

All-Way Stop and Crosswalk Analysis
for
Vassar Avenue at Turtle Creek Boulevard
In the City of University Park, Texas

Prepared
for
University Park

June 9, 2016

By



Binkley & Barfield | C&P
consulting engineers



Cameron L. Williams, P.E., PTOE, PTP

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INTERIM REVIEW ONLY

This document is not for permit or construction.

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INTRODUCTION

The City of University Park acquired the services of Binkley & Barfield – C&P Inc. (BBCPI) to complete an all-way stop and crosswalk analysis of the Vassar Avenue at Turtle Creek Boulevard intersection. The *Texas Manual on Uniform Traffic Control Devices (TxMUTCD)* provides guidance on the evaluation of an all-way stop controlled intersection. The all-way stop analysis requires three pieces of information which include intersection volume data, crash history, and sight distance. Provided in the Appendix are the guidelines as outlined in the *TxMUTCD*. The crosswalk analysis looks at additional information including crossing distances and pedestrian volumes (when available). These pieces of information are presented and evaluated per the *TxMUTCD* as they relate to the study intersection.

EXISTING STUDY AREA TRAFFIC CONDITIONS

This study focuses on the west leg of Vassar Avenue and its intersection with Turtle Creek Boulevard. The study intersection falls within a developed residential neighborhood and is adjacent to Goar Park. Summarized below are the roadways and their characteristics.

Vassar Avenue is a north-south roadway with a speed limit of 30 mph and is 29 feet wide near its intersection with Turtle Creek Boulevard. Vassar Avenue intersects with Lovers Lane approximately 1,500 feet to the north of Turtle Creek Boulevard at a “T” intersection with the northbound approach of Vassar Avenue stop controlled. Southbound, Vassar splits into a “Y” configuration at its intersection with Turtle Creek Boulevard. The west and east legs of Vassar Avenue are approximately 330 feet apart. The southbound approach of Vassar Avenue’s west leg at Turtle Creek Boulevard is controlled by a yield sign while the southbound approach of Vassar Avenue’s east leg is controlled by a stop sign. “No Parking” signs are posted around the curb line of the park like area created between the west and east legs of Vassar Avenue.

Turtle Creek Boulevard is an east-west roadway with a speed limit of 30 mph and ranges from 36 to 41 feet wide. Turtle Creek Boulevard intersects with Hunters Glen Road approximately 550 feet to the west of Vassar Avenue at an all-way stop controlled intersection. Turtle Creek Boulevard intersects with Baltimore Drive approximately 660 feet to the east of the west leg of Vassar Avenue at a yield controlled intersection; Baltimore Drive is the yield controlled street.

Figure 1 shows the study area and the intersection traffic control devices discussed above.



**Figure 1. Existing Study Area
Traffic Conditions**

DFWMaps.com

DISCLAIMER

This data has been compiled for NCTCOG. Various official and unofficial sources were used to gather this information. Every effort was made to ensure the accuracy of this data, however, no guarantee is given or implied as to the accuracy of said data.



EXISTING TRAFFIC VOLUMES

Existing 24-hour tube counts were collected on each approach to the intersection on Wednesday, April 6, 2016. The existing traffic counts are provided in the Appendix. The *TxMUTCD* provides minimum volume thresholds to consider when evaluating the installation of an all-way stop control. Those thresholds are as follows:

- At least 300 vehicles per hour entering volume from both approaches of the major street for any 8 hours of an average day.
- At least 200 units per hour entering volume from both approaches of the minor street for the same 8 hours of an average day as the major street. The units per hour include vehicle, pedestrian, and bicycle volumes. For this study, only vehicular volumes were collected.

Table 1 provides a summary of the intersection volumes for the major and minor streets.

Table 1. Intersection Volumes

Time Period	Major Approach (vph)	Minor Approach (vph)
	Turtle Creek Boulevard	Vassar Avenue
12:00 - 01:00 AM	4	0
01:00 - 02:00 AM	2	0
02:00 - 03:00 AM	3	0
03:00 - 04:00 AM	1	0
04:00 - 05:00 AM	1	0
05:00 - 06:00 AM	15	2
06:00 - 07:00 AM	50	2
07:00 - 08:00 AM	355	9
08:00 - 09:00 AM	351	9
09:00 - 10:00 AM	209	12
10:00 - 11:00 AM	130	8
11:00 AM - 12:00 PM	226	10
12:00 - 01:00 PM	210	7
01:00 - 02:00 PM	200	8
02:00 - 03:00 PM	241	5
03:00 - 04:00 PM	462	10
04:00 - 05:00 PM	386	22
05:00 - 06:00 PM	411	36
06:00 - 07:00 PM	326	14
07:00 - 08:00 PM	179	2
08:00 - 09:00 PM	109	2
09:00 - 10:00 PM	72	1
10:00 - 11:00 PM	23	0
11:00 PM - 12:00 AM	14	0

Note: vph – vehicles per hour

As seen in **Table 1**, the volumes **do not meet** the thresholds as set by the *TxMUTCD* for consideration of an all-way stop controlled intersection. There are six hours where the major approach volumes are above required threshold of 300 vehicles per hour; however, the minor street approach volumes never rise above 36 vehicles per hour.

SPEED DATA

Speed data were gathered from the collected traffic volume information on Turtle Creek Boulevard. The 85th percentile speed for the eastbound direction was found to be **31 mph** while the westbound 85th percentile speed was found to be **32 mph**. The 85th percentile speed for both directions over the 24-hr period was found to be **31 mph**.

CRASH ANALYSIS

A request was made to the University Park Police Department for any reported crashes which have occurred within the past 24 months at the study intersection. The University Park Police Department analysis showed there had been no reported accidents at the intersection between April 8, 2014 and April 8, 2016.

SIGHT DISTANCE ANALYSIS

A field visit was completed to evaluate sight distances at the intersection of Vassar Avenue's west leg with Turtle Creek Boulevard. The southbound approach of Vassar Avenue to Turtle Creek Boulevard is skewed at angle close to 25 degrees. This angle can make it difficult for motorists to look back over their left shoulder to see approaching westbound traffic.

Sight distances for yield control approaches require a driver to see approaching traffic from a point 82 feet back from the intersection of the two streets. This results in larger visibility sight triangles. The park like features between the "Y" legs of Vassar Avenue restrict this sight distance and the desired sight triangles.

