

PS/ED COMMITTEE #1  
July 11, 2016

**MEMORANDUM**

July 7, 2016

TO: Public Safety and Education Committees

FROM: Susan J. Farag, Legislative Analyst *SJF*  
Essie McGuire, Senior Legislative Analyst *EMC*

SUBJECT: **Discussion: School Bus Safety Cameras**

Today the Public Safety and Education Committees will discuss the school bus safety camera program. Those expected to brief the Joint Committee include:

Richard Hetherington, Manager, Automated Traffic Enforcement Unit, Montgomery County Police Department (MCPD)  
Todd Watkins, Montgomery County Public Schools (MCPS)

**Background**

The Council passed legislation in March 2012 enabling the County to implement school bus safety cameras. The purpose of the cameras on school buses is to monitor and enforce violations where vehicles pass a stopped school bus that has its flashing signals, stop sign, and stop arm extended. The current fine is \$125 per violation.

MCPD selected Xerox Corporation in 2013 to provide the cameras and related services. The contract term is for three years, which coincides with the end of the Department's other automated enforcement contracts. The fixed rate, turnkey contract is \$250,000 annual for the 25 cameras, and includes maintenance, rotating cameras among buses, and wiring.

MCPD implemented the program in January 2014. Twenty-five buses had cameras at that time, and 75 additional buses were wired, to allow MCPD to move cameras among high priority routes as needed. The contract was unfunded in both FY15 and FY16; however, \$250,000 was included in the approved budget to pay the vendor for FY17.

**Status Update**

Last year, MCPS and MCPD began researching a different model of school bus safety and traffic enforcement. The company, Force Multiplier Solutions, Inc. (FXS), is based in Dallas, and provides comprehensive on-board bundled services that provide data and security both inside and

outside school buses. From January to May 20, 2016, FXS began a five-bus pilot program in the County. It equipped five buses with its technology, and during the pilot program, it identified 2,620 potential stop arm violations. The current vendor's product, installed on 25 buses total, identified 2,588 during the entire 2015-2016 school year. The County entered into a contract with the FXS on June 30, 2016. It also completed an MOU at the same time.

The bundled package that FXS offers provides 14 cameras on each bus, installed both inside and outside. The three interior cameras have "live view" streaming video with live two-way communication with the driver's remote access. There is a rear camera with backup assist, a forward facing camera, and a right side camera. The product offers six-lane automated enforcement coverage. It also offers real-time GPS.

**Payment Structure:** In exchange for free installation on all MCPS school buses (approximately 1,200), FXS would retain all fine revenues in order to recoup its investment. MCPD indicates that FXS will need to recoup approximately \$18 million in fines to break even on their initial investment. At this point, FXS and the County will negotiate a revenue-sharing plan. Fines will be paid into the County General Fund, but they will be segregated in a "lock box." These funds will be transferred to an MCPS Entrepreneurial Fund and the payment to the vendor will be made from that fund.

MCPS could potentially save approximately \$800,000 annually due to the new contract, since it won't have to replace certain safety equipment that it currently installs on all new buses. Potential savings are about \$7,000 per bus, and MCPS replaces about 100 new buses a year.

MCPD plans to use the \$250,000 included in the FY17 budget for the school bus camera contract to fund three new employees needed to process the larger expected volume of tickets.

## **Implementation**

Full implementation is expected by June 30, 2019. Five buses are currently outfitted and operational. Another 100 buses will be operational by December 30, 2016. Another 400 buses will be operational by the end of 2017, and the remaining fleet will be operational by June 30, 2019. The 200 most frequently violated routes will be the first to be implemented.

## **Discussion Issues**

1. What is the estimated time for repayment to FXS until it recoups all installation costs?
2. Does FXS have enough experience in other similar jurisdictions to determine whether violations slow significantly due to public awareness and compliance? If so, and if revenues decline, does this present any concerns about timely repayment and continued operation of the program?
3. Will there be additional public information campaigns associated with the technology change and increased use on buses?
4. What current safety technology will FXS systems replace on school buses?

**This packet contains**  
MCPD PowerPoint Presentation  
FXS Pilot Program Report

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1-15  
16-27

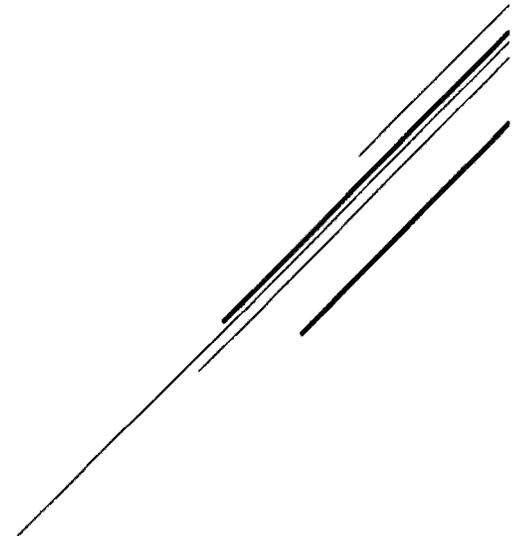
F:\Farag\Packets\Public Safety\School Bus Safety Camera Update 07-11-16.docx

# PUBLIC SAFETY AND EDUCATION COMMITTEES

July 11, 2016

- ▶ In December 2014 Chief Manger was contacted by a colleague who suggested that MCPD take a look at a company who was making significant technological strides in automated school bus stop arm enforcement.
- ▶ The company was identified as Force Multiplier Solutions (FXS) based in Dallas, Texas.
- ▶ FXS had implemented their product with the Dallas School System which is of comparable size to Montgomery County Public Schools

## BACKGROUND

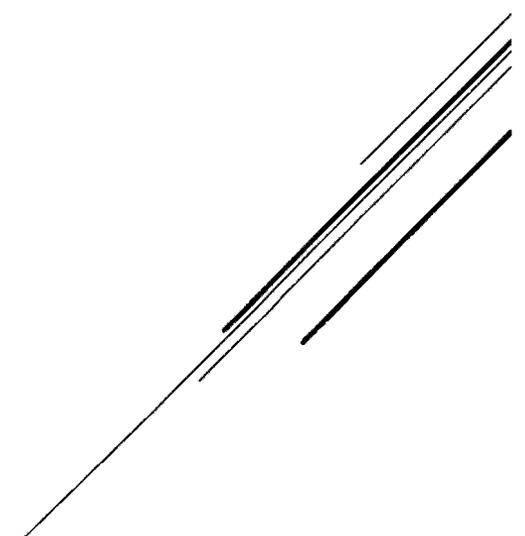


- ▶ On July 8, 2015, members of MCPD's Automated Traffic Enforcement Unit (A.T.E.U.) met with representatives from FXS who wished to partner with Montgomery County on a school bus safety program
- ▶ A second meeting was held on July 17, 2015 which included Mr. Todd Watkins the Director of the MCPS Transportation Department. All parties involved felt that FXS had a technologically superior product and there was interest in moving forward

## BACKGROUND

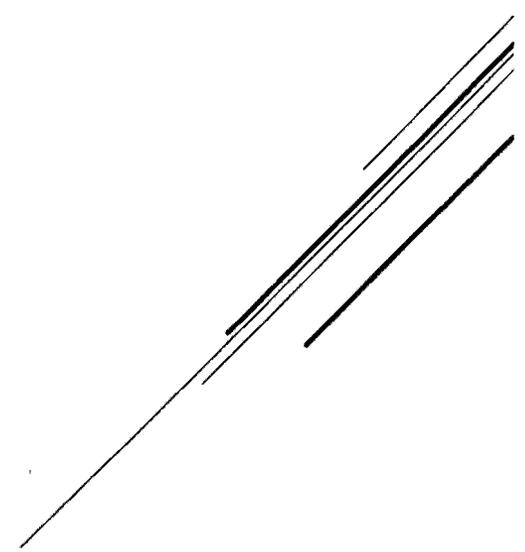
- ▶ August 12-13, 2015- Todd Watkins, Richard Harrison, and Lt. Dave McBain traveled to Dallas to the FXS Headquarters to get a first hand look at their product and operation
- ▶ They also met with the Dallas School Superintendent to get feedback on the product and the safety program
- ▶ Shortly after this meeting it was decided to move forward with FXS as the future vendor for both school bus safety and automated stop arm enforcement
- ▶ FXS offered to absorb 100% of the cost of equipment and installation. Needless to say, we were skeptical as this seemed "too good to be true"

