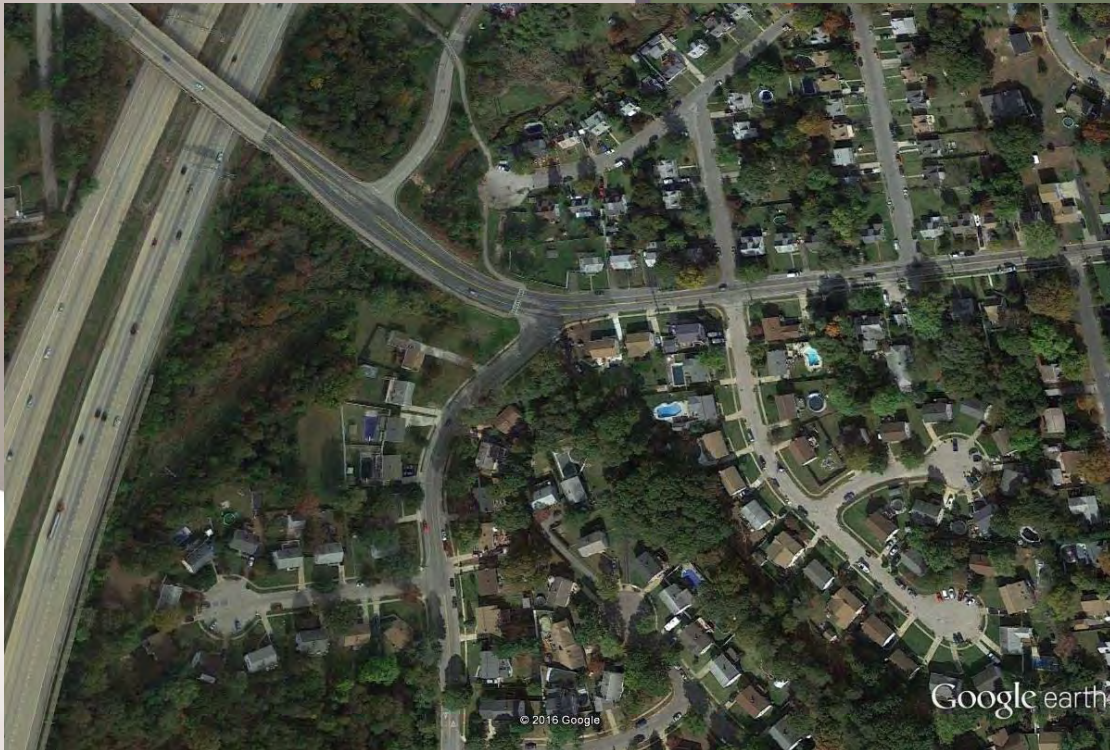




NOVEMBER 2016

INTERSECTION STUDY



STEWART AVENUE AT OLD STAGE ROAD

GLEN BURNIE,
MARYLAND

ANNE ARUNDEL COUNTY
CONTRACT No. H539608

PREPARED BY:



EXECUTIVE SUMMARY

As requested by Anne Arundel County, Wallace Montgomery is providing the results of a comprehensive traffic and safety analysis for the intersection of Stewart Avenue and Old Stage Road.

There are operational and safety concerns with the current roadway configuration. On the west side of the intersection, there is a crosswalk to aid users of the BWI Trail/John Overstreet Connector pedestrian and bike path to cross Stewart Avenue. The curvature of Stewart Avenue makes westbound left-turning vehicles as well as turning vehicles from Old Stage Road difficult. This issue, coupled with excessive speeds seen along the corridor provide safety concerns. Despite the installation of a speed bump about 450 feet to the east of the intersection, speeds along Stewart Avenue on average are approximately 10 MPH over the posted speed limits.

Currently, there are no capacity issues at the intersection with all movements operating at a level of service of LOS B or better. Similarly, when assuming for a 2% annual traffic growth rate, the traffic volumes for a design year of 2025 indicate that there will again be no capacity issues at this intersection. In 2025, the northbound morning peak hour will degrade slightly to an LOS C, which is still considered acceptable, while all other movements remain at an LOS B or better.

Four proposed intersection improvement were evaluated to determine the feasibility of improving the capacity and safety of the intersection.

Alternative 1: All-Way Stop, both with and without the existing eastbound right-turn lane.

Alternative 2: Signalized Control

Alternative 3: Roundabout

Alternative 4: Removal of eastbound right-turn lane and traffic calming measures

Under Alternative 1, while capacity is not significantly reduced along Stewart Avenue, and while safety for vehicles as well as pedestrians could be increased, an all-way stop is not warranted. Similarly, Alternative 2 is not recommended for this intersection as it does not pass any of the nine MUTCD traffic signal warrants.

Overall, the installation of a roundabout is the best alternative in terms of improving capacity, while also reducing vehicular speeds through the neighborhoods and the number and severity of crashes that occur at the intersection. Under Alternative 3, there are no capacity issues as every approach operates at LOS A during both peak hours. Alternative 4 is another viable option as it reduces the distance pedestrians would need to cross Stewart Avenue as well as slowing some eastbound traffic at the intersection. A possible option with this alternative would be to construct a pedestrian refuge island in the middle of the crosswalk. Alternatives 3 and 4 should be pursued for further review with concept plans.

A short-term solution to improving pedestrian and bicycle safety is to install hiker/biker warning and regulatory signs at and in advance of the crosswalk to keep drivers alert of the impending crossing. In addition, the crosswalk pavement markings should be updated along with complete removal of old pavement markings.

Conceptual plans were developed to illustrate four potential options for intersection improvement:

- Standard Roundabout (130' Inscribed Diameter Circle)
- Mini-Roundabout (75' Inscribed Diameter Circle)
- Traffic Calming Measures
- "No Build" option with signing and markings only

Stewart Avenue and Old Stage Road Intersection Study

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A. INTRODUCTION

As requested by Anne Arundel County, Wallace Montgomery is providing the results of a comprehensive traffic and safety analysis for the intersection of Stewart Avenue and Old Stage Road. Citizens have had concerns about safety at the intersection and have observed safety issues at the intersection, necessitating a full study of the intersection.

B. EXISTING CONDITIONS

1. Intersection Location

The Stewart Avenue at Old Stage Road intersection is located in the Glen Burnie area of Anne Arundel County, Maryland. The intersection is located just east of I-97 although there is no access to or from the freeway directly from either roadway. Access to I-97 is via MD 176 (Dorsey Road). Stewart Avenue is approximately one mile long and runs east-to-west. It begins at 4th Avenue Southwest and turns into Aviation Boulevard (MD 162) at the intersection with Dorsey Road. Old Stage Road is about half a mile long and runs north-to-south. From the south, Thelma Avenue becomes Old Stage Road, while at the north end, Old Stage Road terminates at Stewart Avenue. The intersection's location is shown in **Figure 1**.

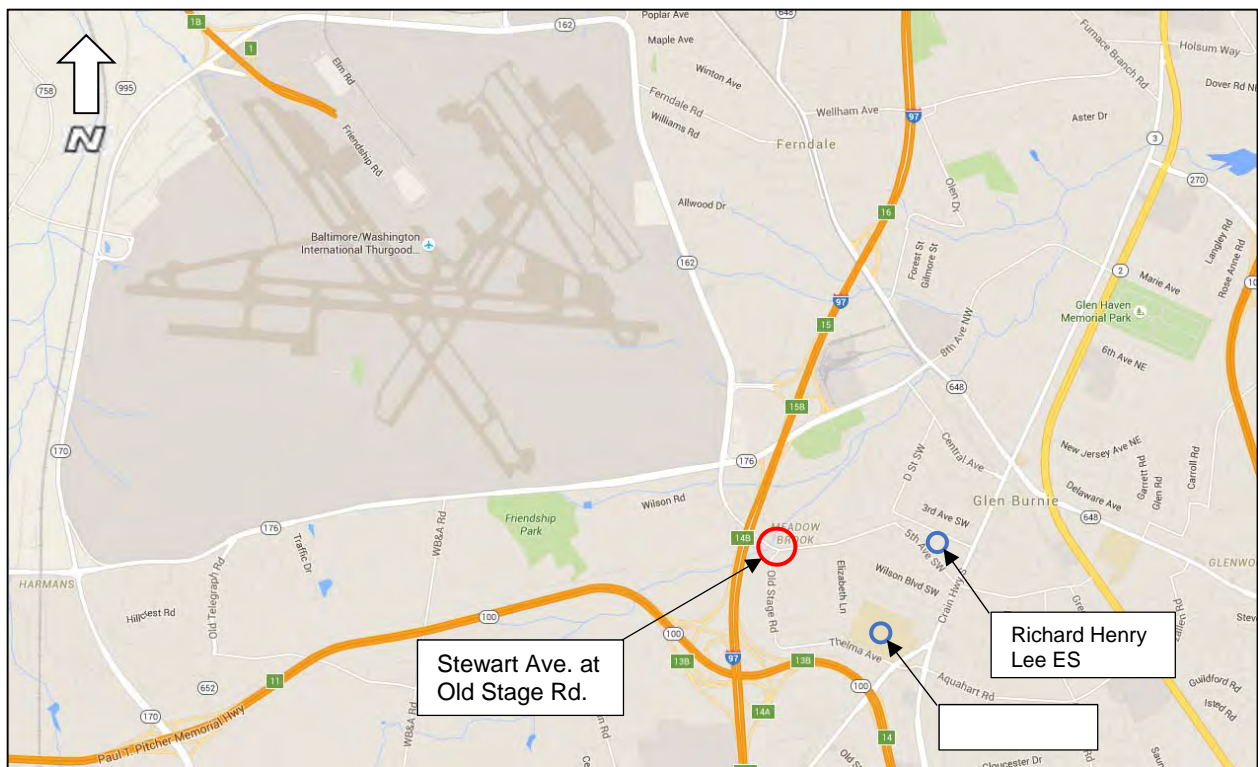


Figure 1 - Study Location

The area surrounding the intersection is primarily residential. About half a mile northwest of the study location along Stewart Avenue is the Baltimore/Washington International Thurgood Marshall Airport property. Access to the parking lots, terminals, private aviation terminals, and transportation freight areas of the airport though are located over two miles away from the study intersection. In addition to the airport, a church, middle school, elementary school, and an SHA maintenance facility also are nearby.

Corkran Middle School is located along Thelma Avenue, approximately $\frac{3}{4}$ mile southeast of the study intersection. Access to the school is from Old Stage Road, which turns into Thelma Avenue, and Elizabeth Lane from Stewart Avenue; however sidewalk is not continuous to the school along either route.

Richard Henry Elementary School is located along A Street, between 4th Street and 5th Street approximately $\frac{3}{4}$ mile east of the study intersection. Access to the school is from Stewart Avenue, which intersects 4th Street and 5th Street; however sidewalk is only continuous to the school from 4th Street.


2. Intersection Geometry and Control

The intersection of Stewart Avenue and Old Stage Road is a three-legged stop-controlled intersection, where only traffic along Old Stage Road is required to stop. Both Stewart Avenue and Old Stage Road are two-lane undivided roads in the area of the intersection with a dedicated right-turn lane along Stewart Avenue for eastbound vehicles turning onto Old Stage Road. Stewart Avenue is classified as a Minor Arterial, while Old Stage Road is classified as a Collector. The condition diagram for the intersection and study area is shown in **Figure 2**. Photographs of the intersection are included in **Appendix A**.

Old Stage Road has a posted speed limit of 25 MPH, a sharp turns with posted 10 MPH advisory speed signs at the Thelma Avenue intersection, and traffic calming devices in the form of speed humps in place. Also, through trucks with a gross vehicle weight over five tons are not permitted to use the road. Stewart Avenue east of Old Stage Road has the same truck restrictions, with speed humps, and a speed limit of 25 MPH. However, west of Old Stage Road, the speed limit increases to 30 MPH, with no vehicle limitations or speed controls are in place.

There are also pedestrian and bicycle facilities around this intersection. The BWI Trail/John Overstreet Connector pedestrian and bike path runs on the eastbound side of Stewart Avenue from the west to Old Stage Road, and there is no pedestrian infrastructure on the westbound side of the road. At Old Stage Road, people wishing to continue on the trail can use an uncontrolled crosswalk to cross Stewart Avenue and then continue north along the path. For pedestrians wishing to leave the trail, a sidewalk continues on the south side of Stewart Avenue east of Old Stage Road. Similarly, there are sidewalks running along both sides of Old Stage Road to provide additional pedestrian facilities after the trail.




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STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY	
EXISTING CONDITIONS	
DATE: FEBRUARY 2016	

FIGURE NO. 02
SHEET NO. 01 OF 01
PAGE NO. 03

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3. Intersection Condition

The pavement at the intersection of Stewart Avenue and Old Stage Road is in only fair condition, with patching and rutting along Stewart Avenue. The current pavement rating along Stewart Avenue from the bridge over I-97 to 4th Street is a 57, which is low and in need of repaving. The pavement markings at the intersection, particularly the crosswalk across Stewart Avenue are not in good condition. The crosswalk across Stewart Avenue has been placed on top of an old crosswalk that was not completely removed, and the crosswalk across Old Stage Road and the stop bar along Old Stage Road are both faded.

The ramps from the crosswalks to the sidewalks are not in compliance with current ADA standards. The crosswalk across Old Stage Road connects on the east side of the road to a residential driveway, which is not standard. As **Figure 3** indicates, in the westbound direction along Stewart Avenue, the warning sign has the figures and border almost completely peeled off, making it near impossible to discern the warning. Also, there is currently not a warning sign for the impending crossing in the eastbound direction, as shown in **Figure 4**. There are also no advance warning signs of the crosswalk, and the existing warning signs are not fluorescent yellow sheeting.

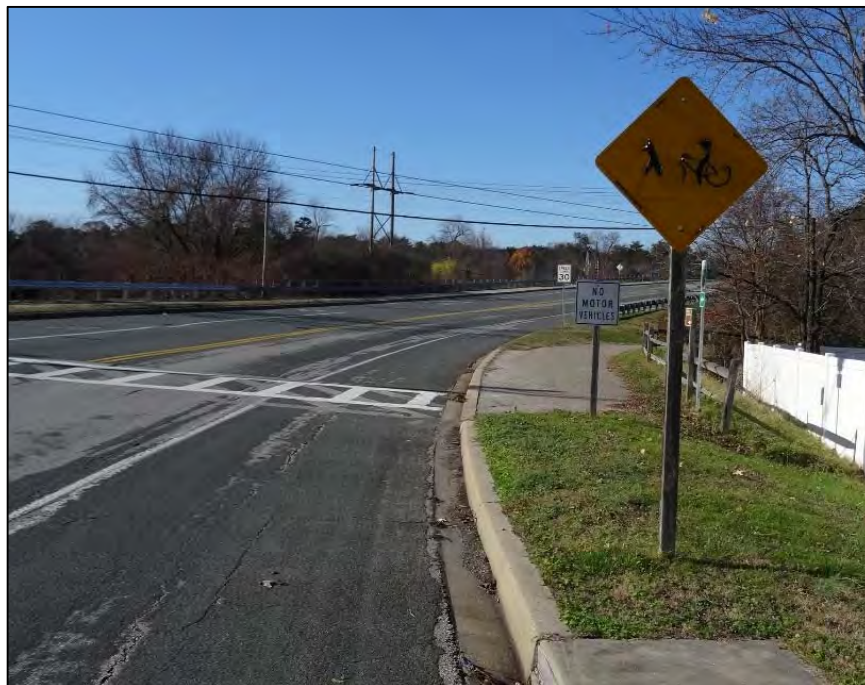


Figure 3 - Westbound Approach to Crosswalk



Figure 4 - Eastbound Approach to Crosswalk

4. Field Observations

Observations of the study area were performed on Thursday December 3rd, 2015 and again on Thursday January 7th, 2016 during data collection and utility locating. Observations specifically focused on driver behavior, traffic patterns, and roadway geometry. Pictures of the intersection are included in **Appendix A** and the following information summarizes the observations:

- a. Vehicular sight distances were measured and current conditions meet or exceed the AASHTO intersection and stopping sight distance criteria based on the intersection speeds and geometry.
- b. The sight distances approaching the marked uncontrolled crossing across Stewart Avenue are adequate, with eastbound vehicle sight lines near the bridge.
- c. Queues formed in the westbound direction along Stewart Avenue for vehicles wishing to turn left during peak periods. Some aggressive drivers were observed turning in front of eastbound travelers. Other left-turning drivers though were extremely hesitant, causing queues to build up.
- d. Volumes did not lead to excessive queues along any leg during any peak period. Instead most queues were related to driver's indecisiveness in regards to turning.
- e. Eastbound drivers often were not fully utilizing the right turn lane and instead straddling the right and through lanes, mostly due to their high speeds approaching the intersection. This caused traffic along other legs to hesitate prior to turning, unsure of what the eastbound driver would do.
- f. There were many indications of previous crashes surrounding the intersection, such as visible chips and scars on the curbs, crash scene spray paint on the asphalt and a W-beam traffic barrier that appears to be recently replaced.

- g. During the field visit, a resident voiced their safety concerns at this intersection due partially from the high speed of vehicles.
- h. Vehicles traveled at speeds much greater than the posted speed limits throughout the corridor. No attempts to brake were made prior to the speed bumps south and east of the intersection, causing drivers to fly over them.

C. TRAFFIC VOLUME DATA AND ANALYSIS

1. Traffic Data Collection

On Thursday, December 3rd, 2015, 13-hour (6 AM to 7 PM) vehicular turning movement, pedestrian and bicycle counts were conducted at the study intersection. The peak hours measured at this study intersection occurred from 7:30 AM to 8:30 AM and 4:45 PM to 5:45 PM. **Figure 5** shows the existing individual peak hour movements, and **Appendix B** includes the turning movement count worksheets, pedestrian counts, and classification counts.

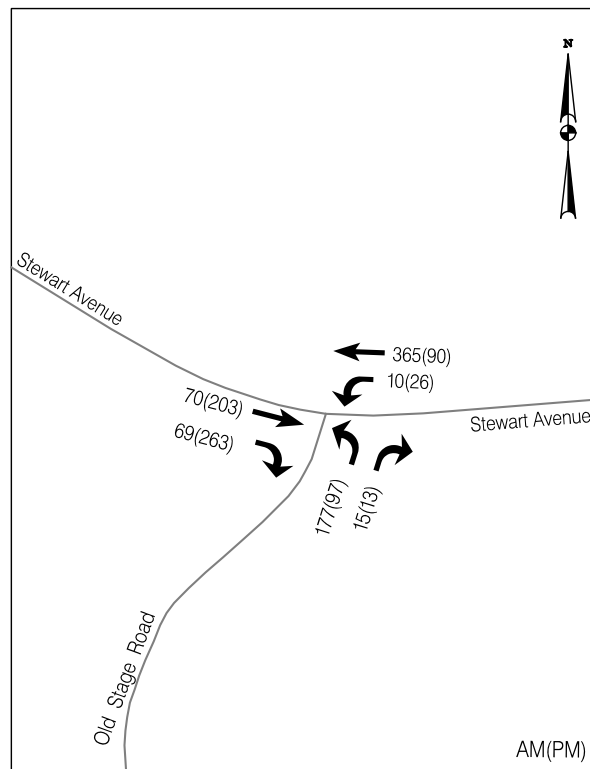


Figure 5 - Existing Peak Hour Volumes

As seen in **Figure 5**, the volumes at the Stewart Avenue and Old Stage Road intersection are fairly low, with no individual movement surpassing 400 vehicles during both peak hours and fewer than 6,000 vehicles passing through the intersection during the 13-hour data collection period. As the data indicates, during the morning peak hour, the majority of traffic travels through the intersection in the westbound direction along Stewart Avenue with the second most vehicular movements coming from traffic along Old Stage Road turning left onto Stewart Avenue to again travel west along Stewart Avenue. In the evening, the majority of traffic originates from the west along Stewart Avenue and then splits relatively evenly between continuing straight on Stewart Avenue and turning right onto Old Stage Road. These peak hour movements are consistent with Stewart Avenue's classification as a Minor Arterial road

as locals are using it to access the major arterials in the area for going to and from work. **Table 1** details the daily volumes and the truck percentages along each leg of the intersection.

Table 1 – Daily Volumes and Truck Percentages

Movement		ADT	Truck %
Stewart Avenue East of Old Stage Road	EB	2100	4.1%
	WB	2400	2.6%
Stewart Avenue West of Old Stage Road	EB	3400	2.6%
	WB	3700	2.5%
Old Stage Road South of Stewart Avenue	NB	1700	4.9%
	SB	2000	6.8%

During the thirteen hour field observations in December, approximately forty individuals used the crosswalk across Stewart Avenue, with the number of pedestrians just slightly outweighing the bicyclists. An additional seven individuals crossed Stewart Avenue on the east side of the intersection where there is not a crosswalk present.

2. Future Design Volumes

The peak hour data was then used to determine the traffic volumes for a design year of 2025. As agreed by the County, a 2% annual traffic growth rate was used over the ten year period to produce the 2025 peak hour traffic volumes shown in **Figure 6**. No new developments are expected in the nearby area.

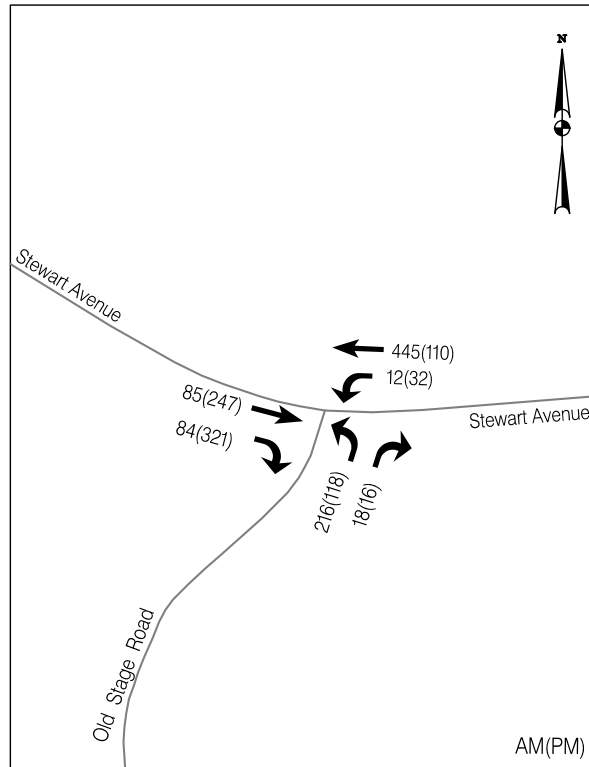


Figure 6 - 2025 Peak Hour Volumes

3. Capacity and Operational Analysis

Capacity analyses were performed on the existing peak hour volumes of the Stewart Avenue and Old Stage Road intersection in accordance with the Highway Capacity Manual (HCM) using HCS. Detailed worksheets are included in **Appendix C** with the results summarized in **Table 2**.

**Table 2 - Existing Capacity Analysis Summary
Stewart Avenue and Old Stage Road**

Movement	AM LOS	AM Delay (sec)	PM LOS	PM Delay (sec)
WB	A	7.5	A	8.3
NB	B	14.2	B	11.5

The analysis in **Table 2** indicates that the overall un-signalized intersection operates at acceptable levels with the lowest level of service (LOS) during both the morning and evening peak hours being LOS B. Once the existing level of service at this intersection was established, HCS was again used with the 2025 peak hour traffic volumes. Detailed worksheets can again be found in **Appendix C**, while **Table 3** provides a synopsis of the results.

**Table 3 - 2025 No-Build Capacity Analysis Summary
Stewart Avenue and Old Stage Road**

Movement	AM LOS	AM Delay (sec)	PM LOS	PM Delay (sec)
WB	A	7.6	A	8.7
NB	C	17.8	B	12.8

While the level of service is expected to degrade slightly to an LOS C during morning peak hours in 2025, this is still considered to be acceptable. The other movements in both the morning and evening peak hours remain consistent with their existing levels of service, and all movements at the intersection to still operate satisfactorily.

4. Speed Analysis

A speed study was conducted from Friday, December 4th, 2015 to Thursday, December 10th, 2015. **Table 4** summarizes the results, which can be found in depth in **Appendix D**. As mentioned previously, the posted speed is 30 MPH along Stewart Avenue west of the intersection and 25 MPH east of the intersection and along Old Stage Road. As the table below indicates, the average speed along Stewart Avenue greatly exceeds the posted speed limits; however, drivers are clearly slowing down east of the intersection. Overall, the eastbound and westbound traffic on either side of Old Stage Road appear to drive about the same speed.

Table 4 - Speed Study Summary

Movement		Posted Speed (MPH)	Average Speed (MPH)	10 MPH Pace (MPH)	85 th Percentile Speed (MPH)	85 th Percentile Speed and Posted Speed Difference (MPH)
Stewart Ave. East of Old Stage Road	EB	25	28	26-35	33	8
	WB	25	29	26-35	33	8
Stewart Ave. West of Old Stage Road	EB	30	38	36-45	43	13
	WB	30	37	21-40	42	12

D. CRASH HISTORY

Police reported crash data was requested and provided by SHA from January 2012 through October 2015 for this study intersection. No crashes were reported during this time frame. In addition, requests were made by Anne Arundel County to County Police to discover if there were any reported crashes in 2015, and there were none reported. Despite the fact that no crashes at this intersection have been reported, there have been citizen concerns discussed with the County about safety at this location, with possible near-miss crashes and minor crashes that may not have been reported that have been observed by citizens.

E. PROPOSED IMPROVEMENTS

Due to the safety concerns within this study area, the following proposed improvements were review to identify most appropriate improvements to address the network's efficiency and safety. Capacity analyses were again performed for all schemes in accordance with the Highway Capacity Manual (HCM) using HCS and Sidra based on the 2025 peak hour volumes, and all analysis worksheets are available in **Appendix E**.

1. Alternative 1 – All-Way Stop Control

This first alternative involves leaving existing lane configurations unchanged at the intersection of Old Stage Road and Stewart Avenue but altering the intersection into an all-way stop condition. Currently, Stewart Avenue is free flowing with only traffic along Old Stage Road having to stop. Introducing stop signs along Stewart Avenue not only makes it easier and safer for vehicles turning onto Stewart Avenue from Old Stage Road but also protects westbound left-turning vehicles and provides a traffic calming measure along Stewart Avenue. In addition to improvements for vehicles, this introduction also provides safer access for bicyclists and pedestrians crossing Stewart Avenue to continue on the John Overstreet Connector. Using this design concept, two separate options are proposed:

- Alternative 1A – Eastbound right-turn lane along Stewart Avenue remains in place
- Alternative 1B – Eastbound right-turn lane along Stewart Avenue is removed

Alternative 1B is proposed because eliminating the right-turn lane benefits the pedestrians and bicyclists. Multiple-threat collisions, where a stopped motor vehicle in one lane can block a vehicle in the other lane from seeing the crossing pedestrian, is eliminated under this scenario. Similarly, if a bulb-out is constructed in the place of the existing right-turn lane at the intersection, the roadway's width will become narrower at the crosswalk, shortening the crossing distance.

Using 2011 Maryland Manual on Uniform Traffic Control Devices (MDMUTCD) Section 2B.07 criteria, it was determined that this intersection does not warrant a multi-way stop due to the

low volumes experienced at the intersection, especially along Old Stewart Avenue, as shown in **Table 5** and in **Appendix F**. This intersection meets the minimum volumes along the major street of at least 300 vehicles per hour for 7 out of the required 8 hours of an average day; however, the minor street approach minimums of 200 vehicles, pedestrians and bicycles are not met during any of those hours.

Similarly, the number of crashes reported within a 12-month period is not met. Based on both SHA and County Police records from January 2012 through October 2015, there were no crashes within 500 feet of the intersection, so an all-way stop is not warranted due to crashes.

Table 5 – Eight-Hour Volumes

Rank	Beginning Hour	Old Stage Road		Stewart Avenue		Stewart Avenue		Major Volume	Minor Volume	Total Volume
		From South		From East		From West				
		L	R	L	T	T	R			
1	7AM	183	10	11	373	65	53	502	193	695
2	5PM	84	7	16	63	216	294	589	91	680
3	4PM	97	21	20	94	168	191	473	118	591
4	3PM	85	18	22	111	152	146	431	103	534
5	8AM	129	12	12	216	65	59	352	141	493
6	6PM	89	12	11	62	136	162	371	101	472
7	2PM	103	7	8	102	117	82	309	110	419
8	6AM	104	5	5	203	23	31	262	109	371

As **Table 6** indicates, under the Alternative 1A scenario, the level of service improves during both the morning and evening peak hours along Old Stage Road due to vehicles no longer having to wait for a break in traffic to turn onto Stewart Avenue. However, the level of service diminishes along Stewart Avenue with the introduction of the stop signs. While under existing conditions only left-turning vehicles in the westbound direction were delayed, under the proposed condition any traffic traveling east- or westbound will now be required to stop. Nonetheless, all levels of service expected at this intersection are at or better than LOS C, which is acceptable.

Table 6 - Alternative 1A – All-Way Stop with Eastbound Right-Turn Lane

Movement	AM LOS	AM Delay (sec)	PM LOS	PM Delay (sec)
WB	C	16.0	A	9.2
EB	A	8.8	A	10.0
NB	B	11.7	A	9.8

The removal of the existing right-turn lane (Alternative 1B) barely effects the levels of service under this scenario as seen in **Table 7**. The largest impact is seen in the eastbound direction in the evening as delays increase from 10 seconds to almost 15 seconds; however, the level of service remains unchanged with an LOS B. All other movements experience similar delays and levels of service to the right-turn lane scenario. Overall, this design makes the pedestrian and bicyclists crossings safer while not further impacting vehicular levels of service.

Table 7 - Alternative 1B – All-Way Stop without Eastbound Right-Turn Lane

Movement	AM LOS	AM Delay (sec)	PM LOS	PM Delay (sec)
WB	C	15.3	A	9.2
EB	A	9.4	B	14.6
NB	B	11.7	A	10.0

2. Alternative 2 – Signalized Control

A possible solution for the Stewart Avenue and Old Stage Road intersection would be to signalize the intersection, allowing more opportunities for drivers to make turns along the corridor. Current traffic issues include drivers being unable to make the westbound left turn onto Old Stage Road. Also, drivers traveling at high speeds along Stewart Avenue make it hard and risky for drivers heading northbound from Old Stage Road to make left and right hand turns onto Stewart Avenue. Pedestrian safety could be improved with a signal as well. Existing traffic conditions, pedestrian movements, and physical characteristics of the intersection were used to determine if a traffic control signal installation is justified.

A comprehensive Traffic Signal Warrant analysis was conducted in accordance with the MDMUTCD using the volumes from the recent summer weekend turning movement counts. The MDMUTCD criterion includes a total of nine separate warrants to determine the need and appropriateness of a traffic signal installation at a subject intersection. **Appendix G** includes the detailed analysis of each warrant, while this section summarizes the results.

Warrants 1 and 2 are volume based warrants, with Warrant 1 requiring a review of the eight highest hourly volumes, and Warrant 2 requires a review of the four highest volumes. **Table 5** in the previous section details the eight highest hourly volumes.

a. Warrant 1 – Eight-Hour Vehicular Volume – NOT MET

The Eight-Hour Vehicular Volume warrant stipulates three conditions under which the warrant is met: Condition A – Minimum Vehicular Volume, Condition B – Interruption of Continuous Traffic, and a combination of Condition A and B. Warrant 1 is to be treated as a single warrant; therefore, if any one of the conditions is met by the study intersection, then Warrant 1 is satisfied. Warrant 1 is an analysis of the eight highest hourly volumes as shown in **Table 5**.

Condition A - Minimum Vehicular Volume – NOT MET

Condition A specifies minimum traffic volume levels that must be observed during any eight-hours of an average day. For conditions applying the 70% factor, the minimum required volume for a two or more lane major approach analysis volume is 420 vehicles; while the minimum volume criteria for a one lane minor street approach is 105 vehicles. Three (3) major/minor street volume combinations surpass the threshold; therefore the volumes do not satisfy the warrant conditions.

Condition B – Interruption of Continuous Traffic – NOT MET

Condition B also specifies minimum traffic volume levels that must be observed during any eight hours of an average day. For conditions applying the 70% factor, the minimum required volume for a two or more lane major approach analysis volume is 630 vehicles; while the minimum volume criteria for one-lane minor street approach is 53 vehicles. Zero (0) of the eight (8) major/minor street volumes surpasses the threshold; therefore Condition B of Warrant 1 is not satisfied.

Combination of Conditions A and B – NOT MET

The MUTCD provides for passage of Warrant 1 when Condition A and Condition B are not satisfied individually, yet exceed 80% of the volume thresholds for both Condition A and Condition B simultaneously for basic conditions. Condition A requires a minimum volume 336 vehicles along major-street approach and 84 vehicles on the minor-street approach; while Condition B requires minimum volume of 504 vehicles on major-street approach and 42 vehicles on minor street approach. Six (6) of the major/minor street volumes surpasses the threshold of Condition A, and two (2) of the major/minor street volumes satisfies Condition B. This warrant requires both Condition A and Condition B to be satisfied, therefore it does not meet warrant requirements.

b. Warrant 2 - Four Hour Vehicular Volume – NOT MET

Warrant 2 specifies the minimum traffic volume levels that must be observed for any four hours of an average day when the major and minor volume pairs are graphed. Only two (2) of the major/minor volume pairs surpass the threshold, while the remainder of the combinations fall below the required threshold. Therefore, the warrant is not satisfied.

c. Warrant 3 - Peak Hour – NOT APPLICABLE

The Peak Hour Warrant states that it shall be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or high occupancy facilities that attract or discharge large number of vehicles over a short time. The aforementioned land uses are not present near the intersection of Old Stage Road and Stewart Avenue; therefore Warrant 3 is not applicable.

d. Warrant 4 - Pedestrian Volume – NOT MET

A pedestrian volume signal warrant study was conducted for the intersection of Stewart Avenue and Old Stage Road to see if additional pedestrian signals are warranted due to heavy pedestrian traffic crossing Stewart Avenue. The MDMUTCD Section 4C.05 (Warrant 4) states that one of the following criteria must be met:

Condition A

“For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or”

Condition B

“For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.”