Sight distances for stop controlled approaches require a driver to be able to see approach traffic from a point 14.5 feet back from the intersection of the two streets. This results in a smaller visibility sight triangle. Even though there are some geometric and vegetation restrictions along Turtle Creek Boulevard, adequate sight distance for a stop controlled condition is available.

Based on the requirements for a stop control versus a yield condition it is recommended to change the traffic control from a yield sign to a stop sign for the southbound approach of Vassar Avenue at Turtle Creek Boulevard even though the crash analysis did not show a history of accidents at this intersection.

CROSSWALK TREATMENTS

TCRP Report 112/NCHRP Report 562 entitle “Improving Pedestrian Safety at Unsignalized Crossings” provides guidance on treatments for unsignalized crossings. Recommended data for determining crossing treatments include pedestrian volumes, vehicular volumes, crossing distances, crossing speeds, posted/85th percentile speeds, and assumed compliance (low or high). For Turtle Creek Boulevard, the following information was known or assumed:

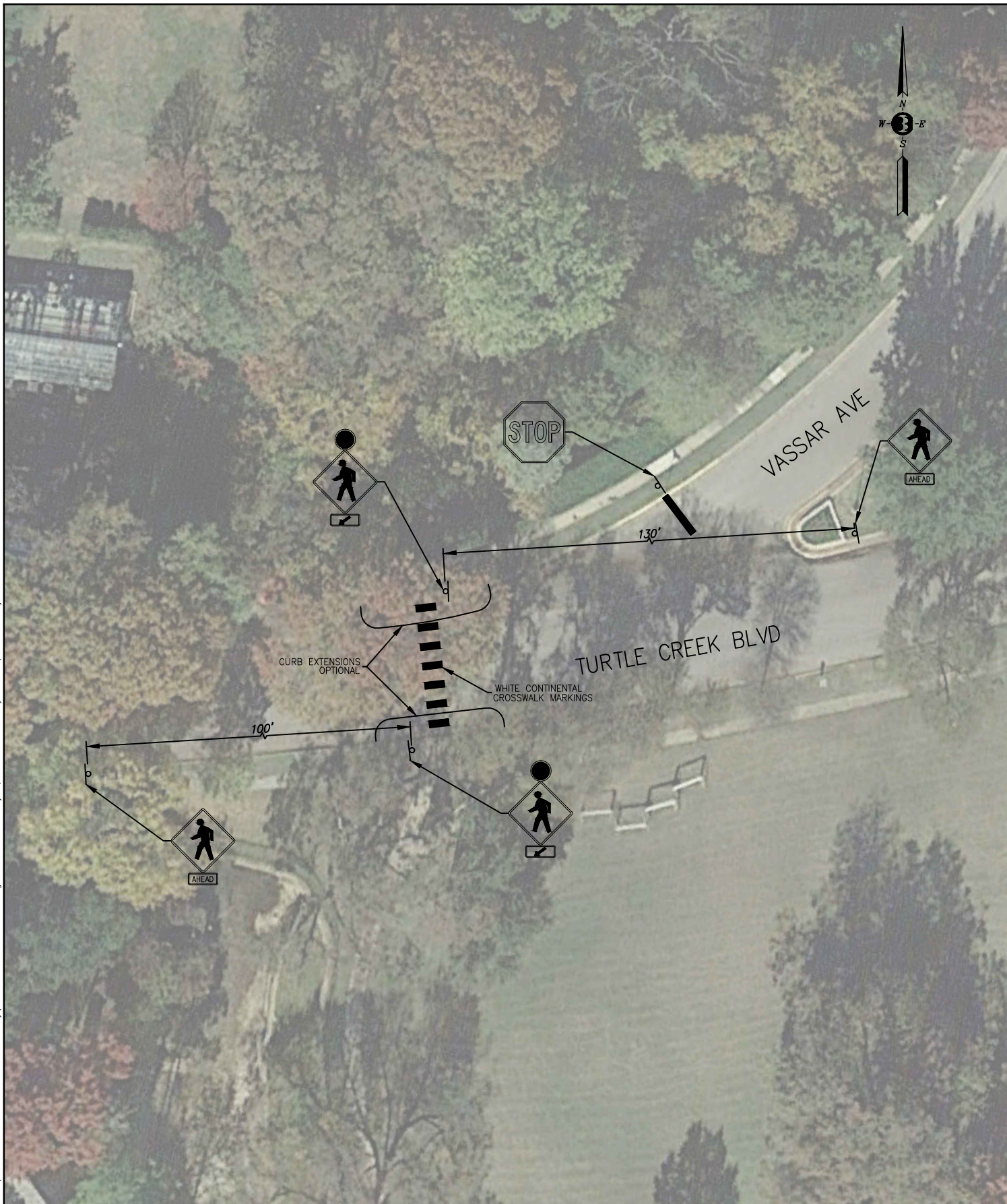
- Pedestrian Volumes in Peak Hour: 20 peds/hr (assumed, not counted)
- Peak Hour Vehicular Volumes: 411 vph (5 PM to 6 PM)
- Crossing Distance: 36 feet to 41 feet
- Crossing Speed: 3.5 feet per second
- 85th Percentile Speed: 31 mph
- Compliance: High (assumed)

Based on these assumptions, recommended treatments include marking a crosswalk and providing enhanced or active treatments. Treatments include median refuge islands, curb extensions, and other traffic calming measures if pedestrian volumes are less than 20 per hour. Specific treatments for this location include the following:

- Continental Crosswalk Markings.
- Pedestrian warning signs (W11-2) at the crosswalks with supplemental down arrow plaques (W16-7P) with fluorescent yellow-green signs to increase visibility.
- Pedestrian activated beacons. An alternative option would be pedestrian activated rectangular rapid flashing beacons.
- Pedestrian warning signs (W11-2) with supplemental “AHEAD” plaques (W16-9P) placed 100 feet in advance of the pedestrian warning signs at the crosswalk.

The City could also consider curb extensions at the crosswalks. Curb extensions would reduce crossing distances, make pedestrians more visible to motorists, and provide some protection to on-street parking near the park. Implementation would also have to still provide for positive drainage either around or through the curb extensions.

See **Figure 2** for a recommended installation and the Appendix for more information regarding advanced pedestrian warning signs.



