Safe Speed Program
Montgomery County Police Department

CountyStat meeting

December 9, 2008

CountyStat

CountyStat Principles

- Require Data Driven Performance
- Promote Strategic Governance
- Increase Government Transparency
- Foster a Culture of Accountability

Agenda

- Introductions
- Safe Speed Program
  - History
  - Program Details
- Speed Camera Placement: Decision Making Process
- Program Impacts
  - Speeding Violations
  - Crashes
- Moving Forward
- Wrap-up

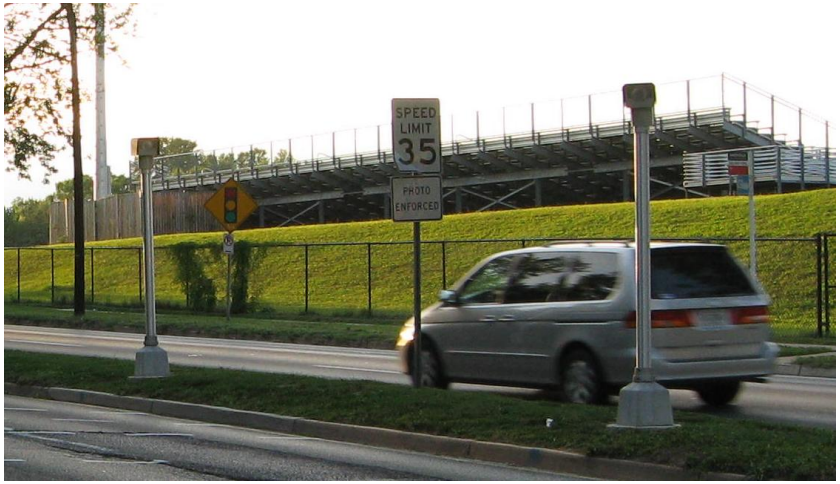
Safe Speed Program: History

- **Initiated in 2006, Montgomery County was given the authority to operate a pilot speed limit enforcement program in residential areas and school zones**
- **11 cameras were initially installed in 2007**
- **Since then, 93 additional sites have been monitored throughout the County**
  - **30** Fixed pole units
  - **63** Mobile locations in total (Maximum 6 sites at any one time)
- **MCPD is currently in the process of identifying and installing 30 additional fixed pole cameras. This expansion is scheduled to conclude in the first quarter of 2009**

This automated speed enforcement program is the first in Maryland to enforce speed limits in residential areas and school zones. It is one of 45 communities in the country to have such a program.

Sources: MCPD; Insurance Institute for Highway Safety

Safe Speed Program: Fixed v. Mobile Sites



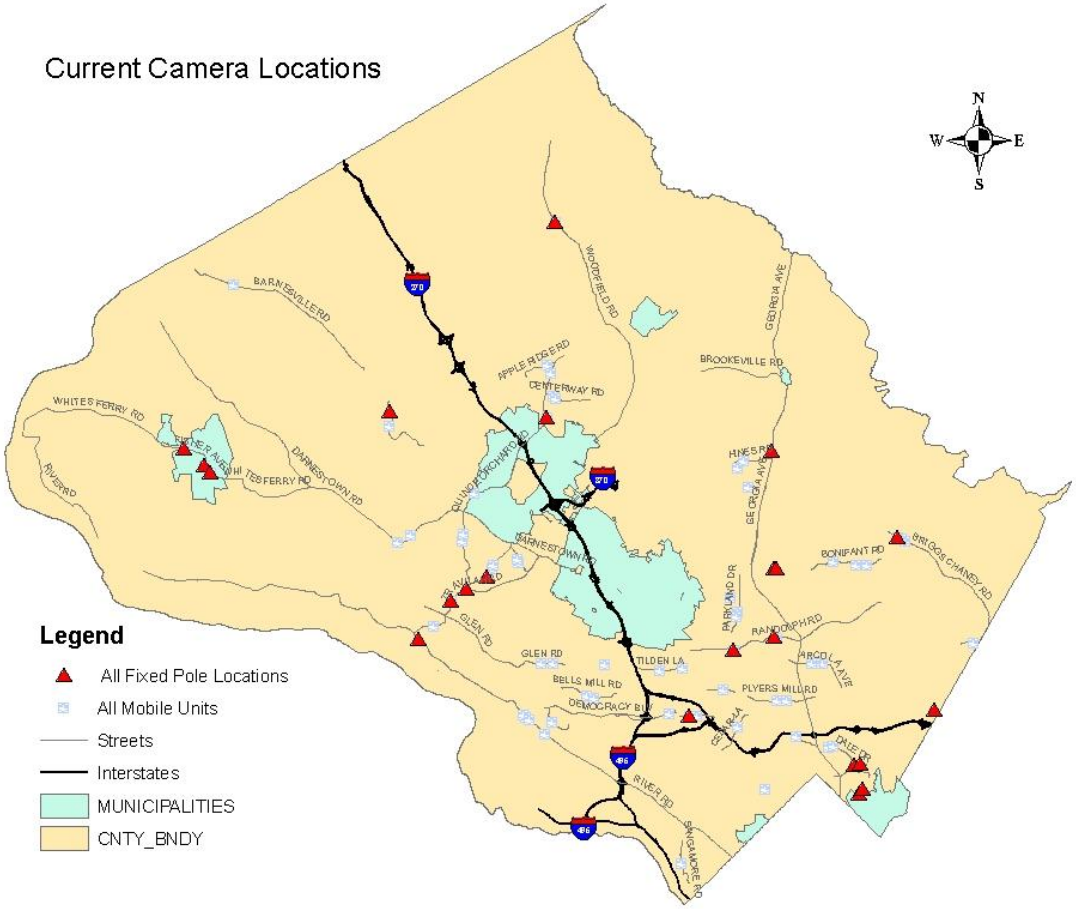
Fixed pole units

- Speed cameras at a permanent location
- Monitor passing vehicles 24 hours a day, 365 days a year

Mobile units

- Speed cameras housed in MCPD vehicles
- Monitor passing vehicles for 2 shifts a day, 6 days a week
- Maximum of 6 mobile vans out at one time

Speed Camera Placement: All Camera Locations



This map displays all fixed speed camera locations, as of October 2008. It also displays all locations where there has been a mobile unit. Mobile units typically remain at one location for approximately 6 weeks.

Sources: MCPD

Safe Speed Program: Purpose

"The safety of the people who live and work in Montgomery County is always our top priority. Automated speed enforcement will help our County enforce the traffic laws and combat and correct the aggressive driving behavior of those who choose to speed. Our goal is to save lives, and speed cameras will give us another resource that will complement our existing enforcement measures."
Montgomery County Police Chief
J. Thomas Manger

- **Safe Speed Goals**
  - To reduce crashes, including pedestrian-related collisions
  - To decrease speeding violations
- **Who Initiated Programs/Manner of implementation**
  - Implementation of the Automated Speed Enforcement Program began with an understanding of both the goals and the need for community input. MCPD continues to adhere the three E's of Traffic Safety: Education, Engineering and Enforcement. This three pronged approach ensures coordination with MCPD, our allied County agencies, and the State for the most efficient operation

Sources: MCPD

Safe Speed Program: Results Overview

	2007	2008	2009 (Projection)	Totals
Tickets - Fixed Pole Cameras	64,565	303,304	360,000*	821,030
Tickets - Mobile Cameras	46,925	46,236		
Total Revenue	$212,206	$11,141,035	$14,400,000	$25,753,241*

*This figure is calculated by dividing anticipated FY09 speed camera citation revenue by the $40 citation fine.

To date, the photo speed program has had a positive effect on the speeds and related collisions on those roadways targeted by MCP personnel.