While pedestrians were observed at the intersection, the volumes are not high enough to warrant a signal, with a maximum of 4 pedestrian during a single hour, so Warrant 4 is not met.

e. Warrant 5 - School Crossing – NOT APPLICABLE

The study intersection is not within a designated school zone; therefore, Warrant 5 is not applicable.

f. Warrant 6 - Coordinated Signal System – NOT APPLICABLE

The warrant relates to providing for the proper platooning of vehicles along an arterial roadway with an established system of closely spaced signalized intersections. MDMUTCD also provides guidance that, coordinated signal system warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet. There are no signals within 1,000 of the intersection along either Stewart Street or Old Stage Road . The proposed signal would not meet the intersection spacing guidance to satisfy this warrant; therefore Warrant 6 is not applicable.

g. Warrant 7 - Crash Experience – NOT MET

Crash history and traffic volumes are components of the Crash Experience Warrant. The warrant is met when five or more crashes involving injury or property damage, which could have been mitigated through signalization, occur in a **12-month** period. In addition to the crash history, Warrant 7 requires that 80% or 56% (whichever is applicable) of Warrant 1 Condition A or Condition B must be met.

Since there were no crashes at the intersection during a period of more than three years as reported by SHA and Anne Arundel County, this warrant is not met.

h. Warrant 8 - Roadway Network – NOT APPLICABLE

Warrant 8 provides signal allowances to encourage concentration and organization of traffic flow between the intersections of two major roadways/routes. Under this warrant a major route is classified as a roadway that is part of a principal roadway network which appears as a major route in an urban area traffic and transportation planning study. The warrant is not applicable as the intersection is not between two major intersecting routes.

i. Warrant 9 – Intersection near a Grade Crossing – NOT APPLICABLE

The Intersection near a Grade Crossing warrant is applicable where a grade crossing exists on an approach of the intersection. This warrant is not applicable as no grade crossing is located in close proximity of the intersection.

j. Summary of Warrants

Based on the above signal warrant analysis results and volumes from a typical weekday, the Stewart Avenue and Old Stage intersection does not meet the MUTCD warrants for installation of a traffic signal.

3. Alternative 3 – Roundabout

This proposed alternative involves the creation of a one-lane roundabout at the intersection. In order to produce a one-lane roundabout, the existing right-turn lane in the eastbound direction will be removed. Also, splitter islands at each approach to the traffic circle are introduced, causing all surrounding roads to be widened approaching the roundabout. While the widening of streets and roundabout construction will require a larger footprint than the existing conditions, it has increased safety benefits. For instance, vehicles need to slow down prior to entering the roundabout due to having to yield to traffic already within the roundabout as well as because of the roadway curvature. Secondly, since all traffic travels around the circle counterclockwise, angle and head-on collisions are eliminated. Finally, it is easier for pedestrians and bicyclists to cross as they only need to look for on-coming cars from one direction and the splitter islands provide a refuge area.

Capacity analysis was accomplished using HCM methods with SIDRA modelling software for this alternative. In this option as **Table 8** highlights, the level of service at the intersection is LOS A for all movements during both peak period, showing great improvements compared with the no-build conditions.

Table 8 - Alternative 3 Capacity and Operational Analysis Summary

Movement	AM LOS	AM Delay (sec)	PM LOS	PM Delay (sec)
WB	A	8.5	A	4.1
EB	A	3.8	A	7.5
NB	A	4.7	A	4.7

An additional option would be a mini-roundabout. The capacity would be the same, but the footprint of the roundabout would be much smaller. The safety implications for drivers would be similar. However, since splitter islands would not be introduced, pedestrian refuge areas would not be available.

The AASHTO Highway Safety Manual (HSM) developed safety performance measures to predict crashes along roadways by providing Crash Modification Factors (CMF) associated with various safety countermeasures. These CMFs are multiplicative factors used to compute the expected number of crashes that might occur after implementing a given countermeasure at a specific site. The lower the CMF value, the greater effect on reducing crashes. Known countermeasure CMFs found on the HSM clearinghouse database website have been developed for converting an intersection with minor-road stop control to modern roundabout, which yields a 0.57 value. A roundabout installation could reduce the number of expected crashes by 43%.

4. Traffic Calming Improvements

Multiple traffic calming improvement can be implemented at the Stewart Avenue and Old Stage Road intersection:

a. Raised Crosswalk

One option for improving Stewart Avenue crossings involves raising the crosswalk such that it sits at a higher elevation than the adjacent roadway. Once the crosswalk is reconstructed, the diagonal crosswalk markings should be reapplied to maximize visibility. Raised crossings not only highlight the crosswalk and bring increased visibility to those using it, it also acts to slow

down cars. In order to notify vehicles of the impending raised walkway, warning signs also need to be installed along Stewart Avenue. However, speed humps are already along Old Stage Road, and field observations showed that some vehicles do not slow down when driving over them.

Known countermeasure CMFs found on the HSM clearinghouse database website have been developed for installing raised pedestrian crosswalks, which yields a 0.67 value. A raised crosswalk could reduce the number of expected crashes by 33%.

b. Speed Reduction Warning Signage

Another option is to introduce a “Reduced Speed Ahead” (W3-5) sign along eastbound Stewart Avenue to warn motorists of the decreased speed limit. This warning sign does not currently exist and could help to slow vehicles on their approach to the intersection.

c. Reduced Pavement

One alternative for reducing speeds at the intersection would be to eliminate the right-turn lane along eastbound Stewart Avenue. During the AM peak hour, the volumes going through and the volumes turning right are fairly even, while during the PM peak hour more vehicles turn right than continue through the intersection. Through vehicles would need to slow down considerably at the intersection with the shared lane, which could introduce safety issues with rear-end conflicts. Capacity does not decrease along the eastbound approach of the intersection if the right-turn lane is eliminated.

With this alternative, there is also the possibility of creating a raised median in the middle of Stewart Avenue, where the necessary width for this median could come from the elimination of the right-turn lane. Less lateral travel width will decrease the driver comfort levels to negotiate higher speeds through the intersection.

5. Pedestrian and Bicycle Safety Improvements

In addition to the road improvements and changes to traffic control, this section examines techniques aimed specifically for improving pedestrian and bicycle safety. Due to the BWI Trail/John Overstreet Connector pedestrian and bike path that crosses Stewart Avenue on the west side of the intersection, this intersection experiences higher than normal non-vehicular traffic for a neighborhood. The pedestrians and bicycles crossing Stewart Avenue despite no vehicular control measures in place produces unsafe conditions.

a. Enhanced Crosswalk Markings

Using the SHA Roadway Crossing Design Standards, including the flow chart and table included as **Appendix H**, the appropriate treatment at this intersection is what is now at the intersection, as daily traffic is under 12,000 vehicles per day. Hatched crosswalk markings are appropriate. However, new striping may be necessary to make the crosswalk more visible, and complete removal of the current crosswalk and the previous one should be completed to improve visibility as well.

b. Enhanced Crossing Signage

Installing new warning and regulatory signs both at the crosswalk and in advance of the crossing can increase motorists’ awareness of pedestrians and bicyclists in the area, causing them to drive more cautiously through the intersection. At the crosswalk itself, new W11-1(1) combined hiker/biker warning signs should be installed coupled with a diagonal downward pointing arrow plaque (W16-7p) below the signs.

Installing new signs on either side of the road will help to draw attention to the crosswalk, making crossings more comfortable for users. In addition to these signs, it is also recommended that the in-street pedestrian crossing sign (R1-6A) be installed facing both directions along Stewart Avenue. This sign will help to make the crosswalk more visible, while also reminding drivers that it is Maryland's state law to stop for pedestrians within the crosswalk.

Finally, advance warning of the crosswalks is also recommended in both directions along Stewart Avenue. In order to accomplish this, the W11-1(1) signs would be installed with the "Ahead" sign (W16-9p) mounted below it to provide advance notice to road users of crossing activity. It is important to note that the installation of these signs can only occur at uncontrolled intersections. Overall, by introducing additional signage to the roadway, motorists will be better informed about the crosswalk and the requirement to yield to pedestrians and bicycles crossing the intersection.

c. Reduced Pavement

As previously discussed, eliminating the right-turn lane along eastbound Stewart Avenue and a raised median at the existing crossing will tighten the intersection and thus create a shorter distance for pedestrians and bicycles to cross. The raised median will create a pedestrian refuge island in the middle of Stewart Avenue, so pedestrians and bicycles would only have to cross one lane at a time if necessary. The necessary width for this island could come from the elimination of the right-turn lane.

F. SUMMARY AND RECOMMENDATIONS

Currently and in the design year 2025 there are no capacity issues at the intersection of Stewart Avenue and Old Stage Road; however, there are safety concerns that have been voiced by citizens in the area four proposed intersection improvement were evaluated to determine the feasibility of improving the capacity and safety of the intersection.

Alternative 1: All-Way Stop (with and without the existing eastbound right-turn lane)

Under Alternative 1, while capacity is not significantly reduced along Stewart Avenue, and while safety for vehicles as well as pedestrians could be increased, an all-way stop is not warranted.

Alternative 2: Signalized Control

Alternative 2 is not recommended for this intersection as it does not pass any of the nine traffic signal warrants.

Alternative 3: Roundabout

Alternative 3 calls for the installation of a roundabout, and overall, is the best alternative in terms of improving capacity, while also reducing vehicular speeds through the neighborhoods and the number and severity of crashes that occur at the intersection. Under this alternative, there are no capacity issues, as every approach operates at LOS A during both peak hours.

Alternative 4: Removal of eastbound right-turn lane and traffic calming measures

Alternative 4 is another viable option as it reduces the distance pedestrians would need to cross as well as slowing some eastbound traffic at the intersection. A possible option with this alternative would be to construct a pedestrian refuge island in the middle of the crosswalk. Alternatives 3 and 4 should be pursued for further review with concept plans.

G. MOVING FORWARD

For the next stage of this project, four separate concept plans were developed for further study and analysis. The following options will be presented at an upcoming public meeting to solicit community comments and feedback before deciding how to proceed. These concept plans are included in **Appendix I**:

Standard Roundabout:

R/W constraints prohibit a large roundabout at this intersection; however, a 130' inscribed circle diameter single-lane roundabout can be utilized with acceptable impacts to the existing adjacent R/W. This option would require the reconstruction of portions of both Stewart and Old Stage to meet approach requirements for both horizontal and vertical alignments.

Mini-Roundabout:

A less impactful solution is a mini-roundabout with a 75' inscribed circle diameter. This option would fit entirely within the existing R/W but would also require the reconstruction of portions of both Stewart and Old Stage, similar to that of the standard roundabout.

Traffic Calming Measures:

This option includes the removal of the eastbound right-turn lane and installation of various traffic calming measures such as islands or speed humps. This option would fit entirely within the existing R/W and would not require the full reconstruction of Stewart and Old Stage; however, an overlay of the intersection area is recommended.

“No Build” option with signing and markings only:

A short-term solution to improving pedestrian and bicycle safety is to install hike/bike warning and regulatory signs at and in advance of the crosswalk to keep drivers alert, in conjunction with updates to the pavement markings and complete removal of old pavement markings.

Appendix A

Photographs of Study Area



Eastbound Stewart Avenue approaching Old Stage Road



Westbound Stewart Avenue approaching Old Stage Road



Northbound Old Stage Road approaching Stewart Avenue



Northbound Old Stage Road at Stewart Avenue



Eastbound Steward Avenue looking west at Old Stage Road



Stewart Avenue heading looking west away from Old Stage Road

Appendix B

Turning Movement and Classification Counts

Request No.:
 Job No.:

Location: Stewart Avenue @ Old Stage Road
 Date: 12/3/2015 Thursday
 Recorder: NST/WTH
 Interval (dd): 15 (In Minutes)

County: Anne Arundel
 Town: Glen Burnie
 Weather: Clear, Cool

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Start 07:30	End 08:30	Volume 706	PM PERIOD 12:00PM-7:00PM	Start 16:30	End 17:30	Volume 692
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Street Name--> HOUR ENDING	From North				Old Stage Road From South				Stewart Avenue From East				Stewart Avenue From West				GRAND TOTAL
	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
	00:15				0				0				0				
00:30				0				0				0				0	0
00:45				0				0				0				0	0
01:00				0				0				0				0	0
01:15				0				0				0				0	0
01:30				0				0				0				0	0
01:45				0				0				0				0	0
02:00				0				0				0				0	0
02:15				0				0				0				0	0
02:30				0				0				0				0	0
02:45				0				0				0				0	0
03:00				0				0				0				0	0
03:15				0				0				0				0	0
03:30				0				0				0				0	0
03:45				0				0				0				0	0
04:00				0				0				0				0	0
04:15				0				0				0				0	0
04:30				0				0				0				0	0
04:45				0				0				0				0	0
05:00				0				0				0				0	0
05:15				0				0				0				0	0
05:30				0				0				0				0	0
05:45				0				0				0				0	0
06:00				0				0				0				0	0
06:15				0	17		1	18	0	38		38		2	6	8	64
06:30				0	21		0	21	4	50		54		2	7	9	84
06:45				0	28		1	29	0	52		52		6	7	13	94
07:00				0	38		3	41	1	63		64		13	11	24	129
07:15				0	38		3	41	4	84		88		19	13	32	161
07:30				0	44		0	44	2	69		71		10	7	17	132
07:45				0	52		2	54	2	114		116		17	19	36	206
08:00				0	49		5	54	3	106		109		19	14	33	196
08:15				0	48		2	50	3	76		79		17	19	36	165
08:30				0	28		6	34	2	69		71		17	17	34	139
08:45				0	27		4	31	4	45		49		18	11	29	109
09:00				0	26		0	26	3	26		29		13	12	25	80
09:15				0	23		0	23	1	27		28		18	17	35	86
09:30				0	22		0	22	2	20		22		16	13	29	73
09:45				0	21		1	22	2	29		31		16	15	31	84
10:00				0	15		1	16	0	14		14		14	12	26	56
10:15				0	15		2	17	1	22		23		15	6	21	61
10:30				0	14		3	17	2	17		19		14	17	31	67
10:45				0	16		1	17	2	19		21		10	18	28	66
11:00				0	12		1	13	2	18		20		16	20	36	69
11:15				0	18		2	20	1	20		21		19	21	40	81
11:30				0	25		2	27	0	19		19		21	18	39	85
11:45				0	20		1	21	2	14		16		21	26	47	84
12:00				0	25		2	27	0	26		26		14	23	37	90
12:15				0	21		3	24	3	20		23		22	20	42	89
12:30				0	20		4	24	3	27		30		23	20	43	97
12:45				0	16		3	19	1	23		24		17	29	46	89
13:00				0	21		3	24	3	37		40		23	14	37	101
13:15				0	18		3	21	5	23		28		16	22	38	87
13:30				0	28		1	29	3	27		30		20	19	39	98
13:45				0	21		4	25	3	24		27		10	25	35	87
14:00				0	18		4	22	3	29		32		21	14	35	89
14:15				0	24		1	25	1	26		27		21	15	36	88
14:30				0	26		2	28	2	22		24		26	21	47	99
14:45				0	26		0	26	4	32		36		32	23	55	117
15:00				0	27		4	31	1	22		23		38	23	61	115
15:15				0	20		3	23	6	24		30		35	37	72	125
15:30				0	23		4	27	11	45		56		46	44	90	173
15:45				0	23		5	28	1	20		21		40	27	67	116
16:00				0	19		6	25	4	22		26		31	38	69	120
16:15				0	16		4	20	3	25		28		43	53	96	144
16:30				0	23		10	33	2	14		16		37	30	67	116
16:45				0	38		5	43	9	36		45		47	55	102	190
17:00				0	20		2	22	6	19		25		41	53	94	141
17:15				0	22		6	28	4	24		28		58	88	146	202
17:30				0	17		0	17	7	11		18		57	67	124	159
17:45				0	23		1	24	4	19		23		58	78	136	183
18:00				0	22		0	22	1	9		10		43	61	104	136
18:15				0	29		0	29	2	16		18		31	46	77	124
18:30				0	19		4	23	2	16		18		42	55	97	138
18:45				0	24		3	27	3	16		19		33	38	71	117
19:00				0	17		5	22	4	14		18		30	23	53	93
19:15				0				0				0				0	0
19:30				0				0				0				0	0
19:45				0				0				0				0	0
20:00				0				0				0				0	0
20:15				0				0				0				0	0
20:30				0				0				0				0	0
20:45				0				0				0				0	0
21:00				0				0				0				0	0
21:15				0				0				0				0	0
21:30				0				0				0				0	0
21:45				0				0				0				0	0
22:00				0				0				0				0	0
22:15				0				0				0				0	0
22:30				0				0				0				0	0
22:45				0				0				0				0	0
23:00				0				0				0				0	0
23:15				0				0				0				0	0
23:30				0				0				0				0	0
23:45				0				0				0				0	0
00:00				0				0				0				0	0

TOTAL	0	0	0	0	1263	0	133	1396	144	1679	0	1823	0	1288	1387	2675	5894
AM Peak Vol	0	0	0	0	177	0	15	192	10	365	0	375	0	70	69	139	706
PM Peak Vol	0	0	0	0	97	0	13	110	26	90	0	116	0	203	263	466	692

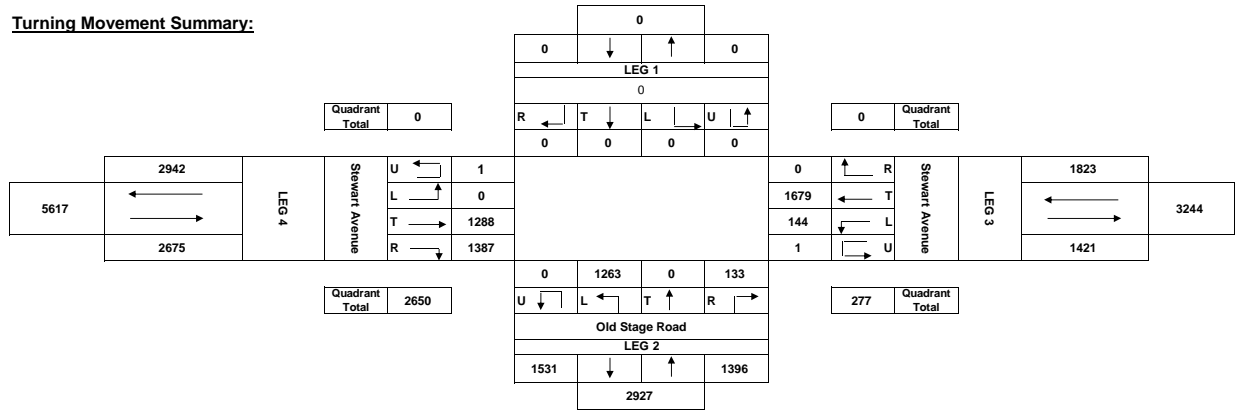
Request No.:
 Job No.:

Location: Stewart Avenue @ Old Stage Road
 Date: 12/3/2015 Thursday
 Recorder: NST/WTH
 Interval (dd): 15
 (In Minutes)

County: Anne Arundel
 Town: Glen Burnie
 Weather: Clear, Cool

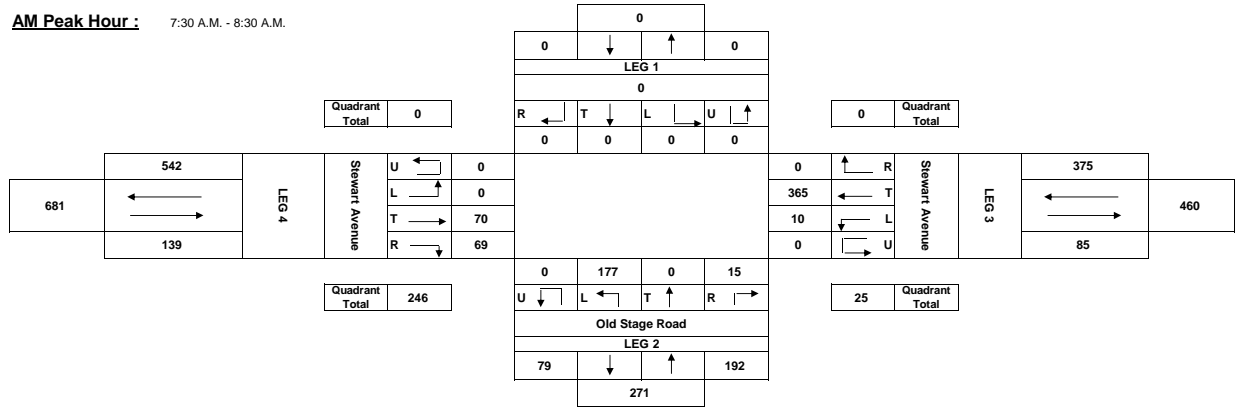
PEAK HOURS	AM PERIOD	Start	End	Volume	PM PERIOD	Start	End	Volume
	6:00AM-12:00PM	07:30	08:30	706	12:00PM-7:00PM	16:30	17:30	692

Turning Movement Summary:

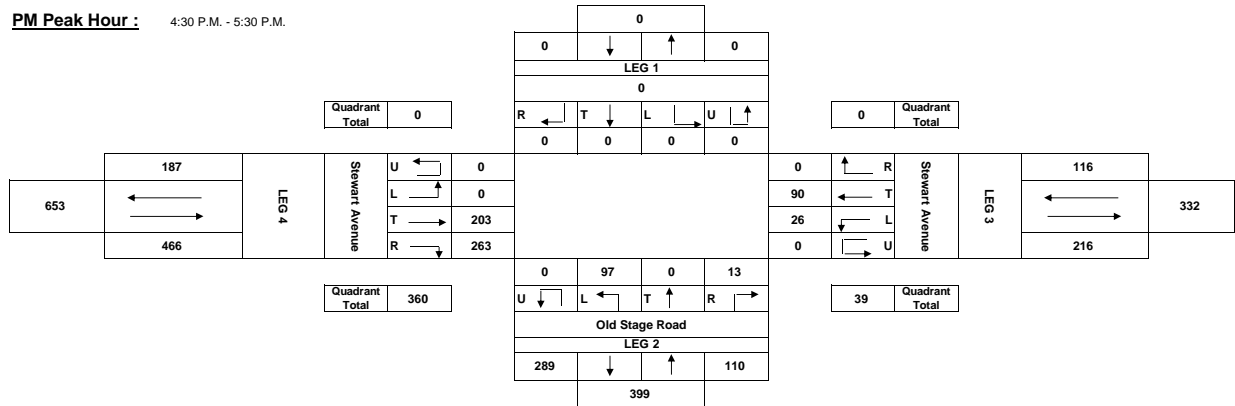


Comments: _____

AM Peak Hour: 7:30 A.M. - 8:30 A.M.



PM Peak Hour: 4:30 P.M. - 5:30 P.M.



Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/04/15	0	14	4	0	0	0	0	0	0	0	0	0	0	0	18
01:00	0	6	2	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	6	2	0	1	0	0	0	0	0	0	0	0	0	9
05:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
06:00	0	18	10	0	2	0	0	0	0	0	0	0	0	4	34
07:00	0	48	19	0	3	1	0	0	0	0	0	0	0	9	80
08:00	3	53	22	0	4	1	0	0	0	0	0	0	0	7	90
09:00	0	27	12	0	5	0	0	0	0	0	0	0	0	1	45
10:00	1	50	9	0	5	0	0	0	0	0	0	0	0	5	70
11:00	1	83	20	0	2	1	0	0	0	0	0	0	0	1	108
12 PM	1	68	20	0	5	1	0	0	0	0	0	0	0	3	98
13:00	1	76	25	0	4	1	0	0	0	0	0	0	0	3	110
14:00	1	98	33	1	9	1	0	0	0	0	0	0	0	5	148
15:00	0	143	46	4	15	0	0	1	0	0	0	0	0	11	220
16:00	2	187	59	0	12	0	0	1	0	0	0	0	0	12	273
17:00	0	235	57	0	6	1	0	0	0	0	0	0	0	11	310
18:00	1	131	32	0	7	2	0	0	0	0	0	0	0	0	173
19:00	1	58	11	0	3	1	0	0	0	0	0	0	0	2	76
20:00	0	46	11	0	2	0	0	0	0	0	0	0	0	4	63
21:00	0	57	12	0	0	0	0	0	0	0	0	0	0	1	70
22:00	0	44	2	0	1	0	0	0	0	0	0	0	0	0	47
23:00	0	44	6	0	1	0	0	0	0	0	0	0	0	2	53
Total	12	1505	419	5	87	10	0	2	0	0	0	0	0	81	2121
Percent	0.6%	71.0%	19.8%	0.2%	4.1%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	
AM Peak	08:00	11:00	08:00		09:00	07:00								07:00	11:00
Vol.	3	83	22		5	1								9	108
PM Peak	16:00	17:00	16:00	15:00	15:00	18:00		15:00						16:00	17:00
Vol.	2	235	59	4	15	2		1						12	310

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/06/15	0	22	5	0	0	0	0	0	0	0	0	0	0	0	27
01:00	0	20	2	0	0	0	0	0	0	0	0	0	0	0	22
02:00	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	1	10	1	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
07:00	0	13	2	0	0	0	0	0	0	0	0	0	0	0	15
08:00	0	20	11	0	0	0	0	0	0	0	0	0	0	3	34
09:00	0	34	13	0	1	1	0	0	0	0	0	0	0	1	50
10:00	0	66	14	0	3	0	0	0	0	0	0	0	0	3	86
11:00	2	48	23	0	3	1	0	0	0	0	0	0	0	5	82
12 PM	0	74	28	0	4	0	0	1	0	0	0	0	0	1	108
13:00	1	74	21	0	2	0	0	0	0	0	0	0	0	5	103
14:00	2	66	15	0	3	0	0	0	0	0	0	0	0	5	91
15:00	1	67	11	0	3	0	0	0	0	0	0	0	0	1	83
16:00	2	70	23	0	3	1	0	0	0	0	0	0	0	5	104
17:00	0	85	22	0	1	0	0	1	0	0	0	0	0	3	112
18:00	1	80	8	1	4	1	0	0	0	0	0	0	0	2	97
19:00	0	61	8	0	0	0	0	0	0	0	0	0	0	2	71
20:00	0	40	13	0	1	0	0	0	0	0	0	0	0	0	54
21:00	0	40	6	0	1	0	0	0	0	0	0	0	0	0	47
22:00	0	26	7	0	0	0	0	0	0	0	0	0	0	1	34
23:00	0	18	0	0	1	0	0	0	0	0	0	0	0	0	19
Total	10	953	239	1	30	4	0	2	0	0	0	0	0	37	1276
Percent	0.8%	74.7%	18.7%	0.1%	2.4%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	
AM Peak	11:00	10:00	11:00		10:00	09:00								11:00	10:00
Vol.	2	66	23		3	1								5	86
PM Peak	14:00	17:00	12:00	18:00	12:00	16:00		12:00						13:00	17:00
Vol.	2	85	28	1	4	1		1						5	112

Wallace Montgomery
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Site Code:
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 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	14	0	0	1	0	0	0	0	0	0	0	0	0	15
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	13	3	0	1	1	0	0	0	0	0	0	0	0	18
06:00	0	24	7	0	2	1	0	0	0	0	0	0	0	2	36
07:00	1	47	15	0	2	0	1	0	0	0	0	0	0	3	69
08:00	0	56	11	1	4	0	0	0	0	0	0	0	0	4	76
09:00	1	50	18	0	0	0	0	0	0	0	0	0	0	9	78
10:00	2	46	12	1	8	1	0	1	0	0	0	0	0	6	77
11:00	0	48	18	0	4	1	0	0	0	0	0	0	0	2	73
12 PM	0	65	21	1	5	0	0	0	0	0	0	0	0	0	92
13:00	0	72	21	0	6	1	0	1	0	0	0	0	0	2	103
14:00	1	90	32	0	9	0	0	0	0	0	0	0	0	9	141
15:00	0	133	38	2	14	0	0	0	0	0	0	0	0	4	191
16:00	3	181	57	0	10	3	0	1	0	0	0	0	0	9	264
17:00	1	279	52	0	8	1	0	2	0	0	0	0	0	10	353
18:00	1	137	29	0	8	0	0	0	0	0	0	0	0	2	177
19:00	1	77	16	0	4	0	0	0	0	0	0	0	0	5	103
20:00	0	53	10	0	3	0	0	0	0	0	0	0	0	0	66
21:00	1	48	14	0	1	0	0	0	0	0	0	0	0	2	66
22:00	0	33	3	0	2	0	0	0	0	0	0	0	0	2	40
23:00	0	20	1	0	2	0	0	0	0	0	0	0	0	1	24
Total	12	1501	382	5	94	9	1	5	0	0	0	0	0	72	2081
Percent	0.6%	72.1%	18.4%	0.2%	4.5%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	
AM Peak	10:00	08:00	09:00	08:00	10:00	05:00	07:00	10:00						09:00	09:00
Vol.	2	56	18	1	8	1	1	1						9	78
PM Peak	16:00	17:00	16:00	15:00	15:00	16:00		17:00						17:00	17:00
Vol.	3	279	57	2	14	3		2						10	353

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	12	2	0	1	0	0	0	0	0	0	0	0	0	15
01:00	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	1	5	1	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	9	3	0	1	0	0	0	0	0	0	0	0	0	13
06:00	0	23	11	0	2	0	0	0	0	0	0	0	0	2	38
07:00	0	39	14	0	1	1	0	0	0	0	0	0	0	5	60
08:00	3	65	18	0	3	1	0	1	0	0	0	0	0	3	94
09:00	0	37	11	1	2	3	0	0	0	0	0	0	0	1	55
10:00	0	42	16	0	1	1	0	0	0	0	0	0	0	2	62
11:00	1	54	10	0	5	0	0	0	0	0	0	0	0	1	71
12 PM	0	56	17	0	2	0	0	1	2	0	0	0	0	5	83
13:00	2	54	18	0	7	1	0	1	0	0	0	0	0	3	86
14:00	2	113	36	1	5	1	0	0	0	0	0	0	0	2	160
15:00	2	145	55	1	12	1	0	1	0	0	0	0	0	9	226
16:00	2	205	57	0	4	0	0	0	0	0	0	0	0	8	276
17:00	2	266	67	0	6	2	0	1	0	0	0	0	0	9	353
18:00	0	116	32	0	8	0	0	1	0	0	0	0	0	3	160
19:00	0	82	17	0	5	0	0	0	0	0	0	0	0	2	106
20:00	1	62	12	0	2	0	0	0	0	0	0	0	0	3	80
21:00	0	43	3	0	1	0	0	0	0	0	0	0	0	0	47
22:00	0	37	7	0	0	0	0	0	0	1	0	0	0	2	47
23:00	1	25	2	0	0	0	0	0	0	0	0	0	0	0	28
Total	17	1502	413	3	68	11	0	6	2	1	0	0	0	60	2083
Percent	0.8%	72.1%	19.8%	0.1%	3.3%	0.5%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	2.9%	
AM Peak	08:00	08:00	08:00	09:00	11:00	09:00		08:00						07:00	08:00
Vol.	3	65	18	1	5	3		1						5	94
PM Peak	13:00	17:00	17:00	14:00	15:00	17:00		12:00	12:00	22:00				15:00	17:00
Vol.	2	266	67	1	12	2		1	2	1				9	353

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/09/15	1	15	3	0	1	0	0	0	0	0	0	0	0	0	20
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	2	5
02:00	0	5	1	0	1	0	0	0	0	0	0	0	0	0	7
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
05:00	0	6	2	0	0	0	0	0	0	0	0	0	0	1	9
06:00	0	22	11	0	1	0	0	0	0	0	0	0	0	1	35
07:00	2	48	14	0	2	2	0	1	0	0	0	0	0	9	78
08:00	1	49	15	0	2	0	0	1	0	0	0	0	0	3	71
09:00	2	42	17	0	3	1	0	0	1	0	0	0	0	2	68
10:00	2	51	16	0	5	0	0	0	0	0	0	0	0	0	74
11:00	0	49	14	0	2	2	0	1	0	0	0	0	0	3	71
12 PM	1	73	18	0	6	0	0	0	0	0	0	0	0	3	101
13:00	0	60	13	1	3	0	0	0	0	0	0	0	0	5	82
14:00	1	91	33	0	3	2	0	1	0	0	0	0	0	5	136
15:00	1	125	42	2	12	1	0	2	0	0	0	0	0	3	188
16:00	2	208	54	0	9	0	0	2	0	0	0	0	0	7	282
17:00	1	236	52	0	9	1	0	0	0	0	0	0	0	13	312
18:00	1	136	33	0	7	0	0	0	0	0	0	0	0	7	184
19:00	1	73	21	0	2	1	0	0	0	0	0	0	0	2	100
20:00	0	63	11	0	3	0	0	0	0	0	0	0	0	2	79
21:00	1	59	6	0	0	0	0	0	0	0	0	0	0	1	67
22:00	0	51	6	0	0	0	0	0	0	0	0	0	0	2	59
23:00	0	26	3	0	0	0	0	0	0	0	0	0	0	1	30
Total	17	1501	388	3	71	10	0	8	1	0	0	0	0	72	2071
Percent	0.8%	72.5%	18.7%	0.1%	3.4%	0.5%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	
AM Peak Vol.	07:00	10:00	09:00		10:00	07:00		07:00	09:00					07:00	07:00
PM Peak Vol.	16:00	17:00	16:00	15:00	15:00	14:00		15:00						17:00	17:00

