

AGENDA

Traffic Committee Meeting

June 15, 2016 – 7:30 P.M.

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

1. Roll Call
2. Minutes – May 18, 2016

REGULAR BUSINESS

3. Request for Traffic Control – Wesley at Newton
4. Request for No Parking Zone – Redwood
5. Residential Speed Control – Forsyth, North of Wattles
6. Public Comment
7. Other Business
8. Adjourn

cc: Item 3: James Ferden, 839 Wesley Drive
Properties within 300'

Item 4: Properties on Forsyth, north of Wattles

Item 5: Kelly Broderick, 169 Redwood
Properties within 300'

Traffic Committee Members
Captain Robert Redmond & Sgt. Mike Szuminski, Police Department
Lt. Eric Caloia, Fire Department
William J. Huotari, Deputy City Engineer/Traffic Engineer

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.

REGULAR BUSINESS

3. Request for Traffic Control – Wesley at Newton

Mr. James Ferden of 839 Wesley states that the lack of existing traffic control at the intersection of Wesley at Newton creates a hazardous condition. Traffic does not yield the right-of-way and travels through the intersection at a high rate of speed and is unsafe for drivers and pedestrians. Mr. Ferden states that the intersection is also a Troy School District bus stop.

SUGGESTED RESOLUTIONS:

- a. RESOLVED, that the intersection of Wesley at Newton be **MODIFIED** from NO traffic control to a YIELD sign on the Newton Drive southbound approach to the intersection.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Wesley at Newton.

4. Request for No Parking Zone – Redwood

Kelly Broderick of 169 Redwood requests that a No Parking zone be established or re-established on Redwood, between the existing NO PARKING HERE TO CORNER sign on southbound Redwood to a previously existing NO PARKING sign near the driveway to 169 Redwood. Ms. Broderick provided a picture of a NO PARKING sign that was installed in front of her home years ago, but she states that it was hit by a drunk driver and never replaced.

SUGGESTED RESOLUTIONS (Item 3):

- a. RESOLVED, that a NO PARKING zone be **ESTABLISHED** approximately forty (40) feet north of the intersection on southbound Redwood and ending at the driveway to 169 Redwood on eastbound Redwood.
- b. RESOLVED, that **NO CHANGE** be made at the intersection of Redwood and Redwood.

5. Residential Speed Control – Forsyth, North of Wattles

At the January 20, 2016 Traffic Committee meeting, a discussion took place regarding speeding on Forsyth, north of Wattles. The Traffic Committee recommended:

- That two (2) 25 mph speed limit signs, in each direction, be approved for installation on northbound and southbound Forsyth, between Wattles and Hill Elementary; and
- That the Troy Police Department provide extra enforcement on Forsyth when not on higher priority calls; and
- That a follow up speed study be conducted in May 2016 to review the results of the new signage and police enforcement on Forsyth. The resulting speed study is to be brought back to the Traffic Committee at the June 2016 meeting.

OHM Advisors conducted a follow up speed study on May 3, 2016 through May 9, 2016. The follow up speed study revealed that the violation rate has dropped from 82% to 62% in the northbound direction and from 83% to 70% in the southbound direction. The 85th percentile speed dropped from 35 mph to 32 mph in the northbound direction and 36 mph to 33 mph in the southbound direction. These results confirm an improvement in the compliance rate with the posted 25 mph speed limit.

While there is still a group of individuals that are driving at higher than desirable speeds, the overall number of vehicles driving at higher speeds has decreased. The recommendations made at the January meeting have made an impact. It will be a continuous effort to educate new drivers due to turnover at Hill Elementary. It is anticipated that another study will be conducted in the fall to check how these measures hold up with a new group of students/parents at the school.

7. Public Comment

8. Other Business

9. Adjourn

A regular meeting of the Troy Traffic Committee was held Wednesday, May 18, 2016 in the Lower Level Conference Room at Troy City Hall. Pete Ziegenfelder called the meeting to order at 7:30 p.m.

1. Roll Call

Present: Tim Brandstetter
Al Petrusis
Mitch Huber
Richard Kilmer
Pete Ziegenfelder

Absent: David Easterbrook
Cynthia Wilsher
Katie Regan (Student Representative)

Also present: Liz Fallert, 1076 Brooklawn
Mike Johnson, 450 E. Square Lake
Don Hill, 1116 Torpey
Daniel Murza, 2218 Tucker
Lt. Eric Caloia, Fire Department
Sgt. Mike Szuminski, Police Department
Bill Huotari, Deputy City Engineer/Traffic Engineer

2. Minutes – April 13, 2016

Resolution # 2016-05-16
Moved by Kilmer
Seconded by Brandstetter

To approve the April 13, 2016 minutes as printed.

Yes: Brandstetter, Petrusis, Huber, Kilmer, Ziegenfelder
No: None
Absent: Easterbrook, Wilsher

MOTION CARRIED

PUBLIC HEARINGS

3. Request for Sidewalk Waiver – 2090 Rochester – Sidwell #88-20-27-429-050

Mike Johnson requests a sidewalk waiver for the sidewalk at 2090 Rochester Road (Sidwell #88-20-27-429-050). Mr. Johnson states “*leads nowhere and connects to nothing; south side (Larchwood) only*”.

Mr. Johnson was present at the meeting and stated that the request for a sidewalk waiver is along the Larchwood side only. He will be constructing a new eight (8) foot wide sidewalk

along the Rochester Road frontage of 2090 and 2120 Rochester Road as part of new home construction. A sidewalk along Larchwood would lead to nowhere and connect to nothing.

Traffic Engineering did receive one (1) email in support of a waiver of the sidewalk along Larchwood.

The Traffic Committee had previously approved a sidewalk waiver for 2060 Rochester Road which is the property immediately to the south of the subject parcel on the opposite side of Larchwood.

Mr. Brandstetter asked about the requirement for eight (8) foot wide sidewalk along major roads.

Mr. Petrusis agrees with the applicant that a sidewalk along Larchwood would lead to nowhere and connect to nothing. We should be consistent with the previous waiver.

Mr. Huber supports sidewalk installation at all locations. He believes that sidewalk would be a good connection to Rochester Road and the school.

Mr. Ziegenfelder also supports sidewalk at all locations.

Mr. Brandstetter asked what school Mr. Huber was referencing. The school in question is Morse Elementary on the north side of Robinwood, west of Rochester Road. Mr. Brandstetter continued that there is not a crossing in the area that would provide a reasonably safe crossing of Rochester Road from Larchwood to Morse Elementary.

Mr. Kilmer stated that a sidewalk on Larchwood would not go anywhere as it is a dead end with no interior connections.

Mr. Petrusis stated that a sidewalk waiver was granted for 2060 Rochester Road (on the south side of Larchwood) and this request [2090 Rochester Road] is on the north side, so for consistency, a sidewalk waiver should be granted for 2090 Rochester Road.

Resolution # 2016-05-17

Moved by Kilmer

Seconded by Petrusis

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

WHEREAS, Mike Johnson has requested a waiver of the requirement to construct sidewalk based on the lack of sidewalk in the area and a new sidewalk would lead nowhere and connect to nothing; and

WHEREAS, the Traffic Committee has determined the following:

- a. A waiver will not impair the public health, safety or general welfare of the

inhabitants of the City and will not unreasonably diminish or impair established property values within the surrounding area, and

- b. A strict application of the requirements to construct a sidewalk would result in practical difficulties to, or undue hardship upon, the owners, and
- c. The construction of a new sidewalk would lead nowhere and connect to no other walk, and thus will not serve the purpose of a pedestrian travel-way.

NOW THEREFORE, BE IT RESOLVED, that the Traffic Committee **GRANTS** a waiver of the sidewalk requirement at 2090 Rochester Road (Sidwell #88-20-27-429-050), along Larchwood only.

Yes: Brandstetter, Petrulis, Kilmer
No: Huber, Ziegenfelder
Absent: Easterbrook, Wilsher

MOTION CARRIED

4. Request for Sidewalk Waiver – 2218 Tucker – Sidwell #88-20-12-351-040

Daniel Murza of 2218 Tucker requests a sidewalk waiver for the sidewalk at 2218 Tucker (Sidwell #88-20-12-351-040). Mr. Murza states *“none of the neighbours on the same side of the subdivision have a sidewalk (not even newer houses); it would impose great hardship with no benefit to owner or neighbours; it would have no continuance and it would be impractical; it is not feasible in the area due to location; we have been living in the house for more than 1 year with the current grading conditions; and this is a dirt road without any pavement”*.

Mr. Murza was present at the meeting and discussed the reasons for his request for a sidewalk waiver. He pointed out that Tucker is a gravel road, west of the EVA. DPW recommended that no sidewalk be installed. Drainage is by ditch in this area and would have to drain over the sidewalk to get to the ditch. The water shut off valve was installed in the area where the sidewalk is to be constructed. The sidewalk would cross his gravel drive and end at a tree at the end of his property. There is no sidewalk to the west on Tucker except for by the church near John R.

Mr. Kilmer asked about the reason why a sidewalk waiver was required. This was a new home construction that met the criteria under the Ordinance for sidewalk across the frontage. During final grade approval it was noted that no sidewalk had been constructed or a sidewalk waiver approved, so the applicant was required to either construct the sidewalk or proceed with the sidewalk waiver process.