Sources: MCPD; Insurance Institute for Highway Safety

Speed Camera Placement: Decision Making Process

- **MCPD's current process to select speed enforcement locations:**
  - *Pre-enforcement verification*: MCPD reviews requests from the community; traffic tickets written by officers; crashes and the contributing factors; community and environmental factors; location features; and pedestrian safety
  - *Data collection*: Data is gathered from the above sources and culled to the stretches of roadway where there is believed to be speeding issues
  - *Data analysis*: MCPD staff analyze collected data
  - *Needs assessment*: Input is requested from Police Traffic squads assigned to enforcement;, ATEU operators, resident requests, other government agencies (i.e. schools)
  - *Citizen Advisory Board on Traffic Issues (CABTI) review*: Meets to review data to assist in the location validation for camera enforcement

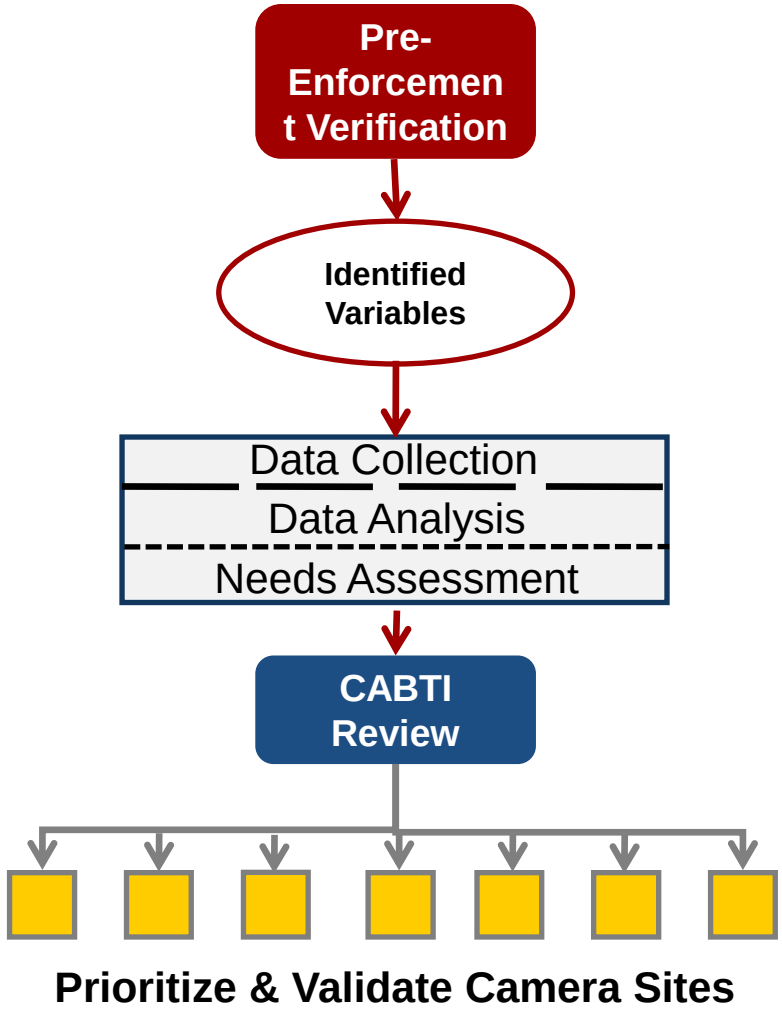
Since the inception of the Safe Speed program, the Police department has developed a rigorous process of site selection and validation.

Sources: MCPD

Speed Camera Placement: Decision Making Process

- **MCPD reached out to community members to form a committee to evaluate data to assist with camera site validation**
- **CABTI reviews for**
  - Crash endangerment
  - Speed endangerment
  - Environmental factors
  - Traffic volume metrics
  - Road prioritization by contributing factors
  - Roadway validation
  - Operational concerns
- **Data collected, analyzed, and provided to the CABTI for review provides the police a public perspective in its initial decision-making process**

The decision-making process for a speed camera location takes four weeks.



Sources: MCPD

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Safe Speed Program Analysis Overview

The Safe Speed program can be evaluated in how well it has achieved its two main goals:

- Reducing speeding violations
- Reducing crashes

Analysis was limited to the first 11 camera sites

- Installed between Sept and Dec 2007
- These 11 locations have been active the longest, and therefore have the most complete data available to analyze

11 Speed Cameras Sites in Study

- 3300 Randolph Rd e/b
- 3300 Randolph Rd w/b
- 4600 Randolph Rd e/b
- 4600 Randolph Rd w/b
- 18600 Montgomery Village Ave n/b
- 18600 Montgomery Village Ave s/b
- 300 Wayne Ave e/b
- 600 Wayne Ave w/b
- 13500 Travilah Rd n/b
- 13600 Travilah Rd s/b
- 14000 Dufief Mill Rd s/b

By monitoring speeding violation and crash history at each site, the County can assess overall program effectiveness.

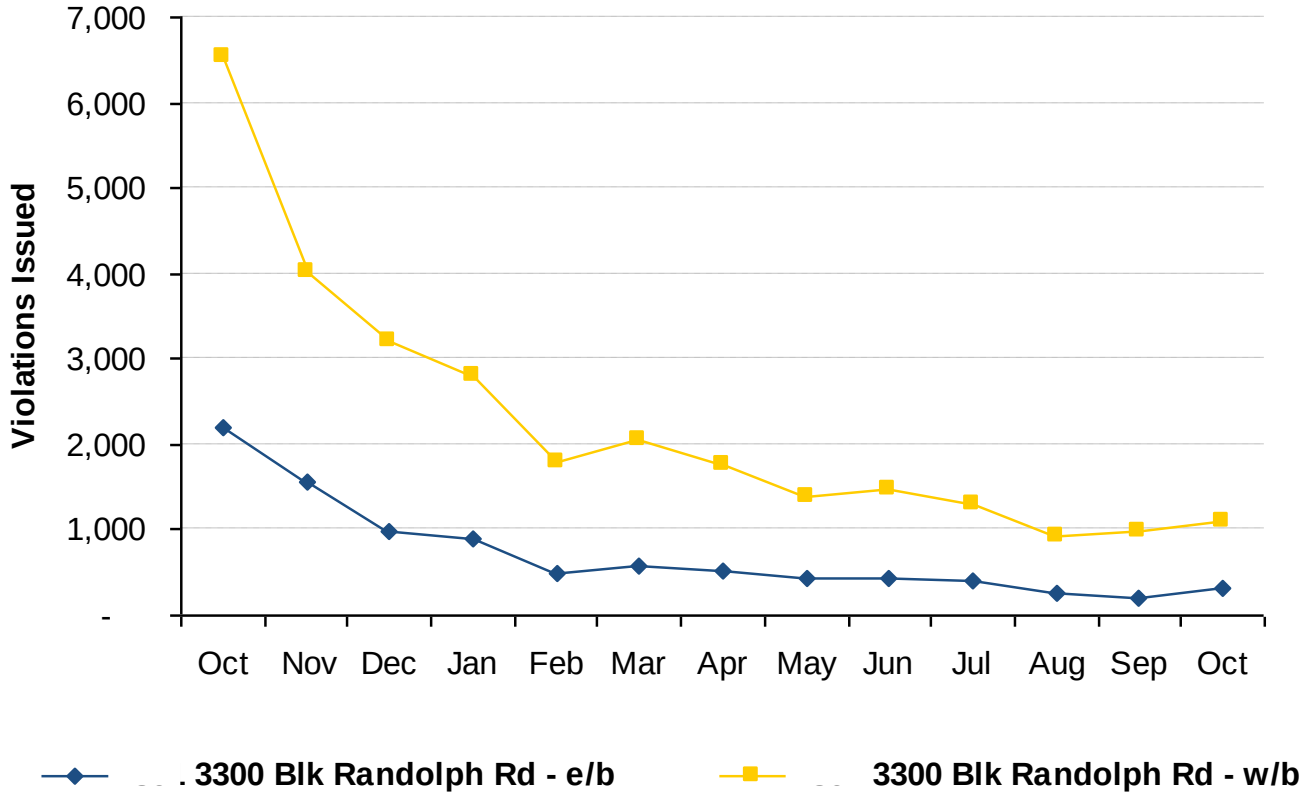
Safe Speed Program Analysis
Summary of Findings: Speeding Violations

Data was collected from the speed cameras on several variables from the first full month of camera operation to October, to have at least 8-12 months of complete data

- **Number of violations issued**
  - Speeding violations decreased dramatically by an average 69 percent at the sites studied
- **Number of vehicle passes (traffic volume)**
  - Traffic volume did not experience a similar decrease
- **Average vehicle speed**
  - MCPD analysis was used to establish average speed prior to camera installation
  - Vehicle speed decreased by an average 22 percent when comparing pre- and post-installation

Analysis of speeding violation data at each camera site was conducted from the first full month of camera operation to October 2008.

