



500 West Big Beaver  
Troy, MI 48084  
troymt.gov



## CITY COUNCIL AGENDA ITEM

Date: November 2, 2021

To: Mark F. Miller, City Manager

From: Robert J. Bruner, Assistant City Manager  
William J. Huotari, City Engineer/Traffic Engineer

Subject: Traffic Committee Recommendation and Minutes – October 20, 2021

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At the Traffic Committee meeting of October 20, 2021, the following recommendations were made for City Council approval:

#### **4. Request for No Parking – West Side of Ellenboro Avenue, Trombley Avenue to Colebrook Avenue**

RESOLVED, that a NO PARKING ZONE be **APPROVED** for the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue, from 8AM-9AM and 3PM-4PM, SCHOOL DAYS ONLY.

#### **5. Request for Traffic Control – Finch Road at Huntsford Drive**

RESOLVED, that the intersection of Finch Road at Huntsford Drive be **MODIFIED** from Yield signs on the Finch Road approaches to ALL-WAY STOP at the intersection of Finch Road and Huntsford Drive.

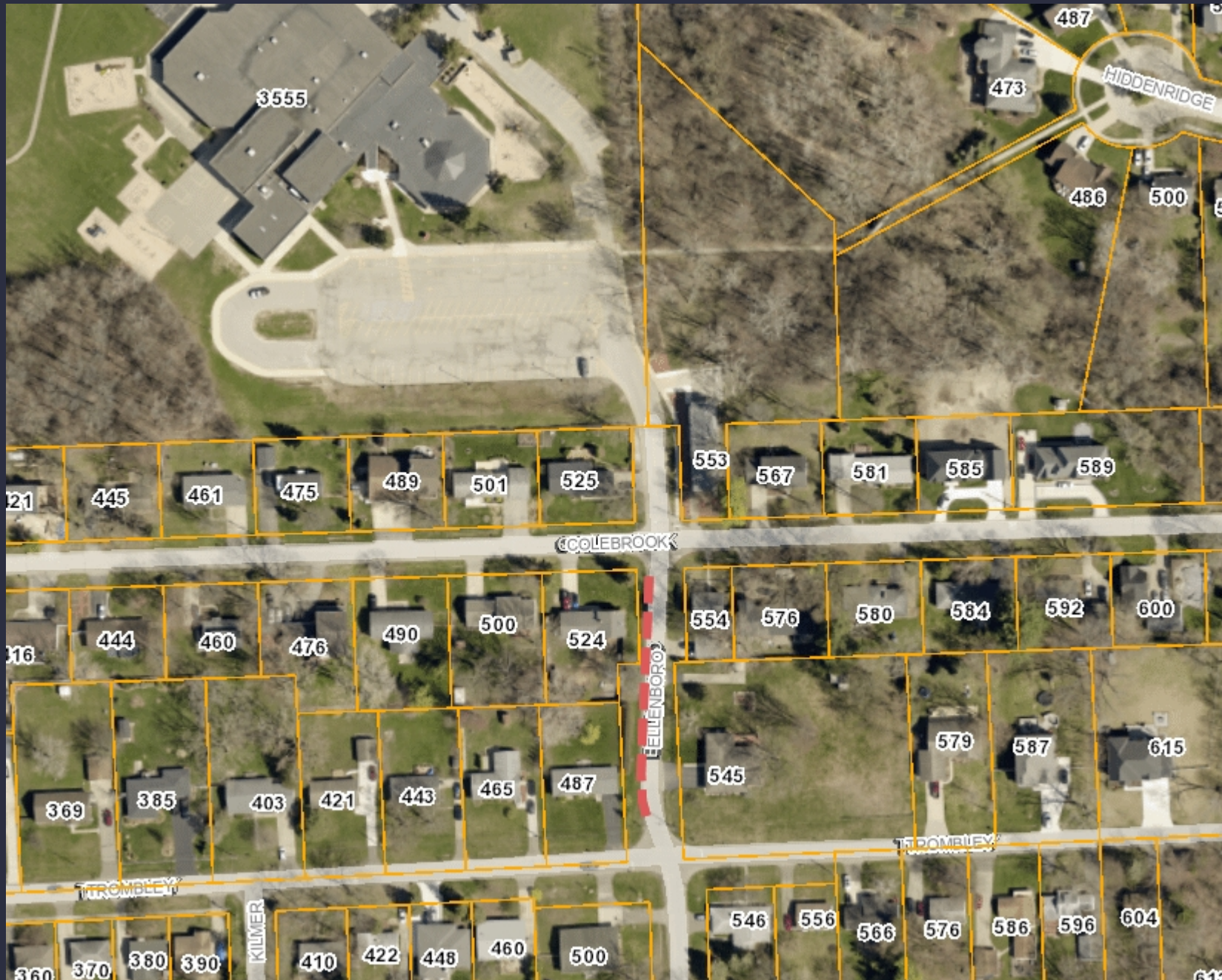
Minutes of the meeting are attached.



# GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=204

Created: September 28, 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.





# GIS Online

Legend:

Road Centerline Text



Notes:

Map Scale: 1=252

Created: September 8, 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.

A regular meeting of the Troy Traffic Committee was held Wednesday, October 20, 2021 in the Council Boardroom at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

**1. Roll Call**

Present: Richard Kilmer  
Cindy Nurak  
Al Petrulis  
Abi Swaminathan  
Cynthia Wilsher  
Pete Ziegenfelder

Absent: Sunil Sivaraman  
Alankar Shende, Student Representative

Also present: Mandy Kostrzewski 3325 Mirage  
Mike & Pam Brady 576 Trombley  
Ken Konwinski 554 Colebrook  
Kristin LaPado 783 Colebrook  
Sgt. Justin Novak, Police Department  
Bill Huotari, City Engineer/Traffic Engineer

**2. Minutes – September 15, 2021**

Resolution # 2021-10-18  
Moved by Kilmer  
Seconded by Petrulis

To approve the September 15, 2021 minutes as printed.