Mr. Ziegenfelder discussed that there is sidewalk to the east that this sidewalk would connect to. He is, in general, in favor of sidewalks.

Mr. Kilmer noted that there are no other sidewalks along the gravel portion of Tucker, except for the aforementioned sidewalk at the church near John R.

Mr. Huber asked about the EVA. Copies of minutes from the previous Traffic Committee meeting where this was discussed will be forwarded to Mr. Huber for his review.

Mr. Brandstetter stated that a sidewalk would make sense if and when Tucker is paved.

Resolution # 2016-05-18

Moved by Kilmer

Seconded by Petrulis

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

WHEREAS, Daniel Murza has requested a waiver of the requirement to construct sidewalk based on the lack of sidewalk in the area and a new sidewalk would lead nowhere and connect to nothing; and

WHEREAS, the Traffic Committee has determined the following:

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

NOW THEREFORE, BE IT RESOLVED, that the Traffic Committee **GRANTS** a waiver of the sidewalk requirement at 2218 Tucker (Sidwell #88-20-12-351-040).

Yes: Kilmer, Petrulis, Huber
No: Brandstetter, Ziegenfelder
Absent: Easterbrook, Wilsher

MOTION CARRIED

REGULAR BUSINESS

5. Request to Extend No Parking Zone – Brooklawn Court

Russell Lewis of 1068 Brooklawn Court requests that the No Parking Zone on Brooklawn Court be extended to Brooklawn (i.e. start the No Parking Zone at the entrance to Brooklawn Court from Brooklawn and continue the No Parking Zone to its current end point at the driveway of 1080 Brooklawn Court). Mr. Lewis states that allowing parking on both sides of Brooklawn Court as you enter creates a situation where it is difficult to navigate when

vehicles occupy both sides of the street.

There were no residents in attendance that spoke in favor of revising the parking zones.

Liz Fallert of 1076 Brooklawn was in attendance and opposed any additional changes to the parking areas on Brooklawn Court. Ms. Fallert explained that there are only 4 or 5 spaces in total available for on street parking on Brooklawn Court currently and prohibiting parking as requested would reduce parking down to about 3 spaces. Most of the homes on the court are single driveways and finding a place to park currently can be challenging let alone if the parking areas are reduced.

Traffic Engineering did also receive an email from Elaine Stelkic of 1080 Brooklawn Court opposed to revisions to parking along Brooklawn Court.

Lt. Caloia was asked if a fire truck could access the court if vehicles were parked on both sides. He answered in the affirmative if the cars were legally parked.

Mr. Brandstetter discussed that there are not a lot of vehicles traveling in/out of the court as there are only eight (8) homes. Of these eight (8) homes, at least two (2) residents oppose changes and only one (1) resident supports changes to the parking areas.

Resolution # 2016-05-19

Moved by Brandstetter

Seconded by Kilmer

RESOLVED, that No Changes be made to the parking areas on Brooklawn Court.

Yes: Brandstetter, Huber, Kilmer, Petrulis, Ziegenfelder

No: None

Absent: Easterbrook, Wilsher

MOTION CARRIED

6. I-75 Modernization Design Guide

Discussion of the upcoming I-75 mega project, design guidelines and general project information.

7. Public Comment

There was no additional public comment made.

8. Other Business

There was no other business brought forward.

9. Adjourn

The meeting adjourned at 8:42 p.m.

Pete Ziegenfelder, Chairperson

Bill Huotari, Deputy City Engineer/Traffic Engineer

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TRAFFIC COMMITTEE REPORT

May 31, 2016

TO: Traffic Committee

FROM: Bill Huotari, Deputy City Engineer/ Traffic Engineer

SUBJECT: Request for Traffic Control
Wesley at Newton

Background:

Mr. James Ferden of 839 Wesley states that the lack of existing traffic control at the intersection of Wesley at Newton creates a hazardous condition. Traffic does not yield the right-of-way and travels through the intersection at a high rate of speed and is unsafe for drivers and pedestrians. Mr. Ferden states that the intersection is also a Troy School District bus stop.

There have been no crashes reported at this intersection in the past five (5) years.

The posted speed limit on both streets is 25 mph. Due to the geometrics, Wesley is considered the continuing roadway.

The major potential sight distance obstruction at the intersection are houses in the northwest and northeast quadrant of the intersection.

The safe approach speed was found to be 14.7 mph for southbound Newton Drive; therefore a YIELD sign is the recommended treatment.

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

May 4, 2016

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

RE: Traffic Control Recommendation for Wesley Drive and Newton Drive
OHM JN: 0128-16-0110

Dear Mr. Huotari:

As requested, we have reviewed the Wesley Drive at Newton Drive intersection to determine the proper traffic control. The subject intersection is a 3-leg intersection (tee) located in the City of Troy approximately 850 feet east of Crooks Road and 0.5-miles north of W Square Lake Road. The speed limit on both streets is 25 mph. There are currently no traffic control devices at this intersection. Reference the attachments for aerial and intersection photos.

Background on Traffic Control Determination

Based on the Michigan Manual of Uniform Traffic Control Devices (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.

Many times 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.



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.

Crash Analysis

Based on information obtained through Traffic Improvement Association of Michigan, there were no crashes recorded in the past 5-years at the intersection of Newton Drive and Wesley Drive. The crash data does not constitute a compelling case for modifying the existing controls.

Approach Speeds

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

Types of Roadways

Both Newton Drive and Wesley Drive are considered local streets. Due to the geometry, Wesley Drive would be considered the continuing roadway. It should be noted that currently there are “no parking” signs posted along eastbound Wesley Drive and northbound Newton Drive.

Sight Distance

The major potential sight distance obstructions at the intersection are houses in the northwest and northeast quadrant of the intersection. These obstructions come into play when determining the safe approach speeds for the intersection. The safe approach speed is the speed at which a vehicle can approach an intersection and still stop in time to avoid a collision with a vehicle on the cross street. Safe approach speeds are determined through calculations.

When the safe approach speed is found to be more than 10 mph, a YIELD sign is commonly used. In this case, the safe approach speed was found to be 14.7 mph for southbound Newton Drive; therefore, a YIELD sign is the recommended treatment. The safe approach speed calculation spreadsheet is attached for your reference.



Recommendation

OHM recommends that the intersection control be made a one-way YIELD control. The sign should be placed on the southbound approach to the intersection on Newton Drive.

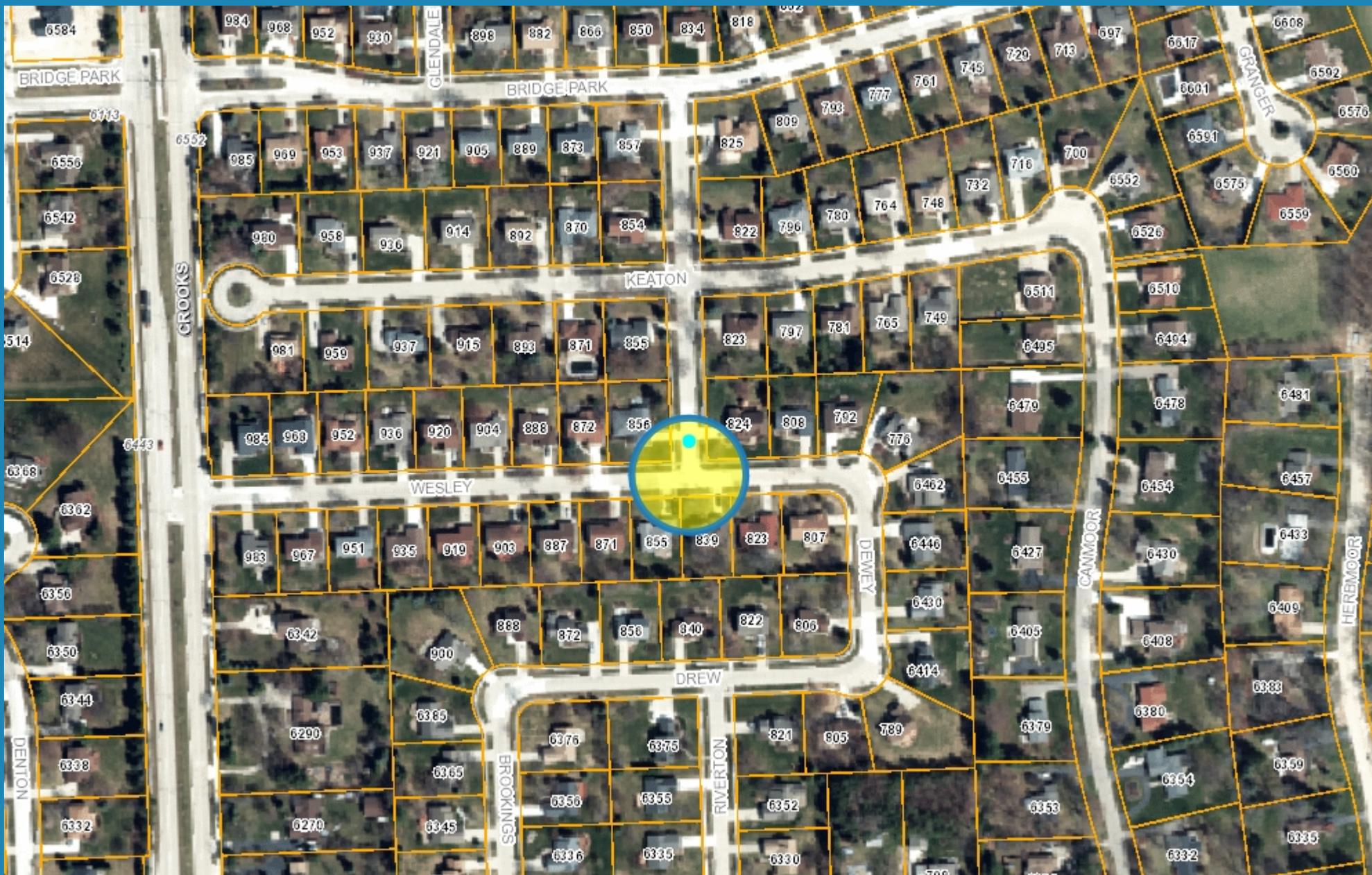
Sincerely,
Orchard Hiltz & McCliment, Inc.