TURTLE CREEK BOULEVARD CROSSWALK

Scale: NTS

Date: MAY 2016

Job No.: BC14026

Dwg. File: FIGURE 2



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RECOMMENDATIONS

Based on the results of the analyses and evaluations conducted, an all-way stop control intersection **is not warranted**. The vehicular volumes **do not meet** the thresholds as recommended in the *TxMUTCD* and there have been no reported vehicular accidents at this location within the past 24 months.

Based on sight distance requirements, it is recommended to change the yield control condition on the southbound approach of Vassar Avenue's west leg at Turtle Creek Boulevard to a stop control condition.

If the City desires to install a crosswalk on Turtle Creek Boulevard to serve Goar Park, the following installation measures are recommended based upon the conditions.

- Continental Crosswalk Markings
- Pedestrian warning signs (W11-2) at the crosswalks with supplemental down arrow plaques (W16-7P) with fluorescent yellow-green signs to increase visibility.
- Pedestrian activated beacons. An alternative option would be pedestrian activated rectangular rapid flashing beacons.
- Pedestrian warning signs (W11-2) with supplemental "AHEAD" plaques (W16-9P) placed 100 feet in advance of the pedestrian warning signs at the crosswalk

The most practical location for the crosswalk would be to align the crossing with the existing sidewalk extension on the south side of Turtle Creek Boulevard which runs along the west side of Goar Park. This provides a natural extension of the existing sidewalk system and crossing distances should be less than those further east.

Although not required, the city could consider curb extensions at the crosswalk location to further aid pedestrian crossings and on-street parking.

CLOSING

We have appreciated the opportunity to assist you in the preparation of this all-way stop control and crosswalk study in the City of University Park. Please do not hesitate to contact our office should you have any questions or comments concerning this report.

APPENDIX

TEXAS MUTCD INFORMATION5 PAGES

TRAFFIC COUNTS9 PAGES

PEDESTRIAN WARNING CROSSING SIGNS1 PAGE

- C. *Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported within a 2-year period.*

05 *YIELD or STOP signs should not be used for speed control.*

Support:

06 Section 2B.07 contains provisions regarding the application of multi-way STOP control at an intersection.

Guidance:

07 *Once the decision has been made to control an intersection, the decision regarding the appropriate roadway to control should be based on engineering judgment. In most cases, the roadway carrying the lowest volume of traffic should be controlled.*

08 *A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study.*

Support:

09 The following are considerations that might influence the decision regarding the appropriate roadway upon which to install a YIELD or STOP sign where two roadways with relatively equal volumes and/or characteristics intersect:

- A. Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
- B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and
- C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.

Standard:

10 **Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:**

- A. **If the signal indication for an approach is a flashing red at all times;**
- B. **If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or**
- C. **If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.**

11 **Except as provided in Section 2B.09, STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other.**

12 **Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.**

13 **A portable or part-time (folding) STOP sign that is manually placed into view and manually removed from view shall not be used during a power outage to control a signalized approach unless the maintaining agency establishes that the signal indication that will first be displayed to that approach upon restoration of power is a flashing red signal indication and that the portable STOP sign will be manually removed from view prior to stop-and-go operation of the traffic control signal.**

Option:

14 **A portable or part-time (folding) STOP sign that is electrically or mechanically operated such that it only displays the STOP message during a power outage and ceases to display the STOP message upon restoration of power may be used during a power outage to control a signalized approach.**

Support:

15 Section 9B.03 contains provisions regarding the assignment of priority at a shared-use path/roadway intersection.

Section 2B.05 STOP Sign (R1-1) and ALL WAY Plaque (R1-3P)

Standard:

01 **When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.**

02 **The STOP sign shall be an octagon with a white legend and border on a red background.**

03 **Secondary legends shall not be used on STOP sign faces.**

- 04 At intersections where all approaches are controlled by STOP signs (see Section 2B.07), an ALL WAY supplemental plaque (R1-3P) shall be mounted below each STOP sign. The ALL WAY plaque (see Figure 2B-1) shall have a white legend and border on a red background.
- 05 The ALL WAY plaque shall only be used if all intersection approaches are controlled by STOP signs.
- 06 Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.

Support:

- 07 The use of the CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque (and other plaques with variations of this word message) is described in Section 2C.59.

Guidance:

- 08 Plaques with the appropriate alternative messages of TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.

Option:

- 09 An EXCEPT RIGHT TURN (R1-10P) plaque (see Figure 2B-1) may be mounted below the STOP sign if an engineering study determines that a special combination of geometry and traffic volumes is present that makes it possible for right-turning traffic on the approach to be permitted to enter the intersection without stopping.

Support:

- 10 The design and application of Stop Beacons are described in Section 4L.05.

Section 2B.06 STOP Sign Applications

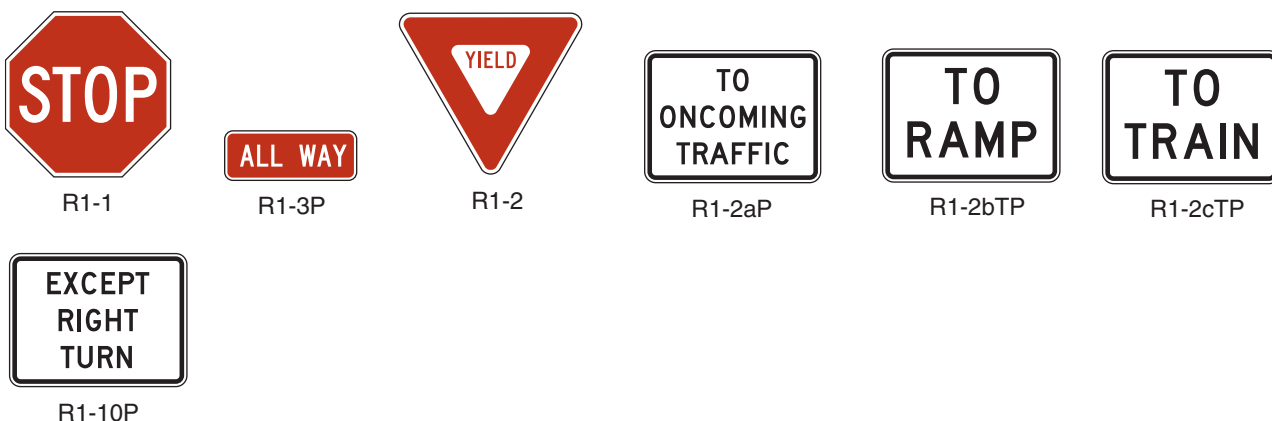
Guidance:

- 01 At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).
- 02 The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:
- A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;
 - B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or
 - C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.

