SHA State Highway Administration
Maryland Department of Transportation

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MARYLAND 28

MARYLAND 198

Welcome

MD 28/MD 198
Corridor Improvement Study

Informational Public Workshop
June 17, 201**4**

PURPOSE OF THE WORKSHOP

MARYLAND 28 MARYLAND 198

To notify interested persons that the project planning study has resumed, review the project history, list changes in the study area, outline the project purpose and need, and obtain your input regarding the project purpose and need and potential corridor improvement features. Your comments and recommendations will assist SHA as the team develops alternatives for project improvements.

WORKSHOP FORMAT

MARYLAND 28 | MARYLAND 198

- **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**

PROJECT SCHEDULE

MARYLAND 28 | MARYLAND 198

Maryland Department of Transportation

Planning *(Currently Funded)*

Planning Steps

- **Update Inventories of Existing Conditions** ---------- *Spring / Summer 2014*
- **Refine Alternatives for Detailed Studies** ---------- *Fall 2014*
- **Conduct Public Workshop of Refined Alternatives Retained for Detailed Study** -------- *Winter 2014 / 2015*
- **Conduct Detailed Engineering and Studies** ---------- *Summer / Fall 2015*
- **Conduct Location / Design Public Hearing**
  - ► Evaluate Comments from Hearing
  - ► Perform Additional Studies, if necessary

  ---------- *Winter 2016*
- **Select Preferred Alternative**
  - ► Prepare Final Environmental Document

  ---------- *Fall 2017*
- **Obtain Location / Design Approvals** ---------- *Winter 2018*