Steve M. Loveland, PE, PTOE
Traffic Project Manager

Matt L. Clark, EIT
Engineer

Attachments:

- Aerial and Intersection Photos
- Safe Approach Speed Calculation Spreadsheet



598 0 299 598 Feet



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

Newton at Wesley
City of Troy

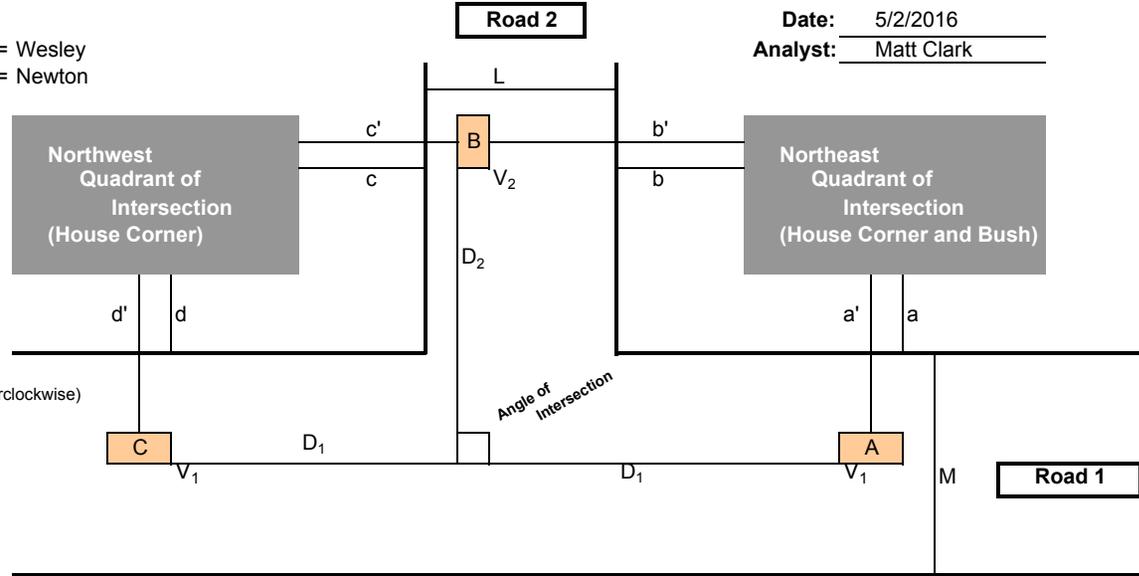
Road 1 = Wesley
Road 2 = Newton

Date: 5/2/2016
Analyst: Matt Clark

Measured:

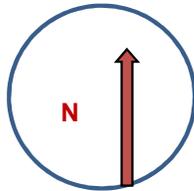
- Width of Roads
 - Road 1 = 26 (ft)
 - Road 2 = 26 (ft)
- Distance to Obstruction
 - a = 42 (ft)
 - b = 43 (ft)
 - c = 49 (ft)
 - d = 47 (ft)

- 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)
 - V₁ = 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:	a' = 52
D ₁ = 196	b' = 59
D _{2A} = 74.3	c' = 59
D _{2C} = 86.9	d' = 63

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

Calculated Safe Approach Speed for Vehicle B
Approaching on Road 2

- V₂ = 14.7 (mph) [Based on Veh. A]
- or V₂ = 16.5 (mph) [Based on Veh. C]

TRUE

Recommended ROW control for Road 2

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

Notes: Enter field measurements in yellow highlighted area.

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

Calculated by spreadsheet



Wesley Drive looking west



Wesley Drive looking east



Newton Drive looking southeast



Newton Drive looking southwest



Newton Drive looking north



TRAFFIC COMMITTEE REPORT

June 1, 2016

TO: Traffic Committee

FROM: Bill Huotari, Deputy City Engineer/ Traffic Engineer

SUBJECT: Redwood
Request for No Parking Zone

Background:

Kelly Broderick of 169 Redwood requests that a No Parking zone be established or re-established on Redwood, approximately forty (40) feet north of the intersection on southbound and ending at the driveway to 169 Redwood on eastbound Redwood. Ms. Broderick provided a picture of a NO PARKING sign that was installed in front of her home years ago, but she states that it was hit by a drunk driver and never replaced.

Traffic Engineering did review records of the City and found no Traffic Control Order in place for either No Parking sign on Redwood at or near 169 Redwood. One NO PARKING HERE TO CORNER sign exists and is in place on the west side of Redwood today, approximately forty (40) feet north of the intersection.

Ms. Broderick states that vehicles parking on the north and west sides of Redwood (in the intersection or very close to it) create conflicts with access to/from her driveway as well as cause motorists to drive around the parked vehicle(s) to the south and west sides of the road. This creates a potential situation where a southbound Redwood driver meets up with a northbound Redwood driver at the intersection, both on the same side of the road.

It is approximately thirty (30) feet from the corner of the sidewalk on Redwood to the driveway to 169 Redwood to the east and approximately forty (40) feet from the corner of the sidewalk on Redwood to the existing NO PARKING HERE TO CORNER sign to the north.

Establishing this area as a No Parking Zone would provide for better sight distance, more reasonable turning areas around the corner from both northbound and southbound directions and allow for drivers to navigate the corner without forcing them into a potential head-on with drivers in the opposite direction.



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.









NO PARKING sign



NO PARKING sign on Redwood (east-west) from resident files



TRAFFIC COMMITTEE REPORT

June 3, 2016

TO: Traffic Committee

FROM: Bill Huotari, Deputy City Engineer/ Traffic Engineer

SUBJECT: Forsyth, North of Wattles
Residential Speed Control

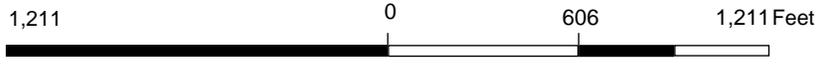
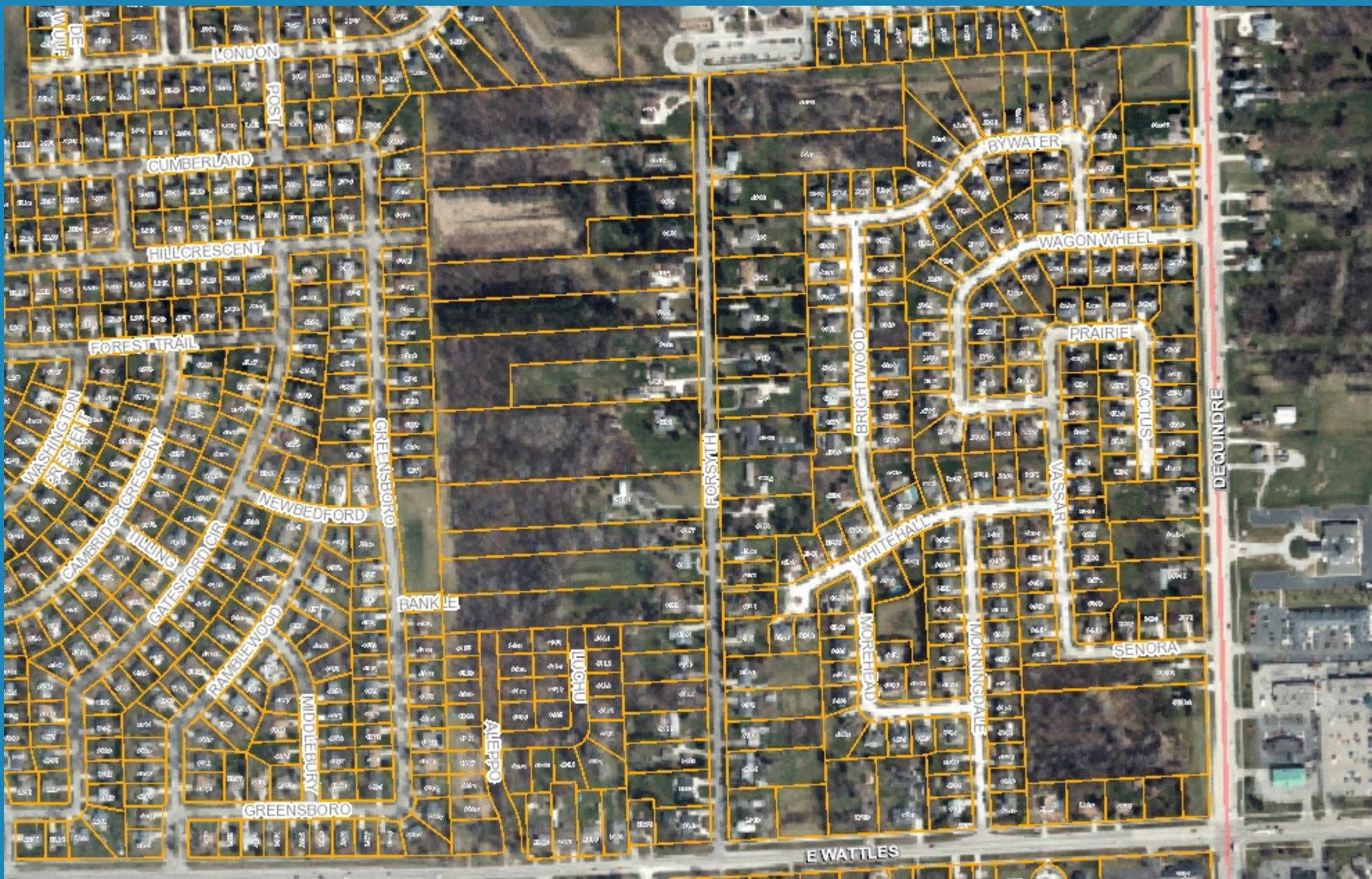
Background:

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- That two (2) 25 mph speed limit signs, in each direction, be approved for installation on northbound and southbound Forsyth, between Wattles and Hill Elementary; and
- That the Troy Police Department provide extra enforcement on Forsyth when not on higher priority calls; and
- That a follow up speed study be conducted in May 2016 to review the results of the new signage and police enforcement on Forsyth. The resulting speed study is to be brought back to the Traffic Committee at the June 2016 meeting.

OHM Advisors conducted a follow up speed study on May 3, 2016 through May 9, 2016. The follow up speed study revealed that the violation rate has dropped from 82% to 62% in the northbound direction and from 83% to 70% in the southbound direction. The 85th percentile speed dropped from 35 mph to 32 mph in the northbound direction and 36 mph to 33 mph in the southbound direction. These results confirm an improvement in the compliance rate with the posted 25 mph speed limit.

While there is still a group of individuals that are driving at higher than desirable speeds, the overall number of vehicles driving at higher speeds has decreased. The recommendations made at the January meeting have made an impact. It will be a continuous effort to educate new drivers due to turnover at Hill Elementary. It is anticipated that another study will be conducted in the fall to check how these measures hold up with a new group of students/parents at the school.



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memorandum

Date: May 13, 2016

To: Bill Huotari

CC: Steven Loveland and Stephen Dearing

From: Matt Clark

Re: Troy Speed/Volume Study Summary for Forsyth Drive

Introduction

A 7-day speed study was conducted by OHM Advisors in December 2015 on Forsyth Drive. The study determined that there was a violation rate in excess of 80% of the 25 mph posted speed limit. As a result of the study, the City of Troy installed two (2) speed limit signs in both directions along Forsyth, along with additional enforcement by the Troy Police Department. A follow-up speed study was conducted in May 2016 to determine if these countermeasures produced any reduction in the violation rate of the speed limit on Forsyth Drive. The results of the follow-up study are discussed in the following sections of the document.

Speed and Volume Collection

As requested, speed and volume data has been collected on Forsyth Drive near the middle of the segment between E Wattles Road and Hill Elementary School. The posted speed limit is 25 mph. Data was collected at a location approximately 1,540 feet north of E Wattles Road along Forsyth Drive. The data has been processed and summarized for your review of this location. Attached to this memo is the data collected for both speed and volumes.

Table 1 - Speed Data Results on Forsyth Drive

Forsyth Drive		
	Northbound	Southbound
85 th Percentile (MPH)	32	33
Mean Speed (MPH)	27	28
10 MPH Pace Speed (MPH)	21-30	26-35
Percent in Pace (%)	65.7	62.4
Violation Rate (%)	62.0	70.2

Based on Table 1, at both locations, the 85th percentile speed is higher than the posted speed limit of 25 mph for both directions.



Table 2 shows the AM and PM hour when the highest volume of traffic was within the specified speed range. A dash indicates a day when the data was not complete, which means an hour where the highest volume could not be determined. Data was not complete because the hoses were placed/removed from the roads, there was an error with the hoses or there were no vehicles recorded in that speed range.

Table 2 - Peak Hours for Specified Speed Ranges on Forsyth Drive

Forsyth Drive					
		Northbound		Southbound	
	Speed Range (MPH)	AM Peak	PM Peak	AM Peak	PM Peak
5/3 (Tue)	16-20	08:00	15:00	07:00	15:00
	21-25	08:00	15:00	08:00	15:00
	26-30	08:00	15:00	08:00	15:00
	31-35	08:00	18:00	08:00	12:00
	36-40	11:00	17:00	08:00	12:00
5/4 (Wed)	16-20	08:00	15:00	08:00	13:00
	21-25	08:00	15:00	08:00	15:00
	26-30	08:00	15:00	08:00	15:00
	31-35	08:00	15:00	08:00	15:00
	36-40	11:00	17:00	07:00	16:00
5/5 (Thur)	16-20	08:00	15:00	11:00	13:00
	21-25	08:00	14:00	08:00	15:00
	26-30	08:00	15:00	08:00	15:00
	31-35	08:00	18:00	08:00	15:00
	36-40	08:00	13:00	08:00	12:00
5/6 (Fri)	16-20	11:00	20:00	07:00	13:00
	21-25	08:00	15:00	08:00	15:00
	26-30	08:00	15:00	08:00	15:00
	31-35	08:00	14:00	08:00	15:00
	36-40	08:00	15:00	07:00	12:00
5/7 (Sat)	16-20	11:00	13:00	-	13:00
	21-25	11:00	15:00	08:00	13:00
	26-30	09:00	15:00	10:00	16:00
	31-35	11:00	16:00	07:00	12:00
	36-40	11:00	13:00	10:00	16:00
5/8 (Sun)	16-20	11:00	19:00	01:00	14:00
	21-25	11:00	15:00	09:00	18:00
	26-30	11:00	12:00	09:00	14:00
	31-35	01:00	16:00	08:00	12:00
	36-40	10:00	12:00	09:00	15:00
5/9 (Mon)	16-20	07:00	16:00	08:00	15:00
	21-25	08:00	15:00	08:00	15:00
	26-30	08:00	15:00	08:00	15:00
	31-35	08:00	15:00	08:00	15:00
	36-40	08:00	17:00	08:00	15:00



The data indicates that vehicles tend to travel faster than the speed limit between 8:00 – 9:00 AM and 3:00 – 4:00 PM in both the northbound and southbound directions.

Table 3 is a day by day summary of the traffic volumes along Forsyth Drive. On average, southbound traffic is approximately 10.9% higher than northbound traffic on weekdays and northbound traffic is approximately 4.0% higher than southbound traffic on weekends.

Table 3 – Forsyth Drive Traffic Volumes

Forsyth Drive			
Day	Northbound	Southbound	Total
Tuesday 5/3	512	558	1070
Wednesday 5/4	447	506	953
Thursday 5/5	497	551	1048
Friday 5/6	447	469	916
Saturday 5/7	182	178	360
Sunday 5/8	180	169	349
Monday 5/9	442	467	909
Average Weekday Daily Traffic*	485	538	1023
Average Weekend Daily Traffic	181	174	355

*=Tuesday, Wednesday, Thursday

Table 4 shows the percentage of the total traffic in each speed range. 62.0% of northbound and 70.2% of southbound total traffic was traveling at speeds higher than the speed limit at the study location.

Table 4 – Forsyth Drive Percent Traffic Volume in Each Speed Range

Speed Range	Forsyth Drive	
	Northbound	Southbound
1-15	4.3%	2.6%
16-20	6.1%	4.8%
21-25	27.6%	22.2%
26-30	38.1%	39.0%
31-35	18.9%	23.4%
36-40	4.2%	6.8%
41-45	0.7%	0.9%
46-50	0.1%	0.1%

Comparison to Previous Study

The follow-up speed study revealed that the violation rate has dropped from 82% to 62% in the northbound direction and from 83% to 70% in the southbound direction. The 85th percentile speed dropped from 35 mph to 32 mph in the northbound direction and 36 mph to 33 mph in the southbound direction. These results confirm an improvement in the compliance rate with the posted 25 mph speed limit.

