Welcome

MD 28/MD 198
Corridor Improvement Study

Alternatives Public Workshop
March 19, 2015

PURPOSE OF THE WORKSHOP

- **Familiarize the public with the project planning process and the Purpose and Need Statement**
- **Display the preliminary alternatives**
- **Present preliminary findings of the study**
- **Receive public comments**

WORKSHOP FORMAT

- **Today's workshop is self-paced. No Formal presentation will be given.**

- **Maps and other exhibits depicting aspects of the project will be on display, and team members will be available to respond to your project-related questions and comments.**

- **Everyone is encouraged to participate and express their views relating to the aspects of the project.**

- **You may comment by:**
  - **speaking with a team representative**
  - **submitting a comment card at the workshop**
  - **returning a comment card by mail**

WHAT'S DIFFERENT ABOUT THIS MD 28/MD 198 PROJECT?

This project:

- **Focuses on *local concerns*, including local traffic safety and traffic operations**
- **Seeks to accommodate *all roadway* users, including motorists, pedestrians and bicyclists**
- **Divides the corridor into *five segments* to reflect the *different community characteristics* along the corridor**
- **Organizes potential improvements as a *menu* of options that can be *mixed* and matched for each segment**
- ***Hopes to customize the best combination of improvements that will meet the unique needs of each community***

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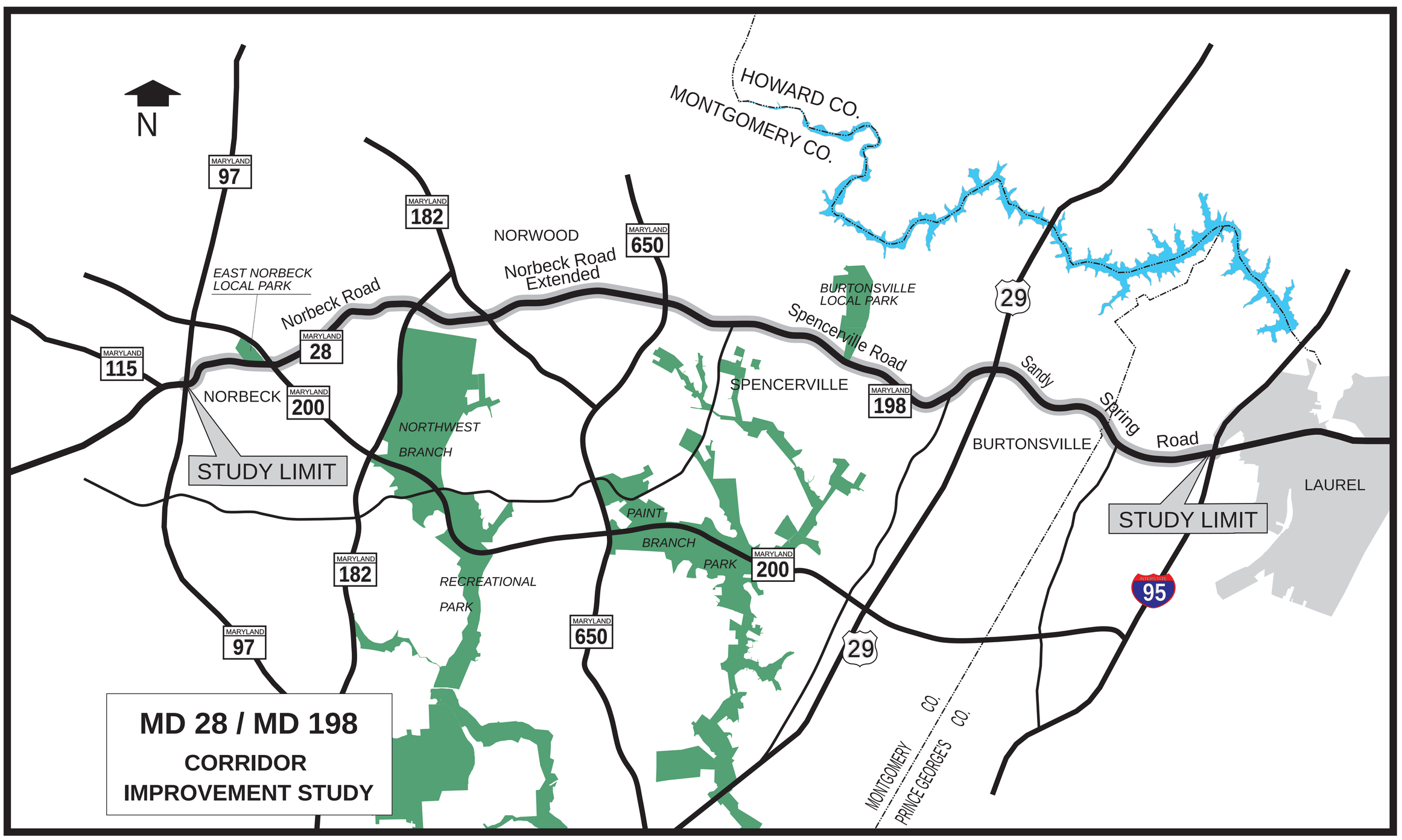
ROADWAY NETWORK CHANGES