## BACKGROUND



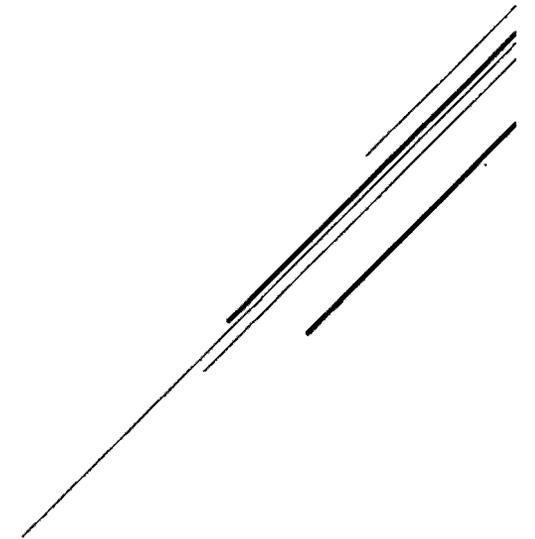
- ▶ FXS began a 5 bus pilot program in Montgomery County. Their system began operations in January of 2016
- ▶ From January to May 20, 2016 the FXS product, on only 5 busses, identified 2,620 potential stop arm violations
- ▶ For comparison purposes, our current vendor operating on 25 busses for the entire school year only identified a total of 2,588 violations

## BACKGROUND



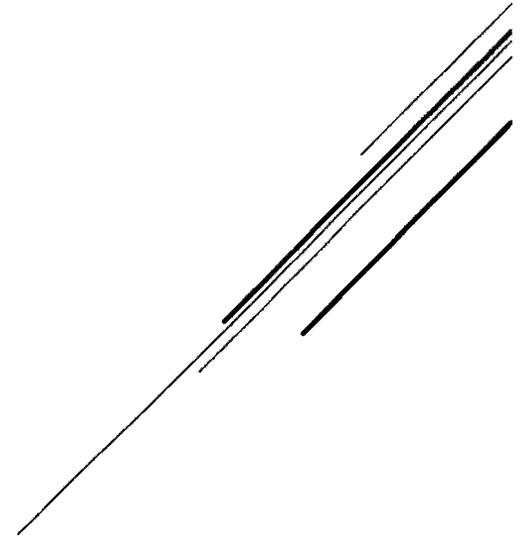
- ▶ The FXS product features 14 cameras inside and outside the bus
- ▶ Three interior cameras with “live view” streaming video with live two-way communication with the driver's remote access
- ▶ Real-time GPS
- ▶ Rear camera with backup assist
- ▶ Emergency distress alarm
- ▶ Forward facing camera and a right side camera
- ▶ Six lane automated enforcement coverage
- ▶ Evidence and citation preparation, similar to our other vendors

## FXS PRODUCT FEATURES



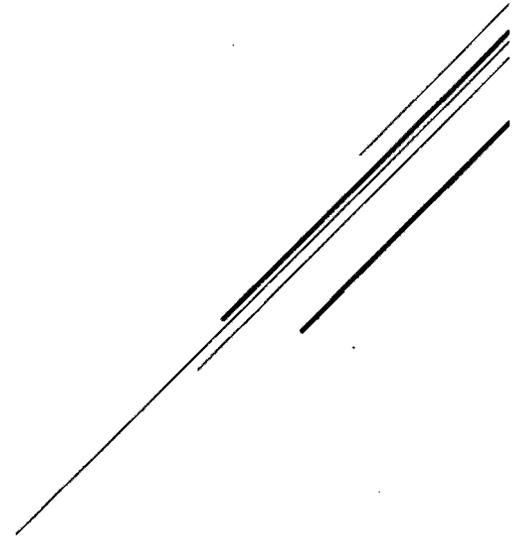
- ▶ FXS continued to offer 100% free installation of the entire bus fleet. It turns out that this is in fact their proven successful business model
- ▶ In return, they receive all of the citation revenue until they recoup their initial investment of approx. \$18 million dollars
- ▶ As the break even point approaches a revenue sharing plan will be negotiated
- ▶ MCPS saves approx. \$800,000 annually due to not having to outfit their fleet replacement of 100 busses at a cost of \$8,000 per bus
- ▶ MCPD will save approx. \$250,000 in camera lease fees to our current vendor and will use those funds to cover the expense of adding 3 additional employees to process stop arm violations

## FXS BUSINESS MODEL



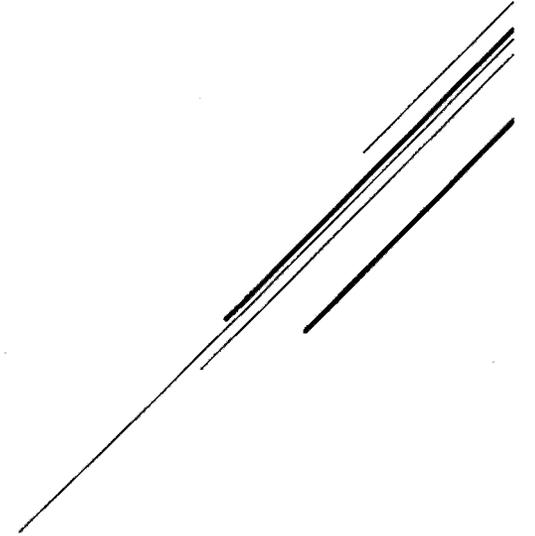
- ▶ FXS offers a technologically superior product compared to other vendors
- ▶ FXS has excellent technical and customer support
- ▶ FXS will offer better protection for school bus users by increasing safety in and around the bus as well as superior enforcement capabilities for stop arm violators
- ▶ FXS will outfit the entire MCPS bus fleet at NO COST to the County or MCPS

## SUMMARY



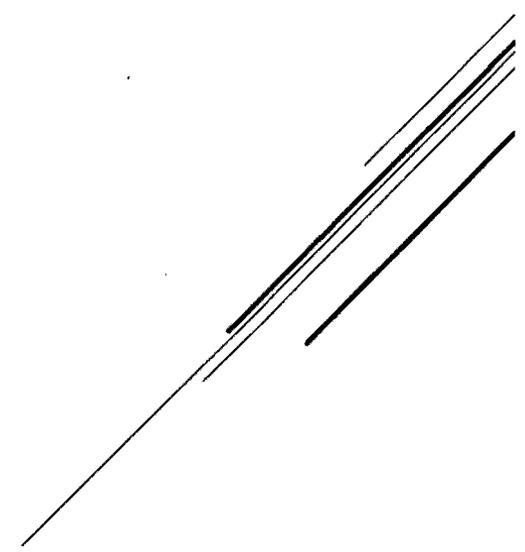
- ▶ After lengthy negotiations, the Contract was signed and executed on June 30, 2016
- ▶ The MOU was completed and signed on June 30, 2016

WHAT IS THE STATUS OF THE  
CONTRACT AND THE MOU?



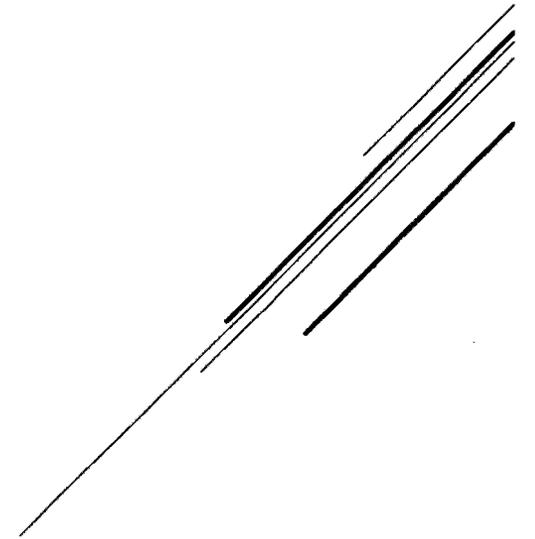
- ▶ The contract was signed on June 30, 2016
- ▶ Orders for equipment have been placed
- ▶ Five (5) busses are already outfitted and ready to go
- ▶ One hundred (100) will be operational by December 30<sup>th</sup>
- ▶ An additional four hundred (400) will be operational by December 30, 2017
- ▶ The remaining fleet will be operational by June 30, 2019
- ▶ The top 200 most frequently violated routes, as identified by MCPS and its drivers, will be the first to be implemented

WHAT IS THE TIMEFRAME FOR  
IMPLEMENTING THE CONTRACT AND WHEN  
WILL THE CAMERAS BE IN PLACE?