Program Impact: Speeding Violations
3300 Block Randolph Road

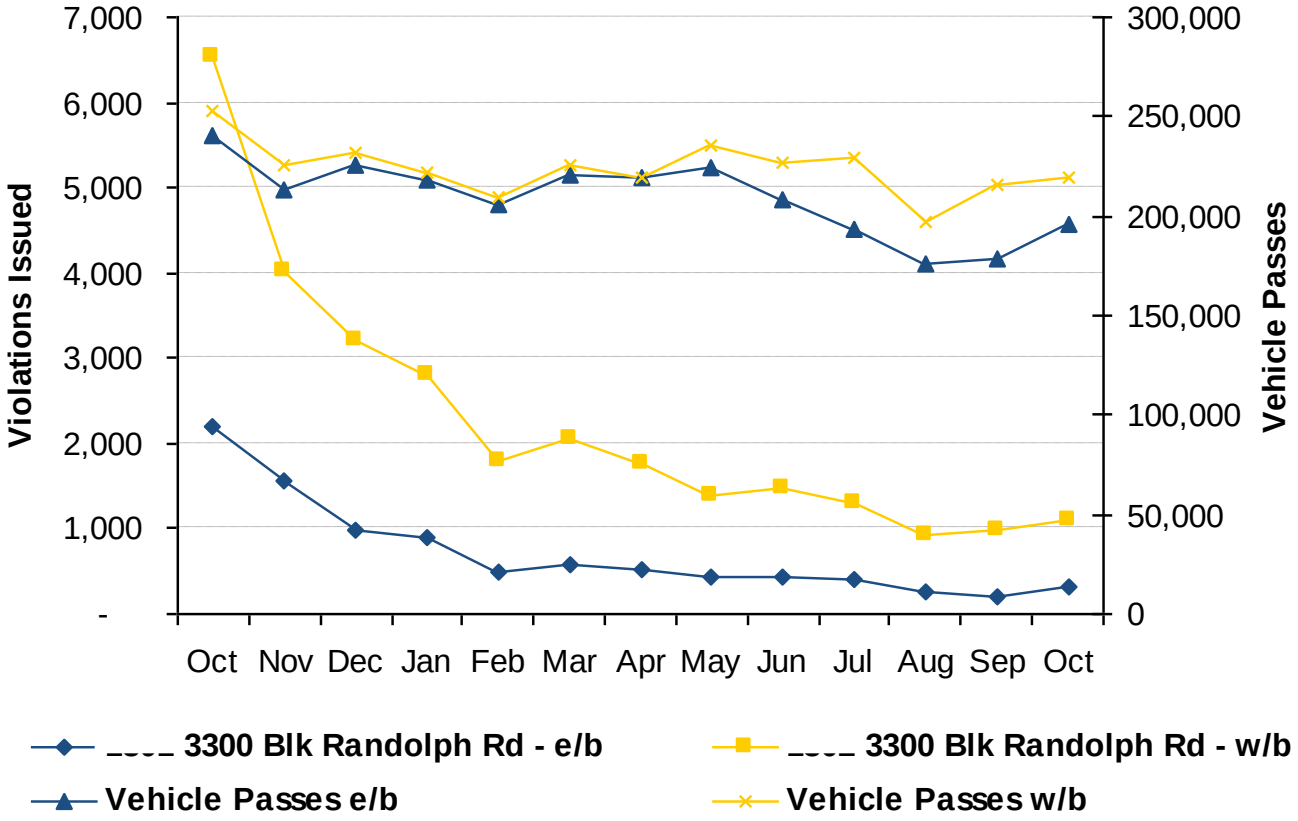


This graph displays issued violations at the speed camera site over time, starting with the first full month the camera was operational.

Sources: MCPD

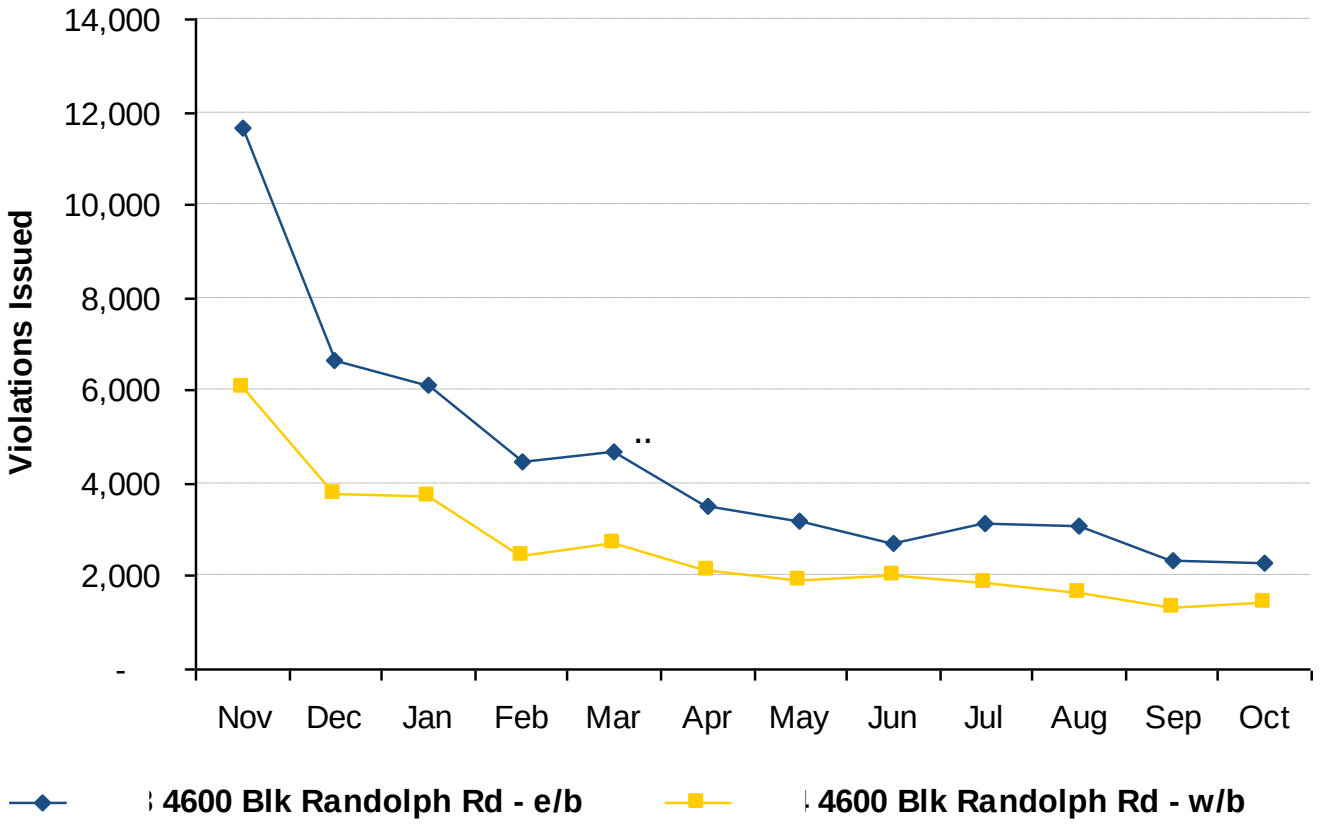
CountyStat

Program Impact: Speeding Violations
3300 Block Randolph Road



This graph displays issued violations at the speed camera site over time, starting with the first full month the camera was operational. It also displays traffic volume (vehicle passes) over the same time period.