- **2001 - SHA initiates MD 28/MD 198 Corridor Improvement Study**
- **2002 - Montgomery County opens Norbeck Road Extended, decreasing travel time between MD 182 and MD 650**
- **2004 - SHA and Maryland Transportation Authority (MDTA) begin Intercounty Connector (MD 200) project**
- **2005 - SHA opens US 29 at MD 198 grade-separated interchange**
- **2011 - MDTA opens MD 200 between MD 97 and I-95, as a managed facility providing an alternate route for through trips**



SHA State Highway Administration
Maryland Department of Transportation

U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

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PROJECT TIMELINE

Timeline

Began Initiation and Scoping Process — Winter 2000/ Spring 2001

Conducted Alternatives Public Workshop — Spring 2002

Selected Alternatives for Detailed Study — Summer 2003

Developed Draft Environmental Document
- ► Coordinated with ICC Project Team

2004 through 2008

Conducted Informational Workshop
- ► Updated project information based on coordination with ICC team

Fall 2008

Project Put on Hold
- ► Due to economic downturn

2009

Conducted Informational Workshop
- ► Provide project background
- ► Review changes in Study Area
- ► Obtain public comments

Spring 2014

Developed Preliminary Alternatives — Summer 2014 through Winter 2014/15

WE ARE HERE

Conduct Alternatives Public Workshop
- ► Provide project background
- ► Present the Preliminary Alternatives
- ► Obtain public comments

Spring 2015

PROJECT PURPOSE AND NEED

PROJECT PURPOSE

- **Improve local traffic safety and operations for motorists, bicyclists, and pedestrians traveling along the MD 28/MD 198 corridor and across intersecting roads while managing access.**

- **Preserve the rural and suburban quality of life by addressing localized traffic issues while considering local planning visions and state growth policies for communities along the corridor.**

PROJECT PURPOSE AND NEED

PROJECT NEED

- **Portions of the roadway along the corridor have traffic operational challenges.**
- **Planned and future development is expected to result in worsened travel operations.**
- **Increased traffic volumes are expected to lead to stop-and-go conditions.**
- **Several intersections are expected to experience failing conditions by the design year (2040).**
- **Intersection operations are constrained by absence of storage lanes for left- and right-turning vehicles and by limited number of through lanes.**
- **Several roadway segments between intersections will likely experience peak-hour constraints imposed by projected traffic volumes.**
- **Total crash rates along portions of the corridor are higher than the statewide average for certain crash types on similar roadways, and conditions are expected to worsen as planned development occurs and traffic volumes increase.**
- **Continuous facilities for pedestrians and bicyclists do not exist along the corridor and are not called for in portions of locally adopted master plans.**

PROJECTED GROWTH IN STUDY AREA

	2010	2040	% GROWTH
Households	68,321	80,314	18%
Population	186,214	210,690	13%
Employment	41,151	75,282	83%

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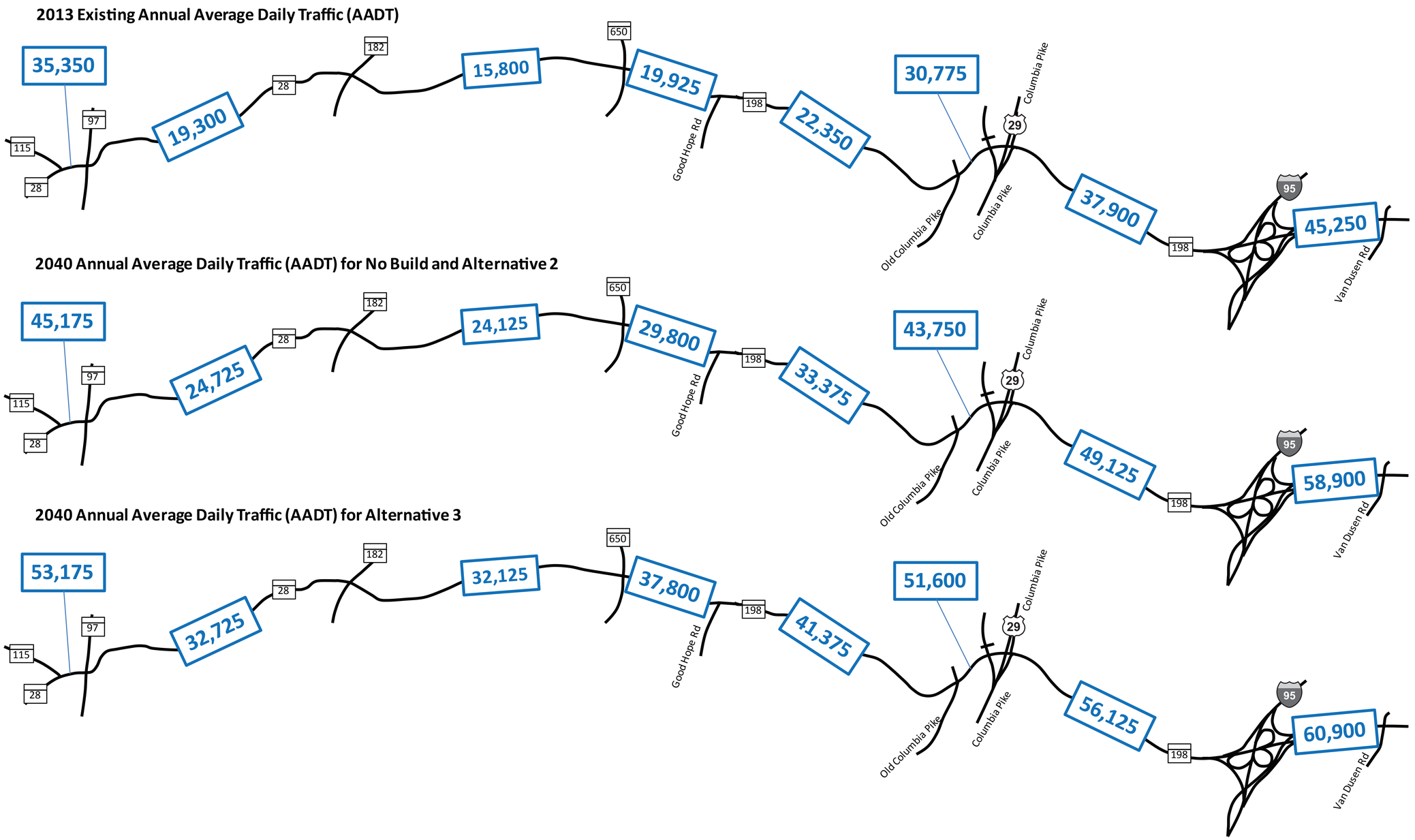
MD 28/MD 198 ANNUAL AVERAGE DAILY TRAFFIC (AADT)