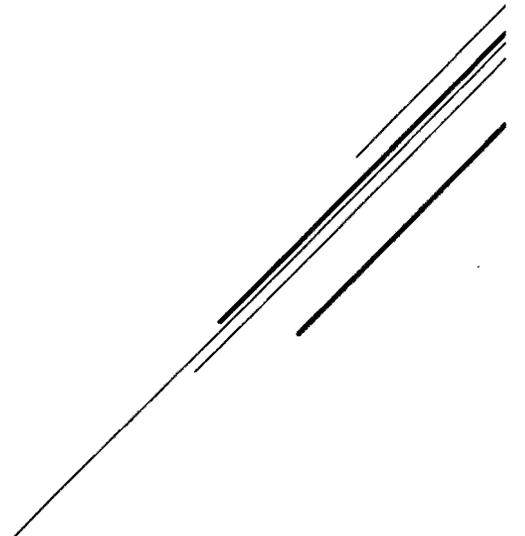
- ▶ MCPD currently has two employees who focus on the review and overview of the school bus violation program which also includes court testimony and evidence presentation
- ▶ The plan is for MCPD to use its annual \$250,000 savings in leasing current vendor equipment to fund the hiring of three additional employees to handle the increase in workload in stop arm enforcement and court preparation and testimony

WHAT STAFFING IN THE POLICE  
DEPARTMENT WILL ASSIST WITH  
ADMINISTRATION OF THE PROGRAM?



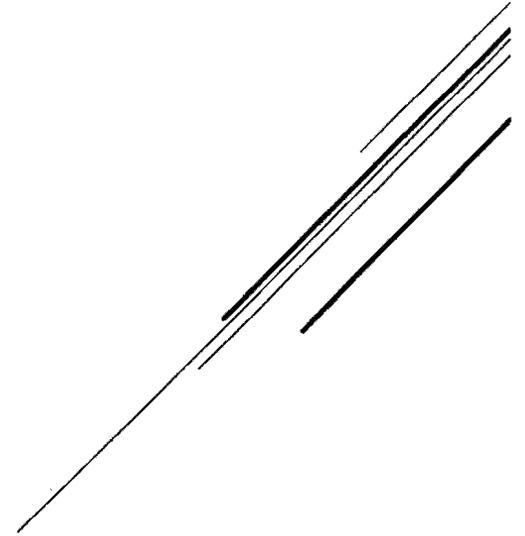
- ▶ The initial term of the contract will expire on June 30, 2021
- ▶ There are an additional 6 1-year options after that under the same terms and conditions unless otherwise modified
- ▶ MCPS may terminate this Agreement prior to the Expiration Date in accordance with Article 26 of the MCPS General Contracting Articles (as described in Section XII), and subject to the survival of any provisions in accordance with their specific terms.

WHEN WILL THE CONTRACT END, AND IF THIS REQUIRES EARLY TERMINATION, HOW WILL THAT OCCUR?



- ▶ Mirroring our Speed Camera and Red Light programs, violators will make their payments into a secured "Lock Box"
- ▶ MCPD and FXS will reconcile the incoming funds and the citations so that a monthly invoice can be verified
- ▶ The funds will go from the "Lock Box" to the County General Fund
- ▶ The County will then transfer the funds to a MCPS Entrepreneurial Fund and the payment to the vendor will be made from that fund

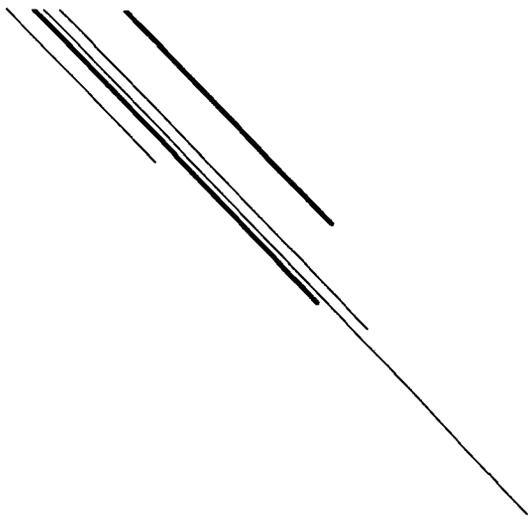
PLEASE DETAIL HOW THE FUNDING  
STREAMS WILL FUNCTION FOR ALL PARTIES  
INVOLVED?



- ▶ Again, mirroring our Speed and Red Light Camera program, when a violator requests a court date rather than paying the fine, a court date will be scheduled, a court package will be prepared by the vendor and reviewed by MCPD A.T.E.U. staff
- ▶ On the court date, A.T.E.U. staff, specifically a Supervisor and a member of the approval staff, will attend District Court and testify, if necessary
- ▶ Since the programs inception in January 2014 4,829 citations have been issued. 96 violators, or 2%, requested a court date. Only 69, or 1%, have actually shown up for court
- ▶ As in all automated programs, fines that are paid in District Court are remanded to the State of Maryland and not the County

## WHAT HAPPENS TO CONTESTED TICKETS IN COURT?

# QUESTIONS?





**FORCE MULTIPLIER**  
SOLUTIONS

## School Bus Safety Program

Pilot Program  
Montgomery

From January 1, 2016  
To May 20, 2016

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## Letter of Introduction

Stakeholders  
Montgomery County



Dear Stakeholders,

Thank you for the opportunity to participate in the School Bus Safety Program pilot. Force Multiplier Solutions (FXS) is honored to partake, and is looking forward to helping you better protect your students. As you now know, Force Multiplier Solutions (FXS) has launched BusGuard, a fully integrated security and transit management system that is scalable and upgradable, featuring live real-time video and audio, with additional options and special features based on the needs of each school district. Over the past 9 years, FXS has equipped more than 3,000 buses in 16 school districts in two large cities with the BusGuard system to protect students, drivers, and other riders. Our commitment to student safety is unfailing, our technical solution is the most comprehensive available, and our community outreach ensures compliance.

While creating a system for the Dallas County Schools with a fleet of about 1,700 buses, we developed a camera system, an interior monitoring system, helped write a city ordinance, created a procedure for citations, and expanded our program to cover aspects of school bus safety that go far beyond those of our competitors: all at no cost to our customer. FXS operates systems on more than 3,000 buses throughout Texas and Louisiana. No other competitor operates as many systems, nor do their systems offer the scalability of our BusGuard solution.

BusGuard protects students from theft, drug dealers, sexual assault, fights, weapons, other crimes and inappropriate behavior, and also helps protect school bus drivers from abuse or trouble caused by students. While some districts request systems capable of recording activity related to motorists who illegally pass stopped school buses, our offer also includes interior cameras and two-way Voice-Over-IP (VOIP) communication, as well as a silent alarm for the bus driver to quickly signal an emergency. With BusGuard, school officials are given live audio and visual links inside the bus to assess activity in the event of an emergency, or to investigate a report of inappropriate or illegal behavior.

FXS believes in protecting all students and drivers on 100% of buses for each school district. Our competitors typically offer to install only exterior cameras on 20% of the bus fleet. Our solution protects 100% of students riding buses: not 2 out of 10. Led by people with experience in law enforcement and in identifying and mitigating threats, FXS is on a mission to protect students while changing motorists' behavior. The goal of our program is to improve the safety of our students as they enter and exit your buses on their way to and from school. We have seen a 20% reduction in stop arm violations in the districts that have implemented our program.