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

**MOTION CARRIED****PUBLIC HEARINGS****3. No Public Hearings****REGULAR BUSINESS****4. Request for No Parking – West Side of Ellenboro Avenue, Trombley Avenue to Colebrook Avenue**

Mandy Kostrzewski of 3325 Mirage requests that the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue be posted as a No Parking zone. The east side of



Trombley Avenue is already posted as a No Parking zone.

Traffic Engineering received three (3) emails and one (1) call prior to the meeting and two (2) additional emails were provided at the meeting.

Email from: Heather Svoboda (Wattles Parent – address not provided)

Good Evening, I would like to express my concern regarding traffic flow on Ellenboro between Trombley and Colebrook. It has become a major source of stress for my family. The mornings and afternoons are absolutely not safe for pedestrians. The road is quite narrow, and there is 2 way traffic flow. There is barely enough room for vehicle flow as it is, and this year cars are now parked on Ellenboro Street. These parked cars have become an obstacle for cars traveling South on Ellenboro. So now you have southbound cars dodging parked cars, and northbound cars veering into pedestrians. Literally there are school buses driving straight at us – ask the bus drivers. There are parents, kids, kids on bikes, all inches (centimeters?) away from hostile morning commuters speeding and dodging each other. It's awful. It's completely unsafe. Please don't take my word for it, come observe any weekday morning. It gets worse in the winter when snow/ice is piled up on yards and pedestrians require more room in the street. Please help as this situation becomes more hazardous every day.

Email from: Micaela Vasquez (524 Colebrook)

Hello William & Traffic Committee, I am reaching out regarding the Resident Request for a No Parking Zone on the west side of Ellenboro, between Trombley & Colebrook. My home property is directly impacted by this request, as I live at the corner of that intersection. I am in favor of this decision because of the following:

- Vehicles parking in this area has caused damage to the street. We are constantly picking up chunks of broken concrete from our lawn which has also caused damage to our lawn equipment.
- Vehicles parked in this area creates a traffic issue. Cars cannot pass each other and causes backups, especially during school drop-off/pickups.
- Pedestrians are forced to walk on our property when vehicles are parked there to safely avoid passing traffic.

I would be happy to discuss further if needed. Thank you for your consideration!

Email from: Robert Olsztyn (448 Trombley)

I am opposed to a "No Parking Zone" on the west side of Ellenboro between Trombley and Colebrook. Our neighborhood currently has parking on one side of most streets and myself as well as many neighbors park in the street as needed. Whenever we have family over in the summer or for holidays, several of our guests park on Ellenboro (I come from a large family). Not sure the reason for this request. If the reason is due to the car traffic on Ellenboro, I agree Ellenboro does get busy during the school year at the start and end of the school day with children walking and parents picking up children. Sidewalks would certainly make it safer for students walking, but doesn't seem to be a possible option. A suggested compromise would be no parking from 8:00 - 9:00 AM and 3:00 - 4:00 PM (whatever time works for the start and end of the school day.)

Email from: Chuck and Colleen Hickman (address not provided)

Hello, we are writing to you today to express our concern for the parking situation on the end of Ellenboro, between Colebrook and Trombley, near Wattles Elementary. We are parents of a student at Wattles, and we see firsthand the congestion that is created in the morning at drop off and in the afternoon at pick up. The entrance to the parking lot is fairly narrow and if a car is parked in the street, it creates a bottleneck situation which is unsafe for the children walking and biking to and from school. It also creates a tight squeeze for the busses to get in on time to load and unload students. It will all of this in mind that I am asking you to consider making this small portion of Ellenboro a no parking zone, at least during school hours. Thank you for your time.

Email from: Debbie Olsztyn (448 Trombley)

I am opposed to a NO PARKING ZONE on the west side of Ellenboro, between Trombley and Colebrook. As with most streets, there is parking on one side of the street in this neighborhood. Myself as well as many neighbors park in the street from time to time. Whenever someone in this area has a party, the overflow of vehicles park on Ellenboro or Kilmer. People are bringing food, gifts, additional chairs, etc. to these gatherings and it is not practical for some to park more than a block away. I have lived here for more than 20 years and raised my children here. We have learned to adapt to the traffic flow in the early AM and late afternoon. The people who live here are very cognizant of the walkers in the street, be it children going to school or adults exercising or taking their pets for their daily walk. I don't understand why this is coming up now, but I do oppose it.

Follow up email from: Debbie Olsztyn (448 Trombley)

Since it is supported by the school district, police, and Wattles I agree the safety of our children come first. I think having specific times of the day on Monday through Friday for the no parking would improve the safety on that street.

Phone message from: Anonymous

Traffic Engineering received a call in opposition to the No Parking request for the west side of Ellenboro, from Trombley to Colebrook. The resident did not identify herself on the call other than say that she lived in the area and does not understand what the concern is about. She continued that she feels that parked vehicles slow traffic down. She further stated that the school will always be an issue. Vehicles park on the other streets in the neighborhood and there is one vehicle that parks near the corner. She closed with a concern that she can't get out of her driveway during school arrival and dismissal as no one lets her out.

Mandy Kostrzewski of 3325 Mirage was present at the meeting. Ms. Kostrzewski stated that she is a parent of two (2) children and they live within ½ mile of Wattles Elementary so they must walk or drive to school. There is no sidewalk in this area so they walk in the road. Last year this was not an issue while students were attending school virtually due to COVID-19. The road is narrow and cannot carry two-way traffic when a vehicle is parked on the west side of the road. There have been more days this year when vehicles have been parked along the



road creating congestion and an unsafe situation for parents and children. There are only four (4) houses on this section of Ellenboro. Of these four (4) houses on two (2) have driveways out to Ellenboro. Colebrook may be a better option to park. Traffic backs up on Ellenboro during arrival and dismissal times. After school is worse as everybody is leaving at the same time. Cars and busses drive close to pedestrians. Ms. Kostrzewski requests that the west side of Ellenboro be posted No Parking, even if it is only between the hours of 8AM-9AM and 3PM-4PM to coincide with the arrival and dismissal times of Wattles Elementary.