OHM Advisors
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Advancing Communities

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/02/16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	4	3	10	14	6	2	0	39	21-30	24							
17:00	0	2	10	8	4	2	1	0	0	0	0	0	0	0	27	21-30	18
18:00	0	1	4	6	6	0	0	0	0	0	0	0	0	0	17	26-35	12
19:00	1	4	7	7	4	1	0	0	0	0	0	0	0	0	24	21-30	14
20:00	0	0	1	1	5	1	0	0	1	0	0	0	0	0	8	26-35	6
21:00	0	0	1	4	0	0	0	0	0	0	0	0	0	0	5	21-30	5
22:00	0	1	0	3	1	0	0	0	0	0	0	0	0	0	5	26-35	4
23:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	24-33	3
Total	5	11	33	45	27	6	1	0	128								
Percent	3.9%	8.6%	25.8%	35.2%	21.1%	4.7%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	16:00	19:00	16:00	16:00	16:00	16:00	17:00								16:00		
	4	4	10	14	6	2	1								39		

Weather: Sunny
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OHM Advisors
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 Livonia, MI 48150
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 Forsyth Dr

Northbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/03/16	1	0	0	0	1	1	0	0	0	0	0	0	0	0	3	29-38	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3	15-24	2
07:00	1	2	11	7	9	0	0	0	0	0	0	0	0	0	30	21-30	18
08:00	4	3	37	35	18	1	1	0	0	0	0	0	0	0	99	21-30	72
09:00	0	1	2	11	2	2	0	0	0	0	0	0	0	0	18	26-35	13
10:00	0	0	3	4	6	1	0	0	0	0	0	0	0	0	14	26-35	10
11:00	1	1	6	11	6	4	1	0	0	0	0	0	0	0	30	21-30	17
12 PM	2	1	5	10	6	2	1	0	0	0	0	0	0	0	27	24-33	16
13:00	4	2	6	6	5	1	0	0	0	0	0	0	0	0	24	21-30	12
14:00	2	4	8	10	4	2	1	0	0	0	0	0	0	0	31	21-30	18
15:00	6	12	31	19	9	2	0	0	0	0	0	0	0	0	79	21-30	50
16:00	4	1	11	12	3	2	0	1	0	0	0	0	0	0	34	21-30	23
17:00	1	4	9	6	8	3	0	0	0	0	0	0	0	0	31	20-29	15
18:00	2	4	8	14	10	3	0	0	0	0	0	0	0	0	41	26-35	24
19:00	2	0	2	9	4	0	0	0	0	0	0	0	0	0	17	26-35	13
20:00	2	0	5	2	4	0	0	0	0	0	0	0	0	0	13	21-30	7
21:00	0	1	7	2	2	0	0	0	0	0	0	0	0	0	12	21-30	9
22:00	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	21-30	3
23:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	19-28	2
Total	32	36	155	162	98	24	4	1	0	0	0	0	0	0	512		
Percent	6.3%	7.0%	30.3%	31.6%	19.1%	4.7%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	08:00								08:00		
Vol.	4	3	37	35	18	4	1								99		
PM Peak	15:00	15:00	15:00	15:00	18:00	17:00	12:00	16:00							15:00		
Vol.	6	12	31	19	10	3	1	1							79		

Weather: Sunny
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 Other Notes: None

OHM Advisors
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 Livonia, MI 48150
Advancing Communities

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 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/04/16	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	29-38	1
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	*	1
07:00	2	3	10	8	4	0	0	0	0	0	0	0	0	0	27	21-30	18
08:00	3	9	46	41	9	2	0	0	0	0	0	0	0	0	110	21-30	87
09:00	0	3	5	4	0	0	0	0	0	0	0	0	0	0	12	19-28	9
10:00	3	2	5	5	0	0	0	0	0	0	0	0	0	0	15	21-30	10
11:00	1	4	13	7	3	3	0	0	0	0	0	0	0	0	31	21-30	20
12 PM	1	4	11	7	2	1	0	0	0	0	0	0	0	0	26	21-30	18
13:00	2	4	5	4	1	1	0	0	0	0	0	0	0	0	17	16-25	9
14:00	0	2	17	10	4	0	0	0	0	0	0	0	0	0	33	21-30	27
15:00	2	6	21	31	7	0	0	0	0	0	0	0	0	0	67	21-30	52
16:00	1	2	5	9	7	3	0	1	0	0	0	0	0	0	28	25-34	16
17:00	0	1	3	10	6	4	2	0	0	0	0	0	0	0	26	26-35	16
18:00	0	3	6	6	3	0	0	0	0	0	0	0	0	0	18	21-30	12
19:00	2	0	3	2	3	0	0	0	0	0	0	0	0	0	10	20-29	5
20:00	0	1	4	5	4	0	0	0	0	0	0	0	0	0	14	21-30	9
21:00	0	1	0	3	0	0	1	0	0	0	0	0	0	0	5	26-35	3
22:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	*	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	19	45	156	153	55	15	3	1	0	0	0	0	0	0	447		
Percent	4.3%	10.1%	34.9%	34.2%	12.3%	3.4%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00									08:00		
Vol.	3	9	46	41	9	3									110		
PM Peak	13:00	15:00	15:00	15:00	15:00	17:00	17:00	16:00							15:00		
Vol.	2	6	21	31	7	4	2	1							67		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/05/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	29-38	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0	5	24-33	4
07:00	0	1	7	12	4	1	0	0	0	0	0	0	0	0	25	21-30	19
08:00	3	2	21	43	21	2	0	0	0	0	0	0	0	0	92	26-35	64
09:00	0	0	7	4	4	0	0	0	0	0	0	0	0	0	15	21-30	11
10:00	0	1	1	3	7	0	0	0	0	0	0	0	0	0	12	26-35	10
11:00	1	0	3	9	11	2	0	0	0	0	0	0	0	0	26	26-35	20
12 PM	0	2	10	7	12	0	0	0	0	0	0	0	0	0	31	26-35	19
13:00	2	0	5	5	5	3	0	0	0	0	0	0	0	0	20	21-30	10
14:00	1	4	18	16	9	1	0	1	0	0	0	0	0	0	50	21-30	34
15:00	3	6	16	23	11	3	0	0	0	0	0	0	0	0	62	21-30	39
16:00	1	1	5	14	8	2	0	0	0	0	0	0	0	0	31	26-35	22
17:00	0	1	8	16	9	1	0	0	0	0	0	0	0	0	35	24-33	25
18:00	1	5	7	16	15	3	1	0	0	0	0	0	0	0	48	26-35	31
19:00	1	1	2	3	4	1	0	0	0	0	0	0	0	0	12	26-35	7
20:00	0	1	2	5	6	0	0	0	0	0	0	0	0	0	14	26-35	11
21:00	0	2	3	2	1	0	0	0	0	0	0	0	0	0	8	21-30	5
22:00	0	0	0	2	4	1	0	0	0	0	0	0	0	0	7	26-35	6
23:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
Total	13	27	117	183	134	21	1	1	0	0	0	0	0	0	497		
Percent	2.6%	5.4%	23.5%	36.8%	27.0%	4.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00									08:00		
Vol.	3	2	21	43	21	2									92		
PM Peak	15:00	15:00	14:00	15:00	18:00	13:00	18:00	14:00							15:00		
Vol.	3	6	18	23	15	3	1	1							62		

OHM Advisors
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Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/06/16	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	19-28	2
07:00	1	1	2	3	7	2	0	0	0	0	0	0	0	0	16	26-35	10
08:00	3	1	19	51	10	4	0	0	0	0	0	0	0	0	88	21-30	70
09:00	0	0	1	7	2	1	0	0	0	0	0	0	0	0	11	26-35	9
10:00	0	1	1	5	7	0	0	0	0	0	0	0	0	0	14	26-35	12
11:00	0	3	6	8	8	2	1	0	0	0	0	0	0	0	28	25-34	16
12 PM	2	1	8	7	5	0	0	0	0	0	0	0	0	0	23	21-30	15
13:00	2	1	5	7	2	0	1	0	0	0	0	0	0	0	18	21-30	12
14:00	2	1	14	22	14	2	0	0	0	0	0	0	0	0	55	21-30	36
15:00	0	0	17	26	14	3	0	0	0	0	0	0	0	0	60	21-30	43
16:00	4	2	6	14	7	1	0	0	0	0	0	0	0	0	34	24-33	21
17:00	0	0	8	5	9	3	0	0	0	0	0	0	0	0	25	26-35	14
18:00	0	0	2	7	3	3	1	0	0	0	0	0	0	0	16	24-33	10
19:00	2	1	4	3	3	0	0	0	0	0	0	0	0	0	13	20-29	7
20:00	3	4	3	4	1	1	0	0	0	0	0	0	0	0	16	15-24	7
21:00	0	0	1	6	5	0	0	0	0	0	0	0	0	0	12	26-35	11
22:00	0	1	4	1	4	0	0	0	0	0	0	0	0	0	10	25-34	5
23:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	14-23	1
Total	19	17	105	177	104	22	3	0	447								
Percent	4.3%	3.8%	23.5%	39.6%	23.3%	4.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	08:00	08:00	08:00	08:00	11:00								08:00		
Vol.	3	3	19	51	10	4	1								88		
PM Peak	16:00	20:00	15:00	15:00	14:00	15:00	13:00								15:00		
Vol.	4	4	17	26	14	3	1								60		

