Pedestrian and Bicycle Safety Program Review – County Council

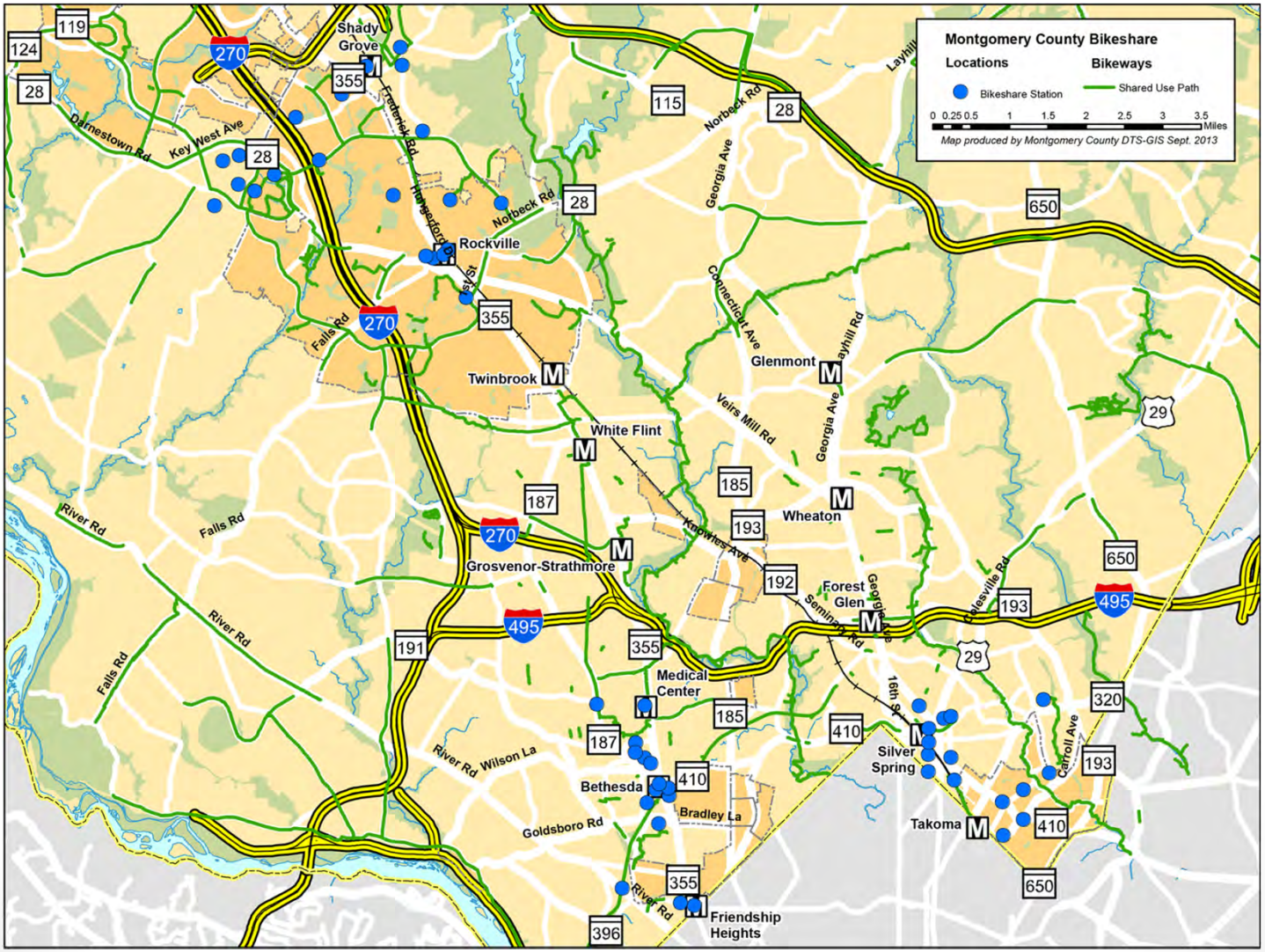
September 24, 2013

Montgomery County Department of Transportation – a Multimodal Agency:

Today's Presentation:

- **Overview** (Art Holmes)
- **Bikeshare and Bicycle Safety** (Al Roshdieh)
- **Bicycle Facilities** (Emil Wolanin)
- **Pedestrian Safety Initiative** (Emil Wolanin)
  - Targeted Approach
  - Program Successes
  - MCDOT Engineering Investments
  - MCDOT Education Programs
- **PIO Parking Lot Education Campaign** (Patrick Lacefield)
- **MCPD Enforcement Activities** (Cpt. Thomas Didone)
- **Summary and Conclusions** (Art Holmes)

Bike Share Stations Map



Evaluation of Routes for Bike Share

Medical Center Drive

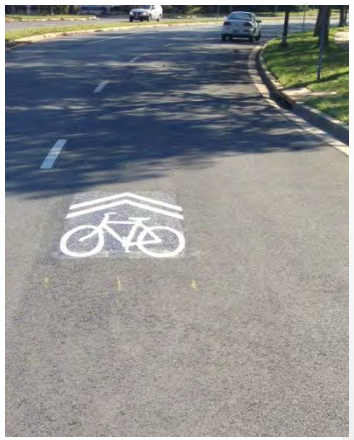
From:	*Great Seneca Hwy*
To:	*JHU Montgomery County Campus*
Functional Classication:	*Local*
Posted Speed Limit:	*30 mph*
Total Number of Lanes:	*Four Lanes*
Pavement Type:	Asphalt
Pavement Conditions:	New
Pavement Width:	48'
Street Grade:	*Steep (> 5%)*
Driveway Density:	*Medium (200'-600')*
ADT:	
Geometry	
Left Edge:	*Parking*
Left Lane(s):	*Two Lane*
Left Lane Width(s):	*12'(ea.)*
Center:	*5' Median*
Right Lane(s):	*Two Lane*
Right Edge:	*Parking*
Right Lane Width(s):	*12'(ea.)*

Recommendation(s):

Primary- Shared Lane Marking
Placement:
SLM placed 4' minimum from curb or edge of parking lane.
Center of lane if less than 12'
Typical application for shared use lanes:
Traffic Volume <= 3,000 ADT
Posted Speed <= 30 mph

Secondary-Shared Use Path
Geometry:
Two-directional path on right side of road, 10'-14' wide.
Recommended width is 11' to allow enough room for passing.

