

# US 1 Safety Evaluation



PRESENTATION OF FINDINGS

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OCTOBER 11, 2018



# Presentation Outline



1. Background and History
2. Evaluation Process
  - Public Input
  - Crash Data
  - Focus Area Development
3. Recommendations and Concepts
4. Next Steps

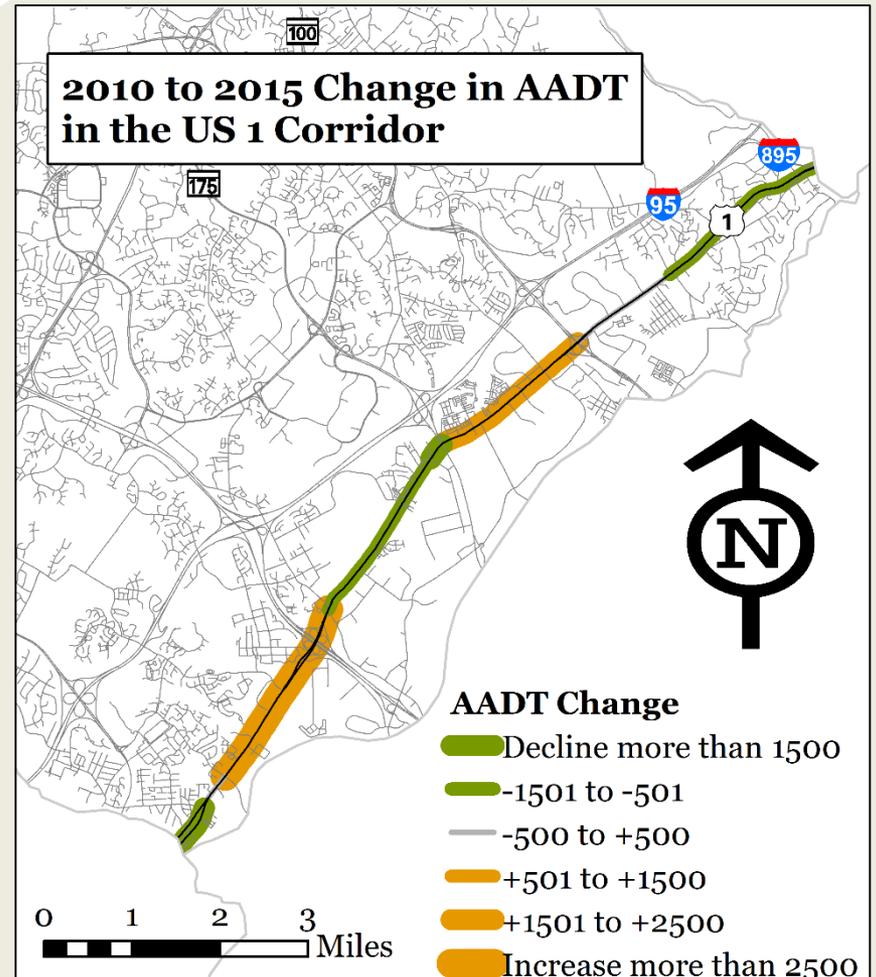
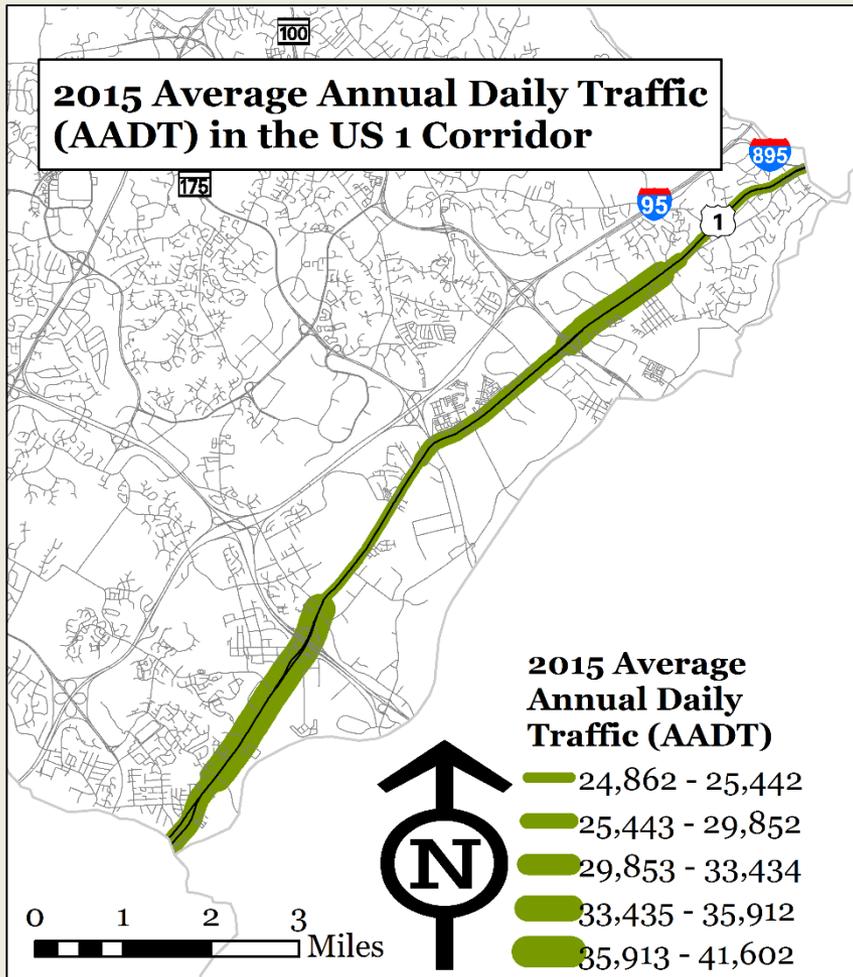
# Background and History



# US 1 in Howard County



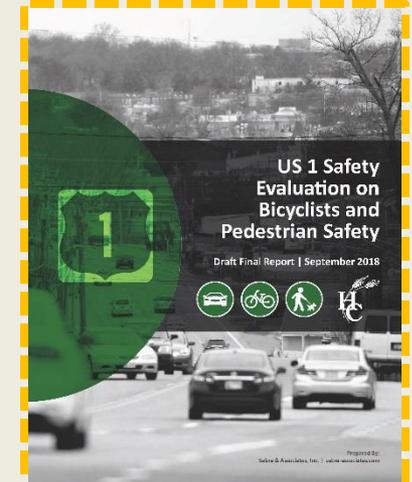
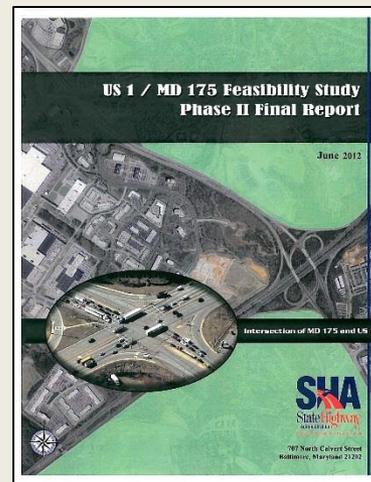
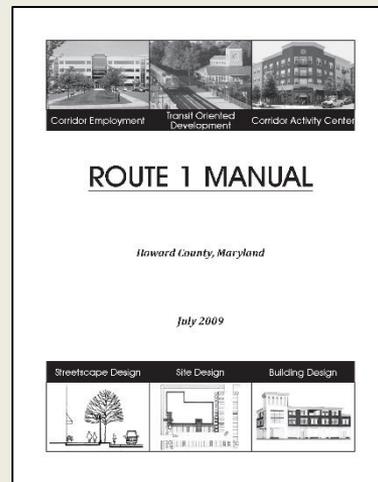
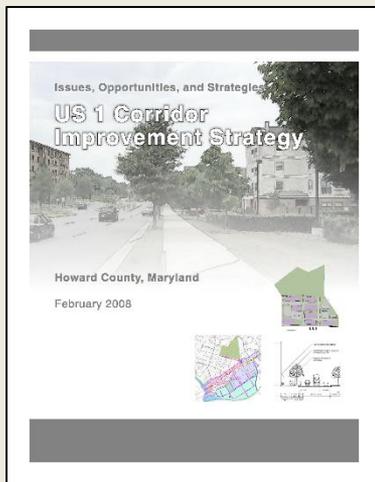
# Trends in the US 1 Corridor: Vehicle Traffic