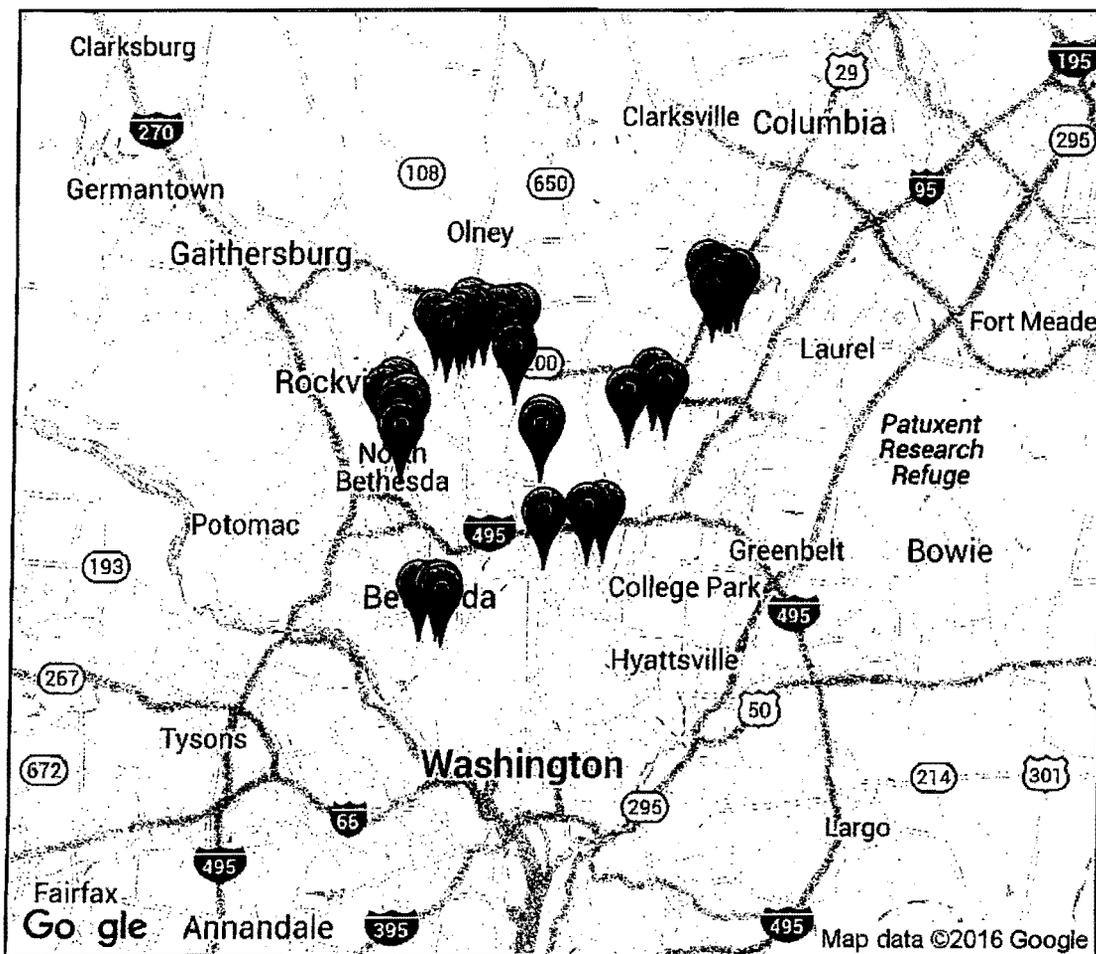
We began the pilot by installing a complete system on 5 buses. We have created a comprehensive report summarizing the details of the pilot. In this report you will find a compilation of data, maps, graphs and charts that represents the complete performance of the pilot from January 1, 2016 until May 20, 2016.

David Poirier  
President & COO  
7217 Lockport Place  
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Lorton, VA 22079  
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### Overview of Violations by Location

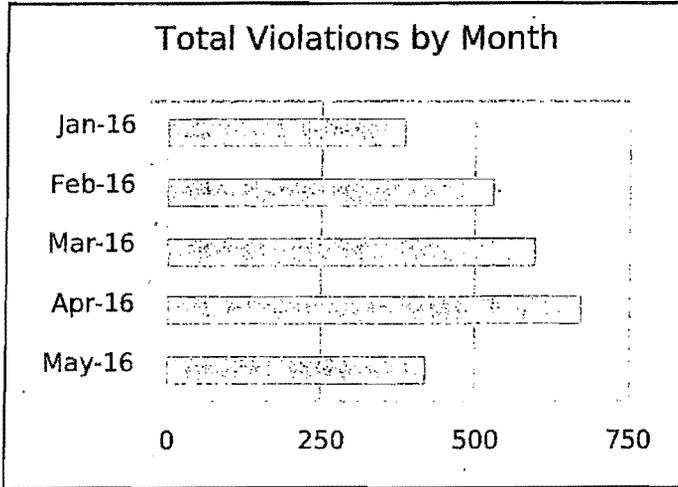
The below map indicates the top 56 unique locations with the highest violations, occurring from 1/01/16 to 5/20/16.

Total Violations and Locations	
Total Violations	2620
Unique Locations with Violations	57

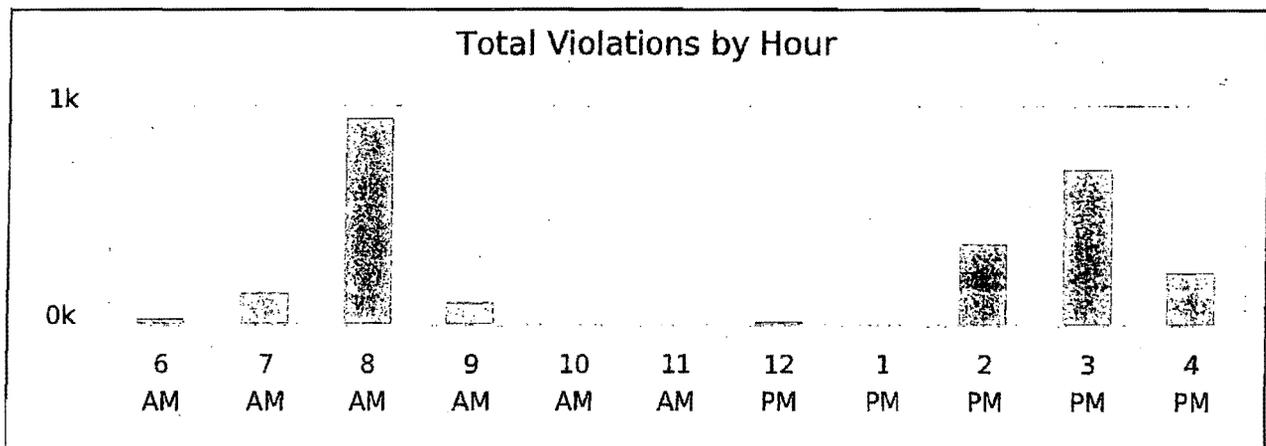
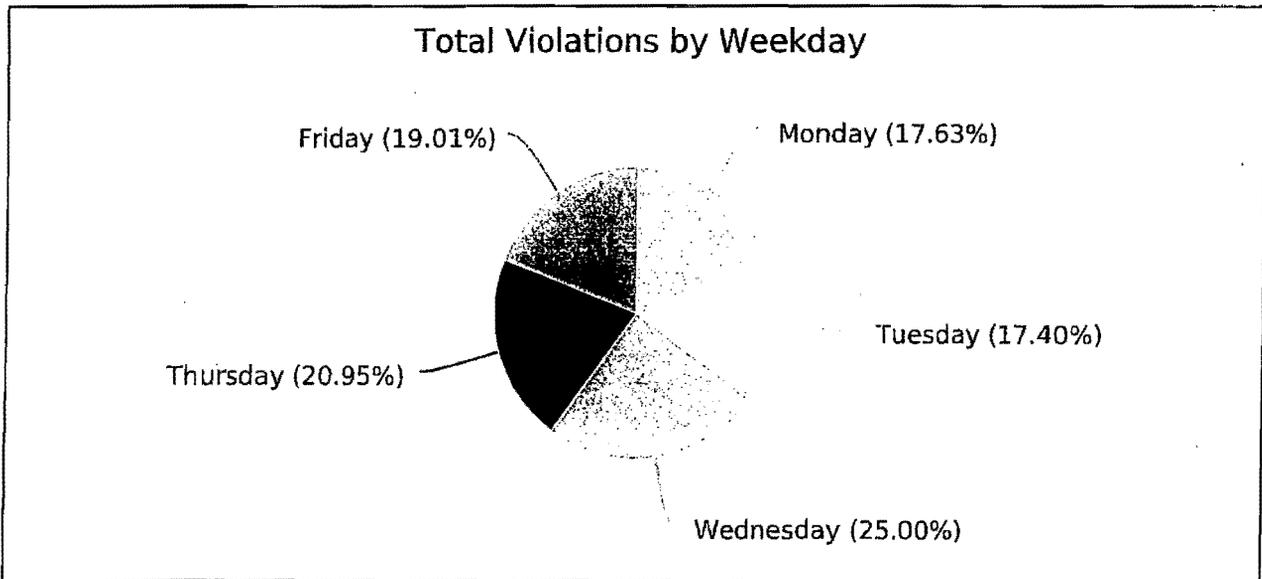


### Overview of Violations by Dates and Times

The charts below indicate the total number of violations based on the month, day of the week, and hour of the day, occurring from 1/01/16 to 5/20/16.



