

VILLAGE OF LOMBARD

POLICE DEPARTMENT

Roy Newton Chief of Police

Thomas Wirsing Deputy Chief of Operations

Cyndy Velazquez Deputy Chief of Administrative Services

TO: Chief Newton

FROM: Sgt. Joe Menolascino #718

DATE: 04/16/2019

SUBJECT: 4 way stop sign at Elizabeth and Ethel

On March 21, 2018, Mayor Keith Giagnorio received a letter from a resident, Jake Netzley (406 W. Ethel) requesting a 4 way stop sign at the intersection of Elizabeth and Ethel. The intersection currently has stop signs on Ethel, for west and east bound traffic. Mr. Netzley feels that the intersection is dangerous. Mr. Netzley feels there is heavy traffic in the area and that a 4 way stop sign would reduce accidents.

I reviewed the request. I checked back to 2010 and found that there have been 0 accidents at the intersection of Elizabeth and Ethel. I also performed a traffic study for the intersection of Elizabeth and Ethel. The study was conducted between 4/8/2019-4/11/2019 for N/B and S/B traffic on Elizabeth.

RESULTS:

4/8/2019	284 vehicles	(N/B 91, S/B 193)
04/09/2019	481 vehicles	(N/B 165, S/B 316)
4/10/2019	368 vehicles	(N/B 143, S/B 225)
04/11/2019	413 vehicle	(N/B 160, S/B 253)

Total vehicles in 4 days 1546 (N/B 559, S/B 987)

RECOMMENDATION:

Certain volumes of traffic must be met on roadways. There are also a number of other factors involved, including the number of crashes at the intersection. With 0 accidents in 9 years and low traffic volume, I strongly recommend the intersection stay as a 2 way stop. I do not recommend a

630 / 873-4400 TDD: 630 / 620-5811 DEPT. FAX: 630 873.4496 INVESTIGATIONS FAX: 630 873.4444 235 E. Wilson Avenue Lombard, Illinois 60148





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4 way stop. Residents have been traveling thru the intersection for numerous years, and changing the intersection and people's driving behaviors may cause accidents.

In Mr. Netzley letter, he believes that 4 way stop signs are safer. A study was done by the Institute of Transportation Engineers along with Federal Highway Administration on stop signs. Unwarranted stop signs create problems at intersection and along roadways. I have highlighted important sections in the article (see attachment #1). Also, the Federal Highway Administration recommends a 2 way stop signs to road that are less traveled. This would be the case in this situation.

630 / 873-4400 TDD: 630 / 620-5811 DEPT. FAX: 630 873.4496 INVESTIGATIONS FAX: 630 873.4444 235 E. Wilson Avenue Lombard, Illinois 60148 406 W. Ethel Lombard, IL 60148

March 21 2019

Mayor Keith Giagnorio

Lombard, IL 60148

Dear Mayor Keith Giagnorio,

My name is Jake Netzley and I am a student from Glenbard East and I live in Lombard. I think that the intersection near Glenbard East, Elizabeth and Ethel, is dangerous and should be a four way stop instead of a two.

First of all, Accidents happen a lot in today's world. According to Insurance Institute for Highway Safety (IIHS), "70% of all accidents happen at one and two way stop signs". Four way stops are safer because everyone following the law must stop and check for obstacles. Another quote from IIHS is, "The most common situation we found was that a driver just didn't see the other vehicle coming, explains Richard Retting. This is how 44 percent of the crash-involved drivers who stopped explained what happened." That's why I think the village of Lombard should add two more stop signs to the intersection of Ethel and Elizabeth making it a four way stop. There is a large hill that you have to go over when driving down Elizabeth and a few feet at the top is the intersection. The hill makes it hard to see cars coming over the hill. Also the cars diving up the hill might have a hard time seeing pedestrians and other vehicles. There is a lot of people that walk home this way because this intersection is about three blocks from the school. All it would take for this to be fatal is some speeding while a student or pedestrian were crossing the street. It wouldn't cost much, each stop sign plus installation costs only costs 50 dollars. This intersection should be made a four way stops and might prevent future accidents and keep pedestrians safe.