Support:

- 03 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

Figure 2B-1. STOP and YIELD Signs and Plaques



Section 2B.07 Multi-Way Stop Applications

Support:

- 01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.
- 02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

- 03 *The decision to install multi-way stop control should be based on an engineering study.*
- 04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*
- A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
 - B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
 - C. *Minimum volumes:*
 1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
 - D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

- 05 Other criteria that may be considered in an engineering study include:
- A. The need to control left-turn conflicts;
 - B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
 - C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
 - D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Section 2B.08 YIELD Sign (R1-2)

Standard:

- 01 **The YIELD (R1-2) sign (see Figure 2B-1) shall be a downward-pointing equilateral triangle with a wide red border and the legend YIELD in red on a white background.**

Support:

- 02 The YIELD sign assigns right-of-way to traffic on certain approaches to an intersection. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Section 2B.09 YIELD Sign Applications

Option:

- 01 YIELD signs may be installed:
- A. On the approaches to a through street or highway where conditions are such that a full stop is not always required.
 - B. At the second crossroad of a divided highway, where the median width at the intersection is 30 feet or greater. In this case, a STOP or YIELD sign may be installed at the entrance to the first roadway of a divided highway, and a YIELD sign may be installed at the entrance to the second roadway.

- C. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.
- D. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.
- E. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.

Standard:

- 02 **A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.**
- 03 **Other than for all of the approaches to a roundabout, YIELD signs shall not be placed on all of the approaches to an intersection.**

Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:

- 01 **The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.**
- 02 **The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.**
- 03 **STOP signs and YIELD signs shall not be mounted on the same post.**
- 04 **No items other than inventory stickers, sign installation dates, and bar codes shall be affixed to the fronts of STOP or YIELD signs, and the placement of these items shall be in the border of the sign.**
- 05 **No items other than official traffic control signs, inventory stickers, sign installation dates, anti-vandalism stickers, and bar codes shall be mounted on the backs of STOP or YIELD signs.**
- 06 **No items other than retroreflective strips (see Section 2A.21) or official traffic control signs shall be mounted on the fronts or backs of STOP or YIELD signs supports.**

Guidance:

- 07 *STOP or YIELD signs should not be placed farther than 50 feet from the edge of the pavement of the intersected roadway (see Drawing F in Figure 2A-3).*
- 08 *A sign that is mounted back-to-back with a STOP or YIELD sign should stay within the edges of the STOP or YIELD sign. If necessary, the size of the STOP or YIELD sign should be increased so that any other sign installed back-to-back with a STOP or YIELD sign remains within the edges of the STOP or YIELD sign.*

Option:

- 09 *Where drivers proceeding straight ahead must yield to traffic approaching from the opposite direction, such as at a one-lane bridge, a TO ONCOMING TRAFFIC (R1-2aP) plaque may be mounted below the YIELD sign.*

Option:

- 10 *Where drivers proceeding straight ahead on the frontage road of a controlled access roadway must yield to traffic from a freeway exit ramp, where ramp traffic has the right-of-way, a TO RAMP (R1-2bTP) plaque (see Figure 2B-1) may be mounted below the YIELD sign.*

Support:

- 11 *Figure 2A-3 shows examples of some typical placements of STOP signs and YIELD signs.*
- 12 *Section 2A.16 contains additional information about separate and combined mounting of other signs with STOP or YIELD signs.*

Guidance:

- 13 *Stop lines that are used to supplement a STOP sign should be located as described in Section 3B.16. Yield lines that are used to supplement a YIELD sign should be located as described in Section 3B.16.*
- 14 *Where there is a marked crosswalk at the intersection, the STOP sign should be installed in advance of the crosswalk line nearest to the approaching traffic.*
- 15 *Except at roundabouts, where there is a marked crosswalk at the intersection, the YIELD sign should be installed in advance of the crosswalk line nearest to the approaching traffic.*
- 16 *Where two roads intersect at an acute angle, the STOP or YIELD sign should be positioned at an angle, or shielded, so that the legend is out of view of traffic to which it does not apply.*

- 17 *If a raised splitter island is available on the left-hand side of a multi-lane roundabout approach, an additional YIELD sign should be placed on the left-hand side of the approach.*

Option:

- 18 If a raised splitter island is available on the left-hand side of a single lane roundabout approach, an additional YIELD sign may be placed on the left-hand side of the approach.
- 19 At wide-throat intersections or where two or more approach lanes of traffic exist on the signed approach, observance of the right-of-way control may be improved by the installation of an additional STOP or YIELD sign on the left-hand side of the road and/or the use of a stop or yield line. At channelized intersections or at divided roadways separated by a median, the additional STOP or YIELD sign may be placed on a channelizing island or in the median. An additional STOP or YIELD sign may also be placed overhead facing the approach at the intersection to improve observance of the right-of-way control.

Standard:

- 20 **More than one STOP sign or more than one YIELD sign shall not be placed on the same support facing in the same direction.**

Option:

- 21 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5P) supplemental plaque (see Section 2C.40) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.

Section 2B.11 Yield Here To Pedestrians Signs (R1-5 and R1-5a)

Standard:

- 01 **Yield Here To Pedestrians (R1-5, R1-5a) signs (see Figure 2B-2) shall be used if yield lines are used in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach.**

Option:

- 02 The legend STATE LAW may be displayed at the top of the R1-5 and R1-5a, signs, if applicable.