Design*

Right-of-Way Acquisition*

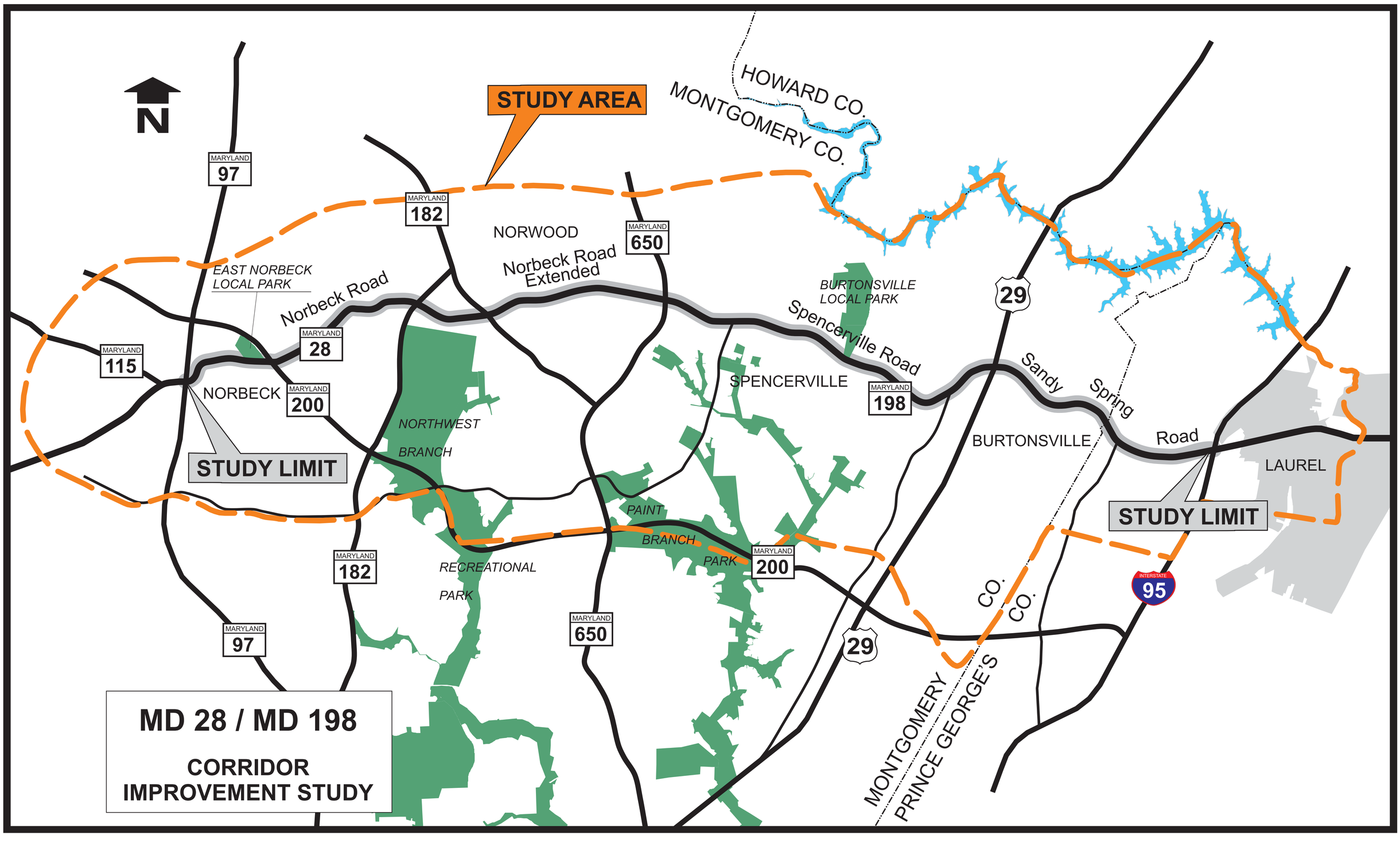
Construction*

** May include entire corridor or break-out improvements*

STUDY AREA BACKGROUND

MARYLAND 28 MARYLAND 198

- **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, providing an alternate route for through trips**



PROJECT MILESTONES

MARYLAND 28

MARYLAND 198

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*

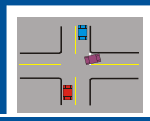
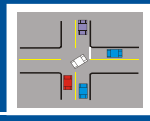
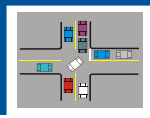
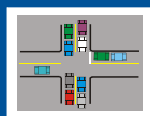
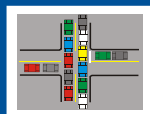
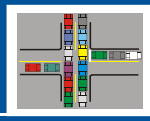
Conduct Informational Workshop
- ► Provide Project Background
- ► Review Changes in Study Area
- ► Obtain public comments

---------- *Spring 2014*

What is Level of Service (LOS)?

Level of Service is a quantitative measure of traffic operational conditions. Ranges of operation are defined for each type of roadway section (signalized intersections, freeways, ramp junctions and weaving sections) and are related to the amount of traffic demand at a given time as compared to the capacity of that type of roadway section.

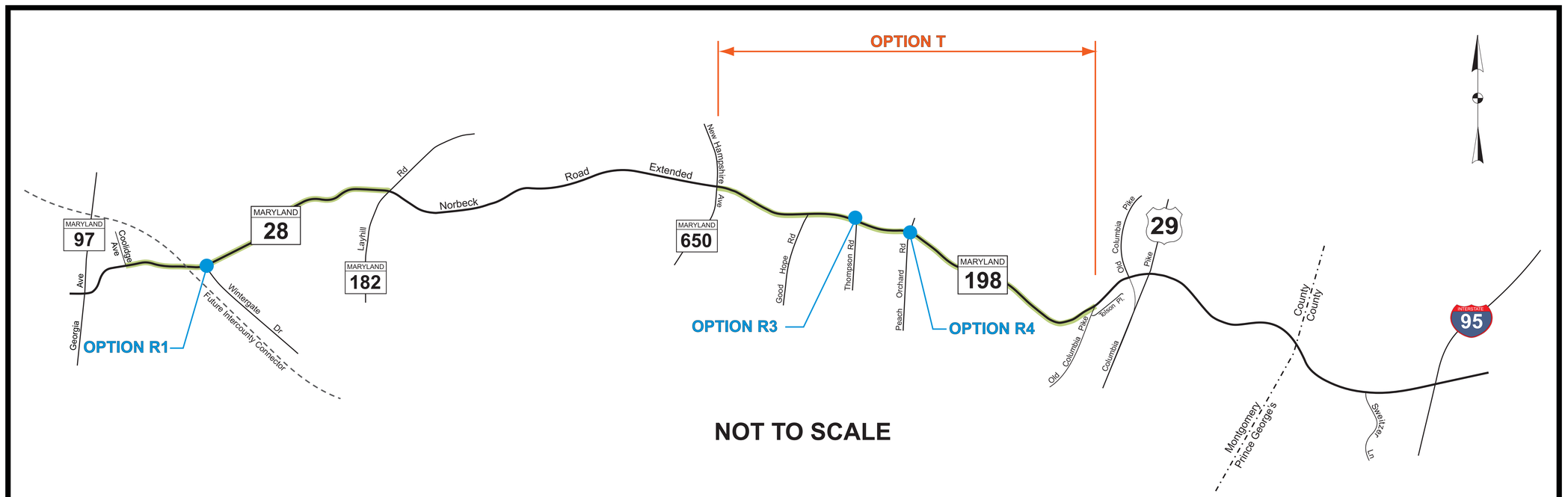
Six levels of service are defined for each type of roadway section and are given letter designations from A to F, with A representing good operating conditions and F representing unsatisfactory operating conditions.