INTERSECTION AND ROADWAY LINK LEVELS OF SERVICE (LOS)

SUMMARY

- **Measure traffic operations for motorized vehicles**
- **Do not reflect safety improvement impacts**
- **2013 Existing Conditions**
  - **Most study area intersections operate at LOS E or better during AM and PM peak hours**
- **Alternative 1: No Build – Year 2040**
  - **Assumes the interchange design currently proposed for MD 28 at MD 97is in place**
  - **Proposes no additional operational or safety improvements for the corridor**
  - **Constrained roadway capacity limits traffic volumes along the corridor**

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INTERSECTION AND ROADWAY LINK LEVELS OF SERVICE (LOS)

SUMMARY

- **Alternative 2: Transportation Systems Management/ Transportation Demand Management (TSM/TDM) – Year 2040**
  - **Provides continuous bicycle lanes and sidewalks throughout the corridor**
  - **Provides operational and/or safety improvements at key signalized intersections**
  - **Provides safety improvements for roadway segments**
  - **Consolidates unsignalized intersections and driveways**

Alternative 3: Typical Section Improvements – Year 2040

- **Provides continuous bicycle lanes and sidewalks throughout the corridor**
- **Provides safety improvements for roadway segments**
- **Consolidates unsignalized intersections and driveways**
- **Increases capacity along the corridor**
  - **Traffic from parallel roads may divert to MD 28/MD 198**

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INTERSECTION DELAY & LOS ANALYSIS RESULTS

Intersection LOS (Delay)	2013 Existing		2040 No-Build		2040 Alternative 2		2040 Alternative 3	
	Delay (Seconds per Vehicle)							
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
MD 28 at MD 115	D (49)	D (37)	D (35)	D (38)	C (33)	D (39)	F (103)	E (80)
MD 28 at MD 97*	F (82)	F (89)	B (19)^ B (10)^^	B (16)^ B (15)^^	C (23)^ B (10)^^	B (17)^ B (14)^^	C (28)^ B (11)^^	C (25)^ B (19)^^
MD 28 at Norbeck Boulevard	B (20)	C (27)	B (11)	A (9)	B (14)	B (11)	A (6)	A (8)
MD 28 at Wintergate Drive	E (59)	C (21)	F (115)	D (41)	F (109)	D (38)	B (18)	B (11)
MD 28 at MD 182	B (19)	C (23)	B (19)	C (22)	C (26)	C (22)	C (32)	C (34)
MD 28 at Norwood Road	D (38)	D (37)	E (61)	E (57)	E (57)	D (54)	E (73)	E (63)
MD 28/MD 198 at MD 650	D (37)	D (36)	D (51)	E (52)	D (45)	D (40)	D (44)	D (36)
MD 198 at S Old Columbia Pike	C (27)	C (24)	F (84)	D (41)	F (88)	D (37)	E (64)	E (73)
MD 198 at US 29 SB Ramps	C (33)	C (33)	C (31)	C (28)	C (24)	C (34)	C (32)	D (38)
MD 198 at US 29 NB Ramps	C (28)	C (34)	B (16)	B (19)	B (19)	B (17)	C (33)	C (35)
MD 198 at McKnew Road	D (42)	C (23)	F (97)	C (24)	F (102)	C (25)	D (44)	B (10)
MD 198 at Old Gunpowder Road	C (27)	B (16)	C (25)	B (15)	C (31)	B (14)	C (32)	C (23)
MD 198 at Sweitzer Lane	D (35)	D (41)	D (36)	D (49)	C (34)	D (46)	D (46)	D (38)
MD 198 at Van Dusen Road	D (37)	D (45)	E (64)	E (79)	E (58)	E (79)	E (64)	F (111)