# Planning History of US 1



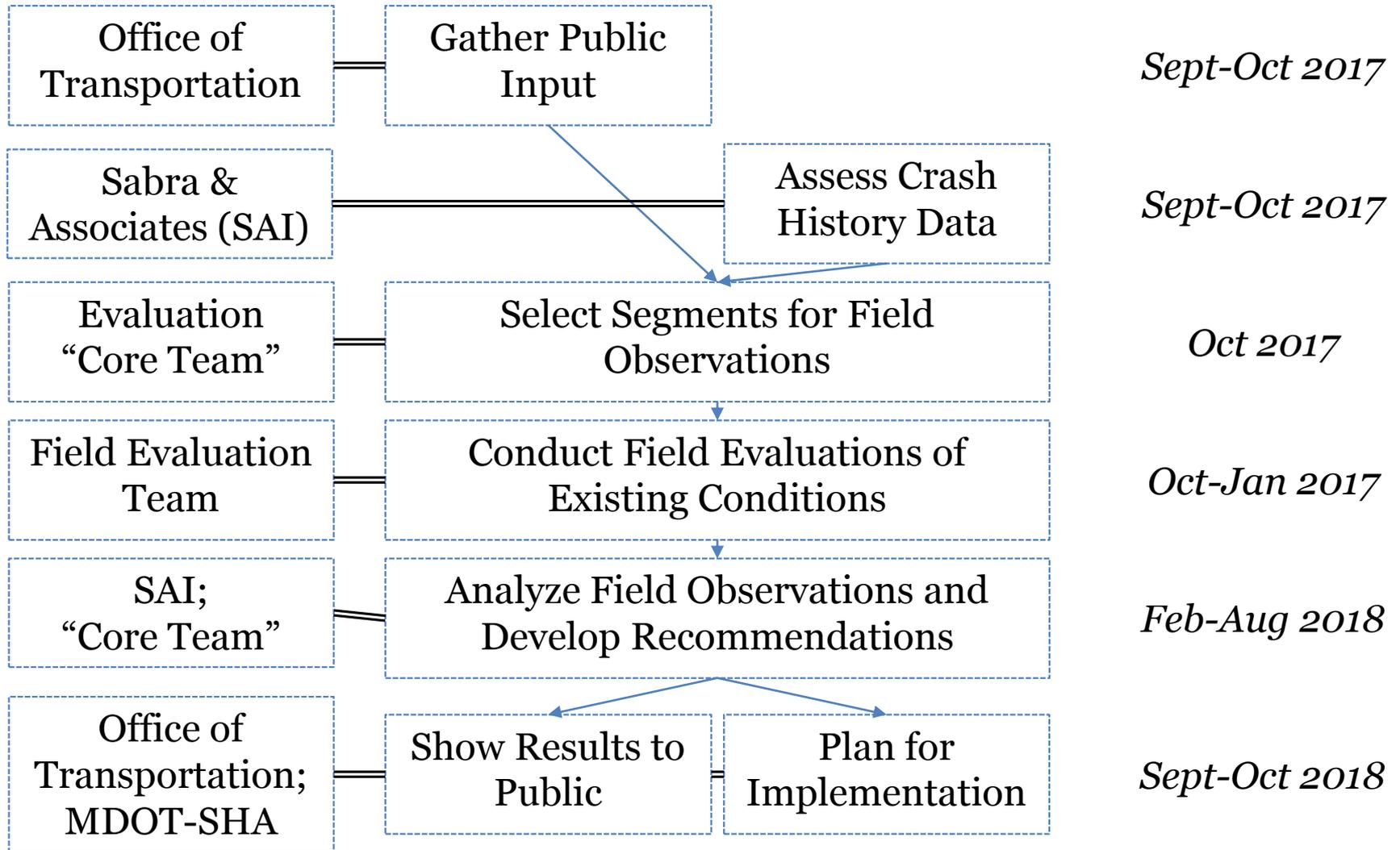
- 2008: US 1 Corridor Improvement Strategy
- 2009: Route 1 Manual
- 2012: US 1/MD 175 Feasibility Study (SHA)
- 2018: US 1 Safety Evaluation
- Future: US 1 Land Use Study



# Evaluation Process



# Evaluation Process



# Core Team Members

The core team consisted of representatives of the following departments, offices, and agencies:

- Maryland Highway Safety Office
- MDOT-SHA District 7 (Howard, Carroll, and Frederick Counties)
- MDOT-SHA Office of Traffic and Safety
- Baltimore Metropolitan Council
- Howard County Department of Public Works
- Howard County Police Department
- Howard County Office of Transportation

