

# Pictorial Radar Speed Sign Effectiveness Study

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I. Introduction

This study serves as a follow-up study to a 2022 study by RK&K that evaluated the effectiveness of standard (non-pictorial) radar speed signs (RSSs) and recommended further work to evaluate the effectiveness of pictorial RSSs.

RSSs display a vehicle's travel speed to provide the motorist with feedback on their current speed. Typically, RSSs measure travel speeds using a radar unit contained within the sign assembly. DelDOT's current practice is to pair RSSs with a static speed limit sign to reinforce what the existing speed limit is on a given roadway. While DelDOT has installed and maintained several hundred RSSs across the State, this study is associated with the first use of pictorial RSS on DelDOT's state-maintained roadways. The pictorial RSSs are programmed to display a smiling face if vehicles are traveling at or below the posted speed limit and a frowning face if vehicles are traveling above the posted speed limit. The smiling face (at or below the speed limit) is yellow, the same color as the measured speed, while the frowning face (above the speed limit) is red. The pictorial RSSs initially display either the smiling or frowning face, and then display the travel speed of the vehicle being measured. DelDOT requested that RK&K perform the current research effort to determine if the pictorial signs have been effective at reducing speeds. This report presents the methodology, conclusions, and recommendations of the study. Examples of pictorial RSSs, including the smiling and frowning faces, are shown below in **Figure 1**.



Figure 1. Examples of pictorial radar speed signs in Delaware

II. Previous Research Efforts

In 2022, RK&K conducted an effectiveness study for standard (non-pictorial) RSSs. The study included a review of 23 RSS locations in Delaware and found that those RSSs have not resulted in consistent statistically significant speed reductions; the standard RSSs did not consistently reduce vehicle speeds or improve speed uniformity. Speed and standard deviation changes after RSS installation were found to be relatively small in magnitude and could be either increases or decreases.

Although the results of the 2022 study did show some statistically significant decreases and increases in average speeds, the magnitude of increases were generally small (1 to 3 mph). Additionally, where there were speed reductions, those reductions typically diminished further downstream from the sign. Results from the 2022 study indicated that RSSs were slightly more effective at consistently reducing speeds at locations where drivers understand there is an underlying need to reduce speed, such as in school zones, near parks, and at speed transition zones.

Included in the 2022 study was the recommendation to further study the effectiveness of pictorial RSSs.

III. Methodology

To study the effectiveness of pictorial RSSs in Delaware, multiple sites throughout the state were identified, including roadways with different functional classifications, daily volumes, and posted speed limits. The sites were chosen based on requests received from citizens and legislators over multiple years, and included multiple sites in each of Delaware’s three counties. Speed data for the “before” period were collected in July 2023. The new pictorial RSSs were installed in August 2023, with the exception of Forrest Avenue which was installed in October 2023. Speed data for the “after” period were then collected between October 2023 and January 2024, which allowed time for motorists to become accustomed to the new signs. In addition to a before-after comparison of vehicle speeds, a statistical analysis was completed to determine if speed changes were statistically significant. This section discusses the sites analyzed, as well as the before-after comparisons and statistical analyses conducted.

**Data Collection Sites**

This study is based on travel speed data that were collected before and after installation of pictorial RSSs at eleven (11) sites in Delaware. The sites were chosen to include roadways that are geographically spread across all three Delaware counties with varying posted speed limits and functional classifications. These eleven (11) sites included six (6) sites in New Castle County, two (2) sites in Kent County, and three (3) sites in Sussex County.

At all eleven (11) sites, speeds were collected both at the sign and downstream of the sign to evaluate whether motorists reduced their speeds at or near the sign, and if they maintained the reduced travel speeds beyond the sign. It should be noted that speeds were also collected upstream of each sign but were not used for the statistical analyses outlined further in this study. The data collection sites and dates of sign installation and data collection are shown in **Table 2**.

Speed data were collected using pneumatic road tubes. Raw vehicle speeds were grouped into bins depending on the posted speed limit. The bins are shown below in **Table 1**.

**Table 1. Speed Bins (mph)**

Speed Limit	Bin 1	Bin 2	Bin 3	Bin 4	Bin 5	Bin 6	Bin 7	Bin 8	Bin 9	Bin 10	Bin 11	Bin 12
25	0-9	10-14	15-19	20-22	23-25	26-28	29-31	32-34	35-39	40-44	45-49	> 50
30	0-14	15-19	20-24	25-27	28-30	31-33	34-36	37-39	40-44	45-49	50-54	> 55
35	0-19	20-24	25-29	30-32	33-35	36-38	39-41	42-44	45-49	50-54	55-59	> 60
40	0-24	25-29	30-34	35-37	38-40	41-43	44-46	47-49	50-54	55-59	60-64	> 65
45	0-29	30-34	35-39	40-42	43-45	46-48	49-51	52-54	55-59	60-64	65-69	> 70
50	0-34	35-39	40-44	45-47	48-50	51-53	54-56	57-59	60-64	65-69	70-74	> 75

It should be noted that for analysis of binned data, it was assumed that vehicle speeds are uniformly distributed within each bin. Bin 1 and Bin 12 counts were not used for numerical analysis because the uniform distribution is an unrealistic assumption for the lower bound (Bin 1) and there is no upper limit for Bin 12. Speed data collected before pictorial radar speed signs were installed are summarized in **Appendix A**. Speed data collected after pictorial radar speed signs were installed are summarized in **Appendix B**.

Table 2. Data Collection Sites

County	Site #	Site Description	City / Town	Speed Limit (mph)	Functional Classification	Before Data Collection	Sign Installation	After Data Collection
New Castle	1	EB Grubb Road <i>between 2704 and 2706</i>	Wilmington	35	Major Collector	7/6/23 – 7/12/23	8/16/23	10/26/23 – 11/1/23
	2	NB Marsh Road <i>~50' north of Rowland Park Boulevard</i>	Wilmington	40	Minor Arterial	7/6/23 – 7/12/23	8/16/23	1/4/24 – 1/10/24 <sup>1</sup>
	3	WB Mt. Lebanon Road <i>~25' west of Severn Road</i>	Wilmington	35	Major Collector	7/6/23 – 7/12/23 <sup>2</sup>	8/16/23	10/25/23 – 10/31/23
	4	NB Milltown Road <i>~200' north of Cratchett Road</i>	Wilmington	35	Major Collector	7/7/23 – 7/13/23	8/3/23	10/25/23 – 10/31/23
	5	SB Glasgow Avenue <i>~50' south of Cann Road</i>	Newark	30	Major Collector	7/7/23 – 7/13/23	8/16/23	10/25/23 – 10/31/23
	6	NB Kirkwood St. Georges Road <i>~140' north of Mariners Way</i>	Bear	25	Local	7/7/23 – 7/13/23	8/13/23	10/25/23 – 10/31/23
Kent	7	EB Forrest Avenue <i>~1,500' west of Sharon Hill Road</i>	Dover	35 <sup>3</sup>	Minor Arterial	7/9/23 – 7/15/23	10/6/23	11/15/23 – 11/21/23
	8	SB Peachtree Run <i>~180' north of Sunny Meadow Drive</i>	Magnolia	50	Major Collector	7/12/23 – 7/18/23	8/17/23	11/15/23 – 11/21/23
Sussex	9	EB Johnson Road <i>~350' east of N Old State Road</i>	Lincoln	25	Major Collector	7/8/23 – 7/14/23	8/17/23	11/15/23 – 11/21/23
	10	WB Long Neck Road <i>~240' west of Radie Kay Lane</i>	Millsboro	40	Major Collector	7/7/23 – 7/13/23 <sup>4</sup>	8/17/23	12/13/23 – 12/19/23
	11	NB Bayard Road <i>~615' south of Jahnigen Boulevard</i>	Frankford	45	Major Collector	7/9/23 – 7/15/23	8/17/23	12/15/23 – 12/22/23
		<p>Notes:</p> <ol style="list-style-type: none"> <li>1. The pictorial RSS at Site 2 was malfunctioning after installation and was fixed in November 2023. "After" data was collected in January 2024 to allow motorists time to adjust to the sign.</li> <li>2. Site 3 does not have a full 7 days of "before" data at the proposed RSS location due to malfunctioning equipment.</li> <li>3. Site 7 is located at the start of the 35-mph section of roadway. Upstream, the speed limit is 50 mph.</li> <li>4. Site 10 does not have a full 7 days of "before" data upstream of the proposed RSS due to malfunctioning equipment.</li> </ol>						

### Before-After Comparisons and Statistical Analysis

To analyze the effectiveness of pictorial RSSs on vehicle speeds, the effects of other factors that could potentially impact vehicle speeds were also taken into consideration. As with the previous 2022 RSS effectiveness study, congestion was identified as a potentially significant factor because speeds are often lower during periods of high traffic volume. Based on the previous RSS study, speeds were typically the highest between 12AM – 4AM. At these times, vehicle speeds are not affected by other vehicles due to low volumes. However, darkness may be another factor that affects vehicle speeds. During daylight hours, the previous RSS study found speeds were generally higher between 10AM – 3PM, which typically corresponds with a period of uncongested travel. Compared to overnight hours, vehicle speeds are more likely to be affected by other vehicles between 10AM – 3PM, but not as impacted by heavy congestion that limits motorists' ability to choose their travel speed. These two time periods, "Overnight" and "Midday Off-Peak", were chosen to quantitatively examine the effects of the pictorial RSSs for all eleven (11) data collection sites. The time periods were chosen to be consistent with the 2022 RSS effectiveness study so results could be compared. The overnight period used data from Monday through Thursday nights, while the midday off-peak period used data from Monday through Friday.

For each analysis time period (overnight and midday off-peak), the average and 85<sup>th</sup> percentile speeds were calculated for each site at the sign location and downstream of the sign. The standard deviations of average speeds were also calculated to compare before and after speed uniformity. One-tailed, two-sample t-tests were used to determine if the differences in before and after average speeds were statistically significant at the 95 percent significance level. It should be noted that due to the data collection methodology, which included speed bins that are not each 5 mph, the 10-mph pace speed (which is often used as a measure of speed uniformity) could not be readily calculated.

In addition to the overnight and midday off-peak comparisons, the average and 85<sup>th</sup> percentile speeds at each site were calculated based on all available data. This full-day data is included for completeness; however, these results do include periods when speeds may be impacted by congestion or other factors.

#### IV. Results

A summary of all before and after data (average speeds, 85<sup>th</sup> percentile speeds, and standard deviations; upstream of the sign, at the sign, and downstream of the sign) is provided in **Appendix C**. Data from at the sign locations and downstream of the signs were used for comparisons. The observed differences before-and-after installation of the pictorial RSSs and statistical analyses of those differences are discussed in the following sub-sections.

#### Before and After Analysis Results

**Table 3** and **Table 5** show the changes in average speed, 85<sup>th</sup> percentile speed, and standard deviation among speeds – both at the sign and downstream of the sign – for each site. The colors in each cell correspond to the magnitude of the change; decreases are shown in green while increases are shown in red, with larger changes having darker colors. **Table 4** and **Table 6** show the changes when sites are grouped by speed limit.

Midday Off-Peak Before and After Analysis

The before and after results for the midday off-peak period between 10AM and 3PM are shown below.

**Table 3. Midday Off-Peak Speed and Standard Deviation Changes (mph)**

Site	Average Speed Change		85th Percentile Speed Change		Standard Deviation Change	
	Sign	Downstream	Sign	Downstream	Sign	Downstream
1	-3.8	-2.8	-4.0	-2.8	+0.4	+0.2
2	-0.6	-2.2	-0.8	-2.4	+0.0	-0.3
3	-1.9	-1.6	-1.6	-2.0	-0.0	-0.3
4	-3.9	-2.8	-4.0	-2.4	-0.4	+0.5
5	-5.2	-1.8	-5.6	-1.7	-0.2	+0.0
6	-0.6	+0.9	-1.1	+2.0	-1.1	+0.4
7	-6.9	-4.6	-5.2	-4.8	+1.5	-0.1
8	-0.6	-0.5	-0.6	-0.7	-0.2	-0.3
9	-2.5	-0.9	-2.7	-2.0	+0.0	-0.5
10	-0.5	+0.5	-0.7	+0.2	-0.3	-0.2
11	-1.3	+1.1	-1.2	+1.2	+0.1	+0.3
Average (all sites)	-2.5	-1.3	-2.5	-1.4	-0.0	-0.0

Overall, the pictorial RSS installation resulted in reduced midday off-peak average and 85<sup>th</sup> percentile speeds at the location of the pictorial RSS:

- The reduction in average speeds ranged from 0.5 to 6.9 mph, with an average speed reduction of 2.5 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average speed reduction of 0.5 mph.
- The reduction in 85<sup>th</sup> percentile speeds ranged from 0.6 mph to 5.6 mph, with an average 85<sup>th</sup> percentile speed reduction of 2.5 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average 85<sup>th</sup> percentile speed reduction of 0.6 mph.

**These data, combined with data from the 2022 study, indicate that, on average, pictorial RSSs are more effective at reducing midday vehicle speeds at the sign than the standard RSSs.**

The data also indicate that motorists maintained reduced speeds downstream of the pictorial RSS at most sites. However, the magnitudes of speed reductions downstream of the RSS were typically smaller than those at the sign. Specifically, downstream of the pictorial RSS:

- The change in average speeds ranged from a speed increase of 1.1 mph to a speed reduction of 4.6 mph, with an average speed reduction of 1.3 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average speed reduction of 0.1 mph.
- The change in 85<sup>th</sup> percentile speeds ranged from a speed increase of 2.0 mph to a speed reduction of 4.8 mph, with an average 85<sup>th</sup> percentile speed reduction of 1.4 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average 85<sup>th</sup> percentile speed reduction of 0.3 mph.