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	24	10	0	3	0	0	0	0	0	0	0	0	1	38
05:00	0	62	23	0	6	0	0	0	0	0	0	0	0	0	91
06:00	0	147	39	1	9	0	0	0	0	0	0	0	0	2	198
07:00	1	314	64	1	9	0	0	1	0	0	0	0	0	2	392
08:00	2	227	45	1	6	1	0	0	0	0	0	0	0	3	285
09:00	0	87	21	1	3	1	0	0	0	0	0	0	0	5	118
10:00	1	89	18	0	11	1	0	0	0	0	0	0	0	2	122
11:00	0	50	20	0	4	1	0	1	0	0	0	0	0	0	76
12 PM	0	77	19	2	2	1	0	0	0	0	0	0	0	2	103
13:00	0	83	18	0	7	0	0	0	0	0	0	0	0	0	108
14:00	0	92	34	1	8	1	0	0	0	0	0	0	0	4	140
15:00	0	101	34	1	9	1	0	1	0	0	0	0	0	5	152
16:00	2	82	31	0	10	1	0	0	0	0	0	0	0	5	131
17:00	1	84	27	0	1	1	0	0	0	0	0	0	0	6	120
18:00	0	80	23	0	4	0	0	0	0	0	0	0	0	6	113
19:00	0	57	18	0	2	0	0	0	0	0	0	0	0	3	80
20:00	0	44	11	0	3	0	0	0	0	0	0	0	0	0	58
21:00	0	31	6	0	1	0	0	0	0	0	0	0	0	3	41
22:00	0	20	4	0	1	0	0	0	0	0	0	0	0	0	25
23:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
Total	7	1779	470	8	99	9	0	3	0	0	0	0	0	49	2424
Percent	0.3%	73.4%	19.4%	0.3%	4.1%	0.4%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	
AM Peak	08:00	07:00	07:00	06:00	10:00	08:00		07:00						09:00	07:00
Vol.	2	314	64	1	11	1		1						5	392
PM Peak	16:00	15:00	14:00	12:00	16:00	12:00		15:00						17:00	15:00
Vol.	2	101	34	2	10	1		1						6	152

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	5	0	0	0	0	0	0	0	0	0	0	0	1	6
01:00	0	2	7	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	31	11	0	3	0	0	0	0	0	0	0	0	1	46
05:00	0	54	22	0	4	0	0	0	0	0	0	0	0	0	80
06:00	0	148	44	1	16	0	0	0	0	0	0	0	0	6	215
07:00	0	282	71	1	17	0	0	0	0	0	0	0	0	4	375
08:00	0	213	38	2	17	0	0	0	0	0	0	0	0	2	272
09:00	1	78	25	0	3	1	0	0	0	0	0	0	0	4	112
10:00	0	80	23	1	2	0	0	0	0	0	0	0	0	1	107
11:00	0	61	20	0	3	1	0	0	0	0	0	0	0	3	88
12 PM	0	68	10	0	4	2	0	0	0	0	0	0	0	3	87
13:00	3	77	21	0	5	0	0	1	0	0	0	0	0	1	108
14:00	0	90	24	0	5	0	0	0	0	0	0	0	0	3	122
15:00	0	92	25	0	7	0	0	0	0	0	0	0	0	8	132
16:00	0	94	21	0	3	1	0	1	0	0	0	0	0	7	127
17:00	2	104	29	0	4	1	0	1	0	0	0	0	0	6	147
18:00	0	67	16	0	5	0	0	1	0	0	0	0	0	0	89
19:00	1	50	12	0	4	0	0	0	0	0	0	0	0	3	70
20:00	0	48	10	0	1	0	0	0	0	0	0	0	0	3	62
21:00	0	38	2	0	1	0	0	0	0	0	0	0	0	2	43
22:00	0	19	3	0	0	0	0	0	0	0	0	0	0	2	24
23:00	0	9	6	0	1	0	0	0	0	0	0	0	0	0	16
Total	7	1719	443	5	105	6	0	4	0	0	0	0	0	60	2349
Percent	0.3%	73.2%	18.9%	0.2%	4.5%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	
AM Peak	09:00	07:00	07:00	08:00	07:00	09:00								06:00	07:00
Vol.	1	282	71	2	17	1								6	375
PM Peak	13:00	17:00	17:00		15:00	12:00		13:00						15:00	17:00
Vol.	3	104	29		7	2		1						8	147

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code:
 Station ID:
 Stewart Ave - East of Old Stage Rd
 Stewart Ave - East Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/09/15	0	11	0	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	31	10	0	2	0	0	0	0	0	0	0	0	0	43
05:00	0	57	25	0	3	0	0	0	0	0	0	0	0	2	87
06:00	0	161	47	1	11	0	0	1	0	0	0	0	0	2	223
07:00	2	292	72	1	12	0	0	1	0	0	0	0	0	5	385
08:00	1	174	40	1	3	0	0	1	0	0	0	0	0	4	224
09:00	1	84	17	0	5	1	0	0	0	0	0	0	0	0	108
10:00	1	57	19	0	2	0	0	0	0	0	0	0	0	1	80
11:00	0	67	16	0	5	1	0	0	0	0	0	0	0	0	89
12 PM	1	86	14	0	5	0	0	1	0	0	0	0	0	0	107
13:00	0	88	26	1	11	1	0	0	0	0	0	0	0	2	129
14:00	0	90	31	1	5	0	0	1	0	0	0	0	0	0	128
15:00	0	96	32	1	8	1	0	1	0	0	0	0	0	2	141
16:00	0	92	23	1	3	1	0	0	0	0	0	0	0	6	126
17:00	0	86	34	0	1	0	0	0	0	0	0	0	0	11	132
18:00	0	79	27	0	5	0	0	0	0	0	0	0	0	3	114
19:00	0	62	11	0	4	0	0	0	0	0	0	0	0	3	80
20:00	0	46	10	0	1	0	0	0	0	0	0	0	0	1	58
21:00	0	34	6	0	1	1	0	0	0	0	0	0	0	0	42
22:00	0	29	5	0	0	0	0	0	0	0	0	0	0	0	34
23:00	0	11	3	0	0	0	0	0	0	0	0	0	0	1	15
Total	6	1744	473	7	87	6	0	6	0	0	0	0	0	43	2372
Percent	0.3%	73.5%	19.9%	0.3%	3.7%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	
AM Peak	07:00	07:00	07:00	06:00	07:00	09:00		06:00						07:00	07:00
Vol.	2	292	72	1	12	1		1						5	385
PM Peak	12:00	15:00	17:00	13:00	13:00	13:00		12:00						17:00	15:00
Vol.	1	96	34	1	11	1		1						11	141

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Vol

Start Time	30-Nov-15		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	Direction 1	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction
12:00 AM	*	*	*	*	*	*	*	*	18	6	48	18	27	18	31	14
01:00	*	*	*	*	*	*	*	*	8	6	14	12	22	15	15	11
02:00	*	*	*	*	*	*	*	*	8	6	9	15	10	12	9	11
03:00	*	*	*	*	*	*	*	*	1	13	4	10	4	7	3	10
04:00	*	*	*	*	*	*	*	*	9	35	7	17	12	11	9	21
05:00	*	*	*	*	*	*	*	*	9	82	10	24	4	12	8	39
06:00	*	*	*	*	*	*	*	*	34	191	14	36	7	25	18	84
07:00	*	*	*	*	*	*	*	*	80	311	23	66	15	41	39	139
08:00	*	*	*	*	*	*	*	*	90	254	59	104	34	80	61	146
09:00	*	*	*	*	*	*	*	*	45	106	64	118	50	89	53	104
10:00	*	*	*	*	*	*	*	*	70	81	93	118	86	115	83	105
11:00	*	*	*	*	*	*	*	*	108	120	112	130	82	101	101	117
12:00 PM	*	*	*	*	*	*	*	*	98	115	99	119	108	116	102	117
01:00	*	*	*	*	*	*	*	*	110	133	110	132	103	110	108	125
02:00	*	*	*	*	*	*	*	*	148	136	117	93	91	114	119	114
03:00	*	*	*	*	*	*	*	*	220	172	95	127	83	100	133	133
04:00	*	*	*	*	*	*	*	*	273	136	98	115	104	111	158	121
05:00	*	*	*	*	*	*	*	*	310	162	109	110	112	108	177	127
06:00	*	*	*	*	*	*	*	*	173	114	109	112	97	76	126	101
07:00	*	*	*	*	*	*	*	*	76	81	99	72	71	71	82	75
08:00	*	*	*	*	*	*	*	*	63	51	72	60	54	49	63	53
09:00	*	*	*	*	*	*	*	*	70	51	65	50	47	40	61	47
10:00	*	*	*	*	*	*	*	*	47	45	53	37	34	24	45	35
11:00	*	*	*	*	*	*	*	*	53	22	40	31	19	11	37	21
Lane	0	0	0	0	0	0	0	0	2121	2429	1523	1726	1276	1456	1641	1870
Day	0	0	0	0	0	0	0	0	4550	4550	3249	3249	2732	2732	3511	3511
AM Peak	-	-	-	-	-	-	-	-	11:00	07:00	11:00	11:00	10:00	10:00	11:00	08:00
Vol.	-	-	-	-	-	-	-	-	108	311	112	130	86	115	101	146
PM Peak	-	-	-	-	-	-	-	-	17:00	15:00	14:00	13:00	17:00	12:00	17:00	15:00
Vol.	-	-	-	-	-	-	-	-	310	172	117	132	112	116	177	133

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/04/15	0	6	2	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
04:00	0	15	5	0	0	1	0	0	0	0	0	0	0	2	23
05:00	0	34	12	0	3	0	0	0	0	0	0	0	0	2	51
06:00	0	75	22	0	1	0	0	0	0	0	0	0	0	5	103
07:00	1	139	31	1	10	1	0	1	0	0	0	0	0	11	195
08:00	0	107	18	0	5	0	0	1	0	0	0	0	0	4	135
09:00	0	61	19	0	8	0	0	3	0	0	0	0	0	1	92
10:00	0	74	16	0	3	0	0	0	0	0	0	0	0	3	96
11:00	0	73	15	1	6	0	0	0	0	0	0	0	0	5	100
12 PM	0	70	19	0	6	0	0	0	0	0	0	0	0	4	99
13:00	0	75	15	0	4	0	0	1	0	0	0	0	0	4	99
14:00	0	93	13	0	3	0	0	0	0	0	0	0	0	7	116
15:00	2	97	20	1	5	2	0	0	0	0	0	0	0	10	137
16:00	0	103	12	0	5	1	0	0	0	0	0	0	0	5	126
17:00	0	88	12	0	2	0	0	0	0	0	0	0	0	16	118
18:00	0	78	12	0	3	0	0	0	0	0	0	0	0	0	93
19:00	0	52	10	1	2	0	0	1	0	0	0	0	0	0	66
20:00	0	46	4	0	2	0	0	0	0	0	0	0	0	0	52
21:00	0	46	8	0	1	0	0	0	0	0	0	0	0	2	57
22:00	0	33	1	0	0	0	0	0	0	0	0	0	0	2	36
23:00	0	14	2	0	0	0	0	0	0	0	0	0	0	1	17
Total	3	1391	271	4	69	5	0	7	0	0	0	0	0	84	1834
Percent	0.2%	75.8%	14.8%	0.2%	3.8%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	
AM Peak	07:00	07:00	07:00	07:00	07:00	04:00		09:00						07:00	07:00
Vol.	1	139	31	1	10	1		3						11	195
PM Peak	15:00	16:00	15:00	15:00	12:00	15:00		13:00						17:00	15:00
Vol.	2	103	20	1	6	2		1						16	137

Wallace Montgomery
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 Hunt Valley, MD 21030
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Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/05/15	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
01:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	7	1	0	0	0	0	0	0	0	0	0	0	1	9
05:00	0	12	5	0	0	0	0	0	0	0	0	0	0	0	17
06:00	0	22	9	0	1	0	0	1	0	0	0	0	0	0	33
07:00	1	37	7	0	3	0	0	0	0	0	0	0	0	4	52
08:00	0	41	13	0	3	0	0	0	0	0	0	0	0	0	57
09:00	0	51	11	0	2	0	0	1	0	0	0	0	0	2	67
10:00	0	53	8	0	0	0	0	0	0	0	0	0	0	6	67
11:00	0	64	22	0	4	0	0	1	0	0	0	0	0	1	92
12 PM	2	61	17	0	3	0	0	1	0	0	0	0	0	4	88
13:00	0	64	9	0	2	0	0	0	0	0	0	0	0	5	80
14:00	0	73	10	0	1	0	0	0	0	0	0	0	0	2	86
15:00	0	71	14	0	2	0	0	0	0	0	0	0	0	4	91
16:00	0	80	20	0	1	0	0	1	0	0	0	0	0	2	104
17:00	0	57	17	0	2	0	0	1	0	0	0	0	0	3	80
18:00	0	66	13	0	2	0	0	0	0	0	0	0	0	4	85
19:00	0	41	5	0	1	0	0	0	0	0	0	0	0	5	52
20:00	0	45	6	0	1	0	0	0	0	0	0	0	0	1	53
21:00	0	33	4	0	1	0	0	0	0	0	0	0	0	0	38
22:00	0	16	2	0	2	0	0	0	0	0	0	0	0	2	22
23:00	0	19	2	0	0	0	0	0	0	0	0	0	0	1	22
Total	3	934	196	0	31	0	0	6	0	0	0	0	0	47	1217
Percent	0.2%	76.7%	16.1%	0.0%	2.5%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	
AM Peak	07:00	11:00	11:00		11:00			06:00						10:00	11:00
Vol.	1	64	22		4			1						6	92
PM Peak	12:00	16:00	16:00		12:00			12:00						13:00	16:00
Vol.	2	80	20		3			1						5	104

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 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/06/15	0	14	2	0	0	0	0	0	0	0	0	0	0	0	16
01:00	0	6	2	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
04:00	0	7	0	0	0	0	0	0	0	0	0	0	0	1	8
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4
06:00	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
07:00	0	30	2	0	0	0	0	0	0	0	0	0	0	0	32
08:00	0	41	9	0	1	0	0	0	0	0	0	0	0	0	51
09:00	0	45	11	0	1	0	0	0	0	0	0	0	0	1	58
10:00	0	67	10	0	1	1	0	0	0	0	0	0	0	5	84
11:00	0	66	8	0	4	0	0	1	0	0	0	0	0	2	81
12 PM	1	79	17	0	1	1	0	0	0	0	0	0	0	2	101
13:00	0	65	15	0	3	1	0	0	0	0	0	0	0	6	90
14:00	1	67	9	0	2	0	0	0	0	0	0	0	0	3	82
15:00	0	50	13	0	0	0	0	0	0	0	0	0	0	9	72
16:00	0	60	11	0	0	0	0	0	0	0	0	0	0	2	73
17:00	0	46	7	0	3	0	0	0	0	0	0	0	0	1	57
18:00	0	41	9	0	0	0	0	0	0	0	0	0	0	0	50
19:00	0	36	3	0	0	0	0	0	0	0	0	0	0	5	44
20:00	0	26	6	0	0	0	0	0	0	0	0	0	0	0	32
21:00	0	22	0	0	1	0	0	0	0	0	0	0	0	2	25
22:00	0	13	4	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	13	0	0	1	0	0	0	0	0	0	0	0	1	15
Total	2	819	143	0	18	3	0	1	0	0	0	0	0	41	1027
Percent	0.2%	79.7%	13.9%	0.0%	1.8%	0.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	
AM Peak Vol.		10:00	09:00		11:00	10:00		11:00						10:00	10:00
PM Peak Vol.	12:00	12:00	12:00		13:00	12:00								15:00	12:00

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 Hunt Valley, MD 21030
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Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	7	3	0	0	0	0	0	0	0	0	0	0	0	10
04:00	0	9	6	0	0	0	0	0	0	0	0	0	0	0	15
05:00	0	36	14	0	2	0	0	0	0	0	0	0	0	2	54
06:00	0	77	21	0	4	0	0	0	0	0	0	0	0	3	105
07:00	1	162	31	1	14	0	0	2	0	0	0	0	0	9	220
08:00	0	156	32	0	8	0	0	0	1	0	0	0	0	14	211
09:00	0	71	10	0	5	1	0	0	0	0	0	0	0	5	92
10:00	0	53	16	0	3	0	0	0	0	0	0	0	0	2	74
11:00	0	59	17	0	3	0	0	1	0	0	0	0	0	3	83
12 PM	0	58	17	0	7	0	0	0	0	0	0	0	0	5	87
13:00	0	65	11	0	7	0	0	0	0	0	0	0	0	3	86
14:00	0	75	20	0	6	1	0	0	0	0	0	0	0	7	109
15:00	1	80	19	1	4	0	0	2	0	0	0	0	0	4	111
16:00	2	90	20	0	5	1	0	1	0	0	0	0	0	10	129
17:00	0	78	17	0	3	0	0	1	0	0	0	0	0	9	108
18:00	0	52	11	0	1	0	0	1	0	0	0	0	0	7	72
19:00	0	48	9	0	0	0	0	0	0	0	0	0	0	3	60
20:00	0	31	5	0	1	0	0	0	0	0	0	0	0	1	38
21:00	0	31	4	0	0	0	0	0	0	0	0	0	0	0	35
22:00	0	17	1	0	1	0	0	0	0	0	0	0	0	1	20
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	1	10
Total	4	1270	284	2	74	3	0	8	1	0	0	0	0	89	1735
Percent	0.2%	73.2%	16.4%	0.1%	4.3%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	5.1%	
AM Peak	07:00	07:00	08:00	07:00	07:00	09:00		07:00	08:00					08:00	07:00
Vol.	1	162	32	1	14	1		2	1					14	220
PM Peak	16:00	16:00	14:00	15:00	12:00	14:00		15:00						16:00	16:00
Vol.	2	90	20	1	7	1		2						10	129

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Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	7	0	0	0	0	0	0	0	0	0	0	0	2	9
01:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	4	0	1	0	0	0	0	0	0	0	0	0	9
04:00	0	18	3	0	0	0	0	0	0	0	0	0	0	0	21
05:00	0	34	14	0	2	0	0	0	0	0	0	0	0	3	53
06:00	0	99	22	0	4	0	0	0	0	0	0	0	0	6	131
07:00	0	159	35	0	4	0	0	1	0	0	0	0	0	8	207
08:00	2	131	23	0	3	0	0	0	0	0	0	0	0	8	167
09:00	0	71	13	0	3	0	0	0	0	0	0	0	0	1	88
10:00	0	52	9	0	4	0	0	0	0	0	0	0	0	0	65
11:00	0	49	8	0	4	0	0	0	0	0	0	0	0	1	62
12 PM	0	61	15	0	3	0	0	0	0	0	0	0	0	4	83
13:00	0	64	12	0	6	0	0	0	0	0	0	0	0	4	86
14:00	2	78	17	0	3	1	0	0	0	0	0	0	0	7	108
15:00	0	88	17	1	3	2	0	0	0	0	0	0	0	4	115
16:00	2	93	8	0	4	0	0	1	0	0	0	0	0	5	113
17:00	1	79	15	0	1	2	0	0	0	0	0	0	0	12	110
18:00	0	72	15	0	2	0	0	0	0	0	0	0	0	2	91
19:00	0	45	6	0	0	0	0	0	0	0	0	0	0	3	54
20:00	0	35	5	0	0	0	0	1	0	0	0	0	0	1	42
21:00	0	28	4	0	0	0	0	0	0	0	0	0	0	3	35
22:00	0	21	0	0	0	0	0	0	0	0	0	0	0	2	23
23:00	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
Total	7	1298	247	1	48	5	0	3	0	0	0	0	0	76	1685
Percent	0.4%	77.0%	14.7%	0.1%	2.8%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	
AM Peak	08:00	07:00	07:00		06:00			07:00						07:00	07:00
Vol.	2	159	35		4			1						8	207
PM Peak	14:00	16:00	14:00	15:00	13:00	15:00		16:00						17:00	15:00
Vol.	2	93	17	1	6	2		1						12	115

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Northbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/09/15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	2	5
03:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	20	4	0	0	0	0	0	0	0	0	0	0	0	24
05:00	0	34	16	0	1	0	0	0	0	0	0	0	0	1	52
06:00	0	87	19	0	4	0	0	0	0	0	0	0	0	3	113
07:00	1	153	27	0	8	0	0	0	0	0	0	0	0	13	202
08:00	0	129	31	0	3	0	0	1	0	0	0	0	0	9	173
09:00	0	61	17	0	5	0	0	0	0	0	0	0	0	2	85
10:00	0	48	10	0	2	0	0	1	0	0	0	0	0	2	63
11:00	1	64	20	0	3	0	0	0	0	0	0	0	0	2	90
12 PM	0	63	21	0	3	0	0	0	0	0	0	0	0	8	95
13:00	0	64	18	0	3	0	0	0	0	0	0	0	0	4	89
14:00	0	77	19	0	2	0	0	1	0	0	0	0	0	4	103
15:00	2	102	18	1	10	0	0	0	0	0	0	0	0	4	137
16:00	1	92	15	0	3	0	0	0	0	0	0	0	0	2	113
17:00	1	69	16	0	4	0	0	0	0	0	0	0	0	9	99
18:00	1	67	8	0	3	0	0	0	0	0	0	0	0	4	83
19:00	0	48	7	0	4	1	0	0	0	0	0	0	0	1	61
20:00	1	47	7	0	1	0	0	0	0	0	0	0	0	3	59
21:00	0	26	0	0	1	0	0	0	0	0	0	0	0	0	27
22:00	0	19	1	0	0	0	0	0	0	0	0	0	0	1	21
23:00	0	15	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	8	1296	278	1	60	1	0	3	0	0	0	0	0	74	1721
Percent	0.5%	75.3%	16.2%	0.1%	3.5%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	
AM Peak Vol.	07:00	07:00	08:00		07:00			08:00						07:00	07:00
PM Peak Vol.	15:00	15:00	12:00	15:00	15:00	19:00		14:00						17:00	15:00

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Southbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/04/15	0	10	1	0	1	0	0	0	0	0	0	0	0	2	14
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00	1	11	2	0	0	0	0	0	0	0	0	0	0	2	16
06:00	0	23	8	0	1	0	1	0	0	0	0	0	0	3	36
07:00	0	52	13	2	1	1	0	0	0	0	0	0	0	12	81
08:00	0	65	15	0	2	0	0	0	0	0	0	0	0	4	86
09:00	0	50	12	0	2	2	0	0	0	0	0	0	0	5	71
10:00	1	64	18	0	3	0	0	0	0	0	0	0	0	5	91
11:00	0	69	13	0	4	1	1	0	0	0	0	0	0	3	91
12 PM	1	63	23	0	3	3	0	0	0	0	0	0	0	6	99
13:00	1	93	10	0	1	1	0	0	0	0	0	0	0	8	114
14:00	0	90	22	1	1	2	0	0	0	0	0	0	0	8	124
15:00	1	127	34	1	6	4	1	0	0	0	0	0	0	19	193
16:00	3	164	31	0	10	3	0	1	0	0	0	0	0	18	230
17:00	1	232	43	0	10	2	0	0	0	0	0	0	0	10	298
18:00	1	99	20	0	3	0	0	0	0	0	0	0	0	2	125
19:00	2	62	13	0	3	1	0	0	0	0	0	0	0	3	84
20:00	0	39	3	0	2	0	0	0	0	0	0	0	0	0	44
21:00	0	40	4	0	1	0	0	0	0	0	0	0	0	3	48
22:00	0	35	7	0	2	0	0	0	0	0	0	0	0	2	46
23:00	0	36	4	0	0	0	0	0	0	0	0	0	0	1	41
Total	12	1441	296	4	56	20	3	1	0	0	0	0	0	116	1949
Percent	0.6%	73.9%	15.2%	0.2%	2.9%	1.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	
AM Peak	05:00	11:00	10:00	07:00	11:00	09:00	06:00							07:00	10:00
Vol.	1	69	18	2	4	2	1							12	91
PM Peak	16:00	17:00	17:00	14:00	16:00	15:00	15:00	16:00						15:00	17:00
Vol.	3	232	43	1	10	4	1	1						19	298

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Southbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/05/15	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
01:00	0	6	2	0	2	0	0	0	0	0	0	0	0	0	11
02:00	0	8	3	0	0	0	0	0	0	0	0	0	0	0	11
03:00	0	3	0	0	0	1	0	0	0	0	0	0	0	0	4
04:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
06:00	0	16	3	0	1	0	0	0	0	0	0	0	0	2	22
07:00	1	24	6	0	0	0	0	0	0	0	0	0	0	6	37
08:00	0	35	5	0	5	0	0	0	0	0	0	0	0	2	47
09:00	1	53	16	0	1	2	0	0	0	0	0	0	0	3	76
10:00	0	76	8	0	4	1	0	0	0	0	0	0	0	5	94
11:00	0	107	21	0	2	2	0	0	0	0	0	0	0	8	140
12 PM	3	99	17	0	3	1	0	0	0	0	0	0	0	8	131
13:00	0	109	18	0	5	1	0	0	0	0	0	0	0	9	142
14:00	2	95	18	0	0	0	0	0	0	0	0	0	0	4	119
15:00	0	111	22	0	3	2	0	0	0	0	0	0	0	9	147
16:00	1	115	22	0	2	2	0	1	0	0	0	0	0	8	151
17:00	1	83	23	0	7	0	0	0	0	0	0	0	0	5	119
18:00	1	110	17	0	4	0	0	0	0	0	0	0	0	3	135
19:00	1	68	13	0	3	1	0	0	0	0	0	0	0	3	89
20:00	0	46	6	0	1	0	0	0	1	0	0	0	0	1	55
21:00	0	33	10	0	1	1	0	0	0	0	0	0	0	2	47
22:00	0	45	4	0	1	1	0	0	0	0	0	0	0	1	52
23:00	0	31	5	0	1	0	0	0	0	0	0	0	0	1	38
Total	11	1292	243	0	46	15	0	1	1	0	0	0	0	81	1690
Percent	0.7%	76.4%	14.4%	0.0%	2.7%	0.9%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	4.8%	
AM Peak	07:00	11:00	11:00		08:00	09:00								11:00	11:00
Vol.	1	107	21		5	2								8	140
PM Peak	12:00	16:00	17:00		17:00	15:00		16:00	20:00					13:00	16:00
Vol.	3	115	23		7	2		1	1					9	151

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Southbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	9	0	0	0	0	0	0	0	0	0	0	0	2	11
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	1	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	4	0	0	1	0	0	0	0	0	0	0	0	2	7
04:00	0	4	2	0	0	0	0	0	0	0	0	0	0	1	7
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	1	5
06:00	0	20	4	0	0	0	0	0	0	0	0	0	0	3	27
07:00	2	53	11	3	4	3	0	0	0	0	0	0	0	11	87
08:00	0	45	14	0	3	0	0	0	0	0	0	0	0	10	72
09:00	2	47	9	1	2	0	0	0	0	0	0	0	0	7	68
10:00	1	52	23	0	2	1	0	0	0	0	0	0	0	5	84
11:00	1	58	18	0	3	1	0	0	0	0	0	0	0	4	85
12 PM	2	65	17	0	3	2	0	0	0	0	0	0	0	3	92
13:00	0	67	17	0	1	1	0	0	0	0	0	0	0	4	90
14:00	1	90	24	0	3	1	0	0	0	0	0	0	0	10	129
15:00	1	132	20	0	4	1	1	1	0	0	0	0	0	8	168
16:00	2	184	43	0	9	5	0	0	0	0	0	0	0	20	263
17:00	1	250	45	0	4	0	0	0	0	0	0	0	0	9	309
18:00	0	123	24	0	2	2	0	0	1	0	0	0	0	5	157
19:00	1	53	14	0	2	0	0	0	0	0	0	0	0	4	74
20:00	0	32	4	0	0	0	0	0	0	0	0	0	0	0	36
21:00	0	34	4	0	1	0	0	0	0	0	0	0	0	2	41
22:00	0	17	0	0	2	0	0	0	0	0	0	0	0	2	21
23:00	0	17	2	0	1	0	0	0	0	0	0	0	0	1	21
Total	14	1364	296	4	47	17	1	1	1	0	0	0	0	115	1860
Percent	0.8%	73.3%	15.9%	0.2%	2.5%	0.9%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	6.2%	
AM Peak	07:00	11:00	10:00	07:00	07:00	07:00								07:00	07:00
Vol.	2	58	23	3	4	3								11	87
PM Peak	12:00	17:00	17:00		16:00	16:00	15:00	15:00	18:00					16:00	17:00
Vol.	2	250	45		9	5	1	1	1					20	309

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Southbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	9	0	0	0	0	0	0	0	0	0	0	0	1	10
01:00	0	7	2	0	1	0	0	0	0	0	0	0	0	1	11
02:00	1	2	2	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
05:00	0	8	1	1	0	0	0	0	0	0	0	0	0	1	11
06:00	0	19	8	0	0	1	1	0	0	0	0	0	0	3	32
07:00	0	60	15	3	5	1	1	0	0	0	0	0	0	6	91
08:00	1	48	9	0	2	2	0	0	0	0	0	0	0	13	75
09:00	0	45	8	0	1	2	0	0	0	0	0	0	0	8	64
10:00	1	57	10	0	3	1	0	1	0	0	0	0	0	3	76
11:00	1	57	16	0	3	0	0	0	0	0	0	0	0	2	79
12 PM	1	52	14	0	2	3	0	1	0	0	0	0	0	3	76
13:00	1	76	17	0	1	1	0	1	0	0	0	0	0	12	109
14:00	1	94	25	0	5	2	0	0	0	0	0	0	0	14	141
15:00	0	137	28	3	6	2	0	0	0	0	0	0	0	6	182
16:00	4	195	35	1	6	3	0	0	1	0	0	0	0	13	258
17:00	5	240	48	0	1	2	0	1	0	0	0	0	0	12	309
18:00	1	136	22	0	2	0	0	0	0	0	0	0	0	6	167
19:00	0	42	18	0	0	0	0	0	0	0	0	0	0	1	61
20:00	0	43	3	0	0	0	0	0	0	0	0	0	0	1	47
21:00	0	44	8	0	2	0	0	0	0	0	0	0	0	6	60
22:00	0	22	1	0	2	0	0	0	0	0	0	0	0	0	25
23:00	0	21	0	0	1	0	0	0	0	0	0	0	0	0	22
Total	17	1425	291	8	43	20	2	4	1	0	0	0	0	112	1923
Percent	0.9%	74.1%	15.1%	0.4%	2.2%	1.0%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	5.8%	
AM Peak Vol.	02:00	07:00	11:00	07:00	07:00	08:00	06:00	10:00						08:00	07:00
PM Peak Vol.	17:00	17:00	17:00	15:00	15:00	12:00		12:00	16:00					14:00	17:00

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South Leg - Class

Southbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/09/15	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	13	2	0	0	0	0	0	0	0	0	0	0	0	15
06:00	0	22	4	0	1	2	0	0	0	0	0	0	0	4	33
07:00	1	61	12	2	1	0	0	0	0	0	0	0	0	8	85
08:00	0	56	13	0	3	0	0	0	0	0	0	0	0	7	79
09:00	0	59	13	0	5	0	0	0	0	0	0	0	0	5	82
10:00	0	62	15	0	3	0	0	0	0	0	0	0	0	3	83
11:00	0	62	17	0	4	2	0	0	0	0	0	0	0	7	92
12 PM	0	69	22	0	1	1	0	1	0	0	0	0	0	2	96
13:00	1	78	15	0	2	1	0	0	0	0	0	0	0	4	101
14:00	0	82	31	0	2	4	0	0	0	0	0	0	0	6	125
15:00	1	134	29	1	4	0	0	0	0	0	0	0	0	7	176
16:00	1	224	27	1	5	4	0	1	0	0	0	0	0	14	277
17:00	3	230	41	0	5	2	0	0	0	0	0	0	0	17	298
18:00	2	117	19	0	5	0	0	1	0	0	0	0	0	8	152
19:00	0	61	7	0	4	1	0	0	0	0	0	0	0	3	76
20:00	1	45	6	0	2	0	0	0	0	0	0	0	0	2	56
21:00	0	44	10	0	1	0	0	1	0	0	0	0	0	4	60
22:00	0	26	3	0	0	0	0	0	0	0	0	0	0	1	30
23:00	0	25	1	0	0	0	0	0	0	0	0	0	0	0	26
Total	10	1495	288	4	48	17	0	4	0	0	0	0	0	102	1968
Percent	0.5%	76.0%	14.6%	0.2%	2.4%	0.9%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	5.2%	
AM Peak	07:00	10:00	11:00	07:00	09:00	06:00								07:00	11:00
Vol.	1	62	17	2	5	2								8	92
PM Peak	17:00	17:00	17:00	15:00	16:00	14:00		12:00						17:00	17:00
Vol.	3	230	41	1	5	4		1						17	298