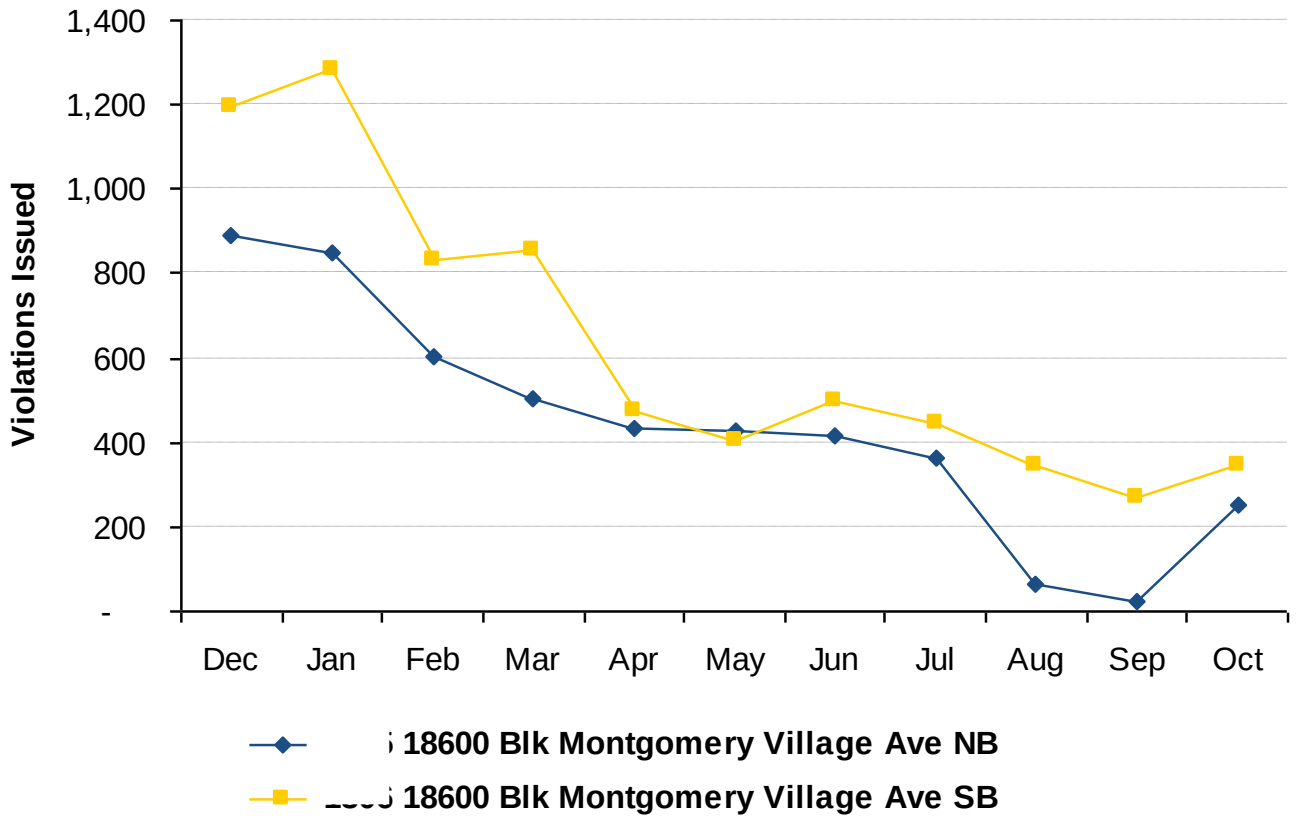
Program Impact: Speeding Violations
4600 Block Randolph Road



Sources: MCPD

CountyStat

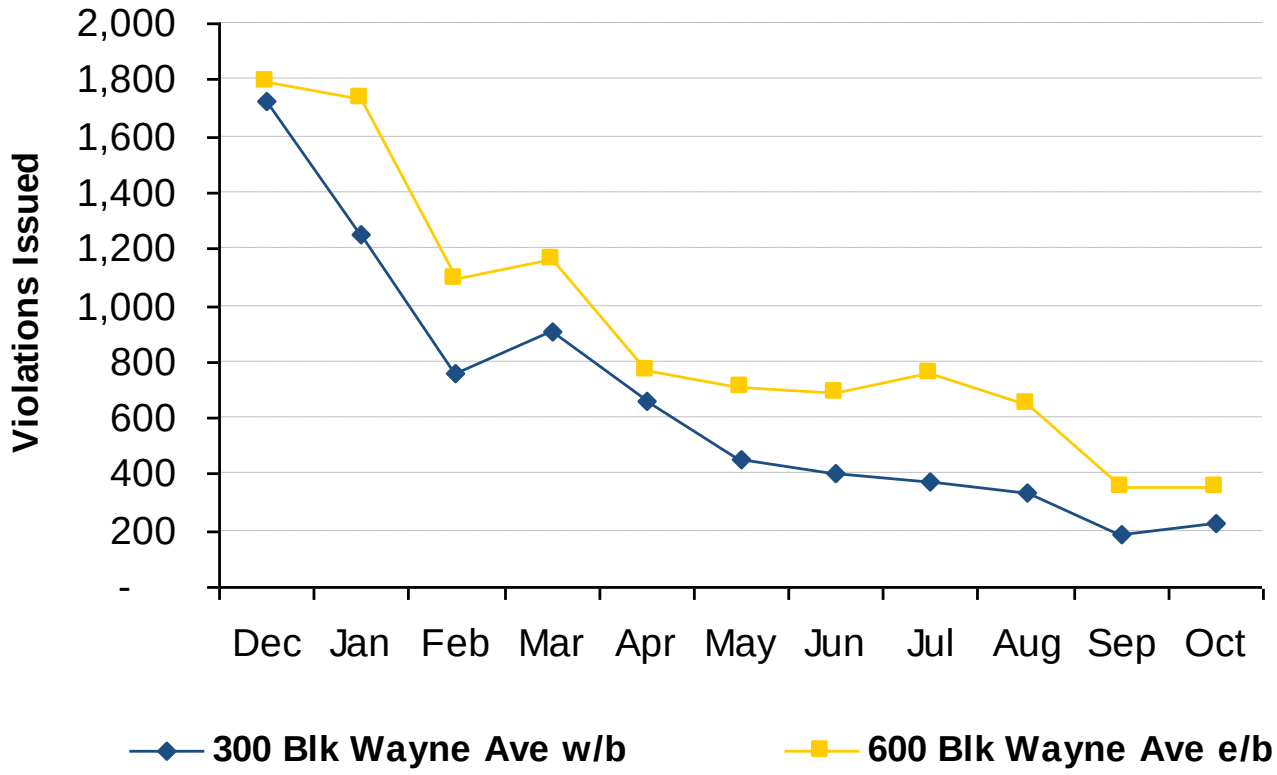
Program Impact: Speeding Violations
18600 Block Montgomery Village Avenue



Sources: MCPD

CountyStat

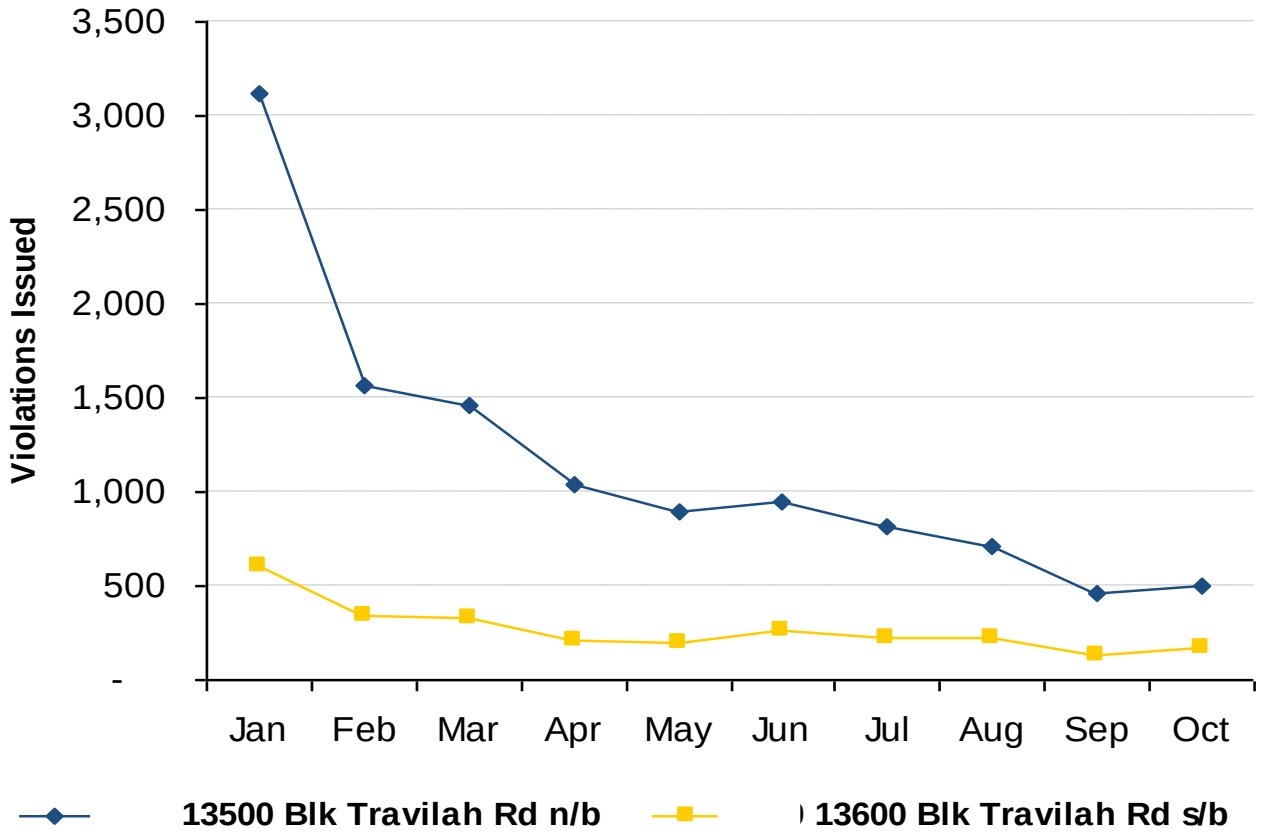
Program Impact: Speeding Violations
600 & 300 Blocks Wayne Avenue