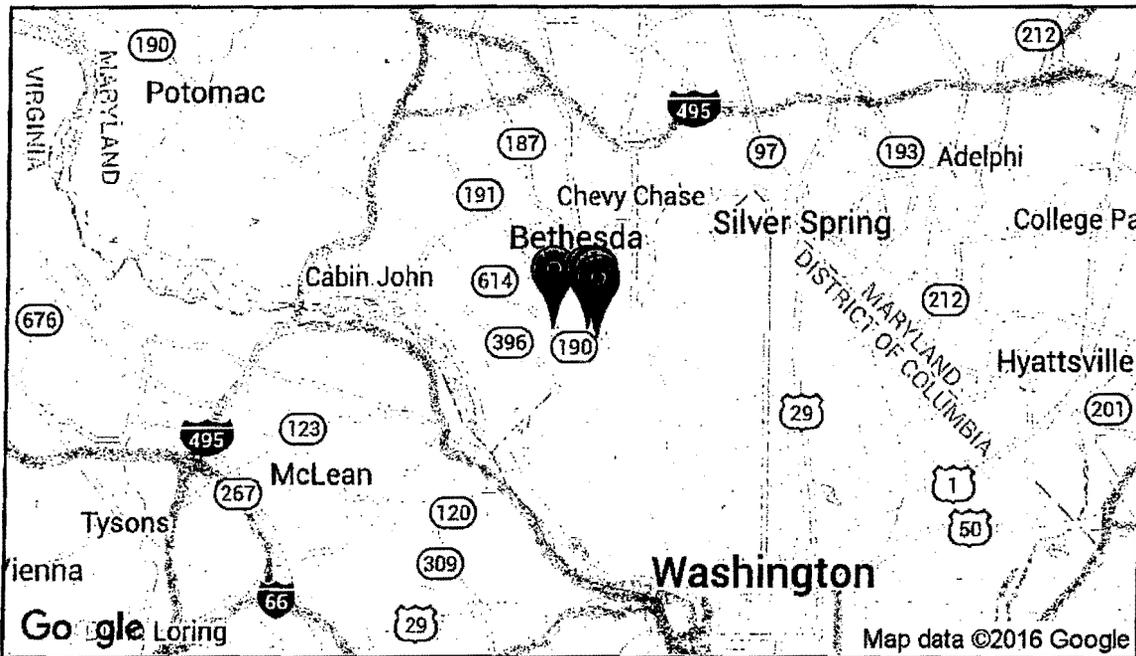
Total Violations by Month	
January 2016	388
February 2016	534
March 2016	600
April 2016	675
May 2016	423



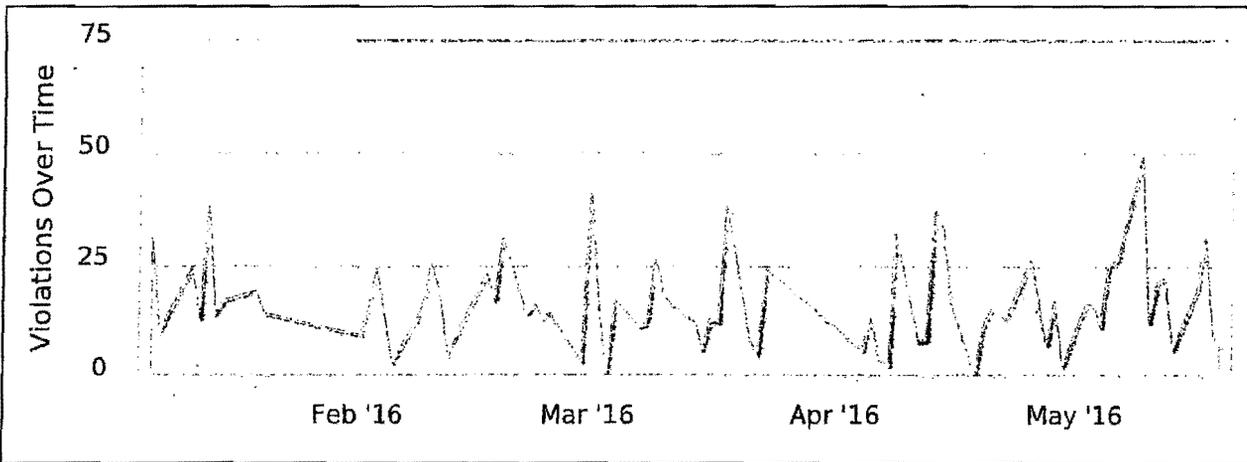
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### Details for Bus 02038

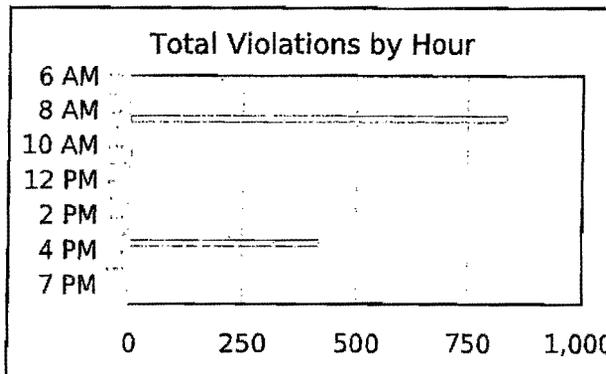
The bus 02038 had a total of 1274 violations, with the first violation occurring on 1/06/16 and the most recent violation occurring on 5/19/16.



The above map shows 8 unique locations where violations occurred for bus 02038.

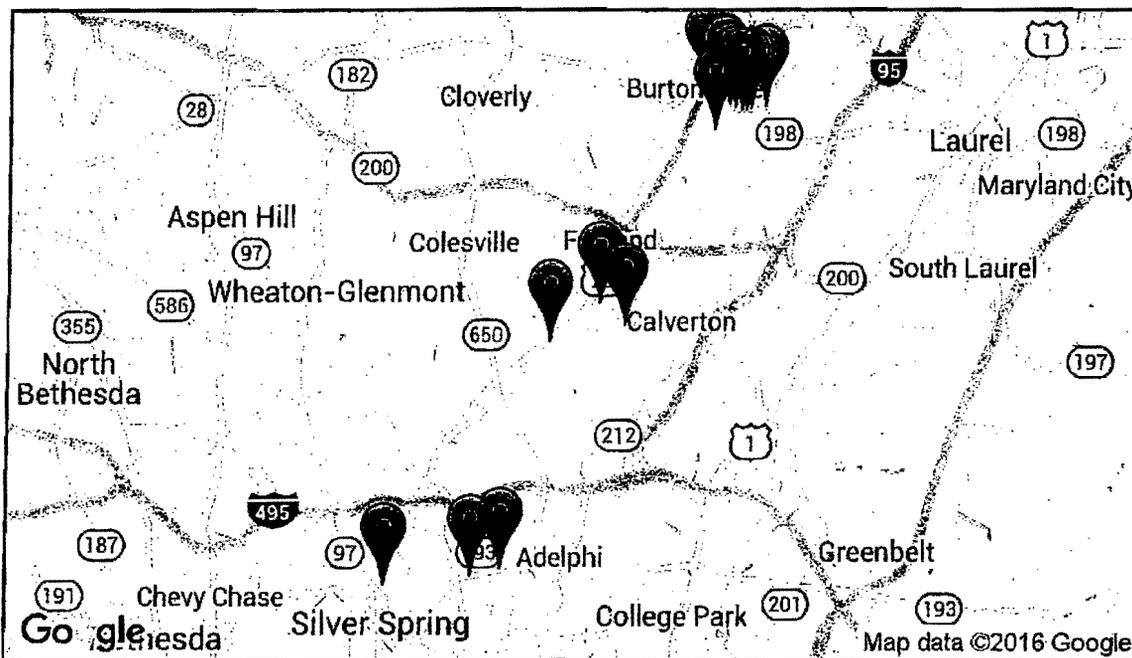


Top 5 Locations for Bus 02038	
Violations	Location
1034	5100 block of River Rd
127	4400 block of S Park Ave
48	5300 block of Friendship Blvd
29	5300 block of Friendship Boulevard
15	4600 block of N Park Ave