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - South - Vol

Start Time	30-Nov-15		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	*	*	*	*	*	*	*	*	8	14	9	12	16	11	13	
01:00	*	*	*	*	*	*	*	*	4	4	5	11	8	6	10	
02:00	*	*	*	*	*	*	*	*	2	5	1	11	4	2	9	
03:00	*	*	*	*	*	*	*	*	9	2	7	4	10	7	4	
04:00	*	*	*	*	*	*	*	*	23	6	9	5	8	4	5	
05:00	*	*	*	*	*	*	*	*	51	16	17	6	4	6	9	
06:00	*	*	*	*	*	*	*	*	103	36	33	22	13	5	21	
07:00	*	*	*	*	*	*	*	*	195	81	52	37	32	10	93	
08:00	*	*	*	*	*	*	*	*	135	86	57	47	51	33	55	
09:00	*	*	*	*	*	*	*	*	92	71	67	76	58	72	72	
10:00	*	*	*	*	*	*	*	*	96	91	67	94	84	88	82	
11:00	*	*	*	*	*	*	*	*	100	91	92	140	81	87	91	106
12:00 PM	*	*	*	*	*	*	*	*	99	99	88	131	101	140	96	123
01:00	*	*	*	*	*	*	*	*	99	114	80	142	90	114	90	123
02:00	*	*	*	*	*	*	*	*	116	124	86	119	82	112	95	118
03:00	*	*	*	*	*	*	*	*	137	193	91	147	72	120	100	153
04:00	*	*	*	*	*	*	*	*	126	230	104	151	73	105	101	162
05:00	*	*	*	*	*	*	*	*	118	298	80	119	57	109	85	175
06:00	*	*	*	*	*	*	*	*	93	125	85	135	50	84	76	115
07:00	*	*	*	*	*	*	*	*	66	84	52	89	44	72	54	82
08:00	*	*	*	*	*	*	*	*	52	44	53	55	32	51	46	50
09:00	*	*	*	*	*	*	*	*	57	48	38	47	25	21	40	39
10:00	*	*	*	*	*	*	*	*	36	46	22	52	17	16	25	38
11:00	*	*	*	*	*	*	*	*	17	41	22	38	15	11	18	30
Lane	0	0	0	0	0	0	0	0	1834	1949	1217	1690	1027	1306	1360	1647
Day	0	0	0	0	0	0	0	0	3783	2907	2333	3007				
AM Peak	-	-	-	-	-	-	-	-	07:00	10:00	11:00	11:00	10:00	10:00	07:00	11:00
Vol.	-	-	-	-	-	-	-	-	195	91	92	140	84	88	93	106
PM Peak	-	-	-	-	-	-	-	-	15:00	17:00	16:00	16:00	12:00	12:00	16:00	17:00
Vol.	-	-	-	-	-	-	-	-	137	298	104	151	101	140	101	175

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/04/15	0	19	4	0	1	0	0	0	0	0	0	0	0	0	24
01:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
02:00	0	8	3	0	0	0	0	0	0	0	0	0	0	0	11
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	11	2	0	1	0	0	0	0	0	0	0	0	0	14
05:00	0	18	4	1	0	0	0	0	0	0	0	0	0	0	23
06:00	0	45	16	0	3	3	0	0	0	0	0	0	0	3	70
07:00	0	101	29	2	7	0	0	0	0	0	0	0	0	15	154
08:00	0	104	27	1	10	1	0	0	1	0	0	0	0	3	147
09:00	0	75	19	0	11	0	0	1	0	0	0	0	0	0	106
10:00	0	103	27	0	11	0	1	0	0	0	0	0	0	4	146
11:00	1	137	34	0	14	1	0	0	0	0	0	0	0	8	195
12 PM	0	126	38	0	14	2	0	0	1	0	0	0	0	3	184
13:00	0	154	36	0	10	1	0	2	0	0	0	0	0	3	206
14:00	0	162	56	3	15	1	0	1	0	0	0	0	0	8	246
15:00	0	257	68	2	22	0	0	1	0	0	0	0	0	16	366
16:00	2	349	77	1	22	0	0	1	0	1	0	0	0	12	465
17:00	1	454	90	0	13	1	0	0	0	0	0	0	0	17	576
18:00	1	205	41	0	8	0	0	0	0	0	0	0	0	7	262
19:00	0	122	17	0	6	0	0	0	0	0	0	0	0	1	146
20:00	0	79	11	0	4	0	0	0	0	0	0	0	0	2	96
21:00	0	91	9	0	1	0	0	0	0	0	0	0	0	1	102
22:00	0	72	6	0	3	0	0	0	0	0	0	0	0	2	83
23:00	0	80	9	0	0	0	0	0	0	0	0	0	0	0	89
Total	5	2785	625	10	176	10	1	6	2	1	0	0	0	105	3726
Percent	0.1%	74.7%	16.8%	0.3%	4.7%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	2.8%	
AM Peak	11:00	11:00	11:00	07:00	11:00	06:00	10:00	09:00	08:00					07:00	11:00
Vol.	1	137	34	2	14	3	1	1	1					15	195
PM Peak	16:00	17:00	17:00	14:00	15:00	12:00		13:00	12:00	16:00				17:00	17:00
Vol.	2	454	90	3	22	2		2	1	1				17	576

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/05/15	0	44	9	0	0	0	0	0	0	0	0	0	0	0	53
01:00	0	16	3	0	3	0	0	0	0	0	0	0	0	0	22
02:00	0	14	3	0	0	0	0	0	0	0	0	0	0	0	17
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	11	1	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	10	5	0	1	0	0	0	0	0	0	0	0	0	16
06:00	0	18	8	0	2	0	0	0	0	0	0	0	0	0	28
07:00	0	40	9	0	2	0	0	0	0	0	0	0	0	2	53
08:00	0	83	11	1	12	0	0	1	0	0	0	0	0	2	110
09:00	1	100	21	0	3	0	0	0	0	0	0	0	0	1	126
10:00	0	131	20	1	7	0	0	0	0	0	0	0	0	5	164
11:00	4	173	45	1	6	0	0	0	0	0	0	0	0	6	235
12 PM	0	152	36	0	8	0	0	0	0	0	0	0	0	1	197
13:00	0	166	42	0	8	1	0	2	0	0	0	0	0	4	223
14:00	1	168	36	0	1	0	0	0	0	0	0	0	0	1	207
15:00	2	172	38	0	8	0	0	0	0	0	0	0	0	5	225
16:00	0	170	32	0	7	0	0	0	0	0	0	0	0	4	213
17:00	0	157	36	0	11	0	0	0	0	0	0	0	0	3	207
18:00	0	178	26	0	7	0	0	0	0	0	0	0	0	3	214
19:00	0	141	24	0	4	0	0	1	0	0	0	0	0	4	174
20:00	0	94	10	0	2	0	0	0	0	0	0	0	0	0	106
21:00	0	82	17	0	1	0	0	0	0	0	0	0	0	0	100
22:00	0	91	7	0	3	0	0	0	0	0	0	0	0	0	101
23:00	0	53	9	0	1	0	0	0	0	0	0	0	0	1	64
Total	8	2268	449	3	97	1	0	4	0	0	0	0	0	42	2872
Percent	0.3%	79.0%	15.6%	0.1%	3.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	
AM Peak Vol.	11:00	11:00	11:00	08:00	08:00			08:00						11:00	11:00
PM Peak Vol.	15:00	18:00	13:00		17:00	13:00		13:00						15:00	15:00

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/06/15	0	31	5	0	0	0	0	0	0	0	0	0	0	1	37
01:00	0	27	2	0	1	0	0	0	0	0	0	0	0	0	30
02:00	0	12	4	0	1	0	0	0	0	0	0	0	0	0	17
03:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13
05:00	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
06:00	0	11	4	0	0	0	0	0	0	0	0	0	0	0	15
07:00	0	19	2	0	0	0	0	0	0	0	0	0	0	0	21
08:00	0	34	13	1	5	0	0	0	0	0	0	0	0	0	53
09:00	0	80	15	0	2	0	0	0	0	0	0	0	0	0	97
10:00	1	115	22	0	2	0	0	1	0	0	0	0	0	9	150
11:00	1	106	28	0	2	0	0	1	0	0	0	0	0	5	143
12 PM	0	163	32	0	9	0	0	1	0	0	0	0	0	5	210
13:00	0	142	28	0	5	0	0	1	0	0	0	0	0	6	182
14:00	1	144	26	0	6	0	0	0	0	0	0	0	0	2	179
15:00	0	143	23	0	6	0	0	0	0	0	0	0	0	2	174
16:00	0	146	30	0	5	0	0	0	0	0	0	0	0	4	185
17:00	0	163	25	0	4	0	0	1	0	0	0	0	0	1	194
18:00	1	138	17	1	5	0	0	0	0	0	0	0	0	3	165
19:00	0	120	15	0	0	0	0	0	0	0	0	0	0	2	137
20:00	0	77	14	0	0	0	0	0	0	0	0	0	0	0	91
21:00	0	51	7	0	2	0	0	0	0	0	0	0	0	1	61
22:00	0	41	7	0	0	0	0	0	0	0	0	0	0	0	48
23:00	0	23	0	0	1	0	0	0	0	0	0	0	0	0	24
Total	4	1817	321	2	56	0	0	5	0	0	0	0	0	41	2246
Percent	0.2%	80.9%	14.3%	0.1%	2.5%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	
AM Peak	10:00	10:00	11:00	08:00	08:00			10:00						10:00	10:00
Vol.	1	115	28	1	5			1						9	150
PM Peak	14:00	12:00	12:00	18:00	12:00			12:00						13:00	12:00
Vol.	1	163	32	1	9			1						6	210

Wallace Montgomery
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 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	19	1	0	0	0	0	0	0	0	0	0	0	1	21
01:00	0	9	1	0	0	0	0	0	0	0	0	0	0	0	10
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	7	1	0	1	0	0	0	0	0	0	0	0	0	9
04:00	0	7	3	1	2	0	0	1	0	0	0	0	0	1	15
05:00	0	21	4	0	1	1	0	0	0	0	0	0	0	0	27
06:00	0	41	8	1	2	0	0	0	0	0	0	0	0	4	56
07:00	2	92	18	1	9	1	0	0	0	0	0	0	0	18	141
08:00	1	87	19	1	6	1	0	0	0	0	0	0	0	7	122
09:00	0	88	20	2	5	0	0	1	0	0	0	0	0	9	125
10:00	0	95	34	1	8	1	0	1	1	0	0	0	0	2	143
11:00	0	91	36	0	12	1	0	0	0	0	0	0	0	1	141
12 PM	0	119	31	1	12	0	0	0	0	0	0	0	0	3	166
13:00	0	141	41	0	10	1	0	1	0	0	0	0	0	3	197
14:00	3	163	52	0	17	0	0	0	0	0	0	0	0	7	242
15:00	1	241	50	2	19	1	0	2	0	0	0	0	0	6	322
16:00	0	366	86	0	16	1	0	2	0	0	0	0	0	12	483
17:00	0	507	87	0	13	0	0	3	0	0	0	0	0	18	628
18:00	1	253	40	0	11	2	0	1	0	0	0	0	0	2	310
19:00	0	121	25	0	6	0	0	0	0	0	0	0	0	3	155
20:00	0	79	13	0	2	0	0	0	0	0	0	0	0	0	94
21:00	2	77	12	0	2	0	0	0	0	0	0	0	0	0	93
22:00	0	42	3	0	4	0	0	0	0	0	0	0	0	0	49
23:00	0	39	2	0	3	0	0	0	0	0	0	0	0	0	44
Total	10	2709	587	10	161	10	0	12	1	0	0	0	0	97	3597
Percent	0.3%	75.3%	16.3%	0.3%	4.5%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	
AM Peak	07:00	10:00	11:00	09:00	11:00	05:00		04:00	10:00					07:00	10:00
Vol.	2	95	36	2	12	1		1	1					18	143
PM Peak	14:00	17:00	17:00	15:00	15:00	18:00		17:00						17:00	17:00
Vol.	3	507	87	2	19	2		3						18	628

Wallace Montgomery
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 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Eastbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	18	2	0	1	0	0	0	0	0	0	0	0	0	21
01:00	0	11	2	0	1	0	0	0	0	0	0	0	0	0	14
02:00	0	7	3	0	0	0	0	0	0	0	0	0	0	0	10
03:00	0	5	0	1	2	0	0	1	0	0	0	0	0	0	9
04:00	0	14	2	0	0	0	0	0	0	0	0	0	0	1	17
05:00	0	16	5	1	1	0	0	0	0	0	0	0	0	0	23
06:00	0	45	12	0	4	1	0	0	0	0	0	0	0	1	63
07:00	0	103	29	1	11	1	0	0	0	0	0	0	0	10	155
08:00	2	92	22	0	6	2	0	0	0	0	0	0	0	6	130
09:00	0	82	19	1	4	0	0	0	0	0	0	0	0	3	109
10:00	0	93	26	0	7	0	0	1	0	0	0	0	0	3	130
11:00	0	96	27	1	11	0	0	1	0	0	0	0	0	0	136
12 PM	2	111	36	0	9	1	0	3	0	0	0	0	0	2	164
13:00	2	120	39	0	11	1	0	1	0	0	0	0	0	3	177
14:00	1	192	62	1	17	1	0	0	0	0	0	0	0	5	279
15:00	1	274	80	3	20	0	0	0	0	0	0	0	0	10	388
16:00	2	392	82	0	9	0	0	1	0	0	0	0	0	10	496
17:00	2	481	104	0	7	1	0	2	0	0	0	0	0	14	611
18:00	1	218	41	0	10	0	0	1	0	0	0	0	0	6	277
19:00	0	114	28	0	5	0	0	0	0	0	0	0	0	3	150
20:00	0	102	11	0	4	0	0	1	0	0	0	0	0	1	119
21:00	0	71	11	0	3	0	0	0	0	0	0	0	0	1	86
22:00	0	54	7	0	2	0	0	0	1	0	0	0	0	2	66
23:00	0	44	2	0	1	0	0	0	0	0	0	0	0	0	47
Total	13	2755	652	9	146	8	0	12	1	0	0	0	0	81	3677
Percent	0.4%	74.9%	17.7%	0.2%	4.0%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%	
AM Peak	08:00	07:00	07:00	03:00	07:00	08:00		03:00						07:00	07:00
Vol.	2	103	29	1	11	2		1						10	155
PM Peak	12:00	17:00	17:00	15:00	15:00	12:00		12:00	22:00					17:00	17:00
Vol.	2	481	104	3	20	1		3	1					14	611

Wallace Montgomery
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Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/04/15	0	4	3	0	2	0	0	0	0	0	0	0	0	0	9
01:00	0	4	2	0	2	0	0	0	0	0	0	0	0	0	8
02:00	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	15	5	0	2	0	0	0	0	0	0	0	0	0	22
04:00	0	31	17	0	7	0	0	0	0	0	0	0	0	2	57
05:00	0	79	40	0	14	0	0	1	0	0	0	0	0	0	134
06:00	0	187	62	0	27	1	0	0	0	0	0	0	0	2	279
07:00	0	333	102	2	30	4	0	1	0	0	0	0	0	6	478
08:00	1	245	84	3	29	1	0	1	0	0	0	0	0	10	374
09:00	0	128	49	1	21	0	0	2	0	0	0	0	0	5	206
10:00	1	124	30	2	9	1	0	1	0	0	0	0	0	1	169
11:00	1	136	46	1	19	0	0	0	0	0	0	0	0	1	204
12 PM	0	126	53	1	19	1	0	0	0	0	0	0	0	5	205
13:00	2	156	43	0	12	0	0	1	0	0	0	0	0	6	220
14:00	1	153	45	2	20	1	0	0	0	0	0	0	0	3	225
15:00	1	187	68	2	29	0	0	0	0	0	0	0	0	8	295
16:00	1	167	43	0	16	2	0	0	0	0	0	0	0	6	235
17:00	3	154	51	1	18	1	0	0	0	0	0	0	0	11	239
18:00	1	130	38	0	11	0	0	0	0	0	0	0	0	6	186
19:00	0	103	23	1	14	0	0	0	0	0	0	0	0	1	142
20:00	0	67	20	0	5	0	0	0	0	0	0	0	0	0	92
21:00	0	70	13	0	9	0	0	0	0	0	0	0	0	0	92
22:00	0	54	12	0	1	0	0	0	0	0	0	0	0	2	69
23:00	0	25	4	0	1	0	0	0	0	0	0	0	0	0	30
Total	12	2681	856	16	317	12	0	7	0	0	0	0	0	75	3976
Percent	0.3%	67.4%	21.5%	0.4%	8.0%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	
AM Peak	08:00	07:00	07:00	08:00	07:00	07:00		09:00						08:00	07:00
Vol.	1	333	102	3	30	4		2						10	478
PM Peak	17:00	15:00	15:00	14:00	15:00	16:00		13:00						17:00	15:00
Vol.	3	187	68	2	29	2		1						11	295

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Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/05/15	0	17	4	0	1	0	0	0	0	0	0	0	0	0	22
01:00	0	12	2	0	0	0	0	0	0	0	0	0	0	0	14
02:00	0	8	5	0	0	0	0	0	0	0	0	0	0	0	13
03:00	0	13	0	0	1	0	0	0	0	0	0	0	0	0	14
04:00	0	17	5	0	2	0	0	0	0	0	0	0	0	0	24
05:00	0	24	9	0	4	1	0	0	0	0	0	0	0	0	38
06:00	0	39	16	1	13	0	0	1	0	0	0	0	0	1	71
07:00	1	78	22	0	11	0	0	0	0	0	0	0	0	1	113
08:00	0	104	40	0	13	1	0	1	0	0	0	0	0	1	160
09:00	0	113	39	1	13	0	0	2	0	0	0	0	0	0	168
10:00	2	115	38	0	13	0	0	0	0	0	0	0	0	4	172
11:00	0	137	44	0	16	1	0	1	0	0	0	0	0	5	204
12 PM	2	121	42	0	16	0	0	0	0	0	0	0	0	2	183
13:00	1	141	41	0	7	0	0	0	0	0	0	0	0	4	194
14:00	0	115	35	0	5	0	0	0	0	0	0	0	0	5	160
15:00	1	135	49	0	13	0	0	0	0	0	0	0	0	4	202
16:00	3	130	42	0	14	0	0	0	0	0	0	0	0	3	192
17:00	0	117	35	0	11	0	0	1	0	0	0	0	0	4	168
18:00	0	123	33	0	8	0	0	0	0	0	0	0	0	2	166
19:00	0	86	14	0	4	2	0	0	0	0	0	0	0	1	107
20:00	0	72	17	0	3	0	0	0	0	0	0	0	0	0	92
21:00	0	59	11	0	6	0	0	0	0	0	0	0	0	1	77
22:00	0	40	8	0	3	0	0	0	0	0	0	0	0	0	51
23:00	0	35	9	0	0	0	0	0	0	0	0	0	0	1	45
Total	10	1851	560	2	177	5	0	6	0	0	0	0	0	39	2650
Percent	0.4%	69.8%	21.1%	0.1%	6.7%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	
AM Peak	10:00	11:00	11:00	06:00	11:00	05:00		09:00						11:00	11:00
Vol.	2	137	44	1	16	1		2						5	204
PM Peak	16:00	13:00	15:00		12:00	19:00		17:00						14:00	15:00
Vol.	3	141	49		16	2		1						5	202

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Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/06/15	0	25	3	0	1	0	0	0	0	0	0	0	0	1	30
01:00	0	11	7	0	0	0	0	0	0	0	0	0	0	0	18
02:00	0	8	1	0	2	0	0	0	0	0	0	0	0	0	11
03:00	0	9	3	0	1	0	0	0	0	0	0	0	0	0	13
04:00	0	15	4	0	0	0	0	0	0	0	0	0	0	0	19
05:00	0	9	2	0	1	0	0	0	0	0	0	0	0	0	12
06:00	1	26	9	0	4	0	0	0	0	0	0	0	0	3	43
07:00	0	51	11	0	7	0	0	0	0	0	0	0	0	2	71
08:00	0	72	30	0	12	0	0	0	0	0	0	0	0	1	115
09:00	0	98	24	0	6	0	0	1	0	0	0	0	0	0	129
10:00	3	113	40	0	16	1	0	0	0	0	0	0	0	4	177
11:00	2	110	27	0	7	0	0	0	0	0	0	0	0	2	148
12 PM	1	130	39	1	13	1	0	0	0	0	0	0	0	4	189
13:00	0	109	42	0	15	1	0	0	0	0	0	0	0	6	173
14:00	2	127	33	0	12	0	0	0	0	0	0	0	0	0	174
15:00	0	108	26	0	5	0	0	0	0	0	0	0	0	4	143
16:00	2	113	38	0	10	1	0	0	0	0	0	0	0	1	165
17:00	0	99	33	0	12	0	0	0	0	0	0	0	0	1	145
18:00	0	75	23	0	7	0	0	0	0	0	0	0	0	7	112
19:00	0	80	12	0	4	0	0	0	0	0	0	0	0	1	97
20:00	1	48	12	1	6	0	0	1	0	0	0	0	0	0	69
21:00	0	39	16	0	3	1	0	0	0	0	0	0	0	1	60
22:00	0	26	11	0	0	0	0	0	0	0	0	0	0	0	37
23:00	0	18	0	0	2	0	0	0	0	0	0	0	0	0	20
Total	12	1519	446	2	146	5	0	2	0	0	0	0	0	38	2170
Percent	0.6%	70.0%	20.6%	0.1%	6.7%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	
AM Peak	10:00	10:00	10:00		10:00	10:00		09:00						10:00	10:00
Vol.	3	113	40		16	1		1						4	177
PM Peak	14:00	12:00	13:00	12:00	13:00	12:00		20:00						18:00	12:00
Vol.	2	130	42	1	15	1		1						7	189

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/07/15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	14	3	0	2	0	0	0	0	0	0	0	0	0	19
04:00	0	33	18	0	6	0	0	0	0	0	0	0	0	0	57
05:00	1	94	34	0	19	0	0	0	0	0	0	0	0	0	148
06:00	1	207	60	1	27	0	0	0	0	0	0	0	0	5	301
07:00	1	412	115	1	32	0	0	2	0	0	0	0	0	22	585
08:00	3	337	95	1	26	2	0	0	0	0	0	0	0	7	471
09:00	0	133	43	2	18	2	0	1	0	0	0	0	0	5	204
10:00	0	130	35	0	17	0	0	0	1	0	0	0	0	2	185
11:00	0	98	39	2	14	1	0	0	0	0	0	0	0	4	158
12 PM	1	119	33	2	18	1	0	0	0	0	0	0	0	3	177
13:00	0	137	34	0	18	1	0	0	0	0	0	0	0	1	191
14:00	0	145	49	0	26	3	0	0	0	0	0	0	0	2	225
15:00	0	149	64	3	21	1	0	2	0	0	0	0	0	5	245
16:00	3	141	52	0	20	1	0	0	0	0	0	0	0	15	232
17:00	1	132	49	0	5	0	0	0	0	0	0	0	0	12	199
18:00	2	112	31	0	10	1	0	0	0	0	0	0	0	7	163
19:00	0	84	30	0	4	2	0	0	0	0	0	0	0	2	122
20:00	0	63	14	1	11	0	0	1	0	0	0	0	0	0	90
21:00	0	51	9	0	2	0	0	0	0	0	0	0	0	2	64
22:00	0	26	7	0	4	0	0	0	0	0	0	0	0	0	37
23:00	0	13	6	0	0	0	0	0	0	0	0	0	0	1	20
Total	13	2644	824	13	300	15	0	6	1	0	0	0	0	95	3911
Percent	0.3%	67.6%	21.1%	0.3%	7.7%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	
AM Peak Vol.	08:00	07:00	07:00	09:00	07:00	08:00		07:00	10:00					07:00	07:00
PM Peak Vol.	16:00	15:00	15:00	15:00	14:00	14:00		15:00						16:00	15:00

Wallace Montgomery
 10150 York Road - Suite 200
 Hunt Valley, MD 21030
 410-494-9093

Site Code: 3333

Station ID:

Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg - Class

Westbound

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12/08/15	0	9	3	0	0	0	0	0	0	0	0	0	0	0	12
01:00	0	3	3	0	5	0	0	0	0	0	0	0	0	0	11
02:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	10	7	0	2	0	0	0	0	0	0	0	0	0	19
04:00	0	45	13	0	9	0	0	0	0	0	0	0	0	0	67
05:00	1	79	38	0	16	0	0	0	0	0	0	0	0	0	134
06:00	0	234	70	2	29	0	0	0	0	0	0	0	0	1	336
07:00	1	384	136	1	37	0	0	0	0	0	0	0	0	4	563
08:00	0	285	75	3	30	1	0	1	0	0	0	0	0	8	403
09:00	0	131	49	0	11	0	0	0	0	0	0	0	0	2	193
10:00	0	117	33	1	14	0	0	0	0	0	0	0	0	4	169
11:00	1	102	39	1	17	1	0	0	0	0	0	0	0	1	162
12 PM	0	113	35	0	11	3	0	0	0	0	0	0	0	4	166
13:00	1	123	40	0	15	0	0	1	0	0	0	0	0	5	185
14:00	1	145	44	0	15	0	0	0	0	0	0	0	0	5	210
15:00	1	147	58	2	22	1	0	0	0	0	0	0	0	9	240
16:00	2	151	34	0	15	0	0	1	0	0	0	0	0	5	208
17:00	2	150	46	0	13	2	0	1	0	0	0	0	0	17	231
18:00	0	105	25	0	13	1	0	1	0	0	0	0	0	4	149
19:00	0	66	19	0	7	0	0	0	0	0	0	0	0	3	95
20:00	0	67	18	1	4	0	0	2	0	0	0	0	0	0	92
21:00	0	48	8	0	3	0	0	0	0	0	0	0	0	0	59
22:00	0	27	6	0	1	0	0	0	0	0	0	0	0	2	36
23:00	0	11	3	0	5	0	0	0	0	0	0	0	0	0	19
Total	10	2555	804	11	294	9	0	7	0	0	0	0	0	74	3764
Percent	0.3%	67.9%	21.4%	0.3%	7.8%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	
AM Peak	05:00	07:00	07:00	08:00	07:00	08:00		08:00						08:00	07:00
Vol.	1	384	136	3	37	1		1						8	563
PM Peak	16:00	16:00	15:00	15:00	15:00	12:00		20:00						17:00	15:00
Vol.	2	151	58	2	22	3		2						17	240

Start Time	30-Nov-15		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	Direction	1	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction	Direction
12:00 AM	*	*	*	*	*	*	*	*	180	197	182	206	204	185	189	206
01:00	*	*	*	*	*	*	*	*	160	204	205	221	222	189	196	205
02:00	*	*	*	*	*	*	*	*	217	222	249	228	213	164	226	205
03:00	*	*	*	*	*	*	*	*	343	246	368	285	217	197	309	243
04:00	*	*	*	*	*	*	*	*	488	262	455	240	220	198	388	233
05:00	*	*	*	*	*	*	*	*	667	197	577	244	201	167	482	203
06:00	*	*	*	*	*	*	*	*	364	173	275	187	216	169	285	176
07:00	*	*	*	*	*	*	*	*	146	127	150	142	174	107	157	125
08:00	*	*	*	*	*	*	*	*	120	89	93	92	112	94	108	92
09:00	*	*	*	*	*	*	*	*	79	67	103	92	98	77	93	79
10:00	*	*	*	*	*	*	*	*	65	41	84	71	97	51	82	54
11:00	*	*	*	*	*	*	*	*	59	25	85	31	70	46	71	34
12:00 PM	*	*	*	*	*	*	*	*	24	8	58	22	37	29	40	20
01:00	*	*	*	*	*	*	*	*	12	9	22	14	31	17	22	13
02:00	*	*	*	*	*	*	*	*	11	6	17	13	17	13	15	11
03:00	*	*	*	*	*	*	*	*	3	21	5	14	7	13	5	16
04:00	*	*	*	*	*	*	*	*	14	57	12	24	13	17	13	33
05:00	*	*	*	*	*	*	*	*	23	130	15	37	12	14	17	60
06:00	*	*	*	*	*	*	*	*	67	278	29	67	14	42	37	129
07:00	*	*	*	*	*	*	*	*	148	476	52	110	23	69	74	218
08:00	*	*	*	*	*	*	*	*	146	375	106	159	50	114	101	216
09:00	*	*	*	*	*	*	*	*	110	209	127	174	99	128	112	170
10:00	*	*	*	*	*	*	*	*	147	167	168	169	149	174	155	170
11:00	*	*	*	*	*	*	*	*	190	201	221	203	137	151	183	185
Lane	0	0	0	0	0	0	0	0	3783	3787	3658	3045	2633	2425	3360	3086
Day	0	0	0	0	0	0	0	0	7570	7570	6703	6703	5058	5058	6446	6446
AM Peak	-	-	-	-	-	-	-	-	05:00	04:00	05:00	03:00	01:00	04:00	05:00	03:00
Vol.	-	-	-	-	-	-	-	-	667	262	577	285	222	198	482	243
PM Peak	-	-	-	-	-	-	-	-	23:00	19:00	23:00	23:00	22:00	22:00	23:00	19:00
Vol.	-	-	-	-	-	-	-	-	190	476	221	203	149	174	183	218

Appendix C

Existing and 2025 No-Build Capacity and Operational Analyses

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Ave @ Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel County			
Date Performed	1/7/2016			Analysis Year	2016			
Analysis Time Period	AM							
Project Description <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		70	69	10	365			
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	0	70	69	10	365	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0				0	
Lanes	0	1	1	0	1		0	
Configuration		T	R	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	177		15					
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	177	0	15	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0				0	
Lanes	0	0	0	0	0		0	
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		10		192				
C (m) (veh/h)		1457		583				
v/c		0.01		0.33				
95% queue length		0.02		1.43				
Control Delay (s/veh)		7.5		14.2				
LOS		A		B				
Approach Delay (s/veh)	--	--	14.2					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Ave @ Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel County			
Date Performed	1/7/2016			Analysis Year	2016			
Analysis Time Period	PM							
Project Description <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		203	263	26	90			
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	0	203	263	26	90	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	0	1	1	0	1	0		
Configuration		T	R	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	97		13					
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	97	0	13	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		26		110				
C (m) (veh/h)		1106		660				
v/c		0.02		0.17				
95% queue length		0.07		0.59				
Control Delay (s/veh)		8.3		11.5				
LOS		A		B				
Approach Delay (s/veh)	--	--	11.5					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Ave @ Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel County			
Date Performed	1/7/2016			Analysis Year	2025			
Analysis Time Period	AM							
Project Description <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)		85	84	12	445			
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	0	85	84	12	445	0		
Percent Heavy Vehicles	0	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0				0	
Lanes	0	1	1	0	1		0	
Configuration		T	R	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	216		18					
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00		
Hourly Flow Rate, HFR (veh/h)	216	0	18	0	0	0		
Percent Heavy Vehicles	0	0	0	0	0	0		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0				0	
Lanes	0	0	0	0	0		0	
Configuration		LR						
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		12		234				
C (m) (veh/h)		1421		513				
v/c		0.01		0.46				
95% queue length		0.03		2.36				
Control Delay (s/veh)		7.6		17.8				
LOS		A		C				
Approach Delay (s/veh)	--	--	17.8					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	JO			Intersection	Stewart Ave @ Old Stage Rd		
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel County		
Date Performed	1/7/2016			Analysis Year	2025		
Analysis Time Period	PM						
Project Description <i>Stewart Ave/Old Stage Rd Intersection Study</i>							
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>			
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		247	321	32	110		
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	0	247	321	32	110	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Undivided						
RT Channelized			0			0	
Lanes	0	1	1	0	1	0	
Configuration		T	R	LT			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	118		16				
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	
Hourly Flow Rate, HFR (veh/h)	118	0	16	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Delay, Queue Length, and Level of Service							
Approach	Eastbound	Westbound	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
v (veh/h)		32		134			
C (m) (veh/h)		1014		594			
v/c		0.03		0.23			
95% queue length		0.10		0.86			
Control Delay (s/veh)		8.7		12.8			
LOS		A		B			
Approach Delay (s/veh)	--	--	12.8				
Approach LOS	--	--	B				

Appendix D

Speed Study Analysis

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Eastbound Start Time	1 5	6 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 55	56 60	61 65	66 70	71 9999	Average		85th Percent	
															Mean	Percent		
12/05/1																		
5	0	0	0	1	13	18	13	3	0	0	0	0	0	0	48	3	27	33
01:00	0	0	0	0	3	4	4	3	0	0	0	0	0	0	14	1	30	36
02:00	0	0	0	0	1	2	4	2	0	0	0	0	0	0	9	1	31	36
03:00	0	0	0	0	1	1	1	0	1	0	0	0	0	0	4	0	30	42
04:00	0	0	0	0	1	3	3	0	0	0	0	0	0	0	7	0	29	33
05:00	0	0	0	0	3	3	2	2	0	0	0	0	0	0	10	1	28	36
06:00	1	0	2	0	3	3	3	2	0	0	0	0	0	0	14	1	26	34
07:00	0	0	1	1	6	12	2	1	0	0	0	0	0	0	23	2	26	29
08:00	3	0	0	1	5	19	20	9	2	0	0	0	0	0	59	4	30	36
09:00	3	0	0	1	9	15	24	8	4	0	0	0	0	0	64	5	30	36
10:00	2	0	2	4	10	32	36	5	2	0	0	0	0	0	93	7	29	34
11:00	1	0	0	2	15	47	31	12	3	1	0	0	0	0	112	8	29	34
12 PM	2	0	1	2	23	38	28	4	1	0	0	0	0	0	99	7	27	33
13:00	0	0	0	5	26	43	28	7	1	1	0	0	0	0	110	8	27	33
14:00	2	1	0	3	23	45	30	12	1	0	0	0	0	0	117	8	28	34
15:00	5	0	1	2	17	33	27	8	2	0	0	0	0	0	95	7	28	34
16:00	6	0	0	3	22	29	24	13	1	0	0	0	0	0	98	7	28	34
17:00	6	0	0	3	29	40	28	2	1	0	0	0	0	0	109	8	27	32
18:00	1	1	1	4	31	39	21	11	0	0	0	0	0	0	109	8	27	33
19:00	1	0	0	11	27	36	17	7	0	0	0	0	0	0	99	7	26	32
20:00	2	0	0	2	22	30	10	3	2	1	0	0	0	0	72	5	26	32
21:00	0	0	1	1	13	27	18	5	0	0	0	0	0	0	65	5	28	33
22:00	1	0	0	0	16	20	10	6	0	0	0	0	0	0	53	4	27	34
23:00	1	0	0	6	8	8	12	5	0	0	0	0	0	0	40	3	28	34
Total	37	2	9	52	327	547	396	130	21	2	0	0	0	0	1523			
Percent	2.4%	0.1%	0.6%	3.4%	21.5%	35.9%	26.0%	8.5%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%				