Montgomery County Bikeshare Route Evaluation
Location #5
Vicinity Map



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Recently Completed and Proposed Pedestrian and Bicycle Projects

On-road Facilities:

- Battery Lane Bike Lane w/ Traffic Calming
- Shady Grove Road Bike Lane
- Woodglen Drive Bike Lane and Shared Use Path between Edson Lane and Nicholson Lane (Fall 2013)
- Marinelli Bike Lane between Rockville Pike and Executive Blvd (Fall 2013)
- Seven Locks Road Bike Shoulder and Sidewalk - Tuckerman to Montrose
- Bonifant Bike Lane from Layhill Road to New Hampshire Ave
- Tuckerman Lane Bike Shoulder
- Tilden Lane Bike Lane
- Calverton Blvd. Bike Lane w/ Traffic Calming
- Apple Ridge Road Bike Areas
- Old Columbia Pike Bike Lane
- Lockwood Drive Bike Lane w/ Traffic Calming

Off-road Facilities:

- Bou Ave Shared Use Path
- Woodfield Road Shared Use Path
- Cedar Lane Shared Use Path
- Jones Bridge Road Shared Use Path
- Father Hurley Blvd Shared Use Path
- Nebel Street Shared Use Path
- Shady Grove Metro Access Shared Use Path
- Montrose Parkway Trial Shared Use Path
- Clopper Road Shared Use Path
- Bethesda Trolley Trail Shared Use Path

Challenges of Bike Lanes on Existing Roadways:

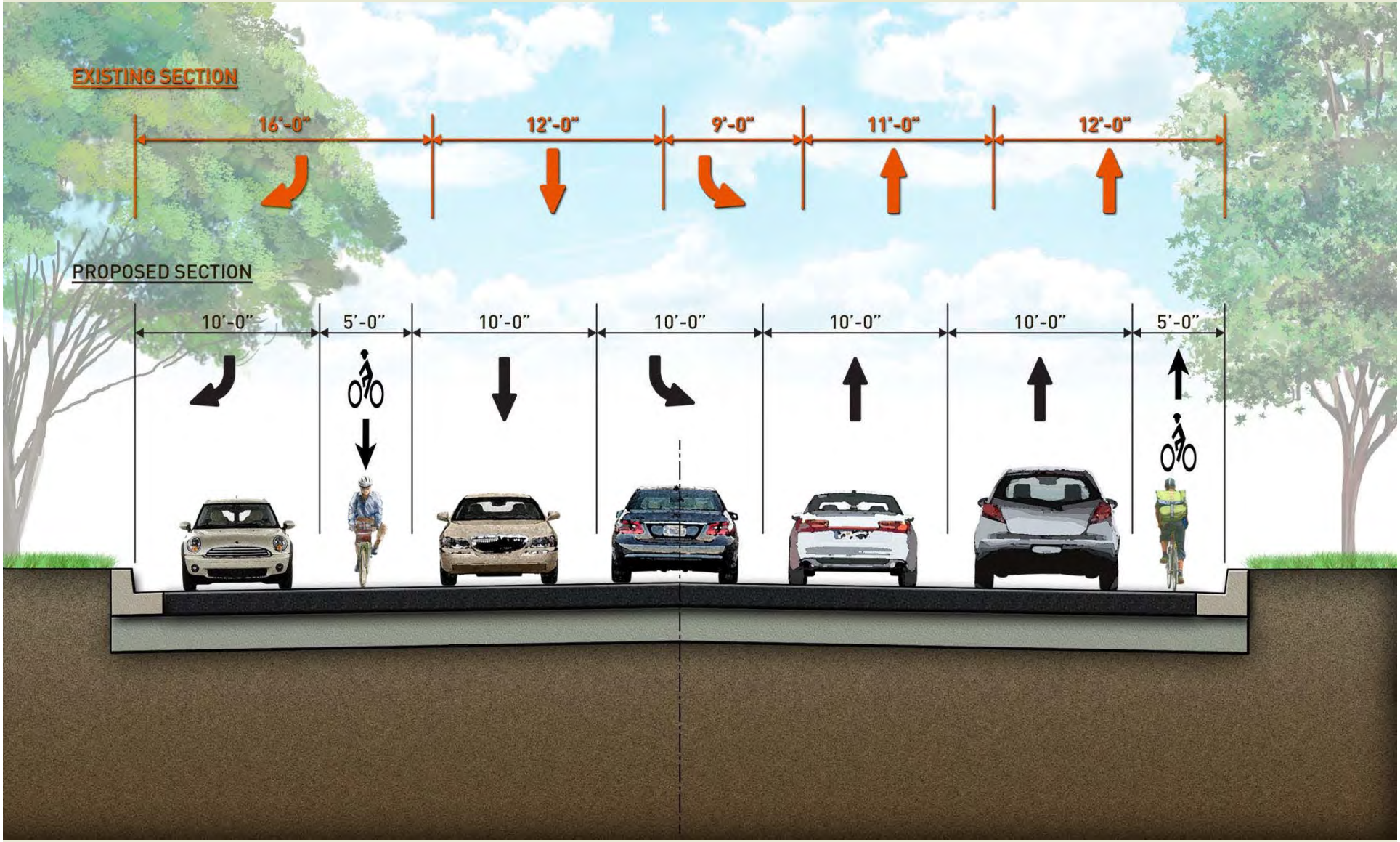
Marinelli Road

Existing and Proposed Condition

Montgomery County Department of Transportation

Montgomery County Department of Transportation

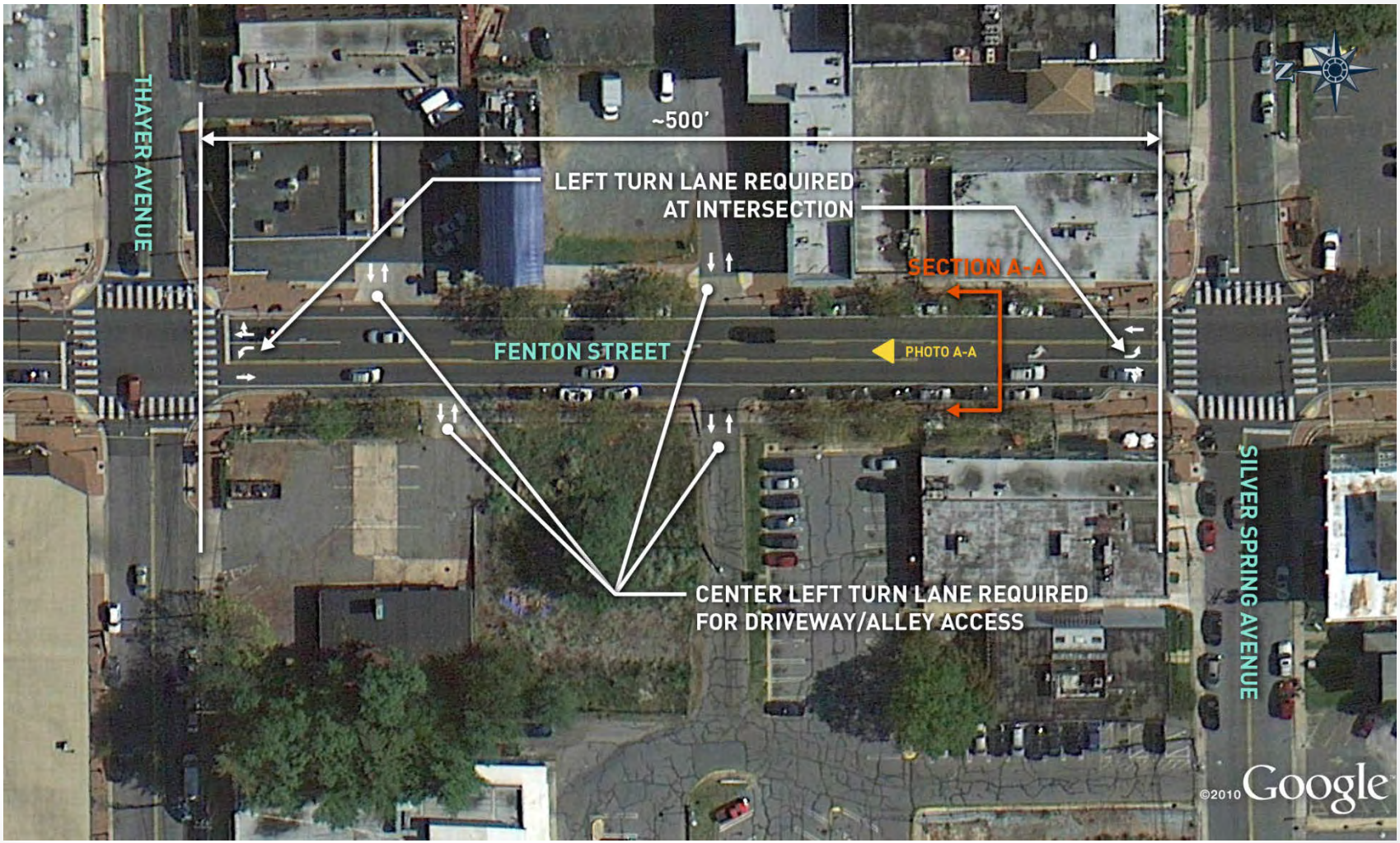
Challenges of Bike Lanes on Existing Roadways:
Marinelli Road Section A-A