Ken Konwinski of 554 Colebrook was present at the meeting. Mr. Konwinski owns the home at the southeast quadrant of the intersection and stated that he was never contacted by the school or other parents and did not know of the concern until he received the notice of the meeting. He is a contractor and is typically gone by 7AM and home by 4PM-4:30PM. He has lived at this location for 18 years. Traffic backups slow traffic down. People rush through and do not stop at the stop signs. This has never been an issue in the past. He needs an area to park extra vehicles. He does not feel safe to leave his truck parked away from his home as he has tools that are stored in the truck. People walk through his yard all the time. When you live by a school, you get used to the traffic. He shovels the road and sidewalk in the area and has been doing so for the past 10 years.

Pam Brady of 576 Trombley was present at the meeting. Ms. Brady states that she sees cars park on the west side of the street. The issue does not extend very far. She questions why cars have to park along the road as she does not see cars park one block over.

Kristin LaPado of 783 Colebrook was present at the meeting. Ms. LaPado has lived at her home for 15 years. She deems the street unsafe to walk to school. The issue is with the neighborhood. Traffic is heavier this year as more parents are driving their kids to school rather than letting them take the bus due to COVID-19. She walks along Colebrook and feels it is unsafe. Parents running late to get their kids to school are dangerous. She does not believe the solution is to limit the parking at the corner. Mr. Konwinski's son rides his bike to the high school, rain or shine, and parks his truck on the west side of the road. Is it safe for Mr. Konwinski's daughter to park further away from their house at night and walk home alone, in the dark? What about events like Thanksgiving? She understands both sides of the issue. The traffic issue is only for a limited time in the morning and afternoon.

Mr. Ziegenfelder asked about the old 1975 Traffic Control Order (TCO) that was rescinded in 1980. The 1975 TCO was for north of Colebrook (nearest the school).

Mr. Kilmer stated that he spent over an hour at the intersection for the morning arrival. He spoke to the principal, crossing guard and some parents. There was a truck parked on the west side of the street, just south of the intersection. Busses and cars have to stop to let the other pass by. He observed approximately 50 kids walking. The person that owned the truck never came out. It's a mess. When the snow files and have to plow around the truck the kids will have to walk through the slush. He supports no parking on the west side at all times. Kids are walking with their back to cars. Kids can walk in the road rather than on resident's lawns.

Mr. Petrulis asked about no parking being limited to certain hours. [Many of the schools in Troy have time limited parking zones]. Would that be a sufficient solution? This would allow the use of the west side of the road during off-peak times.

Sgt. Novak stated that hardly anyone is taking the bus due to COVID-19 concerns. He has officers working with the schools to try and find solutions. He believes this is a structural issue as we have 1960's schools dumping out to 1960's roads. He is hesitant to recommend a long-term proposal that is caused by the parents of the school age children during COVID-19 times. Every school is bad right now. Cars line up to get into a school and traffic gets backed up. Bus drivers need to stay on schedule. Parents dropping kids off at school need to be aware of what is around them. Property owners have a right to park by their property.

A discussion regarding sidewalks ensued.

Mr. Kilmer does not support time limited no parking zones as he does not believe they will work.

A discussion of picture provided in the agenda ensued as there was some confusion about the direction of traffic and how buses pass through the intersection. Cars have to "stand" in the road when the school parking lot backs up with can further create congestion in and around the school.

Mr. Kilmer stated that the Wattles Elementary parking lot is full by 9AM.

Ms. Swaminathan stated that there are no parking zones by the school in her subdivision.

Ms. Nurak agreed and stated that there are no parking zones by the school in her subdivision as well. She supports time limited no parking at this location.

Mr. Kilmer stated that time limited no parking will not work. The residents will not move their cars.

Mr. Kilmer made a motion to establish a NO PARKING ZONE for the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue.

The motion failed as there was no second.

Resolution # 2021-10-19

Moved by Nurak

Seconded by Swaminathan

RESOLVED, that a NO PARKING ZONE be **APPROVED** for the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue, from 8AM-9AM and 3PM-4PM, SCHOOL DAYS ONLY.

Yes: Nurak, Swaminathan, Petrulis, Ziegenfelder

No: Kilmer, Wilsher

Absent: Sivaraman

**MOTION CARRIED**



## 5. Request for Traffic Control – Finch Road at Huntsford Drive

Dongmei Gao of 916 Huntsford Drive requests that Stop signs be installed at the intersection of Finch Road and Huntsford Drive. She states that the existing Yield signs don't do anything and no one yields at the intersection. She had a recent experience where she almost hit by a vehicle and would like Stop signs installed.

Traffic Engineering received one (1) email in support of Stop signs at this location.

Email from: Bob Beauchamp (880 Huntsford)

I have lived at the north east corner of Finch Rd and Huntsford Drive since 1978 and would like to have a stop sign at that intersection. For years, whenever traffic backs up on Crooks or Wattles Rd, our subdivision becomes a shortcut to avoid the traffic light at Crooks and Wattles. People often speed through our neighborhood which becomes a dangerous situation for children and pedestrians.

Mr. Ziegenfelder is in favor of Stop signs at all intersections.

Mr. Petrulis supports Stop signs at this location.

Sgt. Novak stated that Troy Police has spent considerable time on Finch Road as it is a cut-through when Crooks Road backs up. He recommends that ALL-WAY STOP at this intersection may assist in reducing cut-through traffic and provide for a safer intersection.

Resolution # 2021-10-20

Moved by Petrulis

Seconded by Wilsher

RESOLVED, that the intersection of Finch Road at Huntsford Drive be **MODIFIED** from Yield signs on the Finch Road approaches to ALL-WAY STOP at the intersection of Finch Road and Huntsford Drive.