AM Peak Vol.	3	08:00	11:00	11:00	09:00	11:00	11:00	08:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00
PM Peak Vol.	6	16:00	14:00	12:00	19:00	18:00	14:00	15:00	20:00	15:00	16:00	16:00	15:00	20:00	14:00	14:00	14:00	11:00

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Eastbound Start Time	1		6		11		16		21		26		31		36		41		46		56		61		66		71		Average		50th		85th			
	5	10	15	20	25	30	35	40	45	55	60	65	70	75	80	85	90	95	99	99	Total	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent	Mean	Percent					
12/06/1	0	0	0	1	9	10	6	0	1	0	0	0	0	0	0	0	0	0	0	0	27	2	26	2	26	2	26	2	26	2	26	2	26	2	26	
01:00	0	0	0	3	2	7	5	3	2	0	0	0	0	0	0	0	0	0	0	0	22	2	29	2	29	2	29	2	29	2	29	2	29	2	29	
02:00	0	0	0	0	1	3	4	2	0	0	0	0	0	0	0	0	0	0	0	0	10	1	31	1	31	1	31	1	31	1	31	1	31	1	31	
03:00	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	20	0	20	0	20	0	20	0	20	0	20	0	20	
04:00	0	0	1	1	0	4	5	0	1	0	0	0	0	0	0	0	0	0	0	0	12	1	29	1	29	1	29	1	29	1	29	1	29	1	29	
05:00	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	32	0	32	0	32	0	32	0	32	0	32	0	32	
06:00	0	0	0	0	3	1	1	1	3	4	3	4	3	4	3	4	3	4	3	4	15	1	29	1	29	1	29	1	29	1	29	1	29	1	29	
07:00	0	0	0	0	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	0	34	2	26	2	26	2	26	2	26	2	26	2	26	2	26	
08:00	2	0	0	4	5	17	6	0	0	0	0	0	0	0	0	0	0	0	0	0	50	4	29	4	29	4	29	4	29	4	29	4	29	4	29	
09:00	1	0	0	0	11	14	20	4	0	0	0	0	0	0	0	0	0	0	0	0	86	6	29	6	29	6	29	6	29	6	29	6	29	6	29	
10:00	3	0	1	1	12	27	28	12	2	0	0	0	0	0	0	0	0	0	0	0	108	8	29	8	29	8	29	8	29	8	29	8	29	8	29	
11:00	5	0	1	8	18	30	11	9	0	0	0	0	0	0	0	0	0	0	0	82	6	26	6	26	6	26	6	26	6	26	6	26	6	26		
12 PM	1	0	0	5	16	36	37	13	0	0	0	0	0	0	0	0	0	0	0	103	7	29	7	29	7	29	7	29	7	29	7	29	7	29		
13:00	4	0	0	0	19	33	35	9	2	1	0	0	0	0	0	0	0	0	0	91	6	28	6	28	6	28	6	28	6	28	6	28	6	28	6	28
14:00	5	1	0	4	16	32	22	10	0	1	0	0	0	0	0	0	0	0	0	83	6	28	6	28	6	28	6	28	6	28	6	28	6	28	6	28
15:00	1	0	1	3	13	28	27	8	2	0	0	0	0	0	0	0	0	0	0	104	7	27	7	27	7	27	7	27	7	27	7	27	7	27	7	27
16:00	5	0	1	10	18	35	32	2	1	0	0	0	0	0	0	0	0	0	0	112	8	26	8	26	8	26	8	26	8	26	8	26	8	26	8	26
17:00	3	0	2	13	25	39	23	7	0	0	0	0	0	0	0	0	0	0	0	97	7	26	7	26	7	26	7	26	7	26	7	26	7	26	7	26
18:00	1	0	0	16	22	36	14	8	0	0	0	0	0	0	0	0	0	0	0	71	5	26	5	26	5	26	5	26	5	26	5	26	5	26	5	26
19:00	2	0	0	9	19	18	21	2	0	0	0	0	0	0	0	0	0	0	0	54	4	27	4	27	4	27	4	27	4	27	4	27	4	27	4	27
20:00	0	0	0	4	12	24	12	1	1	0	0	0	0	0	0	0	0	0	0	47	3	28	3	28	3	28	3	28	3	28	3	28	3	28	3	28
21:00	0	0	0	2	11	17	13	4	0	0	0	0	0	0	0	0	0	0	0	34	2	27	2	27	2	27	2	27	2	27	2	27	2	27	2	27
22:00	1	0	1	3	4	14	7	3	1	0	0	0	0	0	0	0	0	0	0	19	1	28	1	28	1	28	1	28	1	28	1	28	1	28	1	28
23:00	0	0	0	0	5	6	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	34	1	8	90	246	436	341	104	13	3	0	0	0	0	0	0	0	0	0	1276																
Percent	2.7%	0.1%	0.6%	7.1%	19.3%	34.2%	26.7%	8.2%	1.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%																	

AM	11:00	14:00	17:00	20:00	23:00	Total
Peak	11:00	14:00	17:00	20:00	23:00	10:00
Vol.	10:00	14:00	17:00	20:00	23:00	86
PM	14:00	17:00	20:00	23:00	Total	17:00
Peak	14:00	17:00	20:00	23:00	17:00	112
Vol.	14:00	17:00	20:00	23:00	17:00	112

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Eastbound Start Time	1 5	6 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 55	56 60	61 65	66 70	71 9999	Total	Average		50th		85th		
																Mean	Percent	Percent	Percent	Percent	Percent	
12/07/1																						
5	0	0	0	1	5	2	6	1	0	0	0	0	0	0	15	1	28	0	31	28	33	33
01:00	0	0	0	0	0	2	3	1	0	0	0	0	0	0	6	0	0	0	31	31	35	35
02:00	0	0	0	0	0	2	1	1	0	0	0	0	0	0	4	0	0	0	30	30	37	37
03:00	0	0	0	0	1	1	1	1	0	0	0	0	0	0	4	0	0	0	30	30	37	37
04:00	0	0	0	0	2	2	1	0	0	0	0	0	0	0	5	0	0	0	26	26	31	31
05:00	0	0	0	1	1	4	8	3	1	0	0	0	0	0	18	1	31	1	31	31	37	37
06:00	1	0	0	1	9	12	11	2	0	0	0	0	0	0	36	3	27	3	27	33	33	33
07:00	3	0	0	6	13	23	19	5	0	0	0	0	0	0	69	5	27	5	27	33	33	33
08:00	4	0	0	3	12	30	22	4	1	0	0	0	0	0	76	5	28	5	28	33	33	33
09:00	8	0	0	1	14	24	21	6	3	1	0	0	0	0	78	6	28	6	28	34	34	34
10:00	6	2	5	6	10	22	19	7	0	0	0	0	0	0	77	6	27	6	27	33	33	33
11:00	2	0	0	1	11	29	21	7	2	0	0	0	0	0	73	5	28	5	28	34	34	34
12 PM	0	0	0	1	9	31	36	13	2	0	0	0	0	0	92	7	30	7	30	35	35	35
13:00	1	0	1	2	11	39	36	11	2	0	0	0	0	0	103	7	29	7	29	34	34	34
14:00	7	0	1	2	33	59	34	5	0	0	0	0	0	0	141	10	27	10	27	32	32	32
15:00	4	1	0	16	40	76	45	9	0	0	0	0	0	0	191	14	27	14	27	32	32	32
16:00	6	0	0	9	53	125	58	12	1	0	0	0	0	0	264	19	27	19	27	32	32	32
17:00	10	0	3	16	77	146	90	9	2	0	0	0	0	0	353	25	27	25	27	32	32	32
18:00	2	0	1	9	39	62	54	9	1	0	0	0	0	0	177	13	28	13	28	33	33	33
19:00	5	0	1	7	23	41	20	5	1	0	0	0	0	0	103	7	26	7	26	32	32	32
20:00	0	0	0	6	14	33	9	4	0	0	0	0	0	0	66	5	26	5	26	31	31	31
21:00	2	0	0	2	8	28	20	4	2	0	0	0	0	0	66	5	28	5	28	34	34	34
22:00	2	0	0	3	10	12	11	2	0	0	0	0	0	0	40	3	27	3	27	33	33	33
23:00	1	0	0	0	9	8	4	2	0	0	0	0	0	0	24	2	26	2	26	32	32	32
Total	64	3	12	93	404	813	550	123	18	1	0	0	0	0	2081							
Percent	3.1%	0.1%	0.6%	4.5%	19.4%	39.1%	26.4%	5.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%								
AM Peak Vol.	09:00	10:00	10:00	07:00	09:00	08:00	08:00	10:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00							
PM Peak Vol.	8	2	5	6	14	30	22	7	3	1					78							
	17:00	15:00	17:00	15:00	17:00	17:00	17:00	12:00	12:00	12:00					17:00							
	10	1	3	16	77	146	90	13	2	2					353							

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Eastbound Start Time	1 5	6 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 55	56 60	61 65	66 70	71 9999	Total	Average		85th Percent
																Mean	Percent	
12/09/1																		
5	0	0	0	1	5	6	4	4	0	0	0	0	0	0	20	1	28	36
01:00	2	0	0	0	0	1	2	0	0	0	0	0	0	0	5	0	27	33
02:00	0	0	0	0	0	1	5	1	0	0	0	0	0	0	7	0	32	34
03:00	0	0	0	0	2	0	2	0	1	0	0	0	0	0	5	0	31	41
04:00	0	0	0	0	3	0	4	1	0	0	0	0	0	0	8	1	31	34
05:00	1	0	0	0	0	3	5	0	0	0	0	0	0	0	9	1	30	33
06:00	1	0	1	2	11	14	3	3	0	0	0	0	0	0	35	2	25	31
07:00	9	0	4	2	26	17	17	3	0	0	0	0	0	0	78	6	24	32
08:00	3	0	0	4	11	30	18	4	1	0	0	0	0	0	71	5	27	33
09:00	2	0	1	4	16	24	19	2	0	0	0	0	0	0	68	5	27	32
10:00	0	0	2	3	16	23	23	6	1	0	0	0	0	0	74	5	28	34
11:00	3	0	4	5	13	24	21	1	0	0	0	0	0	0	71	5	27	32
12 PM	3	0	0	2	19	41	24	9	3	0	0	0	0	0	101	7	28	34
13:00	4	0	1	5	12	25	22	11	2	0	0	0	0	0	82	6	28	35
14:00	5	1	1	5	18	52	44	9	1	0	0	0	0	0	136	10	28	33
15:00	2	0	1	7	42	68	58	9	1	0	0	0	0	0	188	13	28	33
16:00	6	0	0	10	51	120	84	10	1	0	0	0	0	0	282	20	28	33
17:00	12	0	0	12	64	132	76	15	1	0	0	0	0	0	312	22	27	32
18:00	7	0	1	8	44	71	42	10	1	0	0	0	0	0	184	13	27	33
19:00	2	0	0	3	12	42	31	8	2	0	0	0	0	0	100	7	28	34
20:00	2	0	0	3	21	26	22	4	1	0	0	0	0	0	79	6	27	33
21:00	1	0	0	3	18	18	22	4	1	0	0	0	0	0	67	5	28	33
22:00	2	0	0	5	8	22	17	5	0	0	0	0	0	0	59	4	28	33
23:00	1	0	0	1	6	8	8	6	0	0	0	0	0	0	30	2	29	36
Total	68	1	16	85	418	768	573	125	17	0	0	0	0	0	2071			
Percent	3.3%	0.0%	0.8%	4.1%	20.2%	37.1%	27.7%	6.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%				

AM Peak Vol.	9	07:00	11:00	17:00	08:00	10:00	10:00	03:00	07:00	07:00	78
PM Peak Vol.	12	17:00	14:00	1	13:00	17:00	17:00	12:00	17:00	17:00	312

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Eastbound	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent	
Start Time	12/10/1	5	0	0	0	0	1	0	5	3	5	30	26	30	35	40	45	45	55	55	60	60	65	65	70	70	9999	18	1	28	33		
01:00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	24	35
02:00	1	0	0	0	0	0	0	0	1	3	2	2	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	8	1	28	34	34	
03:00	0	0	0	0	0	0	1	0	0	4	2	4	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	8	1	28	34	34	
04:00	1	0	0	0	0	0	0	0	0	1	3	1	3	1	1	3	1	0	0	0	0	0	0	0	0	0	0	6	0	31	35	35	
05:00	0	0	0	0	0	0	0	0	1	3	7	3	7	3	3	3	1	0	0	0	0	0	0	0	0	0	0	15	1	32	37	37	
06:00	0	0	0	0	0	0	0	0	9	4	14	4	14	4	1	1	0	0	0	0	0	0	0	0	0	0	0	28	2	26	31	31	
07:00	6	0	0	0	0	0	6	17	17	24	24	17	24	17	4	4	1	0	0	0	0	0	0	0	0	0	0	75	5	26	33	33	
08:00	3	0	0	0	1	3	3	19	19	30	30	26	30	26	5	7	0	0	0	0	0	0	0	0	0	0	0	87	6	27	33	33	
09:00	0	0	0	0	0	0	2	15	20	24	24	20	24	20	7	0	0	0	0	0	0	0	0	0	0	0	0	68	5	29	34	34	
10:00	1	0	0	0	0	0	2	19	12	20	12	20	12	20	2	2	0	0	0	0	0	0	0	0	0	0	0	56	4	27	33	33	
11:00	1	0	0	0	0	0	4	15	30	22	30	22	30	22	4	4	1	0	0	0	0	0	0	0	0	0	0	77	6	28	33	33	
12 PM	5	0	0	0	0	0	4	16	33	32	33	32	33	32	14	3	3	0	0	0	0	0	0	0	0	0	0	107	8	29	35	35	
13:00	2	0	0	0	0	0	6	12	24	41	24	41	24	41	6	0	0	0	0	0	0	0	0	0	0	0	0	91	6	30	34	34	
14:00	6	1	1	1	1	1	4	19	57	51	57	51	57	51	6	1	1	0	0	0	0	0	0	0	0	0	0	146	10	28	33	33	
15:00	7	0	0	0	0	0	5	45	85	44	85	44	85	44	6	2	2	0	0	0	0	0	0	0	0	0	0	194	14	27	32	32	
16:00	13	0	1	20	59	116	60	7	1	0	0	0	0	0	7	1	1	0	0	0	0	0	0	0	0	0	0	277	20	26	32	32	
17:00	8	0	0	0	0	0	17	80	134	83	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	332	24	27	32	32	
18:00	4	0	0	0	3	18	48	82	47	7	7	47	7	47	7	0	0	0	0	0	0	0	0	0	0	0	0	209	15	26	32	32	
19:00	4	0	0	0	2	4	18	24	16	5	2	16	5	2	5	2	2	0	0	0	0	0	0	0	0	0	0	75	5	26	33	33	
20:00	1	0	0	0	0	0	5	18	33	18	5	18	5	18	5	0	0	0	0	0	0	0	0	0	0	0	0	80	6	27	33	33	
21:00	3	1	0	0	0	0	2	15	19	15	3	19	15	3	3	1	1	0	0	0	0	0	0	0	0	0	0	59	4	27	33	33	
22:00	1	0	0	0	0	0	1	12	19	10	1	19	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	45	3	26	32	32	
23:00	1	0	0	0	0	0	0	6	17	13	4	13	4	13	4	1	1	0	0	0	0	0	0	0	0	0	0	43	3	29	34	34	
Total	68	2	9	105	452	789	565	104	15	1	0	0	0	0	104	15	1	0	0	0	0	0	0	0	0	0	0	2110	3	29	34	34	
Percent	3.2%	0.1%	0.4%	5.0%	21.4%	37.4%	26.8%	4.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.9%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

AM	07:00	08:00	08:00	08:00	08:00	09:00	02:00	08:00
Peak Vol.	6	1	6	19	30	26	7	1
PM	16:00	14:00	18:00	16:00	17:00	17:00	12:00	23:00
Peak Vol.	13	1	3	20	80	83	14	1
Total	401	14	73	595	2736	4977	3518	822
Percent	3.0%	0.1%	0.6%	4.5%	20.6%	37.5%	26.5%	6.2%

15th Percentile : 21 MPH
 50th Percentile : 27 MPH
 85th Percentile : 33 MPH
 95th Percentile : 36 MPH

Stats
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 8495
 Percent in Pace : 64.0%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%
 Mean Speed(Average) : 28 MPH

Site Code: 2222
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - East Leg - Speed

Westbound Start Time	1 5	6 10	11 15	16 20	21 25	26 30	31 35	36 40	41 45	46 55	56 60	61 65	66 70	71 9999	Total	Average		50th		85th		
																Mean	Percent	Percent	Percent	Percent	Percent	
12/08/1																						
5	1	0	0	0	3	2	0	0	0	0	0	0	0	0	6	0	0	23	27	0	23	27
01:00	0	0	0	0	1	4	2	1	0	1	0	0	0	0	9	1	1	29	38	0	29	38
02:00	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	0	0	27	29	0	27	29
03:00	0	0	0	0	2	3	1	1	0	0	0	0	0	0	7	0	0	27	34	0	27	34
04:00	1	0	0	2	6	20	13	4	0	0	0	0	0	0	46	3	3	28	33	0	28	33
05:00	0	0	0	2	9	25	36	7	1	0	0	0	0	0	80	6	6	30	34	0	30	34
06:00	5	0	0	2	37	73	80	17	1	0	0	0	0	0	215	15	15	29	34	0	29	34
07:00	4	0	0	3	29	132	179	27	1	0	0	0	0	0	375	27	27	30	34	0	30	34
08:00	2	0	1	20	31	80	115	23	0	0	0	0	0	0	272	19	19	30	34	0	30	34
09:00	4	0	0	2	11	38	43	12	1	1	0	0	0	0	112	8	8	30	34	0	30	34
10:00	1	0	0	9	13	32	38	13	1	0	0	0	0	0	107	8	8	29	34	0	29	34
11:00	3	0	0	2	19	23	29	11	1	0	0	0	0	0	88	6	6	29	34	0	29	34
12 PM	3	0	0	4	13	33	22	11	1	0	0	0	0	0	87	6	6	28	34	0	28	34
13:00	1	0	0	4	19	27	43	12	2	0	0	0	0	0	108	8	8	30	34	0	30	34
14:00	3	0	0	6	24	44	37	8	0	0	0	0	0	0	122	9	9	28	33	0	28	33
15:00	8	0	0	4	29	49	38	4	0	0	0	0	0	0	132	9	9	27	32	0	27	32
16:00	7	0	1	5	18	42	42	12	0	0	0	0	0	0	127	9	9	28	34	0	28	34
17:00	6	0	0	3	27	54	47	9	1	0	0	0	0	0	147	10	10	28	33	0	28	33
18:00	0	0	0	11	22	39	14	3	0	0	0	0	0	0	89	6	6	26	31	0	26	31
19:00	3	0	0	4	18	21	22	2	0	0	0	0	0	0	70	5	5	27	33	0	27	33
20:00	3	0	0	2	21	23	8	5	0	0	0	0	0	0	62	4	4	26	32	0	26	32
21:00	2	0	0	2	18	13	4	4	0	0	0	0	0	0	43	3	3	24	31	0	24	31
22:00	2	0	0	1	8	8	4	1	0	0	0	0	0	0	24	2	2	25	31	0	25	31
23:00	0	0	0	1	1	9	3	2	0	0	0	0	0	0	16	1	1	28	34	0	28	34
Total	59	0	2	89	379	799	820	189	10	2	0	0	0	0	2349							
Percent	2.5%	0.0%	0.1%	3.8%	16.1%	34.0%	34.9%	8.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%								

AM	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	07:00	375	
Peak																					
Vol.	5	1	20	37	132	179	27	1	1	1	1	1	1	1	1	1	1	1	17:00	147	
PM																					
Peak																					
Vol.	8	1	11	29	54	47	12	2	2	2	2	2	2	2	2	2	2	2	17:00	147	

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg- Speed

Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	Average		85th Percent	
																												Total	Mean		Percent
12/04/1	5	0	0	0	0	0	0	0	0	0	1	4	4	8	10	10	1	0	0	0	0	0	0	0	0	0	0	24	2	39	43
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	1	0	0	0	0	0	0	0	0	0	0	12	1	36	40
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	1	0	0	0	0	0	0	0	0	0	0	11	1	34	39
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	3	0	47	52	
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	4	2	0	0	0	0	0	0	0	14	1	39	44	
05:00	0	0	0	0	0	0	0	0	0	0	1	3	3	10	10	5	2	2	2	2	2	2	2	2	2	0	0	23	2	38	47
06:00	3	0	0	0	0	0	1	2	2	2	2	19	24	11	6	2	0	0	0	0	0	0	0	0	0	0	0	5	36	43	
07:00	15	0	0	0	0	0	1	5	9	9	9	27	30	30	10	0	0	0	0	0	0	0	0	0	0	0	154	11	36	42	
08:00	3	0	0	0	0	0	0	0	4	5	4	21	59	37	18	0	0	0	0	0	0	0	0	0	0	0	147	10	38	44	
09:00	0	0	0	0	0	0	0	0	1	8	8	15	41	32	9	0	0	0	0	0	0	0	0	0	0	0	106	8	38	43	
10:00	4	0	0	0	0	0	0	0	1	12	12	20	70	32	7	0	0	0	0	0	0	0	0	0	0	0	146	10	37	42	
11:00	8	0	0	0	0	0	0	0	6	6	16	40	56	47	22	0	0	0	0	0	0	0	0	0	0	0	195	14	37	44	
12 PM	3	0	0	0	0	0	0	0	6	11	11	31	74	45	14	0	0	0	0	0	0	0	0	0	0	0	184	13	37	43	
13:00	3	0	0	0	0	0	0	0	1	9	9	34	72	69	17	1	0	0	0	0	0	0	0	0	0	0	206	15	38	44	
14:00	8	0	0	0	0	0	0	0	8	9	40	40	116	52	12	1	0	0	0	0	0	0	0	0	0	0	246	18	37	42	
15:00	16	0	0	0	0	0	0	0	2	15	15	87	144	81	21	0	0	0	0	0	0	0	0	0	0	0	366	26	37	42	
16:00	12	0	0	0	0	0	1	1	1	26	26	119	177	109	20	0	0	0	0	0	0	0	0	0	0	0	465	33	37	42	
17:00	17	0	0	0	0	0	1	1	5	31	31	185	223	99	15	0	0	0	0	0	0	0	0	0	0	0	576	41	36	41	
18:00	7	0	0	0	0	0	0	0	4	2	2	64	114	57	14	0	0	0	0	0	0	0	0	0	0	0	262	19	37	42	
19:00	1	0	0	0	0	0	0	0	0	0	5	33	54	38	15	0	0	0	0	0	0	0	0	0	0	0	146	10	38	44	
20:00	2	0	0	0	0	0	0	0	0	0	0	26	36	29	3	0	0	0	0	0	0	0	0	0	0	0	96	7	37	43	
21:00	1	0	0	0	0	0	0	0	0	0	4	24	41	19	13	0	0	0	0	0	0	0	0	0	0	0	102	7	37	44	
22:00	2	0	0	0	0	0	0	0	0	0	2	21	34	20	4	0	0	0	0	0	0	0	0	0	0	0	83	6	37	42	
23:00	0	0	0	0	0	0	0	0	0	0	5	17	39	22	6	0	0	0	0	0	0	0	0	0	0	0	89	6	37	43	
Total	105	0	0	4	47	172	841	1467	851	233	6	0	0	0	3726																
Percent	2.8%	0.0%	0.0%	0.1%	1.3%	4.6%	22.6%	39.4%	22.8%	6.3%	0.2%	0.0%	0.0%	0.0%	0.0%																

AM	07:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	05:00	11:00
Peak Vol.	15	1	6	16	40	40	70	47	22	2	195	
PM	17:00	16:00	14:00	17:00	17:00	17:00	17:00	16:00	15:00	13:00	17:00	
Peak Vol.	17	1	8	31	185	223	109	21	1	576		

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg- Speed

Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Average		85th Percent			
																													Mean	Percent				
12/05/1	5	0	0	0	0	0	0	0	0	0	3	3	12	21	21	14	14	3	3	0	0	0	0	0	0	0	0	0	0	53	4	37	43	
01:00	0	0	0	0	0	0	0	0	0	0	3	3	1	9	9	8	8	1	1	0	0	0	0	0	0	0	0	0	0	22	2	38	43	
02:00	0	0	0	0	0	0	0	0	0	0	0	1	7	7	6	6	3	3	0	0	0	0	0	0	0	0	0	0	17	1	40	46		
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	1	1	0	0	0	0	0	0	0	5	0	41	56		
04:00	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	12	1	40	49		
05:00	0	0	0	0	0	0	0	0	0	0	0	1	8	8	8	4	4	2	1	1	1	1	0	0	0	0	0	0	16	1	39	47		
06:00	0	0	0	0	0	0	0	0	0	0	3	6	6	8	8	9	1	1	1	1	1	1	0	0	0	0	0	0	28	2	38	43		
07:00	2	0	0	0	0	0	0	0	1	4	4	10	22	22	22	12	12	2	2	0	0	0	0	0	0	0	0	0	53	4	37	42		
08:00	2	0	0	0	0	0	0	0	3	5	5	16	36	36	33	15	15	0	0	0	0	0	0	0	0	0	0	0	110	8	39	44		
09:00	1	0	0	0	0	0	0	0	3	3	3	19	43	37	22	1	0	0	0	0	0	0	0	0	0	0	0	0	126	9	39	46		
10:00	5	0	0	0	0	0	0	0	2	9	9	27	53	50	17	1	0	0	0	0	0	0	0	0	0	0	0	0	164	12	38	44		
11:00	5	0	0	0	0	0	0	0	1	15	15	48	89	58	18	0	1	0	0	0	0	0	0	0	0	0	0	0	235	17	37	43		
12 PM	1	0	0	0	0	0	0	0	0	0	3	38	95	50	10	0	0	0	0	0	0	0	0	0	0	0	0	0	197	14	37	43		
13:00	4	0	0	0	0	0	0	0	0	0	4	40	95	63	17	0	0	0	0	0	0	0	0	0	0	0	0	0	223	16	38	43		
14:00	1	0	0	0	0	0	0	0	1	5	4	42	70	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	207	15	38	44		
15:00	5	0	0	0	0	0	0	0	1	5	5	55	86	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	225	16	37	43		
16:00	4	0	0	0	0	0	0	0	0	0	3	39	89	56	22	0	0	0	0	0	0	0	0	0	0	0	0	0	213	15	38	44		
17:00	3	0	0	0	0	0	0	0	0	0	10	58	80	42	14	0	0	0	0	0	0	0	0	0	0	0	0	0	207	15	37	42		
18:00	3	0	0	0	0	0	0	0	0	0	3	37	93	64	14	0	0	0	0	0	0	0	0	0	0	0	0	0	214	15	38	43		
19:00	4	0	0	0	0	0	0	0	0	0	5	40	66	48	11	0	0	0	0	0	0	0	0	0	0	0	0	0	174	12	37	43		
20:00	0	0	0	0	0	0	0	0	0	0	5	30	37	23	11	0	0	0	0	0	0	0	0	0	0	0	0	0	106	8	37	43		
21:00	0	0	0	0	0	0	0	0	0	0	4	24	39	23	9	1	0	0	0	0	0	0	0	0	0	0	0	0	100	7	37	43		
22:00	0	0	0	0	0	0	0	0	0	0	1	15	44	32	9	0	0	0	0	0	0	0	0	0	0	0	0	0	101	7	38	44		
23:00	1	0	0	0	0	0	0	0	0	0	2	13	24	18	6	0	0	0	0	0	0	0	0	0	0	0	0	0	64	5	38	43		
Total	41	0	0	0	0	0	0	0	9	95	1119	778	248	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2872					
Percent	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	3.3%	20.0%	39.0%	27.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
AM Peak	10:00								08:00	11:00	11:00	11:00	11:00	11:00	03:00	11:00	11:00	09:00	09:00	03:00	03:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00
Vol.	5								3	15	48	89	58	22	1	1	1	22	22	1	1	1	1	1	1	1	1	1	235					
PM Peak	15:00								14:00	17:00	17:00	12:00	14:00	16:00	21:00	21:00	16:00	16:00	21:00	21:00	21:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	
Vol.	5								1	10	58	95	71	22	1	1	22	22	1	1	1	1	1	1	1	1	1	1	225					

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg- Speed

Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	Average		85th Percent	
																												Mean	Percent		
12/05/1	0	0	0	0	0	0	0	0	1	1	1	1	7	7	8	8	4	4	1	1	0	0	0	0	0	0	0	0	2	36	42
01:00	0	0	0	0	0	0	0	0	0	0	1	1	3	3	7	7	3	3	0	0	0	0	0	0	0	0	0	0	1	37	41
02:00	0	0	0	0	0	0	0	0	0	0	1	1	2	2	4	4	3	3	3	3	0	0	0	0	0	0	0	0	1	39	48
03:00	0	0	0	0	0	0	0	0	0	0	2	2	0	0	7	7	3	3	2	2	0	0	0	0	0	0	0	0	1	38	44
04:00	0	0	0	0	0	0	0	0	1	2	2	2	5	5	7	7	7	7	2	2	0	0	0	0	0	0	0	0	2	37	43
05:00	0	0	0	0	0	0	0	0	1	3	3	3	14	14	13	13	4	4	3	3	0	0	0	0	0	0	0	0	3	35	41
06:00	1	0	0	0	0	0	3	3	2	2	5	5	23	23	20	20	9	9	8	8	0	0	0	0	0	0	0	0	5	35	43
07:00	1	0	0	0	1	1	0	0	1	7	7	7	20	20	41	41	29	29	12	12	1	1	0	0	0	0	0	0	8	38	44
08:00	1	0	0	0	0	0	2	2	6	18	18	39	58	58	58	58	27	27	8	8	1	1	0	0	0	0	0	0	11	36	42
09:00	0	0	0	0	0	0	0	0	6	5	5	35	56	56	56	56	50	50	16	16	0	0	0	0	0	0	0	0	12	38	44
10:00	4	0	0	0	0	0	0	0	6	8	8	34	75	75	75	75	33	33	12	12	0	0	0	0	0	0	0	0	12	37	42
11:00	4	0	0	0	0	0	1	1	7	22	22	67	60	67	60	60	35	35	8	8	0	0	0	0	0	0	0	0	15	35	41
12 PM	2	0	0	0	0	0	0	0	1	10	10	40	74	74	74	74	47	47	9	9	0	0	0	0	0	0	0	0	13	37	43
13:00	4	0	0	0	0	0	0	0	1	9	9	33	71	71	71	71	60	60	16	16	0	0	0	0	0	0	0	0	14	38	43
14:00	5	0	0	0	0	0	1	1	0	4	4	43	62	62	62	62	34	34	11	11	0	0	0	0	0	0	0	0	11	37	43
15:00	4	0	0	0	0	0	0	0	5	10	10	47	79	79	79	79	38	38	19	19	0	0	0	0	0	0	0	0	14	37	43
16:00	3	0	0	0	1	1	0	0	1	14	14	55	71	71	71	71	37	37	9	9	1	1	0	0	0	0	0	0	14	36	42
17:00	4	0	0	0	0	0	0	0	0	12	12	59	58	59	58	58	26	26	9	9	0	0	0	0	0	0	0	0	12	35	41
18:00	2	0	0	0	0	0	0	0	2	14	14	49	61	61	61	61	31	31	6	6	1	1	0	0	0	0	0	0	12	36	42
19:00	1	0	0	0	0	0	0	0	1	10	10	24	41	41	41	41	24	24	6	6	0	0	0	0	0	0	0	0	8	37	42
20:00	0	0	0	0	0	0	0	0	0	8	8	34	33	33	33	33	15	15	1	1	1	1	0	0	0	0	0	7	35	41	
21:00	1	0	0	0	0	0	0	0	1	5	5	23	31	31	31	31	11	11	5	5	0	0	0	0	0	0	0	0	6	36	42
22:00	0	0	0	0	0	0	0	0	1	3	3	21	12	12	12	12	9	9	3	3	2	2	0	0	0	0	0	4	35	43	
23:00	1	0	0	0	0	0	0	0	4	4	4	14	18	18	18	18	7	7	1	1	0	0	0	0	0	0	0	3	35	40	
Total	38	0	0	0	2	7	7	7	44	178	178	691	967	967	967	967	546	546	170	170	7	7	0	0	0	0	0	0	2650		
Percent	1.4%	0.0%	0.0%	0.0%	0.1%	0.3%	0.3%	0.3%	1.7%	6.7%	6.7%	26.1%	36.5%	36.5%	36.5%	36.5%	20.6%	20.6%	6.4%	6.4%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.	4	10:00	07:00	06:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	11:00	10:00	10:00	10:00	10:00	09:00	09:00	09:00	09:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	11:00		
PM Peak Vol.	5	14:00	16:00	14:00	15:00	15:00	15:00	15:00	15:00	15:00	15:00	17:00	15:00	15:00	15:00	15:00	13:00	13:00	15:00	15:00	22:00	22:00	22:00	22:00	22:00	22:00	22:00	15:00			