Sources: MCPD

CountyStat

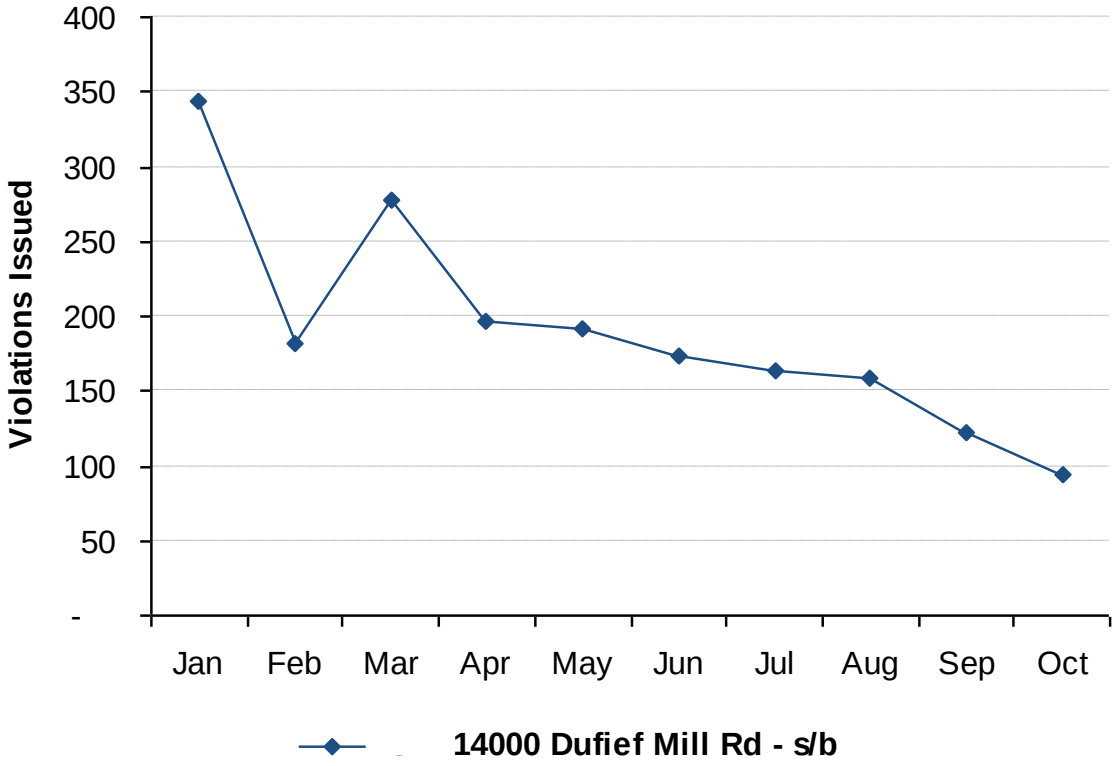
Program Impact: Speeding Violations
13500-600 Block Travilah Road



Sources: MCPD

CountyStat

Program Impact: Speeding Violations
14000 Block Dufief Mill Road



Sources: MCPD

CountyStat

Program Impact: Speed
Before and After Installation

Camera Location	Operation Start Date	Average Speed Before Installation[2]	Average Speed After Installation[1]
3300 Block Randolph Rd EB	9/21/2007	38	31.4
3300 Block Randolph Rd WB	9/21/2007	40	32.4
4600 Block Randolph Rd EB	10/26/2007	-	32.2
4600 Block Randolph Rd WB	10/26/2007	-	32.3
18600 Block Montgomery Village Ave NB	11/21/2007	45	31.5
18600 Block Montgomery Village Ave SB	11/21/2007	45	32.4
600 Block Wayne Ave EB	11/16/2007	32	30.5
300 Block Wayne Ave WB	11/16/2007	33	29.3
13500 Travilah Rd NB	12/17/2007	41	28.5
13600 Block Travilah SB	12/13/2007	51	27.8
14000 Block Dufief Mill Rd SB	12/28/2007	33	29.6

[1] Data begins with the first full month camera was operational and ends in October 2008.

[2] Average speed before installation was drawn from MCPD analysis, in the report to the CABTI; 4600 Randolph did not have data available.

Comparing speed before and after camera placement, all sites with available pre-data saw an average 22 percent decrease in vehicle speed.

Sources: MCPD

Program Impact: Speeding Violations
Results Overview and Recommendations

- **At all 11 camera sites, there is an overall downward trend in the number of speeding violations**
  - This indicates that there is an overall decrease in drivers traveling more than 10 mph over the posted speed limit at those 11 locations
  - Traffic volume remained relatively constant over the same time frame
- **Comparing pre- and post-installation speed data, there is a average speed decrease at each location**
  - Certain locations (i.e. Wayne Ave, Dufief Mill Rd) had relatively low average speeds prior to installation

Moving forward, prioritizing locations based on average vehicle speed is a way to make the most impact in driver behavior.

Sources: MCPD

Program Impact: Speeding Violations
Results Overview

An external study of the Montgomery County Safe Speed program was conducted by the Insurance Institute for Highway Safety

- Study of the first 6 months of speed camera program
- It found large and significant reductions in speeding 6 months after implementation
- Impact on speeding 10mph or more above the speed limit varied by type of study site
  - 70 percent on streets with both warning signs and cameras
  - 39 percent on streets with just warning signs
  - 16 percent on comparable residential streets in the same county with neither warning signs nor cameras
- This study did not evaluate crash outcomes because of the short time the program had been in place

This study indicates that "highly visible automated enforcement can promote community-wide changes in driver behavior." It will be necessary to continue to track outcomes to maintain program efficacy.