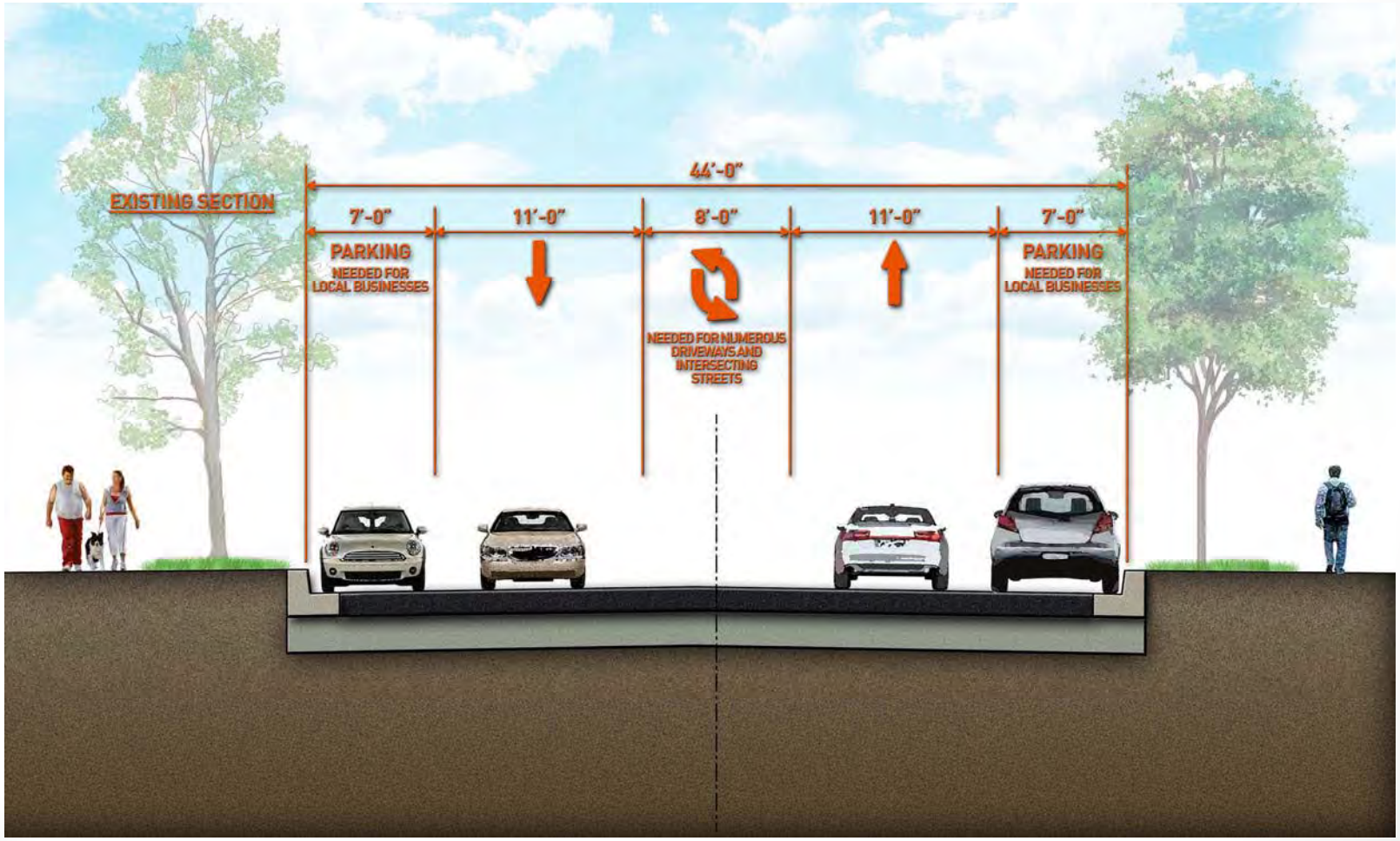
Montgomery County Department of Transportation

Challenges of Bike Lanes on Existing Roadways:
Marinelli Road Photo A-A

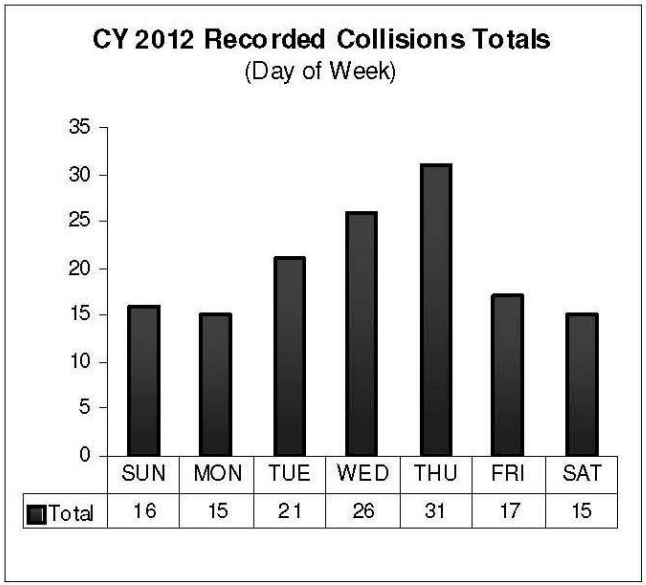
Challenges of Bike Lanes on Existing Roadways: Fenton Street