Site Code: 3333
 Station ID:
 Stewart Ave @ Old Stage Rd
 Stewart Ave - West Leg- Speed

Start Time	1		6		11		16		21		26		31		36		41		46		56		66		71		Average		50th		85th	
	5	10	15	20	25	30	35	40	45	55	60	65	70	75	80	85	90	95	Mean	Percent	Percent	Total	Mean	Percent	Percent	Total	Mean	Percent	Percent			
12/09/1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	34	39		
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	40	44		
02:00	0	0	0	1	3	2	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	34	39			
03:00	0	0	0	0	0	2	2	4	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	38	48			
04:00	1	0	0	0	1	6	16	17	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	5	37	44				
05:00	0	0	0	0	4	6	33	62	28	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	140	10	37	42				
06:00	3	0	0	0	1	22	105	126	59	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329	24	36	41				
07:00	9	0	0	0	3	22	94	282	122	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	555	40	37	42				
08:00	2	0	0	5	10	26	90	139	79	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	370	26	36	42				
09:00	1	0	0	1	2	12	58	69	31	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181	13	36	41				
10:00	2	0	0	1	4	12	40	39	22	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	9	35	42				
11:00	4	0	0	1	5	20	55	51	33	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	178	13	35	42				
12 PM	5	0	0	0	2	19	58	61	28	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	187	13	35	42				
13:00	7	0	0	1	10	16	66	73	27	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	209	15	35	40				
14:00	7	0	0	0	3	19	59	81	43	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	219	16	36	41				
15:00	8	0	0	1	7	19	75	96	48	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	263	19	36	41				
16:00	10	0	0	1	2	16	65	70	39	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212	15	35	42				
17:00	9	0	0	0	7	18	41	71	33	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	190	14	36	42				
18:00	4	0	0	0	5	14	50	66	26	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	12	36	41				
19:00	6	0	0	0	2	5	27	49	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110	8	36	41				
20:00	2	0	0	2	3	10	35	38	8	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	7	34	39				
21:00	0	0	0	0	1	6	27	14	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	4	34	41				
22:00	0	0	0	1	0	4	13	18	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	3	36	41				
23:00	0	0	0	1	0	4	7	7	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	2	35	42				
Total	80	0	2	17	75	280	1023	1445	688	167	6	0	0	0	0	0	0	0	0	0	0	0	0	0	3783							
Percent	2.1%	0.0%	0.1%	0.4%	2.0%	7.4%	27.0%	38.2%	18.2%	4.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							
AM Peak Vol.	9		1	5	10	26	105	282	122	23	2														07:00							
PM Peak Vol.	10			2	10	19	75	96	48	13	1														15:00							

Site Code: 1111
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Northbound Start Time	1		6		11		16		21		26		31		36		41		46		56		61		66		71		Average		50th		85th	
	5	10	15	20	25	30	35	40	45	55	60	65	70	75	80	85	90	95	Percent	Percent	Mean	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent			
12/06/1	1	5	0	0	0	2	10	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1	23	27		
01:00	0	0	0	1	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	23	27			
02:00	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	24	28				
03:00	0	0	0	2	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	23	29				
04:00	1	0	0	1	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	22	27				
05:00	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	20	27				
06:00	0	0	0	1	5	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	25	29				
07:00	0	0	0	4	14	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	2	24	28				
08:00	0	1	2	6	26	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	4	23	27				
09:00	1	0	1	6	34	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	4	23	27				
10:00	5	0	3	12	44	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	6	22	26				
11:00	2	0	2	18	44	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	6	22	26				
12 PM	2	0	6	22	52	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	7	21	26				
13:00	4	1	3	16	45	20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	6	22	26				
14:00	3	0	4	14	45	14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	6	22	26				
15:00	9	0	2	15	33	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	5	21	25				
16:00	1	0	2	10	44	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	5	22	26				
17:00	0	0	3	12	31	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	4	22	26				
18:00	0	0	2	6	29	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	4	22	27				
19:00	4	0	3	6	21	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	3	22	26				
20:00	0	0	1	7	18	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	2	22	26				
21:00	2	0	0	3	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	2	23	28				
22:00	0	0	0	1	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	1	23	26				
23:00	1	0	0	3	6	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1	22	28				
Total	36	2	34	169	539	230	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1027							
Percent	3.5%	0.2%	3.3%	16.5%	52.5%	22.4%	1.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%								

AM	10:00	08:00	10:00	11:00	10:00	10:00	03:00	00:00	10:00
Peak Vol.	5	1	3	18	44	20	1	1	84
PM	15:00	13:00	12:00	12:00	12:00	13:00	18:00	12:00	101
Peak Vol.	9	1	6	22	52	20	3	101	

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - Speed

Northbound	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent
Start Time	12/09/1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent
5	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	21	23
01:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	22	24	24
02:00	1	0	0	0	0	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	21	26	26
03:00	0	0	0	0	0	0	0	0	5	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	23	28	28
04:00	0	0	0	0	0	0	3	0	9	10	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	2	24	28	28
05:00	1	0	0	0	0	0	0	0	28	21	21	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	4	24	28	28
06:00	2	0	0	2	0	2	10	64	64	33	33	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	113	8	23	27	27
07:00	9	0	0	5	34	42	34	104	104	44	44	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202	14	22	27	27
08:00	7	0	0	4	8	6	42	83	83	35	35	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	12	22	26	26
09:00	2	0	0	0	0	0	6	49	49	27	27	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85	6	23	27	27
10:00	2	0	0	0	0	0	1	12	31	16	16	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	4	22	27	27
11:00	2	0	0	0	0	0	1	20	53	13	13	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	6	22	25	25
12 PM	7	1	1	1	1	1	8	52	52	25	25	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	7	22	27	27
13:00	3	0	0	0	0	0	13	45	45	25	25	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	6	23	27	27
14:00	4	0	0	0	0	0	8	50	50	35	35	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103	7	23	28	28
15:00	4	0	0	0	0	0	2	10	77	37	37	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	137	10	23	28	28
16:00	2	0	0	0	0	0	13	61	61	34	34	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	113	8	23	27	27
17:00	9	0	0	0	0	0	11	52	52	25	25	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	7	22	27	27
18:00	4	0	0	0	0	0	7	32	32	34	34	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	6	24	28	28
19:00	1	0	0	0	0	0	6	29	29	21	21	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	61	4	24	28	28
20:00	3	0	0	0	0	0	2	30	30	19	19	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	4	23	28	28
21:00	0	0	0	0	0	0	1	13	13	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	2	24	28	28
22:00	1	0	0	0	0	0	0	8	8	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	2	25	28	28
23:00	0	0	0	0	0	0	3	9	9	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	1	22	28	28
Total	64	1	1	23	211	889	484	46	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1721				
Percent	3.7%	0.1%	0.1%	1.3%	12.3%	51.7%	28.1%	2.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					

AM	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total	
Peak Vol.	9	5	42	104	44	6	07:00	07:00	15:00	15:00	15:00	18:00	15:00	15:00	15:00	15:00	15:00	07:00	202
PM Peak Vol.	9	1	2	13	77	37	7	2	15:00	15:00	15:00	18:00	15:00	15:00	15:00	15:00	15:00	1721	137

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - Speed

Southbound	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent
Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	60	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent	
12/04/1	5	2	0	0	0	0	2	2	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	22	27	
01:00	0	0	0	0	0	0	1	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	24	28	
02:00	0	0	0	0	0	0	1	1	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	23	28		
03:00	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	22	24		
04:00	0	0	0	0	0	0	2	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	21	25		
05:00	2	1	0	0	0	0	2	7	7	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1	22	27		
06:00	3	0	0	0	2	4	4	20	20	6	6	1	1	1	0	0	0	0	0	0	0	0	0	0	0	36	3	22	26		
07:00	12	0	0	0	1	7	7	48	48	12	12	1	1	1	0	0	0	0	0	0	0	0	0	0	0	81	6	22	25		
08:00	4	0	0	0	0	0	5	5	57	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	6	22	26		
09:00	5	0	0	0	0	0	9	9	42	11	11	4	4	0	0	0	0	0	0	0	0	0	0	0	0	71	5	22	26		
10:00	5	0	0	0	0	0	12	63	63	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	6	22	24		
11:00	3	0	0	0	0	0	10	10	60	16	16	2	2	0	0	0	0	0	0	0	0	0	0	0	0	91	6	22	26		
12 PM	6	1	2	0	2	12	12	58	58	19	19	1	1	1	0	0	0	0	0	0	0	0	0	0	0	99	7	22	26		
13:00	8	0	0	0	0	0	14	14	66	25	25	1	1	1	0	0	0	0	0	0	0	0	0	0	0	114	8	22	26		
14:00	7	0	0	0	2	7	7	77	77	30	30	1	1	1	0	0	0	0	0	0	0	0	0	0	0	124	9	22	27		
15:00	19	0	0	0	3	20	20	113	113	38	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193	14	22	26		
16:00	16	0	0	0	2	36	36	140	140	34	34	2	2	2	0	0	0	0	0	0	0	0	0	0	0	230	16	22	25		
17:00	10	0	0	0	4	36	36	208	208	36	36	4	4	0	0	0	0	0	0	0	0	0	0	0	0	298	21	22	24		
18:00	2	0	0	0	2	21	21	76	76	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	9	22	26		
19:00	3	0	0	0	3	17	17	52	52	8	8	1	1	1	0	0	0	0	0	0	0	0	0	0	0	84	6	21	24		
20:00	0	0	0	0	0	6	6	33	33	4	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	44	3	22	24		
21:00	3	1	1	1	10	26	26	7	7	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	3	21	24		
22:00	2	0	0	0	0	7	7	31	31	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	3	22	24		
23:00	1	0	0	0	0	4	4	26	26	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	3	22	26		
Total	113	5.8%	3	0.2%	22	1.1%	245	12.6%	1216	62.4%	331	18	0.9%	18	1	0.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	1949	3	22	26	
Percent	5.8%	0.2%	1.1%	12.6%	62.4%	17.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.	07:00	12	1	1	2	12	12	63	63	20	20	4	4	0	0	0	0	0	0	0	0	0	0	0	0	91	10:00				
PM Peak Vol.	15:00	19	1	1	4	36	36	208	208	38	38	4	4	1	1	1	0	0	0	0	0	0	0	0	0	17:00	298	17:00			

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
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Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent
12/05/1	0	0	0	0	0	0	2	2	7	7	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1	22	27
01:00	1	0	0	0	0	0	2	2	7	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	21	24	
02:00	0	0	0	0	0	0	2	2	6	6	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	22	27	
03:00	0	0	0	0	0	0	0	0	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	23	27	
04:00	0	0	0	0	0	0	1	1	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	22	26	
05:00	0	0	0	0	0	0	0	0	4	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	23	27	
06:00	2	0	0	0	0	0	5	5	12	12	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	2	21	24	
07:00	6	0	0	0	1	1	5	4	21	21	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	3	21	24	
08:00	2	0	0	0	1	1	4	4	24	24	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	3	23	27	
09:00	3	0	0	0	0	0	12	12	44	44	16	16	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	76	5	22	26	
10:00	5	0	0	0	3	3	15	15	47	47	23	23	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	94	7	22	27	
11:00	7	0	0	0	1	1	25	25	91	91	15	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	140	10	22	24	
12 PM	5	0	0	0	0	0	26	26	78	78	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131	9	22	25	
13:00	9	0	0	0	3	3	13	13	84	84	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142	10	22	26	
14:00	4	0	0	0	1	1	6	6	83	83	24	24	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	119	8	22	26	
15:00	9	0	0	0	1	1	15	15	81	81	40	40	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	147	10	22	27	
16:00	8	0	0	0	1	1	22	22	90	90	27	27	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	151	11	22	26	
17:00	5	0	0	0	0	0	21	21	78	78	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119	8	22	24	
18:00	3	0	0	0	2	2	15	15	93	93	20	20	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	135	10	22	25	
19:00	3	0	0	0	0	0	20	20	57	57	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	6	21	24	
20:00	1	0	0	0	4	4	15	15	28	28	6	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	55	4	21	24	
21:00	2	0	0	0	4	4	11	11	27	27	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	3	21	24	
22:00	1	0	0	0	1	1	9	9	34	34	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	4	22	24	
23:00	1	0	0	0	0	0	3	3	29	29	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	3	22	24	
Total	77	0	0	0	23	23	249	249	1031	1031	299	299	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	1690				
Percent	4.6%	0.0%	0.0%	0.0%	1.4%	1.4%	14.7%	14.7%	61.0%	61.0%	17.7%	17.7%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					

AM Peak Vol.	11:00	10:00	9:00
7	3	25	23
140	140	140	140

PM Peak Vol.	13:00	12:00	11:00
9	4	26	40
151	151	151	151

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - Speed

Southbound	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent
Start Time	12/10/1	5	0	0	0	1	1	1	7	7	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	22	25
01:00	1	0	0	0	1	1	2	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	1	21	23	
02:00	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	22	24		
03:00	0	0	0	0	0	0	2	0	5	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	21	24		
04:00	0	0	0	0	0	0	0	0	3	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	25	28		
05:00	7	0	0	0	0	0	2	0	8	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	1	20	24		
06:00	0	0	0	0	0	0	8	0	10	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	2	22	27		
07:00	10	0	0	0	3	8	54	14	38	38	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	6	22	25		
08:00	7	0	0	0	1	12	38	22	42	42	19	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	81	6	22	27		
09:00	4	0	0	0	1	10	42	19	55	55	25	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	78	6	22	27		
10:00	4	0	0	0	1	7	62	25	62	62	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	7	23	27			
11:00	3	0	0	0	0	9	67	16	67	67	16	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	99	7	23	27		
12 PM	7	0	0	0	1	11	67	20	67	67	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	7	22	25		
13:00	7	0	0	0	1	17	56	20	56	56	20	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	7	22	26		
14:00	13	0	0	0	2	11	92	37	92	92	37	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157	11	22	27		
15:00	16	0	0	0	2	24	119	42	119	119	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203	14	22	26		
16:00	20	0	0	0	4	25	172	48	172	172	48	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272	19	22	26		
17:00	11	0	0	0	7	46	209	40	209	209	40	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	317	23	22	24		
18:00	8	0	0	0	2	15	96	26	96	96	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147	10	22	25		
19:00	3	0	0	0	4	17	42	10	42	42	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	6	21	24		
20:00	1	0	0	0	1	8	34	10	34	34	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	4	22	26		
21:00	0	0	0	0	1	8	26	6	26	26	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	3	22	25		
22:00	4	0	0	0	0	6	25	3	25	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	3	21	24		
23:00	0	0	0	0	1	0	13	5	13	13	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	1	23	27		
Total	126	6.1%	3	0.1%	34	1.7%	249	12.1%	1245	60.5%	383	17	0.8%	17	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0	0.0%	0	0	0	2057	1	23	27	

Percent	6.1%	0.1%	1.7%	12.1%	60.5%	18.6%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak Vol.	10	07:00	3	08:00	11:00	10:00	09:00	11:00	11:00	10:00	25	2	11:00	99																		
PM Peak Vol.	20	16:00	3	17:00	17:00	16:00	13:00	17:00	17:00	16:00	48	3	17:00	317																		

Site Code: 1111
 Station ID:
 Stewart Ave @ Old Stage Rd
 Old Stage Rd - Speed

Start Time	1	5	6	10	11	15	16	20	21	25	26	30	31	35	36	40	41	45	46	55	56	60	61	65	66	70	71	9999	Total	Average Mean	50th Percent	85th Percent		
12/11/1	5	1	0	0	0	0	4	2	11	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	22	26		
01:00	0	0	0	0	0	0	2	2	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	22	27			
02:00	1	0	0	0	0	0	1	1	3	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	7	0	22	29			
03:00	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	2	0	24	28			
04:00	2	0	0	0	0	0	4	2	6	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	1	20	24				
05:00	2	1	0	1	0	2	1	4	18	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	21	26				
06:00	4	0	0	2	0	7	4	11	4	4	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	36	3	21	24				
07:00	2	1	0	1	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	2	21	25				
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*			
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*		
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*		
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*		
12 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*		
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
Total	12	2	2	2	23	57	20	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118						
Percent	10.2%	1.7%	1.7%	1.7%	19.5%	48.3%	16.9%	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
AM Peak	06:00	05:00	06:00	06:00	06:00	06:00	00:00	06:00	06:00	06:00	00:00	06:00	06:00	06:00	02:00														06:00					
Vol.	4	1	2	2	7	18	4	1	1																			36						
PM Peak																																		
Vol.																																		
Total	705	15	208	1754	7808	2296	81	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12871						
Percent	5.5%	0.1%	1.6%	13.6%	60.7%	17.8%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%							

Stats	10 MPH Pace Speed :	21-30 MPH
Number in Pace :	10104	
Percent in Pace :	78.5%	
Number of Vehicles > 25 MPH :	2381	
Percent of Vehicles > 25 MPH :	18.5%	
Mean Speed(Average) :	22 MPH	

Appendix E

Proposed Capacity and Operational Analyses

**All-Way Stop Control
with Eastbound Right-Turn Lane**

ALL-WAY STOP CONTROL ANALYSIS								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Avenue at Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundle			
Date Performed	1/14/2016			Analysis Year	2025			
Analysis Time Period	AM							
Project ID <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	70	85	84	12	445	0		
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	216	0	18	0	0	0		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	T	R	LT		LR			
PHF	1.00	1.00	1.00		1.00			
Flow Rate (veh/h)	85	84	457		234			
% Heavy Vehicles	0	0	0		0			
No. Lanes	2		1		1		0	
Geometry Group	5		3a		1			
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.0	0.0	0.0		0.9			
Prop. Right-Turns	0.0	1.0	0.0		0.1			
Prop. Heavy Vehicle	0.0	0.0	0.0		0.0			
hLT-adj	0.5	0.5	0.2	0.2	0.2	0.2		
hRT-adj	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6		
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7		
hadj, computed	0.0	-0.7	0.0		0.1			
Departure Headway and Service Time								
hd, initial value (s)	3.20	3.20	3.20		3.20			
x, initial	0.08	0.07	0.41		0.21			
hd, final value (s)	5.72	5.01	4.96		5.57			
x, final value	0.14	0.12	0.63		0.36			
Move-up time, m (s)	2.3		2.0		2.0			
Service Time, t _s (s)	3.4	2.7	3.0		3.6			
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	335	334	707		484			
Delay (s/veh)	9.31	8.37	15.99		11.70			
LOS	A	A	C		B			
Approach: Delay (s/veh)	8.84		15.99		11.70			
LOS	A		C		B			
Intersection Delay (s/veh)	13.42							
Intersection LOS	B							

ALL-WAY STOP CONTROL ANALYSIS								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Avenue at Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel			
Date Performed	1/14/2016			Analysis Year	2025			
Analysis Time Period	AM							
Project ID <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	70	247	321	32	110	0		
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	118	0	16	0	0	0		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	T	R	LT		LR			
PHF	1.00	1.00	1.00		1.00			
Flow Rate (veh/h)	247	321	142		134			
% Heavy Vehicles	0	0	0		0			
No. Lanes	2		1		1		0	
Geometry Group	5		3a		1			
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.0	0.0	0.2		0.9			
Prop. Right-Turns	0.0	1.0	0.0		0.1			
Prop. Heavy Vehicle	0.0	0.0	0.0		0.0			
hLT-adj	0.5	0.5	0.2	0.2	0.2	0.2		
hRT-adj	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6		
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7		
hadj, computed	0.0	-0.7	0.0		0.1			
Departure Headway and Service Time								
hd, initial value (s)	3.20	3.20	3.20		3.20			
x, initial	0.22	0.29	0.13		0.12			
hd, final value (s)	5.03	4.33	4.98		5.42			
x, final value	0.35	0.39	0.20		0.20			
Move-up time, m (s)	2.3		2.0		2.0			
Service Time, t _s (s)	2.7	2.0	3.0		3.4			
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	497	571	392		384			
Delay (s/veh)	10.36	9.72	9.19		9.79			
LOS	B	A	A		A			
Approach: Delay (s/veh)	10.00		9.19		9.79			
LOS	A		A		A			
Intersection Delay (s/veh)	9.83							
Intersection LOS	A							

**All-Way Stop Control
without Eastbound Right-Turn Lane**

ALL-WAY STOP CONTROL ANALYSIS								
General Information				Site Information				
Analyst	JO			Intersection	Stewart Avenue at Old Stage Rd			
Agency/Co.	Wallace Montgomery			Jurisdiction	Anne Arundel			
Date Performed	1/14/2016			Analysis Year	2025			
Analysis Time Period	AM							
Project ID <i>Stewart Ave/Old Stage Rd Intersection Study</i>								
East/West Street: <i>Stewart Avenue</i>				North/South Street: <i>Old Stage Road</i>				
Volume Adjustments and Site Characteristics								
Approach	Eastbound				Westbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	0	85	84	12	445	0		
%Thrus Left Lane								
Approach	Northbound				Southbound			
Movement	L	T	R	L	T	R		
Volume (veh/h)	216	0	18	0	0	0		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	TR		LT		LR			
PHF	1.00		1.00		1.00			
Flow Rate (veh/h)	169		457		234			
% Heavy Vehicles	0		0		0			
No. Lanes	1		1		1		0	
Geometry Group	1		1		1			
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.0		0.0		0.9			
Prop. Right-Turns	0.5		0.0		0.1			
Prop. Heavy Vehicle	0.0		0.0		0.0			
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2		
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6		
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7		
hadj, computed	-0.3		0.0		0.1			
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20			
x, initial	0.15		0.41		0.21			
hd, final value (s)	4.92		4.84		5.57			
x, final value	0.23		0.61		0.36			
Move-up time, m (s)	2.0		2.0		2.0			
Service Time, t _s (s)	2.9		2.8		3.6			
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	419		707		484			
Delay (s/veh)	9.38		15.26		11.71			
LOS	A		C		B			
Approach: Delay (s/veh)	9.38		15.26		11.71			
LOS	A		C		B			
Intersection Delay (s/veh)	13.14							
Intersection LOS	B							

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	JO				Intersection	Stewart Avenue at Old Stage Rd			
Agency/Co.	Wallace Montgomery				Jurisdiction	Anne Arundle			
Date Performed	1/14/2016				Analysis Year	2025			
Analysis Time Period	AM								
Project ID <i>Stewart Ave/Old Stage Rd Intersection Study</i>									
East/West Street: <i>Stewart Avenue</i>					North/South Street: <i>Old Stage Road</i>				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R	L	T	R			
Volume (veh/h)	0	247	321	32	110	0			
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R	L	T	R			
Volume (veh/h)	118	0	16	0	0	0			
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	TR		LT		LR				
PHF	1.00		1.00		1.00				
Flow Rate (veh/h)	568		142		134				
% Heavy Vehicles	0		0		0				
No. Lanes	1		1		1		0		
Geometry Group	1		1		1				
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.0		0.2		0.9				
Prop. Right-Turns	0.6		0.0		0.1				
Prop. Heavy Vehicle	0.0		0.0		0.0				
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2			
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6			
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7			
hadj, computed	-0.3		0.0		0.1				
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20				
x, initial	0.50		0.13		0.12				
hd, final value (s)	4.14		4.95		5.56				
x, final value	0.65		0.20		0.21				
Move-up time, m (s)	2.0		2.0		2.0				
Service Time, t _s (s)	2.1		3.0		3.6				
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	818		392		384				
Delay (s/veh)	14.61		9.15		10.00				
LOS	B		A		A				
Approach: Delay (s/veh)	14.61		9.15		10.00				
LOS	B		A		A				
Intersection Delay (s/veh)	12.96								
Intersection LOS	B								

INTERSECTION SUMMARY

 Site: Stewart Avenue and Old Stage Road - AM Roundabout Installation

New Site
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	23.5 mph	23.5 mph
Travel Distance (Total)	588.4 veh-mi/h	706.1 pers-mi/h
Travel Time (Total)	25.1 veh-h/h	30.1 pers-h/h
Demand Flows (Total)	935 veh/h	1122 pers/h
Percent Heavy Vehicles (Demand)	1.0 %	
Degree of Saturation	0.463	
Practical Spare Capacity	83.6 %	
Effective Intersection Capacity	2019 veh/h	
Control Delay (Total)	1.70 veh-h/h	2.04 pers-h/h
Control Delay (Average)	6.6 sec	6.6 sec
Control Delay (Worst Lane)	8.5 sec	
Control Delay (Worst Movement)	8.5 sec	8.5 sec
Geometric Delay (Average)	0.0 sec	
Stop-Line Delay (Average)	6.6 sec	
Idling Time (Average)	4.5 sec	
Intersection Level of Service (LOS)	LOS A	
95% Back of Queue - Vehicles (Worst Lane)	2.9 veh	
95% Back of Queue - Distance (Worst Lane)	73.1 ft	
Queue Storage Ratio (Worst Lane)	0.06	
Total Effective Stops	243 veh/h	291 pers/h
Effective Stop Rate	0.26 per veh	0.26 per pers
Proportion Queued	0.38	0.38
Performance Index	34.0	34.0
Cost (Total)	283.59 \$/h	283.59 \$/h
Fuel Consumption (Total)	18.9 gal/h	
Carbon Dioxide (Total)	169.0 kg/h	
Hydrocarbons (Total)	0.012 kg/h	
Carbon Monoxide (Total)	0.079 kg/h	
NOx (Total)	0.095 kg/h	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	448,696 veh/y	538,435 pers/y
Delay	816 veh-h/y	980 pers-h/y
Effective Stops	116,469 veh/y	139,763 pers/y
Travel Distance	282,454 veh-mi/y	338,945 pers-mi/y
Travel Time	12,040 veh-h/y	14,447 pers-h/y
Cost	136,124 \$/y	136,124 \$/y
Fuel Consumption	9,088 gal/y	
Carbon Dioxide	81,098 kg/y	
Hydrocarbons	6 kg/y	
Carbon Monoxide	38 kg/y	
NOx	45 kg/y	

DELAY (CONTROL)

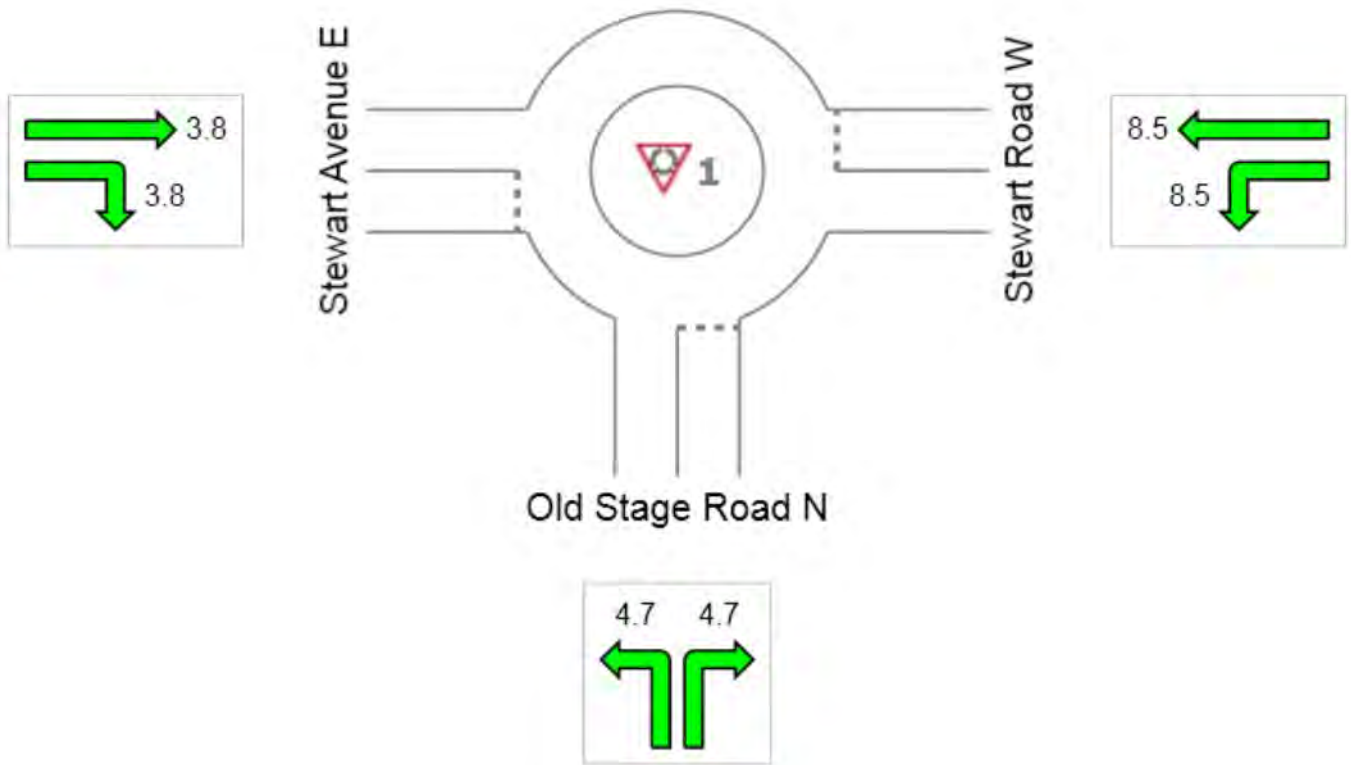
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: Stewart Avenue and Old Stage Road - AM Roundabout Installation**

New Site
Roundabout

All Movement Classes

	South	East	West	Intersection
	4.7	8.5	3.8	6.6
LOS	A	A	A	A



Colour code based on Level of Service



Level of Service Method: Delay & v/c (HCM 2010)

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INTERSECTION SUMMARY

 **Site: Stewart Avenue and Old Stage Road - PM Roundabout Installation**

New Site
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Travel Speed (Average)	23.4 mph	23.4 mph
Travel Distance (Total)	573.3 veh-mi/h	688.0 pers-mi/h
Travel Time (Total)	24.5 veh-h/h	29.4 pers-h/h
Demand Flows (Total)	917 veh/h	1101 pers/h
Percent Heavy Vehicles (Demand)	1.0 %	
Degree of Saturation	0.472	
Practical Spare Capacity	80.1 %	
Effective Intersection Capacity	1944 veh/h	
Control Delay (Total)	1.66 veh-h/h	1.99 pers-h/h
Control Delay (Average)	6.5 sec	6.5 sec
Control Delay (Worst Lane)	7.5 sec	
Control Delay (Worst Movement)	7.5 sec	7.5 sec
Geometric Delay (Average)	0.0 sec	
Stop-Line Delay (Average)	6.5 sec	
Idling Time (Average)	5.3 sec	
Intersection Level of Service (LOS)	LOS A	
95% Back of Queue - Vehicles (Worst Lane)	3.5 veh	
95% Back of Queue - Distance (Worst Lane)	88.3 ft	
Queue Storage Ratio (Worst Lane)	0.07	
Total Effective Stops	116 veh/h	139 pers/h
Effective Stop Rate	0.13 per veh	0.13 per pers
Proportion Queued	0.26	0.26
Performance Index	32.8	32.8
Cost (Total)	239.42 \$/h	239.42 \$/h
Fuel Consumption (Total)	18.3 gal/h	
Carbon Dioxide (Total)	163.2 kg/h	
Hydrocarbons (Total)	0.011 kg/h	
Carbon Monoxide (Total)	0.076 kg/h	
NOx (Total)	0.090 kg/h	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Sign Control.

Intersection LOS value for Vehicles is based on average delay for all vehicle movements.