Yes: Kilmer, Nurak, Swaminathan, Petrulis, Wilsher, Ziegenfelder

No: None

Absent: Sivaraman

## MOTION CARRIED

## 6. Public Comment

There was no further public comment at the meeting.

## 7. Other Business

Mr. Kilmer requested that the intersection of Ellenboro at Hartland be reviewed for purposes of replacing the existing Yield signs with Stop signs. He stated that the rest of Hartland has Stop signs and the Yield signs create confusion for drivers.

**8. Adjourn**

The meeting adjourned at 8:38 p.m.

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Pete Ziegenfelder, Chairperson

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William J. Huotari, City Engineer/Traffic Engineer

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# **TRAFFIC COMMITTEE AGENDA**

**October 20, 2021 – 7:30 P.M.**

**Council Boardroom – Troy City Hall – 500 West Big Beaver**

1. Roll Call
2. Approval of Minutes – September 15, 2021 Traffic Committee

## **PUBLIC HEARINGS**

3. No Public Hearings

## **REGULAR BUSINESS**

4. Request for No Parking – West Side of Ellenboro Avenue, Trombley Avenue to Colebrook Avenue
5. Request for Traffic Control – Finch Road at Huntsford Drive
6. Public Comment
7. Other Business
8. Adjourn

## **Copy to:**

Item 4: Mandy Kostrzewski, 3325 Mirage; Properties within 300'

Item 5: Dongmei Gao, 916 Huntsford; Properties within 300'

Traffic Committee Members; Sgt. Justin Novak, Police Department; Lt. Paul Firth, 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. Approval of Minutes – July 21, 2021 Traffic Committee

### PUBLIC HEARING

#### 3. No Public Hearings

### REGULAR BUSINESS

#### 4. Request for No Parking – West Side of Ellenboro Avenue, Trombley Avenue to Colebrook Avenue

Mandy Kostrzewski of 3325 Mirage requests that the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue be posted as a No Parking zone. The east side of Trombley Avenue is already posted as a No Parking zone.

### SUGGESTED RESOLUTIONS:

- a. RESOLVED, that a NO PARKING ZONE be **APPROVED** for the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue.
- b. RESOLVED, that **NO CHANGE** be made to the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue.

#### 5. Request for Traffic Control – Finch Road at Huntsford Drive

Dongmei Gao of 916 Huntsford Drive requests that Stop signs be installed at the intersection of Finch Road and Huntsford Drive. She states that the existing Yield signs don't do anything and no one yields at the intersection. She had a recent experience where she was almost hit by a vehicle and would like Stop signs installed.

### SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Finch Road at Huntsford Drive be **MODIFIED** from Yield signs on the Finch Road approaches to STOP signs on the Finch Road approaches to the intersection.
- b. RESOLVED, that **NO CHANGE** be made to the intersection of Finch Road at Huntsford Drive.

#### 6. Public Comment

#### 7. Other Business

#### 8. Adjourn

A regular meeting of the Troy Traffic Committee was held Wednesday, September 15, 2021 in the Council Boardroom at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

**1. Roll Call**

Present: Richard Kilmer  
Cindy Nurak  
Al Petrulis  
Abi Swaminathan  
Cynthia Wilsher  
Pete Ziegenfelder

Absent: Sunil Sivaraman  
Alankar Shende, Student Representative

Also present: Debbie Villneff, 5280 Houghton  
Sgt. Justin Novak, Police Department  
Bill Huotari, City Engineer/Traffic Engineer

**2. Minutes – July 21, 2021**

Resolution # 2021-09-16  
Moved by Kilmer  
Seconded by Petrulis

To approve the July 21, 2021 minutes as printed.

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

**MOTION CARRIED****PUBLIC HEARINGS****3. No Public Hearings****REGULAR BUSINESS****4. Request for Traffic Control – Daniels Drive at McKinley Drive**

Debbie Villneff of 5820 Houghton states that the lack of traffic control signs at the intersection of Daniels Drive at McKinley Drive creates a hazardous condition.

Ms. Villneff was in attendance at the meeting. She discussed the necessity for a Yield or a Stop sign at the intersection. She lives on Houghton in her parents' house that has been in the family since 1964. Ms. Villneff stated that she has been cut-off many times at the intersection

by drivers turning left on McKinley. There is a large pine tree and large maple tree at the intersection that reduces visibility of other vehicles approaching the intersection. Drivers need to stop and look before proceeding. She also discussed the cut-through traffic. Ms. Villneff discussed who is at fault at an intersection with no signs [Sgt. Novak discussed that at an uncontrolled intersection, whoever gets their first has right-of-way]. She discussed further that there are cars that park near the intersection from the new house that was built on the north side of the intersection. Ms. Villneff prefers Stop signs.

Mr. Ziegenfelder asked for clarification on the parked vehicles.

Sgt. Novak added that he and his officers have spent time in this area dealing with cut-through traffic. He prefers a Stop sign on Daniels.

Ms. Swaminathan asked about creating a No Parking zone. There was no public notice regarding creation of a No Parking zone, so if desired it would need to be on the agenda at a future meeting.

Sgt. Novak discussed that they can review the area to see if there are vehicles parked illegally.

Ms. Wilsher added that it is difficult to see around parked cars if they park too close to a sign or near/within an intersection.

Sgt. Novak added that a single Stop sign on Daniels would help control traffic in this area without creating undue congestion as a 3-Way Stop might create.

Resolution # 2021-09-17

Moved by Wilsher

Seconded by Kilmer

RESOLVED, that the intersection of Daniels Drive at McKinley Drive be **MODIFIED** from no traffic control to **ADD** a STOP sign on the Daniels Drive approach to the intersection.