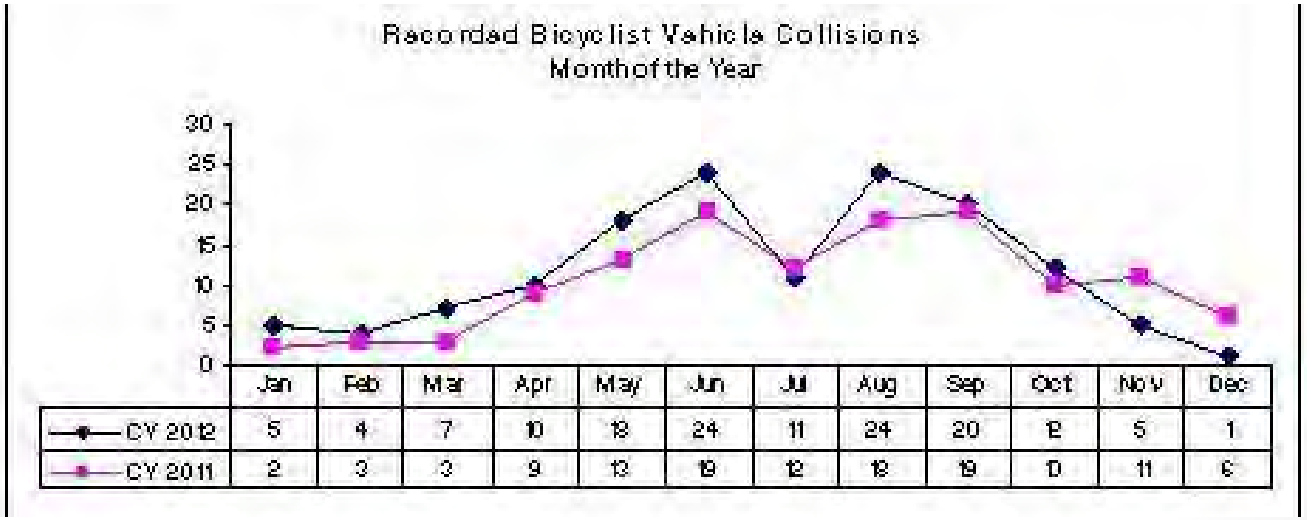


Challenges of Bike Lanes on Existing Roadways: Fenton Street



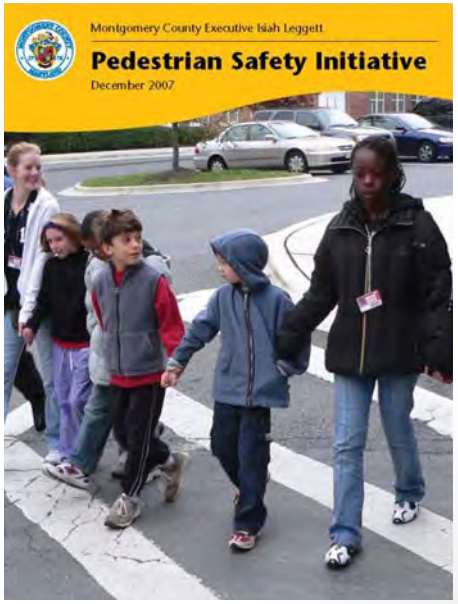
Bicycle Program Progressing–Data Driven





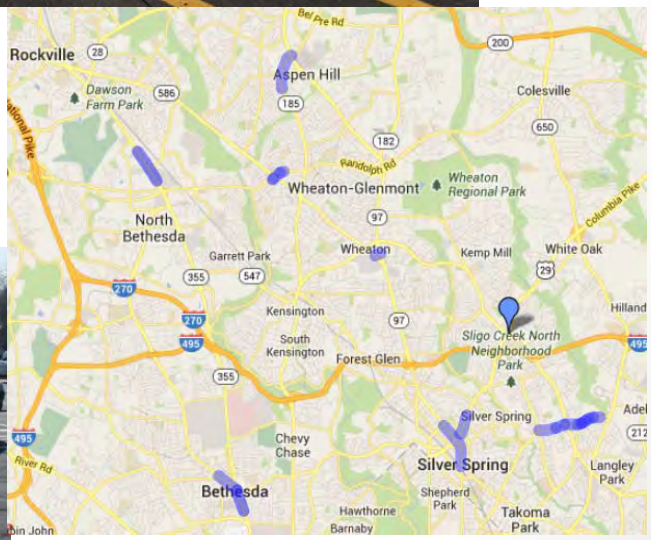
History of Pedestrian Safety in Montgomery County

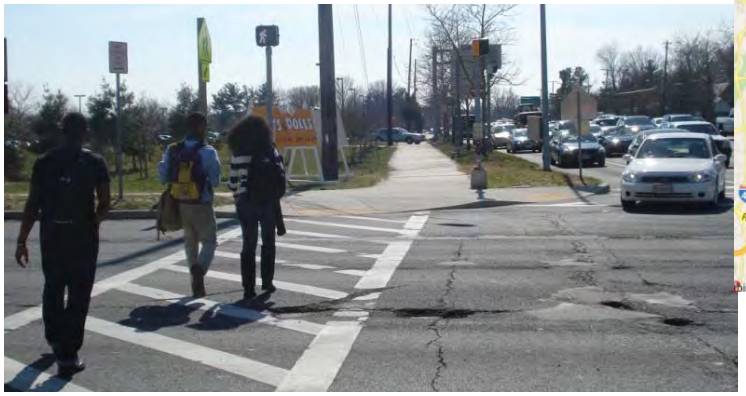
- 2000 – Blue Ribbon Panel Assembled by County Executive
- 2002 – Blue Ribbon Panel Final Report
- 2007 – Pedestrian Safety Initiative, a Strategic Plan



Montgomery County's Pedestrian Safety Initiative

- Seven Strategies
- Targeted
- Data Driven
- Resources:
  - Budget
  - Personnel