*Under 2040 No-Build, MD 28 at MD 97 is assumed to be reconstructed as an interchange
^ LOS for SB (southbound) Ramps intersection within MD 97 Interchange
^^ LOS for NB (northbound) Ramps intersection within MD 97 Interchange

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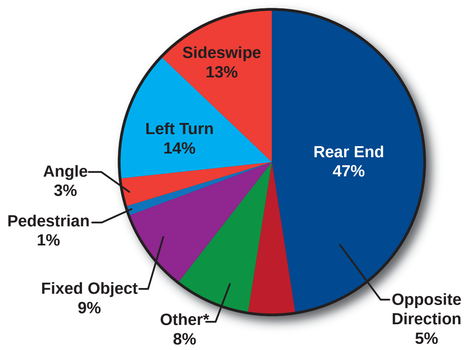
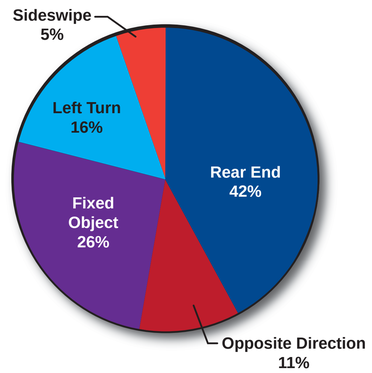
SAFETY SUMMARY 2010-2012

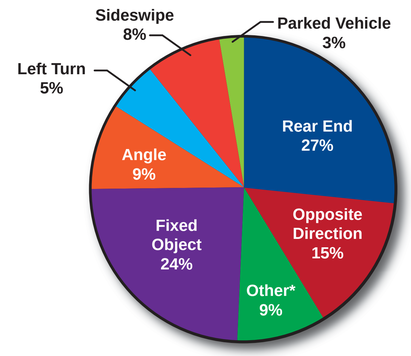
MD 28 from MD 97 to MD 182
(based on 101 police reported crashes)



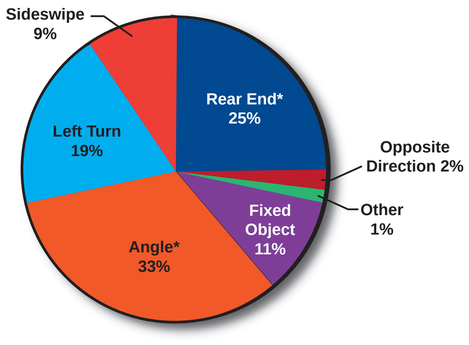
Norbeck Road Extended from MD 182 to MD 650
(based on 19 police reported crashes)



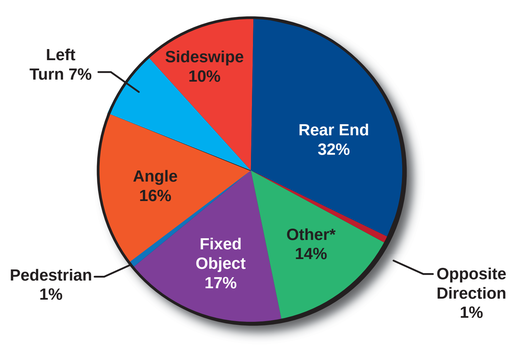
MD 198 from MD 650 to Sanitini Road
(based on 75 police reported crashes)



MD 198 from Sanitini Road to US 29
(based on 85 police reported crashes)



MD 198 from US 29 to Van Dusen Road
(based on 171 police reported crashes)



Notes: *Significantly higher than the statewide average crash rate for similar types of highway

-The major crash types reported are: opposite direction, rear end, sideswipe, left turn, angle, pedestrian, parked vehicle, fixed object, truck related and other crashes. Other is a catch all category that includes crashes not among the major crash types (i.e., u-turns, overturned vehicles, etc).

- Norbeck Road Extended is not part of the SHA roadway system

ROADWAY LINK LOS ANALYSIS RESULTS

Roadway Segment	# of Travel Lanes for Existing, No-Build and Alternative 2	2013 Existing		2040 No-Build		2040 Alternative 2		# of Travel Lanes for Alternative 3	2040 Alternative 3	
		AM Peak LOS	PM Peak LOS	AM Peak LOS	PM Peak LOS	AM Peak LOS	PM Peak LOS		AM Peak LOS	PM Peak LOS
MD 28 (eastbound) at:										
MD 115 to MD 97	4/5	F	F	C	E	C	F	4/6	C	F
MD 97 to Wintergate Drive	2	C	D	B	F	B	F	4	B	E
Wintergate Drive to MD 182	2	B	B	B	C	B	C	4	C	D
Norbeck Road (eastbound) at:										
MD 182 to MD 650	2/4	C	C	F	F	F	E	4	E	F
MD 198 (eastbound) at:										
MD 650 to Old Columbia Pike	2	B	B	B	B	B	B	4	F	F
Old Columbia Pike to US 29 NB Ramps	4	C	C	C	C	C	C	4	F	F
US 29 NB Ramps to Sweitzer Lane	4	C	C	D	D	F	C	4	F	F
Sweitzer Lane to Van Dusen Road	4/6	C	D	D	D	B	C	4/6	B	C
MD 198 (westbound) at:										
Van Dusen Road to Sweitzer Lane	4/6	B	B	B	B	B	C	4/6	C	B
Sweitzer Lane to US 29 NB Ramps	4	C	C	D	C	E	D	4	D	C
US 29 NB Ramps to Old Columbia Pike	4	D	D	F	F	F	F	4	F	D
Old Columbia Pike to MD 650	2	B	B	B	B	B	B	4	D	B
Norbeck Road (westbound) at:										
MD 650 to MD 182	2/4	B	C	C	C	C	C	4	C	C
MD 28 (westbound) at:										
MD 182 to Wintergate Drive	2	B	B	D	B	D	B	4	C	C
Wintergate Drive to MD 97	2	D	D	B	B	B	B	4	C	C
MD 97 to MD 115	4/5	F	E	D	D	D	C	4/6	E	C