Yes: Kilmer, Nurak, Swaminathan, Petrulis, Wilsher, Ziegenfelder

No: None

Absent: Sivaraman

## **MOTION CARRIED**

### **5. Public Comment**

There was no further public comment at the meeting.

### **6. Other Business**

Ms. Wilsher asked about Troy Police reviewing parking in the Kenyon and Jamaica area. She reports that there are three (3) houses at the end of Kenyon which have recently been sold and cars are parked very close to where Kenyon meets Jamaica creating some issues for vehicles



traveling in this area.

Sgt. Novak discussed legal parking and would have an officer review the area.

Mr. Ziegenfelder discussed what he perceives as an abandoned vehicle on the east end of Forge near Wattles. A car has been parked on the road with a flat tire for a few months.

Sgt. Novak took down the location and will have an officer review the area.

Mr. Ziegenfelder also asked about how long an RV can be parked in a driveway. There was further discussion about restrictions on RV parking in the driveway and long-term storage on the side or in the rear of a house.

Traffic Engineering will refer the concern to Code Enforcement.

### **13. Adjourn**

The meeting adjourned at 8:04 p.m.

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Pete Ziegenfelder, Chairperson

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William J. Huotari, City Engineer/Traffic Engineer

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## **TRAFFIC COMMITTEE REPORT**

September 28, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for No Parking – West Side of Ellenboro Avenue, Trombley Avenue to Colebrook Avenue

### **Background:**

Mandy Kostrzewski of 3325 Mirage requests that the west side of Ellenboro Avenue, between Trombley Avenue and Colebrook Avenue be posted as a No Parking zone. The east side of Ellenboro Avenue is already posted as a No Parking zone.

Ms. Kostrzewski states that this section of Ellenboro Avenue is dangerous to families and also very inconvenient to families and school bus drivers. Ellenboro Avenue is narrow and extremely busy during the school year. When cars are parked on this street (usually it is only 1 car/truck), it can back up traffic significantly. Buses are trying to leave Wattles [Elementary] and cars are trying to get to Wattles [Elementary] and the road is not wide enough to accommodate both plus a parked vehicle. Kids end up being driven to very closely or having to walk in the grass. Plus, we have many children riding bikes to school and that can be very scary with all the traffic.

Dr. Joyce Brasington, Wattles Elementary Principal, supports this request and shares the same concerns about cars being parked on Ellenboro Avenue while buses, walkers and cars of parents are picking up or dropping off students are attempting to exit and enter our [Wattles Elementary] parking lot.

Troy Police Officer and School Resource Officer, John Julian, supports No Parking during the school ingress and egress times. This would help alleviate the congestion, particularly closest to the intersection.

Mary Thumm, Wattles Elementary School Crossing Guard, supports No Parking on the west side of Ellenboro Avenue. Ms. Thumm adds that both in the mornings and afternoons when school is starting and letting out, there is a severe back up of traffic on Ellenboro Avenue, primarily due to vehicles being parked on the side of the road, which allows parking. The road is not wide enough to fit cars/trucks/buses, let alone children and families trying to walk on that section of street due to a lack of sidewalks when there is a vehicle or more parked along that section. It's a tight squeeze even without any vehicles being parked there. And as a crossing guard, I feel that it can be unsafe at times for children trying to walk amidst all of that....especially when a vehicle is parked there, it makes it so much worse.



Legend:

Road Centerline Text



Notes:

Map Scale: 1=204

Created: September 28, 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.

**William J Huotari**

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**Subject:** FW: Parking on Ellenboro between Colebrook and Trombley

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**From:** Mandy L. [<mailto:mandynicole94@yahoo.com>]  
**Sent:** Wednesday, September 22, 2021 8:53 AM  
**To:** Clara E Reid  
**Subject:** Parking on Ellenboro between Colebrook and Trombley

**CAUTION:** This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Clara, please forward this email to the correct department and let me know what the proper email address is, as I believe several other parents will want to email as well.

Hello,

I live within walking distance to Wattles Elementary. For years we have hoped to get sidewalks installed on the roads leading up to Wattles, but we understand that this would be a large expensive undertaking and probably isn't feasible. However, the stretch of road of Ellenboro between Colebrook and Trombley is dangerous to families and also very inconvenient to families and I would assume the school bus drivers. That small stretch of street narrows and is extremely busy during the school year. I would like to request that this stretch of Ellenboro be changed to no parking at any time, or even during the school year between 8am and 4pm. When cars are parked on this street (usually it is only 1 car/truck), it can back up traffic significantly. Buses are trying to leave Wattles, and cars are trying to get to Wattles, and the road is not wide enough to accommodate both plus a parked vehicle. Kids end up being driven to very closely, or having to walk in the grass, which on days like today is very wet. Plus, we have many children riding bikes to school and that can be very scary with all the traffic.

I understand that not being able to park on the street near your house might be inconvenient, but if you look at that stretch, only 2 houses actually have driveways on that stretch, and none of the houses actually face the street. All face the perpendicular streets. I do not think it would be a burden on any of the houses, to not have parking on that stretch. There would be very close parking on Colebrook or Trombley since they are wider streets. Ideally, someone would park on the west side of Colebrook, as it is a dead end street and thus does not have much thru traffic.

For the safety of our students, and the convenience of parents and bus drivers, please consider marking this small stretch of Ellenboro as no parking.

Thank you for your consideration.

Mandy Kostrzewski  
Wattles Parent and PTO Board Member  
3325 Mirage Dr.  
248-421-3168



## William J Huotari

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**Subject:** FW: Parking - Ellenboro

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**From:** Julian, John [mailto:JJulian@troy.k12.mi.us]  
**Sent:** Thursday, September 23, 2021 11:48 AM  
**To:** Justin A Novak <novakja@troymi.gov>  
**Cc:** William J Huotari <HuotariWJ@troymi.gov>; Jason J Clark <clarkjj@troymi.gov>  
**Subject:** Re: Parking - Ellenboro

**CAUTION:** This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi all,

The pictures actually show the inflow of traffic heading toward the school on the east side of Ellenboro. The buses were going past the traffic toward the school.