**These data, combined with data from the 2022 study, indicate that, on average, pictorial RSSs are more effective at reducing midday vehicle speeds downstream of the sign than the standard RSSs.** Despite the smaller downstream speed reduction magnitudes, pictorial RSSs were more effective at reducing downstream speeds compared to standard RSSs.

It should be noted that there were three (3) sites with higher average and 85<sup>th</sup> percentile speeds at the downstream location after sign installation. The few instances of increases in vehicle speeds downstream of the sign may be due to drivers trying to make up lost time that was realized closer to the pictorial RSS.

Standard deviation was used as a surrogate measure of speed uniformity. A larger standard deviation indicates larger speed variance. Therefore, a positive change in standard deviation indicates larger speed variance or less uniformity among speeds, while a negative change indicates smaller speed variance (and greater speed uniformity). There was no clear pattern of standard deviation increases or decreases across all 11 sites. This indicates that pictorial RSSs do not have a consistent impact on speed uniformity. The 2022 study found that standard RSSs also resulted in both increases and decreases in speed uniformity, depending on the location. **Overall, pictorial RSSs are as ineffective at increasing midday speed uniformity as the standard RSSs studied in 2022, with no clear pattern of standard deviation changes in either study.**

The previous 2022 study found RSSs are slightly more effective at locations where drivers understand the need to slow down. There were four (4) sites that were at these types of locations in the current pictorial RSS study:

- Site 7 is located at a speed transition zone from 50 mph to 35 mph. Site 7 experienced the highest speed reductions after installation of the pictorial RSS, with an average speed reduction of 6.9 mph at the sign.
- Site 5 is adjacent to a high school and its athletic fields. Site 5 experienced the second-highest speed reductions after installation of the pictorial RSS, with an average speed reduction of 5.2 mph at the sign.
- Site 1 is located near an elementary school and is near school crossing signs. Site 1 experienced the third-highest speed reductions after installation of the pictorial RSS, with an average speed reduction of 3.8 mph at the sign.
- Site 3 is adjacent to a park with baseball fields. Site 3 experienced the fifth-highest speed reductions after installation of the pictorial RSS, with an average speed reduction of 1.9 mph at the sign.

The data from the current study corroborate the conclusions from the 2022, as the **pictorial RSSs appear to be more effective at locations where drivers understand the need to slow down.**

Midday Off-Peak Before and After Results Grouped by Posted Speed Limit

The effectiveness of pictorial RSSs based on posted speed limit was evaluated and compared to that of standard RSSs in the 2022 study. While the 2022 study included multiple sites for each posted speed limit, approximately half of sites in the current pictorial RSS study had a 35-mph speed limit. There were 2 sites with a posted speed limit of 40 mph and 1 site each with posted speed limits of 25, 30, 45, and 50 mph in the current pictorial RSS study. The average differences between before and after speeds, grouped by posted speed limit, for both pictorial RSSs and standard RSSs are shown below in **Table 4**.

**Table 4: Midday Off-Peak Results Grouped by Posted Speed Limit**

Posted Speed Limit	Pictorial RSS					Standard RSS				
	# of Sites	Average Speed Change		85th Percentile Speed Change		# of Sites	Average Speed Change		85th Percentile Speed Change	
		Sign	Downstream	Sign	Downstream		Sign	Downstream	Sign	Downstream
25	1	-2.5	-0.9	-2.7	-2.0	8	-0.5	0	-0.8	-0.5
30	1	-5.2	-1.8	-5.6	-1.7	0	N/A	N/A	N/A	N/A
35	5	-3.4	-2.2	-3.2	-2.0	5	-0.7	0	-1.0	-0.1
40	2	-0.6	-0.8	-0.8	-1.1	5	-0.8	-0.7	-0.5	-0.8
45	1	-1.3	+1.1	-1.2	+1.2	3	-0.3	-0.3	-0.6	-0.6
50	1	-0.6	-0.5	-0.6	-0.7	2	+0.7	+1.5	+0.6	+1.2



In general, the pictorial RSSs resulted in larger reductions in midday off-peak speeds than standard RSSs, with the exception of sites with a 40-mph speed limit. Sites with a 35-mph speed limit, which was the only speed limit with a relatively large sample size, showed that the pictorial RSSs were more effective than standard RSSs, with an average speed reduction of 3.4 mph for the pictorial RSSs compared to a reduction of only 0.7 mph for standard RSSs in the 2022 study. These findings indicate that **pictorial RSSs appear to be more effective than standard RSSs at reducing both average and 85<sup>th</sup> percentile midday speeds, particularly at the sign, regardless of posted speed limit.**

Overnight Before and After Analysis

To evaluate the effectiveness of pictorial RSSs during the traditionally lowest-volume time periods, when speeds are typically the highest, the project team evaluated speeds at all eleven (11) sites between the hours of 12AM and 4AM. The before and after results for this overnight period are shown in **Table 5**. The overnight period sample sizes are substantially smaller; therefore, trends are more susceptible to large fluctuations due to potential outliers.

**Table 5. Overnight Speed and Standard Deviation Changes (mph)**

Site	Average Speed Change		85th Percentile Speed Change		Standard Deviation Change	
	Sign	Downstream	Sign	Downstream	Sign	Downstream
1	-2.6	-1.5	-1.1	-0.4	+0.7	+1.2
2	-1.4	-2.6	-0.9	-2.7	+0.0	-0.1
3	-3.0	-4.0	-4.4	-8.4	-2.2	-1.7
4	-3.0	-2.0	-3.2	-2.8	+0.1	-0.2
5	-5.0	-1.3	-2.7	+0.7	+1.4	+0.7
6	-1.3	-0.3	-4.4	-2.5	-2.5	-1.9
7	-5.6	-4.0	-3.6	-2.4	+2.0	+0.5
8	-2.2	-0.9	-2.7	-1.6	-1.5	-0.3
9	-1.0	-1.3	-1.2	-1.4	+0.5	-0.4
10	-1.5	-1.1	-2.2	-1.2	-0.7	-0.2
11	-3.4	-1.3	-6.5	-4.4	-2.4	-1.7
Average (all sites)	-2.7	-1.9	-3.0	-2.5	-0.4	-0.4

Overall, the pictorial RSS installation resulted in reduced overnight average and 85<sup>th</sup> percentile speeds at the location of the pictorial RSS:

- The reduction in average speeds ranged from 1.0 to 5.6 mph, with an average speed reduction of 2.7 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average speed reduction of 0.3 mph.
- The reduction in 85<sup>th</sup> percentile speeds ranged from 0.9 mph to 6.5 mph, with an average 85<sup>th</sup> percentile speed reduction of 3.0 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average 85<sup>th</sup> percentile speed reduction of 0.6 mph.

**These data, combined with data from the 2022 study, indicate that, on average, pictorial RSSs are more effective at reducing overnight vehicle speeds at the sign than the standard RSSs.**

In contrast to the midday off-peak results, the average overnight speeds downstream of the sign were reduced after installation of the pictorial RSS at all eleven (11) sites. However, the magnitudes of speed reductions downstream of the RSS were typically smaller than those at the sign. Specifically, downstream of the pictorial RSS:

- The reduction in average speeds ranged from 0.3 mph to 4.0 mph, with an average speed reduction of 1.9 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average speed reduction of 0.3 mph.
- The change in 85<sup>th</sup> percentile speeds ranged from a speed increase of 0.7 mph to a speed reduction of 8.4 mph, with an average 85<sup>th</sup> percentile speed reduction of 2.5 mph across all 11 sites. In contrast, the 2022 study found that standard RSSs resulted in an average 85<sup>th</sup> percentile speed reduction of 0.9 mph.

**These data, combined with data from the 2022 study, indicate that, on average, pictorial RSSs are more effective at reducing overnight vehicle speeds downstream of the sign than the standard RSSs.** As with the midday off-peak period, the magnitude of the speed reductions downstream of the sign were lower than those at the sign location, with the exception of Site 3. Despite the typical smaller downstream speed reduction magnitudes, pictorial RSSs were more effective at reducing downstream speeds compared to standard RSSs.

Similar to the midday off-peak results, there was no clear pattern of increasing or decreasing speed uniformity following the installation of the pictorial RSS in the overnight speed data. The magnitudes of the standard deviation changes during the overnight period were slightly greater than those during the midday off-peak period, which is expected due to the smaller overnight sample size. **Overall, pictorial RSSs are as ineffective at increasing overnight speed uniformity as the standard RSSs studied in 2022, with no clear pattern of standard deviation changes in either study.**

Similar to the midday off-peak results, locations where drivers may understand the need to reduce their speed (Sites 1, 3, 5, and 7) experienced some of the highest speed reductions. The data from the current study corroborate the conclusions from the 2022, as the **pictorial RSSs appear to be more effective at locations where drivers understand the need to slow down.**

Overnight Before and After Results Grouped by Posted Speed Limit

The average differences between before and after speeds during overnight hours, grouped by posted speed limit, for both pictorial RSSs and standard RSSs are shown below in **Table 6**.

**Table 6: Overnight Before and After Results by Posted Speed Limit**

Posted Speed Limit	Pictorial RSS					Standard RSS				
	# of Sites	Average Speed Change		85th Percentile Speed Change		# of Sites	Average Speed Change		85th Percentile Speed Change	
		Sign	Downstream	Sign	Downstream		Sign	Downstream	Sign	Downstream
25	1	-1.0	-1.3	-1.2	-1.4	8	-0.1	-1.1	+0.7	-1.8
30	1	-5.0	-1.3	-2.7	+0.7	0	N/A	N/A	N/A	N/A
35	5	-3.1	-2.4	-3.3	-3.3	5	-0.4	-0.1	+0.5	-0.5
40	2	-1.4	-1.9	-1.5	-2.0	5	-0.5	+0.3	-0.8	+0.2
45	1	-3.4	-1.3	-6.5	-4.4	3	0	-0.5	-1.1	-2.0
50	1	-2.2	-0.9	-2.7	-1.6	2	-0.3	-0.1	0	-0.6

Pictorial RSSs were more effective than standard RSSs, regardless of posted speed limit, with the exception of the change in 85<sup>th</sup> percentile speed downstream of 25-mph sites. These findings indicate that **pictorial RSSs appear to be more effective than standard RSSs at reducing average and 85<sup>th</sup> percentile overnight speeds, particularly at the sign, regardless of posted speed limit.**

**Statistical Analysis of Before and After Results**

While the previous section quantified the magnitude of the speed changes before and after installation of pictorial RSSs, **Table 7** and **Table 8** show the statistical significance of average speed changes. One-tailed, two-sample t-tests were performed to determine if average speed reductions at each site were statistically significant at a 95 percent confidence level. T-tests with large sample sizes, such as the data obtained for this study, will often result in statistical significance, even if the speed reduction is small in magnitude. Similar to **Table 3** through **Table 6** above, decreases in average speeds following installation of the pictorial RSS are shaded in green while increases are shaded in red, with darker colors indicating larger magnitudes.

Midday Off-Peak Statistical Analysis

**Table 7. Midday Off-Peak Average Speed Change Statistical Significance**

Site	Sign Location		Downstream Location	
	Speed change (mph)	Statistically significant?	Speed change (mph)	Statistically significant?
1	-3.8	Yes	-2.8	Yes
2	-0.6	Yes	-2.2	Yes
3	-1.9	Yes	-1.6	Yes
4	-3.9	Yes	-2.8	Yes
5	-5.2	Yes	-1.8	Yes
6	-0.6	Yes	+0.9	Yes
7	-6.9	Yes	-4.6	Yes
8	-0.6	Yes	-0.5	Yes
9	-2.5	Yes	-0.9	Yes
10	-0.5	Yes	+0.5	Yes
11	-1.3	Yes	+1.1	Yes

All sites experienced a statistically significant speed decrease at the sign location following installation of the pictorial RSS. However, for the three (3) sites where average speeds downstream of the sign were higher after installation of the pictorial sign, the increase was also statistically significant. The analysis shows **pictorial RSSs may provide significant speed reductions at the sign during midday off-peak hours**, with six (6) sites showing a statistically significant speed reduction of approximately 2 mph or more.