# Public Input



**2** open houses

**36** attendees

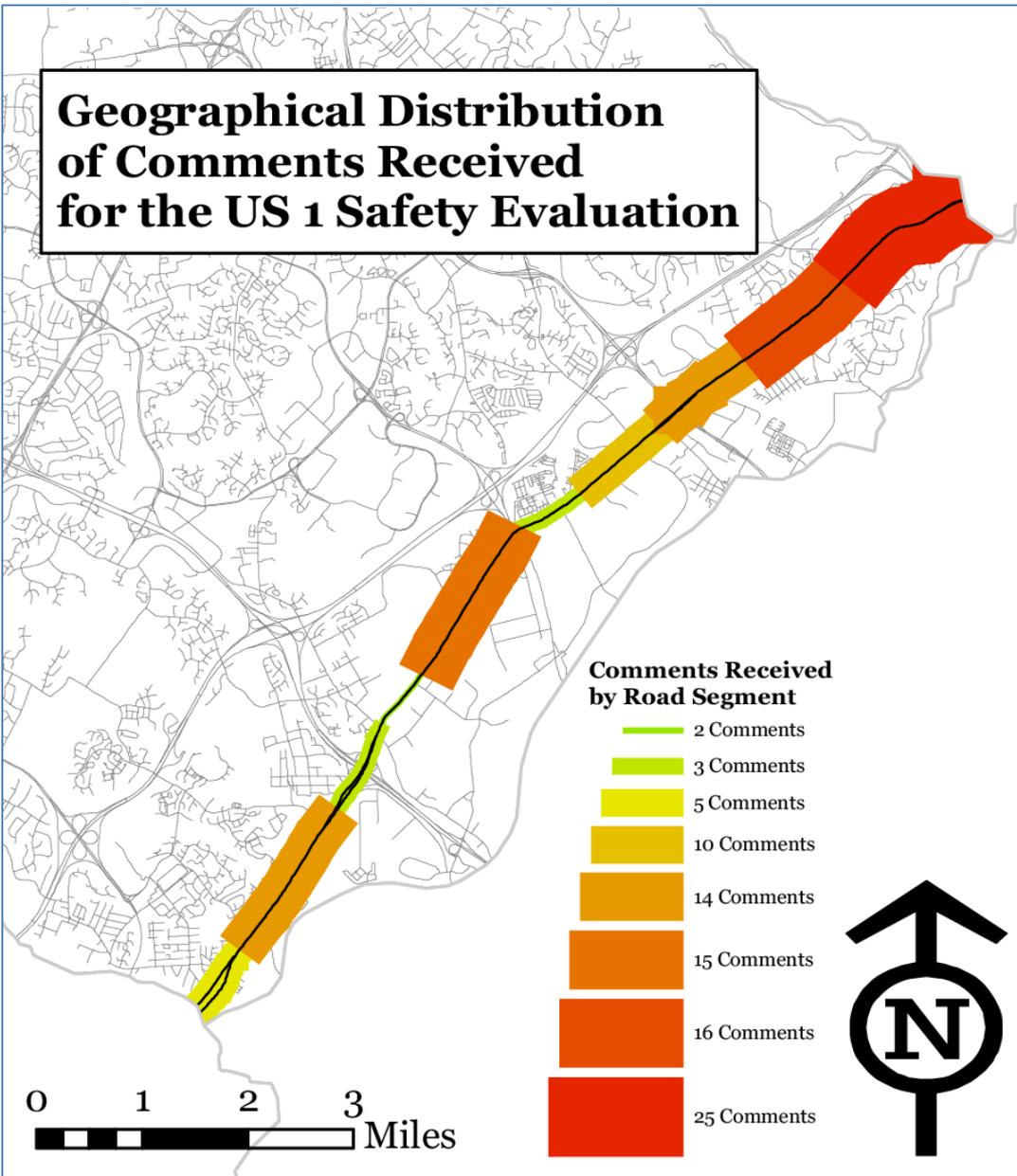
**41** comment forms

**89** specific locations

**14** emails received

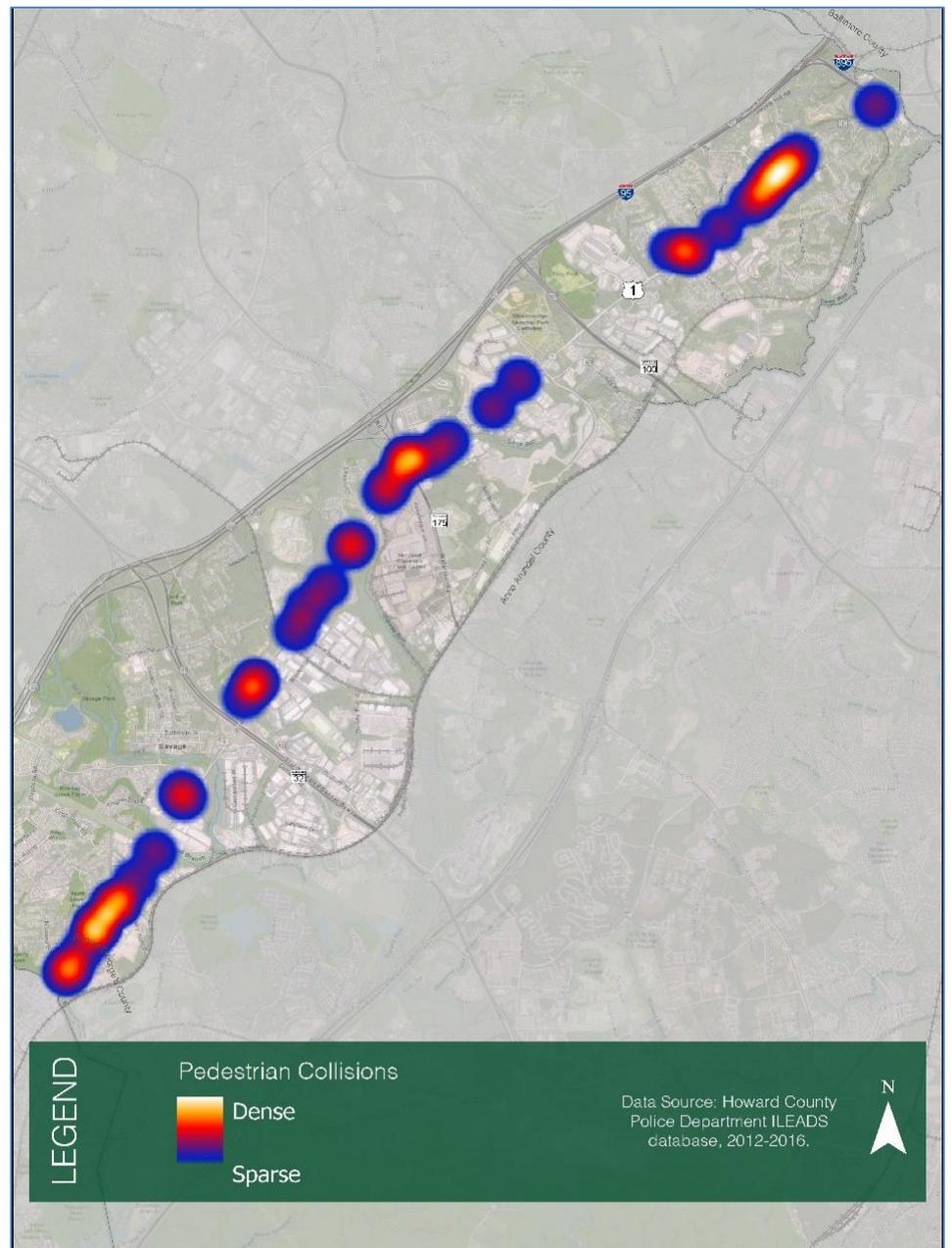
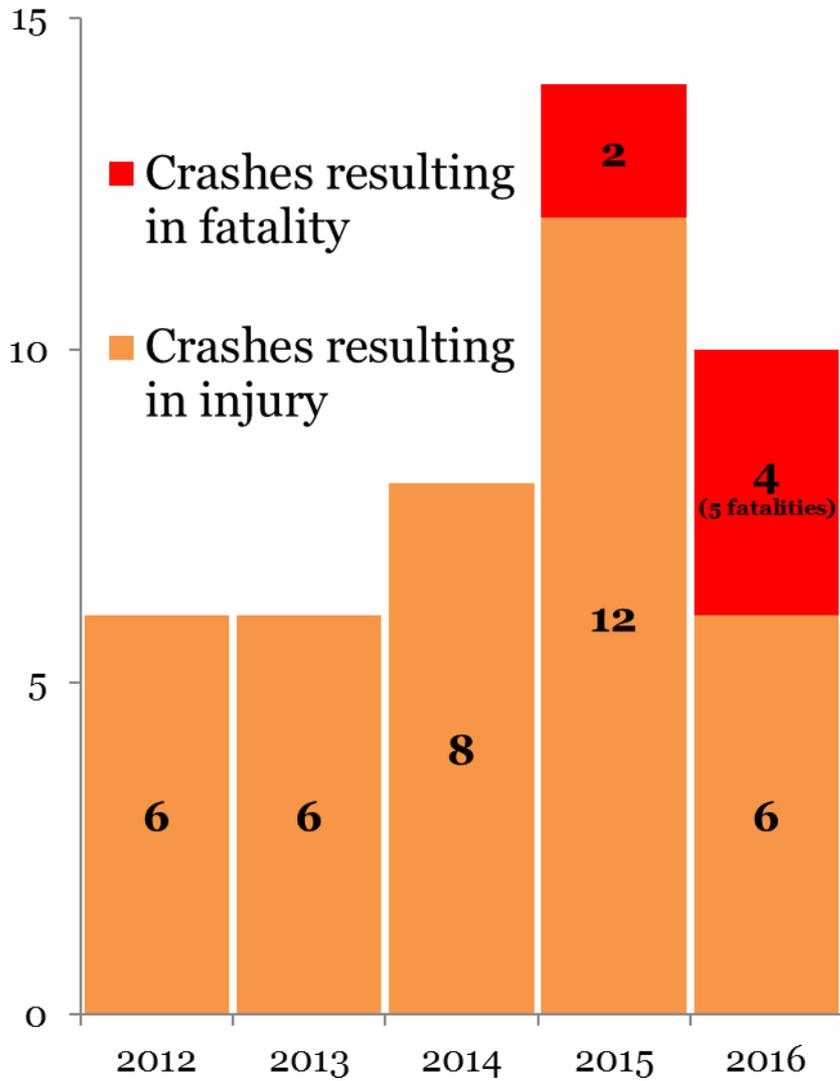
**4** boards and commissions

## Geographical Distribution of Comments Received for the US 1 Safety Evaluation



## Themes

- **Non-continuous sidewalks**
- **Sparse pedestrian crossings of US 1**
- **Poor bicycle and pedestrian access to transit**