Sources: Insurance Institute for Highway Safety

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  - Speeding Violations
  - **Crashes**
- Moving Forward
- Wrap-up

Safe Speed Program Analysis
Summary of Findings: Crashes

Crash data was collected from the Police department and includes crashes between January 2007 through May 2008

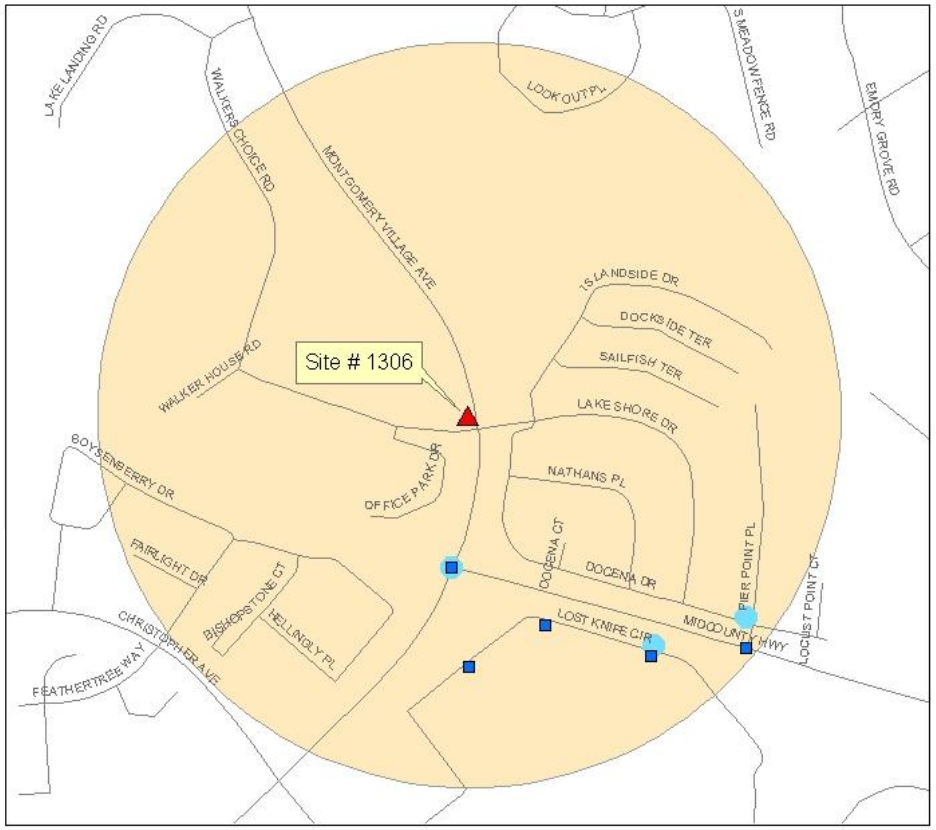
- **Number of crashes before and after camera installation**
  - Crashes within .25 miles of the speed camera were counted
    - Analysis included crashes on the same road as the camera, and within a radius of the camera
  - Overall, crashes decreased by 25 percent on the same road as the camera, after cameras were installed
  - Crashes decreased by 15 percent in the .25 mile radius around the camera

Analysis of crashes around the speed camera site before and after camera placement from a month after installation of the first camera to May 2008.

Program Impact: Crashes
18600 Block Montgomery Village Avenue

	Before installation	After installation
# of Crashes (.25 on Mont. Vill. Ave)	8	5
# of Crashes (.25 mi radius)	11	7

Note: Crash data is from 1/1/07 to 5/31/08



Shown are the number of crashes within .25 mile of the speed camera location. This map displays both the north and southbound cameras.

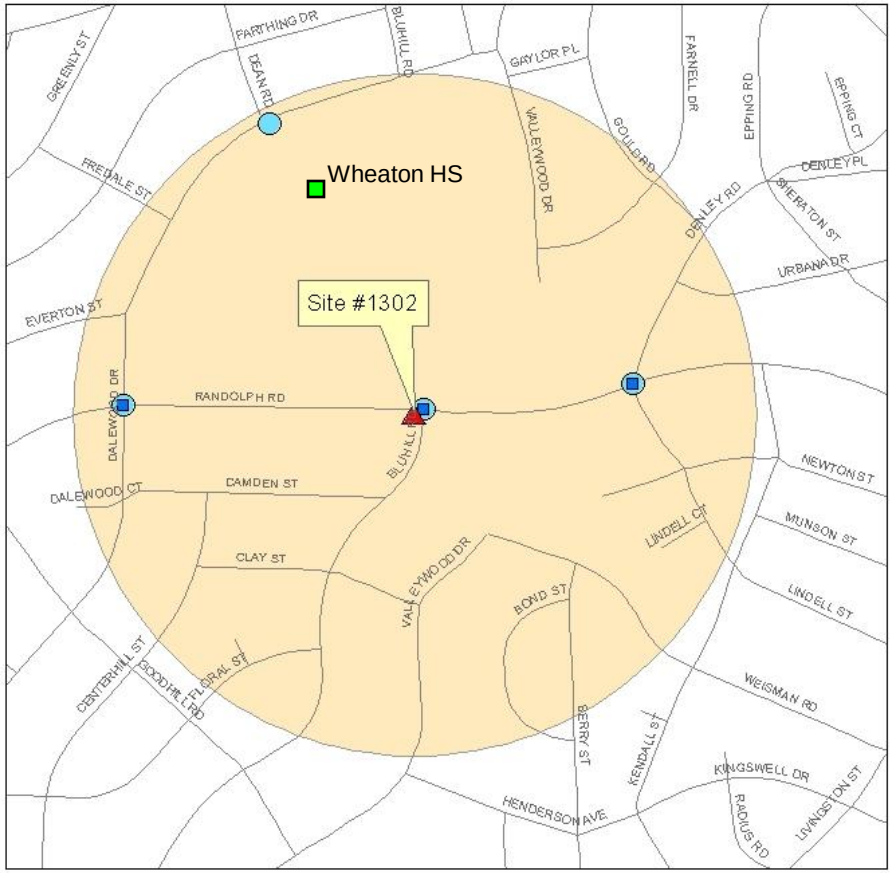
Sources: MCPD

CountyStat

Program Impact: Crashes
3300 Block Randolph Road

	Before installation	After installation
# of Crashes (.25 on Randolph Rd)	13	15
# of Crashes (.25 mi radius)	14	15

Note: Crash data is from 1/1/07 to 5/31/08



Shown are the number of crashes within .25 mile of the speed camera location. This map displays both the east and westbound cameras.

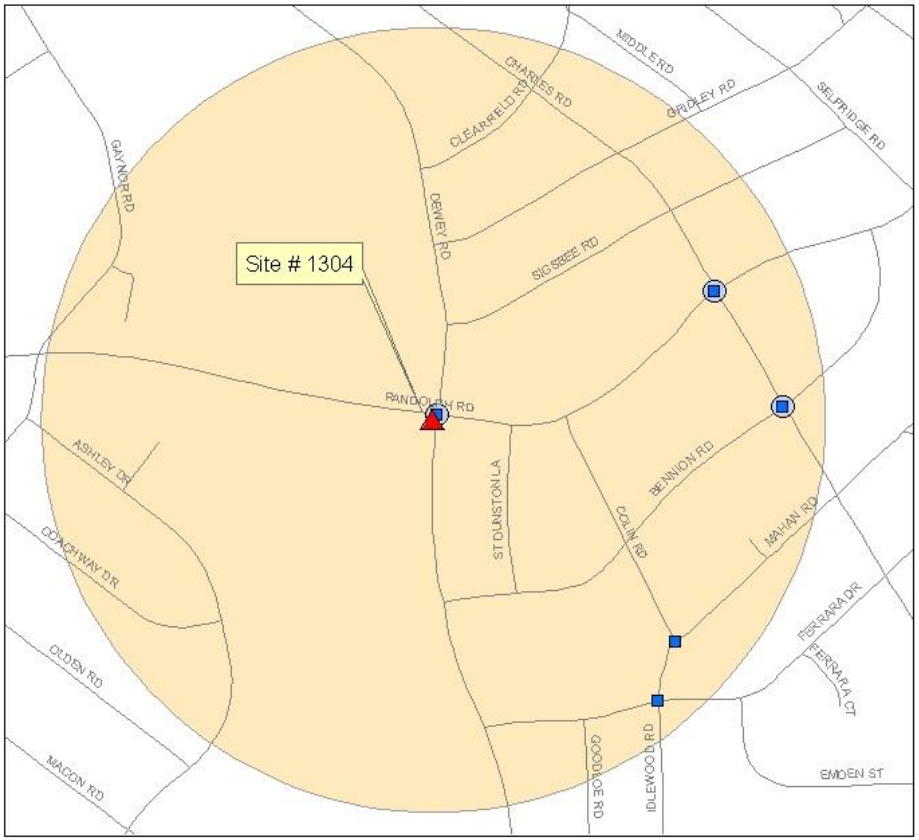
Sources: MCPD

CountyStat

Program Impact: Crashes
4600 Block Randolph Road

	Before installation	After installation
# of Crashes (.25 on Randolph Rd)	14	4
# of Crashes (.25 mi radius)	15	17

Note: Crash data is from 1/1/07 to 5/31/08



Legend

- Fixed pole
- Crashes before
- Crashes after
- Streets
- Buffer.25Mile

Shown are the number of crashes within .25 mile of the speed camera location. This map displays both the east and westbound cameras.