GAINESVILLE METHOD FOR BICYCLE AND PEDESTRIAN LEVELS OF COMFORT

Roadway Segment	2013 Existing		2040 No-Build		2040 Alternative 2		2040 Alternative 3	
	Bicycle LOC	Pedestrian LOC	Bicycle LOC	Pedestrian LOC	Bicycle LOC	Pedestrian LOC	Bicycle LOC	Pedestrian LOC
MD 28 at:								
MD 115 to MD 97	F	D	F	D	D	D	D	D
MD 97 to Wintergate Drive	F	E	F	F	B	C	B	C
Wintergate Drive to MD 182	F	E	F	F	B	C	B	C
Norbeck Road at:								
MD 182 to MD 650	B	C	B	C	B	C	B	C
MD 198 at:								
MD 650 to Old Columbia Pike	E	E	E	E	B	C	C	D
Old Columbia Pike to US 29 NB Ramps	F	F	F	F	C	D	C	D
US 29 NB Ramps to Sweitzer Lane	E	E	F	E	C	C	C	C
Sweitzer Lane to Van Dusen Road	F	F	F	F	C	C	C	C

DETERMINING BICYCLE AND PEDESTRIAN LEVELS OF COMFORT (LOC)

- **LOC measures pedestrians' and bicyclists' perception of a roadway's safety and their degree of comfort when using that roadway. LOC is based on roadway geometry and features, such as:**
  - **Presence of continuous sidewalks or bike lanes**
  - **Sidewalk and bike lane widths**
  - **Buffers between sidewalks and roadway travel lanes**
  - **Number of conflicts between sidewalks/bike lanes and driveways/side streets**

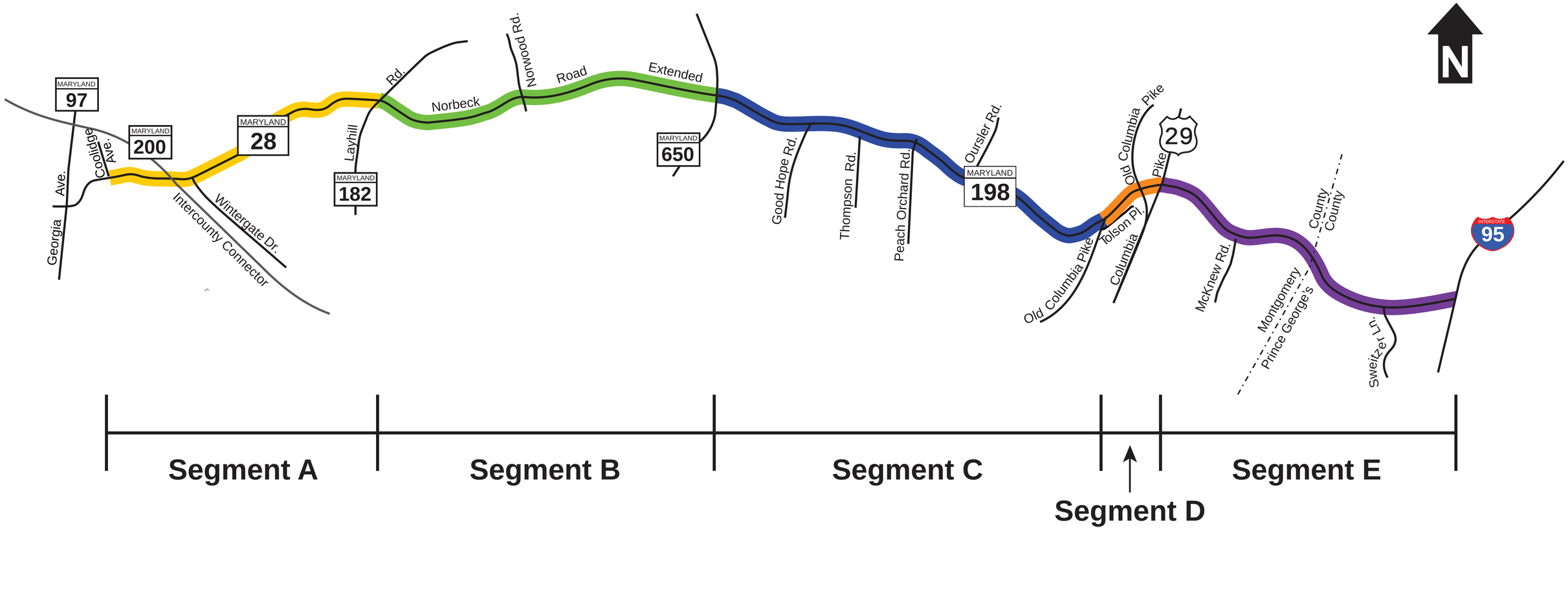
- **Based on roadway geometry and features, LOC measures pedestrians' and bicyclists' perception of a roadway's safety and their degree of comfort when using that roadway**