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 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/07/16	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	19-28	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
08:00	1	0	4	2	0	0	0	0	0	0	0	0	0	0	7	20-29	6
09:00	0	0	2	5	0	0	0	0	0	0	0	0	0	0	7	21-30	7
10:00	0	1	2	5	2	0	0	0	0	0	0	0	0	0	10	26-35	7
11:00	1	2	5	4	7	1	0	0	0	0	0	0	0	0	20	25-34	11
12 PM	0	0	4	4	1	1	1	0	0	0	0	0	0	0	11	21-30	8
13:00	3	2	4	4	1	3	0	0	0	0	0	0	0	0	17	20-29	8
14:00	1	2	5	5	0	0	0	0	0	0	0	0	0	0	13	21-30	10
15:00	0	0	7	8	2	1	0	0	0	0	0	0	0	0	18	21-30	15
16:00	1	0	3	3	3	0	0	0	0	0	0	0	0	0	10	21-30	6
17:00	0	2	0	5	3	0	0	0	0	0	0	0	0	0	10	26-35	8
18:00	3	2	2	6	3	0	0	0	0	0	0	0	0	0	16	24-33	9
19:00	0	2	5	5	0	0	0	0	0	0	0	0	0	0	12	21-30	10
20:00	2	1	0	1	2	0	0	0	0	0	0	0	0	0	6	25-34	3
21:00	0	0	2	1	2	0	0	0	0	0	0	0	0	0	5	19-28	3
22:00	0	0	1	4	3	0	0	0	0	0	0	0	0	0	8	25-34	7
23:00	0	0	2	3	0	1	0	0	0	0	0	0	0	0	6	21-30	5
Total	12	14	49	68	31	7	1	0	0	0	0	0	0	0	182		
Percent	6.6%	7.7%	26.9%	37.4%	17.0%	3.8%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	11:00	09:00	11:00	11:00									11:00		
Vol.	1	2	5	5	7	1									20		
PM Peak	13:00	13:00	15:00	15:00	16:00	13:00	12:00								15:00		
Vol.	3	2	7	8	3	3	1								18		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/08/16	0	0	3	0	0	0	1	0	0	0	0	0	0	0	4	16-25	3
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	9-18	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
08:00	0	0	0	3	1	0	0	0	0	0	0	0	0	0	4	24-33	4
09:00	0	1	1	2	1	0	0	0	0	0	0	0	0	0	5	26-35	3
10:00	1	0	0	1	1	1	0	0	0	0	0	0	0	0	4	24-33	2
11:00	0	2	5	8	1	0	0	0	0	0	0	0	0	0	16	21-30	13
12 PM	0	1	1	13	4	2	0	0	0	0	0	0	0	0	21	26-35	17
13:00	3	1	6	5	3	2	0	0	0	0	0	0	0	0	20	21-30	11
14:00	2	0	3	5	1	0	0	0	0	0	0	0	0	0	11	21-30	8
15:00	1	1	8	4	2	0	0	0	0	0	0	0	0	0	16	21-30	12
16:00	3	0	3	4	5	1	0	0	0	0	0	0	0	0	16	25-34	9
17:00	2	1	7	4	2	0	0	0	0	0	0	0	0	0	16	21-30	11
18:00	1	0	3	1	2	1	0	0	0	0	0	0	0	0	8	21-30	4
19:00	0	2	1	3	3	0	0	1	0	0	0	0	0	0	10	26-35	6
20:00	0	2	3	1	0	1	0	0	0	0	0	0	0	0	7	16-25	5
21:00	0	0	3	5	2	1	0	0	0	0	0	0	0	0	11	21-30	8
22:00	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	19-28	3
23:00	0	0	0	3	1	0	0	0	0	0	0	0	0	0	4	24-33	4
Total	13	12	49	65	30	9	1	1	0	0	0	0	0	0	180		
Percent	7.2%	6.7%	27.2%	36.1%	16.7%	5.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	11:00	11:00	01:00	10:00	00:00								11:00		
Vol.	1	2	5	8	1	1	1								16		
PM Peak	13:00	19:00	15:00	12:00	16:00	12:00		19:00							12:00		
Vol.	3	2	8	13	5	2		1							21		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Pace Speed	Number in Pace
05/09/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	29-38	2
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	4	20-29	3
07:00	4	2	6	7	3	3	0	0	0	0	0	0	0	0	0	25	21-30	13
08:00	2	1	23	59	15	4	1	0	0	0	0	0	0	0	0	105	21-30	82
09:00	0	0	3	2	3	1	1	0	0	0	0	0	0	0	0	10	26-35	5
10:00	0	0	2	0	3	1	0	0	0	0	0	0	0	0	0	6	31-40	4
11:00	2	0	9	7	5	3	0	0	0	0	0	0	0	0	0	26	21-30	16
12 PM	0	2	10	9	5	1	0	0	1	0	0	0	0	0	0	28	21-30	19
13:00	0	0	4	3	2	2	0	0	0	0	0	0	0	0	0	11	21-30	7
14:00	3	3	12	14	6	1	0	0	0	0	0	0	0	0	0	39	21-30	26
15:00	1	1	20	36	17	1	1	0	0	0	0	0	0	0	0	77	21-30	56
16:00	2	4	6	7	1	3	0	0	0	0	0	0	0	0	0	23	21-30	13
17:00	1	2	9	8	8	4	0	0	0	0	0	0	0	0	0	32	21-30	17
18:00	0	2	3	6	4	1	2	0	0	0	0	0	0	0	0	18	26-35	10
19:00	0	1	3	3	2	0	0	0	0	0	0	0	0	0	0	9	21-30	6
20:00	2	0	3	7	1	0	0	1	0	0	0	0	0	0	0	14	21-30	10
21:00	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	5	21-30	4
22:00	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	4	19-28	2
23:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	19-28	2
Total	18	18	121	173	78	27	5	1	1	0	0	0	0	0	0	442		
Percent	4.1%	4.1%	27.4%	39.1%	17.6%	6.1%	1.1%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	08:00	08:00	08:00	08:00	08:00										08:00	
Vol.	4	2	23	59	15	4	1									105		
PM Peak	14:00	16:00	15:00	15:00	15:00	17:00	18:00	20:00	12:00							15:00		
Vol.	3	4	20	36	17	4	2	1	1							77		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/10/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3	15-24	2
07:00	2	0	6	10	2	2	0	0	0	0	0	0	0	0	22	21-30	16
08:00	5	6	32	42	14	3	0	0	0	0	0	0	0	0	102	21-30	74
09:00	1	0	5	14	3	2	0	0	0	0	0	0	0	0	25	21-30	19
10:00	0	0	2	2	4	0	0	0	0	0	0	0	0	0	8	25-34	6
11:00	0	2	6	10	4	1	0	0	0	0	0	0	0	0	23	21-30	16
12 PM	1	1	8	16	4	0	1	0	0	0	0	0	0	0	31	21-30	24
13:00	1	2	3	7	1	0	0	0	0	0	0	0	0	0	14	21-30	10
14:00	0	2	13	15	8	0	1	0	0	0	0	0	0	0	39	21-30	28
15:00	1	4	17	32	11	2	0	0	0	0	0	0	0	0	67	21-30	49
16:00	0	1	4	10	9	2	0	0	0	0	0	0	0	0	26	26-35	19
17:00	0	2	5	16	8	1	0	0	0	0	0	0	0	0	32	26-35	24
18:00	2	2	8	14	2	0	0	0	0	0	0	0	0	0	28	21-30	22
19:00	0	2	5	11	6	0	0	0	0	0	0	0	0	0	24	24-33	17
20:00	0	1	5	7	4	0	1	0	0	0	0	0	0	0	18	21-30	12
21:00	0	0	2	3	0	0	0	0	0	0	0	0	0	0	5	21-30	5
22:00	0	0	1	3	0	1	0	0	0	0	0	0	0	0	5	21-30	4
23:00	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	20-29	4
Total	13	25	126	216	81	14	3	0	478								
Percent	2.7%	5.2%	26.4%	45.2%	16.9%	2.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00									08:00		
Vol.	5	6	32	42	14	3									102		
PM Peak	18:00	15:00	15:00	15:00	15:00	15:00	12:00								15:00		
Vol.	2	4	17	32	11	2	1								67		

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Northbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/11/16	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	20-29	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
07:00	0	2	9	9	4	0	0	0	0	0	0	0	0	0	24	21-30	18
08:00	3	3	34	62	11	1	1	0	0	0	0	0	0	0	115	21-30	96
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	3	5	44	74	15	1	1	0	143								
Percent	2.1%	3.5%	30.8%	51.7%	10.5%	0.7%	0.7%	0.0%									
AM Peak	08:00								08:00								
Vol.	3	3	34	62	11	1	1								115		
PM Peak																	
Vol.																	
Total	147	210	955	1316	653	146	23	5	1	0	0	0	0	0	3456		
Percent	4.3%	6.1%	27.6%	38.1%	18.9%	4.2%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 20 MPH
 50th Percentile : 26 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 2271
 Percent in Pace : 65.7%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%
 Mean Speed(Average) : 27 MPH

