

## Appendix G – Alternatives

The alternatives were divided into the following nine categories. Each category was assigned a letter, so that each alternative could be identified with a category letter and a number:

- Driver Behavior (A)
- Signs & Markings (B)
- Operational Changes (C)
- Multi-Modal Improvements (D)
- Geometric Modifications (E)
- Roadway Departure Countermeasures (F)
- Maintenance (G)
- Environmental (H)
- Fort Belvoir (I)

What follows is a list of candidate alternatives. The **bolded** candidate alternatives are those that are outside the scope of the project; the underlined candidate alternatives were removed due to context sensitivity.

### **List of Candidate Alternatives**

#### Driver Behavior (A)

A1: Speed Public Awareness Campaign

A2: Parkway vs. Road Public Awareness Campaign

A3: Distracted Driving Public Awareness Campaign

A4: Pedestrian Safety Public Awareness Campaign

A5: Law Enforcement Push on Speed, DUI, and Distracted Driving

A6: Neighborhood Educational Event

A7: Commercial Vehicle Enforcement/Educational Campaign

A8: Speed Cameras

A9: Increased Speed Fines

A10: Dynamic Message Signs (DMS)

A11: Crowdsourcing/Citizen Reporting Application (App)

A12: Infographic on Time vs. Speed

A13: Speed Management Plan

A14: Website for Public Comments/Concerns

## Signs & Markings (B)

B1: Manual on Uniform Traffic Control Devices (MUTCD) Compliant Warning Signs

B2: Turn Lane Pavement Arrows

B3: Animal Warning Signage

B4: Improved Delineation

B5: Add Pavement Hatchmarks and Signs to Not Block Intersections

B6: Enhanced Delineation and Friction on Curves

B7: Install Centerline Delineators

B8: Speed Activated Feedback Sign

**B9: Signage and Pavement Marking for Stone Arch Bridge**

**B10: Low Clearance Bridge Intelligent Transportation System (ITS)**

**B11: Update Signage at Mt. Vernon Roundabout**

## Operational Changes (C)

C1: Variable Speed Limits (VSL)

C2: Advisory Speed Limits

C3: Reduced/Increased Speed Limits

**C4: Reduced Speed at Stone Arch Bridge**

C5: Corridor (Access) Management

C6: Turn Prohibition

C7: Adjust Signal Timing on Route 1

C8: Tour Bus Prohibition

C9: Intersection Collision Warning System

C10: Wildlife Detection System

C11: Speed Hump or Speed Table

C12: Transfer Road to Virginia Department of Transportation (VDOT)

C13: Commuter/Carpooling Parking Lot

C14: Close Parkway to Traffic on Weekends and Holidays

C15: Close Parkway Exit on 495

**C16: Signal Timing at Thornton/Porto Vecchio**

Multi-Modal Improvements (D)

D1: Pedestrian Crossing with RRFB or HAWK

D2: Pedestrian Crosswalks

D3: Embedded Pavement Lights for Pedestrian Crossings

D4: Pedestrian Medians/Crossing Islands

D5: Transit Study

D6: Walkways/Sidewalks

D7: Pedestrian Warning Application (App)

D8: Pedestrian Bridge

D9: Pedestrian Tunnel

D10: Lift E-Bike/E-Scooter Ban

D11: Add Capital Bikeshare Locations

D12: Lift Bike Ban on GWMP for Weekends & Holidays

**D13: Crossing Guard/Officers at Mt. Vernon Roundabout**

**D14: Improvements to Mt. Vernon Trail**

**D15: Separate E-Bike**

**D16: Separate Scooter**

Geometric Modifications (E)

E1: Traffic Signal

E2: Roundabout

E3: Continuous Green T-Intersection

E4: Road Diet (e.g. imbalanced typical section with two-lanes in one direction and 1 lane in the other)

E5: Two-Way Left-Turn Lane Installation

E6: Spot Left-Turn Lane Installation

E7: Spot Acceleration Lanes on GWMP for Traffic Entering From Neighborhoods

E8: Spot Widen/Add Splitter Islands

E9: Right-Turn Lanes

E10: Reduced Left-Turn Conflict Intersections

E11: Channelize Right-Turns with ‘Pork Chop’ Island

**E12: Redesign/Reconstruct Stone Arch Bridge**

E13: Redesign Grades at Intersections

**E14: Mt. Vernon Parking Terminus Improvements**

E15: Remove Intersection

#### Roadway Departure Countermeasures (F)

F1: Road Design Improvements at Curves

F2: Longitudinal Rumble/Mumble Strips

F3: Safety Edge

F4: Install Lighting

F5: Median Barrier

F6: Median Strips

F7: Centerline Buffer Area

#### Maintenance (G)

G1: Trim Trees/Shrubs/Grass/Edging

G2: Fix the Current Road Surface

G3: Upgrade Existing Striping

G4: Repave

Environmental (H)

H1: Arborist Study

H2: Drainage Study

H3: Flood Mitigation Study/Partnership

Fort Belvoir (I)

I1: Educational Event at Fort Belvoir

I2: Mass Transit for Fort Belvoir

I3: Suggest Travel Demand Management (e.g. telework) for Fort Belvoir to reduce single occupancy vehicle commuters who use the GWMP