Overnight Statistical Analysis

**Table 8. Overnight Average Speed Change Statistical Significance**

Site	Sign Location		Downstream Location	
	Speed change (mph)	Statistically significant?	Speed change (mph)	Statistically significant?
1	-2.6	Yes	-1.5	Yes
2	-1.4	Yes	-2.6	Yes
3	-3.0	No	-4.0	Yes
4	-3.0	Yes	-2.0	Yes
5	-5.0	Yes	-1.3	Yes
6	-1.3	No	-0.3	No
7	-5.6	Yes	-4.0	Yes
8	-2.2	Yes	-0.9	No
9	-1.0	Yes	-1.3	Yes
10	-1.5	Yes	-1.1	Yes
11	-3.4	Yes	-1.3	Yes

Nine (9) of the eleven (11) sites experienced a statistically significant speed decrease at the sign location during the overnight period, including six (6) sites that experienced a speed decrease larger than 2 mph. Additionally, nine (9) of the eleven (11) sites experienced a statistically significant speed decrease downstream of the pictorial RSS sign during the overnight period, although they were not the same nine (9) sites. Site 6 was the only site where the reduction in average speeds was not statistically significant, either at the sign or downstream of the sign. Although the results were not statistically significant at all sites, the results generally indicate **pictorial RSSs may provide significant speed reductions both at the sign and downstream of the sign during overnight hours.**

**Full-Day Before and After Analysis Results**

In addition to the before and after results from the midday off-peak and overnight periods, before and after comparisons were also calculated using full-day data including 24 hours of the day, and both weekdays and weekends. These results include periods when speeds may be impacted by congestion or other factors. Therefore, no statistical analyses were performed for the full-day data. The results are shown below in **Table 9.**

**Table 9: Full-Day Speed Changes (mph)**

Site	Average Speed Change		85th Percentile Speed Change	
	Sign	Downstream	Sign	Downstream
1	-3.7	-2.7	-3.5	-2.8
2	-1.2	-3.1	-1.1	-3.0
3	-2.2	-1.6	-2.6	-1.8
4	-4.3	-2.6	-4.5	-2.2
5	-5.6	-1.9	-5.7	-1.7
6	-0.9	+0.2	-2.5	+0.1
7	-7.2	-4.5	-5.9	-4.7
8	-0.7	-0.8	-0.6	-1.0
9	-2.5	-1.0	-2.1	-1.2
10	-0.8	-0.4	-0.9	-0.3
11	-1.8	+0.7	-1.9	+0.8
Average (all sites)	-2.8	-1.6	-2.8	-1.6

Overall, the full-day results were similar to the midday off-peak and overnight period results. All eleven (11) sites experienced a reduction in average and 85<sup>th</sup> percentile speeds at the sign, and nine (9) sites experienced a reduction in average and 85<sup>th</sup> percentile speeds downstream of the sign. Most reductions in average and 85<sup>th</sup> percentile speeds at the sign were greater than 2 mph. Although speeds were generally lower downstream of the sign after installation of the pictorial RSS, the magnitudes of the speed reductions were smaller downstream of the signs than at the signs. Locations where drivers may understand the need to reduce their speed (Sites 1, 3, 5, and 7) experienced some of the highest speed reductions, similar to the midday off-peak and overnight periods. Standard deviation and speed uniformity were not analyzed because no statistical analyses were performed for the full-day period, as discussed previously. Full-day data for standard RSSs was not evaluated in the 2022 study; therefore, the full-day speeds before and after pictorial RSS installation cannot be directly compared to the standard RSSs. However, the results indicate that, as with the midday off-peak and overnight periods, **the pictorial RSSs demonstrated reduced vehicle speeds both at the sign location and downstream of the sign when considering all hours of the day.**

V. Discussion

Based on the speed data collected during the midday and overnight periods, the installation of pictorial RSSs generally result in reduced vehicle speeds. Key findings are outlined below:

- Pictorial RSSs consistently provided speed reductions at the sign location at all 11 sites studied.
- Pictorial RSSs consistently provided speed reductions downstream of the sign at most of the sites studied, although the speed reductions were slightly smaller than those at the sign location.
- Almost all speed changes, including small reductions and speed increases, were statistically significant.
- There were no consistent trends in either increased or decreased speed uniformity after installation of pictorial RSSs.
- Sites 1, 3, 5, and 7 experienced some of the highest reductions in both average and 85<sup>th</sup> percentile speeds. These sites were near a park, school or school signs, or speed transition zone. This finding is similar to the previous RSS study that found RSSs may be more effective at locations where drivers understand the need to reduce speed.
- Pictorial RSSs were more effective at reducing vehicle speeds than the standard RSSs studied in 2022.
  - Pictorial RSSs provided speed reductions consistently throughout all sites.
  - Not only did the pictorial RSSs provide more consistent speed reductions, but the magnitudes of these speed reductions were higher.
  - These trends were also true when comparing sites with the same speed limit. Pictorial RSSs were usually more effective than standard RSSs for any given speed limit, although the pictorial RSS sample sizes were typically small (1 or 2 sites).

Overall, the results of this study show that pictorial RSSs may result in an average and/or 85<sup>th</sup> percentile speed reduction of at least 2 mph, though the reduction is likely to diminish as vehicles proceed farther past the sign. Pictorial RSSs are likely to be more effective at reducing speeds at sites where drivers understand the need to reduce their speeds, such as schools, parks, and speed transition zones. Furthermore, pictorial RSSs are likely to be more effective at reducing speeds compared to standard RSSs.

Reducing average and 85<sup>th</sup> percentile vehicle speeds can improve safety not only for motorists, but also for vulnerable road users such as bicyclists and pedestrians. Similar to the standard RSSs studied in 2022, speed reductions were higher at locations where drivers understand the need to slow down, such as near schools, parks, and speed transition zones. Pictorial RSSs could be used as a tool to consider if a community group or legislator would like to install the signs as a low-cost treatment. Pictorial RSS could also be considered as an alternative to standard RSSs.

VI. Conclusions and Recommendations

A before-and-after study of eleven (11) sites in Delaware indicates that pictorial RSSs may be effective at reducing vehicle speeds. Overall, average and 85<sup>th</sup> percentile speeds were consistently 2 to 3 mph lower at the sign after installation. These speed reductions were larger than the speed reductions associated with standard RSSs studied in 2022, which were less than 1 mph on average.

The pictorial RSS study summarized in this report evaluated eleven (11) sites, compared to over 20 sites evaluated for the standard RSS study. It is recommended to continue installing and evaluating pictorial RSSs to determine the effectiveness of the pictorial RSSs across a larger sample size. It is also recommended to perform an additional study on the existing pictorial RSSs after time has passed to determine if their effectiveness is due to the novelty of the signs or a lasting change.

VII. Appendices

Appendix A: Before Installation – Speed Data Summaries

Appendix B: After Installation – Speed Data Summaries

Appendix C: Measured Vehicle Speeds for All Locations

**Appendix A**

Before Installation – Speed Data Summaries



Site Code: GRUBB RD UP 4952  
 Station ID: 1  
 Location 1: Grubb Rd Upstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.822239  
 Longitude: -75.521722  
 Date Printed: 7/31/2023

A to B, East Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
35 - 44	19,133	76.0574%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	32.4	34.1	35.2	36	36.7	37.4	37.9	38.4	38.9	39.4	40	40.5	41	41.6	42.2	43	43.9	45.1	47

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	25,140
Total Greater Than 35.0	21,691
Percent Greater Than 35.0	86.3%

***Mean, Median, and Mode Averages***

Mean:	39.6
Median (50th %):	39.4
Mode:	40.5





Site Code: GRUBB RD AT RSS  
Station ID: 2  
Location 1: Grubb Rd at RSS - Basics

110S. Poplar St  
Wilmington, DE 19801

Latitude: 39.820575  
Longitude: -75.518872  
Date Printed: 7/31/2023

A to B, East Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
36 - 45	17,685	70.57063%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	32.5	34.5	35.8	36.7	37.4	38.1	38.7	39.4	40	40.5	41.1	41.7	42.4	43.1	43.8	44.6	45.6	47	49.1

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	25,060
Total Greater Than 35.0	22,158
Percent Greater Than 35.0	88.4%

***Mean, Median, and Mode Averages***

Mean:	40.7
Median (50th %):	40.5
Mode:	41.1



Site Code: GRUBB RD DW  
 Station ID: 3  
 Location 1: Grubb Rd Downstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.819631  
 Longitude: -75.516042  
 Date Printed: 7/31/2023

A to B, East Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
34 - 43	17,796	69.52106%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	30	32.1	33.2	34.2	34.9	35.6	36.3	36.9	37.5	38.1	38.7	39.3	40	40.7	41.4	42.3	43.3	44.7	47

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	25,598
Total Greater Than 35.0	19,197
Percent Greater Than 35.0	75.0%

***Mean, Median, and Mode Averages***

Mean:	38.4
Median (50th %):	38.1
Mode:	37.9



Site Code: MARSH RD UP  
Station ID: 1  
Location 1: Marsh Rd Upstream - Basics

110S. Poplar St  
Wilmington, DE 19801

Latitude: 39.782528  
Longitude: -75.505461  
Date Printed: 7/31/2023

A to B, North Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
36 - 45	24,925	64.8852%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	31.1	33.8	35.3	36.3	37.2	38	38.7	39.4	40	40.7	41.3	42	42.7	43.5	44.3	45.3	46.4	48	50.5

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	38,414
Total Greater Than 40.0	21,406
Percent Greater Than 40.0	55.7%

***Mean, Median, and Mode Averages***

Mean:	40.8
Median (50th %):	40.7
Mode:	40.8



Site Code: MARSH RD AT  
 Station ID: 2  
 Location 1: Marsh Rd At RSS - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.783925  
 Longitude: -75.506019  
 Date Printed: 7/31/2023

A to B, North Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
34 - 43	25,931	67.69966%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	29.5	31.7	33.1	34.1	35	35.7	36.4	37	37.6	38.3	38.9	39.5	40.1	40.8	41.6	42.5	43.6	45	47.3

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	38,303
Total Greater Than 40.0	13,959
Percent Greater Than 40.0	36.4%

***Mean, Median, and Mode Averages***

Mean:	38.4
Median (50th %):	38.3
Mode:	37.5



Site Code: MARSH RD DW  
Station ID: 3  
Location 1: Marsh Rd Downstream - Basics

110S. Poplar St  
Wilmington, DE 19801

Latitude: 39.785944  
Longitude: -75.505917  
Date Printed: 7/31/2023

A to B, North Bound 7/6/2023 to 7/12/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
35 - 44	22,780	65.88004%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	29	31.8	33.3	34.5	35.4	36.2	36.9	37.6	38.3	38.9	39.5	40.2	40.8	41.5	42.3	43.2	44.3	45.7	48

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	34,578
Total Greater Than 40.0	14,421
Percent Greater Than 40.0	41.7%

***Mean, Median, and Mode Averages***

Mean:	38.8
Median (50th %):	38.9
Mode:	37.9

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MT LEBANON UP  
Start Date: 7/5/2023  
End Date: 7/14/2023

Latitude: 39.805925  
Longitude: -75.552786

Combined Lanes 7/6/2023 to 7/12/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	17,348	72.1%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29.1	31	32.2	33.1	33.8	34.5	35.1	35.7	36.3	36.9	37.4	38	38.6	39.2	39.9	40.7	41.6	42.9	44.8

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	19,325
Total Greater Than 35.0	12,858
Percent Greater Than 35.0	66.5%

### *Mean, Median, and Mode Averages*

Mean:	37.0
Median (50th %):	36.9
Mode:	37.3

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
7	43	16181	2498	20	498	12	0	66	0	0	0	0	0	0
0.0%	0.2%	83.7%	12.9%	0.1%	2.6%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Site Code: MT LEBANON Rd RSS  
 Station ID: 2  
 Location 1: Mt. Lebanon Rd RSS - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.805172  
 Longitude: -75.554244  
 Date Printed: 7/31/2023

A to B, West Bound 7/5/2023 to 7/7/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
35 - 44	2,757	68.14138%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	21.9	31.7	34.1	35.2	36.1	36.9	37.6	38.3	38.9	39.5	40.1	40.6	41.3	42	42.7	43.5	44.5	45.6	47.5

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	4,046
Total Greater Than 35.0	3,280
Percent Greater Than 35.0	81.1%

***Mean, Median, and Mode Averages***

Mean:	38.6
Median (50th %):	39.5
Mode:	37.5

Site Code: Mt Lebanon Downstream  
Start Date: 7/5/2023  
End Date: 7/14/2023

Latitude: 39.804444  
Longitude: -75.556497

Combined Lanes 7/6/2023 to 7/12/2023

**Pace Speed - MPH**

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	16,603	71.5%

**Percentile Speeds**

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	30.1	32	33.2	34	34.8	35.4	36	36.6	37.2	37.8	38.3	38.9	39.5	40.2	40.9	41.8	42.8	44.1	46.2

**Vehicles Traveling Greater Than 35.0 MPH**

Total Volume	18,507
Total Greater Than 35.0	13,635
Percent Greater Than 35.0	73.7%

**Mean, Median, and Mode Averages**

Mean:	38.0
Median (50th %):	37.8
Mode:	37.5

**Classification Statistics**

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
10	63	16008	1944	13	398	13	0	58	0	0	0	0	0	0
0.1%	0.3%	86.5%	10.5%	0.1%	2.2%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%





Site Code: MILLTOWN RD UP  
 Station ID: 1  
 Location 1: Milltown Rd Upstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.731336  
 Longitude: -75.665275  
 Date Printed: 7/31/2023

A to B, North Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
30 - 39	21,677	66.34733%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	25.5	27.8	29.1	30.1	30.8	31.5	32.2	32.8	33.5	34.1	34.8	35.5	36.2	37	37.8	38.8	39.9	41.3	43.3

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	32,672
Total Greater Than 35.0	14,310
Percent Greater Than 35.0	43.8%

***Mean, Median, and Mode Averages***

Mean:	34.4
Median (50th %):	34.1
Mode:	34.0



Site Code: MILLTOWN RD AT  
 Station ID: 2  
 Location 1: Milltown Rd At RSS - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.731692  
 Longitude: -75.664033  
 Date Printed: 7/31/2023

**A to B, North Bound 7/7/2023 to 7/13/2023**

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
34 - 43	22,530	68.13645%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	28.7	31.4	32.9	34	34.9	35.7	36.3	37	37.6	38.2	38.8	39.4	40.1	40.8	41.5	42.3	43.3	44.7	46.7