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	15	16:20	21:25	26:30	31:35	36:40	41:45	46:50	51:55	56:60	61:65	66:70	71:75	76:999	Total	Pace Speed	Number in Pace
05/02/16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	0	2	8	18	8	5	0	0	0	0	0	0	0	0	41	26-35	26
17:00	0	4	4	8	5	4	0	0	0	0	0	0	0	0	25	26-35	13
18:00	1	1	3	7	3	0	0	0	0	0	0	0	0	0	15	21-30	10
19:00	2	1	5	8	3	0	1	0	0	0	0	0	0	0	20	21-30	13
20:00	0	0	4	4	2	0	0	0	0	0	0	0	0	0	10	21-30	8
21:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	30-39	3
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	10-19	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	3	10	24	45	22	11	1	0	0	0	0	0	0	0	116		
Percent	2.6%	8.6%	20.7%	38.8%	19.0%	9.5%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	19:00	17:00	16:00	16:00	16:00	16:00	19:00								16:00		
	2	4	8	18	8	5	1								41		

OHM Advisors
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Advancing Communities

Weather: Sunny
 Serial Number: 27497
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 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/04/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	14-23	1
05:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	24-33	3
06:00	0	2	4	3	2	0	0	0	0	0	0	0	0	0	11	19-28	7
07:00	0	2	12	14	9	2	0	0	0	0	0	0	0	0	39	21-30	26
08:00	0	6	66	54	11	2	0	0	0	0	0	0	0	0	139	21-30	120
09:00	0	4	9	7	6	2	0	0	0	0	0	0	0	0	28	21-30	16
10:00	1	1	6	6	2	1	0	0	0	0	0	0	0	0	17	21-30	12
11:00	0	3	8	11	6	0	0	0	0	0	0	0	0	0	28	21-30	19
12 PM	0	3	8	10	8	0	0	0	0	0	0	0	0	0	29	21-30	18
13:00	2	4	7	8	4	3	0	0	0	0	0	0	0	0	28	21-30	15
14:00	0	2	4	4	2	1	0	0	0	0	0	0	0	0	13	21-30	8
15:00	1	1	25	27	19	3	0	0	0	0	0	0	0	0	76	21-30	52
16:00	0	1	3	22	15	4	0	0	0	0	0	0	0	0	45	26-35	37
17:00	0	0	4	10	3	0	1	0	0	0	0	0	0	0	18	21-30	14
18:00	0	1	5	4	1	2	0	0	0	0	0	0	0	0	13	21-30	9
19:00	1	0	0	3	1	0	0	0	0	0	0	0	0	0	5	26-35	4
20:00	0	0	2	2	2	1	0	0	0	0	0	0	0	0	7	26-35	4
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
22:00	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	*	1
23:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
Total	6	30	165	189	93	22	1	0	506								
Percent	1.2%	5.9%	32.6%	37.4%	18.4%	4.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	08:00	08:00	08:00	08:00	07:00										08:00	
Vol.	1	6	66	54	11	2									139		
PM Peak	13:00	13:00	15:00	15:00	15:00	16:00	17:00								15:00		
Vol.	2	4	25	27	19	4	1								76		

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/06/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	19-28	2
05:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
06:00	0	0	3	4	2	1	1	0	0	0	0	0	0	0	11	21-30	7
07:00	1	1	5	12	14	7	2	1	0	0	0	0	0	0	43	26-35	26
08:00	3	0	26	45	22	3	0	0	0	0	0	0	0	0	99	21-30	71
09:00	0	1	4	10	8	3	1	0	0	0	0	0	0	0	27	26-35	18
10:00	0	0	5	4	5	2	0	0	0	0	0	0	0	0	16	26-35	9
11:00	0	1	8	8	7	1	0	0	0	0	0	0	0	0	25	21-30	16
12 PM	0	0	5	10	4	6	0	0	0	0	0	0	0	0	25	21-30	15
13:00	2	3	6	9	5	0	2	0	0	0	0	0	0	0	27	21-30	15
14:00	1	0	3	6	3	0	0	0	0	0	0	0	0	0	13	21-30	9
15:00	0	0	11	29	22	6	2	0	0	0	0	0	0	0	70	26-35	51
16:00	0	2	4	15	12	4	0	0	0	0	0	0	0	0	37	26-35	27
17:00	0	1	2	10	6	3	0	0	0	0	0	0	0	0	22	26-35	16
18:00	0	1	4	6	4	1	0	0	0	0	0	0	0	0	16	26-35	10
19:00	1	1	6	3	2	2	0	0	0	0	0	0	0	0	15	21-30	9
20:00	1	2	1	4	1	0	0	0	0	0	0	0	0	0	9	20-29	5
21:00	0	0	2	4	0	0	0	0	0	0	0	0	0	0	6	21-30	6
22:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	24-33	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	9	13	96	182	120	40	8	1	0	0	0	0	0	0	469		
Percent	1.9%	2.8%	20.5%	38.8%	25.6%	8.5%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	08:00	08:00	08:00	07:00	07:00	07:00							08:00		
Vol.	3	1	26	45	22	7	2	1							99		
PM Peak	13:00	13:00	15:00	15:00	15:00	12:00	13:00								15:00		
Vol.	2	3	11	29	22	6	2								70		

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/08/16	1	0	0	1	0	1	0	0	0	0	0	0	0	0	3	*	1
01:00	0	1	0	1	0	1	1	0	0	0	0	0	0	0	4	34-43	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
05:00	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	19-28	2
06:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
08:00	0	0	0	2	3	0	0	0	0	0	0	0	0	0	5	26-35	5
09:00	1	0	4	6	2	2	0	0	0	0	0	0	0	0	15	21-30	10
10:00	0	1	2	2	3	2	0	0	0	0	0	0	0	0	10	31-40	5
11:00	0	1	1	4	3	2	2	0	0	0	0	0	0	0	13	26-35	7
12 PM	1	1	3	3	3	0	0	0	0	0	0	0	0	0	11	20-29	6
13:00	1	1	2	4	2	1	1	0	0	0	0	0	0	0	12	26-35	6
14:00	2	2	2	6	0	2	0	0	0	0	0	0	0	0	14	21-30	8
15:00	2	0	2	4	2	5	0	1	0	0	0	0	0	0	16	31-40	7
16:00	0	1	1	4	3	1	0	0	0	0	0	0	0	0	10	25-34	7
17:00	0	1	3	5	3	0	0	0	0	0	0	0	0	0	12	21-30	8
18:00	2	0	6	4	0	0	1	0	0	0	0	0	0	0	13	21-30	10
19:00	2	2	1	1	2	0	0	0	0	0	0	0	0	0	8	26-35	3
20:00	1	2	4	0	2	0	1	0	0	0	0	0	0	0	10	16-25	6
21:00	0	2	0	1	0	1	0	0	0	0	0	0	0	0	4	10-19	2
22:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
23:00	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2	9-18	1
Total	13	16	32	50	32	18	7	1	0	0	0	0	0	0	169		
Percent	7.7%	9.5%	18.9%	29.6%	18.9%	10.7%	4.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	00:00	01:00	09:00	09:00	08:00	09:00	11:00								09:00		
Vol.	1	1	4	6	3	2	2								15		
PM Peak	14:00	14:00	18:00	14:00	12:00	15:00	13:00	15:00							15:00		
Vol.	2	2	6	6	3	5	1	1							16		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/09/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	24-33	1
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
05:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
06:00	0	0	4	10	3	1	0	0	0	0	0	0	0	0	18	21-30	14
07:00	2	0	12	9	12	0	1	0	0	0	0	0	0	0	36	21-30	21
08:00	0	2	21	63	32	7	0	0	0	0	0	0	0	0	125	26-35	95
09:00	0	2	3	6	10	0	1	0	0	0	0	0	0	0	22	26-35	16
10:00	0	0	1	2	6	0	1	0	0	0	0	0	0	0	10	26-35	8
11:00	1	0	5	10	5	0	1	0	0	0	0	0	0	0	22	21-30	15
12 PM	0	1	3	16	10	3	0	0	0	0	0	0	0	0	33	26-35	26
13:00	1	0	0	12	5	2	0	0	0	0	0	0	0	0	20	26-35	17
14:00	0	0	2	10	3	0	0	0	0	0	0	0	0	0	15	26-35	13
15:00	2	2	21	22	21	3	0	0	0	0	0	0	0	0	71	26-35	43
16:00	2	2	9	18	5	2	0	0	0	0	0	0	0	0	38	21-30	27
17:00	0	0	3	16	4	2	0	0	0	0	0	0	0	0	25	24-33	20
18:00	1	0	1	3	2	2	0	0	0	0	0	0	0	0	9	26-35	5
19:00	1	0	2	4	0	1	0	0	0	0	0	0	0	0	8	21-30	6
20:00	0	1	2	1	3	0	0	0	0	0	0	0	0	0	7	24-33	4
21:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
22:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	9-18	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	9-18	1
Total	10	12	89	206	123	23	4	0	0	0	0	0	0	0	467		
Percent	2.1%	2.6%	19.1%	44.1%	26.3%	4.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	08:00	08:00	08:00	07:00								08:00		
Vol.	2	2	21	63	32	7	1								125		
PM Peak	15:00	15:00	15:00	15:00	15:00	12:00									15:00		
Vol.	2	2	21	22	21	3									71		