To conclude, I believe that this intersection should become a four way stop. I hope you consider this opportunity to make Lombard a safer town. Thank you for spending time reading this letter. I look forward for your response.

Sincerely,

Sake Metzley

Jake Netzley



S/B ELIZABETH O ETHEL



· = STOP SIGNS

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U.S. Department of Transportation

Federal Highway Administration

1200 New Jersey Avenue, SE Washington, DC 20590 202-366-4000

Safety.

Intersection Safety Issue Briefs

Issue Brief 4

STOP Signs

November 2009 FHWA-SA-10-005

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Purpose of a STOP Sign

The STOP sign is a regulatory sign that is used when traffic is required to stop. It is a red octagon that has a white border and large white capital letters that read STOP. At multiway stop intersections, where all approaches are controlled by STOP signs, an "ALL WAY" plaque is required below the stop sign to inform the driver that the intersection is an "all-way" stop intersection. Flashing beacons are sometimes used to supplement STOP signs, especially in rural areas.



Figure 1: All Way Stop Sign

4/5/2019

⁷ The Manual on Uniform Traffic Control Devices (MUTCD) provides information on the design, application, and placement of STOP signs (R1-1). The purpose of STOP signs is to assign vehicular right of way at an intersection. If installed where warranted, STOP signs can be very effective. However, STOP signs can be an inconvenience to motorists and a potential safety issue and should only be used where warranted. STOP signs should not be used to control vehicle speeds.

Where Should a STOP Sign Be Installed?

STOP signs should be located where vehicles are required to stop, or as near to that point as possible. The sign may also be supplemented with a STOP line and/or the word STOP marked on the pavement as text.

Where there is a marked crosswalk, the STOP sign should be located approximately 4 feet in advance of the crosswalk line. A STOP sign shall be placed to the right of the lane it controls. Where there is a pattern of drivers missing the STOP sign on the intersection approach, placement of a supplementary STOP on the left-hand side of the roadway or in the median or overhead has been shown to reduce crashes. Where the visibility of the STOP sign on the intersection is insufficient to slow traffic and allow drivers to stop in ample time, placement of a STOP AHEAD symbol warning sign is required.

If two lanes of traffic exist on an approach, the STOP sign should be visible to each lane of traffic.

Under What Conditions Should a Two-Way STOP Control Be Installed?

Intersections should have one or more of the following conditions for a two-way STOP control to be installed:

- At an intersection of a minor and major road, where the application of the normal right-of-way-rule would be inappropriate.
- At a street entering a through highway or street.
- At an unsignalized intersection in a signalized area.
- At locations where high-speed traffic, restricted view, or crash records indicate a need for STOP sign control.

The advantage of a two-way stop is that the major traffic flows do not have to stop and thus incur almost no delay at the intersection (i.e., the majority of the through traffic does not have to stop).

Under What Conditions Should a Four-Way (Multiway) STOP Control Be Installed?

Four-way STOP control is often used at the intersection of two roadways that exhibit approximately equal traffic volumes. As with other traffic-control devices, installation of a multiway stop should be based on an engineering study. The following criteria, as described in the 2003 edition of the MUTCD, should be considered:

- A traffic signal is going to be installed and the intersection needs a temporary solution to control the traffic.
- At least five crashes have occurred at the intersection in a 12-month period that are susceptible to correction by STOP signs (crash reports should be analyzed to determine the probable cause of each crash).
- Minimum traffic and pedestrian volumes are as follows:
 - 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.
 - 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 if the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.