- **The Gainesville Method measures LOC by assigning the roadway a grade of "A" (best) to "F" (worst).**

ALTERNATIVES AND OPTIONS UNDER CONSIDERATION

- **Alternative 1: No-Build**
- **Alternative 2: Transportation Systems Management / Transportation Demand Management (by Corridor Segment)**
  - **Base: Bicycle/Pedestrian Provisions**
  - **Access Management Options**
  - **Intersection Improvement Options**
- **Alternative 3: Typical Section Improvements (by Corridor Segment)**
  - **Base: Bicycle/Pedestrian/Roadway Provisions**
  - **Access Management Options**
  - **Intersection Improvement Options**

ALTERNATIVES 2 AND 3
SEGMENT LOCATIONS



NOT TO SCALE

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SUMMARY OF IMPACTS

Potential Resource Impacts	Alternative1 No-Build	Alternative 2, Segment A: MD 97 (Georgia Avenue) to MD 182 (Layhill Road) Transportation Systems Management/ Transportation Demand Management (TSM/TDM)			Alternative 2, Segment B: MD 182 (Layhill Road) to MD 650 (New Hampshire Avenue) Transportation Demand Management (TSM/TDM)	
		Base Alternative (Bicycle/Pedestrian Features)	Access Management Provisions Option	Intersection Improvement Options	Base Alternative (Bicycle/Pedestrian Features)	Intersection Improvement Options
		Widen Shoulders, 5’ sidewalk to south, 10’ shared-use path to north	3 Frontage Roads	Wintergate Drive Roundabout	Widen shared-use path to 10’ on north	Norwood Road Turn Lanes
Community Effects						
Residential No. Displacements/No. Impacts/Acres	0/0/0	5/78/9.88	+0/+6/+2.61	+0/+3/+0.36	0/0/0	+0/+0/+0
Commercial No. Displacements/No. Impacts/Acres	0/0/0	0/1/0.17	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Church/School No. Displacements/No. Impacts/Acres	0/0/0	0/5/1.06	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Historic/Archeological No. Displacements/No. Impacts/Acres	0/0/0	0/1/0.19	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Parks/Recreation No. Displacements/No. Impacts/Acres	0/0/0	0/0/0	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Right-of-Way (Acres)	0	11.33	+2.61	+0.36	0	+0
Natural Environment						
Streams Number/Linear Feet/Square Feet	0/0/0	3/407/13,197	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Wetlands (Acres)	0	0.13	+0	+0	0	+0
100-Year Floodplain (Acres)	0	1.61	+0.17	+0	0.15	+0
Woodlands (Acres)	0	7.30	+1.07	+0	0	+0
Specimen Trees (Number)	0	67	+8	+1	0	+0
Cost ($Millions)	0	38-43	+(8-9)	+(1.5-2)	3-3.5	+(0.5)
Total Cost by Segment ($Millions)	0	38-54			3-4	