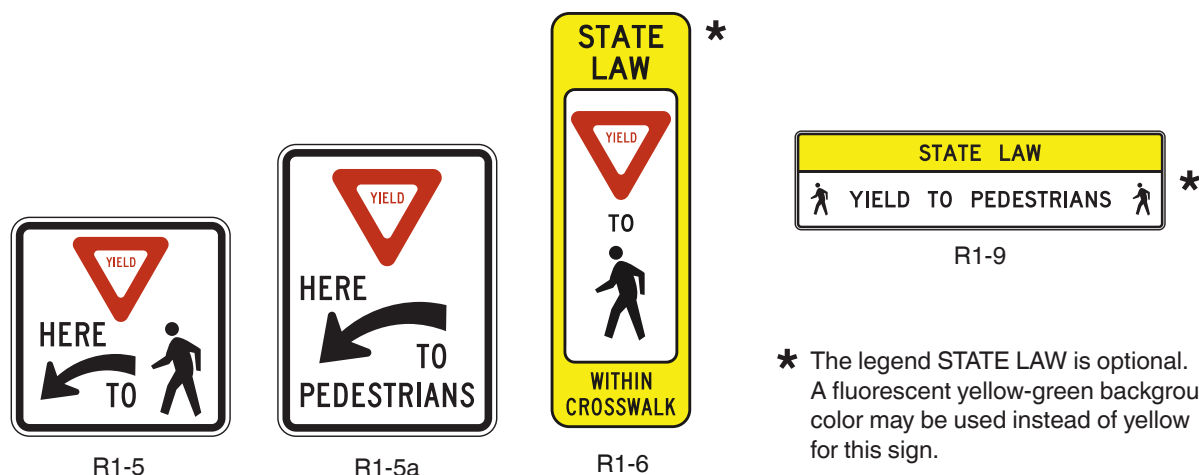
Guidance:

- 03 *If yield lines and Yield Here To Pedestrians signs are used in advance of a crosswalk that crosses an uncontrolled multi-lane approach, they should be placed 20 to 50 feet in advance of the nearest crosswalk line (see Section 3B.16 and Figure 3B-17), and parking should be prohibited in the area between the yield line and the crosswalk.*
- 04 *Yield lines and Yield Here To Pedestrians signs should not be used in advance of crosswalks that cross an approach to or departure from a roundabout.*

Option:

- 05 Yield Here To Pedestrians signs may be used in advance of a crosswalk that crosses an uncontrolled multi-lane approach to indicate to road users where to yield even if yield lines are not used.

Figure 2B-2. Unsignalized Pedestrian Crosswalk Signs



VASSAR AVE @ TURTLE CREEK BLVD - EB APPROACH

Start Date: 4/6/2016
 Start Time: 12:00:00 AM
 Site Code: 237

Date	Time	EB
4/6/2016	12:00 AM	3
4/6/2016	12:15 AM	1
4/6/2016	12:30 AM	0
4/6/2016	12:45 AM	0
4/6/2016	01:00 AM	1
4/6/2016	01:15 AM	1
4/6/2016	01:30 AM	0
4/6/2016	01:45 AM	0
4/6/2016	02:00 AM	1
4/6/2016	02:15 AM	0
4/6/2016	02:30 AM	1
4/6/2016	02:45 AM	0
4/6/2016	03:00 AM	1
4/6/2016	03:15 AM	0
4/6/2016	03:30 AM	0
4/6/2016	03:45 AM	0
4/6/2016	04:00 AM	0
4/6/2016	04:15 AM	0
4/6/2016	04:30 AM	1
4/6/2016	04:45 AM	0
4/6/2016	05:00 AM	1
4/6/2016	05:15 AM	1
4/6/2016	05:30 AM	2
4/6/2016	05:45 AM	2
4/6/2016	06:00 AM	0
4/6/2016	06:15 AM	4
4/6/2016	06:30 AM	8
4/6/2016	06:45 AM	8
4/6/2016	07:00 AM	11
4/6/2016	07:15 AM	25
4/6/2016	07:30 AM	46
4/6/2016	07:45 AM	62
4/6/2016	08:00 AM	52
4/6/2016	08:15 AM	29
4/6/2016	08:30 AM	32
4/6/2016	08:45 AM	30
4/6/2016	09:00 AM	36
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4/6/2016	10:15 AM	22
4/6/2016	10:30 AM	14
4/6/2016	10:45 AM	16
4/6/2016	11:00 AM	20
4/6/2016	11:15 AM	14
4/6/2016	11:30 AM	40
4/6/2016	11:45 AM	48
4/6/2016	12:00 PM	28

VASSAR AVE @ TURTLE CREEK BLVD - EB APPROACH

Start Date: 4/6/2016
Start Time: 12:00:00 AM
Site Code: 237

Date	Time	EB
4/6/2016	12:15 PM	38
4/6/2016	12:30 PM	16
4/6/2016	12:45 PM	30
4/6/2016	01:00 PM	22
4/6/2016	01:15 PM	29
4/6/2016	01:30 PM	20
4/6/2016	01:45 PM	36
4/6/2016	02:00 PM	40
4/6/2016	02:15 PM	30
4/6/2016	02:30 PM	39
4/6/2016	02:45 PM	54
4/6/2016	03:00 PM	43
4/6/2016	03:15 PM	34
4/6/2016	03:30 PM	132
4/6/2016	03:45 PM	118
4/6/2016	04:00 PM	82
4/6/2016	04:15 PM	60
4/6/2016	04:30 PM	74
4/6/2016	04:45 PM	54
4/6/2016	05:00 PM	66
4/6/2016	05:15 PM	80
4/6/2016	05:30 PM	73
4/6/2016	05:45 PM	68
4/6/2016	06:00 PM	72
4/6/2016	06:15 PM	72
4/6/2016	06:30 PM	46
4/6/2016	06:45 PM	28
4/6/2016	07:00 PM	28
4/6/2016	07:15 PM	40
4/6/2016	07:30 PM	22
4/6/2016	07:45 PM	18
4/6/2016	08:00 PM	25
4/6/2016	08:15 PM	19
4/6/2016	08:30 PM	13
4/6/2016	08:45 PM	16
4/6/2016	09:00 PM	14
4/6/2016	09:15 PM	14
4/6/2016	09:30 PM	14
4/6/2016	09:45 PM	9
4/6/2016	10:00 PM	1
4/6/2016	10:15 PM	4
4/6/2016	10:30 PM	2
4/6/2016	10:45 PM	0
4/6/2016	11:00 PM	3
4/6/2016	11:15 PM	1
4/6/2016	11:30 PM	1
4/6/2016	11:45 PM	2
Total:		2341