	Intersection		Roadway
LOS A	• Highly stable, free-flow condition with little or no congestion • Delay: <10 seconds/vehicle		• Free flowing • Uninterrupted vehicle
LOS B	• Stable, free-flow condition with little congestion • Delay: 10 to 20 seconds/vehicle		• Stable flow • Other vehicles are more noticeable
LOS C	• Free-flow condition with moderate congestion • Delay: 20 to 35 seconds/vehicle		• Stable flow • Vehicle operations affected by other vehicles
LOS D	• Approaching unstable condition with increasing congestion • Delay: 35 to 55 seconds/vehicle		• High density free flow • Operation of vehicle is affected by other vehicles
LOS E	• Unstable, congested condition • Delay: 55 to 80 seconds/vehicle		• High density traffic flow, nearing capacity • Operating conditions are extremely poor
LOS F	• Stop and go • Delay: >80 seconds/vehicle		• Forced or breakdown flow • Amount of traffic exceeds capacity

PREVIOUS ALTERNATIVE 2 (TSM)

MARYLAND 28 | MARYLAND 198

IMPROVEMENTS EAST OF MD 97 to MD 182 AND MD 650 TO OLD COLUMBIA PIKE



NOT TO SCALE

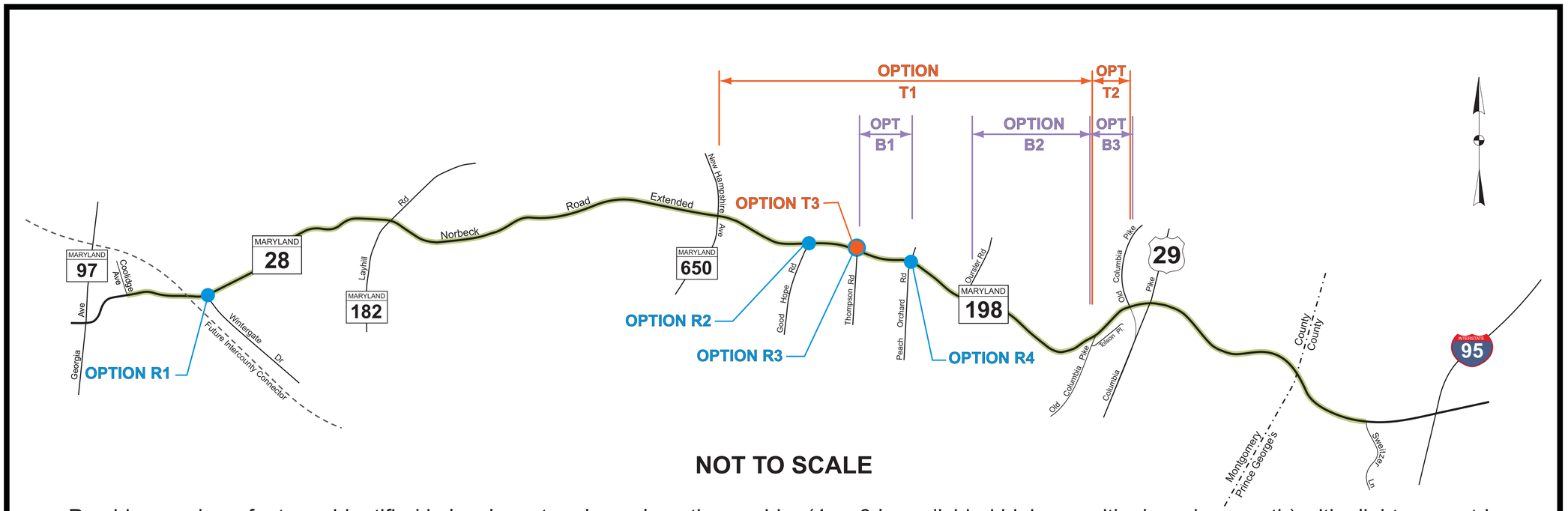
Spot improvements at specific locations, including shoulder improvements, access roads, sidewalks, slight geometric shifts to improve sight distance, and reduction of access points