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	33,066
Total Greater Than 35.0	24,738
Percent Greater Than 35.0	74.8%

***Mean, Median, and Mode Averages***

Mean:	38.2
Median (50th %):	38.2
Mode:	37.5



Site Code: MILLTOWN RD DW  
 Station ID: 3  
 Location 1: Milltown Rd Downstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.732219  
 Longitude: -75.662208  
 Date Printed: 7/31/2023

A to B, North Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
33 - 42	23,628	71.43764%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	29.5	31.4	32.6	33.5	34.3	35	35.6	36.2	36.8	37.4	38	38.5	39.1	39.8	40.5	41.3	42.3	43.5	45.6

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	33,075
Total Greater Than 35.0	23,223
Percent Greater Than 35.0	70.2%

***Mean, Median, and Mode Averages***

Mean:	37.5
Median (50th %):	37.4
Mode:	37.9



Site Code: GLASGOW AVE UP  
 Station ID: 1  
 Location 1: Glasgow Ave Upstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.600628  
 Longitude: -75.743558  
 Date Printed: 7/28/2023

A to B, South Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	20,110	41.36583%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	24.1	25.8	27	28.1	29.1	30.2	31.5	32.9	34.3	35.7	37	38.1	39.3	40.4	41.5	42.7	43.9	45.5	48.1

***Vehicles Traveling Greater Than 30.0 MPH***

Total Volume	48,615
Total Greater Than 30.0	34,570
Percent Greater Than 30.0	71.1%

***Mean, Median, and Mode Averages***

Mean:	35.6
Median (50th %):	35.7
Mode:	27.7



Site Code: GLASGOW AVE AT RSS  
Station ID: 2  
Location 1: Glasgow Ave At RSS

110S. Poplar St  
Wilmington, DE 19801

Latitude: 39.597983  
Longitude: -75.742717  
Date Printed: 8/1/2023

**A to B, South Bound 7/7/2023 to 7/13/2023**

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
37 - 46	25,745	58.31918%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	32	34	35.3	36.4	37.3	38.2	39	39.8	40.6	41.4	42.3	43.1	43.9	44.8	45.8	46.7	47.9	49.5	51.8

***Vehicles Traveling Greater Than 30.0 MPH***

Total Volume	44,145
Total Greater Than 30.0	42,971
Percent Greater Than 30.0	97.3%

***Mean, Median, and Mode Averages***

Mean:	41.6
Median (50th %):	41.4
Mode:	41.1



Site Code: GLASGOW AVE DW  
 Station ID: 3  
 Location 1: Glasgow Ave Downstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.596425  
 Longitude: -75.742178  
 Date Printed: 7/31/2023

A to B, South Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
38 - 47	26,736	60.6176%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	32.7	34.7	36.1	37.2	38.2	39.2	40	40.7	41.5	42.2	43	43.7	44.4	45.3	46.1	47.1	48.2	49.7	51.9

***Vehicles Traveling Greater Than 30.0 MPH***

Total Volume	44,106
Total Greater Than 30.0	43,531
Percent Greater Than 30.0	98.7%

***Mean, Median, and Mode Averages***

Mean:	42.4
Median (50th %):	42.2
Mode:	43.3



Site Code: KIRKWOOD SG UP  
 Station ID: 1  
 Location 1: Kirkwood St. George Upstream - Basics

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.567136  
 Longitude: -75.691981  
 Date Printed: 7/31/2023

A to B, North Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
41 - 50	5,293	58.51205%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	34.2	37	38.6	39.9	41	41.8	42.7	43.5	44.2	45	45.8	46.6	47.4	48.2	49.1	50.3	51.7	53.5	56.4

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	9,046
Total Greater Than 35.0	8,497
Percent Greater Than 35.0	93.9%

***Mean, Median, and Mode Averages***

Mean:	45.2
Median (50th %):	45.0
Mode:	44.6

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: Kirkwood St George's at RSS  
Start Date: 7/6/2023  
End Date: 7/14/2023

Latitude: 39.568253  
Longitude: -75.693778

Combined Lanes 7/7/2023 to 7/13/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
40 - 49	5,460	41.9%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	24.7	26.5	27.9	29.3	30.8	32.8	35.4	37.7	39.5	40.7	41.8	42.9	44.1	45.1	46.3	47.5	48.9	50.8	53.4

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	11,258
Total Greater Than 35.0	7,412
Percent Greater Than 35.0	65.8%

### *Mean, Median, and Mode Averages*

Mean:	39.4
Median (50th %):	40.7
Mode:	45.0

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
10	93	7544	2485	48	905	21	0	143	9	0	0	0	0	0
0.1%	0.8%	67.0%	22.1%	0.4%	8.0%	0.2%	0.0%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%





Site Code: KIRKWOOD SG DW  
 Station ID: 3  
 Location 1: Kirkwood St. George Downstream

110S. Poplar St  
 Wilmington, DE 19801

Latitude: 39.150753  
 Longitude: -75.624736  
 Date Printed: 7/31/2023

A to B, North Bound 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

<b>Speed</b>	<b>Number</b>	<b>Percent</b>
35 - 44	7,116	62.0834%

***Percentile Speeds***

<b>Percentile</b>	<b>5th</b>	<b>10th</b>	<b>15th</b>	<b>20th</b>	<b>25th</b>	<b>30th</b>	<b>35th</b>	<b>40th</b>	<b>45th</b>	<b>50th</b>	<b>55th</b>	<b>60th</b>	<b>65th</b>	<b>70th</b>	<b>75th</b>	<b>80th</b>	<b>85th</b>	<b>90th</b>	<b>95th</b>
Speed - MPH	28.8	31.3	32.8	34	35	35.8	36.6	37.3	38	38.8	39.5	40.2	40.9	41.7	42.6	43.6	44.7	46.1	48.3

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	11,462
Total Greater Than 35.0	8,607
Percent Greater Than 35.0	75.1%

***Mean, Median, and Mode Averages***

Mean:	38.8
Median (50th %):	38.8
Mode:	40.8



700 East Pratt St  
Baltimore MD

Longitude: -75.591272  
Latitude: 39.155741  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: 7 - Forrest Ave - Upstream  
Station ID:  
Location 1:

Combined Lanes 7/9/2023 to 7/15/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
47 - 56	27,755	63.2%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	42.7	45	46.4	47.5	48.4	49.2	49.9	50.6	51.3	51.9	52.6	53.3	54.1	54.8	55.8	56.8	58.1	59.8	62.6

***Vehicles Traveling Greater Than 50.0 MPH***

Total Volume	27,653
Total Greater Than 50.0	18,155
Percent Greater Than 50.0	65.7%

***Mean, Median, and Mode Averages***

Mean:	52.5
Median (50th %):	52.1
Mode:	53.5

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
205	19053	5578	149	1751	178	5	327	374	0	0	14	0	0	19
0.7%	68.9%	20.2%	0.5%	6.3%	0.6%	0.0%	1.2%	1.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%

Site Code: 00722  
Station ID: 1  
Location 1: 7 - Forrest Ave - RSS location

Combined Lanes 7/20/2023 to 7/26/2023

**Pace Speed - MPH**

Classes Excluded From Pace: None

Speed	Number	Percent
46 - 55	17,897	60.2%

**Percentile Speeds**

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	39.8	42.4	44	45.3	46.3	47.3	48.2	48.9	49.6	50.4	51.1	51.9	52.6	53.4	54.2	55.2	56.4	57.9	60.5

**Vehicles Traveling Greater Than 35.0 MPH**

Total Volume	27,426
Total Greater Than 35.0	27,090
Percent Greater Than 35.0	98.8%

**Mean, Median, and Mode Averages**

Mean:	50.4
Median (50th %):	50.4
Mode:	51.5

**Classification Statistics**

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
223	17843	6233	195	2070	109	1	318	398	2	1	13	1	0	19
0.8%	65.1%	22.7%	0.7%	7.5%	0.4%	0.0%	1.2%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

Site Code: 0073  
Station ID: 1  
Location 1: 7 - Forrest Ave - Downstream

Combined Lanes 7/9/2023 to 7/15/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
42 - 51	30,719	55.8%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	35.4	37.8	39.4	40.8	41.9	43	44	44.9	45.8	46.5	47.4	48.2	49	49.9	50.8	51.9	53.1	54.6	57.2

***Vehicles Traveling Greater Than 35.0 MPH***

Total Volume	27,790
Total Greater Than 35.0	26,597
Percent Greater Than 35.0	95.7%

***Mean, Median, and Mode Averages***

Mean:	46.5
Median (50th %):	46.5
Mode:	45.9

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
203	19595	5238	148	1655	164	5	315	405	0	0	16	0	0	46
0.7%	70.5%	18.8%	0.5%	6.0%	0.6%	0.0%	1.1%	1.5%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%

Site Code: 0081  
Station ID: 1  
Location 1: Site 8 - Peachtree Run - Upstream

### Combined Lanes 7/12/2023 to 7/18/2023

#### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
42 - 51	25,230	66.9%

#### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	38	40	41.2	42.1	42.9	43.7	44.3	45	45.6	46.3	46.9	47.5	48.1	48.8	49.6	50.4	51.5	53	55.3

#### *Vehicles Traveling Greater Than 50.0 MPH*

Total Volume	20,391
Total Greater Than 50.0	4,604
Percent Greater Than 50.0	22.6%

#### *Mean, Median, and Mode Averages*

Mean:	46.5
Median (50th %):	46.3
Mode:	46.4

#### *Classification Statistics*

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
99	15744	3688	48	674	35	0	89	8	1	0	0	0	0	5
0.5%	77.2%	18.1%	0.2%	3.3%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Site Code: 00822

Station ID: 1

Location 1: Site 8 - Peachtree Run - RSS location - 2

## Combined Lanes 7/12/2023 to 7/18/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
39 - 48	13,186	55.8%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29.4	31.7	33.8	35.8	37.4	38.8	39.9	40.8	41.8	42.6	43.3	44.1	44.9	45.7	46.5	47.5	48.6	50	52.5

### *Vehicles Traveling Greater Than 50.0 MPH*

Total Volume 20,329

Total Greater Than 50.0 2,059

Percent Greater Than 50.0 10.1%

### *Mean, Median, and Mode Averages*

Mean: 42.0

Median (50th %): 42.6

Mode: 44.0

### *Classification Statistics*

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
60	15455	3884	48	730	35	0	94	6	0	0	0	0	0	17
0.3%	76.0%	19.1%	0.2%	3.6%	0.2%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

Site Code: 008300  
Station ID: 1  
Location 1: Site 8 - Peachtree Run - Downstream

Combined Lanes 7/12/2023 to 7/18/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
41 - 50	21,343	64.0%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	37	39	40.4	41.3	42.2	42.9	43.6	44.4	45.1	45.8	46.4	47.2	47.9	48.7	49.5	50.5	51.6	53.1	55.8

***Vehicles Traveling Greater Than 50.0 MPH***

Total Volume	17,857
Total Greater Than 50.0	4,024
Percent Greater Than 50.0	22.5%

***Mean, Median, and Mode Averages***

Mean:	46.1
Median (50th %):	45.8
Mode:	45.9

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
80	13351	3591	40	659	36	0	85	5	0	0	0	0	0	10
0.4%	74.8%	20.1%	0.2%	3.7%	0.2%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%



700 East Pratt St  
Baltimore MD

Longitude: -75.430894  
Latitude: 38.870708  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: Site 9 - Johnson Rd - Upstream  
Station ID:  
Location 1:

Combined Lanes 7/8/2023 to 7/14/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
31 - 40	31,725	65.5%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.3	29.4	30.6	31.7	32.5	33.3	34	34.7	35.3	36	36.6	37.3	38	38.8	39.6	40.5	41.6	43.2	45.5

***Vehicles Traveling Greater Than 25.0 MPH***

Total Volume	24,439
Total Greater Than 25.0	23,947
Percent Greater Than 25.0	98.0%

***Mean, Median, and Mode Averages***

Mean:	36.2
Median (50th %):	36.0
Mode:	35.9

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
107	15302	6396	152	1901	107	22	299	100	4	0	2	0	0	47
0.4%	62.6%	26.2%	0.6%	7.8%	0.4%	0.1%	1.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%





700 East Pratt St  
Baltimore MD

Longitude: -75.427911  
Latitude: 38.871025  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: Site 9 - Johnson Rd - RSS location  
Station ID:  
Location 1:

Combined Lanes 7/8/2023 to 7/14/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
27 - 36	31,812	72.3%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	25.2	26.5	27.4	28.2	28.8	29.5	30	30.6	31.2	31.7	32.4	33	33.6	34.3	35.1	35.9	37	38.5	40.9

***Vehicles Traveling Greater Than 25.0 MPH***

Total Volume	22,230
Total Greater Than 25.0	21,260
Percent Greater Than 25.0	95.6%

***Mean, Median, and Mode Averages***

Mean:	32.3
Median (50th %):	31.7
Mode:	30.6

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
122	14236	5650	151	1547	111	22	264	95	4	3	2	0	0	23
0.5%	64.0%	25.4%	0.7%	7.0%	0.5%	0.1%	1.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%



700 East Pratt St  
Baltimore MD

Longitude: -75.424638  
Latitude: 38.870986  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: Site 9 - Johnson Rd - Downstream  
Station ID:  
Location 1:

Combined Lanes 7/8/2023 to 7/14/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
26 - 35	25,166	71.2%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	23.3	25	26	26.8	27.5	28.1	28.7	29.3	29.9	30.4	31	31.6	32.3	33	33.8	34.7	35.8	37.4	40.2