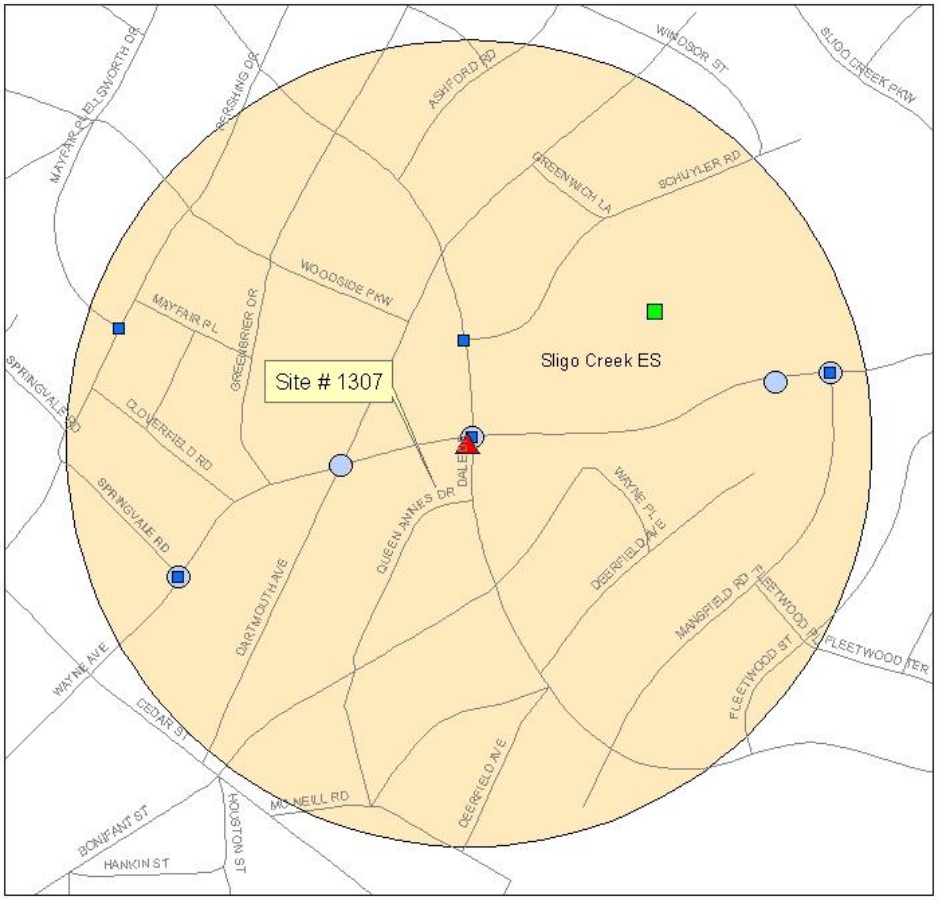
Sources: MCPD

CountyStat

Program Impact: Crashes
600 Block Wayne Avenue

	Before installation	After installation
# of Crashes (.25 on Wayne Ave)	6	6
# of Crashes (.25 mi radius)	6	8

Note: Crash data is from 1/1/07 to 5/31/08



Legend

- Fixed pole
- Crashes before
- Crashes after
- Streets
- Buffer.25Mile

Shown are the number of crashes within .25 mile of the speed camera location. This location only has an eastbound camera.

Sources: MCPD

CountyStat

Program Impact: Crashes 300 Block Wayne Avenue

	Before installation	After installation
# of Crashes (.25 on Wayne Ave)	8	7
# of Crashes (.25 mi radius)	11	9

Note: Crash data is from 1/1/07 to 5/31/08

Shown are the number of crashes within .25 mile of the speed camera location. This location only has a westbound camera.

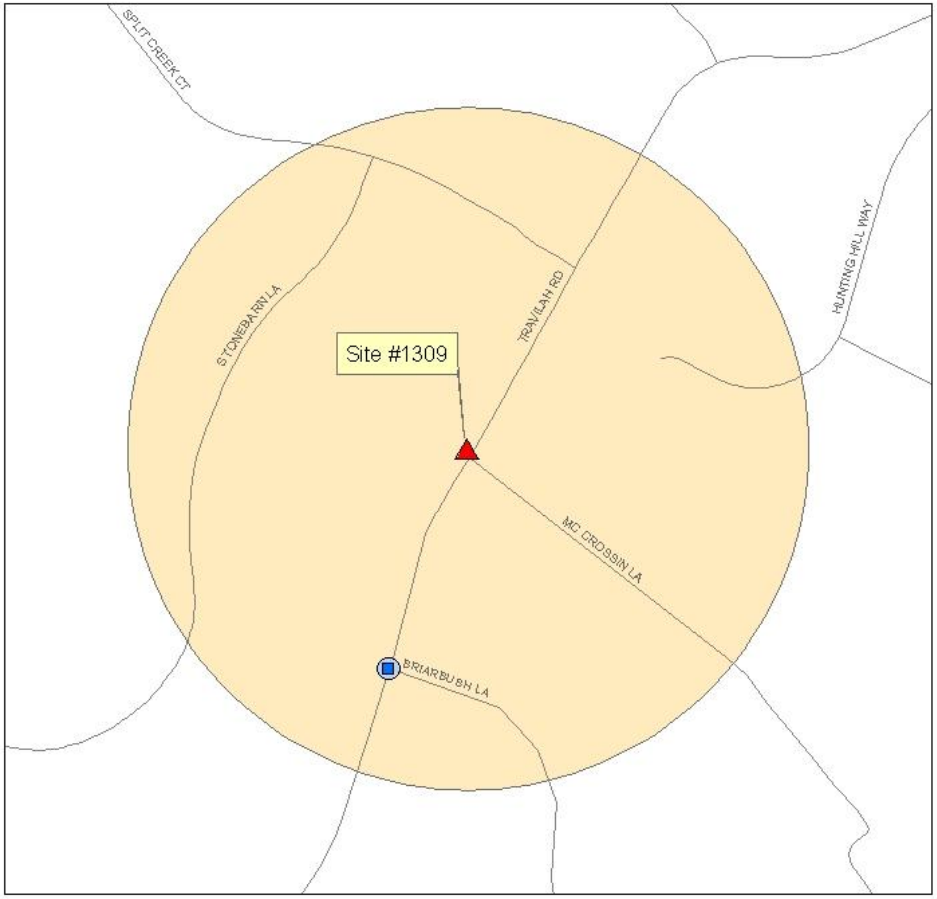
Sources: MCPD

CountyStat

Program Impact: Crashes
13500 Block Travilah Road

	Before installation	After installation
# of Crashes (.25 on Travilah Rd)	1	0
# of Crashes (.25 mi radius)	11	9

Note: Crash data is from 1/1/07 to 5/31/08



Shown are the number of crashes within .25 mile of the speed camera location. This location only has a northbound camera.