Roundabout Capacity Model: US HCM 2010.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	440,348 veh/y	528,417 pers/y
Delay	797 veh-h/y	957 pers-h/y
Effective Stops	55,602 veh/y	66,722 pers/y
Travel Distance	275,184 veh-mi/y	330,221 pers-mi/y
Travel Time	11,778 veh-h/y	14,133 pers-h/y
Cost	114,920 \$/y	114,920 \$/y
Fuel Consumption	8,777 gal/y	
Carbon Dioxide	78,328 kg/y	
Hydrocarbons	5 kg/y	
Carbon Monoxide	36 kg/y	
NOx	43 kg/y	

DELAY (CONTROL)

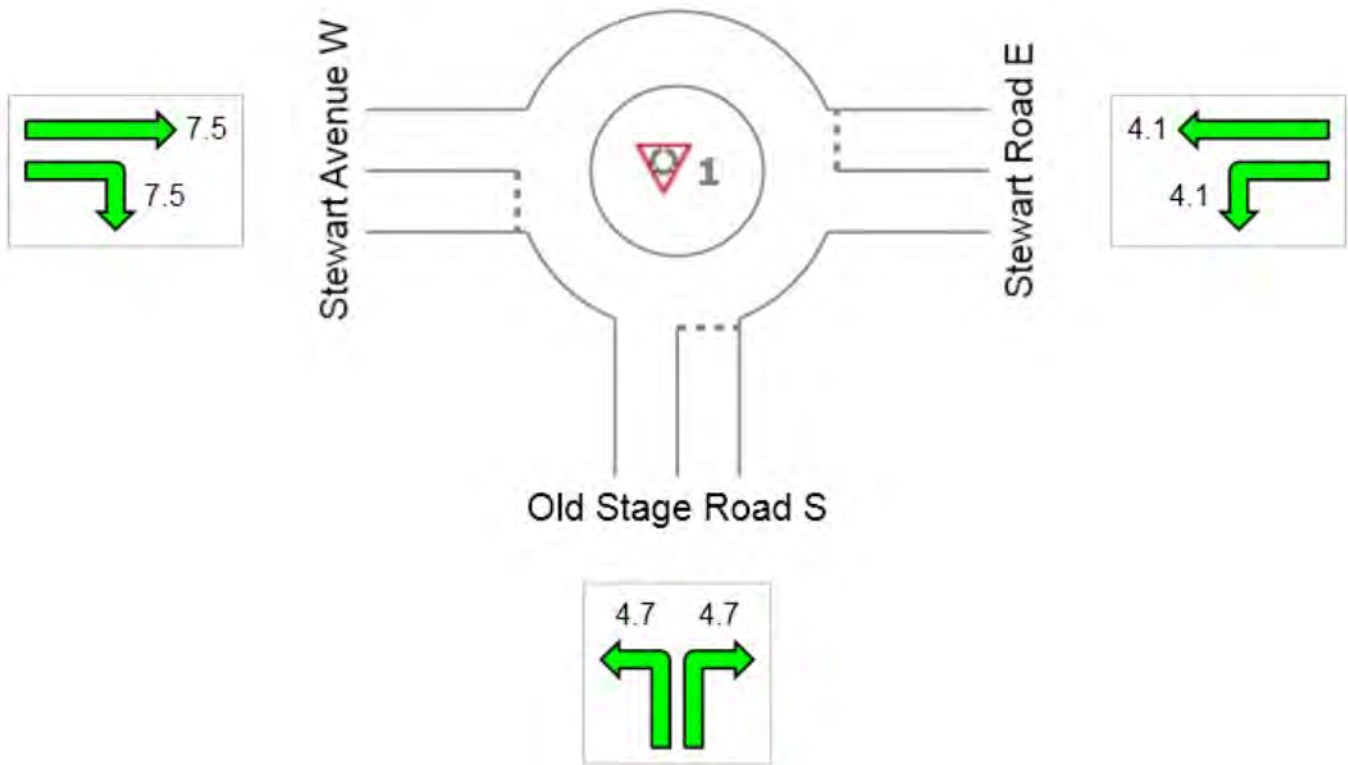
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: Stewart Avenue and Old Stage Road - PM Roundabout Installation**

New Site
Roundabout

All Movement Classes

	South	East	West	Intersection
	4.7	4.1	7.5	6.5
LOS	A	A	A	A



Colour code based on Level of Service



Level of Service Method: Delay & v/c (HCM 2010)

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Lanes, Volumes, Timings

1:

1/26/2016

	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑	↗		↖	↘	
Traffic Volume (vph)	82	84	12	445	216	18
Future Volume (vph)	82	84	12	445	216	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr t		0.850			0.989	
Flt Protected				0.999	0.956	
Satd. Flow (prot)	1863	1583	0	1861	1761	0
Flt Permitted				0.994	0.956	
Satd. Flow (perm)	1863	1583	0	1852	1761	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	557			469	614	
Travel Time (s)	12.7			10.7	14.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	91	13	484	235	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	91	0	497	255	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	pm+ov	Perm	NA	Prot	
Protected Phases	4	2		8	2	
Permitted Phases		4	8			
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	18.0	45.0		18.0	18.0	
Actuated g/C Ratio	0.40	1.00		0.40	0.40	
v/c Ratio	0.12	0.06		0.67	0.36	

Lanes, Volumes, Timings

1:

1/26/2016



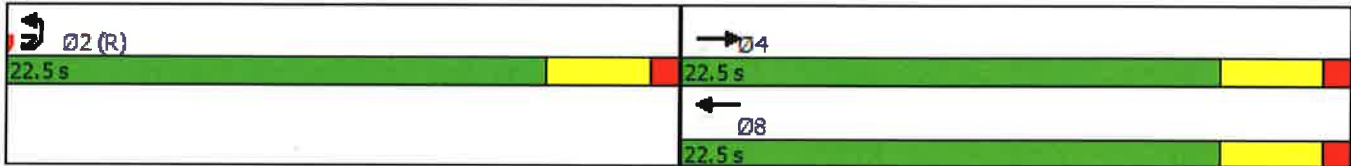
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Control Delay	9.1	0.1		16.8	11.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	9.1	0.1		16.8	11.4	
LOS	A	A		B	B	
Approach Delay	4.5			16.8	11.4	
Approach LOS	A			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 12.9
 Intersection Capacity Utilization 51.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1:



Lanes, Volumes, Timings

1:

1/26/2016

	→	↘	↙	←	↗	↖
Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑	↗		↖	↘	
Traffic Volume (vph)	247	321	32	110	118	16
Future Volume (vph)	247	321	32	110	118	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		100	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.850			0.984	
Flt Protected				0.989	0.958	
Satd. Flow (prot)	1863	1583	0	1842	1756	0
Flt Permitted				0.898	0.958	
Satd. Flow (perm)	1863	1583	0	1673	1756	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					17	
Link Speed (mph)	30			30	30	
Link Distance (ft)	511			320	661	
Travel Time (s)	11.6			7.3	15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	349	35	120	128	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	349	0	155	145	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Turn Type	NA	Over	Perm	NA	Prot	
Protected Phases	4	2		8	2	
Permitted Phases			8			
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	18.0	18.0		18.0	18.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40	
v/c Ratio	0.36	0.55		0.23	0.20	

Lanes, Volumes, Timings

1:

1/26/2016

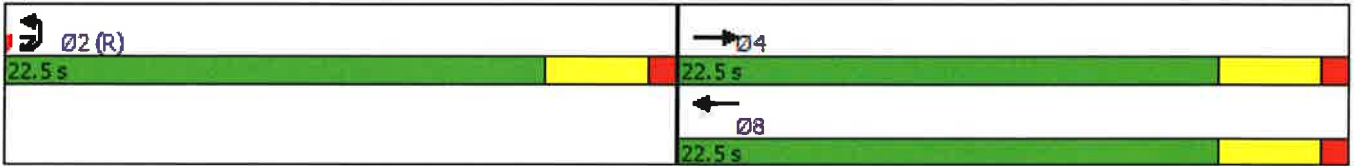


Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Control Delay	11.2	14.5		10.1	8.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	11.2	14.5		10.1	8.8	
LOS	B	B		B	A	
Approach Delay	13.1			10.1	8.8	
Approach LOS	B			B	A	

Intersection Summary

Area Type: Other
 Cycle Length: 45
 Actuated Cycle Length: 45
 Offset: 0 (0%), Referenced to phase 2:NEL and 6:, Start of Green
 Natural Cycle: 45
 Control Type: Pretimed
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 11.9
 Intersection Capacity Utilization 39.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1:



Appendix F

All-Way Stop Control Warrant Analysis

All Way Stop Control Analysis

Location: Stewart Avenue & Old Stage Road
 Date: 12/30/2015 Thursday
 Recorder: NST/WTH
 Interval (dd) : 15
 (In Minutes)

County: Glen Burnie
 Weather: Clear, Cool

Anne Arundel
 Glen Burnie
 Clear, Cool

December 2015 Analysis Volume

HOUR BEGINNING	none												Stewart Avenue												Stewart Avenue												Stewart Avenue											
	From North						From South						From East						From West						From East						From West						From East						From West					
	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT								
06:00	0	0	0	0	104	0	5	203	0	208	0	23	31	54	109	8	262	379	8	262	379	109	8	262	379	109	8	262	379	109	8	262	379	109	8	262	379											
07:00	0	0	0	183	0	10	373	0	384	0	65	53	118	193	3	502	698	3	502	698	193	3	502	698	193	3	502	698	193	3	502	698	193	3	502	698												
08:00	0	0	0	129	0	216	0	228	0	216	0	65	59	124	141	0	352	493	0	352	493	141	0	352	493	141	0	352	493	141	0	352	493	141	0	352	493											
09:00	0	0	0	81	0	2	83	0	85	0	90	0	121	83	0	216	299	0	216	299	83	0	216	299	83	0	216	299	83	0	216	299	83	0	216	299												
10:00	0	0	0	57	0	7	64	0	83	0	76	0	116	64	0	199	266	0	199	266	64	0	199	266	64	0	199	266	64	0	199	266	64	0	199	266												
11:00	0	0	0	88	0	7	95	0	82	0	79	0	163	88	0	245	344	0	245	344	88	0	245	344	88	0	245	344	88	0	245	344	88	0	245	344												
12:00	0	0	0	78	0	13	107	0	117	0	107	0	168	78	0	285	377	0	285	377	78	0	285	377	78	0	285	377	78	0	285	377	78	0	285	377												
13:00	0	0	0	85	0	12	97	0	110	0	14	0	147	85	0	264	369	0	264	369	85	0	264	369	85	0	264	369	85	0	264	369	85	0	264	369												
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10:00	0	0																																														

Appendix G

Signal Warrant Analysis

WARRANT 1 ANALYSIS

Location: Stewart Avenue & Old Stage Road
 Date: 12/3/2015 Thursday
 Recorder: NSTJ/WTH
 Interval (dd) : 15
 (In Minutes)

County: none
 Town: none
 Weather: none

Anne Arundel
 Glen Burnie
 Clear, Cool

December 2015 Analysis Volume

HOUR	none												Total Analysis Volume	RANK				
	From North				Old Stage Road From South				Stewart Avenue From East						Stewart Avenue From West			
	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT			L	T	R	TOT
06:00	0	0	0	0	0	104	5	109	0	203	0	203	0	23	31	54	371	
07:00	0	0	0	0	183	0	183	0	193	11	373	0	384	0	65	53	118	695
08:00	0	0	0	0	129	0	129	0	141	12	216	0	228	0	65	59	124	493
09:00	0	0	0	0	81	0	81	0	83	5	90	0	95	0	64	57	121	299
10:00	0	0	0	0	57	0	57	0	64	7	76	0	83	0	55	61	116	263
11:00	0	0	0	0	88	0	88	0	79	3	79	0	82	0	75	88	163	340
12:00	0	0	0	0	78	0	78	0	13	10	107	0	117	0	95	83	168	376
13:00	0	0	0	0	65	0	65	0	12	14	103	0	117	0	67	80	147	361
14:00	0	0	0	0	103	0	103	0	8	102	0	110	0	117	0	82	199	419
15:00	0	0	0	0	85	0	85	0	18	103	0	133	0	152	146	298	534	
16:00	0	0	0	0	97	0	97	0	21	118	0	114	0	168	191	359	591	
17:00	0	0	0	0	84	0	84	0	7	91	16	63	0	216	294	510	680	
18:00	0	0	0	0	89	0	89	0	12	101	11	62	0	136	162	298	472	

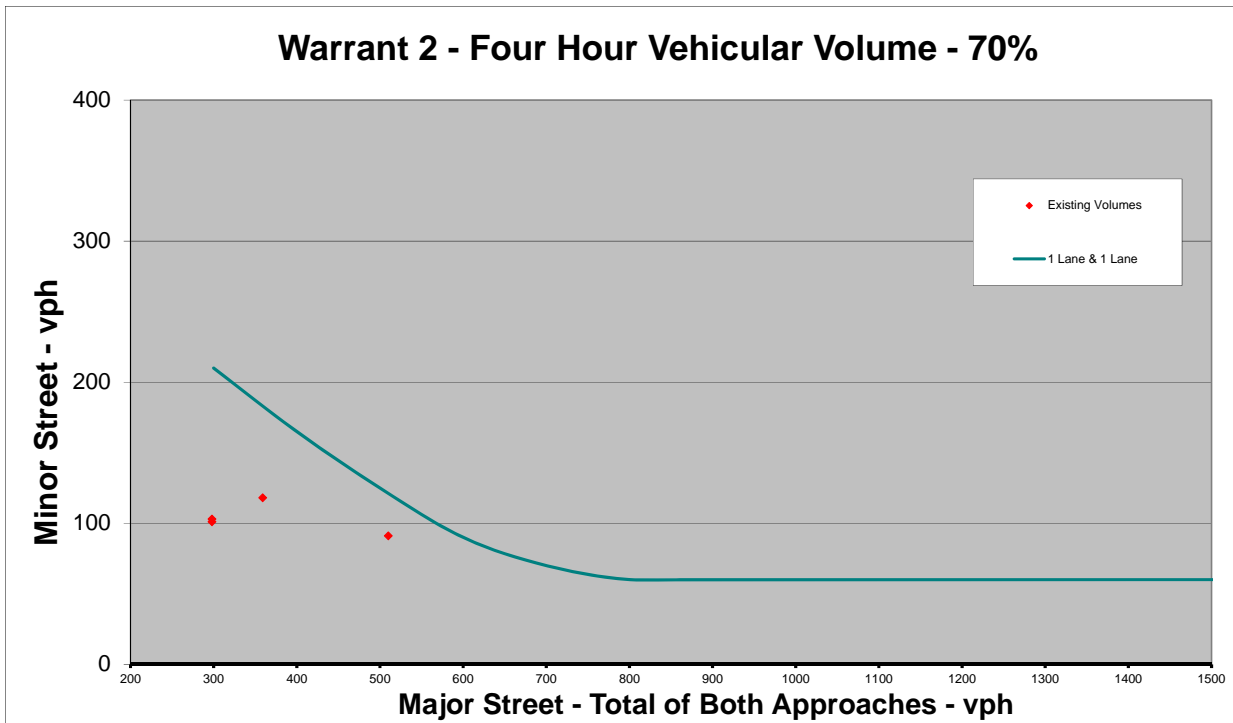
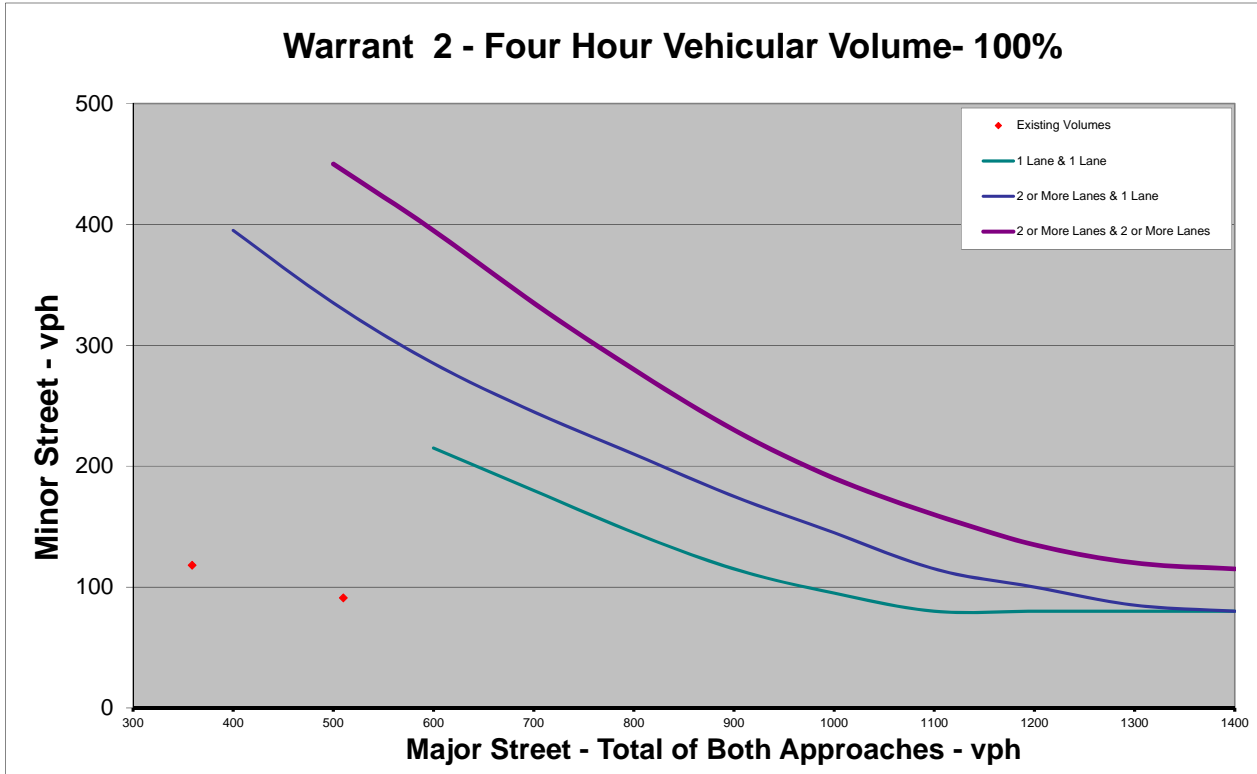
HOUR	none												Total Analysis Volume	RANK					
	From North				Old Stage Road From South				Stewart Avenue From East						Stewart Avenue From West				
	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT			L	T	R	TOT	
17:00	0	0	0	0	84	0	84	0	91	16	63	0	79	0	216	294	510	680	
18:00	0	0	0	0	97	0	97	0	21	118	0	114	0	168	191	359	591	768	
19:00	0	0	0	0	85	0	85	0	18	103	22	111	0	152	146	298	534	932	
20:00	0	0	0	0	89	0	89	0	12	101	11	62	0	136	162	298	472	1130	
21:00	0	0	0	0	183	0	183	0	10	193	0	384	0	65	53	118	695	1525	
22:00	0	0	0	0	103	0	103	0	8	102	0	110	0	117	0	82	199	419	1944
23:00	0	0	0	0	129	0	129	0	12	141	12	216	0	228	294	510	680	2554	
24:00	0	0	0	0	78	0	78	0	13	91	10	107	0	85	83	168	376	3330	

Warrant 1 Analysis Summary

RANK	Minor Street	Major Street	100% Condition A	100% Condition B	80% of Condition A	80% of Condition B	70% Condition A	70% Condition B	56% of Condition A	56% of Condition B	80% of Condition B	56% of Condition B
1	91	510	N	Y	N	N	Y	Y	Y	Y	Y	Y
2	118	359	N	Y	N	N	Y	Y	Y	Y	Y	Y
3	103	298	N	Y	N	N	Y	Y	Y	Y	Y	Y
4	101	298	N	Y	N	N	Y	Y	Y	Y	Y	Y
5	193	118	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	110	199	N	Y	N	N	Y	Y	Y	Y	Y	Y
7	141	124	N	Y	N	N	Y	Y	Y	Y	Y	Y
8	91	168	N	Y	N	N	Y	Y	Y	Y	Y	Y

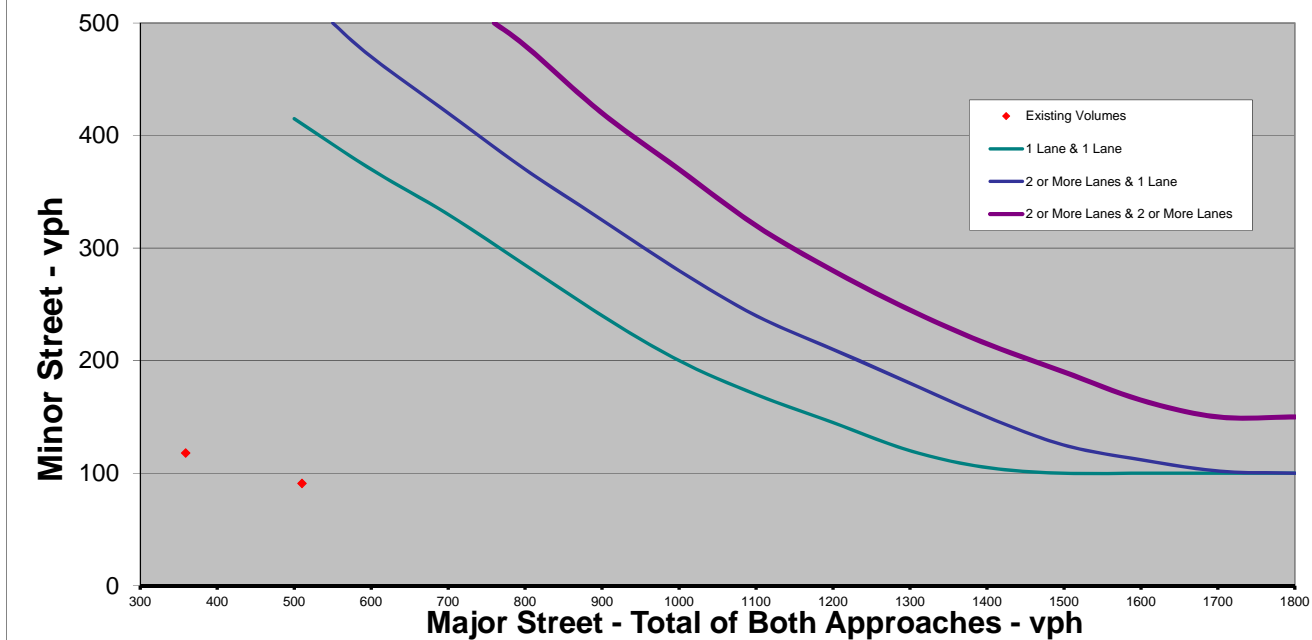
- Warrant 1 100% Condition A - Not Met (2 of 16 Met)
- Warrant 1 100% Condition B - Not Met (0 of 8 Met)
- Warrant 1 80% Combination A and B - Not Met (0 of 8 Met for Condition B)
- Warrant 1 70% Condition A - Not Met (5 of 16 Met)
- Warrant 1 70% Condition B - Not Met (0 of 8 Met)
- Warrant 1 56% Combination A and B - Not Met (1 of 8 Met for Condition B)

Warrant 2

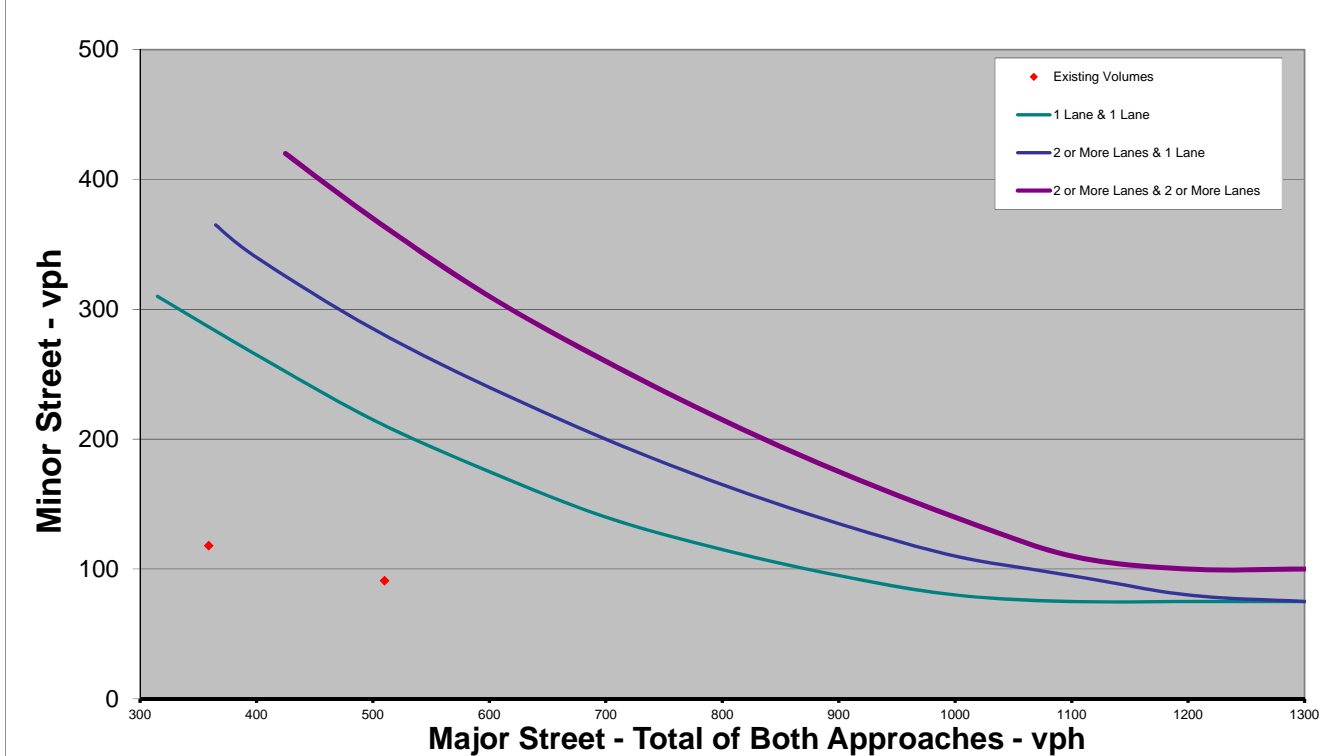


Warrant 3

Warrant 3 - Peak Hour Vehicular Volume - 100%

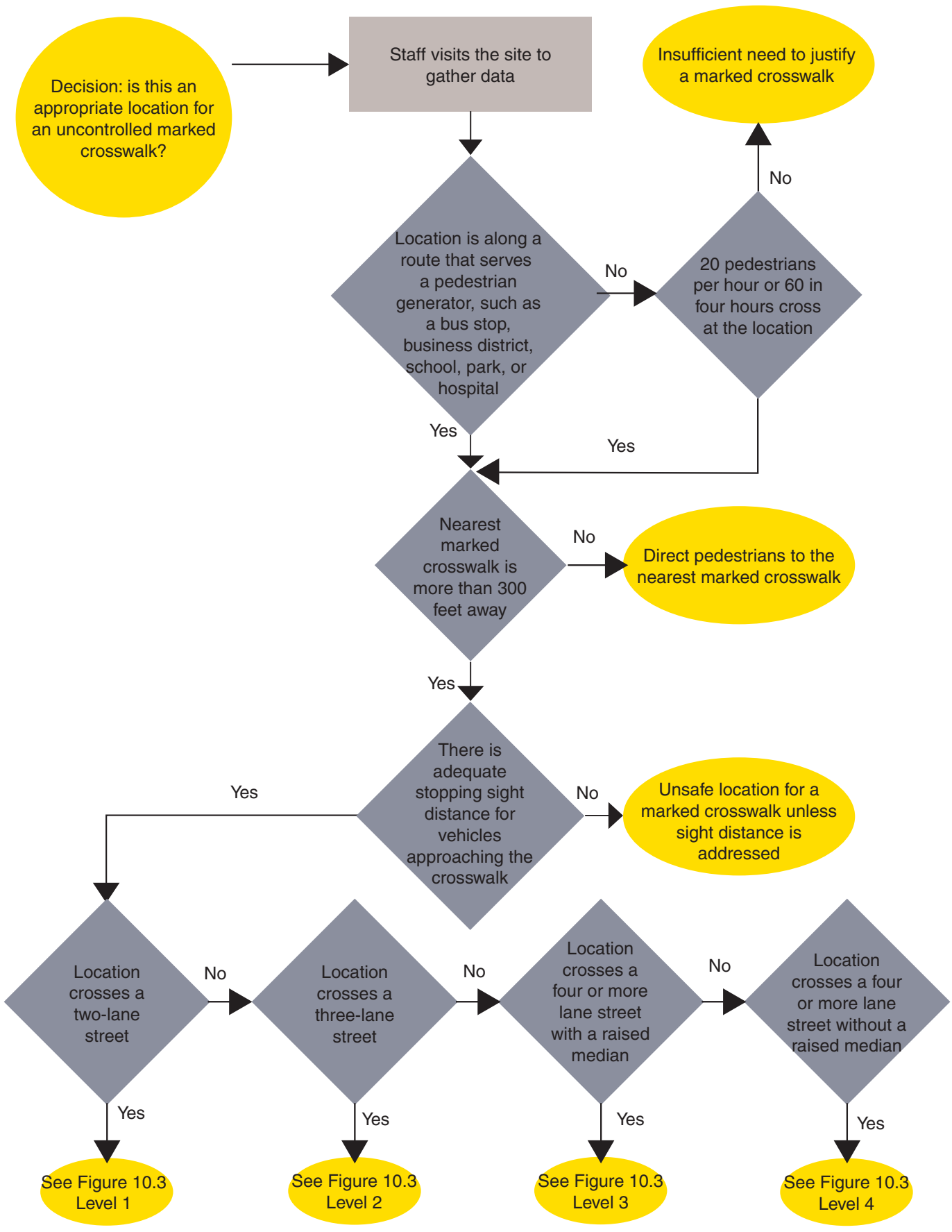


Warrant 3 - Peak Hour Vehicular Volume - 70%



Appendix H

SHA Crossing Guidelines



Sources: Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations, 2002 and City of Sacramento Public Works Department

Figure 10.2 - Uncontrolled Marked Crosswalks

Instructions: Complete the flow chart in Figure 10.2 and refer to the corresponding level below.

Level 1: 2 Lane Street

ADT	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
Up to 12,000 cars per day	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)
12,000-15000	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings	Pedestrian signal or grade separated crossing
15,000 cars or more per day	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing

Level 3: 4 or more Lanes with a Raised Median

ADT	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)
9,000-12,000	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
12,000-15,000	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
15,000 or more	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Level 2: 3 Lane Street

ADT	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)
9,000-12,000	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)
12,000-15,000	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
15,000 or more	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Level 4: 4 or more Lanes without a Raised Median

ADT	POSTED SPEED		
	30 mph or less	35 mph	40 mph or more
9,000 cars or fewer per day	Longitudinal or diagonal crosswalk markings	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
9,000-12,000	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Longitudinal or diagonal crosswalk markings plus an engineering treatment (see below)	Pedestrian signal or grade separated crossing
12,000-15,000	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing
15,000 or more	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing	Pedestrian signal or grade separated crossing

Menu of Engineering Treatments

- Road Diet
- Crossing Islands
- Curb Extensions
- Advance Stop Lines
- In-Roadway Warning Lights
- Pedestrian Signals
- Grade Separated Crossing (should not be used in conjunction with longitudinal or diagonal crosswalk markings)

Figure 10.3 - Engineering Treatments for Uncontrolled Marked Crosswalks

Appendix I

Concept Plans



LEGEND

	FULL DEPTH ASPHALT PAVING		GRASS ISLAND
	SHARED USE PATH		CONCRETE BRICK PATTERN
	RESURFACING		SWM FACILITY
	CONCRETE SIDEWALK		PAVEMENT REMOVAL
	CONCRETE DRIVEWAY		EXISTING SIGN
	CONCRETE APRON		PROPOSED SIGN

WM WALLACE MONTGOMERY
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS
 10150 York Road, Suite 200
 Hunt Valley, Maryland 21030
 410.494.9093 Tel / 410.667.0925 Fax
 www.WallaceMontgomery.com A Limited Liability Partnership

NO. DESCRIPTION BY DATE

NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
ASSISTANT CHIEF ENGINEER		CHIEF, R/W SERVICES	

NO BUILD

STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY

SCALE 1"=30'
 DRAWN BY J.W.L.
 CHECKED BY M.J.B.
 SHEET OF XX
 PROJECT NO. H539600
 CONTRACT NO. H539608



N 544275
E 1413325

N 543725
E 1413325

- LEGEND**
- FULL DEPTH ASPHALT PAVING
 - SHARED USE PATH
 - RESURFACING
 - CONCRETE SIDEWALK
 - CONCRETE DRIVEWAY
 - CONCRETE APRON
 - GRASS ISLAND
 - CONCRETE BRICK PATTERN
 - SWM FACILITY
 - PAVEMENT REMOVAL
 - EXISTING SIGN
 - PROPOSED SIGN

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 www.WallaceMontgomery.com A Limited Liability Partnership

REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
ASSISTANT CHIEF ENGINEER		CHIEF, R/W SERVICES	

SCALE 1"=30'
DRAWN BY J.W.L.
CHECKED BY M.J.B.
SHEET OF XX
PROJECT NO. H539600
CONTRACT NO. H539608

MINI ROUNDABOUT

STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY

D1S-02

PLOT DATE: Tuesday, November 01, 2016 AT 01:55 PM
 FILE: M:\PROJECTS\110009\000\Highways\Cadd\LPD-P001_Stewart_ALD.dgn



N 544275
E 1413325
N 543725
E 1413325



SCALE: 1"=30'
DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

D15-03

LEGEND

- FULL DEPTH ASPHALT PAVING
- SHARED USE PATH
- RESURFACING
- CONCRETE SIDEWALK
- CONCRETE DRIVEWAY
- CONCRETE APRON
- GRASS ISLAND
- CONCRETE BRICK PATTERN
- SWM FACILITY
- PAVEMENT REMOVAL
- EXISTING SIGN
- PROPOSED SIGN

WM WALLACE MONTGOMERY
 ENGINEERS-PLANNERS-SURVEYORS-CONSTRUCTION MANAGERS
 10150 York Road, Suite 200
 Hunt Valley, Maryland 21030
 410.494.9093 Tel / 410.667.0925 Fax
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REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED	DATE	APPROVED	DATE	SCALE 1"=30'
CHIEF ENGINEER		PROJECT MANAGER		DRAWN BY J.W.L.
APPROVED	DATE	APPROVED	DATE	CHECKED BY M.J.B.
				SHEET OF XX
				PROJECT NO. H539600
				CONTRACT NO. H539608

TRAFFIC CALMING
STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY

PLOTTED: Tuesday, November 01, 2016 AT 11:06 AM
 FILE: M:\PROJECTS\110009\000\Highways\Cadd\1510-D-001_Stewart_AL13.dgn



N 544275
E 1413325

N 543725
E 1413325

LEGEND

- FULL DEPTH ASPHALT PAVING
- SHARED USE PATH
- RESURFACING
- CONCRETE SIDEWALK
- CONCRETE DRIVEWAY
- CONCRETE APRON
- GRASS ISLAND
- CONCRETE BRICK PATTERN
- SWM FACILITY
- PAVEMENT REMOVAL
- EXISTING SIGN
- PROPOSED SIGN