VASSAR AVE @ TURTLE CREEK BLVD - SB APPROACH

Start Date: 4/6/2016
Start Time: 12:00:00 AM
Site Code: 871

Date	Time	SB
4/6/2016	12:00 AM	0
4/6/2016	12:15 AM	0
4/6/2016	12:30 AM	0
4/6/2016	12:45 AM	0
4/6/2016	01:00 AM	0
4/6/2016	01:15 AM	0
4/6/2016	01:30 AM	0
4/6/2016	01:45 AM	0
4/6/2016	02:00 AM	0
4/6/2016	02:15 AM	0
4/6/2016	02:30 AM	0
4/6/2016	02:45 AM	0
4/6/2016	03:00 AM	0
4/6/2016	03:15 AM	0
4/6/2016	03:30 AM	0
4/6/2016	03:45 AM	0
4/6/2016	04:00 AM	0
4/6/2016	04:15 AM	0
4/6/2016	04:30 AM	0
4/6/2016	04:45 AM	0
4/6/2016	05:00 AM	0
4/6/2016	05:15 AM	0
4/6/2016	05:30 AM	2
4/6/2016	05:45 AM	0
4/6/2016	06:00 AM	0
4/6/2016	06:15 AM	0
4/6/2016	06:30 AM	1
4/6/2016	06:45 AM	1
4/6/2016	07:00 AM	4
4/6/2016	07:15 AM	0
4/6/2016	07:30 AM	2
4/6/2016	07:45 AM	3
4/6/2016	08:00 AM	4
4/6/2016	08:15 AM	1
4/6/2016	08:30 AM	0
4/6/2016	08:45 AM	4
4/6/2016	09:00 AM	2
4/6/2016	09:15 AM	5
4/6/2016	09:30 AM	0
4/6/2016	09:45 AM	5
4/6/2016	10:00 AM	1
4/6/2016	10:15 AM	4
4/6/2016	10:30 AM	1
4/6/2016	10:45 AM	2
4/6/2016	11:00 AM	0
4/6/2016	11:15 AM	1
4/6/2016	11:30 AM	2
4/6/2016	11:45 AM	7
4/6/2016	12:00 PM	2

VASSAR AVE @ TURTLE CREEK BLVD - SB APPROACH

Start Date: 4/6/2016

Start Time: 12:00:00 AM

Site Code: 871

Date	Time	SB
4/6/2016	12:15 PM	3
4/6/2016	12:30 PM	2
4/6/2016	12:45 PM	0
4/6/2016	01:00 PM	4
4/6/2016	01:15 PM	2
4/6/2016	01:30 PM	1
4/6/2016	01:45 PM	1
4/6/2016	02:00 PM	1
4/6/2016	02:15 PM	3
4/6/2016	02:30 PM	0
4/6/2016	02:45 PM	1
4/6/2016	03:00 PM	2
4/6/2016	03:15 PM	1
4/6/2016	03:30 PM	3
4/6/2016	03:45 PM	4
4/6/2016	04:00 PM	4
4/6/2016	04:15 PM	8
4/6/2016	04:30 PM	6
4/6/2016	04:45 PM	4
4/6/2016	05:00 PM	8
4/6/2016	05:15 PM	14
4/6/2016	05:30 PM	10
4/6/2016	05:45 PM	4
4/6/2016	06:00 PM	2
4/6/2016	06:15 PM	6
4/6/2016	06:30 PM	4
4/6/2016	06:45 PM	2
4/6/2016	07:00 PM	0
4/6/2016	07:15 PM	2
4/6/2016	07:30 PM	0
4/6/2016	07:45 PM	0
4/6/2016	08:00 PM	1
4/6/2016	08:15 PM	1
4/6/2016	08:30 PM	0
4/6/2016	08:45 PM	0
4/6/2016	09:00 PM	1
4/6/2016	09:15 PM	0
4/6/2016	09:30 PM	0
4/6/2016	09:45 PM	0
4/6/2016	10:00 PM	0
4/6/2016	10:15 PM	0
4/6/2016	10:30 PM	0
4/6/2016	10:45 PM	0
4/6/2016	11:00 PM	0
4/6/2016	11:15 PM	0
4/6/2016	11:30 PM	0
4/6/2016	11:45 PM	0
Total:		159

VASSAR AVE @ TURTLE CREEK BLVD - WB APPROACH

Start Date: 4/6/2016
 Start Time: 12:00:00 AM
 Site Code: 852

Date	Time	WB
4/6/2016	12:00 AM	0
4/6/2016	12:15 AM	0
4/6/2016	12:30 AM	0
4/6/2016	12:45 AM	0
4/6/2016	01:00 AM	0
4/6/2016	01:15 AM	0
4/6/2016	01:30 AM	0
4/6/2016	01:45 AM	0
4/6/2016	02:00 AM	1
4/6/2016	02:15 AM	0
4/6/2016	02:30 AM	0
4/6/2016	02:45 AM	0
4/6/2016	03:00 AM	0
4/6/2016	03:15 AM	0
4/6/2016	03:30 AM	0
4/6/2016	03:45 AM	0
4/6/2016	04:00 AM	0
4/6/2016	04:15 AM	0
4/6/2016	04:30 AM	0
4/6/2016	04:45 AM	0
4/6/2016	05:00 AM	0
4/6/2016	05:15 AM	4
4/6/2016	05:30 AM	4
4/6/2016	05:45 AM	1
4/6/2016	06:00 AM	1
4/6/2016	06:15 AM	5
4/6/2016	06:30 AM	9
4/6/2016	06:45 AM	15
4/6/2016	07:00 AM	21
4/6/2016	07:15 AM	44
4/6/2016	07:30 AM	73
4/6/2016	07:45 AM	73
4/6/2016	08:00 AM	72
4/6/2016	08:15 AM	44
4/6/2016	08:30 AM	41
4/6/2016	08:45 AM	51
4/6/2016	09:00 AM	38
4/6/2016	09:15 AM	29
4/6/2016	09:30 AM	20
4/6/2016	09:45 AM	26
4/6/2016	10:00 AM	17
4/6/2016	10:15 AM	12
4/6/2016	10:30 AM	14
4/6/2016	10:45 AM	17
4/6/2016	11:00 AM	23
4/6/2016	11:15 AM	19
4/6/2016	11:30 AM	36
4/6/2016	11:45 AM	26
4/6/2016	12:00 PM	25