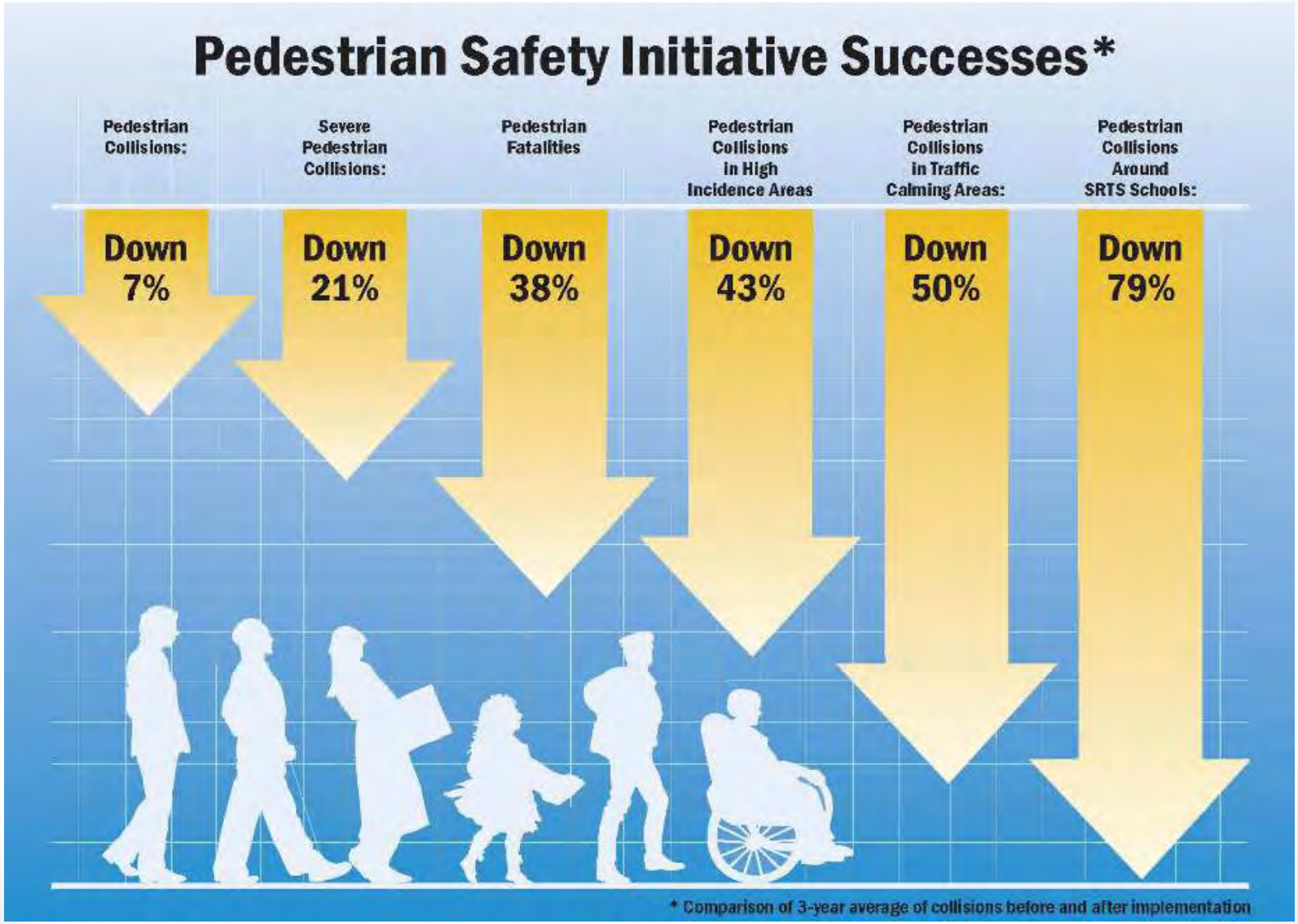




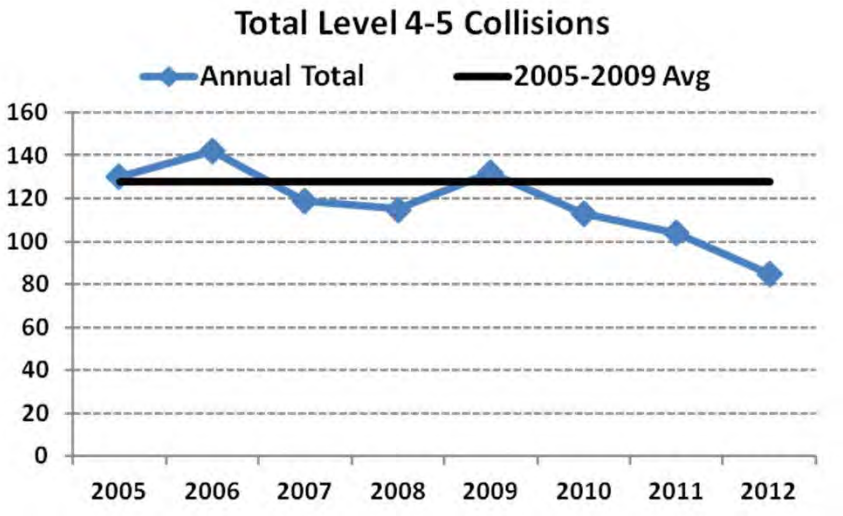
Close Coordination of Engineering, Education, and Enforcement

Engineering → Education → Enforcement → Changing Pedestrian and Driver Behavior

Pedestrian Safety Initiative – Results



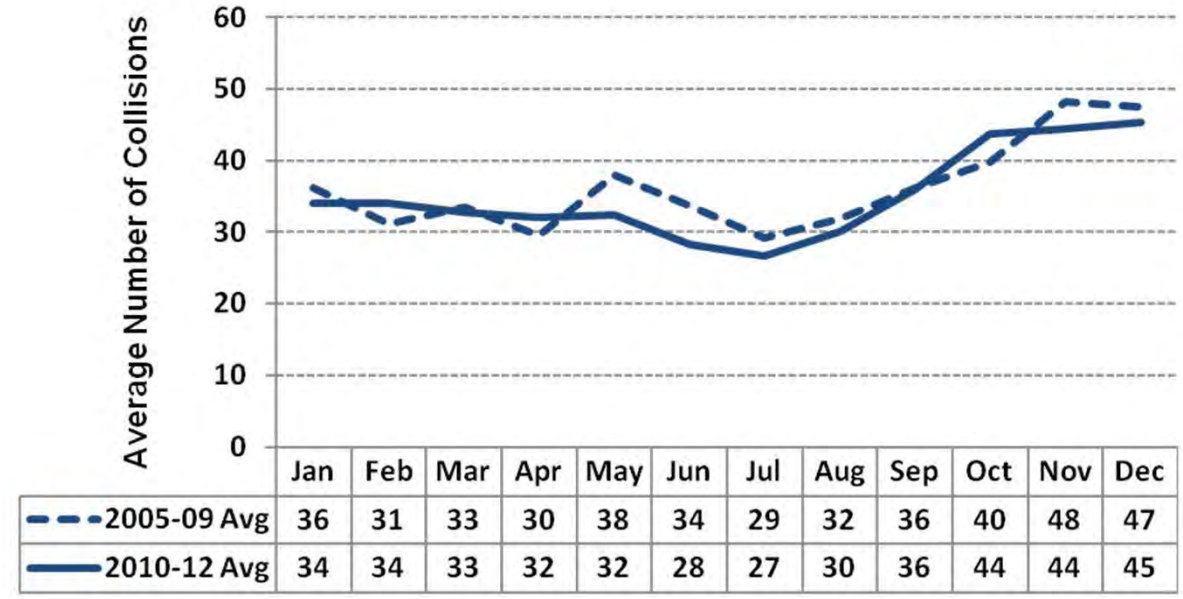
Pedestrian Collision Annual Trends



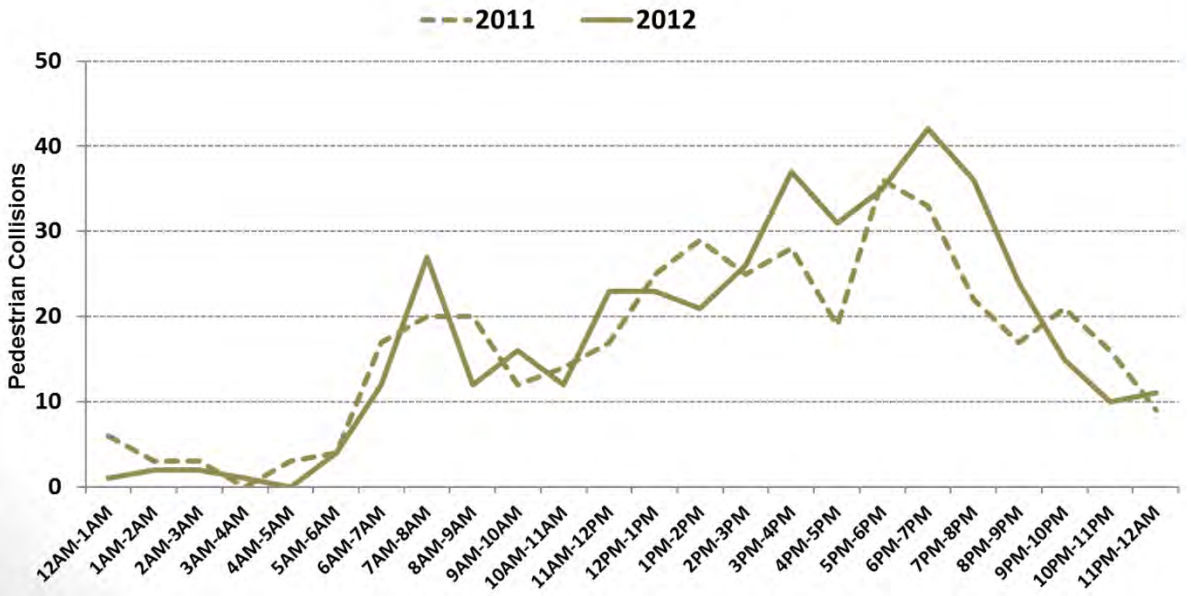
% Change	+9%	-16%	-3%	+14%	-14%	-8%	-18%

The number of severe collisions (level 4-5) have dropped by 21% from the pre-initiative average (2005-2009.)