- The need to control vehicle/pedestrian conflicts exists near locations that generate high pedestrian volumes crossing the major street.
- A four-way STOP control is needed at locations where a road user, after stopping, cannot see conflicting traffic and is not able to safely negotiate the intersection unless conflicting cross traffic is also required to stop.
- An intersection of two residential neighborhood collector (through) streets of similar design and/or
 operating characteristics where multiway stop control would improve traffic operational characteristics of
 the intersection, and the minimum traffic and pedestrian volume requirements are satisfied.

Failure to Stop at Existing STOP Signs

Approximately 72 percent of fatal crashes occur at unsignalized intersections. Most often, the cause of the crash can be attributed to a driver failing to yield the right of way. When there is a history of drivers failing to heed STOP signs that are clearly visible, the following approaches could be considered:

- Install STOP AHEAD sign.
- · Increase size of STOP and STOP AHEAD signs.
- Install an additional STOP and/or STOP AHEAD sign on the left-hand side of the road or in the median
 on the left side of the approach.
- Install an overhead STOP sign.
- Install intersection illumination.
- Install a red reflective strip or post insert on the STOP sign post.
- Consider adding a flashing red beacon in conjunction with the STOP signs mounted either on top of the sign or on an overhead span wire or mast arm.
- Place actuated red flashing beacons (see MUTCD Section 4K.05) on the top of a STOP sign. A detector
 would be in the pavement in advance of STOP sign. As a vehicle approaches, the red beacons would begin
 to flash. This solution would address the driver expectancy problem and give more attention to the STOP
 sign.
- Under rural road conditions, install two sets of transverse rumble strips in the approach lane (one in advance of the STOP AHEAD sign and the other before the STOP sign). Consider installation of two additional sets of transverse rumble strips to supplement the first two locations.

Resources

Manual on Uniform Traffic Control Devices. Washington, DC, USA: Federal Highway Administration, 2003. Accessible via <u>http://mutcd.fhwa.dot.gov</u>.

A review of published research on multi-way stop intersections: http://www.ite.org/traffic/documents/AHA99B49.pdf.

Ellison, James W., P.E. Case Study: Failure to Stop at a Stop Sign: A Progressive Approach. http://www.ite.org/library/Intersection Safety/Ellison.pdf.

Neuman, Timothy R., R. Pfefer, K.L. Slack, K. Kennedy Hardy, D.W. Harwood, I.B. Potts, D.J. Torbic, and E.R. Kohlman Rabbani. NCHRP Report 500, Volume 5: *A Guide for Addressing Unsignalized Intersection Collisions*. Washington, DC: Transportation Research Board, 2003.

Intersection Safety Brief #8: Toolbox of Countermeasures and Their Potential Effectiveness to Make Intersections Safer. Federal Highway Administration/Institute of Transportation Engineers. Intersection Safety Issue Briefs - Safety | Federal Highway Administration



Federal Highway Administration Office of Safety

Page last modified on April 1, 2019



Myth vs Reality

Intersection Safety: Myth Versus Reality

Traffic engineering decisions about intersection safety are often the product of factors and relationships that are more complex than the casual observer may realize. In many cases, evaluating potential solutions to crash or violation problems may reveal aspects of intersection safety and effi-

ciency that are in conflict with one another. In reality, traffic engineers must always consider a balance between managing safety and improving intersection operations before making their final choice for intersection control.

The driving public has developed a number of misconceptions about traffic control solutions over the years. This brief attempts to expose some of those myths and shed light on the rationale behind certain traffic control decisions.

Myth 1: Installing signals always makes Intersections safer.

Reality:

The installation of unwarranted signals, or signals that operate improperly, can create situations where overall intersection congestion is increased, which in turn can create aggressive driving behavior.

When more complex signal phasing causes longer waiting times at intersections, both drivers and pedestrians tend to become impatient and violate red lights, or drivers are tempted to cut through neighborhood streets. This subjects local residents to a greater risk of collisions, worse congestion and more air and noise pollution.