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Pace Speed	Number in Pace
05/10/16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	*	1
05:00	0	0	1	3	0	0	0	0	0	0	0	0	0	0	4	21-30	4
06:00	0	1	0	5	4	0	0	0	0	0	0	0	0	0	10	26-35	9
07:00	1	1	8	14	12	3	0	0	0	0	0	0	0	0	39	26-35	26
08:00	2	6	46	46	24	3	0	0	0	0	0	0	0	0	127	21-30	92
09:00	0	1	3	16	7	1	0	0	0	0	0	0	0	0	28	26-35	23
10:00	0	0	3	8	4	2	0	0	0	0	0	0	0	0	17	26-35	12
11:00	0	2	4	5	3	2	2	0	0	0	0	0	0	0	18	21-30	9
12 PM	0	2	7	13	14	2	0	0	0	0	0	0	0	0	38	26-35	27
13:00	0	1	4	8	4	2	0	0	0	0	0	0	0	0	19	26-35	12
14:00	1	0	1	5	4	0	0	0	0	0	0	0	0	0	11	26-35	9
15:00	0	2	27	40	18	2	0	0	0	0	0	0	0	0	89	21-30	67
16:00	2	0	2	7	9	3	1	0	0	0	0	0	0	0	24	26-35	16
17:00	0	3	1	7	4	0	0	0	0	0	0	0	0	0	15	26-35	11
18:00	2	0	4	12	8	0	0	0	0	0	0	0	0	0	26	26-35	20
19:00	0	0	3	0	4	0	0	0	0	0	0	0	0	0	7	24-33	4
20:00	1	4	4	8	4	3	0	0	0	0	0	0	0	0	24	26-35	12
21:00	0	0	0	4	2	0	0	0	0	0	0	0	0	0	6	25-34	6
22:00	0	0	0	1	2	1	0	0	0	0	0	0	0	0	4	25-34	3
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
Total	10	23	120	203	127	24	3	0	510								
Percent	2.0%	4.5%	23.5%	39.8%	24.9%	4.7%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	07:00	11:00								08:00		
Vol.	2	6	46	46	24	3	2								127		
PM Peak	16:00	20:00	15:00	15:00	15:00	16:00	16:00								15:00		
Vol.	2	4	27	40	18	3	1								89		

OHM Advisors
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Weather: Sunny
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 Other Notes: None

Date Start: 02-May-16
 ForsythDr_Speed_05022016
 Forsyth Dr

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
05/11/16	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	19-28	2
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	15-24	2
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	1	4	6	3	1	0	0	0	0	0	0	0	0	15	21-30	10
07:00	0	3	5	20	9	5	0	0	0	0	0	0	0	0	42	26-35	29
08:00	6	3	36	61	23	5	0	0	0	0	0	0	0	0	134	21-30	97
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	7	7	50	88	35	11	0	0	0	0	0	0	0	0	198		
Percent	3.5%	3.5%	25.3%	44.4%	17.7%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	08:00	08:00	08:00	07:00									08:00		
Vol.	6	3	36	61	23	5									134		
PM Peak																	
Vol.																	
Total	98	179	828	1453	871	254	35	4	0	0	0	0	0	0	3722		
Percent	2.6%	4.8%	22.2%	39.0%	23.4%	6.8%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 21 MPH
 50th Percentile : 27 MPH
 85th Percentile : 33 MPH
 95th Percentile : 37 MPH

Stats
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 2324
 Percent in Pace : 62.4%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%
 Mean Speed(Average) : 28 MPH

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Volume_05022016
 Forsyth Dr

Start Time	02-May-16		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	Northboun	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo
12:00 AM	*	*	3	0	1	0	0	0	1	0	2	1	4	3	2	1
01:00	*	*	0	0	0	1	0	0	1	1	0	1	2	4	0	1
02:00	*	*	0	1	1	0	0	0	0	0	1	0	1	0	0	0
03:00	*	*	1	1	2	1	1	1	1	0	1	1	0	1	1	1
04:00	*	*	0	2	0	2	1	2	0	3	1	1	1	1	0	2
05:00	*	*	0	2	0	3	0	3	0	1	0	3	0	3	0	2
06:00	*	*	3	12	2	11	5	11	3	11	1	3	0	1	2	8
07:00	*	*	30	42	27	39	25	38	16	43	0	9	0	0	16	28
08:00	*	*	99	121	110	139	92	115	88	99	7	13	4	5	67	82
09:00	*	*	18	22	12	28	15	20	11	27	7	15	5	15	11	21
10:00	*	*	14	14	15	17	12	18	14	16	10	18	4	10	12	16
11:00	*	*	30	24	31	28	26	28	28	25	20	11	16	13	25	22
12:00 PM	*	*	27	44	26	29	31	38	23	25	11	14	21	11	23	27
01:00	*	*	24	20	17	28	20	20	18	27	17	15	20	12	19	20
02:00	*	*	31	16	33	13	50	16	55	13	13	7	11	14	32	13
03:00	*	*	79	92	67	76	62	90	60	70	18	10	16	16	50	59
04:00	39	41	34	35	28	45	31	28	34	37	10	16	16	10	27	30
05:00	27	25	31	26	26	18	35	35	25	22	10	14	16	12	24	22
06:00	17	15	41	27	18	13	48	22	16	16	16	8	8	13	23	16
07:00	24	20	17	25	10	5	12	14	13	15	12	5	10	8	14	13
08:00	8	10	13	22	14	7	14	47	16	9	6	7	7	10	11	16
09:00	5	3	12	8	5	0	8	2	12	6	5	2	11	4	8	4
10:00	5	2	3	1	2	2	7	2	10	3	8	3	3	1	5	2
11:00	3	0	2	1	0	1	2	1	2	0	6	1	4	2	3	1
Lane	128	116	512	558	447	506	497	551	447	469	182	178	180	169	375	407
Day	244		1070		953		1048		916		360		349		782	
AM Peak	-	-	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	11:00	10:00	11:00	09:00	08:00	08:00
Vol.	-	-	99	121	110	139	92	115	88	99	20	18	16	15	67	82
PM Peak	16:00	16:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	16:00	12:00	15:00	15:00	15:00
Vol.	39	41	79	92	67	76	62	90	60	70	18	16	21	16	50	59

Weather: Sunny
 Serial Number: 27497
 Installed by Matt Clark
 Other Notes: None

OHM Advisors
 34000 Plymouth Road
 Livonia, MI 48150
Advancing Communities

Date Start: 02-May-16
 ForsythDr_Volume_05022016
 Forsyth Dr

Start Time	09-May-16		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo
12:00 AM	0	0	0	0	3	2	*	*	*	*	*	*	*	*	1	1
01:00	1	0	0	0	0	1	*	*	*	*	*	*	*	*	0	0
02:00	0	1	1	0	0	0	*	*	*	*	*	*	*	*	0	0
03:00	1	1	1	1	1	1	*	*	*	*	*	*	*	*	1	1
04:00	2	1	0	2	0	3	*	*	*	*	*	*	*	*	1	2
05:00	0	1	0	4	0	0	*	*	*	*	*	*	*	*	0	2
06:00	4	18	3	10	0	15	*	*	*	*	*	*	*	*	2	14
07:00	25	36	22	39	24	42	*	*	*	*	*	*	*	*	24	39
08:00	105	125	102	127	115	134	*	*	*	*	*	*	*	*	107	129
09:00	10	22	25	28	9	21	*	*	*	*	*	*	*	*	15	24
10:00	6	10	8	17	*	*	*	*	*	*	*	*	*	*	7	14
11:00	26	22	23	18	*	*	*	*	*	*	*	*	*	*	24	20
12:00 PM	28	33	31	38	*	*	*	*	*	*	*	*	*	*	30	36
01:00	11	20	14	19	*	*	*	*	*	*	*	*	*	*	12	20
02:00	39	15	39	11	*	*	*	*	*	*	*	*	*	*	39	13
03:00	77	71	67	89	*	*	*	*	*	*	*	*	*	*	72	80
04:00	23	38	26	24	*	*	*	*	*	*	*	*	*	*	24	31
05:00	32	25	32	15	*	*	*	*	*	*	*	*	*	*	32	20
06:00	18	9	28	26	*	*	*	*	*	*	*	*	*	*	23	18
07:00	9	8	24	7	*	*	*	*	*	*	*	*	*	*	16	8
08:00	14	7	18	24	*	*	*	*	*	*	*	*	*	*	16	16
09:00	5	1	5	6	*	*	*	*	*	*	*	*	*	*	5	4
10:00	4	2	5	4	*	*	*	*	*	*	*	*	*	*	4	3
11:00	2	1	4	1	*	*	*	*	*	*	*	*	*	*	3	1
Lane	442	467	478	510	152	219	0	0	0	0	0	0	0	0	458	496
Day	909		988		371		0	0	0	0	0	0	0		954	
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	-	-	-	-	-	-	-	-	08:00	08:00
Vol.	105	125	102	127	115	134	-	-	-	-	-	-	-	-	107	129
PM Peak	15:00	15:00	15:00	15:00	-	-	-	-	-	-	-	-	-	-	15:00	15:00
Vol.	77	71	67	89	-	-	-	-	-	-	-	-	-	-	72	80

Comb. Total	1153	2058	1324	1048	916	360	349	1736
ADT	ADT 996	AADT 996						