VASSAR AVE @ TURTLE CREEK BLVD - WB APPROACH

Start Date: 4/6/2016
 Start Time: 12:00:00 AM
 Site Code: 852

Date	Time	WB
4/6/2016	12:15 PM	28
4/6/2016	12:30 PM	20
4/6/2016	12:45 PM	25
4/6/2016	01:00 PM	18
4/6/2016	01:15 PM	16
4/6/2016	01:30 PM	28
4/6/2016	01:45 PM	31
4/6/2016	02:00 PM	13
4/6/2016	02:15 PM	27
4/6/2016	02:30 PM	17
4/6/2016	02:45 PM	21
4/6/2016	03:00 PM	20
4/6/2016	03:15 PM	36
4/6/2016	03:30 PM	41
4/6/2016	03:45 PM	38
4/6/2016	04:00 PM	37
4/6/2016	04:15 PM	31
4/6/2016	04:30 PM	22
4/6/2016	04:45 PM	26
4/6/2016	05:00 PM	36
4/6/2016	05:15 PM	31
4/6/2016	05:30 PM	32
4/6/2016	05:45 PM	25
4/6/2016	06:00 PM	26
4/6/2016	06:15 PM	33
4/6/2016	06:30 PM	24
4/6/2016	06:45 PM	25
4/6/2016	07:00 PM	21
4/6/2016	07:15 PM	19
4/6/2016	07:30 PM	15
4/6/2016	07:45 PM	16
4/6/2016	08:00 PM	9
4/6/2016	08:15 PM	15
4/6/2016	08:30 PM	7
4/6/2016	08:45 PM	5
4/6/2016	09:00 PM	6
4/6/2016	09:15 PM	5
4/6/2016	09:30 PM	4
4/6/2016	09:45 PM	6
4/6/2016	10:00 PM	5
4/6/2016	10:15 PM	5
4/6/2016	10:30 PM	3
4/6/2016	10:45 PM	3
4/6/2016	11:00 PM	2
4/6/2016	11:15 PM	4
4/6/2016	11:30 PM	1
4/6/2016	11:45 PM	0
		1639

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

VASSAR AVE @ TURTLE CREEK BLVD - SPEED WITH 4 SEC FILTER

Site Code: 852

Date Start: 06-Apr-16

EB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
04/06/16	1	0	0	0	0	1	1	0	1	0	0	0	0	0	4	34	35
01:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	29	29
02:00	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2	37	37
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	25	25
04:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	31	31
05:00	0	0	1	2	0	1	0	0	0	0	0	0	0	0	4	28	29
06:00	4	3	2	1	1	1	1	2	2	2	0	0	0	0	19	35	37
07:00	28	36	24	10	4	6	3	1	1	1	0	0	0	0	114	25	30
08:00	17	21	14	18	18	11	10	1	0	1	0	0	0	0	111	29	31
09:00	12	5	7	10	11	10	8	4	5	1	0	0	0	0	73	31	34
10:00	8	5	6	6	7	10	4	7	3	1	0	0	0	0	57	32	34
11:00	6	11	15	13	15	8	8	9	3	0	2	0	0	0	90	32	34
12 PM	6	6	7	11	12	14	7	5	5	1	0	0	0	0	74	31	34
13:00	5	7	14	12	9	14	13	5	4	2	0	0	0	0	85	31	34
14:00	7	8	14	12	17	17	15	12	6	1	1	0	0	0	110	32	34
15:00	14	17	35	53	30	26	19	14	4	2	0	0	0	0	214	30	33
16:00	14	17	37	24	18	16	20	10	3	1	0	0	0	0	160	31	33
17:00	36	27	29	41	15	27	16	1	0	1	0	0	0	0	193	29	31
18:00	10	15	19	18	16	16	12	12	4	3	0	0	0	0	125	32	34
19:00	1	1	10	5	4	8	12	1	4	3	1	0	1	0	51	34	37
20:00	6	4	6	5	7	9	7	5	3	0	0	1	0	0	53	32	34
21:00	3	6	4	4	4	1	10	4	1	1	1	0	0	0	39	32	36
22:00	2	3	4	5	5	8	8	0	2	0	0	0	0	0	37	31	34
23:00	2	1	3	3	2	2	3	2	1	0	0	1	0	0	20	33	40
Total	182	194	251	255	195	207	178	95	52	22	5	2	1	0	1639		
Percent	11.1%	11.8%	15.3%	15.6%	11.9%	12.6%	10.9%	5.8%	3.2%	1.3%	0.3%	0.1%	0.1%	0.0%			
AM Peak	07:00	07:00	07:00	08:00	08:00	08:00	08:00	11:00	09:00	06:00	11:00				07:00		
Vol.	28	36	24	18	18	11	10	9	5	2	2				114		
PM Peak	17:00	17:00	16:00	15:00	15:00	17:00	16:00	15:00	14:00	18:00	14:00	20:00	19:00		15:00		
Vol.	36	27	37	53	30	27	20	14	6	3	1	1	1		214		
Total	182	194	251	255	195	207	178	95	52	22	5	2	1	0	1639		
Percent	11.1%	11.8%	15.3%	15.6%	11.9%	12.6%	10.9%	5.8%	3.2%	1.3%	0.3%	0.1%	0.1%	0.0%			

15th Percentile : 20 MPH
50th Percentile : 25 MPH
85th Percentile : 31 MPH
95th Percentile : 34 MPH

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 1102
Percent in Pace : 67.2%
Number of Vehicles > 55 MPH : 0
Percent of Vehicles > 55 MPH : 0.0%
Mean Speed(Average) : 25 MPH