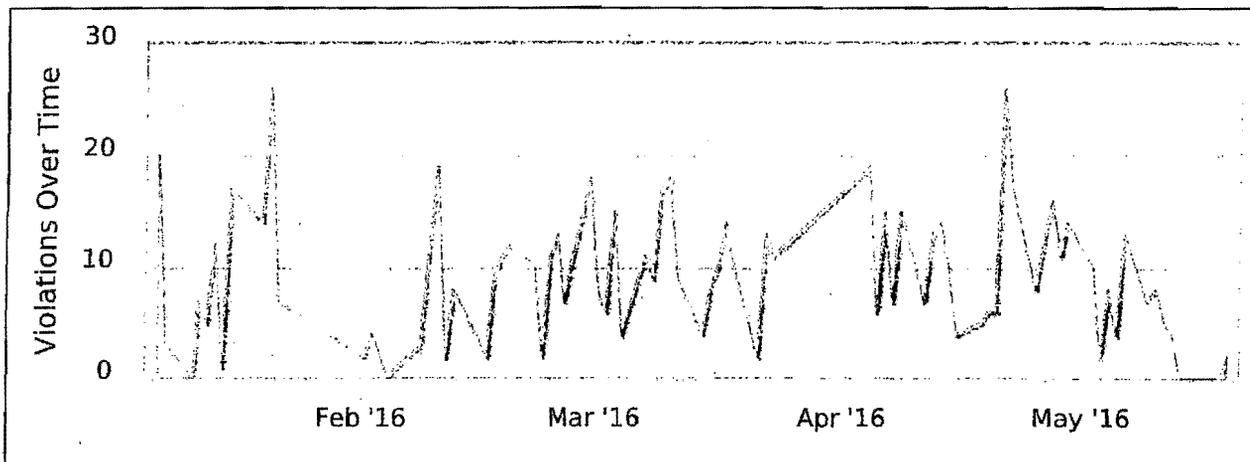


### Details for Bus 15085

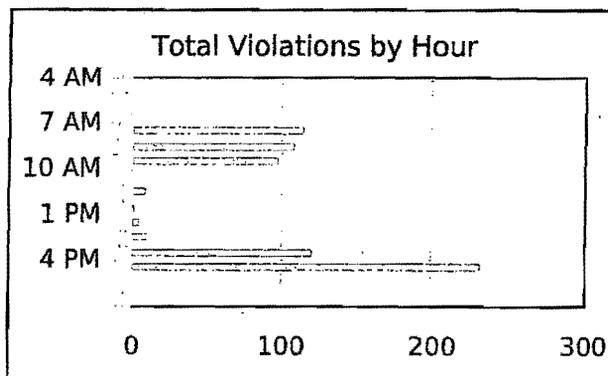
The bus 15085 had a total of 711 violations, with the first violation occurring on 1/06/16 and the most recent violation occurring on 5/19/16.



The above map shows 20 unique locations where violations occurred for bus 15085.



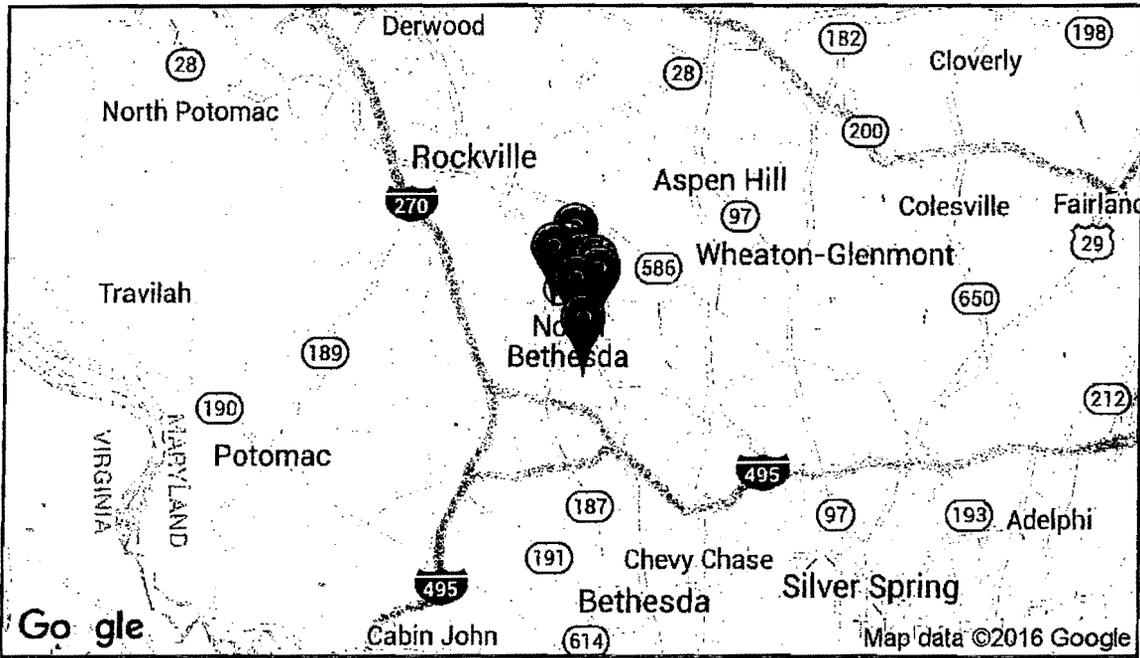
Top 5 Locations for Bus 15085	
Violations	Location
204	4400 block of Sandy Spring Rd
184	4600 block of Sandy Spring Rd
140	4300 block of MD-198
62	4300 block of Sandy Spring Road
53	15300 block of Dino Dr