Clearly traffic diversion to side streets is an undesirable side effect of long cycle lengths and congestion. This diverted traffic may increase risk on the side streets, but the cause of this increased safety risk should not be attributed to the new signal.

2



Over the years, a number of misconceptions about traffic-control solutions have become apparent. This briefing sheet attempts to shed some light on the rationale for why certain traffic-control decisions are appropriate and required.

Additional traffic safety measures are sometimes necessary to offset increased traffic and speeding through neighborhood streets. One way of improving waiting times at an intersection with a new signal is to make sure the minor street waiting times are less than they were before installation of the signal. This improvement will encourage motorists

> to use signals on main roads instead of neighborhood streets.

> On occasion, other traffic control options, such as stop control or the introduction of roundabouts can perform as well as, or even better than, signals in managing both vehicle and pedestrian traffic safety at inter-

sections. This is particularly true when signals are inappropriately placed at locations where traffic volume is relatively low. Intersections with signals that have very low traffic volumes tend to tempt drivers and pedestrians to violate that red light.

Myth 2: Having a stop sign is always better than no stop sign, OR, more stop signs are always safer than fewer stop signs.

Reality:

Unwarranted stop signs create problems at both the intersection and along the roadway by:

- Encouraging motorists to drive faster between intersections in order to save time. Placing stop signs on every low-volume local street promotes speeding between the stop signs as drivers try to offset the delays caused by stopping at every intersection;
- Encouraging violation of traffic laws. As the number of stop signs increase so that nearly every intersection has one, the rate of stop sign violations tends to increase;
- Encouraging the use of alternate routes. Placing too many stop signs in some areas



often causes traffic to use other neighborhood routes to avoid a sequence of intersections that may be controlled by stop signs; and

 Increasing the chance that drivers will disregard conflicting vehicle and pedestrian traffic, which raises the risk of collisions.



There is no evidence to indicate that stop signs decrease the overall speed of traffic. Impatient drivers view the additional delay caused by unwarranted stop signs as "lost time" to be made up by driving at higher speeds between stop signs.

Unwarranted stop signs breed contempt in motorists who tend to ignore them or only slow down without stopping. This can sometimes lead to tragic consequences.

Stop signs should never be installed as a routine, cure-all approach to curtall speeding, prevent collisions at intersections, or discourage traffic from entering a neighborhood. Stop signs should be installed only after an engineering study determines that there is a need. Stop signs are not a solution to intersection safety problems caused by poor sight distances and deficient road design.

Myth 3: Installing stop signs on all approaches (four-way stop) to an intersection will always result in fewer accidents.

Reality:

Four-way stop signs do not necessarily improve pedestrian or vehicle safety. In fact, pedestrians in stop sign-congested neighborhoods often have a false sense of security about crossing local streets

Intersection Safety is a National Priority

with four-way stop signs. The application of traffic control devices, to the casual observer, often creates this sense of security, but in reality may actually increase safety risk. If control devices are improperly applied, they can create confusion between the pedestrians and the driver as to who has the right-of-way, thereby increasing the risk that one of the two will make an improper decision resulting in serious consequences.

Placing four-way stop signs on roads of very unequal design, speed and traffic volume will tend to promote stop-sign violations by drivers, especially on main roads. Driver expectancies are violated in situations like this and when this occurs, improper actions result which can increase safety risk at intersections.

Placing four-way stop signs at every intersection where there were formerly only two-way stop signs also usually increases congestion. Four-way stop signs should only be considered after an engineering study and a capacity analysis are performed.

Generally, every State requires the installation of traffic control devices, including stop signs, to meet State standards of the department of transportation.

The State standards are based on the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD is the national standard for traffic control devices. It prescribes standards for the design, location, use and operation of traffic control devices. The MUTCD is located at the following Web site: http://mutcd.fhwa.dot.gov.

Myth 4: Signals are always better than stop signs.