***Vehicles Traveling Greater Than 25.0 MPH***

Total Volume	22,662
Total Greater Than 25.0	20,467
Percent Greater Than 25.0	90.3%

***Mean, Median, and Mode Averages***

Mean:	31.0
Median (50th %):	30.4
Mode:	30.2

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
117	12989	5543	173	3229	96	22	365	91	4	3	0	0	0	30
0.5%	57.3%	24.5%	0.8%	14.2%	0.4%	0.1%	1.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%

Site Code: 00101  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - Upstream - 1

**Combined Lanes 7/6/2023 to 7/8/2023**

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
37 - 46	14,446	78.1%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	34.1	35.8	36.9	37.8	38.5	39.2	39.8	40.3	40.8	41.3	41.7	42.2	42.8	43.3	43.9	44.5	45.3	46.3	47.9

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	18,161
Total Greater Than 40.0	11,489
Percent Greater Than 40.0	63.3%

***Mean, Median, and Mode Averages***

Mean:	41.2
Median (50th %):	41.3
Mode:	41.1

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
62	12047	4395	38	1224	79	1	285	20	1	0	0	0	0	9
0.3%	66.3%	24.2%	0.2%	6.7%	0.4%	0.0%	1.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Site Code: 00102  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - RSS location

Combined Lanes 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
35 - 44	66,372	74.5%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	31	33.2	34.7	35.8	36.7	37.4	38	38.6	39.1	39.7	40.2	40.7	41.2	41.7	42.4	43	43.8	44.8	46.4

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	59,614
Total Greater Than 40.0	27,942
Percent Greater Than 40.0	46.9%

***Mean, Median, and Mode Averages***

Mean:	39.4
Median (50th %):	39.6
Mode:	39.8

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
121	40414	14068	185	3553	273	3	913	53	1	1	1	1	0	27
0.2%	67.8%	23.6%	0.3%	6.0%	0.5%	0.0%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Site Code: 00103  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - Downstream

Combined Lanes 7/7/2023 to 7/13/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	65,284	74.0%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29.6	31.8	33.2	34.3	35.1	35.8	36.5	37.1	37.7	38.2	38.7	39.2	39.8	40.3	41	41.6	42.4	43.4	45

***Vehicles Traveling Greater Than 40.0 MPH***

Total Volume	59,890
Total Greater Than 40.0	20,546
Percent Greater Than 40.0	34.3%

***Mean, Median, and Mode Averages***

Mean:	38.0
Median (50th %):	38.3
Mode:	38.9

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
103	41401	13362	209	3451	300	3	816	41	3	2	1	0	0	198
0.2%	69.1%	22.3%	0.3%	5.8%	0.5%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%



700 East Pratt St  
Baltimore MD

Longitude: -75.139427  
Latitude: 38.479319  
Start Date: 7/11/2023  
End Date: 7/19/2023

File Name: Site 11 - Bayard Rd - Upstream  
Station ID:  
Location 1:

Combined Lanes 7/12/2023 to 7/18/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
32 - 41	15,777	79.4%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	30.2	31.8	32.8	33.6	34.2	34.8	35.3	35.8	36.3	36.8	37.3	37.8	38.2	38.8	39.4	40.1	40.9	41.8	43.6

***Vehicles Traveling Greater Than 45.0 MPH***

Total Volume	17,444
Total Greater Than 45.0	507
Percent Greater Than 45.0	2.9%

***Mean, Median, and Mode Averages***

Mean:	36.9
Median (50th %):	36.8
Mode:	37.5

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
73	12572	3685	59	835	23	14	134	35	1	0	0	1	0	12
0.4%	72.1%	21.1%	0.3%	4.8%	0.1%	0.1%	0.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%



700 East Pratt St  
Baltimore MD

Longitude: -75.138311  
Latitude: 38.481663  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: Site 11 - Bayard Rd - RSS locaiton  
Station ID:  
Location 1:

Combined Lanes 7/9/2023 to 7/15/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
37 - 46	22,506	75.7%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	34.5	36.2	37.3	38.2	38.9	39.5	40.1	40.7	41.2	41.7	42.2	42.8	43.3	43.9	44.5	45.2	46.1	47.2	49.1

***Vehicles Traveling Greater Than 45.0 MPH***

Total Volume	17,380
Total Greater Than 45.0	3,742
Percent Greater Than 45.0	21.5%

***Mean, Median, and Mode Averages***

Mean:	41.8
Median (50th %):	41.7
Mode:	41.5

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
97	11905	4007	68	1072	21	11	153	31	1	0	0	0	0	14
0.6%	68.5%	23.1%	0.4%	6.2%	0.1%	0.1%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%



700 East Pratt St  
Baltimore MD

Longitude: -75.137691  
Latitude: 38.484677  
Start Date: 7/5/2023  
End Date: 7/19/2023

File Name: Site 11 - Bayard Rd - Downstream  
Station ID:  
Location 1:

Combined Lanes 7/9/2023 to 7/15/2023

***Pace Speed - MPH***

Classes Excluded From Pace: None

Speed	Number	Percent
38 - 47	24,647	75.5%

***Percentile Speeds***

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	34.6	36.6	37.8	38.6	39.4	40	40.5	41	41.6	42.1	42.6	43.1	43.7	44.3	44.9	45.6	46.5	47.6	49.5

***Vehicles Traveling Greater Than 45.0 MPH***

Total Volume	16,156
Total Greater Than 45.0	3,964
Percent Greater Than 45.0	24.5%

***Mean, Median, and Mode Averages***

Mean:	42.2
Median (50th %):	42.1
Mode:	41.6

***Classification Statistics***

Motorcycles	Cars & Trailers	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	Bicycles	Unclassed
83	11144	3694	71	955	20	9	140	29	1	0	0	0	0	10
0.5%	69.0%	22.9%	0.4%	5.9%	0.1%	0.1%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%



**Appendix B**

After Installation – Speed Data Summaries

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD UP  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.822076  
Longitude: -75.521980

## Combined Lanes 10/26/2023 to 11/1/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
32 - 41	17,155	54.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	21.4	24.9	27.1	28.8	30.2	31.4	32.5	33.4	34.3	35.2	36	36.8	37.6	38.5	39.3	40.3	41.5	42.9	45.1

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	27,258
Total Greater Than 35.0	13,977
Percent Greater Than 35.0	51.3%

### *Mean, Median, and Mode Averages*

Mean:	34.6
Median (50th %):	35.2
Mode:	37.1

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
30	32	21463	4260	162	1195	21	0	88	6	0	1	0	0	0
0.1%	0.1%	78.7%	15.6%	0.6%	4.4%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	Excluded	
10/26/2023	East, Lane 1	4,007
10/27/2023	East, Lane 1	4,298
10/28/2023	East, Lane 1	4,082
10/29/2023	East, Lane 1	2,997
10/30/2023	East, Lane 1	3,930
10/31/2023	East, Lane 1	3,972
11/1/2023	East, Lane 1	3,972
11/2/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD UP  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.822076  
Longitude: -75.521980

Date	Lane	AADT
	Total	27258
	Average	3894

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD AT  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.820584  
Longitude: -75.518880

## Combined Lanes 10/26/2023 to 11/1/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
32 - 41	22,181	70.6%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	28.7	30.9	32.2	33.1	33.8	34.5	35.1	35.6	36.2	36.7	37.3	37.9	38.6	39.3	40.1	40.9	42.1	43.5	45.7

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	27,271
Total Greater Than 35.0	17,979
Percent Greater Than 35.0	65.9%

### *Mean, Median, and Mode Averages*

Mean:	37.0
Median (50th %):	36.7
Mode:	36.2

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
18	23	21137	4456	162	1355	20	1	94	5	0	0	0	0	0
0.1%	0.1%	77.5%	16.3%	0.6%	5.0%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	Excluded	
10/26/2023	East, Lane 1	4,083
10/27/2023	East, Lane 1	4,312
10/28/2023	East, Lane 1	4,005
10/29/2023	East, Lane 1	2,849
10/30/2023	East, Lane 1	3,903
10/31/2023	East, Lane 1	4,072
11/1/2023	East, Lane 1	4,047
11/2/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD AT  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.820584  
Longitude: -75.518880

Date	Lane	AADT
Total		27271
Average		3896

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD DWN  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.819629  
Longitude: -75.516017

## Combined Lanes 10/26/2023 to 11/1/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
31 - 40	23,336	72.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.5	29.9	31.2	32	32.8	33.4	34	34.6	35.2	35.7	36.3	36.8	37.4	38.1	38.8	39.6	40.5	41.8	43.9

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	27,821
Total Greater Than 35.0	15,764
Percent Greater Than 35.0	56.7%

### *Mean, Median, and Mode Averages*

Mean:	35.7
Median (50th %):	35.6
Mode:	35.4

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
15	21	24318	2631	145	582	20	1	81	5	0	2	0	0	0
0.1%	0.1%	87.4%	9.5%	0.5%	2.1%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	Excluded	
10/26/2023	East, Lane 1	4,171
10/27/2023	East, Lane 1	4,401
10/28/2023	East, Lane 1	4,108
10/29/2023	East, Lane 1	2,882
10/30/2023	East, Lane 1	3,980
10/31/2023	East, Lane 1	4,162
11/1/2023	East, Lane 1	4,117
11/2/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GRUBB RD DWN  
Start Date: 10/25/2023  
End Date: 11/2/2023

Latitude: 39.819629  
Longitude: -75.516017

Date	Lane	AADT
	Total	27821
	Average	3974

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MARSH UP  
Start Date: 1/3/2024  
End Date: 1/12/2024

Latitude: 39.782549  
Longitude: -75.506066

Combined Lanes 1/4/2024 to 1/10/2024

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	33,484	65.0%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	28.9	31.7	33.2	34.3	35.2	36	36.7	37.4	38.1	38.7	39.3	40	40.7	41.4	42.2	43.2	44.3	45.8	48

### *Vehicles Traveling Greater Than 40.0 MPH*

Total Volume	38,639
Total Greater Than 40.0	15,570
Percent Greater Than 40.0	40.3%

### *Mean, Median, and Mode Averages*

Mean:	38.8
Median (50th %):	38.7
Mode:	37.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
44	11	31382	5415	336	1244	64	5	91	38	1	1	1	0	6
0.1%	0.0%	81.2%	14.0%	0.9%	3.2%	0.2%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
1/3/2024	Excluded	
1/4/2024	North, Lane 1	6,096
1/5/2024	North, Lane 1	6,376
1/6/2024	North, Lane 1	4,129
1/7/2024	North, Lane 1	3,862
1/8/2024	North, Lane 1	5,961
1/9/2024	North, Lane 1	5,287
1/10/2024	North, Lane 1	6,930
1/11/2024	Excluded	



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.782549  
Longitude: -75.506066

Site Code: MARSH UP  
Start Date: 1/3/2024  
End Date: 1/12/2024

Date	Lane	AADT
1/12/2024	Excluded	
Total		38641
Average		5520

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MARSH AT  
Start Date: 1/3/2024  
End Date: 1/12/2024

Latitude: 39.783872  
Longitude: -75.505928

Combined Lanes 1/4/2024 to 1/10/2024

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	34,388	67.1%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.7	30.3	31.8	32.9	33.8	34.6	35.3	35.9	36.6	37.2	37.8	38.4	39	39.7	40.4	41.3	42.5	44.1	46.6

### *Vehicles Traveling Greater Than 40.0 MPH*

Total Volume	38,522
Total Greater Than 40.0	10,865
Percent Greater Than 40.0	28.2%

### *Mean, Median, and Mode Averages*

Mean:	37.2
Median (50th %):	37.2
Mode:	37.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
63	29	29622	6079	355	2172	63	5	93	40	0	1	0	0	0
0.2%	0.1%	76.9%	15.8%	0.9%	5.6%	0.2%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
1/3/2024	Excluded	
1/4/2024	North, Lane 1	6,078
1/5/2024	North, Lane 1	6,359
1/6/2024	North, Lane 1	4,132
1/7/2024	North, Lane 1	3,827
1/8/2024	North, Lane 1	5,946
1/9/2024	North, Lane 1	5,270
1/10/2024	North, Lane 1	6,910
1/11/2024	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.783872  
Longitude: -75.505928

Site Code: MARSH AT  
Start Date: 1/3/2024  
End Date: 1/12/2024

Date	Lane	AADT
1/12/2024	Excluded	
Total		38522
Average		5503

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MARSH RD DOWN  
Start Date: 1/3/2024  
End Date: 1/12/2024

Latitude: 39.786007  
Longitude: -75.505849

Combined Lanes 1/4/2024 to 1/10/2024

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
31 - 40	29,806	64.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	25.1	28.3	29.9	31.1	32.2	33.1	33.9	34.6	35.3	36	36.6	37.3	37.9	38.7	39.4	40.3	41.3	42.7	44.9

### *Vehicles Traveling Greater Than 40.0 MPH*

Total Volume	34,707
Total Greater Than 40.0	7,589
Percent Greater Than 40.0	21.9%

### *Mean, Median, and Mode Averages*

Mean:	35.7
Median (50th %):	36.0
Mode:	37.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
37	16	29286	4057	304	855	60	7	47	38	0	0	0	0	0
0.1%	0.0%	84.4%	11.7%	0.9%	2.5%	0.2%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
1/3/2024	Excluded	
1/4/2024	North, Lane 1	5,434
1/5/2024	North, Lane 1	5,824
1/6/2024	North, Lane 1	3,782
1/7/2024	North, Lane 1	3,484
1/8/2024	North, Lane 1	5,301
1/9/2024	North, Lane 1	4,737
1/10/2024	North, Lane 1	6,147
1/11/2024	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.786007  
Longitude: -75.505849