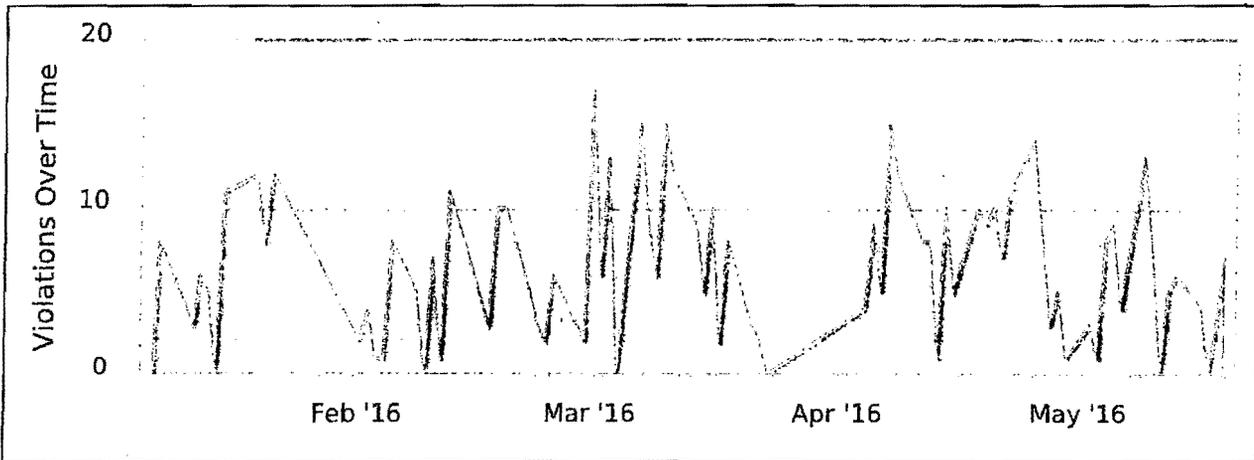
22

### Details for Bus 05039

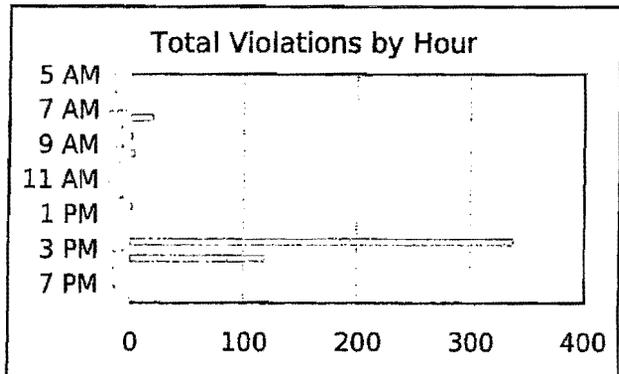
The bus 05039 had a total of 500 violations, with the first violation occurring on 1/06/16 and the most recent violation occurring on 5/19/16.



The above map shows 11 unique locations where violations occurred for bus 05039.

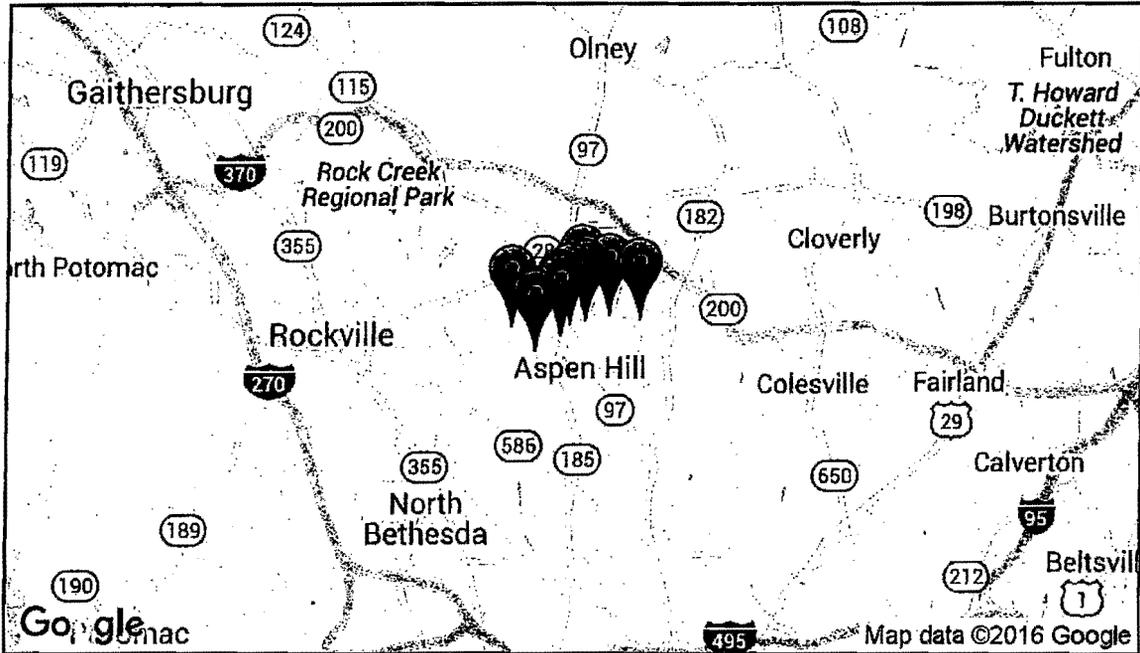


Top 5 Locations for Bus 05039	
Violations	Location
263	11900 block of Rockville Pike
72	5900 block of Montrose Rd
39	6100 block of Montrose Rd
33	5900 block of Executive Blvd
32	5700 block of Bou Ave

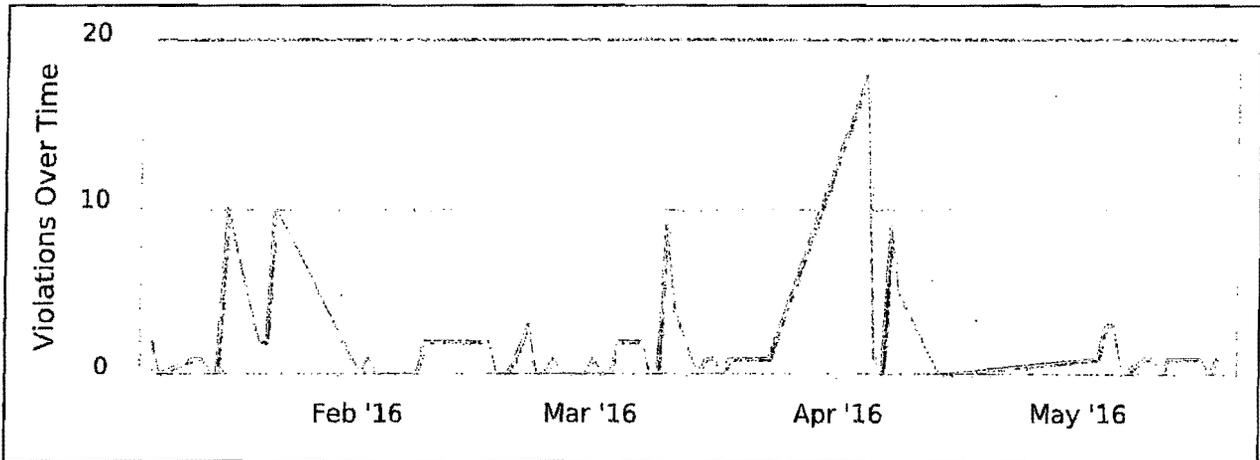


### Details for Bus 05048

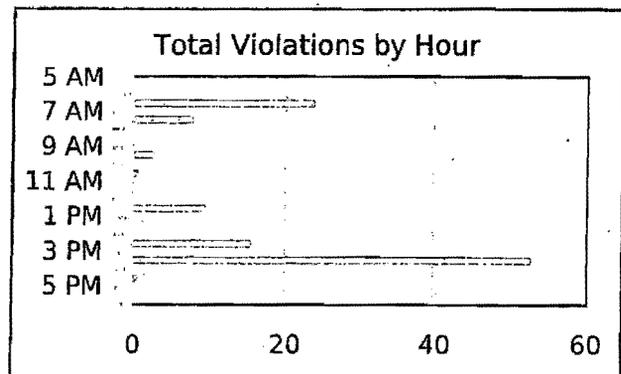
The bus 05048 had a total of 116 violations, with the first violation occurring on 1/06/16 and the most recent violation occurring on 5/19/16.



The above map shows 10 unique locations where violations occurred for bus 05048.