Reality:

Installing stop signs instead of signals when there is no intersection traffic control, increasing the size or visibility of existing stop signs, or placing them in a better location often increases both vehicle and pedestrian safety without the initial expense and later maintenance costs of signals. While waiting for signals to qualify for installation, the substantial amount of money saved can be used to make roads safer. 10

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel and Elizabeth

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Speed	in Pace
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15:00	3	5	16	14	2	0	0	0	0	0	0	0	0	0	40	21-30	30
16:00	2	5	22	23	3	0	0	0	0	0	0	0	0	õ	55	21-30	45
17:00	1	5	24	25	2	0	0	0	0	n	0	0	0	0	57	21-30	49
18:00	1	6	24	13	1	1	õ	0	õ	ñ	0	0	0	0	46	21-30	37
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Total	10	29	129	99	15	1	1	0	0	0	0	0	0	0	284		
Percent	3.5%	10.2%	45.4%	34.9%	5.3%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak	15:00	18:00	17:00	17:00	16:00	18:00	14:00								17:00		
Vol.	3	6	24	25	3	1	1								57		

36.40 41-45

Page 1

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel and Elizabeth

Southbound,	Northboun	d															
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Speed	in Pace
04/09/19	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	14-23	1
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	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	2	0	0	0	0	0	0	0	0	0	0	0	3	15-24	3
05:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	9-18	1
06:00	1	1	5	7	0	0	0	0	0	0	0	0	0	0	14	21-30	12
07:00	1	3	20	13	3	0	0	0	0	0	0	0	0	0	40	21-30	33
08:00	2	6	16	9	2	0	0	0	0	0	0	0	0	0	35	21-30	25
09:00	2	7	7	1	0	0	0	0	0	0	0	0	0	0	17	16-25	14
10:00	0	1	9	4	0	0	0	0	0	0	0	0	0	0	14	21-30	13
11:00	4	4	9	10	0	0	0	0	0	0	0	0	0	0	27	21-30	19
12 PM	3	5	10	16	1	0	D	0	0	0	0	0	0	0	35	21-30	26
13:00	2	5	5	9	2	0	0	0	0	0	0	0	0	0	23	21-30	14
14:00	1	4	18	6	2	0	0	0	0	0	0	D	0	0	31	20-29	24
15:00	2	7	26	12	2	0	0	0	0	0	0	0	0	0	49	21-30	38
16:00	4	7	26	15	1	0	0	0	0	0	0	0	0	0	53	21-30	41
17:00	1	6	15	23	3	0	0	0	0	0	0	0	0	0	48	21-30	38
18:00	3	8	15	17	0	0	0	0	0	0	0	0	0	0	43	21-30	32
19:00	1	3	13	5	õ	0	0	0	0	0	Ő	0	0	õ	22	20-29	18
20:00	1	0	8	4	0	0	0	0	0	0	0	0	0	0	13	21-30	12
21:00	0	0	2	2	0	0	0	0	0	D	0	0	0	0	4	20-29	4
22:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	9-18	1
23:00	Ū.	0	2	0	0	0	0	a	0	0	0	õ	0	Ō	2	15-24	2
Total	28	70	209	157	17	0	0	0	0	0	0	0	0	0	481		
Percent	5.8%	14.6%	43.5%	32.6%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	07:00	07:00	07:00										07:00		
Vol.	4	7	20	13	3										40		
PM Peak	16:00	18:00	15:00	17:00	17:00										16:00		
Vol.	4	8	26	23	3										53		