Pedestrian Collision Trends



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2005-09 Avg	36	31	33	30	38	34	29	32	36	40	48	47
2010-12 Avg	34	34	33	32	32	28	27	30	36	44	44	45



There is an increase in pedestrian collisions in Fall and early Winter. There is an elevated number of pedestrian collisions during the morning and evening peak hours, and during the mid-day period (when schools get out.)

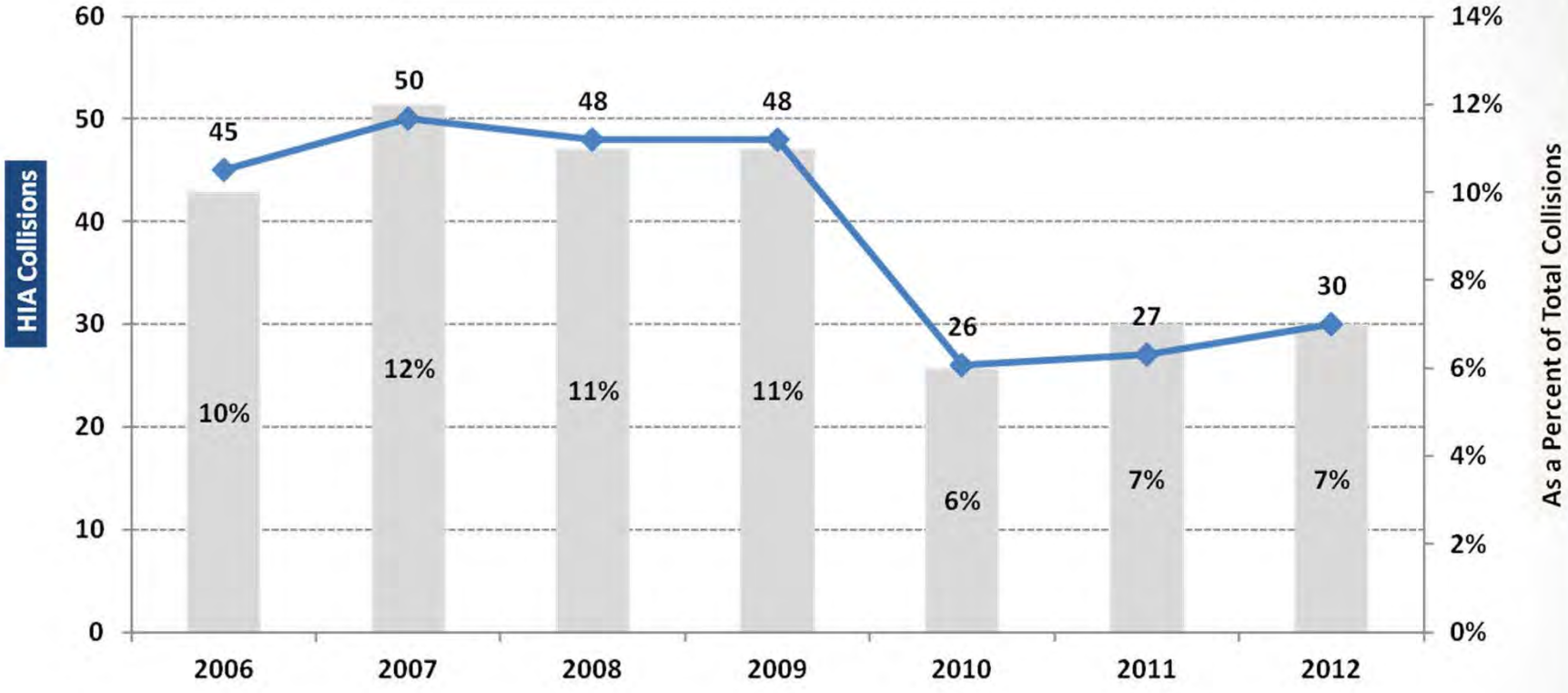
High Incidence Areas – Targeted Strategy

- **Maryland SHA is now using the same targeted approach, modeled on Montgomery County's success**
- **Targets funding for engineering, education, and enforcement (the 3 E's) where it can have the greatest effect on reducing pedestrian collisions**
- **The highest rate of pedestrian collisions has been along State roads, so this strategy engages the State in targeting pedestrian safety activities within the County where the rate of collisions and severity are highest**
- **Creates opportunities to leverage multiple projects in target areas with cost-sharing between multiple agencies**

1. Piney Branch Rd
2. Wisconsin Ave
3. Georgia Ave (Silver Spring)
4. Rockville Pike
5. Four Corners
6. Reedie Dr.
7. Randolph Rd@Veirs Mill
8. Connecticut Ave
9. Colesville Rd
10. Old Georgetown Rd
11. Fenton Street
12. Georgia Ave (Wheaton)*
13. Randolph Rd (Wheaton)*

* Georgia Avenue and Randolph Road Safety Audits Modified Plans for Future Construction

Annual Trend of Pedestrian Collisions in High Incidence Areas:

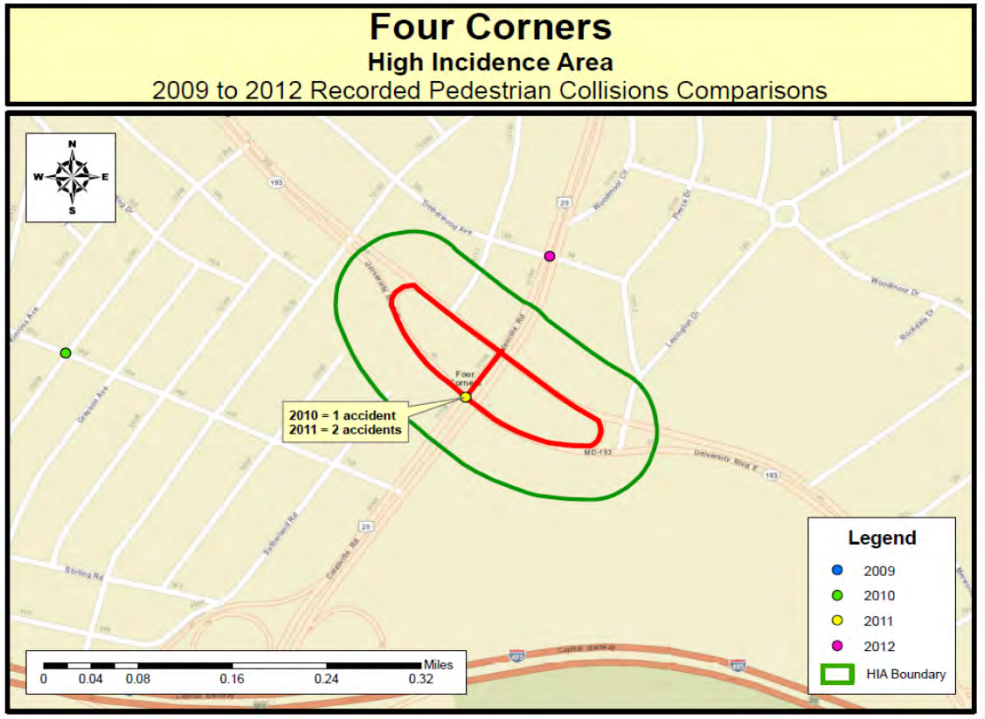


Since implementing pedestrian safety improvements, pedestrian collisions in High Incidence Areas have declined 43%. Before the Pedestrian Safety Initiative, 11% of all pedestrian crashes occurred in High Incidence Areas, consisting of less than 1% of County roadways.