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SUMMARY OF IMPACTS

Potential Resource Impacts	Alternative 2, Segment C: MD 650 (New Hampshire Avenue) to Old Columbia Pike Transportation Systems Management/ Transportation Demand Management (TSM/TDM)							Alternative 2, Segment D: Old Columbia Pike to US 29 Transportation Systems Management/ Transportation Demand Management (TSM/TDM)		Alternative 2, Segment E: US 29 to I-95 Transportation Systems Management/ Transportation Demand Management (TSM/TDM)	
	Base Alternative (Bicycle/Pedestrian Features)	Access Management Provisions Option		Intersection Improvement Options				Base Alternative (Bicycle/Pedestrian Features)	Intersection Improvement Options	Base Alternative (Bicycle/Pedestrian Features)	Intersection Improvement Options
	Widen shoulders, 10' shared-use path to South	2-Way Center Turn	6' Median	MD 650 Turn Lanes	Good Hope Roundabout	Thompson Roundabout	Peach Orchard Roundabout	Widen shared-use path to 10' on north	Old Columbia Pike Turn Lanes	10' shared-use path to South	McKnew Road Turn Lanes
Community Effects											
Residential No. Displacements/No. Impacts/Acres	11/87/14.13	+1/+12/-0.14	+0/+9/-0.93	+0/+6/+1.13	+0/+3/+2.12	+2/+8/+1.90	+0/+5/+0.53	0/0/0	+0/+3/+0.13	0/33/2.11	+0/+3/+0.49
Commercial No. Displacements/No. Impacts/Acres	5/13/2.14	0/0/+0.06	-0/-1/+0.04	+0/+1/+0.10	+0/+0/+0	+0/+0/+0	+0/+1/+0.25	4/13/0.83	+5/+7/+1.22	0/19/2.05	+0/+0/+0
Church/School No. Displacements/No. Impacts/Acres	0/6/1.70	+0/+1/+0.28	0/+1/+0.15	+0/+0/+0	+0/+2/+0.04	+0/+2/+0.06	+0/+0/+0	0/1/0.02	+1/+1/+0.32	0/2/0.24	+0/+0/+0
Historic/Archeological No. Displacements/No. Impacts/Acres	0/4/0.52	+0/+0/+0.28	+0/+0/+0.14	+0/+0/+0	+0/+1/+0.02	+0/+0/+0	+0/+1/-0.03	0/0/0	+0/+0/+0	0/0/0	+0/+0/+0
Parks/Recreation No. Displacements/No. Impacts/Acres	0/1/0.23	+0/+0/-0.03	+0/+0/-0.05	+0/+0/+0	+0/+0/+0	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0	0/0/0	+0/+0/+0
Right-of-Way (Acres)	18.87	+0.34	-0.65	+1.23	+2.18	+1.96	+0.75	0.85	+1.67	4.40	+0.49
Natural Environment											
Streams Number/Linear Feet/Square Feet	1/41/679	-1/-41/-679	-1/-41/-679	+0/+0/+0	+0/+0/+0	+0/+0/+0	+0/+0/+0	1/14/64	+0/+0/+0	1/36/258	+0/+0/+0
Wetlands (Acres)	0.13	+0.02	-0.02	+0	+0	+0	+0.23	0	+0	0	+0
100-Year Floodplain (Acres)	0.19	+0.06	+0.03	+0	+0	+0	+0	0	+0	0	+0
Woodlands (Acres)	4.29	-0.95	-1.33	+0.04	+2.06	+0.17	+0.27	0	+0	0.60	+0.43
Specimen Trees (Number)	74	+3	+1	+2	+10	+6	+0	3	+1	3	+0
Cost ($Millions)	42-46	+(13-14)	+(16-18)	+(7-8)	+(7-7.5)	+(5-6)	+(4-5)	3-3.5	+(5-6)	10-11	+(1-2)
Total Cost by Segment ($Millions)	42-90.5							3-9.5		10-13	

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SUMMARY OF IMPACTS

Potential Resource Impacts	Alternative 3, Segment A: MD 97 (Georgia Avenue) to MD 182 (Layhill Road) Typical Section Improvement			Alternative 3, Segment B: MD 182 (Layhill Road) to MD 650 (New Hampshire Avenue) Typical Section Improvement	
	Base Alternative (Bicycle/Pedestrian Features)	Access Management Provisions Option	Intersection Improvement Options	Base Alternative (Bicycle/Pedestrian Features)	Intersection Improvement Options
	4-Lane Divided Roadway with wide shoulders, 5' sidewalk to South, 10' shared-use path to North	3 Frontage Roads	Wintergate Drive Roundabout	4-Lane Divided Roadway, Widen shared-use path to 10' on North	Norwood Road Turn Lanes
Community Effects					
Residential No. Displacements/No. Impacts/Acres	5/76/21.55	+0/+8/+2.04	+0/+1/+0.37	0/7/7.78	+0/+0/+0
Commercial No. Displacements/No. Impacts/Acres	0/1/0.18	+0/+0/+0	+0/+1/+0.06	0/1/0.34	+0/+0/+0
Church/School No. Displacements/No. Impacts/Acres	0/5/1.63	+0/+0/+0.10	+0/+0/+0	0/0/0	+0/+0/+0
Historic/Archeological No. Displacements/No. Impacts/Acres	0/1/0.90	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Parks/Recreation No. Displacements/No. Impacts/Acres	0/1/0.90	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Right-of-Way (Acres)	25.16	+2.14	+0.43	8.12	+0
Natural Environment					
Streams Number/Linear Feet/Square Feet	4/457/15,887	0/0/0	+0/+0/+0	5/385/4516	+0/+0/+0
Wetlands (Acres)	0.33	0	+0	0.09	+0
100-Year Floodplain (Acres)	3.01	0	+0	3.86	+0
Woodlands (Acres)	16.20	+0.51	+0.32	12.43	+0
Specimen Trees (Number)	71	+8	+3	13	+0
Cost ($Millions)	95-105	+(6.5-7.5)	+(1.5-2)	34-37.5	+(0.5)
Total Cost by Segment ($Millions)	95-114.5			34-38	