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel and Elizabeth

Southbound.	Northboun	d					-					_					
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Speed	in Pace
04/10/19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	9-18	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	•	*
02:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	19-28	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	•	•
04:00	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3	14-23	2
05:00	0	4	0	2	0	0	0	0	0	0	0	0	0	0	6	11-20	4
06:00	0	2	6	3	0	0	0	0	0	0	0	0	0	0	11	19-28	9
07:00	0	3	23	18	4	0	0	0	0	0	0	0	0	0	48	21-30	41
08:00	0	6	9	9	2	0	0	0	0	0	0	0	0	0	26	21-30	18
09:00	0	0	8	3	0	0	0	0	0	0	0	0	0	0	11	21-30	11
10:00	2	1	2	2	0	0	0	0	0	0	0	0	0	0	7	19-28	4
11:00	1	3	9	11	3	1	0	0	0	0	0	0	0	0	28	21-30	20
12 PM	1	4	3	5	O	0	O	0	0	0	0	0	0	0	13	19-28	8
13:00	3	2	3	5	1	0	0	0	0	0	0	0	0	0	14	21-30	8
14:00	2	3	10	11	0	0	0	0	0	0	0	0	0	0	26	21-30	21
15:00	2	1	19	10	1	0	0	0	0	0	0	0	0	0	33	21-30	29
16:00	1	7	20	12	0	0	D	0	0	0	0	0	0	0	40	21-30	32
17:00	2	10	23	14	1	0	0	0	0	D	0	0	0	0	50	21-30	37
18:00	0	3	4	6	0	0	0	0	0	0	0	0	0	0	13	21-30	10
19:00	0	3	8	3	0	0	0	0	0	0	0	0	0	0	14	21-30	11
20:00	1	3	4	3	D	0	0	0	0	0	0	0	0	0	11	16-25	7
21:00	0	0	2	5	0	0	0	0	0	0	0	0	0	0	7	21-30	7
22:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15-24	2
23:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	20-29	2
Total	15	57	157	126	12	1	0	0	0	0	0	0	0	0	368		
Percent	4.1%	15.5%	42.7%	34.2%	3.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	08:00	07:00	07:00	07:00	11:00									07:00		
Vol.	2	6	23	18	4	1									48		
PM Peak	13:00	17:00	17:00	17:00	13:00										17:00		
Vol.	3	10	23	14	1										50		

