is no clear major versus minor street. However, for the purpose of analysis Sandpiper Drive at the intersection of Osprey Drive at Sandpiper Drive, Osprey Drive at the intersection of Macaw Drive at Osprey Drive, and Dexter Drive at both the Macaw Drive at Dexter Drive and Wayfarer Drive at Dexter Drive are presumed to be the minor roads. All of these study streets serve as key routes throughout 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 any of the intersections. The crash history does not constitute a compelling case for modifying the existing controls.

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Traffic Volumes

Traffic counts were not collected in the vicinity of the intersections. 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 it is highly improbable that this location would satisfy any of the minimum volume warrants for an all-way STOP (see attached Reference Guide).

It is therefore extremely unlikely that the major roads at any of the intersections meets and sustains the 300 vehicles per hour threshold for a minimum of 8 hours. The combined vehicular, pedestrian, and bicycle volumes entering from any of the minor roads of the intersections are 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. Finally, the study intersections are 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 likely been met.

Approach Speed Limits

The approach speed limit on all study road are 25mph. 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 Osprey Drive at Sandpiper Drive for a motorist traveling northbound on Sandpiper Drive would be the house corner on the southeast quadrant and vegetation on the southwest quadrant of the intersection.

The major potential sight distance obstruction at the intersection of Macaw Drive at Osprey Drive for a motorist traveling eastbound on Osprey Drive would be the house corners on the northwest and southwest quadrants of the intersection.

The major potential sight distance obstruction at the intersection of Macaw Drive at Dexter Drive for a motorist traveling westbound on Dexter Drive would be the house corners on the northeast and southeast quadrants of the intersection.

The major potential sight distance obstruction at the intersection of Wayfarer Drive at Dexter Drive for a motorist traveling eastbound on Dexter Drive would be the vegetation on the northwest and southwest quadrants of the intersection.

These obstructions impact the calculated 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 10 mph or less, a STOP sign is recommended. When the safe approach speed is found to be more than 10 mph, a YIELD sign is recommended. Table 1 below shows the safe approach speeds, dictating obstruction, and recommended traffic control for the minor road approach per intersection. The safe approach speed calculation spreadsheets for the intersections is attached for reference.

Table 1. Recommended Traffic Control

Intersection	Safe Approach Speed (mph)	Obstruction / Quadrant	Recommended Traffic Control
Osprey at Sandpiper	14.2	Vegetation / SW	YIELD
Macaw at Osprey	9.0	House Corner / SW	STOP
Macaw at Dexter	15.4	House Corner / SE	YIELD
Wayfarer at Dexter	7.4	Vegetation / SW	STOP

Recommendation

The preceding analysis did not determine that any criteria were met for all-way STOP-control. The safe approach speed calculations suggested YIELD-control would be appropriate for the minor street approaches at the intersections of Osprey Drive at Sandpiper Drive and Macaw Drive at Dexter Drive. The safe approach speed calculations suggested STOP-control would be appropriate for the minor street approaches at the intersections of Macaw Drive at Osprey Drive and Wayfarer Drive at Dexter Drive.

OHM recommends implementing a YIELD sign on the Sandpiper Drive approach of the Osprey Drive at Sandpiper Drive intersection, implementing a STOP sign on the Osprey Drive approach at the Macaw Drive at Osprey Drive intersection and on the Dexter Drive approach at the Wayfarer Drive at Dexter Drive intersection. Lastly, the approach of Dexter Drive at the Macaw Drive at Dexter Drive intersection should be converted from the existing STOP sign to a YIELD sign. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.