Site Code: MARSH RD DOWN  
Start Date: 1/3/2024  
End Date: 1/12/2024

Date	Lane	AADT
1/12/2024	Excluded	
Total		34709
Average		4958

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MT LEBANON UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.805859  
Longitude: -75.553021

Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	12,815	70.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29.1	30.9	32.2	33.1	33.9	34.6	35.2	35.8	36.4	36.9	37.5	38.1	38.7	39.4	40.1	41	42	43.3	45.4

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	15,514
Total Greater Than 35.0	10,507
Percent Greater Than 35.0	67.7%

### *Mean, Median, and Mode Averages*

Mean:	37.2
Median (50th %):	37.0
Mode:	37.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
12	65	11324	3298	47	693	6	0	69	0	0	0	0	0	0
0.1%	0.4%	73.0%	21.3%	0.3%	4.5%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	West, Lane 2	2,728
10/26/2023	West, Lane 2	2,884
10/27/2023	West, Lane 2	3,042
10/28/2023	West, Lane 2	2,483
10/29/2023	West, Lane 2	1,947
10/30/2023	West, Lane 2	2,428
10/31/2023	West, Lane 2	2
Total		15514

RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.805859  
Longitude: -75.553021

Site Code: MT LEBANON UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Date	Lane	AADT
Average		2216

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MT LEBANON AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.805181  
Longitude: -75.554837

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	16,483	71.5%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
Speed - MPH	21.2	30.3	32.3	33.3	34.1	34.7	35.3	35.8	36.3	36.8	37.3	37.9	38.5	39.2	39.9	40.8	41.9	43.3	45.4	105.7

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	18,689
Total Greater Than 35.0	12,764
Percent Greater Than 35.0	68.3%

### *Mean, Median, and Mode Averages*

Mean:	36.4
Median (50th %):	36.8
Mode:	35.4

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
634	336	12965	3591	208	840	40	1	74	0	0	0	0	0	0
3.4%	1.8%	69.4%	19.2%	1.1%	4.5%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	West, Lane 2	2,728
10/26/2023	West, Lane 2	2,914
10/27/2023	West, Lane 2	3,063
10/28/2023	West, Lane 2	2,405
10/29/2023	West, Lane 2	1,933
10/30/2023	West, Lane 2	2,753
10/31/2023	West, Lane 2	2,893
11/1/2023	Excluded	



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MT LEBANON AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.805181  
Longitude: -75.554837

Date	Lane	AADT
Total		18689
Average		2670

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MT LEBANON DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.804415  
Longitude: -75.556575

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
32 - 41	16,457	74.4%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29	30.9	31.9	32.7	33.4	34	34.6	35.1	35.6	36.1	36.6	37.2	37.8	38.4	39.1	40	41	42.3	44.3

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	18,049
Total Greater Than 35.0	10,963
Percent Greater Than 35.0	60.7%

### *Mean, Median, and Mode Averages*

Mean:	36.4
Median (50th %):	36.0
Mode:	35.4

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
12	70	15317	2161	51	360	14	0	63	1	0	0	0	0	0
0.1%	0.4%	84.9%	12.0%	0.3%	2.0%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	West, Lane 2	2,628
10/26/2023	West, Lane 2	2,809
10/27/2023	West, Lane 2	2,957
10/28/2023	West, Lane 2	2,359
10/29/2023	West, Lane 2	1,861
10/30/2023	West, Lane 2	2,648
10/31/2023	West, Lane 2	2,787
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.804415  
Longitude: -75.556575

Site Code: MT LEBANON DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Date	Lane	AADT
Total		18049
Average		2578

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.731383  
Longitude: -75.665120

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
30 - 39	29,898	67.2%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	24.8	27.3	28.7	29.7	30.6	31.3	31.9	32.5	33.2	33.8	34.4	35	35.7	36.4	37.3	38.2	39.3	40.7	42.8

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	36,120
Total Greater Than 35.0	14,554
Percent Greater Than 35.0	40.3%

### *Mean, Median, and Mode Averages*

Mean:	33.9
Median (50th %):	33.8
Mode:	32.7

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
451	79	24514	7110	318	2930	46	3	518	3	100	25	4	19	0
1.2%	0.2%	67.9%	19.7%	0.9%	8.1%	0.1%	0.0%	1.4%	0.0%	0.3%	0.1%	0.0%	0.1%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	North, Lane 1	5,545
10/26/2023	North, Lane 1	5,510
10/27/2023	North, Lane 1	5,669
10/28/2023	North, Lane 1	5,046
10/29/2023	North, Lane 1	3,856
10/30/2023	North, Lane 1	4,855
10/31/2023	North, Lane 1	5,639
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.731383  
Longitude: -75.665120

Date	Lane	AADT
		36120
		5160

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.731763  
Longitude: -75.664022

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
30 - 39	31,451	69.6%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	24.7	27.3	28.8	29.9	30.7	31.5	32.2	32.8	33.3	33.9	34.4	35	35.7	36.3	37	37.8	38.8	40.1	42.1

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	36,619
Total Greater Than 35.0	14,920
Percent Greater Than 35.0	40.7%

### *Mean, Median, and Mode Averages*

Mean:	33.9
Median (50th %):	33.9
Mode:	33.1

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
184	79	29056	5589	330	1091	49	3	208	3	18	6	0	3	0
0.5%	0.2%	79.3%	15.3%	0.9%	3.0%	0.1%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	North, Lane 1	5,615
10/26/2023	North, Lane 1	5,624
10/27/2023	North, Lane 1	5,704
10/28/2023	North, Lane 1	5,046
10/29/2023	North, Lane 1	3,860
10/30/2023	North, Lane 1	4,961
10/31/2023	North, Lane 1	5,809
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.731763  
Longitude: -75.664022

Date	Lane	AADT
		36619
		5231

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.732234  
Longitude: -75.662184

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
31 - 40	31,253	69.0%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	25.3	28.3	29.8	30.9	31.8	32.6	33.3	33.9	34.5	35.1	35.7	36.3	36.9	37.6	38.3	39.1	40.1	41.4	43.5

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	36,721
Total Greater Than 35.0	18,752
Percent Greater Than 35.0	51.1%

### *Mean, Median, and Mode Averages*

Mean:	34.9
Median (50th %):	35.1
Mode:	34.7

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
137	99	24575	8077	365	3182	50	2	228	3	1	1	0	1	0
0.4%	0.3%	66.9%	22.0%	1.0%	8.7%	0.1%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	North, Lane 1	5,641
10/26/2023	North, Lane 1	5,611
10/27/2023	North, Lane 1	5,734
10/28/2023	North, Lane 1	5,073
10/29/2023	North, Lane 1	3,872
10/30/2023	North, Lane 1	4,968
10/31/2023	North, Lane 1	5,822
11/1/2023	Excluded	



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: MILLTOWN RD DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.732234  
Longitude: -75.662184

Date	Lane	AADT
Total		36721
Average		5246

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GLASGOW UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.600650  
Longitude: -75.743533

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
27 - 36	27,642	44.0%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	22.8	24.9	26.2	27.3	28.3	29.4	30.5	31.6	32.9	34.1	35.3	36.4	37.5	38.6	39.7	40.9	42.3	43.9	46.5

### *Vehicles Traveling Greater Than 30.0 MPH*

Total Volume	52,720
Total Greater Than 30.0	35,567
Percent Greater Than 30.0	67.5%

### *Mean, Median, and Mode Averages*

Mean:	34.2
Median (50th %):	34.1
Mode:	28.3

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
336	160	39956	9081	487	2315	89	25	244	26	1	0	0	0	0
0.6%	0.3%	75.8%	17.2%	0.9%	4.4%	0.2%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	South, Lane 2	8,007
10/26/2023	South, Lane 2	8,350
10/27/2023	South, Lane 2	8,745
10/28/2023	South, Lane 2	7,221
10/29/2023	South, Lane 2	5,300
10/30/2023	South, Lane 2	7,438
10/31/2023	South, Lane 2	7,660
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GLASGOW UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.600650  
Longitude: -75.743533

Date	Lane	AADT
Total		52721
Average		7532

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GLASGOW AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.597836  
Longitude: -75.742556

Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
30 - 39	28,027	61.5%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.6	29	30	30.8	31.7	32.4	33.2	34	34.7	35.5	36.2	37	37.9	38.8	39.7	40.8	42.2	43.8	46.2

### *Vehicles Traveling Greater Than 30.0 MPH*

Total Volume	45,579
Total Greater Than 30.0	38,798
Percent Greater Than 30.0	85.1%

### *Mean, Median, and Mode Averages*

Mean:	36.0
Median (50th %):	35.5
Mode:	35.7

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
133	131	36069	7016	251	1670	54	8	211	25	9	0	1	1	0
0.3%	0.3%	79.1%	15.4%	0.6%	3.7%	0.1%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	South, Lane 2	6,713
10/26/2023	South, Lane 2	7,139
10/27/2023	South, Lane 2	7,602
10/28/2023	South, Lane 2	6,275
10/29/2023	South, Lane 2	4,937
10/30/2023	South, Lane 2	6,314
10/31/2023	South, Lane 2	6,599
Total		45579
Average		6511

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: GLASCOW DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.596418  
Longitude: -75.742145

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
35 - 44	27,690	60.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	31.5	33.1	34.3	35.2	36.1	36.9	37.6	38.4	39.1	39.9	40.6	41.4	42.2	43.1	44.1	45.2	46.5	48.1	50.7

### *Vehicles Traveling Greater Than 30.0 MPH*

Total Volume	45,582
Total Greater Than 30.0	44,502
Percent Greater Than 30.0	97.6%

### *Mean, Median, and Mode Averages*

Mean:	40.4
Median (50th %):	39.9
Mode:	40.3

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
78	116	31386	8803	263	4546	43	9	303	27	6	1	0	1	0
0.2%	0.3%	68.9%	19.3%	0.6%	10.0%	0.1%	0.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	South, Lane 2	6,709
10/26/2023	South, Lane 2	7,141
10/27/2023	South, Lane 2	7,608
10/28/2023	South, Lane 2	6,277
10/29/2023	South, Lane 2	4,930
10/30/2023	South, Lane 2	6,318
10/31/2023	South, Lane 2	6,599
Total		45582
Average		6512

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: KWOOD ST G UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.567095  
Longitude: -75.691957

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
40 - 49	6,612	57.8%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	33.5	36.2	38	39.3	40.4	41.3	42.2	43	43.8	44.6	45.4	46.2	46.9	47.8	48.7	49.8	51.1	52.9	55.9

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	9,532
Total Greater Than 35.0	8,843
Percent Greater Than 35.0	92.8%

### *Mean, Median, and Mode Averages*

Mean:	44.6
Median (50th %):	44.5
Mode:	42.8

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
7	55	6109	2361	149	730	28	7	81	5	0	0	0	0	0
0.1%	0.6%	64.1%	24.8%	1.6%	7.7%	0.3%	0.1%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	North, Lane 1	1,501
10/26/2023	North, Lane 1	1,538
10/27/2023	North, Lane 1	1,520
10/28/2023	North, Lane 1	1,119
10/29/2023	North, Lane 1	940
10/30/2023	North, Lane 1	1,429
10/31/2023	North, Lane 1	1,485
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: KWOOD ST G UP  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.567095  
Longitude: -75.691957

Date	Lane	AADT
Total		9532
Average		1362

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: KWOOD ST G AT  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.568144  
Longitude: -75.693802

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
33 - 42	5,340	46.1%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	26.7	28.9	30.4	31.7	32.8	33.8	34.8	35.9	37.1	38.2	39.3	40.4	41.5	42.5	43.7	45	46.4	48.4	51.4

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	11,574
Total Greater Than 35.0	7,456
Percent Greater Than 35.0	64.4%

### *Mean, Median, and Mode Averages*

Mean:	38.5
Median (50th %):	38.2
Mode:	41.6

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
11	65	7895	2612	158	689	30	7	102	5	0	0	0	0	0
0.1%	0.6%	68.2%	22.6%	1.4%	6.0%	0.3%	0.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/25/2023	North, Lane 1	1,762
10/26/2023	North, Lane 1	1,833
10/27/2023	North, Lane 1	1,849
10/28/2023	North, Lane 1	1,450
10/29/2023	North, Lane 1	1,204
10/30/2023	North, Lane 1	1,700
10/31/2023	North, Lane 1	1,776
Total		11574
Average		1653



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: KWOOD ST G DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.569087  
Longitude: -75.695375

## Combined Lanes 10/25/2023 to 10/31/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	8,976	63.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	29.6	31.9	33.3	34.4	35.2	36	36.7	37.4	38.1	38.8	39.5	40.2	41	41.7	42.6	43.7	44.8	46.4	48.8

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	11,723
Total Greater Than 35.0	8,969
Percent Greater Than 35.0	76.5%

### *Mean, Median, and Mode Averages*

Mean:	39.0
Median (50th %):	38.8
Mode:	37.1

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
25	68	7210	2904	171	1168	30	7	135	5	0	0	0	0	0
0.2%	0.6%	61.5%	24.8%	1.5%	10.0%	0.3%	0.1%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
10/24/2023	Excluded	
10/25/2023	West, Lane 2	1,792
10/26/2023	West, Lane 2	1,854
10/27/2023	West, Lane 2	1,871
10/28/2023	West, Lane 2	1,475
10/29/2023	West, Lane 2	1,217
10/30/2023	West, Lane 2	1,722
10/31/2023	West, Lane 2	1,792
11/1/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: KWOOD ST G DN  
Start Date: 10/24/2023  
End Date: 11/1/2023