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel and Elizabeth

Start 1 16 21 26 31 36 41 46 51 56 61 66 71 76 Pace Number Time 15 20 25 30 35 40 45 50 55 60 65 70 75 999 Total Speed in Pace 04/10/19 0<	Southbound.	Northboun	d															
Time 15 20 25 30 35 40 45 50 55 60 65 70 75 999 Total Speed in Pace 04/11/19 0	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		Pace	Number
04/11/19 0<	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Speed	in Pace
01:00 0 <td>04/11/19</td> <td>0</td> <td></td> <td>*</td>	04/11/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		*
02:00 0 <td>01:00</td> <td>0</td> <td>Ō</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>D</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td>	01:00	0	Ō	0	0	0	0	0	0	0	0	0	D	0	0	0		
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04:00 0 <td>03:00</td> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>D</td> <td>0</td> <td>D</td> <td>0</td> <td>0</td> <td>Ū.</td> <td>0</td> <td>0</td> <td>2</td> <td>14-23</td> <td>2</td>	03:00	0	1	1	0	0	0	D	0	D	0	0	Ū.	0	0	2	14-23	2
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07:00 1 4 26 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 0 0 0 0 0 0 0 0 0 0 1 1 1 1 0 <td>06:00</td> <td>2</td> <td>3</td> <td>9</td> <td>6</td> <td>2</td> <td>ñ</td> <td>0</td> <td>õ</td> <td>ñ</td> <td>õ</td> <td>õ</td> <td>ő</td> <td>0</td> <td>õ</td> <td>22</td> <td>21-30</td> <td>15</td>	06:00	2	3	9	6	2	ñ	0	õ	ñ	õ	õ	ő	0	õ	22	21-30	15
08:00 3 4 13 9 2 0 <td>07:00</td> <td>1</td> <td>4</td> <td>26</td> <td>26</td> <td>3</td> <td>1</td> <td>0</td> <td>ő</td> <td>Ő</td> <td>ñ</td> <td>0</td> <td>0</td> <td>0</td> <td>õ</td> <td>61</td> <td>21-30</td> <td>52</td>	07:00	1	4	26	26	3	1	0	ő	Ő	ñ	0	0	0	õ	61	21-30	52
09:00 0 3 2 0 1 1 18-27 5 1 1 1 0 0 0 0 0 0 0 1 1 18-27 5 1 1 1 1 0 0 0 0 0 0 0 1 1 18-27 5 1	08:00	3	4	13	q	2	0	0	ő	ő	0	Ő	0	ő	õ	31	21-30	22
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	14:00	1	3	20	20	0	1	1	u	U	0	0	0	0	0	40	21-30	40
	15:00	1	4	16	10	2	0	0	0	0	0	0	0	U	0	30	21-30	28
	16:00	1	4	20	19		U	0	0	0	0	0	U	0	0	45	21-30	39
	17:00	3	6	9	21	1	0	0	0	U	0	0	0	U	0	40	21-30	30
18:00 1 3 11 10 2 0 0 0 0 0 0 0 0 0 0 27 21-30 21	18:00	1	3	11	10	2	0	0	0	0	0	0	0	0	0	21	21-30	21
19:00 1 2 15 6 0 0 0 0 0 0 0 0 0 0 0 24 21-30 21	19:00	1	2	15	6	0	0	0	0	0	0	0	0	a	0	24	21-30	21
20:00 1 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 6 16-25 5	20:00	1	0	5	0	0	U	0	0	0	0	0	0	0	0	6	16-25	5
21:00	21:00					1 I I I I I I I I I I I I I I I I I I I	1.0											
22:00	22:00								5.									
23:00	23:00																	
Total 23 50 172 147 18 2 1 0 0 0 0 0 0 0 0 413	Total	23	50	172	147	18	2	1	0	0	0	0	0	0	0	413		
Percent 5.6% 12.1% 41.6% 35.6% 4.4% 0.5% 0.2% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	Percent	5.6%	12.1%	41.6%	35,6%	4.4%	0.5%	0,2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak 10:00 07:00 07:00 07:00 07:00 07:00 07:00 07:00	AM Peak	10:00	07:00	07:00	07:00	07:00	07:00									07:00		
Vol. 4 4 26 26 3 1 61	Vol.	4	4	26	26	3	1									61		
PM Peak 17:00 12:00 14:00 17:00 12:00 14:00 14:00 14:00 14:00	PM Peak	17:00	12:00	14:00	17:00	12:00	14:00	14:00								14:00		
Vol. 3 6 20 21 2 1 1 46	Vol.	3	6	20	21	2	1	1								46		
Total 76 206 667 529 62 4 2 0 0 0 0 0 0 0 1546	Total	76	206	667	529	62	4	2	0	0	0	0	0	0	0	1546		
Percent 4.9% 13.3% 43.1% 34.2% 4.0% 0.3% 0.1% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	Percent	4.9%	13.3%	43.1%	34.2%	4.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
75th Percentile: 18 MPH 50th Percentile: 23 MPH 85th Percentile: 28 MPH				50th Percen 50th Percen 85th Percen	itile : itile : itile :	23 MPH 28 MPH												
95th Percentile : 29 MPH				95th Percen	itile :	29 MPH												
Stats 10 MPH Pace Speed : 21-30 MPH	Stats		10 MP	H Pace Spe	eed :	21-30 MPH												
Percent in Pace 77.4%			P	ercent in Pa	ace :	77.4%												
Number of Vehicles > 30 MPH 68		Numb	her of Vehic	les > 30 M	PH	68												
Percent of Vehicles > 30 MPH 44%		Perce	ant of Vehic	les > 30 M	PH ·	4 4 %												
Mean Speed(Average): 24 MPH		1 0100	Mean S	peed(Avera	de):	24 MPH												