Sincerely,
OHM Advisors

Lauren Hull

Lauren Hull, PE, RSP$_1$
Traffic Engineer

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

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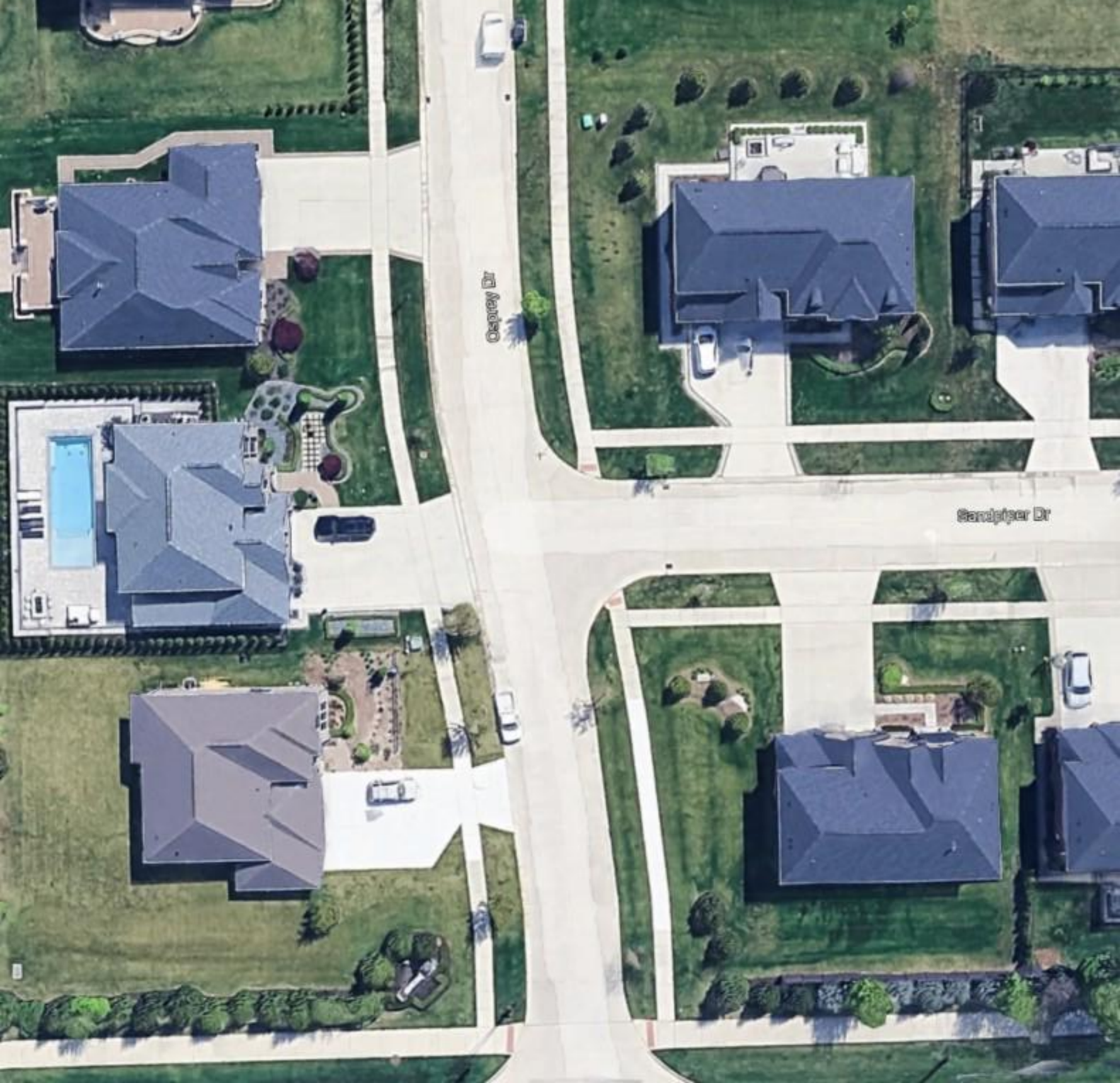
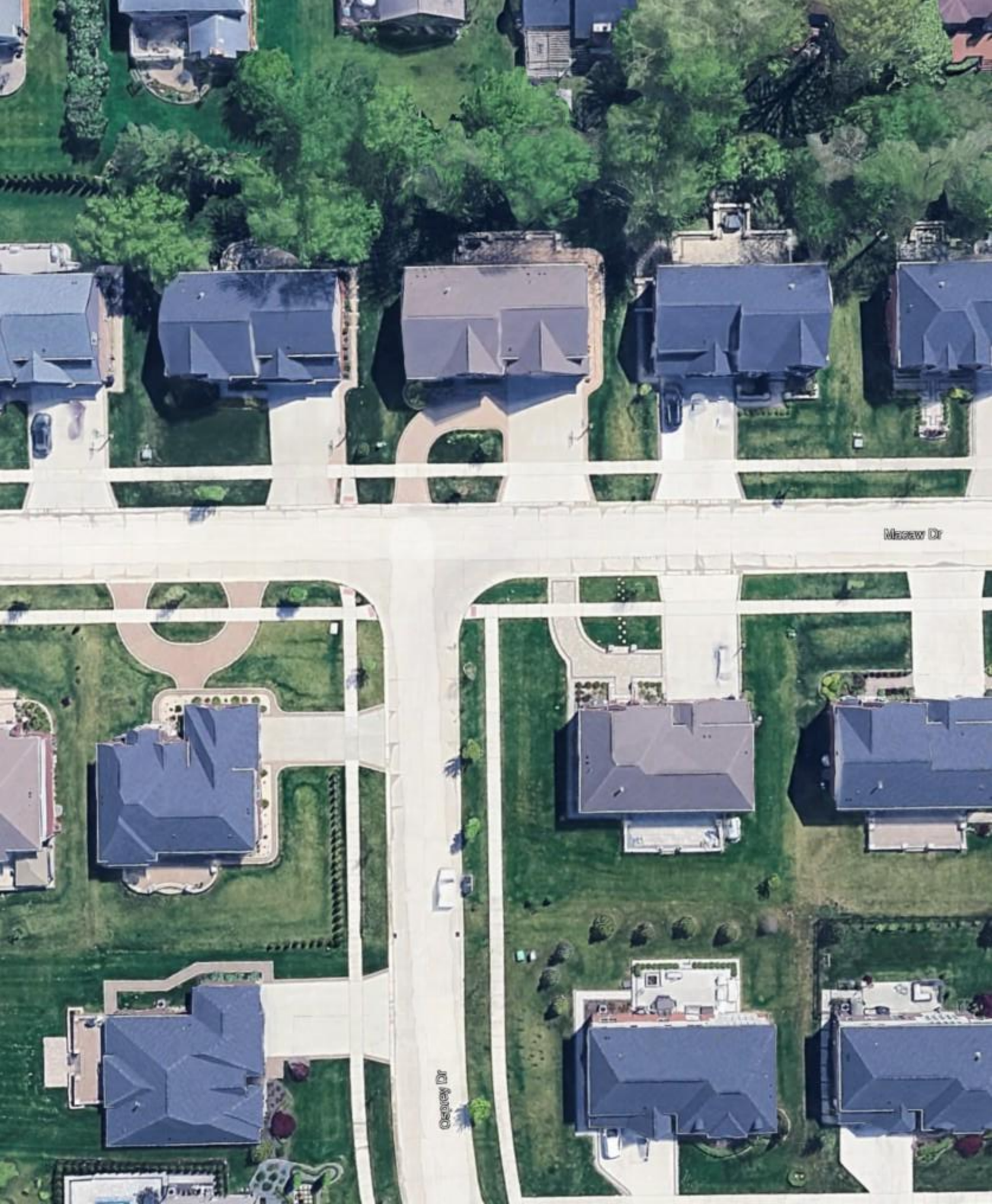
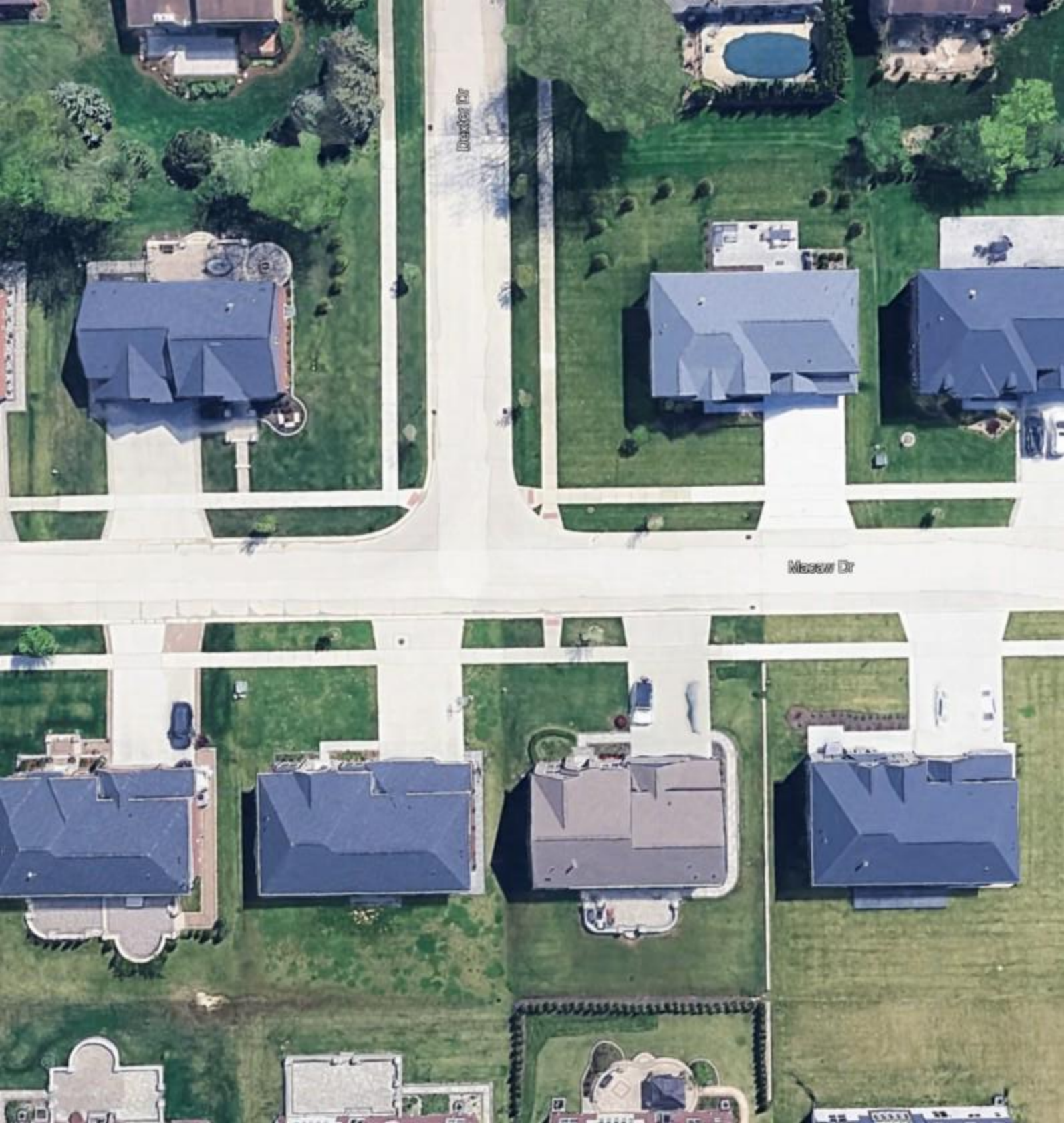