Latitude: 39.569087  
Longitude: -75.695375

Date	Lane	AADT
Total		11723
Average		1675

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: FORREST AVE UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.155724  
Longitude: -75.591363

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
46 - 55	39,392	65.3%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	40.1	42.5	44	45.2	46.2	47	47.7	48.4	49	49.7	50.3	51	51.7	52.4	53.2	54.1	55.2	56.8	59.3

### *Vehicles Traveling Greater Than 50.0 MPH*

Total Volume	28,906
Total Greater Than 50.0	13,768
Percent Greater Than 50.0	47.6%

### *Mean, Median, and Mode Averages*

Mean:	49.7
Median (50th %):	49.7
Mode:	49.8

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
20	77	20928	5195	211	1651	127	20	307	349	6	1	14	0	0
0.1%	0.3%	72.4%	18.0%	0.7%	5.7%	0.4%	0.1%	1.1%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	East, Lane 1	4,198
11/16/2023	East, Lane 1	4,315
11/17/2023	East, Lane 1	4,710
11/18/2023	East, Lane 1	4,379
11/19/2023	East, Lane 1	2,997
11/20/2023	East, Lane 1	4,259
11/21/2023	East, Lane 1	4,048
11/22/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.155724  
Longitude: -75.591363

Site Code: FORREST AVE UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/23/2023	Excluded	
11/24/2023	Excluded	
11/25/2023	Excluded	
11/26/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		28906
Average		4129

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: FORREST AVE AT RSS  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.155737  
Longitude: -75.588432

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
39 - 48	15,671	49.6%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	31.8	33.7	35.3	36.6	37.8	39	40.1	41.1	42	43	43.9	44.9	45.8	46.9	47.9	49.1	50.5	52.4	55.3

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	29,054
Total Greater Than 35.0	25,064
Percent Greater Than 35.0	86.3%

### *Mean, Median, and Mode Averages*

Mean:	43.2
Median (50th %):	43.1
Mode:	43.6

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
43	85	20394	5701	231	1772	109	19	330	348	6	1	14	1	0
0.1%	0.3%	70.2%	19.6%	0.8%	6.1%	0.4%	0.1%	1.1%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	East, Lane 1	4,207
11/16/2023	East, Lane 1	4,324
11/17/2023	East, Lane 1	4,734
11/18/2023	East, Lane 1	4,427
11/19/2023	East, Lane 1	3,082
11/20/2023	East, Lane 1	4,273
11/21/2023	East, Lane 1	4,007
11/22/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.155737  
Longitude: -75.588432

Site Code: FORREST AVE AT RSS  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/24/2023	Excluded	
11/25/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		29054
Average		4151

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: FORREST AVE DWN  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.155714  
Longitude: -75.587018

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
36 - 45	35,027	58.0%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	32.8	34.5	35.6	36.5	37.3	38.1	38.9	39.7	40.4	41.2	42	42.8	43.7	44.7	45.8	47	48.4	50.3	53.4

### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	29,157
Total Greater Than 35.0	25,659
Percent Greater Than 35.0	88.0%

### *Mean, Median, and Mode Averages*

Mean:	42.0
Median (50th %):	41.2
Mode:	40.8

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
62	78	19054	6730	255	2129	111	16	347	354	7	0	14	0	0
0.2%	0.3%	65.3%	23.1%	0.9%	7.3%	0.4%	0.1%	1.2%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	East, Lane 1	4,214
11/16/2023	East, Lane 1	4,334
11/17/2023	East, Lane 1	4,741
11/18/2023	East, Lane 1	4,439
11/19/2023	East, Lane 1	3,087
11/20/2023	East, Lane 1	4,276
11/21/2023	East, Lane 1	4,066
11/22/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.155714  
Longitude: -75.587018

Site Code: FORREST AVE DWN  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/23/2023	Excluded	
11/24/2023	Excluded	
11/25/2023	Excluded	
11/26/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		29157
Average		4165



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: PEACH TREE UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.062699  
Longitude: -75.532706

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
43 - 52	28,133	65.4%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	38.6	40.6	41.9	42.9	43.8	44.5	45.2	45.9	46.6	47.2	47.9	48.6	49.3	50.1	50.9	51.8	52.9	54.4	56.9

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	20,939
Total Greater Than 25.0	20,913
Percent Greater Than 25.0	99.9%

### *Mean, Median, and Mode Averages*

Mean:	47.5
Median (50th %):	47.2
Mode:	45.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
15	31	14630	4349	102	1696	30	0	83	3	0	0	0	0	0
0.1%	0.1%	69.9%	20.8%	0.5%	8.1%	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	South, Lane 2	3,152
11/16/2023	South, Lane 2	3,231
11/17/2023	South, Lane 2	3,296
11/18/2023	South, Lane 2	2,887
11/19/2023	South, Lane 2	2,332
11/20/2023	South, Lane 2	3,056
11/21/2023	South, Lane 2	2,986
11/22/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 39.062699  
Longitude: -75.532706

Site Code: PEACH TREE UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/23/2023	Excluded	
11/24/2023	Excluded	
11/25/2023	Excluded	
11/26/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		20940
Average		2991

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: PEACHTREE AT  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.060854  
Longitude: -75.531919

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
39 - 48	11,369	55.7%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	28.7	31	33	34.9	36.6	38.1	39.3	40.3	41.2	42.1	42.8	43.6	44.4	45.1	46	46.9	48	49.4	51.7

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	20,422
Total Greater Than 25.0	20,197
Percent Greater Than 25.0	98.9%

### *Mean, Median, and Mode Averages*

Mean:	41.3
Median (50th %):	42.1
Mode:	43.7

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
10	31	14960	4018	98	1202	31	0	69	3	0	0	0	0	0
0.0%	0.2%	73.3%	19.7%	0.5%	5.9%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/15/2023	South, Lane 2	3,150
11/16/2023	South, Lane 2	3,227
11/17/2023	South, Lane 2	2,787
11/18/2023	South, Lane 2	2,887
11/19/2023	South, Lane 2	2,333
11/20/2023	South, Lane 2	3,057
11/21/2023	South, Lane 2	2,982
Total		20423
Average		2918

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: PEACHTREE DWN  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 39.058691  
Longitude: -75.530644

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
41 - 50	11,776	65.4%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	36.3	38.3	39.5	40.6	41.6	42.4	43.1	43.8	44.5	45.1	45.8	46.5	47.2	47.9	48.7	49.5	50.6	51.9	54.2

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	17,997
Total Greater Than 25.0	17,964
Percent Greater Than 25.0	99.8%

### *Mean, Median, and Mode Averages*

Mean:	45.3
Median (50th %):	45.1
Mode:	44.8

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
6	30	13636	3417	91	717	32	0	64	4	0	0	0	0	0
0.0%	0.2%	75.8%	19.0%	0.5%	4.0%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/15/2023	South, Lane 2	2,754
11/16/2023	South, Lane 2	2,797
11/17/2023	South, Lane 2	2,659
11/18/2023	South, Lane 2	2,496
11/19/2023	South, Lane 2	2,001
11/20/2023	South, Lane 2	2,672
11/21/2023	South, Lane 2	2,619
Total		17998
Average		2571

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: JOHNSON RD UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 38.870729  
Longitude: -75.431032

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
32 - 41	30,918	63.3%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.8	29.9	31.2	32.3	33.2	33.9	34.6	35.4	36.1	36.8	37.4	38.1	38.8	39.5	40.4	41.4	42.6	44.1	46.5

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	23,996
Total Greater Than 25.0	23,568
Percent Greater Than 25.0	98.2%

### *Mean, Median, and Mode Averages*

Mean:	37.0
Median (50th %):	36.8
Mode:	36.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
35	34	14387	5794	209	2993	93	23	305	114	7	2	0	0	0
0.1%	0.1%	60.0%	24.1%	0.9%	12.5%	0.4%	0.1%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	East, Lane 1	3,649
11/16/2023	East, Lane 1	3,719
11/17/2023	East, Lane 1	3,785
11/18/2023	East, Lane 1	3,095
11/19/2023	East, Lane 1	2,547
11/20/2023	East, Lane 1	3,618
11/21/2023	East, Lane 1	3,584
11/22/2023	Excluded	

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 38.870729  
Longitude: -75.431032

Site Code: JOHNSON RD UP  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/23/2023	Excluded	
11/24/2023	Excluded	
11/25/2023	Excluded	
11/26/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		23997
Average		3428

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: JOHNSON AT  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 38.871047  
Longitude: -75.427851

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
24 - 33	15,310	72.2%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	23	24.1	24.8	25.4	25.9	26.5	27.1	27.7	28.3	28.9	29.6	30.3	31	31.8	32.7	33.7	34.9	36.5	39

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	21,209
Total Greater Than 25.0	17,730
Percent Greater Than 25.0	83.6%

### *Mean, Median, and Mode Averages*

Mean:	29.8
Median (50th %):	28.9
Mode:	25.9

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
75	32	13183	5565	189	1686	93	22	250	102	8	3	0	1	0
0.4%	0.2%	62.2%	26.2%	0.9%	7.9%	0.4%	0.1%	1.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/15/2023	East, Lane 1	3,297
11/16/2023	East, Lane 1	3,306
11/17/2023	East, Lane 1	3,372
11/18/2023	East, Lane 1	2,784
11/19/2023	East, Lane 1	2,257
11/20/2023	East, Lane 1	3,333
11/21/2023	East, Lane 1	2,860
Total		21209
Average		3030

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: JOHNSON RD DWN  
Start Date: 11/14/2023  
End Date: 11/29/2023

Latitude: 38.871030  
Longitude: -75.424852

## Combined Lanes 11/15/2023 to 11/21/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
25 - 34	33,908	75.0%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	23	24.5	25.5	26.2	26.8	27.4	27.9	28.4	28.9	29.5	30	30.6	31.2	31.8	32.6	33.5	34.6	36.1	38.6

### *Vehicles Traveling Greater Than 25.0 MPH*

Total Volume	22,154
Total Greater Than 25.0	19,469
Percent Greater Than 25.0	87.9%

### *Mean, Median, and Mode Averages*

Mean:	30.0
Median (50th %):	29.5
Mode:	28.1

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
29	28	12391	5565	198	3378	87	22	344	102	8	2	0	0	0
0.1%	0.1%	55.9%	25.1%	0.9%	15.2%	0.4%	0.1%	1.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
11/14/2023	Excluded	
11/15/2023	East, Lane 1	3,360
11/16/2023	East, Lane 1	3,391
11/17/2023	East, Lane 1	3,470
11/18/2023	East, Lane 1	2,883
11/19/2023	East, Lane 1	2,378
11/20/2023	East, Lane 1	3,380
11/21/2023	East, Lane 1	3,293
11/22/2023	Excluded	



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Latitude: 38.871030  
Longitude: -75.424852

Site Code: JOHNSON RD DWN  
Start Date: 11/14/2023  
End Date: 11/29/2023

Date	Lane	AADT
11/23/2023	Excluded	
11/24/2023	Excluded	
11/25/2023	Excluded	
11/26/2023	Excluded	
11/27/2023	Excluded	
11/28/2023	Excluded	
11/29/2023	Excluded	
Total		22155
Average		3165

Site Code: 001011  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - Upstream

### Combined Lanes 12/13/2023 to 12/19/2023

#### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
38 - 47	32,779	76.5%

#### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	34.5	36.4	37.7	38.5	39.2	39.8	40.4	40.9	41.4	42	42.5	43	43.6	44.1	44.7	45.4	46.3	47.3	49

#### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	37,410
Total Greater Than 35.0	35,176
Percent Greater Than 35.0	94.0%

#### *Mean, Median, and Mode Averages*

Mean:	42.0
Median (50th %):	42.0
Mode:	41.5

#### *Classification Statistics*

Motorcycles	Cars & Trailers	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	Unclassed	
23	25462	8824	267	2221	249	3	299	44	0	1	1	0	16
0.1%	68.1%	23.6%	0.7%	5.9%	0.7%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

#### *AADT*

Date	Lane	AADT
12/12/2023	Excluded	
12/13/2023	West, Lane 1	5,524
12/14/2023	West, Lane 1	5,563
12/15/2023	West, Lane 1	6,226
12/16/2023	West, Lane 1	5,310
12/17/2023	West, Lane 1	4,093
12/18/2023	West, Lane 1	5,066
12/19/2023	West, Lane 1	5,628
12/20/2023	Excluded	
Total		37410
Average		5344

Site Code: 001022  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - RSS location

### Combined Lanes 12/13/2023 to 12/19/2023

#### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
35 - 44	34,791	76.9%

#### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	30.9	33.1	34.4	35.4	36.1	36.7	37.2	37.7	38.2	38.6	39.1	39.5	40.1	40.6	41.3	42	42.9	43.9	45.6

#### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	39,614
Total Greater Than 35.0	32,615
Percent Greater Than 35.0	82.3%

#### *Mean, Median, and Mode Averages*

Mean:	38.6
Median (50th %):	38.6
Mode:	38.8

#### *Classification Statistics*

Motorcycles	Cars & Trailers	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	Unclassed
21	27349	9033	279	2222	260	3	332	88	2	1	0	24
0.1%	69.0%	22.8%	0.7%	5.6%	0.7%	0.0%	0.8%	0.2%	0.0%	0.0%	0.0%	0.1%