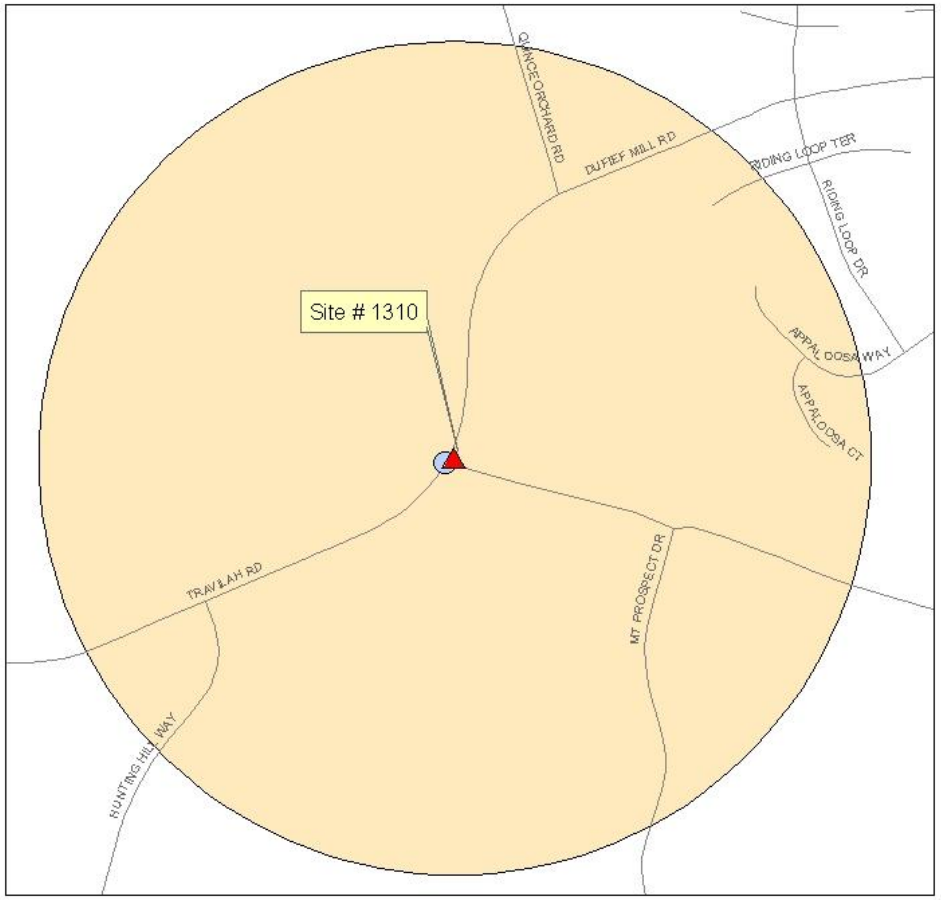
Sources: MCPD

CountyStat

Program Impact: Crashes
13600 Block Travilah Road

	Before installation	After installation
# of Crashes (.25 on Travilah Rd)	1	0
# of Crashes (.25 mi radius)	1	0

Note: Crash data is from 1/1/07 to 5/31/08



Shown are the number of crashes within .25 mile of the speed camera location. This location only has a southbound camera.

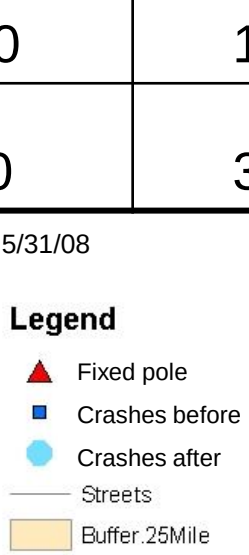
Sources: MCPD

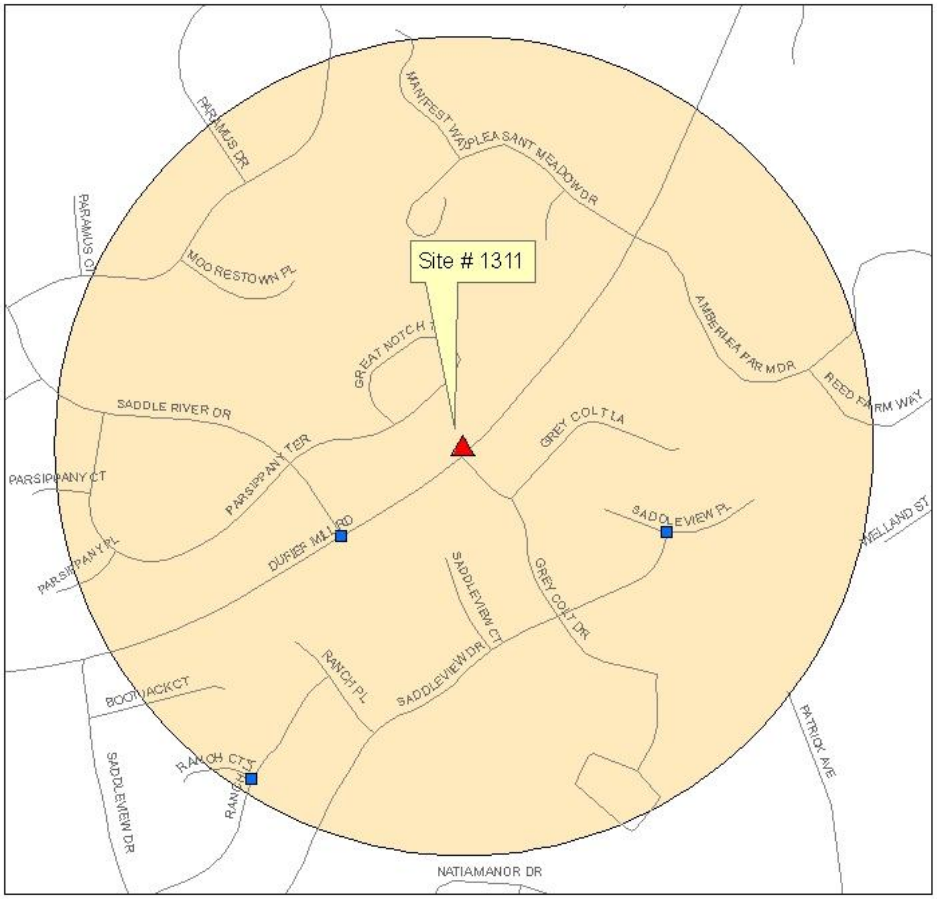
CountyStat

Program Impact: Crashes
14000 Block Dufief Mill Road

	Before installation	After installation
# of Crashes (.25 on Dufief Mill Rd)	0	1
# of Crashes (.25 mi radius)	0	3

Note: Crash data is from 1/1/07 to 5/31/08





Shown are the number of crashes within .25 mile of the speed camera location. This location only has a southbound camera.

Sources: MCPD

CountyStat

Program Impact: Crashes
Results Overview and Recommendations

Camera Location	Crashes Before	Crashes After	Posted Speed Limit	Avg Speed Before	Avg Speed After
18600 Block Montgomery Village Ave NB/SB	8	5	35	45/45	31/32
3300 Block Randolph Rd EB/WB	13	15	35	38/40	31/32
4600 Block Randolph Rd EB/WB	14	4	35	-	32/32
600 Block Wayne Ave EB	6	6	25	32	30
300 Block Wayne Ave WB	8	7	25	33	29
13500 Travilah Rd NB	1	0	30	41	28
13600 Travilah Rd SB	1	0	30	51	28
14000 Block Dufief Mill Rd SB	0	1	25	33	30
Total crashes at all sites	**51**	**38**			

Within .25 mi of the road on which the speed camera is located, there was a 25 percent decrease in crashes. Crashes will be important to track on a ongoing basis, considering the short term nature of current program results.

Sources: MCPD

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Moving Forward: Tracking Outcomes

- **MCPD can continue to track certain variables over time to determine if the program is maintaining its efficacy at the current sites**
  - Total violations at each site
  - Average speed over time
  - Before and after comparison of crashes over time
- **MCPD can work with CountyStat as sufficient data is collected to analyze more recently placed camera sites in a similar manner**

- **MCPD is responding to concerns of traffic diversion to other roadways**
  - Community complaints receive attention and analysis
  - MCPD continues to study the roadway volumetrics on connecting roadways near enforcement sites

These continued analyses ensure that the Safe Speed program is being applied in the most effective way, and continues to be a highly successful method of traffic enforcement.

Moving Forward: Safe Speed Program

As this program moves into its second full year, MCPD plans to

Make program improvements

- Conclude the initial Training and Customer Service classes for all related personnel. Continuing education will follow
- Continue to assess and evaluate the current fixed sites for effectiveness. This evaluation will assist in the potential relocation of fixed camera enforcement sites as need dictates
- Provide additional, programmatic information via a re-designed web site

Expand program

- Continue to develop and identify roadways for enforcement to expand our service
- Seek to implement additional signal or “Red Light” Cameras throughout current unenforced intersections
- Place more emphasis on public education and awareness as it relates to driver and pedestrian safety

Wrap-Up

- **Confirmation of follow-up items**
- **Time frame for next meeting**