Osprey Dr
Sandpiper Dr


Maxaw Dr
Ozark Dr

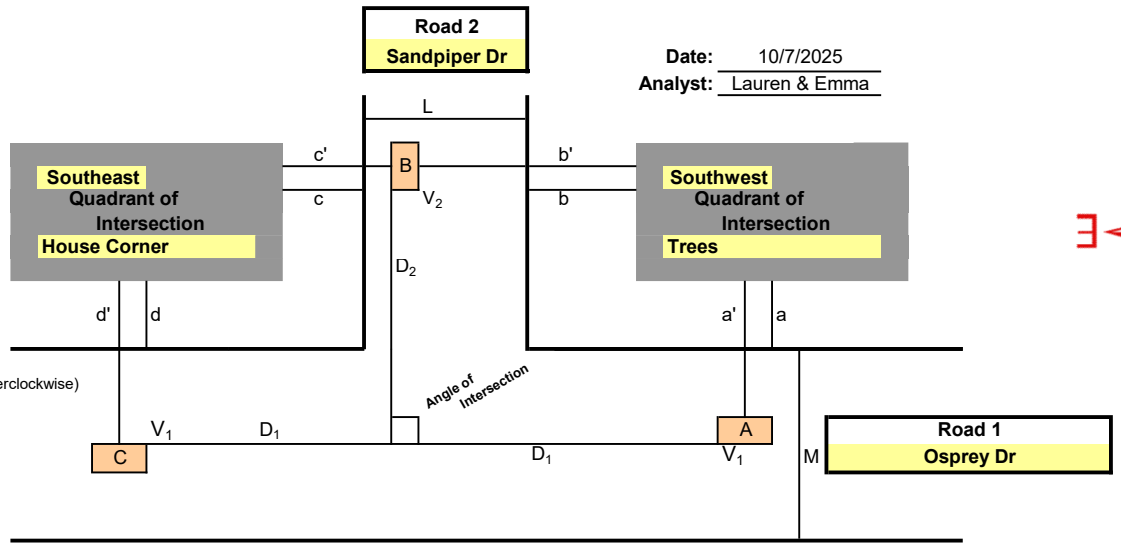

Dexter Dr
Moscow Dr

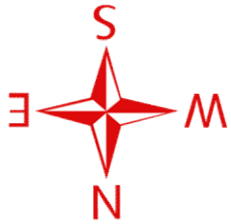
Dexter Dr
Wayfarer Dr

Safe Approach Speed Calculation

Osprey Dr and Sandpiper Dr
City of Troy

Date: 10/7/2025
Analyst: Lauren & Emma





Measured:

Width of Roads

Road 1 =	26	(ft)
Road 2 =	26	(ft)

Distance to Obstruction

a =	48	(ft)
b =	33.5	(ft)
c =	48	(ft)
d =	38.5	(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)

Intermediate Calculations:

D_1 =	196	a' =	54
D_{2A} =	71.2	b' =	47.5
D_{2C} =	73.7	c' =	54
		d' =	52.5

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

Calculated Safe Approach Speed for Vehicle B
Approaching on Road 2

TRUE		14.2	(mph) [Based on Veh. A]
FALSE	or V_2 =	14.6	(mph) [Based on Veh. C]

Notes:
Enter field measurements in yellow highlighted area.
Blue fields are std. default values; change only for cause.
Calculated by spreadsheet

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

to Recommend STOP Control	10.0	(mph)
to Recommend YIELD Control	25.0	(mph)

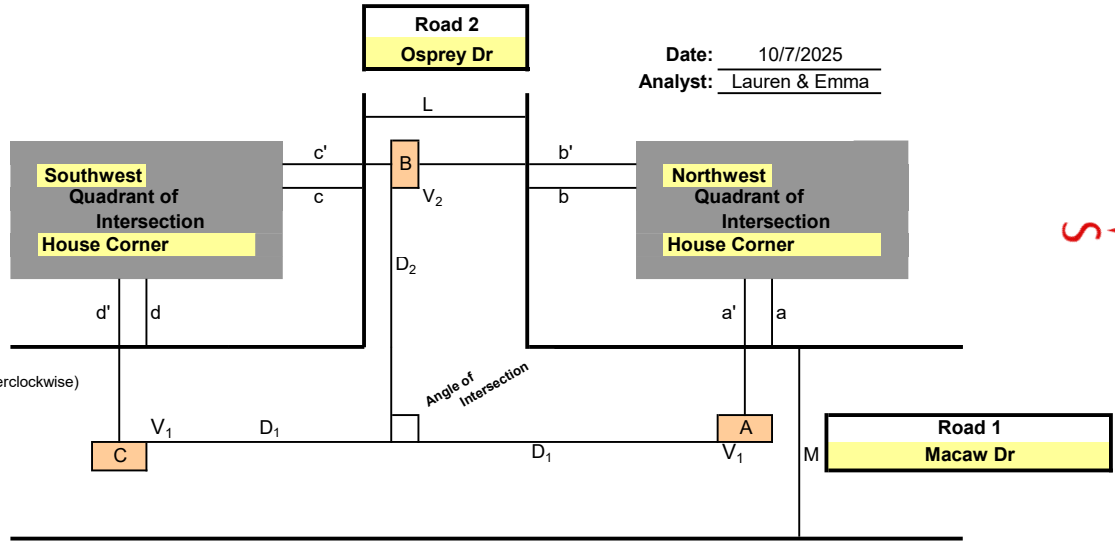
Otherwise Recommends NO CONTROL.

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

Safe Approach Speed Calculation

Macaw Dr and Osprey Dr
City of Troy

Date: 10/7/2025
Analyst: Lauren & Emma



Measured:

Width of Roads
- Road 1 = 26 (ft)
- Road 2 = 26 (ft)

Distance to Obstruction
- a = 50.2 (ft)
- b = 20.5 (ft)
- c = 21.5 (ft)
- d = 50.2 (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)

Intermediate Calculations:

D_1 =	196	a' =	56.2
D_{2A} =	68.2	b' =	34.5
D_{2C} =	40.9	c' =	27.5
		d' =	64.2

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

Calculated Safe Approach Speed for Vehicle B
Approaching on Road 2

FALSE	13.7	(mph) [Based on Veh. A]
FALSE	or V_2 = 9.0	(mph) [Based on Veh. C]

Notes:
- Enter field measurements in yellow highlighted area.
- Blue fields are std. default values; change only for cause.
- Calculated by spreadsheet