#### *AADT*

Date	Lane	AADT
12/12/2023	Excluded	
12/13/2023	West, Lane 1	5,836
12/14/2023	West, Lane 1	5,897
12/15/2023	West, Lane 1	6,594
12/16/2023	West, Lane 1	5,627
12/17/2023	West, Lane 1	4,354
12/18/2023	West, Lane 1	5,345
12/19/2023	West, Lane 1	5,961
12/20/2023	Excluded	
Total		39614
Average		5659

Site Code: 001033  
Station ID: 1  
Location 1: Site 10 - Long Neck Rd - Downstream

### Combined Lanes 12/13/2023 to 12/19/2023

#### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	36,309	75.8%

#### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	27.9	31.4	33.3	34.4	35.3	36	36.6	37.2	37.7	38.2	38.6	39.1	39.6	40.1	40.7	41.3	42.1	43	44.5

#### *Vehicles Traveling Greater Than 35.0 MPH*

Total Volume	41,963
Total Greater Than 35.0	32,297
Percent Greater Than 35.0	77.0%

#### *Mean, Median, and Mode Averages*

Mean:	37.6
Median (50th %):	38.2
Mode:	37.9

#### *Classification Statistics*

Motorcycles	Cars & Trailers	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	Unclassed
30	29438	9264	291	2236	260	3	344	70	2	1	0	24
0.1%	70.2%	22.1%	0.7%	5.3%	0.6%	0.0%	0.8%	0.2%	0.0%	0.0%	0.0%	0.1%

#### *AADT*

Date	Lane	AADT
12/12/2023	Excluded	
12/13/2023	West, Lane 1	6,218
12/14/2023	West, Lane 1	6,284
12/15/2023	West, Lane 1	6,950
12/16/2023	West, Lane 1	5,888
12/17/2023	West, Lane 1	4,536
12/18/2023	West, Lane 1	5,672
12/19/2023	West, Lane 1	6,415
12/20/2023	Excluded	
Total		41963
Average		5995

Default Report Title  
 Use Preferences to Define Titles

Site Code: BAYARD UP  
 Start Date: 12/15/2023  
 End Date: 12/22/2023

Latitude: 0.000000  
 Longitude: 0.000000

0.000000  
 0.000000

Combined Lanes 12/15/2023 to 12/22/2023

**Pace Speed - MPH**

Classes Excluded From Pace: None

Speed	Number	Percent
34 - 43	8,798	76.3%

**Percentile Speeds**

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	31.1	32.7	33.8	34.7	35.4	36.1	36.6	37.2	37.7	38.3	38.8	39.3	39.7	40.3	40.9	41.6	42.5	43.6	45.3

**Vehicles Traveling Greater Than 25.0 MPH**

Total Volume	11,533
Total Greater Than 25.0	11,484
Percent Greater Than 25.0	99.6%

**Mean, Median, and Mode Averages**

Mean:	38.3
Median (50th %):	38.2
Mode:	39.5

**Classification Statistics**

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
3	9	7353	2819	94	1135	20	15	67	18	0	0	0	0	0
0.0%	0.1%	63.8%	24.4%	0.8%	9.8%	0.2%	0.1%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%

**AADT**

Date	Lane	AADT
12/15/2023	North, Lane 1	1,231
12/16/2023	North, Lane 1	1,513
12/17/2023	North, Lane 1	1,001
12/18/2023	North, Lane 1	1,562
12/19/2023	North, Lane 1	1,941
12/20/2023	North, Lane 1	2,000
12/21/2023	North, Lane 1	2,014

Default Report Title  
Use Preferences to Define Titles

Site Code: BAYARD UP  
Start Date: 12/15/2023  
End Date: 12/22/2023

Latitude: 0.000000  
Longitude: 0.000000

0.000000  
0.000000

Date	Lane	AADT
12/22/2023	North, Lane 1	271
Total		11533
Average		1442

# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: BAYARD RD AT RSS  
Start Date: 12/15/2023  
End Date: 12/22/2023

Latitude: 38.481868  
Longitude: -75.138274

## Combined Lanes 12/15/2023 to 12/22/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
36 - 45	8,879	76.5%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	32.6	34.4	35.6	36.5	37.2	37.8	38.4	39	39.5	40	40.5	41.1	41.6	42.2	42.8	43.4	44.2	45.2	47

### *Vehicles Traveling Greater Than 45.0 MPH*

Total Volume	11,607
Total Greater Than 45.0	1,315
Percent Greater Than 45.0	11.3%

### *Mean, Median, and Mode Averages*

Mean:	40.0
Median (50th %):	40.0
Mode:	41.5

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
5	3	8044	2686	84	659	25	16	66	19	0	0	0	0	0
0.0%	0.0%	69.3%	23.1%	0.7%	5.7%	0.2%	0.1%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
12/15/2023	North, Lane 1	1,307
12/16/2023	North, Lane 1	1,504
12/17/2023	North, Lane 1	1,001
12/18/2023	North, Lane 1	1,558
12/19/2023	North, Lane 1	1,934
12/20/2023	North, Lane 1	1,992
12/21/2023	North, Lane 1	2,009
12/22/2023	North, Lane 1	302
Total		11607

RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: BAYARD RD AT RSS  
Start Date: 12/15/2023  
End Date: 12/22/2023

Date	Lane	AADT
Average		1451

Latitude: 38.481868  
Longitude: -75.138274



# RK&K

700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: BAYARD DWN  
Start Date: 12/15/2023  
End Date: 12/22/2023

Latitude: 38.484610  
Longitude: -75.137721

## Combined Lanes 12/15/2023 to 12/22/2023

### *Pace Speed - MPH*

Classes Excluded From Pace: None

Speed	Number	Percent
39 - 48	7,817	74.1%

### *Percentile Speeds*

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th
Speed - MPH	34.8	36.9	38.2	39.2	40	40.7	41.3	41.9	42.4	43	43.5	44	44.6	45.1	45.7	46.3	47.3	48.4	50.3

### *Vehicles Traveling Greater Than 45.0 MPH*

Total Volume	10,548
Total Greater Than 45.0	3,293
Percent Greater Than 45.0	31.2%

### *Mean, Median, and Mode Averages*

Mean:	42.9
Median (50th %):	43.0
Mode:	44.8

### *Classification Statistics*

Unclassified	Motorcycles	Cars & Trailers	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	Bicycles
9	5	6434	2485	94	1397	19	16	71	18	0	0	0	0	0
0.1%	0.0%	61.0%	23.6%	0.9%	13.2%	0.2%	0.2%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%

### *AADT*

Date	Lane	AADT
12/15/2023	North, Lane 1	1,031
12/16/2023	North, Lane 1	1,346
12/17/2023	North, Lane 1	890
12/18/2023	North, Lane 1	1,430
12/19/2023	North, Lane 1	1,810
12/20/2023	North, Lane 1	1,862
12/21/2023	North, Lane 1	1,853
12/22/2023	North, Lane 1	326
Total		10548

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700 E Pratt St Ste 500  
Baltimore MD 21202

Site Code: BAYARD DWN  
Start Date: 12/15/2023  
End Date: 12/22/2023

Date Lane  
Average

AAADT  
1318

Latitude: 38.484610  
Longitude: -75.137721

**Appendix C**

After Installation – Measured Vehicle Speeds for All Locations

County	Site	Posted Speed Limit	Location	Average Speeds						85th Percentile Speeds						Standard Deviation			
				Overnight		Midday Off-Peak		Full-Day		Overnight		Midday Off-Peak		Full-Day		Overnight		Midday Off-Peak	
				Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
New Castle	1	35	Upstream	42.8	42.2	40.1	36.1	39.6	34.6	48.7	48.5	44.5	42.3	43.9	41.5	5.7	6.2	4.6	6.3
			Sign	44.1	41.5	41.2	37.4	40.7	37.0	50.6	49.5	46.6	42.6	45.6	42.1	6.0	6.7	5.1	5.5
			Downstream	41.9	40.3	38.8	36.0	38.4	35.7	48.2	47.9	44.0	41.2	43.3	40.5	5.9	7.0	5.2	5.4
	2	40	Upstream	42.8	41.2	41.7	40.2	40.8	38.8	49.1	47.0	47.3	45.8	46.4	44.3	6.3	6.0	5.7	5.5
			Sign	41.9	40.5	39.4	38.8	38.4	37.2	47.8	46.9	44.7	43.9	43.6	42.5	5.9	5.9	5.2	5.3
			Downstream	44.1	41.5	39.8	37.6	38.8	35.7	50.1	47.3	45.2	42.7	44.3	41.3	6.1	6.0	5.4	5.0
	3	35	Upstream	41.7	40.5	37.9	38.1	37.0	37.2	49.0	46.3	42.5	43.0	41.6	42.0	7.0	5.1	4.7	4.9
			Sign	43.3	40.3	40.2	38.3	38.6	36.4	51.1	46.8	44.8	43.2	44.5	41.9	7.4	5.2	4.9	4.9
			Downstream	43.9	40.0	38.8	37.1	38.0	36.4	53.2	44.8	43.7	41.6	42.8	41.0	7.6	5.9	4.9	4.6
	4	35	Upstream	35.8	35.0	35.0	35.2	34.4	33.9	41.6	40.8	40.7	40.8	39.9	39.3	6.5	6.5	5.4	5.4
			Sign	39.9	36.9	38.8	35.0	38.2	33.9	45.9	42.7	44.2	40.2	43.3	38.8	6.2	6.3	5.4	5.0
			Downstream	40.5	38.5	38.3	35.5	37.5	34.9	46.4	43.6	43.3	40.9	42.3	40.1	6.0	5.8	4.9	5.4
	5	30	Upstream	40.1	38.8	35.4	34.7	35.6	34.2	48.9	48.4	43.5	42.5	43.9	42.3	8.0	8.3	7.1	6.8
			Sign	44.8	39.8	40.9	35.7	41.6	36.0	50.8	48.1	47.3	41.8	47.9	42.2	5.7	7.1	5.8	5.6
			Downstream	44.6	43.4	42.1	40.3	42.3	40.4	50.1	50.8	48.2	46.4	48.2	46.5	5.5	6.2	5.4	5.4
	6	35	Upstream	42.2	44.3	45.7	45.7	45.2	44.6	51.3	50.7	52.2	52.8	51.7	51.1	8.1	6.4	6.2	6.5
			Sign	38.9	37.6	40.1	39.5	39.4	38.5	48.9	44.5	49.2	48.0	48.9	46.4	9.2	6.7	8.8	7.7
			Downstream	39.3	39.0	39.4	40.4	38.8	39.0	47.1	44.6	45.0	47.0	44.7	44.8	7.6	5.7	5.8	6.2
Kent	7	35	Upstream	56.5	53.6	52.2	50.0	52.5	49.7	64.4	59.7	57.6	55.5	58.1	55.2	7.1	6.9	5.5	5.4
			Sign	51.6	46.0	49.6	42.7	50.4	43.2	57.3	53.7	55.1	49.9	56.4	50.5	5.0	7.0	5.4	6.9
			Downstream	48.4	44.3	46.0	41.4	46.5	42.0	55.0	52.6	52.8	48.0	53.1	48.4	6.4	6.9	6.1	6.0
	8	35	Upstream	34.0	34.6	32.8	34.0	46.5	47.5	40.8	40.8	37.8	39.4	51.5	52.9	7.6	6.7	5.1	5.5
			Sign	32.9	30.7	30.3	29.7	42.0	41.3	39.8	37.1	35.5	34.9	48.6	48.0	7.7	6.2	5.3	5.0
			Downstream	34.1	33.2	32.0	31.5	46.1	45.3	41.3	39.7	37.4	36.7	51.6	50.6	7.4	7.1	5.5	5.1
Sussex	9	25	Upstream	36.7	37.7	36.8	37.8	36.2	37.0	43.8	44.8	43.0	43.7	41.6	42.6	6.2	6.2	5.4	5.4
			Sign	34.7	33.6	32.9	30.4	32.3	29.8	40.9	39.7	38.3	35.5	37.0	34.9	5.4	6.0	4.9	4.9
			Downstream	34.5	33.3	31.3	30.4	31.0	30.0	40.6	39.3	36.8	34.8	35.8	34.6	5.8	5.4	5.2	4.7
	10	40	Upstream	38.2	38.7	36.9	38.0	41.2	42.0	42.2	44.5	41.2	42.1	45.3	46.3	4.3	6.2	4.2	4.4
			Sign	38.2	36.7	34.9	34.4	39.4	38.6	44.1	41.9	39.3	38.6	43.8	42.9	6.0	5.3	4.6	4.3
			Downstream	37.2	36.1	33.3	33.8	38.0	37.6	43.0	41.8	38.0	38.2	42.4	42.1	6.0	5.7	4.6	4.4
11	45	Upstream	28.7	29.5	27.9	29.6	36.9	38.3	33.0	34.2	31.9	34.1	40.9	42.5	4.8	3.9	3.8	4.2	
		Sign	34.5	31.1	32.3	31.0	41.8	40.0	41.9	35.4	36.7	35.5	46.1	44.2	6.7	4.2	4.3	4.4	
		Downstream	35.3	34.0	32.7	33.7	42.2	42.9	43.1	38.8	37.2	38.3	46.5	47.3	6.5	4.8	4.4	4.7	

Note: Standard deviation data was not available for the Full-Day analysis period.