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SUMMARY OF IMPACTS

Potential Resource Impacts	Alternative 3, Segment C: MD 650 (New Hampshire Avenue) to Old Columbia Pike Typical Section Improvement							Alternative 3, Segment D: Old Columbia Pike to US 29 Typical Section Improvement			Alternative 3, Segment E: US 29 to I-95 Typical Section Improvement	
	Base Alternative (Bicycle/Pedestrian Features)	Access Management Provisions Option		Intersection Improvement Options				Base Alternative (Bicycle/Pedestrian Features)	Access Management Provisions Option	Intersection Improvement Options	Base Alternative (Bicycle/Pedestrian Features)	Intersection Improvement Options
	4-Lane Divided w/ wide shoulders, 10' shared-use path to South	2-Way Center Turn	6' Median	MD 650 Turn Lanes	Good Hope Roundabout	Thompson Roundabout	Peach Orchard Roundabout	Widen shared-use path to 10' on north	18' Median	Old Columbia Pike Turn Lanes	4- and 6- Lane Divided Roadway, 10' shared-use path to South	McKnew Road Turn Lanes
Community Effects												
Residential No. Displacements/No. Impacts/Acres	20/114/36.48	-8/-3/-6.96	-7/-5/-5.13	+0/+1/+0.09	+0/+0/+1.71	+0/+0/+1.74	+0/+0/+0.12	0/0/0	+0/+0/+0	+0/+0/+0	0/35/2.93	+0/+3/+0.53
Commercial No. Displacements/No. Impacts/Acres	5/14/7.09	-0/-0/-0.05	+0/+0/+0.03	+0/+0/+0.03	+0/+0/+0	+0/+0/+0	+0/+0/+0.18	10/19/1.74	-1/-0/-0.19	+0/+2/+0.14	0/19/3.01	+0/+0/+0
Church/School No. Displacements/No. Impacts/Acres	0/6/2.91	-0/-0/-0.03	-0/-0/-0.01	+0/+0/+0	+0/+0/+0	+0/+0/+0	+0/+0/+0	1/0/0.18	-0/-0/-0.02	+0/+1/+0.04	0/3/0.44	+0/+0/+0
Historic/Archeological No. Displacements/No. Impacts/Acres	1/4/3.16	-0/-0/-0.02	-0/-0/-0.03	+0/+0/+0	+0/+0/+0	+0/+0/+0	-0/-0/-0.39	0/0/0	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Parks/Recreation No. Displacements/No. Impacts/Acres	0/1/0.35	-0/-0/-0.06	-0/-0/-0.06	+0/+0/+0	+0/+0/+0	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0	+0/+0/+0	0/0/0	+0/+0/+0
Right-of-Way (Acres)	49.99	-7.12	-5.20	+0.12	+1.71	+1.74	-0.09	1.92	-0.21	+0.18	6.38	+0.53
Natural Environment												
Streams Number/Linear Feet/Square Feet	2/125/2,469	0/-9/-251	0/+4/+33	0/0/0	0/0/0	0/0/0	0/0/0	1/66/1,797	-0/-3/-105	+0/+0/+0	1/36/258	+0/+0/+0
Wetlands (Acres)	0.33	-0.08	-0.03	0	0	0	+0.13	0	-0	+0	0	+0
100-Year Floodplain (Acres)	0.42	-0.13	-0.01	0	0	0	0	0	-0	+0	0	+0
Woodlands (Acres)	5.14	-0.45	-0.13	0	+1.64	0	+0.08	0	-0	+0	0.98	+0.46
Specimen Trees (Number)	83	-1	-1	0	+8	+1	0	3	-0	+1	11	+0
Cost ($Millions)	105-116	-(7-8)	-(9-10)	+(7-8)	+(3.5-4)	+(3-4)	+(0.5-1)	10-11	-(0.5-1)	+(1)	30-33	+(1.5-2)
Total Cost by Segment ($Millions)	105-125							10-11			30-35	

RELATED TRANSPORTATION PROJECTS

- **MD 97 at MD 28 Interchange Project** (*Design - On Hold*)
- **MD 97 at MD 28 Intersection Improvements** (*Design - Ongoing*)
- **MD 28 from MD 97 to Baileys Lane** (*Concept Development - Ongoing*)
  - **Provide Sidewalk along Eastbound MD 28**
- **US 29 Interchanges**
  - **Stewart Lane/Tech Road** (*Design - On Hold*)
  - **Musgrove Road/Fairland Road** (*Design - Ongoing*)
  - **Greencastle Road** (*Design - On Hold*)
  - **Blackburn Road** (*Design - On Hold*)
- **Burtonsville Access Road** (*County*)
- **MD 198 from Riding Stable Road to I-95** (*Constuction - Ongoing*)
  - **Pavement, drainage, sidewalk, curb and gutter, traffic barrier, markings, and traffic signage upgrade/replacement**
- **MD 198 at Riding Stable Road** (*Concept Development - Ongoing*)
  - **Extending deceleration lane Westbound on MD 198**

MARYLAND 28

MARYLAND 198

PROJECT SCHEDULE

Planning (Currently Funded)

Planning Steps

- Update Inventories of Existing Conditions — Spring / Summer 2014
- Develop Preliminary Alternatives — Summer 2014 - Winter 2014/2015
- Conduct Alternatives Public Workshop — Spring 2015
- Select Alternatives for Detailed Study — Summer 2015
- Conduct Detailed Engineering and Studies — Summer / Fall 2015
- Conduct Location / Design Public Hearing — Winter 2015 / 2016
  - ► Evaluate Comments from Hearing
  - ► Perform Additional Studies, if Necessary
- Select Preferred Alternative — Spring 2016
  - ► Prepare Final Environmental Document
- Obtain Location / Design Approvals — Fall 2017

Design*

Right-of-Way Acquisition*

Construction*

* May include entire corridor or break-out improvements