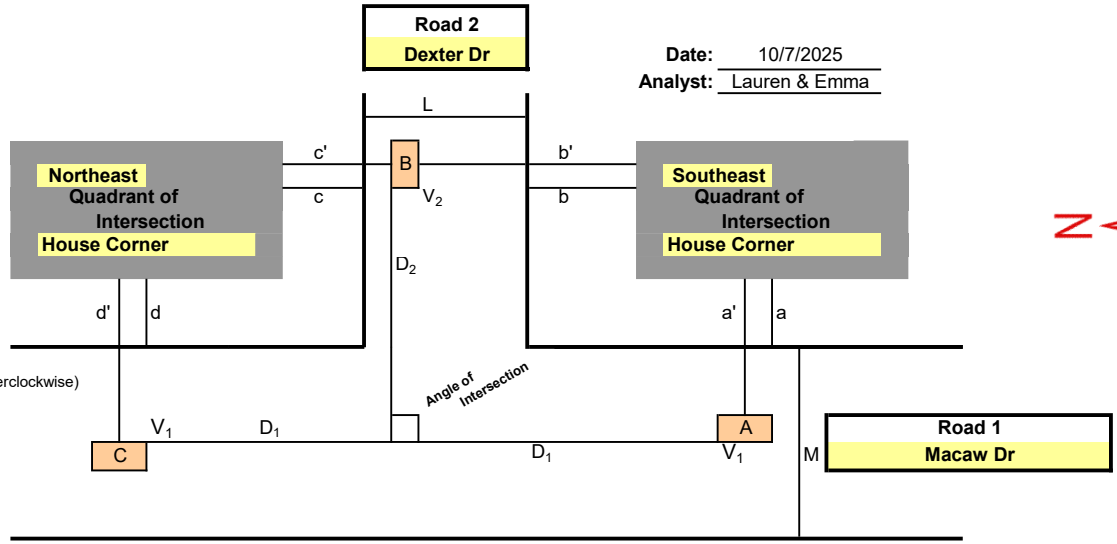
Threshold of Safe Approach Speed (AAA, FHWA & NSC)
- to Recommend STOP Control 10.0 (mph)
- to Recommend YIELD Control 25.0 (mph)
- Otherwise Recommends NO CONTROL.

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

Safe Approach Speed Calculation

Macaw Dr and Dexter Dr
City of Troy

Date: 10/7/2025
Analyst: Lauren & Emma



Measured:

Width of Roads

Road 1 =	26	(ft)
Road 2 =	26	(ft)

Distance to Obstruction

a =	48	(ft)
b =	48.5	(ft)
c =	48.5	(ft)
d =	48	(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)

Intermediate Calculations:

D_1=	196	a' =	54
D_{2A}=	79.2	b' =	62.5
D_{2C}=	79.6	c' =	54.5
		d' =	62

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

Calculated Safe Approach Speed for Vehicle B
Approaching on Road 2

TRUE		15.4	(mph) [Based on Veh. A]
FALSE	or V_2 =	15.5	(mph) [Based on Veh. C]

Notes:
Enter field measurements in yellow highlighted area.
Blue fields are std. default values; change only for cause.
Calculated by spreadsheet

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

to Recommend STOP Control	10.0	(mph)
to Recommend YIELD Control	25.0	(mph)

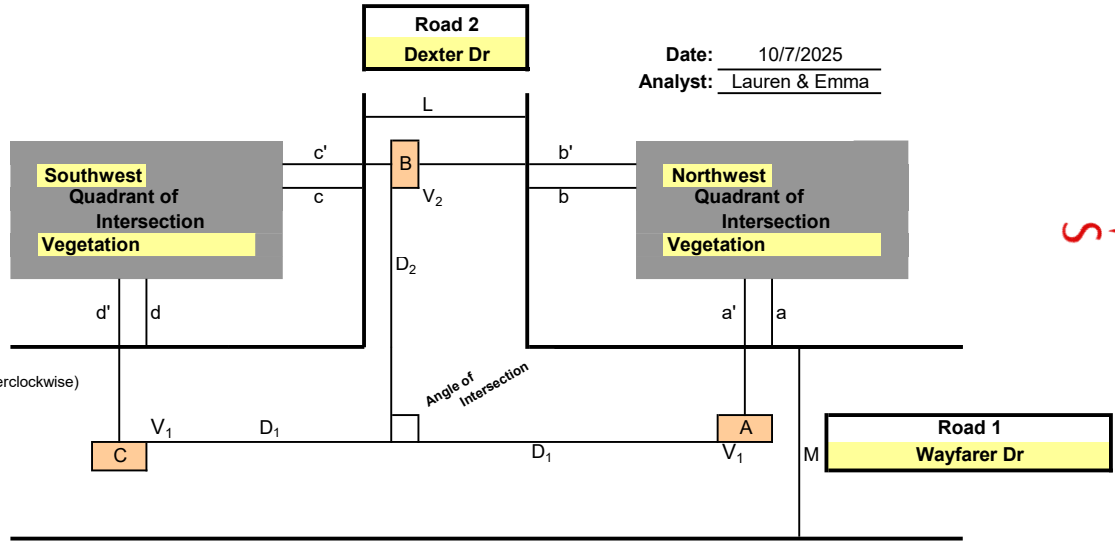
Otherwise Recommends NO CONTROL.