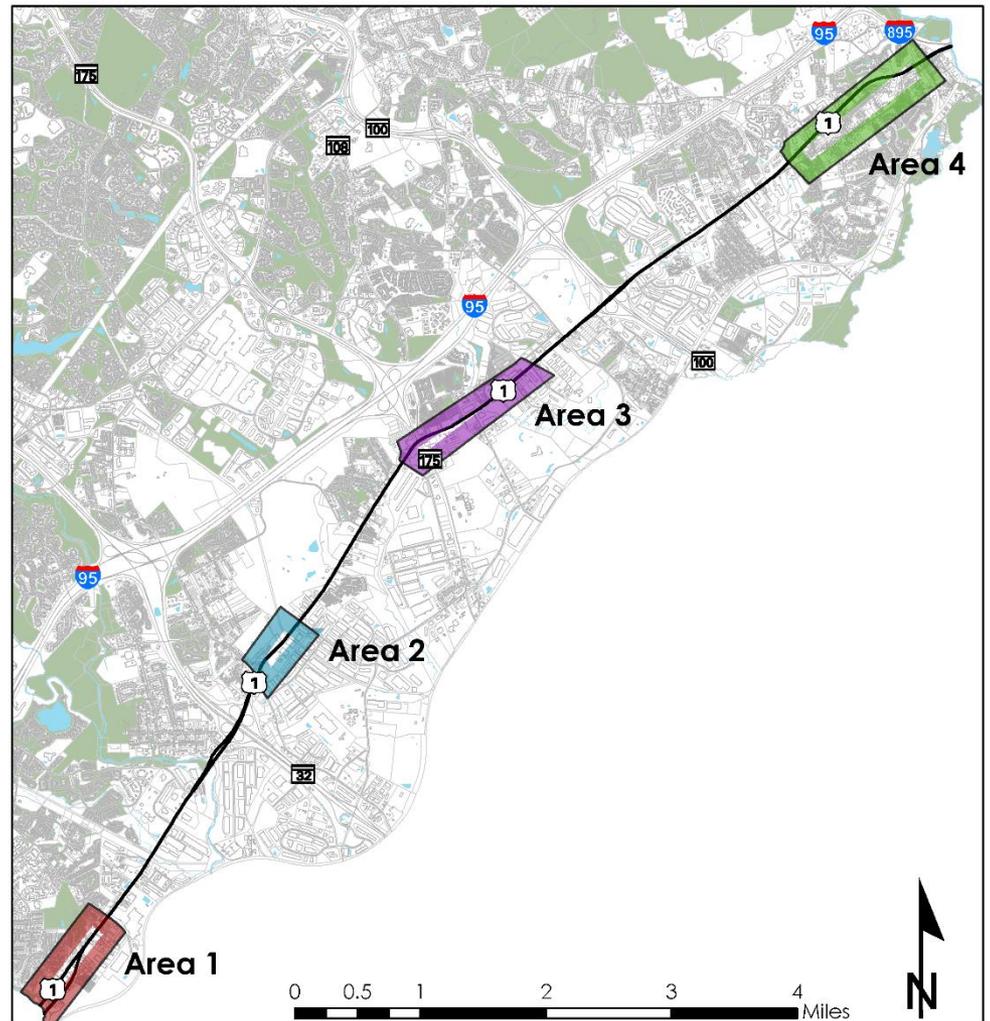
# CRASH HISTORY: PEDESTRIAN AND BICYCLE

**Area 1:** City of Laurel/  
Howard County Line to  
Whiskey Bottom Road

**Area 2:** Guilford Road to  
Patuxent Range Road

**Area 3:** Assateague Drive to  
Brookdale Drive

**Area 4:** Greenfield Road to  
Levering Avenue



**FOCUS AREAS**

# Daytime and Twilight Field Observations

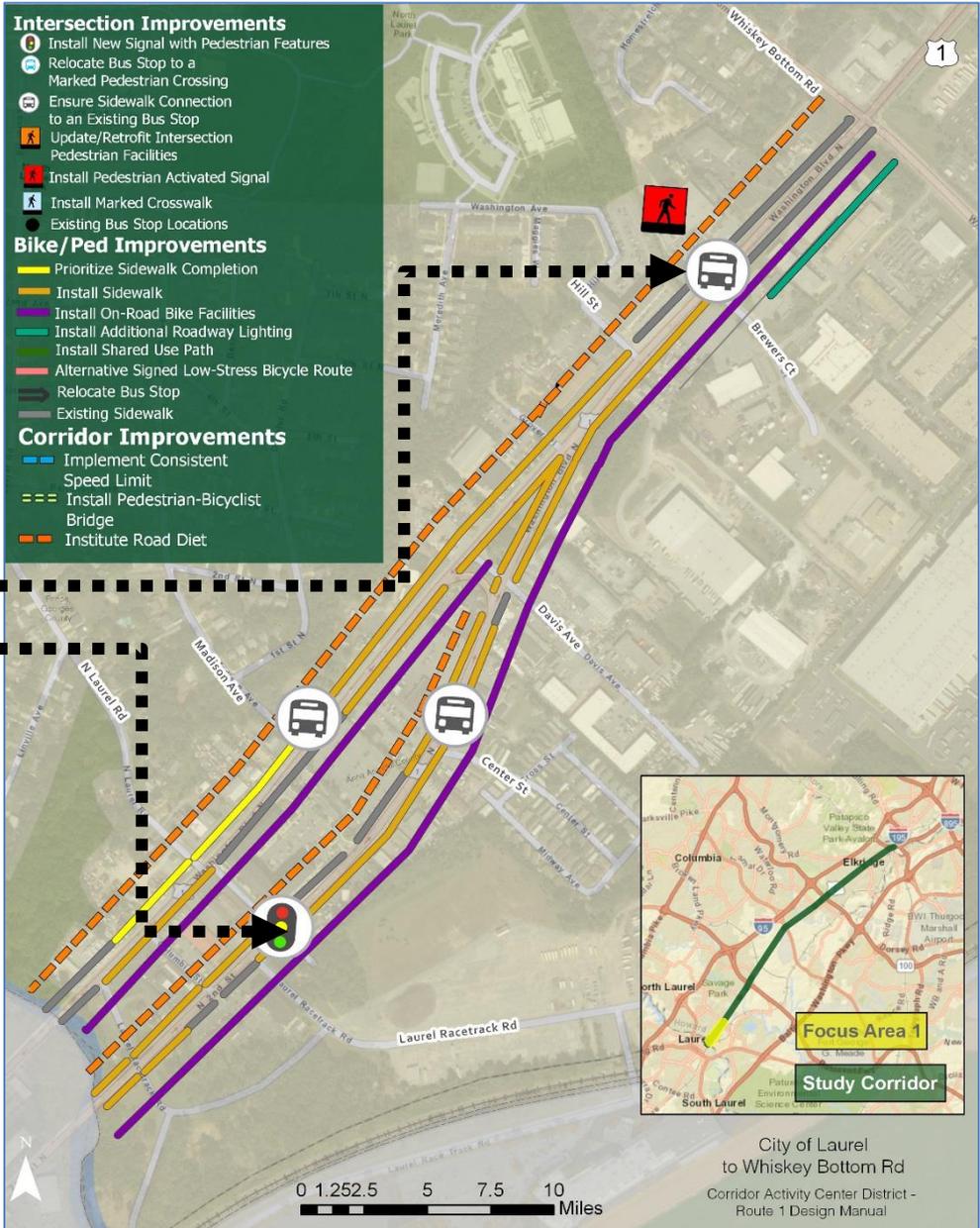


- High vehicle speed incompatible with pedestrian activity
- Inadequate visibility of pedestrians
- Lack of pedestrian crossings
- Lack of sidewalks or bike facilities creating a connected non-motorized network