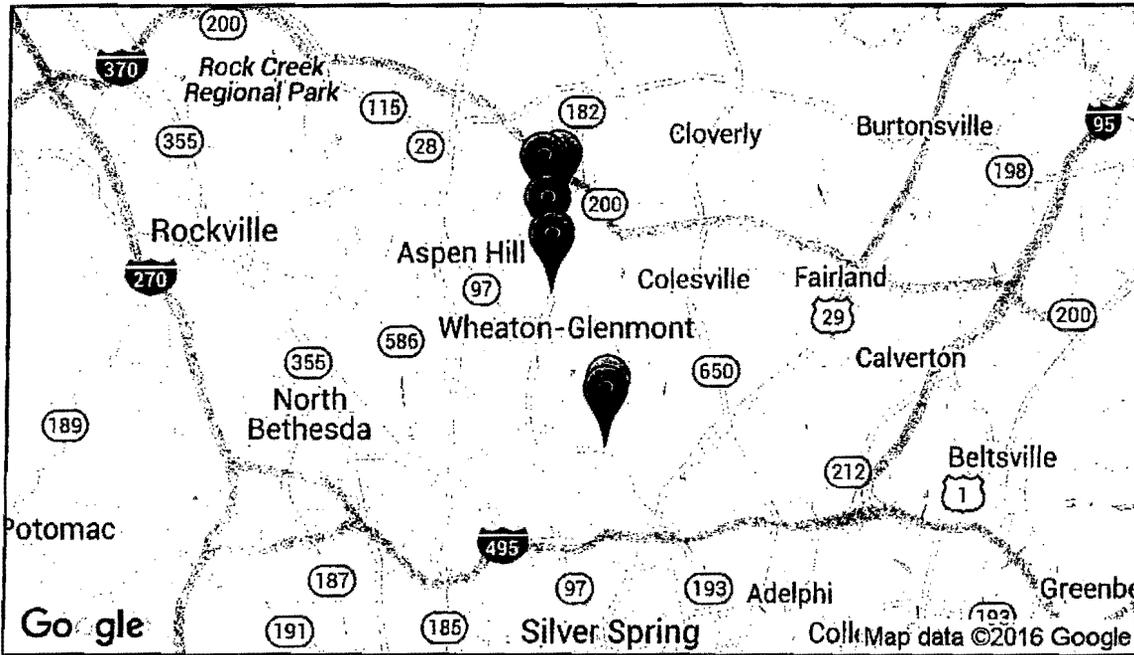


Top 5 Locations for Bus 05048	
Violations	Location
42	3000 block of Bel Pre Rd
34	14200 block of Georgia Ave
16	14100 block of Georgia Ave
10	2600 block of Bel Pre Rd
9	4000 block of Postgate Ter

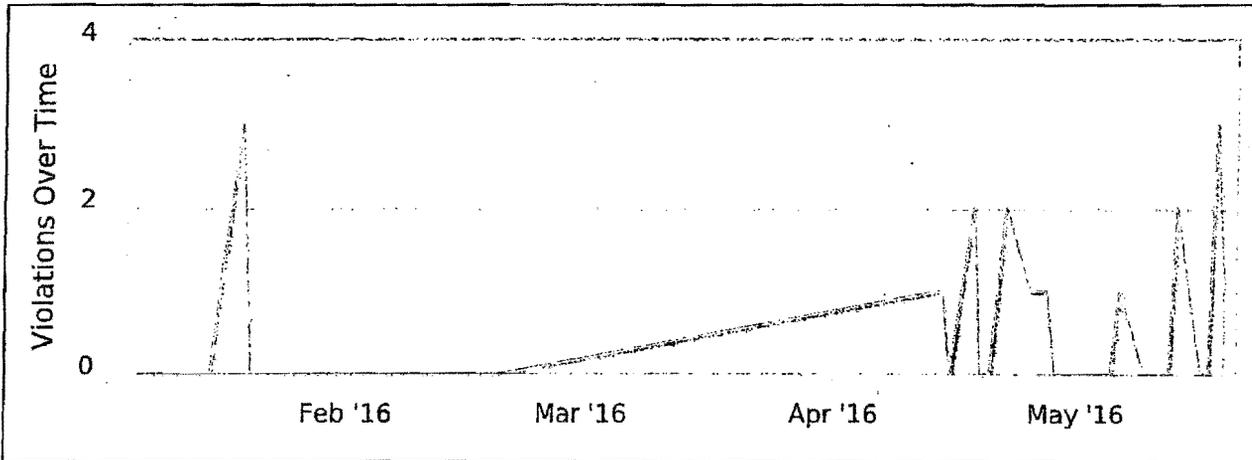


### Details for Bus 04011

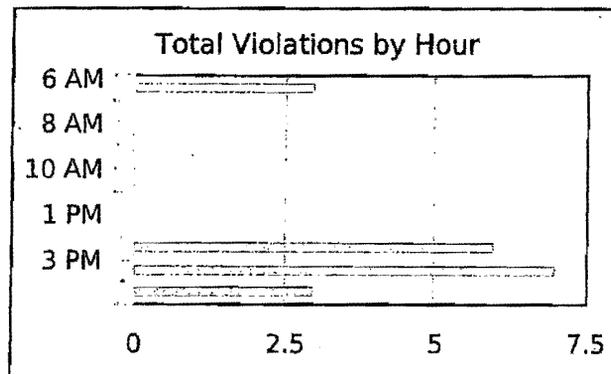
The bus 04011 had a total of 19 violations, with the first violation occurring on 1/06/16 and the most recent violation occurring on 5/19/16.



The above map shows 8 unique locations where violations occurred for bus 04011.



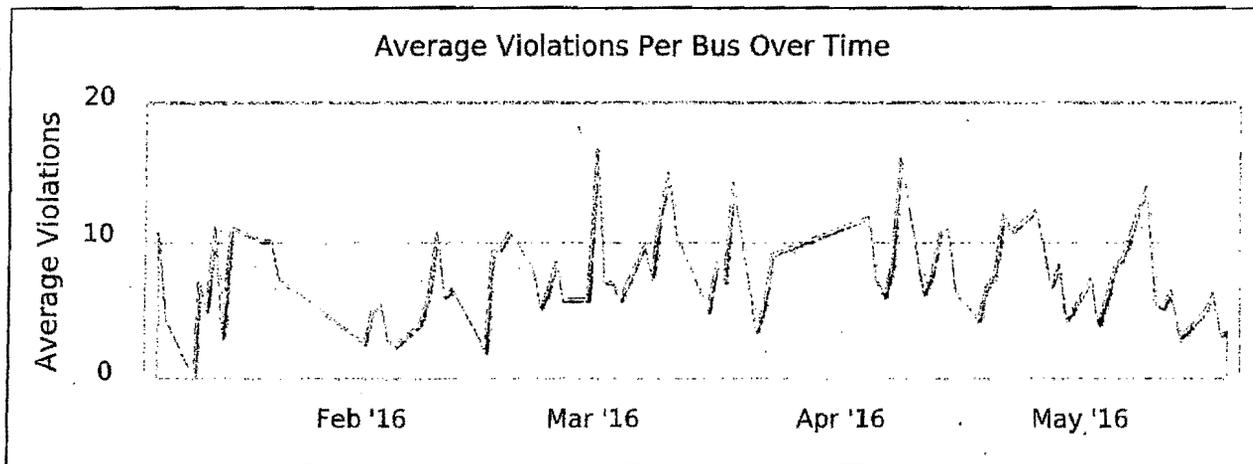
Violations	Location
6	14300 block of Rosetree Ct
3	2300 block of Sun Valley Cir
2	2000 block of Middlebridge Dr
2	13200 block of Layhill Rd
2	1100 block of Arcola Ave



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### Appendix: Overview per Week

Below are details per week from 1/01/16 to 5/20/16. This includes the total number of violations for the week, the average number of violations per bus, and the average number of violations per weekday.



The above chart shows the average number of violations for buses running per day.

Week	Total Violations	Average per Bus	Average per Weekday
Jan/3/16 - Jan/9/16	74	14.8	14.8
Jan/10/16 - Jan/16/16	185	37.0	37.0
Jan/17/16 - Jan/23/16	129	25.8	25.8
Jan/31/16 - Feb/6/16	91	18.2	18.2
Feb/7/16 - Feb/13/16	154	30.8	30.8
Feb/14/16 - Feb/20/16	130	26.0	26.0
Feb/21/16 - Feb/27/16	136	34.0	27.2
Feb/28/16 - Mar/5/16	169	42.2	33.8
Mar/6/16 - Mar/12/16	219	54.7	43.8
Mar/13/16 - Mar/19/16	164	41.0	32.8
Mar/20/16 - Mar/26/16	71	17.7	14.2
Apr/3/16 - Apr/9/16	197	49.2	39.4
Apr/10/16 - Apr/16/16	187	37.4	37.4

### Appendix: Overview per Week

Below are details per week from 1/01/16 to 5/20/16. This includes the total number of violations for the week, the average number of violations per bus, and the average number of violations per weekday.

Violations per Week			
Week	Total Violations	Average per Bus	Average per Weekday
Apr/17/16 - Apr/23/16	165	41.2	33.0
Apr/24/16 - Apr/30/16	128	31.5	25.2
May/1/16 - May/7/16	164	32.8	32.8
May/8/16 - May/14/16	171	34.2	34.2
May/15/16 - May/21/16	88	17.6	17.6