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

Safe Approach Speed Calculation

Wayfarer Dr and Dexter Dr
City of Troy

Date: 10/7/2025
Analyst: Lauren & Emma



Measured:

Width of Roads

Road 1 =	27	(ft)
Road 2 =	26	(ft)

Distance to Obstruction

a =	24.2	(ft)
b =	32	(ft)
c =	20	(ft)
d =	24.2	(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)

Intermediate Calculations:

D_1 =	196	a' =	30.2
D_{2A} =	39.4	b' =	46
D_{2C} =	32.5	c' =	26
		d' =	39.2

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

Calculated Safe Approach Speed for Vehicle B
Approaching on Road 2

FALSE		8.8	(mph) [Based on Veh. A]
FALSE	or V_2 =	7.4	(mph) [Based on Veh. C]

Notes:
Enter field measurements in yellow highlighted area.
Blue fields are std. default values; change only for cause.
Calculated by spreadsheet

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.

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

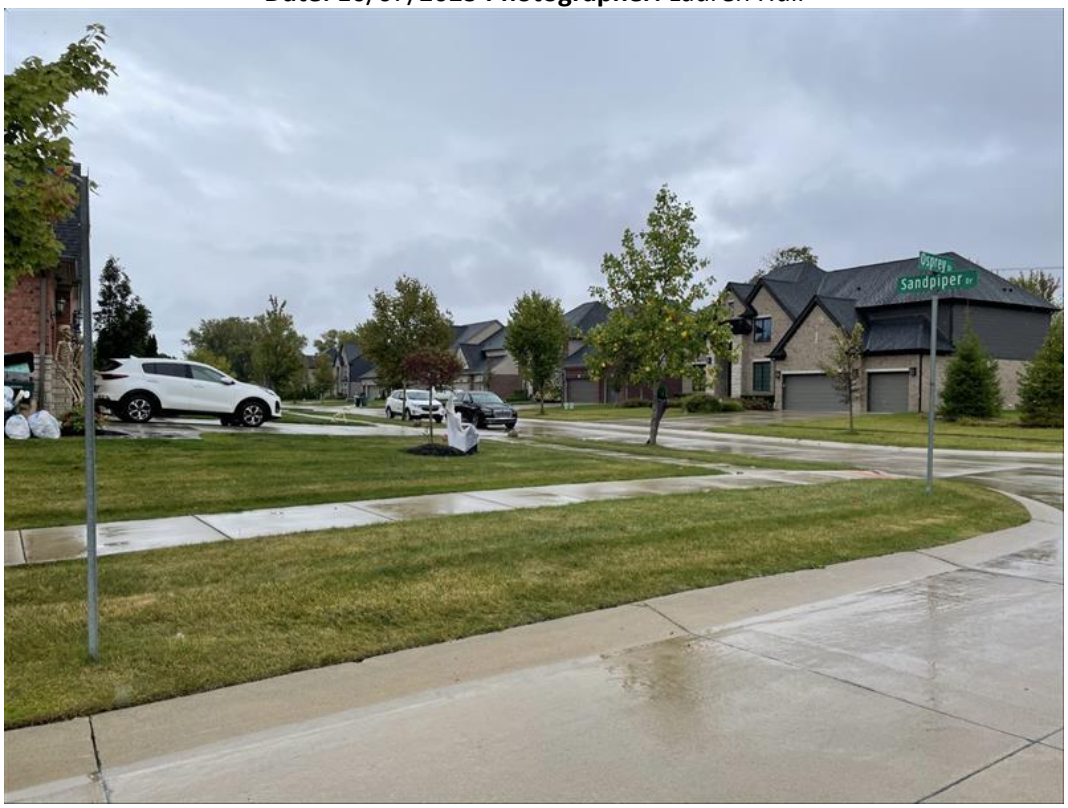
Photograph No. 1: Osprey Drive - Heading East
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 2: Osprey Drive - Heading East Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 3: Sandpiper Drive - Heading North Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 4: Sandpiper Drive - Heading North
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 5: Sandpiper Drive - Heading North Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull