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

VASSAR AVE @ TURTLE CREEK BLVD - SPEED WITH 4 SEC FILTER

Site Code: 852

Date Start: 06-Apr-16

WB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
04/06/16	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	1	0	0	0	0	0	0	0	0	0	0	0	0	1	21	21
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	3	0	0	1	1	0	1	0	2	0	1	0	0	9	37	41
06:00	3	2	5	3	5	5	4	2	0	0	0	0	0	0	29	30	32
07:00	14	27	29	29	20	19	19	7	4	0	1	0	0	0	169	30	33
08:00	16	25	18	18	26	21	18	13	6	2	1	0	0	0	164	31	34
09:00	4	7	11	11	4	22	12	18	5	3	2	0	0	0	99	33	36
10:00	4	5	5	11	8	10	2	3	4	3	1	2	0	0	58	34	38
11:00	5	12	12	10	12	14	11	14	4	2	2	0	0	0	98	33	35
12 PM	5	6	14	12	9	15	6	8	5	3	0	1	0	0	84	33	35
13:00	9	5	14	9	8	18	12	9	8	1	0	0	0	0	93	32	35
14:00	1	10	13	17	8	12	10	8	9	4	0	0	0	0	92	33	35
15:00	3	13	27	25	11	12	12	7	10	0	2	0	0	0	122	32	35
16:00	10	9	7	9	8	7	6	4	4	2	0	0	2	21	89	32	36
17:00	69	6	6	5	1	4	3	5	2	4	3	2	3	11	124	32	39
18:00	40	1	1	0	0	0	0	0	0	0	0	0	0	0	42	17	19
19:00	16	2	1	1	0	0	1	0	0	0	0	0	0	0	21	21	25
20:00	22	0	0	0	0	0	0	0	0	0	0	0	1	0	23	17	19
21:00	4	0	2	0	1	0	1	0	0	0	0	0	0	0	8	27	31
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
Total	225	134	165	160	122	160	117	99	61	26	12	6	6	32	1325		
Percent	17.0%	10.1%	12.5%	12.1%	9.2%	12.1%	8.8%	7.5%	4.6%	2.0%	0.9%	0.5%	0.5%	2.4%			
AM Peak	08:00	07:00	07:00	07:00	08:00	09:00	07:00	09:00	08:00	09:00	09:00	10:00			07:00		
Vol.	16	27	29	29	26	22	19	18	6	3	2	2			169		
PM Peak	17:00	15:00	15:00	15:00	15:00	13:00	13:00	13:00	15:00	14:00	17:00	17:00	17:00	16:00	17:00		
Vol.	69	13	27	25	11	18	12	9	10	4	3	2	3	21	124		
Total	225	134	165	160	122	160	117	99	61	26	12	6	6	32	1325		
Percent	17.0%	10.1%	12.5%	12.1%	9.2%	12.1%	8.8%	7.5%	4.6%	2.0%	0.9%	0.5%	0.5%	2.4%			

15th Percentile : 17 MPH
50th Percentile : 25 MPH
85th Percentile : 32 MPH
95th Percentile : 35 MPH

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 741
Percent in Pace : 57.3%
Number of Vehicles > 55 MPH : 0
Percent of Vehicles > 55 MPH : 0.0%
Mean Speed(Average) : 25 MPH

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

VASSAR AVE @ TURTLE CREEK BLVD - SPEED WITH 4 SEC FILTER

Site Code: 852

Date Start: 06-Apr-16

EB, WB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
04/06/16	1	0	0	0	0	1	1	0	1	0	0	0	0	0	4	34	35
01:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	29	29
02:00	0	1	0	1	0	0	0	0	0	1	0	0	0	0	3	37	37
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	25	25
04:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	31	31
05:00	0	3	1	2	1	2	0	1	0	2	0	1	0	0	13	37	40
06:00	7	5	7	4	6	6	5	4	2	2	0	0	0	0	48	32	35
07:00	42	63	53	39	24	25	22	8	5	1	1	0	0	0	283	29	32
08:00	33	46	32	36	44	32	28	14	6	3	1	0	0	0	275	30	33
09:00	16	12	18	21	15	32	20	22	10	4	2	0	0	0	172	33	35
10:00	12	10	11	17	15	20	6	10	7	4	1	2	0	0	115	33	36
11:00	11	23	27	23	27	22	19	23	7	2	4	0	0	0	188	32	35
12 PM	11	12	21	23	21	29	13	13	10	4	0	1	0	0	158	32	35
13:00	14	12	28	21	17	32	25	14	12	3	0	0	0	0	178	32	35
14:00	8	18	27	29	25	29	25	20	15	5	1	0	0	0	202	33	35
15:00	17	30	62	78	41	38	31	21	14	2	2	0	0	0	336	31	34
16:00	24	26	44	33	26	23	26	14	7	3	0	0	2	21	249	31	34
17:00	105	33	35	46	16	31	19	6	2	5	3	2	3	11	317	29	33
18:00	50	16	20	18	16	16	12	12	4	3	0	0	0	0	167	30	33
19:00	17	3	11	6	4	8	13	1	4	3	1	0	1	0	72	31	36
20:00	28	4	6	5	7	9	7	5	3	0	0	1	1	0	76	31	34
21:00	7	6	6	4	5	1	11	4	1	1	1	0	0	0	47	31	35
22:00	2	3	4	5	5	8	8	0	2	0	0	0	0	0	37	31	34
23:00	2	1	3	3	2	2	3	2	1	0	0	1	0	0	20	33	40
Total	407	328	416	415	317	367	295	194	113	48	17	8	7	32	2964		
Percent	13.7%	11.1%	14.0%	14.0%	10.7%	12.4%	10.0%	6.5%	3.8%	1.6%	0.6%	0.3%	0.2%	1.1%			
AM Peak	07:00	07:00	07:00	07:00	08:00	08:00	08:00	11:00	09:00	09:00	11:00	10:00			07:00		
Vol.	42	63	53	39	44	32	28	23	10	4	4	2			283		
PM Peak	17:00	17:00	15:00	15:00	15:00	15:00	15:00	15:00	14:00	14:00	17:00	17:00	17:00	16:00	15:00		
Vol.	105	33	62	78	41	38	31	21	15	5	3	2	3	21	336		
Total	407	328	416	415	317	367	295	194	113	48	17	8	7	32	2964		
Percent	13.7%	11.1%	14.0%	14.0%	10.7%	12.4%	10.0%	6.5%	3.8%	1.6%	0.6%	0.3%	0.2%	1.1%			

15th Percentile : 20 MPH
50th Percentile : 25 MPH
85th Percentile : 31 MPH
95th Percentile : 34 MPH

Stats
10 MPH Pace Speed : 21-30 MPH
Number in Pace : 1843
Percent in Pace : 62.9%
Number of Vehicles > 55 MPH : 0
Percent of Vehicles > 55 MPH : 0.0%
Mean Speed(Average) : 25 MPH

PEDESTRIAN CROSSING WARNING SIGNS

Description:

- A pedestrian warning sign (W11-2) along with supplemental plaque may be placed 100 to 200 feet in advance of crosswalk to warn drivers of the potential presence of pedestrians.

Applications:

- Can be used in advanced of pedestrian crossings to provide additional warning to motorists of the crossing ahead

Design/Installation Issues:

- Can be placed at an intersection or midblock
- Need to be placed to provide adequate time for motorists to react to the potential conditions.

Potential Impacts:

- Too many signs can result in motorists not paying attention to the signs



W11-2



W16-9P



W16-7P