**FIELD EVALUATIONS**

# Recommendations





# RECOMMENDATIONS: AREA 1



### Intersection Improvements

- Install New Signal with Pedestrian Features
- Relocate Bus Stop to a Marked Pedestrian Crossing
- Ensure Sidewalk Connection to an Existing Bus Stop
- Update/Retrofit Intersection Pedestrian Facilities
- Install Pedestrian Activated Signal
- Install Marked Crosswalk
- Existing Bus Stop Locations

### Bike/Ped Improvements

- Prioritize Sidewalk Completion
- Install Sidewalk
- Install On-Road Bike Facilities
- Install Additional Roadway Lighting
- Install Shared Use Path
- Alternative Signed Low-Stress Bicycle Route
- Relocate Bus Stop
- Existing Sidewalk

### Corridor Improvements

- Implement Consistent Speed Limit
- Install Pedestrian-Bicyclist Bridge
- Institute Road Diet



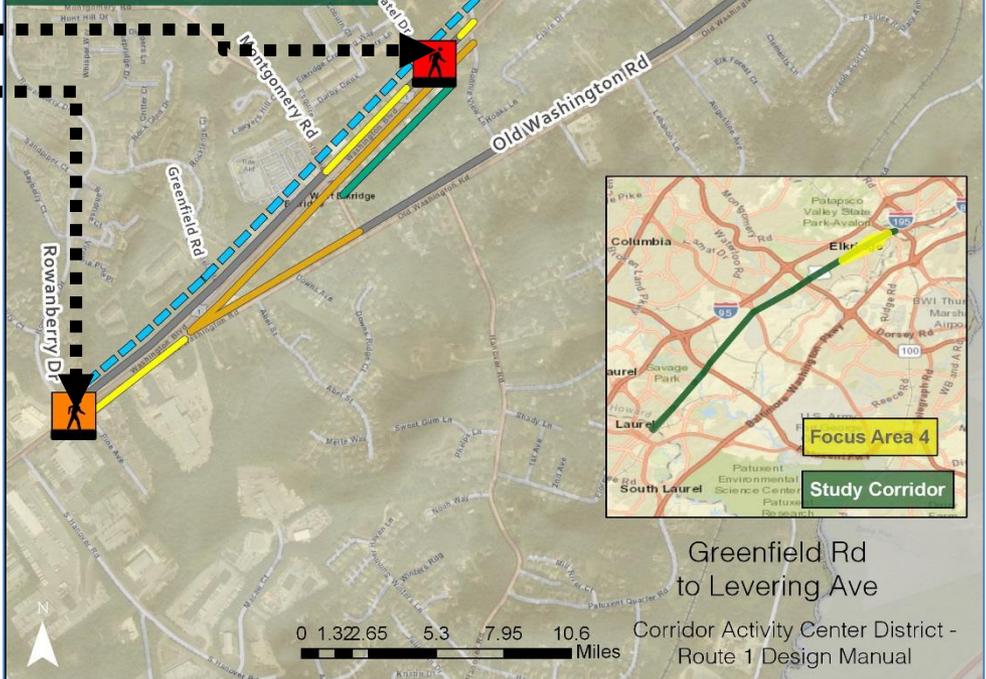
# RECOMMENDATIONS: AREA 2



# RECOMMENDATIONS: AREA 3

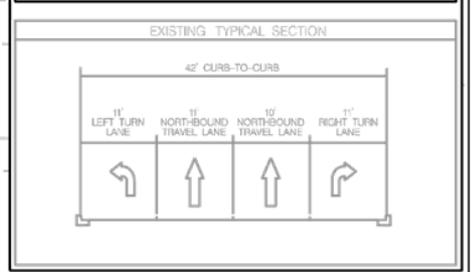
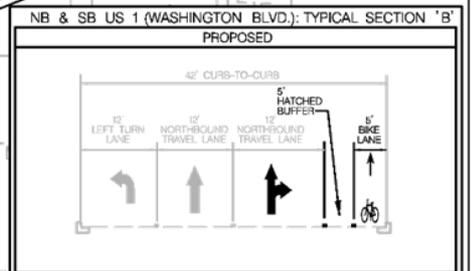
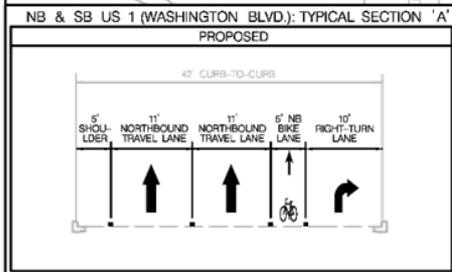
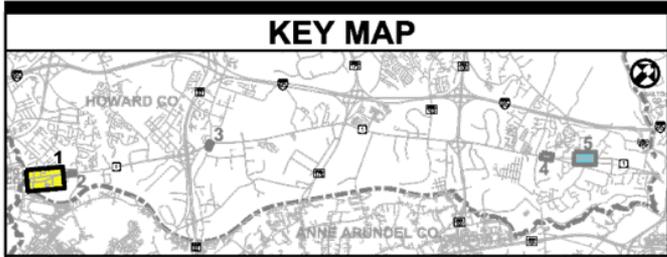


- Intersection Improvements**
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  - Alternative Signed Low-Stress Bicycle Route
  - Relocate Bus Stop
  - Existing Sidewalk
- Corridor Improvements**
- Implement Consistent Speed Limit
  - Install Pedestrian-Bicyclist Bridge
  - Institute Road Diet



# RECOMMENDATIONS: AREA 4

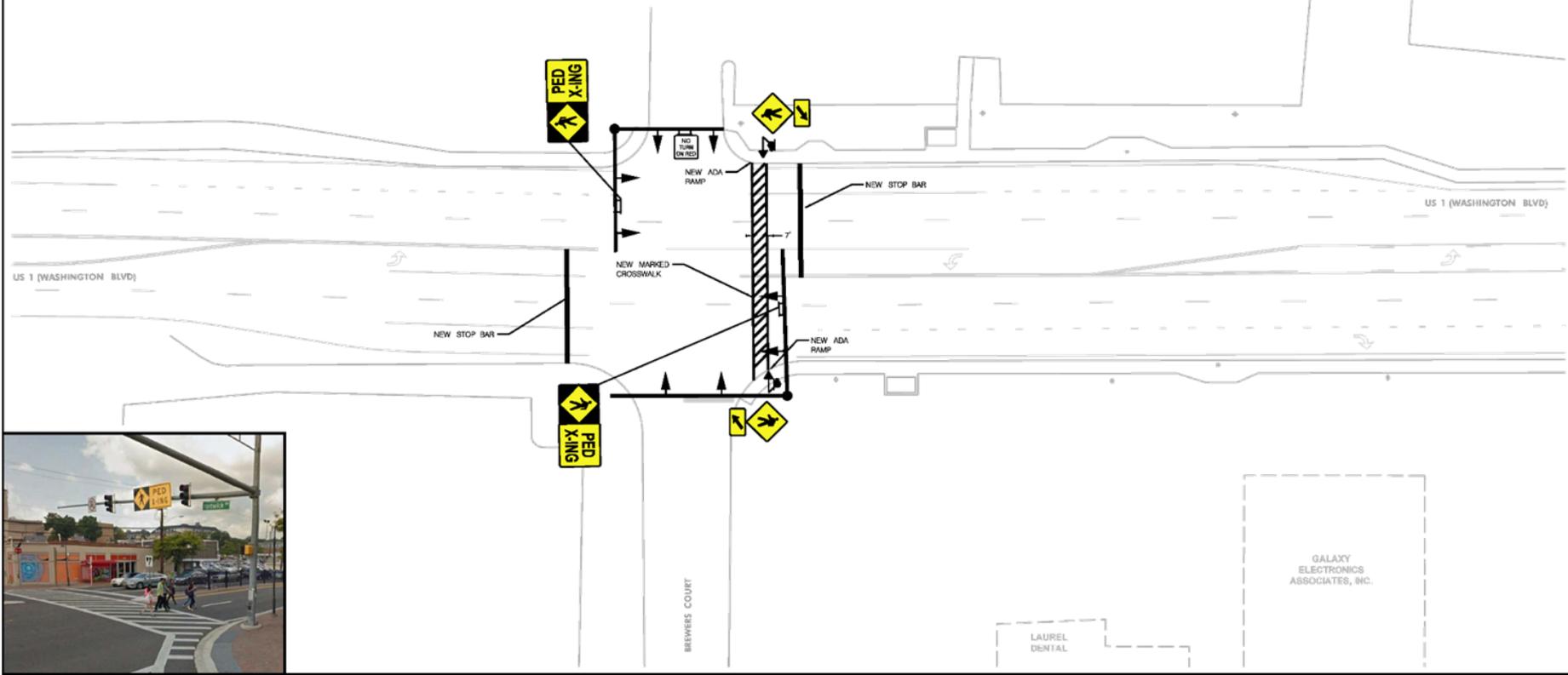
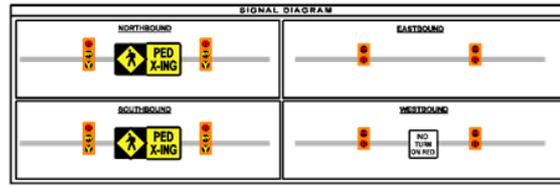
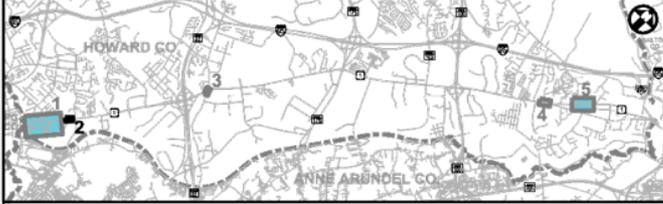
Greenfield Rd to Levering Ave  
Corridor Activity Center District -  
Route 1 Design Manual