But, yes I am in agreement with Sgt. Novak, regarding “no parking during the school ingress and egress times”. This would help alleviate the congestion, particularly closest to the intersection.

The Ford Truck pictured by the school bus belongs to the blue house on the corner. So, with the kids/parents walking to school, the drop off traffic, school buses, and regular neighborhood traffic it is a very tight fit there.

Our crossing guard posted there also mentioned the cramped conditions.

Please let me know if I can be of further assistance.

Thank you,

John Julian  
School Resource Officer  
248-497-1395



**From:** [Brasington, Joyce](#)  
**To:** [William J Huotari](#)  
**Cc:** [Carson, Robert](#)  
**Subject:** Parking  
**Date:** Wednesday, September 22, 2021 11:15:08 PM

---

**CAUTION:** This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

My name is Joyce Brasington and I am the principal of Wattles Elementary.

I share the concerns about cars being parked on Ellenborro while buses, walkers, and cars of parents picking up or dropping off students are attempting to exit and enter our parking lot.

I took the pictures below today. You can see with the parked car and a moving bus, there is no room on the road for another car or student.

I am sure you could contact Officer Julian, our police liaison officer, for his insight.

Dr. Brasington





Sent from my iPhone

**From:** [Mary Thumm](#)  
**To:** [William J Huotari](#)  
**Cc:** [mandynicole94@yahoo.com](#)  
**Subject:** Regarding parking on Ellenborough St  
**Date:** Wednesday, September 22, 2021 2:35:56 PM  
**Attachments:** [No parking.rtf](#)

---

**CAUTION:** This email did not originate from within the City of Troy. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Mr. Huotari, I have attached a letter in regards to the concerns of traffic flow on Ellenborough St, primarily the section between Tromley & Colebrook. Please read the letter and take in consideration the changes that would be beneficial by adding a no parking sign. Thanks so much, Mary Thumm

9/22/21

To whom it may concern,

I am the crossing guard at Wattles Elementary School and for quite some time now, there has been a lot of issues with traffic during school hours on Ellenborough (between Trombley & Colebrook).

Both in the mornings and afternoons when school is starting and letting out, there is a severe back up of traffic on Ellenborough, primarily due to vehicles being parked on the side of the road, which allows parking. The road is not wide enough to fit cars/trucks/buses, let alone children and families trying to walk on that section of street due to a lack of sidewalks when there is a vehicle or more parked along that section. Its a tight squeeze even without any vehicles being parked there. And as a crossing guard, I feel that it can be unsafe at times for children trying to walk amidst all of that....especially when a vehicle is parked there, it makes it so much worse.

My suggestion would be to put up a no parking sign on the side of the road that allows parking currently. Even if it was a no parking sign only during school hours, that would be great and may eliminate some of this heavy congestion.

Please consider my suggestion and help keep that area a bit safer and allow for a smoother flow of traffic.

Sincerely, Mary Thumm

Contact info:

Mary Thumm

248-225-5568

matijow@yahoo.com

169 Olympia Dr., Troy, MI 48084



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TRAFFIC CONTROL ORDER  
# 75-7-P

LOCATION: Ellenboro, north of Colebrook (both sides)

Requirement of Order:

RESOLVED, that Traffic Control Order No. 75-7-P for the installation of no parking signs on both sides of Ellenboro, north of Colebrook is hereby approved.

DONE

Date of Commission Approval: September 8, 1975

Work Order Sent to D.P.W.: September 10, 1975

(2) copies to D.P.W. (this form shall also be work order)

Install signs ASAP

Note installation date on both copies as soon as complete and return (1) copy to Manager's Office.

Frank Gusterker (ag)  
City Manager

Manager's office will forward copies to Police Department and City Clerk after installation.

Date Installed: 9-12-75 Alison  
Public Works Supt.

Signs installed 9/12/75

Copies to:

☐ Police Department                       
(Date)

☒ City Clerk 9-25-75  
(Date)



Location Ellenboro Street

Requirement of Order:

Move "No Parking" signs to the fire hydrant (east) side of Ellenboro Street (between Vanderpool Street and Colebrook Street) as recommended by the Traffic Committee.

Date of Council Approval 10/13/80

Work Order Sent to DPW 10/20/80

2 copies to DPW (this form shall also be work order)

Install signs \_\_\_\_\_

Note installation date on both copies as soon as complete and return (1) copy to Manager's Office.

J. Gortenecker  
City Manager

Manager's Office will forward copies to Police Department and City Clerk after installation.

Date Installed 10-20-80

Mark D. Williams  
Public Works Superintendent

Copies to:

☐ Police Department \_\_\_\_\_  
Date

☒ City Clerk 10/31/80  
Date



# Troy School District

## 2021-2022 Building Schedules

### Bemis, Hill, Martell, Troy Union, Wass and Wattles Elementary Schools (Early Start)

|                |                    |  |
|----------------|--------------------|--|
| Full Day       | 8:39 AM – 3:37 PM  |  |
| AM/Half Day    | 8:39 AM – 12:29 PM | 8/31, 9/1 (Kdg only), 9/2 (Kdg only), 9/29,<br>10/27, 10/28, 3/17, 4/28,<br>6/14, 6/15, 6/16 |
| Late Start Day | 10:09 AM – 3:37 PM | 11/10, 12/1, 1/12, 3/9, 4/20, 5/4  |