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel at Elizabeth

Start	08-Apr-19	Company of	241 A. S. 199	Combined		
Time	Mon	Southbound	Northbound	Total		
2:00 AM		*	*	*		
01:00		*	*	*		
02:00		*	*	*		
03:00		*	*	*		
04:00		*	*	*		
05:00		*	*	*		
06:00		*	*	*		
07:00		*	*	*		
08:00		*	*	*		
09:00		*	*	*		
10:00		*	*	*		
11:00		*	*	*		
12:00 PM		*	*	*		
01:00		*	*	*		
02:00		23	10	33		_
03:00		27	13	40		
04:00		37	18	55		
05:00		39	18	57		
06:00		28	18	46		
07:00		13	9	22		
08:00		11	2	13		
09:00		9	1	10		
10:00		4	1	5	100	÷.,
11:00		2	1	3		
Total		193	91	284		
Percent		68.0%	32.0%			

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel at Elizabeth

Start 09	-Apr-19	0	AT THE COURT	Combined	
Time	Tue	Southbound	Northbound	lotal	
12:00 AM		2	0	2	
01:00		1	0	1	
02:00		1	0	1	
03:00		0	0	0	
04:00		2	1	3	
05:00		1	1	2	
06:00		8	6	14	
07:00		24	16	40	
08:00		27	8	35	
09:00		14	3	17	
10:00		10	4	14	
11:00		17	10	27	
12:00 PM		20	15	35	1
01:00		13	10	23	
02.00		25	6	31	11
03:00		32	17	49	
04.00		34	19	53	
05:00		29	19	48	
06:00		24	19	43	
07:00		17	15	22	
07.00		17	5	12	The second second
00.00		9	4	13	
09:00		3	1	4	100
10:00		1	1	2	
11:00		2	0	2	
Total		316	165	481	
Percent		65.7%	34.3%		

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel at Elizabeth

Start 10-Apr-19		Sector Sector	Combined	
Time Wed	Southbound	Northbound	Total	
2:00 AM	1	0	1	
01:00	0	0	0	
02:00	2	0	2	
03:00	0	0	0	
04:00	2	1	3	
05:00	4	2	6	and the second
06:00	5	6	11	
07:00	32	16	48	
08:00	17	9	26	
09:00	4	7	11	
10:00	5	2	7	
11:00	16	12	28	Contraction of the local division of the loc
2:00 PM	8	5	13	
01:00	7	7	14	
02.00	16	10	26	
03:00	24	9	33	and the second se
04.00	27	13	40	
05:00	26	24	50	
06:00	5	8	13	
07:00	7	7	14	
08:00	10	1	11	In case of the local division of the local d
09.00	4	3	7	
10:00	4	1	2	
11:00	2	0	2	1 A A
Total	225	1/3	368	
Percent	61 1%	38 0%	500	

Date Start: 08-Apr-19 Date End: 11-Apr-19 Ethel at Elizabeth

Start	11-Apr-19	Charles - 1		Combined	
Time	Thu	Southbound	Northbound	Total	
12:00 AM		0	0	0	
01:00		0	0	0	
02:00		0	0	0	
03:00		1	1	2	
04:00		1	1	2	
05:00		4	3	7	
06:00		10	12	22	
07:00		36	25	61	
08:00		23	8	31	
09:00		4	1	5	
10:00		8	3	11	
11:00		5	10	15	And the second sec
12:00 PM		10	8	18	
01:00		11	5	16	
02:00		30	16	46	the second se
03:00		27	8	35	
04:00		29	16	45	
05:00		22	18	40	
06:00		15	12	27	
07:00		13	11	24	
08:00		4	2	6	and the second se
09:00		*	*	*	
10:00		*	*	*	
11:00		*	*	*	
Total		253	160	413	
Percent		61.3%	38.7%	101-3	
Grand Total		987	559		
Percentage		63.8%	36.2%		
ADT		ADT 438		AADT 438	