High Incidence Areas: Four Corners

Background

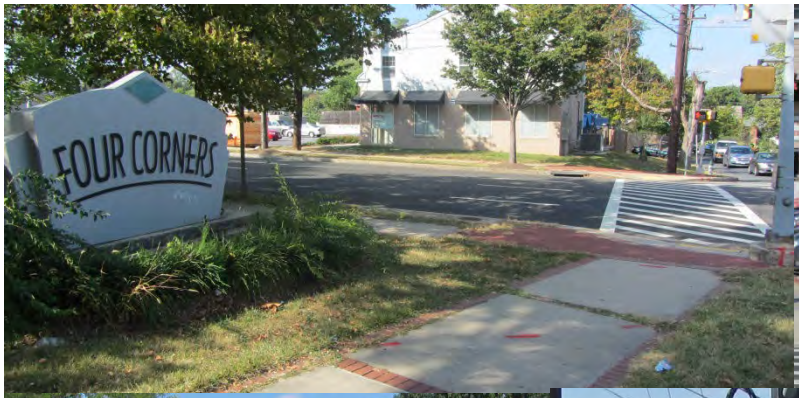
- Intersection of **Colesville Rd and University Blvd**
- Safety audit conducted in January 2010
- Montgomery Blair HS
- Large student population
- Many pedestrians cross mid-block
- Lack of signal adherence by pedestrians
- Numerous commercial access points
- Heavy bus transit usage

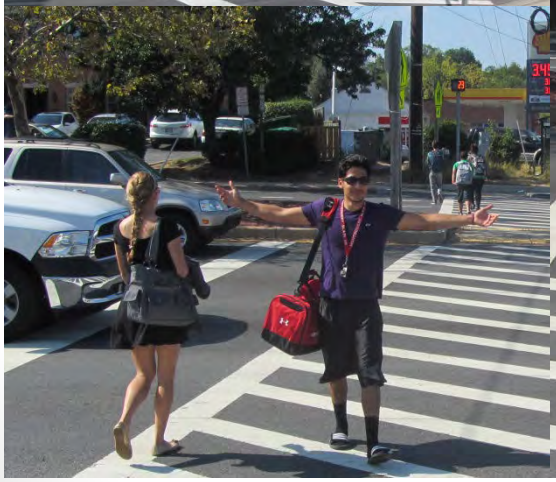


Engineering, Education, and Enforcement

- Pedestrian Signal Improvements
- Completed MDSHA resurfacing project
- Designated School Zone by MSHA
- Upgraded signage and pavement markings
- Montgomery Blair HS Education & Outreach Campaign (Fall 2011 - 2012)
- Targeted Enforcement (2012 and 2013)

High Incidence Areas: Four Corners Improved Facilities – Improved Behaviors

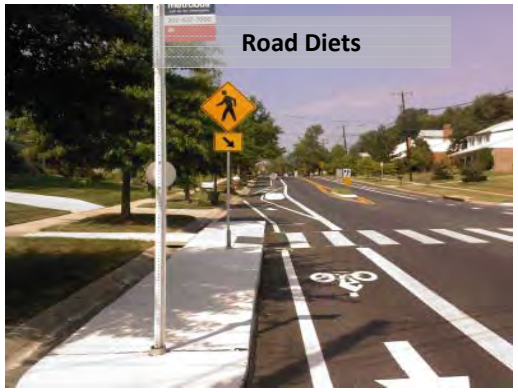




Engineering Improvement in High Incidence Areas

- **Improve and Widen Sidewalks**
- **Reconstruct Intersections and Signals**
- **Install Enhanced Pedestrian Crossings with Pedestrian Refuge Islands and Beacons**
- **Upgrade Street Lighting**
- **Construct Median Fencing and Landscaping to Channelize Pedestrians to Crosswalks**
- **Upgrade Pedestrian Signals with Countdown Ped Heads and Accessible Pedestrian Signals**
- **Improve Signage and Pavement Markings**
- **Install Curb Markings**

Other Pedestrian Safety-Related Efforts:
Traffic Calming



Traffic Calming successfully reduces speeding and has reduced pedestrian collisions by an average 50% where constructed.

MCDOT Education in High Incidence Areas

Piney Branch, Randolph, Reedie, Connecticut

- Curb Markers
- Safety Promotion Teams
- Volunteers at festivals
- Outreach to local business
- Shopping center intercepts

Four Corners (Blair High School)

- "Best Eyes" Campaign
- SWAG bracelets
- Text message contest
- Train-the-Trainer
- Fall "See Them See You" Campaign

MCDOT Safe Routes to Schools

Started in 2005, over 160 schools have had comprehensive school zone traffic safety assessments conducted and improvements implemented.

- **ENGINEERING: Prioritized to weight pedestrian collisions**
  - Weighted scores with pedestrian collisions - used to prioritize schools
  - Factored into engineering evaluation criteria for overall score
  - Safe Routes to School (SRTS) list prioritized using crash data
  - SRTS Grant Applications reflect priorities

- **EDUCATION: Increased at schools with high pedestrian collisions**
  - SRTS Coordinator now working with Elementary, Middle, and High Schools
  - SRTS Coordinator placing highest priority on schools with pedestrian collisions within 1/4 mile

- **ENFORCEMENT: Increased at schools with high pedestrian collisions**
  - Enforcement actions targeted at schools with higher number of pedestrian collisions

Since 2009, combined engineering improvements, education activities, and enforcement actions have resulted in a 79% reduction in pedestrian collisions with ¼ mile radius of grant schools under Safe Routes to School.

MCDOT Safe Routes to School: Bicycle and Pedestrian Education

Bicycle Rodeo

- To empower young cyclists with a set of skills for on-road riding and includes helmet fitting and bike safety inspection.

Crosswalk Simulation

- Simulated real world experience of crossing a street.
- Kids practice approaching the street, looking left, right, and left again and crossing in the middle of the crosswalk.