### Barnard, Costello, Hamilton, Leonard, Morse and Schroeder Elementary Schools (Late Start)

|                |                    |  |
|----------------|--------------------|--|
| Full Day       | 9:09 AM – 4:07 PM  |  |
| AM/Half Day    | 9:09 AM – 12:59 PM | 8/31, 9/1 (Kdg only), 9/2 (Kdg only), 9/29,<br>10/27, 10/28, 3/17, 4/28,<br>6/14, 6/15, 6/16 |
| Late Start Day | 10:39 AM – 4:07 PM | 11/10, 12/1, 1/12, 3/9, 4/20, 5/4  |

| Boulton Park/Larson<br>(Early Start) | Middle Schools  | Baker/Smith<br>(Late Start) |
|--------------------------------------|---|-----------------------------|
| 7:54 AM – 2:38 PM                    | Full Day  | 8:19 AM – 3:03 PM           |
| 7:54 AM – 11:29 AM                   | AM/Half Day<br>8/31, 9/29, 10/21, 10/22, 1/20, 4/28, 6/14, 6/15, 6/16 | 8:19 AM – 11:54 AM          |
| 9:24 AM – 2:38 PM                    | Late Start Day<br>11/10, 12/1, 1/12, 3/9, 4/20, 5/4                   | 9:59 AM – 3:03 PM           |

### Troy and Athens High School

|                |                    |  |
|----------------|--------------------|--|
| Full Day       | 7:20 AM – 2:10 PM  |  |
| AM/Half Day    | 7:20 AM – 10:55 AM | 8/31, 9/29, 10/14, 1/18, 1/19, 1/20, 4/28,<br>6/14, 6/15, 6/16 |
| Late Start Day | 8:50 AM – 2:10 PM  | 11/10, 12/1, 1/12, 3/9, 4/20, 5/4                              |

### Troy College and Career High School-*waiting for reduced days and hours approval from State*

|             |            |                    |
|-------------|------------|--------------------|
| Full Day    | May Change | 7:50 AM – 2:10 PM  |
| AM/Half Day | May Change | 8:00 AM – 10:55 AM |

### International Academy East

|               |                    |   |
|---------------|--------------------|---|
| Full Day      | 7:45 AM – 2:35 PM  |   |
| Early Release | 7:45 AM – 11:00 AM | 10/22, 10/28, 12/16, 12/17  |
| Early Release | 7:45 AM – 12:00 PM | 9/29, 1/21, 1/26, 3/16, 4/12, 4/13, 5/11,<br>6/16, 6/17, 6/20, 6/21 |

### Troy Center for Transition

|  |                    |
|--|--------------------|
| Full Day   | 7:50 AM – 2:10 PM  |
| AM/Half Day<br>8/31, 9/1, 9/29, 10/15, 12/17, 1/14, 1/31, 2/11, 3/4, 3/24, 4/28, 5/27,<br>6/13, 6/14 | 7:50 AM – 11:00 AM |



## **TRAFFIC COMMITTEE REPORT**

**S**

October 1, 2021

TO: Traffic Committee

FROM: Bill Huotari, City Engineer/Traffic Engineer

SUBJECT: Request for Traffic Control – Finch Road at Huntsford Drive

### **Background:**

Dongmei Gao of 916 Huntsford Drive requests that Stop signs be installed at the intersection of Finch Road and Huntsford Drive. She states that the existing Yield signs don't do anything and no one yields at the intersection. She had a recent experience where she almost hit by a vehicle and would like Stop signs installed.

The posted speed limit on both streets is 25 mph.

The intersection is currently controlled by existing Yield signs on the Finch Road approaches to the intersection.

Finch Road is presumed to be the minor road, while Huntsford Drive is considered the major road.

There were two (2) crashes recorded in the past full five (5) years within a 250' radius of the intersection.

The major potential sight distance obstruction at the intersection for a motorist traveling northbound on Finch Road would be the house corners on the southeast and southwest quadrants of the intersection. For a motorist traveling southbound on Finch drive, the obstruction would be the house corners on the northwest and northeast corners.

The safe approach speed for southbound vehicles on Finch Road is 17.4 mph due to the permanent sight distance obstruction from the house corner on the northeast quadrant.

OHM recommends maintaining YIELD signs on the Finch Road approaches to the intersection.

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

September 30, 2021

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

RE: Traffic Control Recommendation for Huntsford Drive at Finch Drive

Dear Mr. Huotari:

As requested, we have reviewed the intersection of Huntsford Drive at Finch Drive to determine the proper traffic control. Huntsford Drive at Finch Drive is a 4-legged intersection located in the City of Troy. The speed limit on both streets under investigation is 25 mph. The intersection does not have any stop controlled approaches. Attached are aerial and intersection photos.

### **Types of Roadways**

Both Huntsford Drive and Finch Drive are considered local streets. Finch Drive runs north to south providing direct access to the neighborhood from W Wattles Road. Huntsford Drive runs east to west offering access to the neighborhood off of Crooks Road.

The surrounding land use is entirely single-family residential. On-street parking is permitted on the west side of Finch Drive and on the north side of Huntsford Drive. There is no clear major versus minor street. However, for the purpose of analysis Finch Drive is presumed to be the minor road, while Huntsford Drive is considered the major road. Both Finch Drive and Huntsford Drive 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 two injury level O (property damaged only) crashes recorded in the past full five (5) years within a 250' radius of the intersection. The first crash occurred when the driver lost control on the road and struck a tree at the south side of Huntsford Drive, the second crash was a result of a driver making a wide right turn which struck the other vehicle on Huntsford Drive. 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. 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 Finch 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 Huntsford 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 85<sup>th</sup> 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 likely been met.

### Approach Speed Limits

The approach speed limit on all study streets is 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 Huntsford Drive at Finch Drive for a motorist traveling northbound on Finch Drive would be the house corners on the southeast and southwest quadrants of the intersection. For a motorist traveling southbound on Finch Drive, the obstruction would be the house corners on the northwest and northeast corners. 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 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. The safe approach speed for southbound vehicles on Finch Drive is 17.4 mph due to the permanent sight distance obstruction from the house corner on the northeast quadrant. Safe approach speeds for the remaining quadrants range from 18.6 mph to 20.1 mph. Thus, based on the safe approach speed calculations, YIELD-control is the computed right-of-way control for Finch 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 suggested YIELD-control would be appropriate for the minor street (Finch Drive) approach.