# CONCEPT 1: NORTH LAUREL BUFFERED BIKE LANES

DATE: 08/14/2014 11:58 AM

# KEY MAP



**SABRA, WANG & ASSOCIATES, INC.**  
ENGINEERS • PLANNERS • ANALYSTS

US 1 (Washington Boulevard) Safety Evaluation  
Proposed Improvements: Concept # 2  
Pedestrian Activated Traffic Signal



# CONCEPT 2: BREWERS COURT PEDESTRIAN SIGNAL

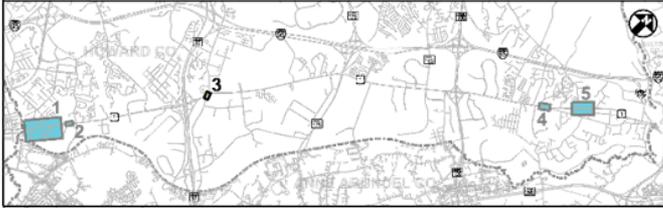
DATE: 08/14/2014 11:58 AM

# Maryland Pedestrian Signal Example

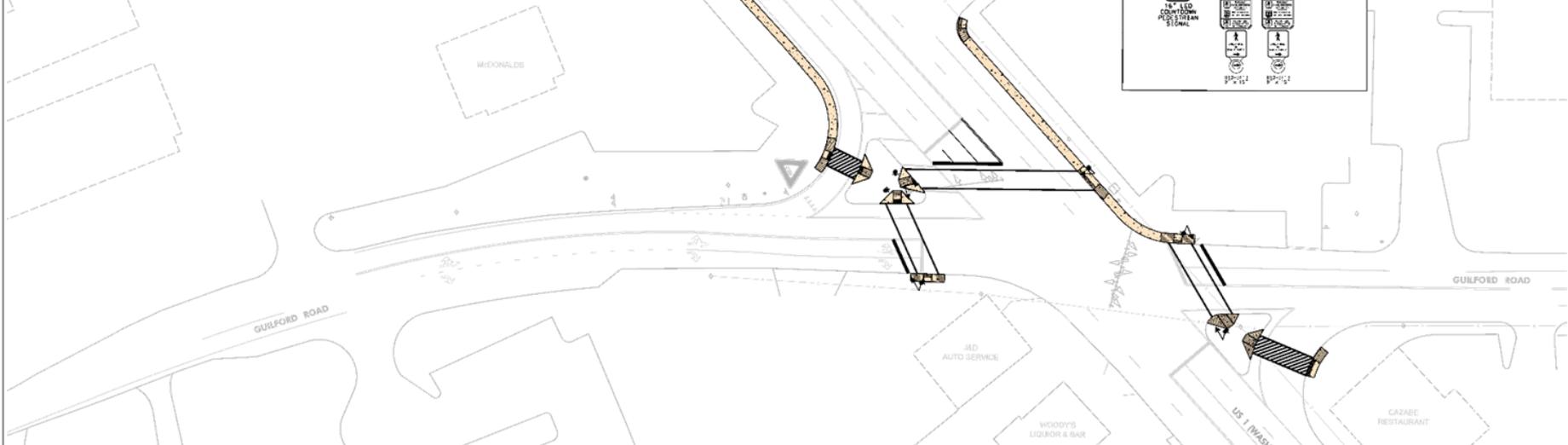
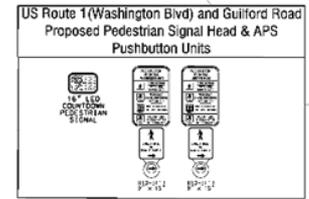
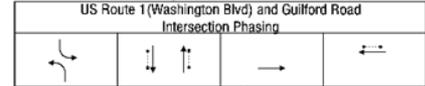
US 1 (Baltimore Avenue) at Hartwick Road, College Park, Prince George's County



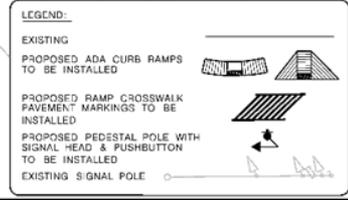
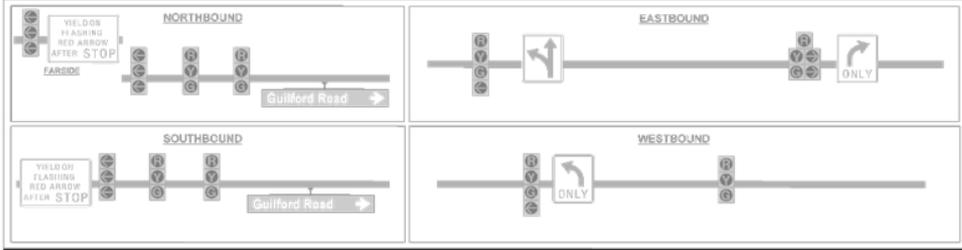
# KEY MAP



PROPOSED 8' CONCRETE SIDEWALK  
EXTENDS NORTH 800' TO  
EXTENDED STAY AMERICA ENTRANCE



SIGNAL DIAGRAM: GUILFORD ROAD [EB/WB] AT US 1 (WASHINGTON BLVD) [NB/SB]