Train-the-Trainer

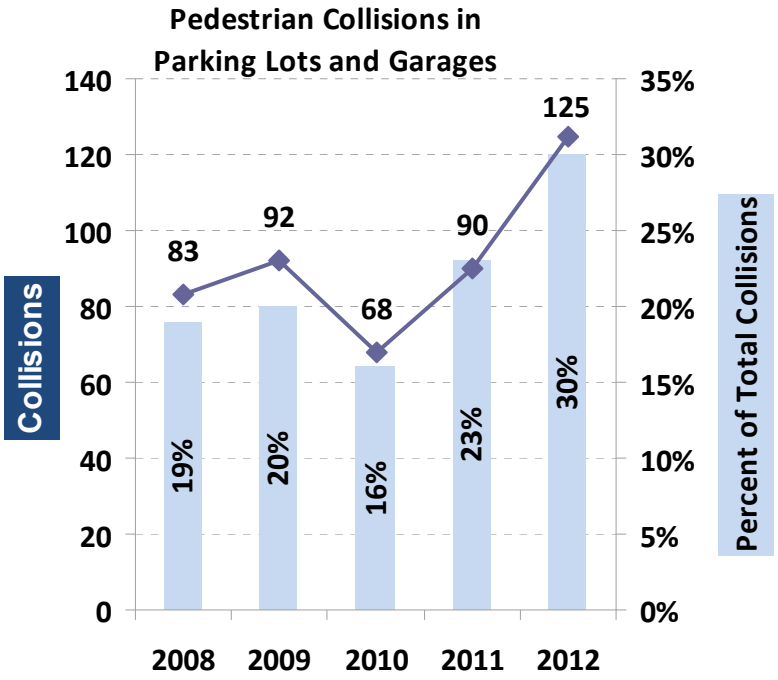
- High School students are trained to conduct the crosswalk simulation activity for elementary school students.

MCDOT Pedestrian Safety Education in High Schools

- **Education Campaigns: Blair and Seneca Valley High Schools (2011-2012)**
- **FY14: $100,000 Authorized for High School Pedestrian Safety Education**
- **Inter-agency Work Group Develops Plan – Partnership with MCPS**
- **Crash Data Analyzed to Identify Targeted Approach**
- **Working with School Principals and Data to Reach Target Schools**
- **Launch Fall Campaign in Late October – Second Wave in March**
- **Use Web-based Resources – "Tool Kit" Made Available to All Schools**

From 2010 to 2012, there have been 172 pedestrian collisions within ½ mile of Montgomery County's High Schools – 30 involve 13-18 year olds.

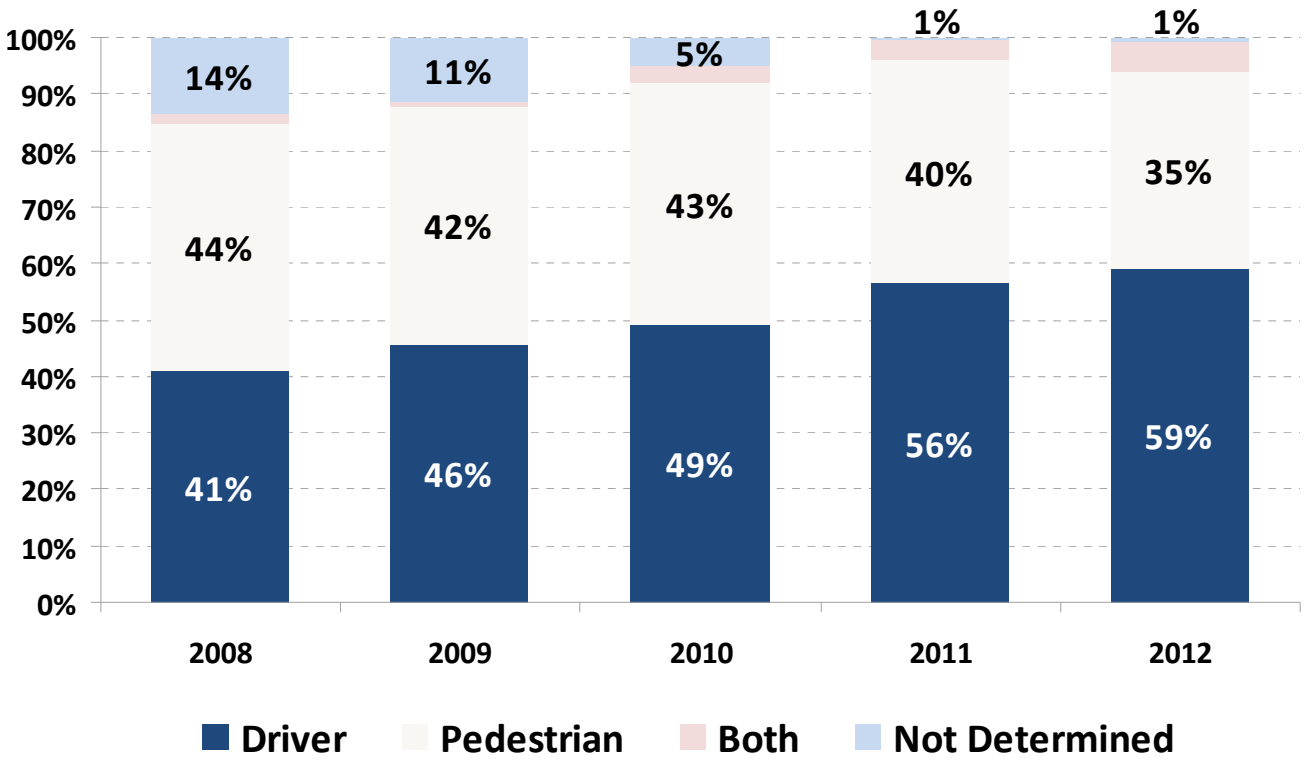
PIO Parking Lot Pedestrian Safety Education Campaign



- 95% occurred in a surface parking lots – not garages, 75% were fault of the driver, and 31% involved a vehicle backing out of a parking stall or travel lane
- 18% of collisions were Level 4, resulting in incapacitating injury - - the same percentage as roadways
- Inter-agency work group formed last year – developing strategic plan and targeted education campaign
- $50,000 approved for PIO to reactivate the 2009 education campaign eliminated under County's savings plan.
- County Executive has assembled "kitchen cabinet" of private property owners and managers operating parking lots

In 2012, there was a 39% increase in the number of pedestrian collisions occurring in parking lots/garages; these incidents represented 30% of all pedestrian collisions. The increase in pedestrian collisions in 2012 is attributed to the increase in parking lots.

Pedestrian Collisions by Fault



Since 2008 there has been an increase in the percentage of collisions in which the driver was determined to be at fault.

High Incidence Areas: Enforcement Efforts in Group 1

HIA Enforcement:

Dec. 2011 – Dec. 2012

- 607 warnings
- 1,686 citations
  - 65 driver citations
  - 1,561 pedestrian citations
  - 60 additional citations

Crosswalk Sting Enforcement:

May 2013 – Jun. 2013

- 83 warnings
- 417 citations
  - 374 driver citations
  - 43 pedestrian citations

Enforcement Lessons Learned

- Judges supporting citations in court (citing education effort)
- Using data as a tool to direct enforcement
- Residents participating in pre-enforcement education
- Involving media to increase awareness
- Citations more effective than warnings
- Crosswalk sting enforcement reinstituted to address driver-related violations

Summary and Conclusions:

- The Bicycle Program continues to focus on improving safe bicycle access
- Serious pedestrian collisions (Level 4 and 5) have declined
- Where actions have been targeted, the number of pedestrian collisions have declined significantly
- Close coordination of engineering, education, and enforcement actions has been effective in reducing collisions and is critical to our success
- Engineering is a more costly initial expenditure that results in a decline of collisions
- Education and Enforcement, while less costly than Engineering, will be a recurring cost to change pedestrian and driver behavior
- Education and Enforcement will not be a one-time or a one-year expenditure
- Continued cooperation with the Pedestrian, Bicycle, and Traffic Safety Advisory Committee