OHM recommends maintaining a YIELD sign on the Finch Drive approaches. The intersection should be reevaluated if traffic volumes increase or crashes begin to occur.



Sincerely,  
**OHM Advisors**

---

Ife Ogundeji  
Traffic Engineer

Attachments:

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





Legend:

Road Centerline Text



Notes:

Map Scale: 1=252

Created: September 8, 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.



# Safe Approach Speed Calculation

Huntsford Dr and Finch Dr  
City of Troy

Date: 9/14/2021  
Analyst: Ife Ogundeji

Measured:

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

Distance to Obstructions  
a = 55 (ft) e = 62 (ft)  
b = 51 (ft) f = 52 (ft)  
c = 57 (ft) g = 62 (ft)  
d = 58 (ft) h = 62 (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> = 17.2 (mph) [Based on Veh. A]  
or V<sub>2</sub> = 18.3 (mph) [Based on Veh. C]

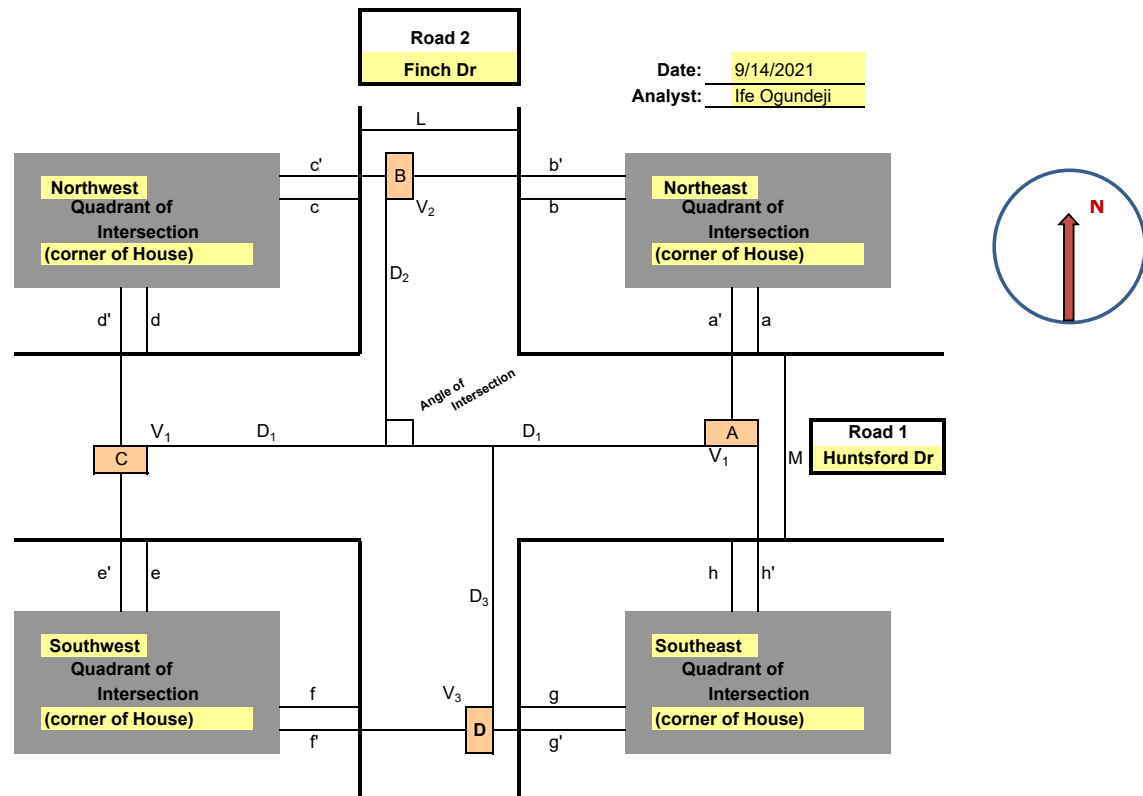
Calculated Safe Approach Speed for Vehicle D

Approaching on Road 2

V<sub>3</sub> = 19.9 (mph) [Based on Veh. A]  
or V<sub>3</sub> = 18.7 (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<sub>1</sub> = 196 a' = 61 e' = 68  
D<sub>2A</sub> = 91.2 b' = 65 f' = 66  
D<sub>2C</sub> = 99.5 c' = 63 g' = 68  
D<sub>3A</sub> = 110.9 d' = 72 h' = 76  
D<sub>3C</sub> = 102

Based On  $D_1 = (1.075 V_1^2 / A) + 1.4667 V_1 t + EC$   
 $D_{2A} = \frac{a' \cdot D_1}{(D_1 - b')}$  or  $D_{2C} = \frac{c' \cdot D_1}{(D_1 - d')}$  or  $D_{3A} = \frac{g' \cdot D_1}{(D_1 - h')}$  or  $D_{3C} = \frac{e' \cdot D_1}{(D_1 - f')}$

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 :

YIELD SIGN



**Photograph No. 1:** Finch Drive- Heading North  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 2:** Finch Drive- Heading North looking left  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji





**Photograph No. 3:** Finch Drive- Heading North looking right  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 4:** Huntsford Drive- Heading West  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji





**Photograph No. 5:** Huntsford Drive - Heading West and looking left  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 6:** Huntsford Drive - Heading West and looking right  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji





**Photograph No. 7:** Finch Drive- Heading South  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 8:** Finch Drive - Heading South and looking left  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji





**Photograph No. 9:** Finch Drive- Heading South and looking right  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 10:** Huntsford Drive - Heading East  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji





**Photograph No. 11:** Huntsford Drive- Heading East and looking left  
**Date:** 09/16/2021      **Photographer:** Ife Ogundeji



**Photograph No. 12:** Huntsford Drive - Heading East and looking right  
**Date:** 09/16/2021      **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.*