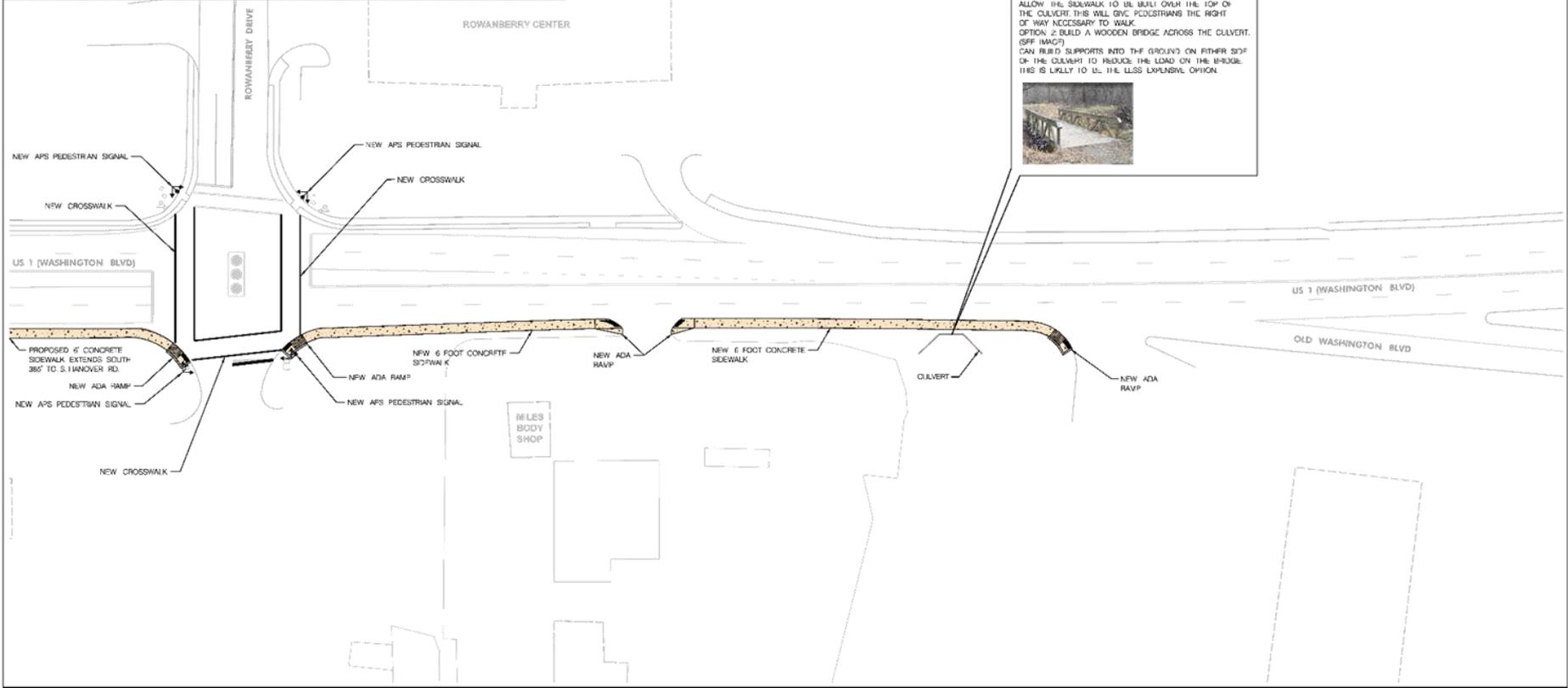
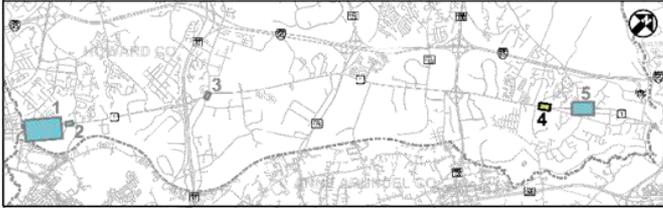
US 1 (Washington Boulevard) Safety Evaluation  
Proposed Improvements: Concept # 3  
Pedestrian Improvements at Guilford Road



# CONCEPT 3: GUILFORD/US 1 PEDESTRIAN IMPROVEMENTS

OPERATOR USERNAME: JOTTED: 8/2/25 FILE NAME: 0115

# KEY MAP



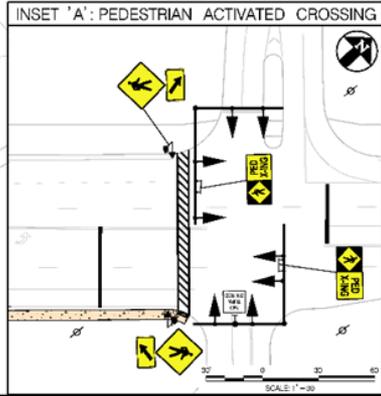
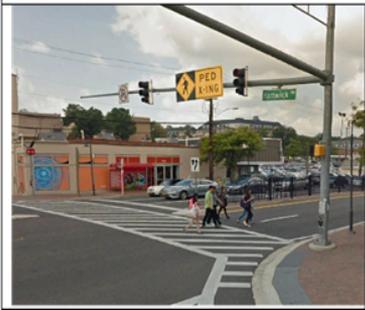
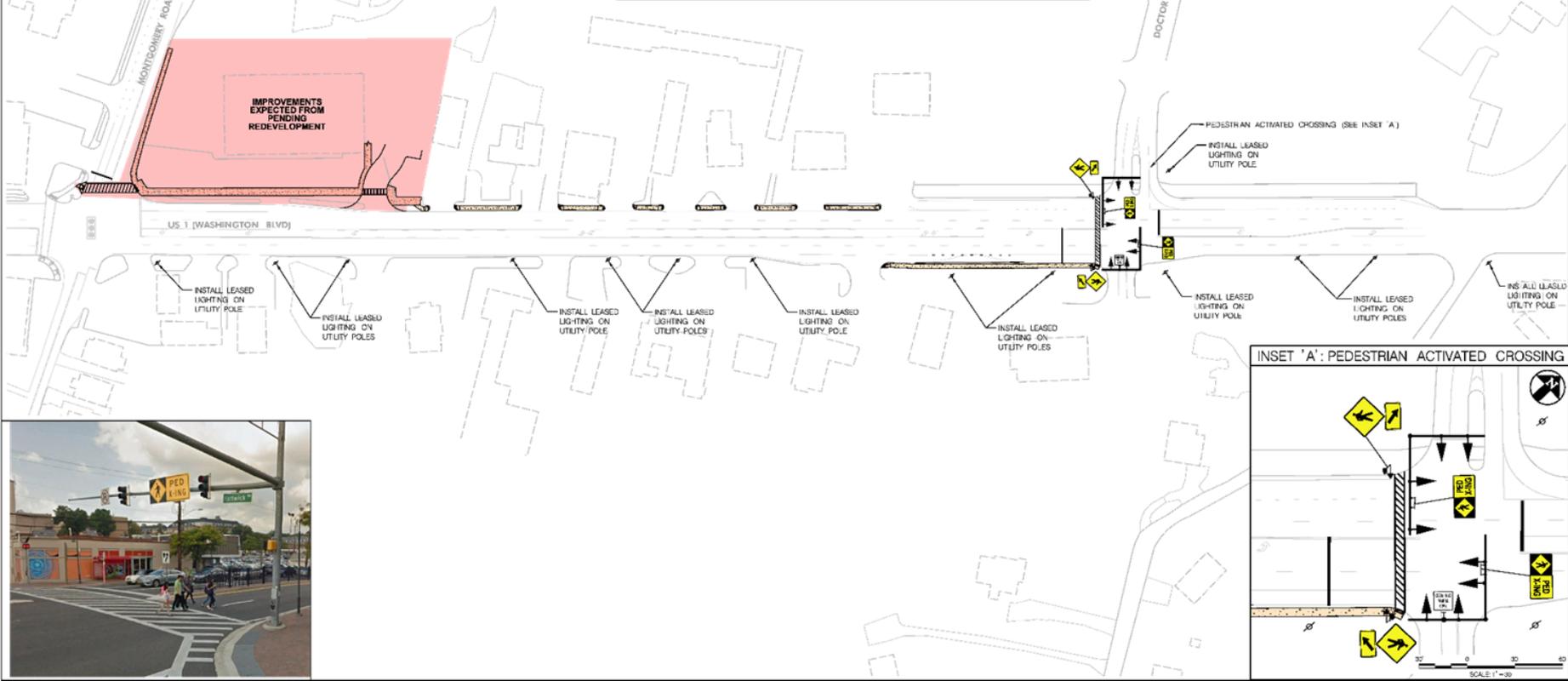
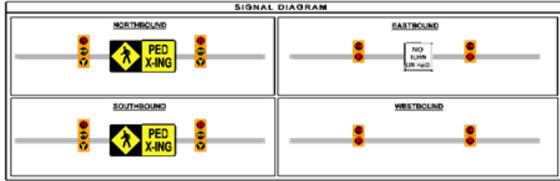
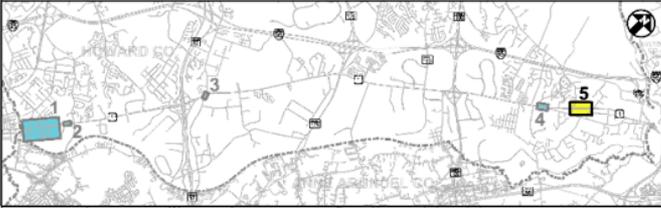
**DESIGN REQUIREMENT:**  
 ALTERATIONS NEEDED AT CULVERT BEFORE SIDEWALK CAN BE RUN.  
 OPTION 1: EXTEND CULVERT HEADWALL WHICH WILL ALLOW THE SIDEWALK TO BE BUILT OVER THE TOP OF THE CULVERT. THIS WILL GIVE PEDESTRIANS THE RIGHT OF WAY NECESSARY TO WALK.  
 OPTION 2: BUILD A WOODEN BRIDGE ACROSS THE CULVERT. (SPE IMAGE)  
 CAN BUILD SUPPORTS INTO THE GROUND ON EITHER SIDE OF THE CULVERT TO REDUCE THE LOAD ON THE BRIDGE. THIS IS LIKELY TO BE THE LESS EXPENSIVE OPTION.