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 Hunt Valley, Maryland 21030
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REVISIONS			
NO.	DESCRIPTION	BY	DATE

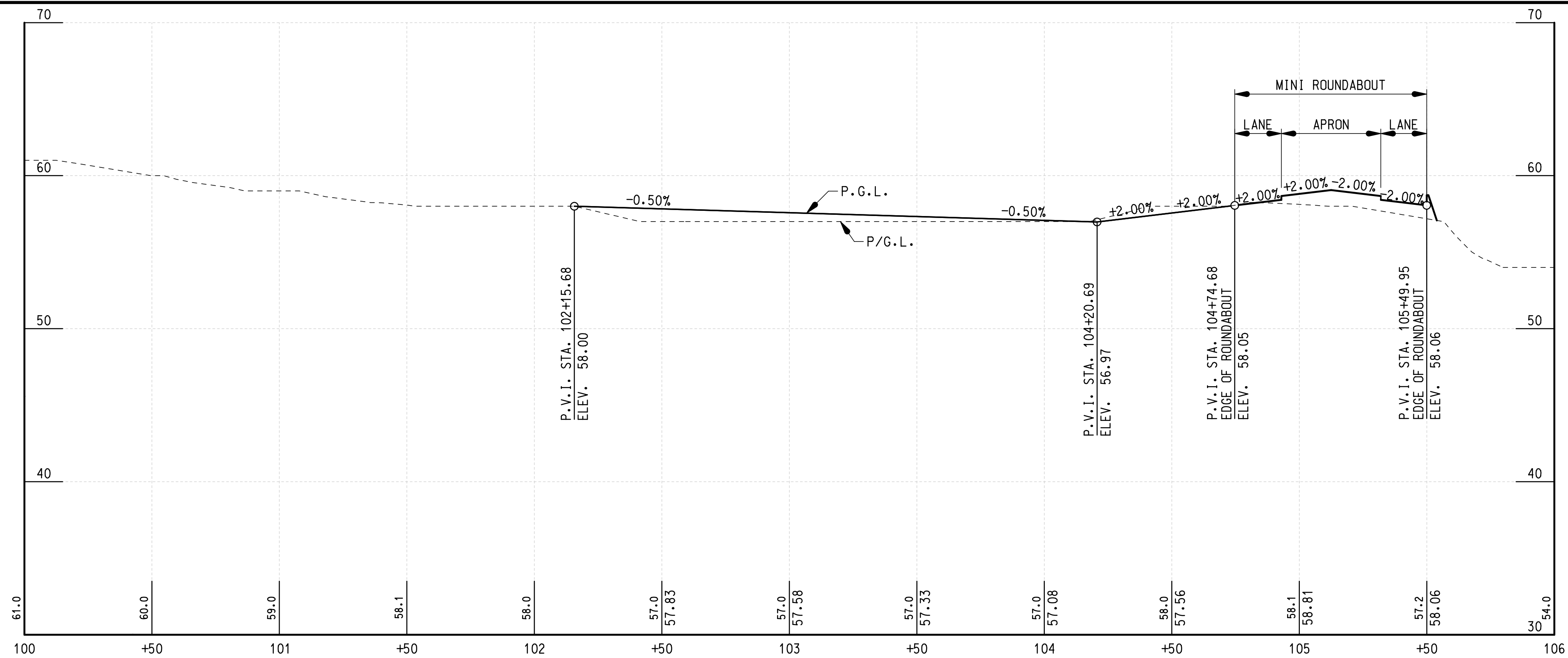
APPROVED			
DATE	DATE	DATE	DATE

ANNE ARUNDEL COUNTY
 DEPARTMENT OF PUBLIC WORKS

STANDARD ROUNDABOUT

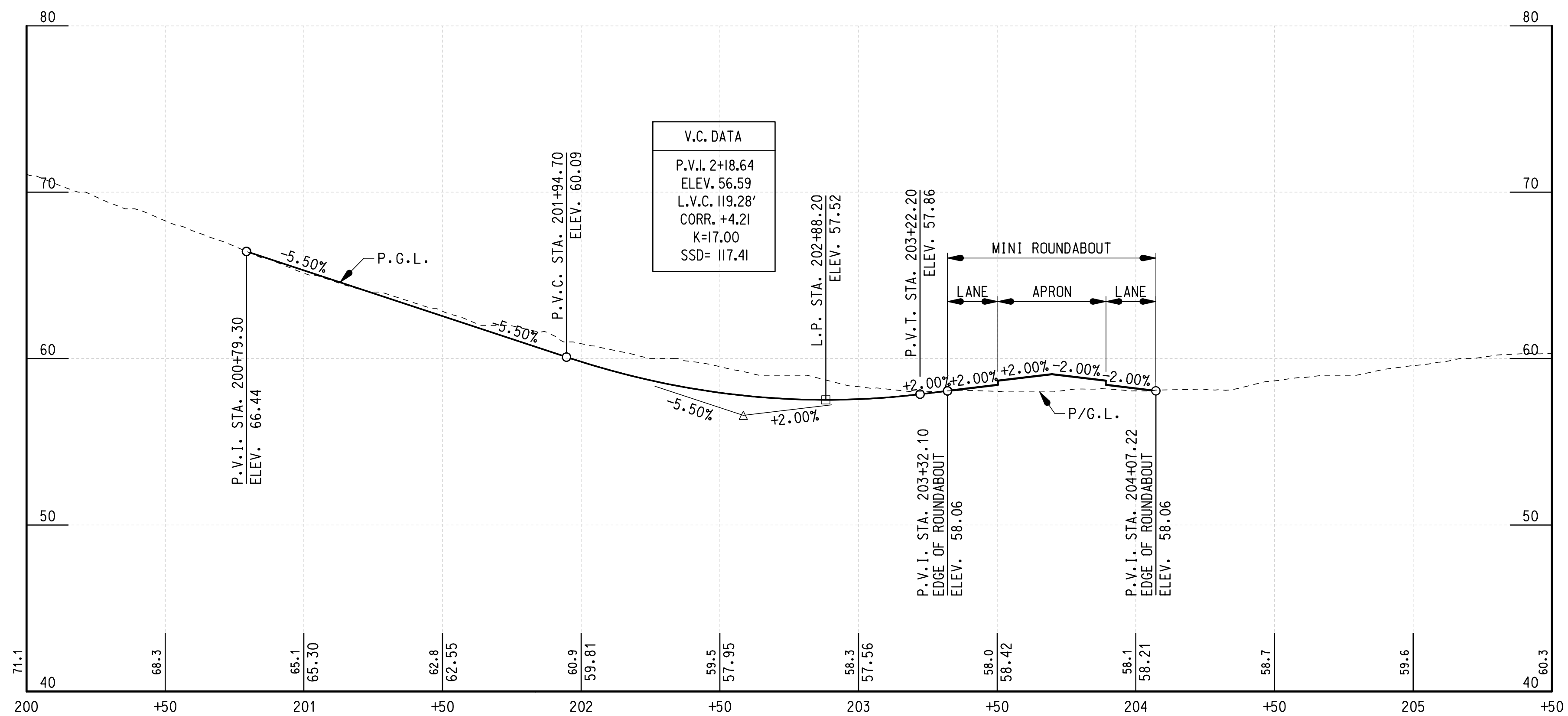
STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY

SCALE 1"=30'
 DRAWN BY J.W.L.
 CHECKED BY M.J.B.
 SHEET OF XX
 PROJECT NO. H539600
 CONTRACT NO. H539608



**MINI ROUNDABOUT
OLDSTAGE ROAD PROFILE**

HORIZONTAL : 1" = 30'
VERTICAL : 1" = 5'



**MINI ROUNDABOUT
STEWART AVENUE PROFILE**

HORIZONTAL : 1" = 30'
VERTICAL : 1" = 5'

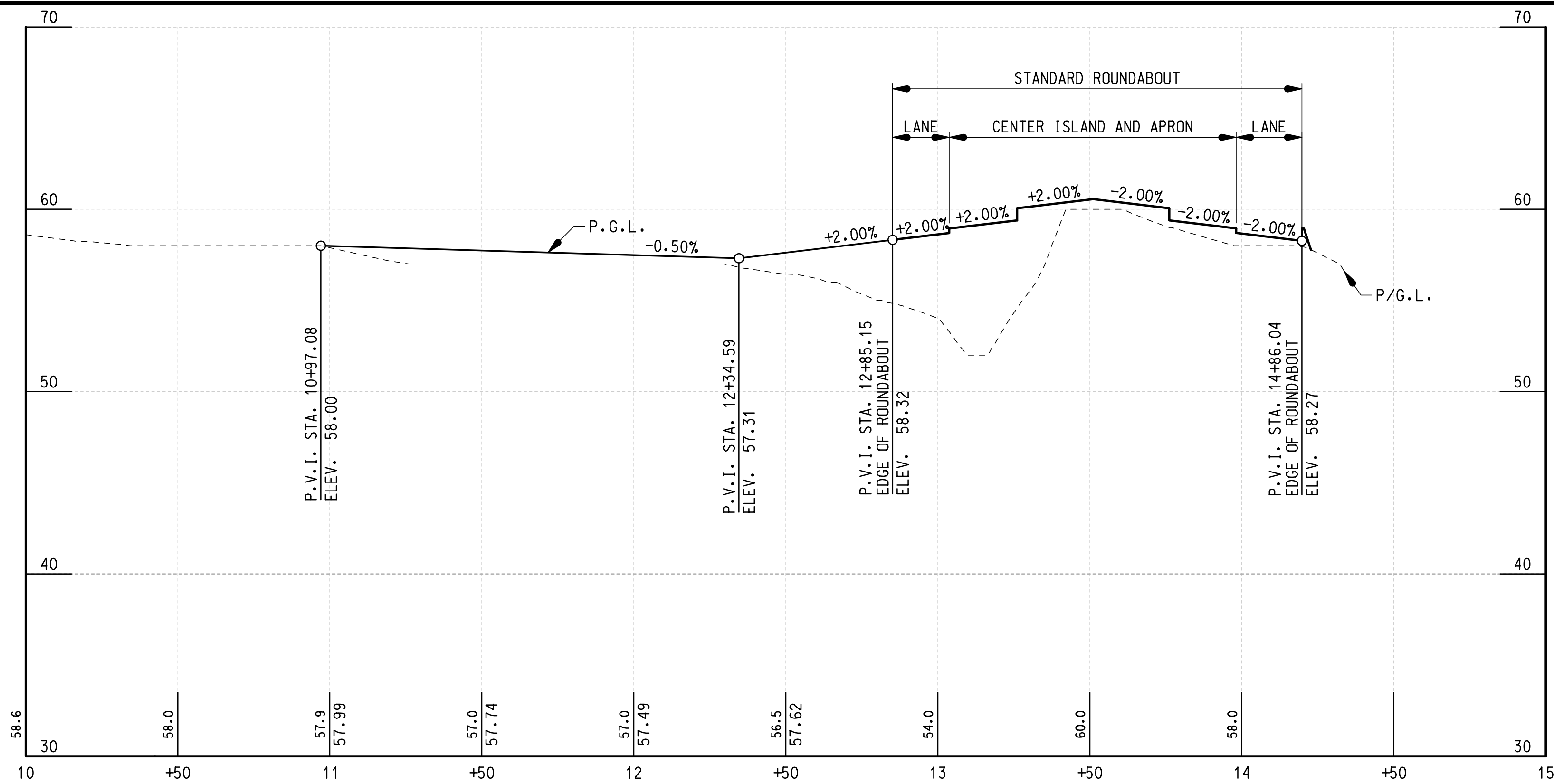
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P.V.I. 2+18.64	ELEV. 56.59
L.V.C. 119.28'	CORR. +4.21
K=17.00	
SSD=117.41	

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

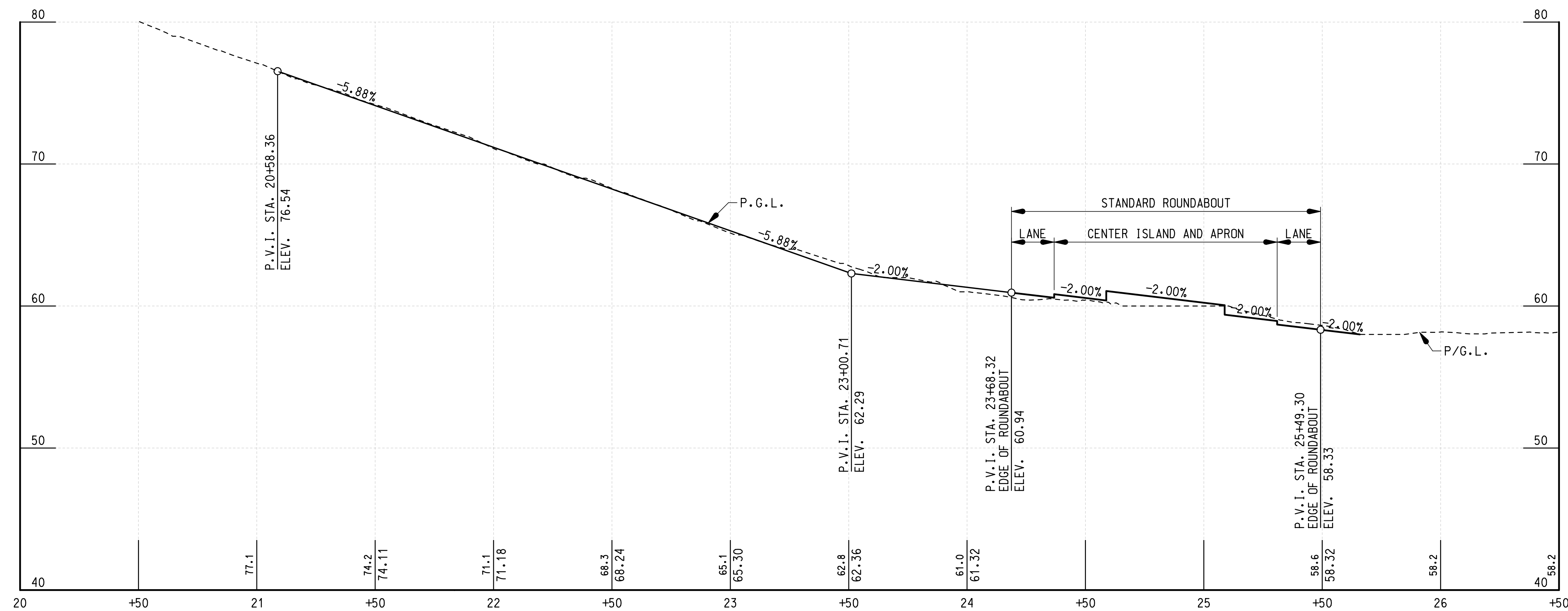
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REVISIONS			
NO.	DESCRIPTION	BY	DATE

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS			
APPROVED	DATE	APPROVED	DATE
CHIEF ENGINEER		PROJECT MANAGER	
APPROVED	DATE	APPROVED	DATE
ASSISTANT CHIEF ENGINEER		CHIEF R/W SERVICES	
SCALE	DRAWN BY J.W.L.	CHECKED BY M.J.B.	SHEET OF XX
PROJECT NO. H539600	CONTRACT NO. H539608	MINI ROUNDABOUT PROFILE STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY	



**STANDARD ROUNDABOUT
OLDSTAGE ROAD PROFILE**
HORIZONTAL : 1" = 30'
VERTICAL : 1" = 5'



**STANDARD ROUNDABOUT
STEWART AVENUE PROFILE**
HORIZONTAL : 1" = 30'
VERTICAL : 1" = 5'

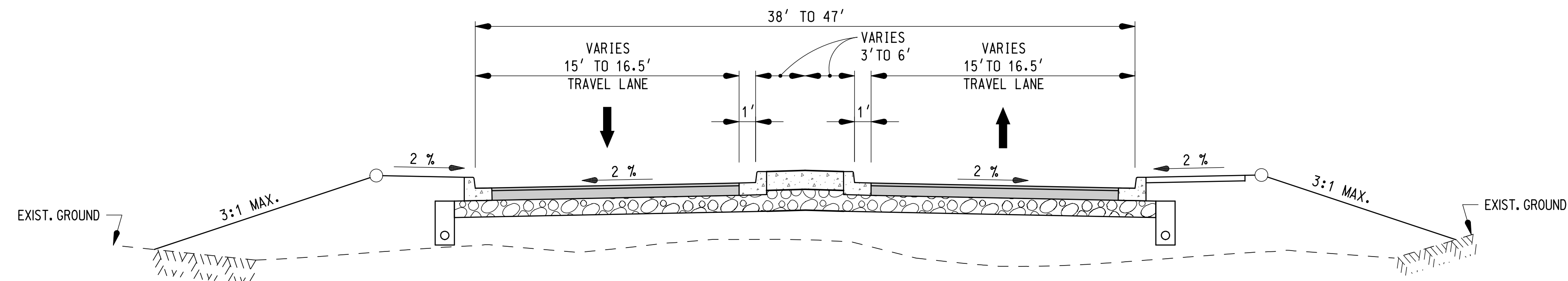
DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

WM WALLACE MONTGOMERY
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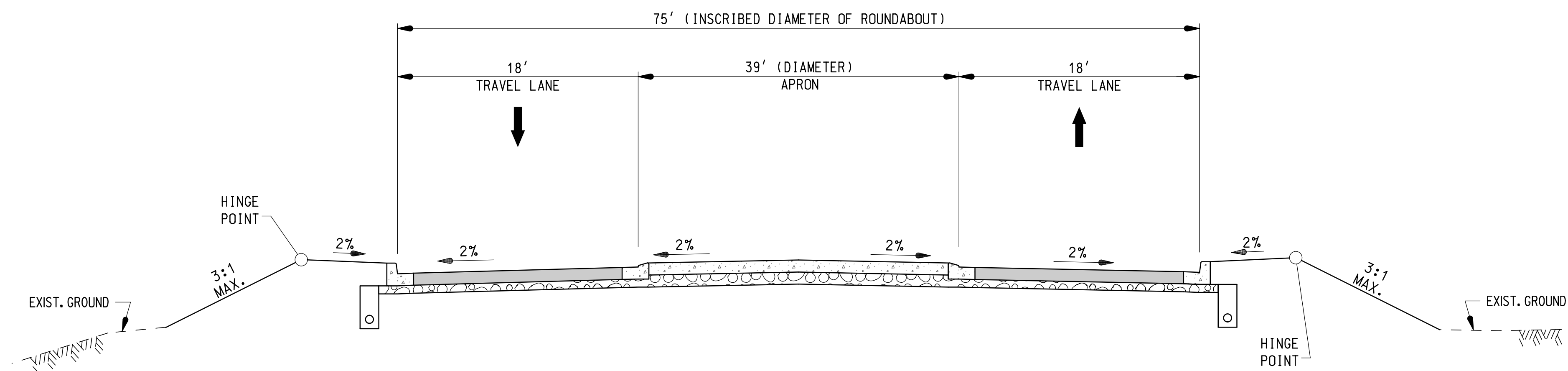
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PROJECT NO. H539600	CONTRACT NO. H539608	STANDARD ROUNDABOUT PROFILE STEWART ROAD AND OLD STAGE ROAD INTERSECTION STUDY	

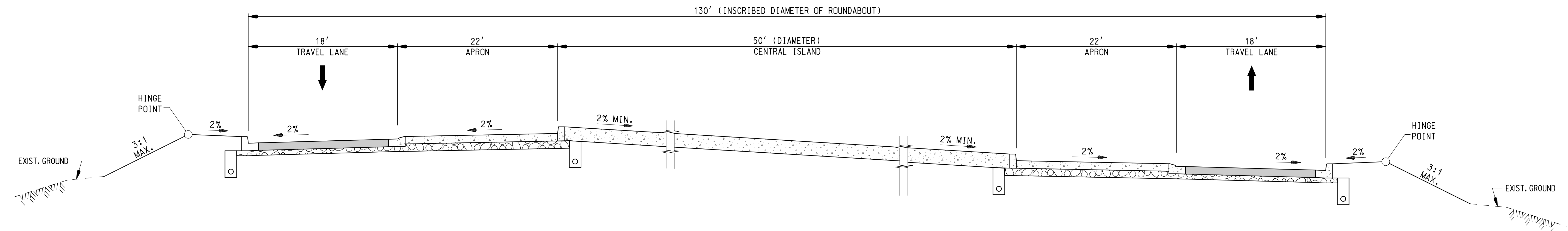
PLOTTED: Tuesday, November 01, 2016 AT 11:34 AM
FILE: M:\PROJ\210009.0009\Highways\Cadd\pHP-V000_STEWART_ALT4.dgn



ROUNDBOUT APPROACH SECTION
NOT TO SCALE



MINI ROUNDBOUT SECTION
NOT TO SCALE



STANDARD ROUNDBOUT SECTION
NOT TO SCALE

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

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SCALE		DRAWN BY	J.W.L.
		CHECKED BY	M.J.B.
		SHEET	OF XX
		PROJECT NO.	H539600
		CONTRACT NO.	H539608

TYPICAL SECTIONS
**STEWART ROAD
AND OLD STAGE ROAD
INTERSECTION STUDY**

Appendix J

Concept Cost Estimates

MAJOR QUANTITIES ESTIMATE

DATE:	November 1, 2016	CONTRACT #:
ROUTE:	STEWART AVE.	COUNTY: ANNE ARUNDEL COUNTY
JOB DESCRP:	STEWART AVE. AND OLD STAGE ROAD	LENGTH 400 feet
IMPROV TYPE:	INTERSECTION DESIGN	AVG COST \$285 per linear foot
TYPICAL SEC:	N/A	COST PER 1/2 MILE: \$ 754,000
ALTERNATE:	MINI ROUNDABOUT	
PREPARED BY:	WALLACE, MONTGOMERY & ASSOCIATES LLP.	

CATEGORIES	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	GRAND_TOT
CATEGORY 1:	PRELIMINARY ITEMS	20%		[% OF CATGR 2,5,6,7,8]		\$ 134,000
CATEGORY 2:	EARTHWORK AND GRADING					\$ 156,000
	CLASS 1 OR 2 EXCAVATION < 15' WIDE	2,000	CY	\$ 32	\$ 64,000	
	CLASS 1-A OVER EXCAVATION	0	CY	\$ 45	\$ -	
	BORROW COMMON OR SELECT BORROW	2,000	CY	\$ 40	\$ 80,000	
	REMOVAL REMOVAL OF EXISTING PAVEMENT	296	CY	\$ 40	\$ 11,840	
CATEGORY 3:	DRAINAGE ITEMS					\$ 276,000
	SWM FACILITY STORM WATER MANAGEMENT POND	1	LS	\$ 75,000	\$ 75,000	
	E&S MEASURES 10% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 67,000	\$ 67,000	
	MISC DRAINAGE 20% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 134,000	\$ 134,000	
CATEGORY 4:	STRUCTURES					\$ -
	<i>NO STRUCTURES IN THIS SECTION</i>	0	SF	\$ -	\$ -	
		0	SF	\$ -	\$ -	
CATEGORY 5:	PAVING					\$ 244,000
	PAVEMENT SURFACE SUPER PAVE ASPHALT MIX FOR SURFACE	311	TON	\$ 130	\$ 40,430	
	PAVEMENT SURFACE SUPER PAVE ASPHALT MIX FOR SURFACE (SHARED USE PATH)	24	TON	\$ 130	\$ 3,120	
	PAVEMENT BASE SUPER PAVE ASPHALT MIX FOR BASE	931	TON	\$ 130	\$ 121,030	
	PAVEMENT BASE SUPER PAVE ASPHALT MIX FOR BASE (SHARED USE PATH)	38	TON	\$ 130	\$ 4,940	
	GAB 6" GRADED AGGREGATE BASE	2,638	SY	\$ 12	\$ 31,656	
	GAB 4" GRADED AGGREGATE BASE	261	SY	\$ 10	\$ 2,610	
	DRIVEWAY APRON AND DRIVEWAY CONSTRUCTION	80	SY	\$ 100	\$ 8,000	
	SPLITTER ISLANDS 11 INCH PLAIN PORTLAND CEMENT CONCRETE PAVEMENT MIX # 7 (BRICK PATTERN)	219	SY	\$ 100	\$ 21,900	
	PAVEMENT MARKING	4,800	LF	\$ 2	\$ 9,600	
CATEGORY 6:	SHOULDERS					\$ 111,000
	CURB / MEDIAN TYPE A CURB AND GUTTER	1,330	LF	\$ 45	\$ 59,850	
	CURB / MEDIAN TYPE C CURB AND GUTTER	123	LF	\$ 45	\$ 5,535	
	SIDEWALK & RAMPS 5" CONCRETE SIDEWALK	2,241	SF	\$ 9	\$ 20,169	
	BARRIER TRAFFIC BARRIER W BEAM	1,000	LF	\$ 25	\$ 25,000	
CATEGORY 7:	LANDSCAPING ITEMS	10%		[% OF CATGR 2,5,6]		\$ 52,000
CATEGORY 8:	TRAFFIC/UTILITY ITEMS	20%		[% OF CATGR 2,5,6]		\$ 103,000
						\$ 511,000
						\$ 666,000
						\$ 1,076,000
						\$ 430,400
	NEAT CONSTRUCTION COST					\$ 1,506,400

REMARKS:

COSTS ARE BASED UPON SHA COST ESTIMATING MANUAL.
 ALL WORK IS ASSUMED TO BE WITHIN EXISTING RIGHT-OF-WAY

MAJOR QUANTITIES ESTIMATE

DATE:	November 1, 2016	CONTRACT #:
ROUTE:	STEWART AVE.	COUNTY: ANNE ARUNDEL COUNTY
JOB DESCRP:	STEWART AVE. AND OLD STAGE ROAD	LENGTH: 400 feet
IMPROV TYPE:	INTERSECTION DESIGN	AVG COST: \$111 per linear foot
TYPICAL SEC:	N/A	COST PER 1/2 MILE: \$ 294,000
ALTERNATE:	TRAFFIC CALMING	
PREPARED BY:	WALLACE, MONTGOMERY & ASSOCIATES LLP.	

CATEGORIES	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	GRAND_TOT
CATEGORY 1:	PRELIMINARY ITEMS	20%		[% OF CATGR 2,5,6,7,8]		\$ 48,000
CATEGORY 2:	EARTHWORK AND GRADING					\$ 15,000
	CLASS 1 OR 2 EXCAVATION < 15' WIDE	200	CY	\$ 32	\$ 6,400	
	CLASS 1-A OVER EXCAVATION	0	CY	\$ 45	\$ -	
	BORROW COMMON OR SELECT BORROW	50	CY	\$ 40	\$ 2,000	
	REMOVAL REMOVAL OF EXISTING PAVEMENT	153	CY	\$ 40	\$ 6,120	
CATEGORY 3:	DRAINAGE ITEMS			[% OF CATGR 2,5,6,7,8]		\$ 135,000
	SWM FACILITY STORM WATER MANAGEMENT POND	1	LS	\$ 75,000	\$ 75,000	
	E&S MEASURES 10% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 24,000	\$ 24,000	
	MISC DRAINAGE 15% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 36,000	\$ 36,000	
CATEGORY 4:	STRUCTURES					\$ -
	<i>NO STRUCTURES IN THIS SECTION</i>	0	SF	\$ -	\$ -	
		0	SF	\$ -	\$ -	
CATEGORY 5:	PAVING					\$ 76,000
	PAVEMENT SURFACE SUPER PAVE ASPHALT MIX FOR SURFACE (SHARED USE PATH)	20	TON	\$ 130	\$ 2,600	
	PAVEMENT BASE SUPER PAVE ASPHALT MIX FOR BASE (SHARED USE PATH)	32	TON	\$ 130	\$ 4,160	
	GAB 4" GRADED AGGREGATE BASE	217	SY	\$ 10	\$ 2,170	
	GIRNDING/MILLING GRINDING/MILLING EXISTING PAVEMENT (0"-2")	2,670	SY	\$ 12	\$ 32,040	
	DRIVEWAY APRON AND DRIVEWAY CONSTRUCTION	107	SY	\$ 100	\$ 10,700	
	SPLITTER ISLANDS 11 INCH PLAIN PORTLAND CEMENT CONCRETE	145	SY	\$ 100	\$ 14,500	
	PAVEMENT MARKING PAVEMENT MIX # 7 (BRICK PATTERN) LANE MARKING ANY SIZE (W/Y)	4,800	LF	\$ 2	\$ 9,600	
CATEGORY 6:	SHOULDERS					\$ 90,000
	CURB / MEDIAN TYPE C CURB AND GUTTER	1,021	LF	\$ 45	\$ 45,945	
	SIDEWALK & RAMPS 5" CONCRETE SIDEWALK	2,064	SF	\$ 9	\$ 18,576	
	BARRIER TRAFFIC BARRIER W BEAM	1,000	LF	\$ 25	\$ 25,000	
CATEGORY 7:	LANDSCAPING ITEMS	10%		[% OF CATGR 2,5,6]		\$ 19,000
CATEGORY 8:	TRAFFIC/UTILITY ITEMS	20%		[% OF CATGR 2,5,6]		\$ 37,000
						\$ 181,000
						\$ 237,000
						\$ 420,000
						\$ 168,000
						\$ 588,000

REMARKS:
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MAJOR QUANTITIES ESTIMATE

DATE:	November 1, 2016	CONTRACT #:
ROUTE:	STEWART AVE.	COUNTY: ANNE ARUNDEL COUNTY
JOB DESCRP:	STEWART AVE. AND OLD STAGE ROAD	LENGTH 500 feet
IMPROV TYPE:	INTERSECTION DESIGN	AVG COST \$331 per linear foot
TYPICAL SEC:	N/A	COST PER 1/2 MILE: \$ 875,000
ALTERNATE:	STANDARD ROUNDABOUT	
PREPARED BY:	WALLACE, MONTGOMERY & ASSOCIATES LLP.	

CATEGORIES	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL	GRAND_TOT
CATEGORY 1:	PRELIMINARY ITEMS	20%	[% OF CATGR 2,5,6,7,8]			\$ 167,000
CATEGORY 2:	EARTHWORK AND GRADING					\$ 176,000
	CLASS 1 OR 2 EXCAVATION < 15' WIDE	2,000	CY	\$ 32	\$ 64,000	
	CLASS 1-A OVER EXCAVATION	0	CY	\$ 45	\$ -	
	BORROW COMMON OR SELECT BORROW	2,500	CY	\$ 40	\$ 100,000	
	REMOVAL REMOVAL OF EXISTING SIDEWALK	16	CY	\$ 100	\$ 1,600	
	REMOVAL REMOVAL OF EXISTING PAVEMENT	249	CY	\$ 40	\$ 9,960	
CATEGORY 3:	DRAINAGE ITEMS					\$ 251,000
	E&S MEASURES 10% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 84,000	\$ 84,000	
	MISC DRAINAGE 20% of Constr Costs (CATS 2,5,6,7,8)	1	LS	\$ 167,000	\$ 167,000	
CATEGORY 4:	STRUCTURES					\$ -
	<i>NO STRUCTURES IN THIS SECTION</i>	0	SF	\$ -	\$ -	
		0	SF	\$ -	\$ -	
CATEGORY 5:	PAVING					\$ 266,000
	PAVEMENT SURFACE SUPER PAVE ASPHALT MIX FOR SURFACE	369	TON	\$ 130	\$ 47,970	
	PAVEMENT SURFACE SUPER PAVE ASPHALT MIX FOR SURFACE (SHARED USE PATH)	21	TON	\$ 130	\$ 2,730	
	PAVEMENT BASE SUPER PAVE ASPHALT MIX FOR BASE	1,107	TON	\$ 80	\$ 88,560	
	PAVEMENT BASE SUPER PAVE ASPHALT MIX FOR BASE (SHARED USE PATH)	34	TON	\$ 130	\$ 4,420	
	GAB 6" GRADED AGGREGATE BASE	3,136	SY	\$ 12	\$ 37,632	
	GAB 4" GRADED AGGREGATE BASE	235	SY	\$ 10	\$ 2,350	
	DRIVEWAY APRON AND DRIVEWAY CONSTRUCTION	159	SY	\$ 100	\$ 15,900	
	SPLITTER ISLANDS 11 INCH PLAIN PORTLAND CEMENT CONCRETE PAVEMENT MIX # 7	567	SY	\$ 100	\$ 56,700	
	PAVEMENT MARKING LANE MARKING ANY SIZE (W/Y)	4,800	LF	\$ 2	\$ 9,600	
CATEGORY 6:	SHOULDERS					\$ 174,000
	CURB / MEDIAN TYPE A CURB AND GUTTER	2,058	LF	\$ 45	\$ 92,610	
	CURB / MEDIAN TYPE C CURB AND GUTTER	296	LF	\$ 45	\$ 13,320	
	SIDEWALK & RAMPS 5" CONCRETE SIDEWALK	4,111	SF	\$ 9	\$ 36,999	
	BARRIER TRAFFIC BARRIER W BEAM	1,000	LF	\$ 25	\$ 25,000	
	FENCE REMOVE AND RESET EXISTING FENCE	1	LS	\$ 6,000	\$ 6,000	
CATEGORY 7:	LANDSCAPING ITEMS	10%	[% OF CATGR 2,5,6]			\$ 62,000
CATEGORY 8:	TRAFFIC/UTILITY ITEMS	25%	[% OF CATGR 2,5,6]			\$ 154,000
					\$ 616,000	
					\$ 832,000	
					\$ 1,250,000	
					\$ 500,000	
	NEAT CONSTRUCTION COST					\$ 1,750,000

REMARKS:

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