Photograph No. 6: Osprey Drive - Heading West Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 7: Osprey Drive - Heading West
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 8: Macaw Drive - Heading South
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 9: Macaw Drive - Heading South Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 10: Osprey Drive - Heading East Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 11: Osprey Drive - Heading East
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 12: Osprey Drive - Heading East Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 13: Macaw Drive - Heading North Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 14: Macaw Drive - Heading North
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 15: Macaw Drive - Heading South Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 16: Macaw Drive - Heading South
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 17: Macaw Drive - Heading North
Date: 10/07/2025 **Photographer:** Lauren Hull

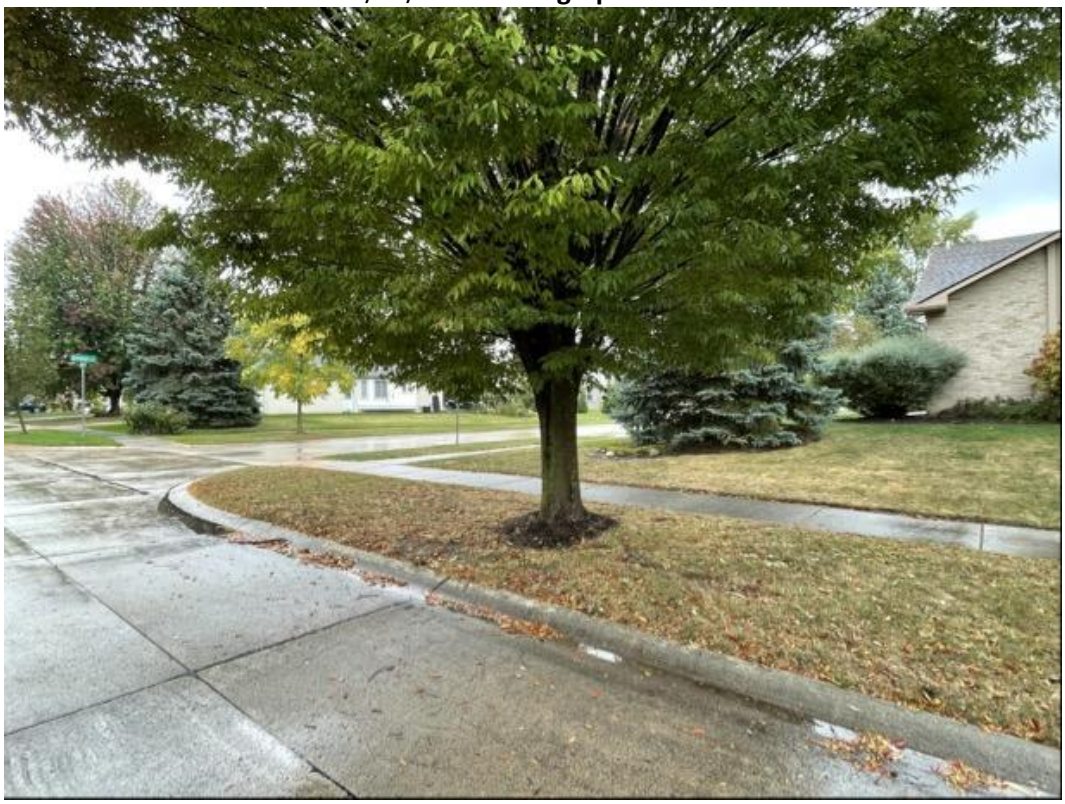
Photograph No. 18: Macaw Drive - Heading North Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 19: Dexter Drive - Heading West Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 20: Dexter Drive - Heading West
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 21: Dexter Drive - Heading West Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 22: Wayfarer Drive - Heading South
Date: 10/07/2025 **Photographer:** Lauren Hull



Photograph No. 23: Wayfarer Drive - Heading South Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 24: Dexter Drive - Heading East Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 25: Dexter Drive - Heading East
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 26: Dexter Drive - Heading East Looking Right
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 27: Wayfarer Drive - Heading North Looking Left
Date: 10/07/2025 **Photographer:** Lauren Hull

Photograph No. 28: Wayfarer Drive - Heading North
Date: 10/07/2025 **Photographer:** Lauren Hull

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.*