OPERATOR: USERNAME: PLOTTED: DATE: FILE NAME: PLS

# CONCEPT 4: ROWANBERRY/US 1 PEDESTRIAN IMPROVEMENTS

# KEY MAP



US 1 (Washington Boulevard) Safety Evaluation – Proposed Improvements: Concept # 5  
 Pedestrian-Activated Traffic Signal, Lighting, and Sidewalk Improvements  
 Montgomery Road to Doctor Patel Drive



# CONCEPT 5: DOCTOR PATEL DRIVE PEDESTRIAN SIGNAL

OFFPRINT/Revised - PLOTTED: Thursday, September 13, 2018 AT 09:30 AM  
 FILE NAME: \\SABRA\WORK\B\Howard County Traffic\94122204\18 US 1 Pedestrian Safety Howard County\Map\US1\_Concepts\_FINAL.dwg

# Cost Estimates



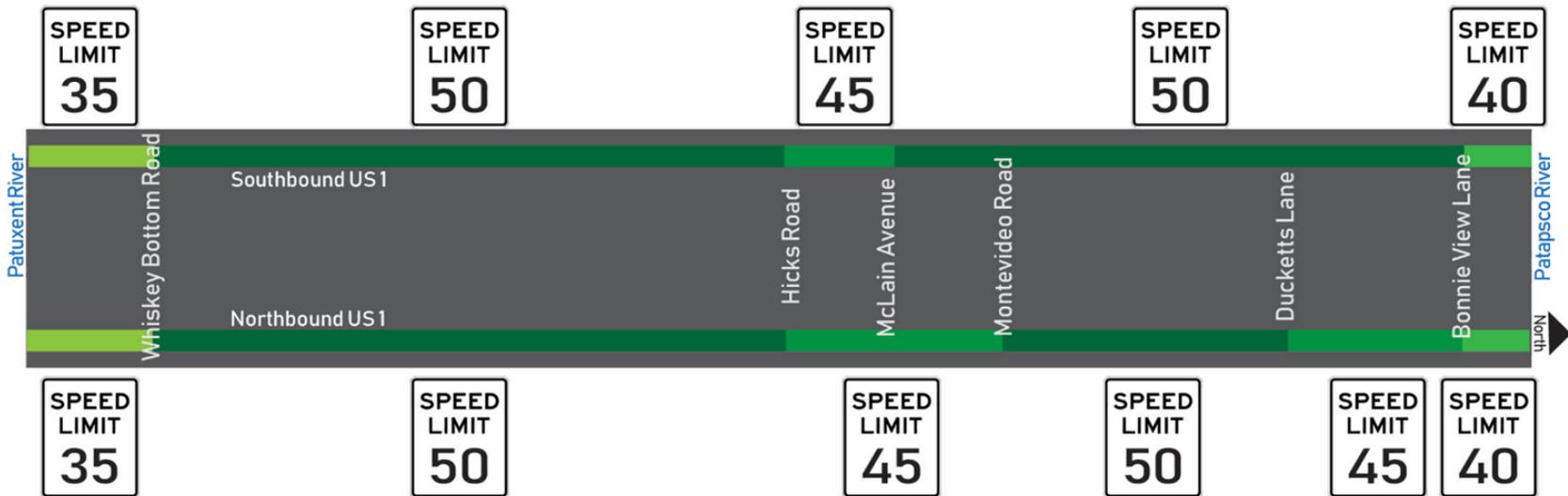
Concept		Pavement Markings - Bike Lane	Signage	Curb Ramps	New Traffic Signals	Retrofit Pedestrian Signals	Crosswalk Markings	Sidewalk	Leased Lighting Heads	Concept Total
Concept 1	Lane Repurposing for Bike Facility	\$20,000	\$10,000	\$10,000	\$230,000	\$10,000	\$5,000	—	—	\$285,000
Concept 2	Pedestrian Activated Signal	—	\$5,000	\$20,000	\$150,000	—	\$5,000	—	—	\$180,000
Concept 3	Signal Upgrade Retrofit for Pedestrian Signals	—	\$2,500	\$40,000	—	\$25,000	\$10,000	\$100,000	—	\$177,500
Concept 4	Signal Upgrade Retrofit for Pedestrian Signals	—	—	\$15,000	—	\$25,000	\$10,000	\$75,000	—	\$125,000
Concept 5	Pedestrian Activated Signal	—	\$5,000	\$15,000	\$150,000	—	—	\$100,000	\$30,000	\$300,000
Element Sum		\$20,000	\$22,500	\$100,000	\$530,000	\$60,000	\$30,000	\$275,000	\$30,000	
Sub-Total Costs										\$1,067,500
100 % Contingency for design fee, environmental mitigation, utilities, and right of way acquisition										\$1,067,500
Total Costs										\$2,135,000

# Corridor-Wide Recommendations



## Context-Sensitive Speed Limit

- Max speed limit of 45 MPH
- Lower speed limit in pedestrian-dense areas
- Change speed limit in increments of 5 MPH

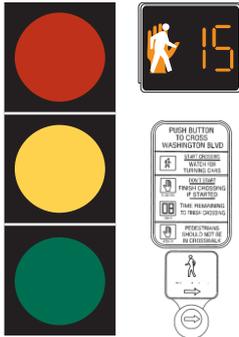


# Corridor-Wide Recommendations



## Context-Sensitive Speed Limit

- Max speed limit of 45 MPH
- Lower speed limit in pedestrian-dense areas
- Change speed limit in increments of 5 MPH



## Traffic Signal Phasing

- Consider implementation of pedestrian-friendly traffic signal timing such as leading pedestrian interval (LPI)
- Possible locations: North Laurel Road, Assateague Drive, Rowanberry Drive, and Levering Avenue

# Next Steps



# Next Steps



1. Collect input from the public and finalize the report
2. Pursue implementation as partnership between MDOT-SHA and Howard County
3. Continue to monitor traffic and safety incidents and trends in the US 1 corridor



# How to Provide Comments



*Current comment period open through October 25*

**Online Feedback Form:** [www.howardcountymd.gov/US1Safety](http://www.howardcountymd.gov/US1Safety)

**Email:** [transportation@howardcountymd.gov](mailto:transportation@howardcountymd.gov)

**Phone:** (410) 313-4360

**Mail:** Howard County Government  
Office of Transportation  
3430 Court House Drive  
Ellicott City, MD 21043

[howardcountymd.gov/US1Safety](http://www.howardcountymd.gov/US1Safety)