Category	#	Potential Treatment	Traffic Safety Benefit 0 to 6	Law, Policy, & Regulatory Compatibility 0 to 3	Implementation Timeline 0 to 2	Traffic Operational Benefits 0 to 2	Supporting Analysis 0 to 2	Construction Costs 0 to 1	Responsible Agency for Implementation 0 to 1	Right-of-Way 0 to 1	Community Support 0 to 1	TOTAL	Comments
DB	A1	Speed Public Awareness Campaign	5	3	2	2	1	1	0	1	1	16	
DB	A2	Parkway vs. Road Public Awareness Campaign	0	2	2	0	1	1	1	1	1	8	
DB	A3	Distracted Driving Campaign	5	3	2	2	1	1	0	1	1	16	
DB	A4	Pedestrian Safety Public Awareness Campaign	5	3	2	2	1	1	0	1	1	16	
DB	A5	Law Enforcement Push on Speed, DUI and Distracted Driving	6	3	1	1	1	0	1	1	1	15	
DB	A6	Neighborhood Educational Event	1	3	1	1	1	1	1	0	1	10	
DB	A7	Commercial Vehicle Enforcement/Educational Campaign	4	3	2	2	1	1	1	1	1	16	
DB	A8	Speed Cameras	5	1	0	0	1	0	1	1	0	9	
DB	A10	Dynamic Message Sign (DMS)	3	1	2	2	2	1	1	1	0	13	
DB	A11	Crowdsourcing/Citizen Reporting Application (App)	2	0	0	1	0	0	1	1	0	5	
DB	A12	Infographic on Time vs. Speed	3	1	2	0	2	1	1	1	0	11	
DB	A13	Speed Management Plan	4	1	0	1	0	0	1	1	0	8	
DB	A14	Website for Public Comments/Concerns	2	0	2	1	1	1	0	1	0	8	
SM	B1	MUTCD Compliant Warning Signs	5	3	2	2	2	1	1	1	1	18	
SM	B2	Turn Lane Pavement Arrows	3	1	2	2	2	1	1	1	0	13	
SM	B4	Improved Delineation	6	1	2	2	2	1	1	1	1	17	
SM	B5	Add Pavement Hatchmarks and Signs to Not Block Intersections	3	1	2	2	2	1	1	1	1	14	
SM	B8	Speed Activated Feedback Sign	5	1	1	1	1	0	0	1	1	11	
OC	C3	Reduced Speed Limits	6	3	1	0	0	1	1	1	1	14	
OC	C5	Corridor (Access) Management	3	3	0	2	0	1	1	0	0	10	
OC	C6	Turn Prohibition	3	3	1	2	1	1	1	1	0	13	
OC	C7	Adjust Signal Timing on Route 1	1	1	1	2	0	0	0	0	0	6	
OC	C11	Speed Hump or Speed Table	3	1	0	0	0	0	1	1	0	6	
MM	D1	Pedestrian Crossing with RFB or HAWK	6	1	0	1	0	0	0	1	1	10	
MM	D2	Pedestrian Crosswalks	3	1	1	2	1	1	1	1	1	12	
MM	D4	Pedestrian Medians/Crossing Islands	3	1	0	2	0	0	0	1	1	8	
MM	D5	Transit Study	2	3	0	2	0	0	0	0	0	8	
MM	D7	Pedestrian Warning Application (App)	5	0	0	2	0	0	1	1	1	10	
MM	D11	Add Capital Bikeshare Locations	1	3	1	0	1	1	0	0	0	8	
GM	E2	Roundabout	6	1	0	2	0	0	0	0	0	9	
GM	E4	Road Diet (e.g. Imbalanced Typical Section w/2 Lanes in One Direction and 1 Lane in the Other)	6	1	0	2	0	0	0	0	0	9	
GM	E5	Two-Way Left-Turn Lane Installation	3	1	0	1	0	0	0	0	0	5	
GM	E6	Spot Left-Turn Lane Installation	3	1	0	2	1	1	0	0	0	8	
GM	E8	Spot Widen/Add Splitter Islands	3	1	0	2	1	1	0	0	0	9	
GM	E9	Right-Turn Lanes	3	1	0	2	1	0	0	0	0	7	
GM	E10	Reduced Left-Turn Conflict Intersections	6	1	0	1	0	0	0	0	0	8	
GM	E11	Channelize Right-Turns with 'Pork Chop' Island	3	1	0	2	1	1	0	1	0	9	
GM	E15	Remove Intersection	6	3	0	1	0	0	0	1	1	11	
RD	F1	Roadside Design Improvements at Curves	6	1	0	0	1	0	0	0	0	9	
RD	F2	Longitudinal Rumble/Mumble Strips	3	1	1	0	1	1	1	1	0	9	
RD	F4	Install Lighting	6	3	1	2	1	0	1	0	0	14	
RD	F7	Centerline Buffer Area	3	1	1	0	2	1	1	1	1	10	
M	G1	Trim Trees/Shrubs/Grass/Edging	3	1	2	1	2	0	1	1	1	12	
M	G2	Fix the Current Road Surface	3	3	2	2	2	0	1	1	1	15	
M	G3	Update Existing Striping	6	1	2	2	2	0	1	1	1	16	
E	H1	Arborist Study	1	1	0	0	0	1	1	1	0	5	
E	H2	Drainage Study	3	1	0	1	0	1	0	0	0	6	
FB	I1	Educational Event at Fort Belvoir	1	1	2	0	1	0	1	0	1	7	