- Typical Section Option:
  - Option T: Three-lane roadway (continuous two-way center turn lane) along MD 198 from MD 650 to Old Columbia Pike
- Roundabout Options:
  - Option R1: MD 28 at Wintergate Drive
  - Option R3: MD 198 at Thompson Road
  - Option R4: MD 198 at Peach Orchard Road

PREVIOUS ALTERNATIVE 3 MASTER PLAN FEATURES

MARYLAND 28 | MARYLAND 198

IMPROVEMENTS EAST OF MD 97 to WEST OF I-95



NOT TO SCALE

Provides roadway features identified in local master plans along the corridor (4-or 6-lane divided highway with shared-use path) with slight geometric shifts and reduction of access points

- Typical Section Options:
  - Option T1: Minimum impervious surface roadway along MD 198 from MD 650 to Old Columbia Pike
  - Option T2: Center two-way turn lane between Old Columbia Pike and US 29
  - Option T3: Westbound left-turn lane on MD 198 at Thompson Road
- Roundabout Options:
  - Option R1: MD 28 at Wintergate Drive
  - Option R2: MD 198 at Good Hope Road
  - Option R3: MD 198 at Thompson Road
  - Option R4: MD 198 at Peach Orchard Road
- Bikeway Options:
  - Option B1: Placement of the shared-use path to the south side of the properties south of MD 198 bewteen Thompson Road and Peach Orchard Road
  - Option B2: Placement of the shared-use path along the south side of MD 198 from Ourslet Road to Old Columbia Pike
  - Option B3: Placement of the shared-use path along Tolson Place between Old Columbia Pike and US 29 and sidewalks along both sides of MD 198 in the Burtonsville business area

PROJECT PURPOSE AND NEED

MARYLAND 28 MARYLAND 198

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 NEED

- Portions of the roadway along the corridor have traffic operational challenges.
- Planned and future development is expected to result in decreased traffic 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 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

MARYLAND 28 | MARYLAND 198

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

WHAT HAS CHANGED?

MARYLAND 28 MARYLAND 198

- **The ICC is now in place.**
- **The ICC provides a regional transportation connection.**

The MD 28/MD 198 Corridor is part of several neighboring communities. This project will focus on local concerns which include:

- **Improving local traffic safety;**
- **Enhancing local traffic operations; and**
- **Accommodating all local roadway users, including pedestrians, motorists, and bicyclists.**

ENVIRONMENTAL CONSIDERATIONS

SHA State Highway Administration — Maryland Department of Transportation

National Environmental Policy Act (NEPA)

Requires that we do everything possible to protect and enhance the natural, cultural and human environment. A complete study of all reasonable alternatives (including measures to avoid and minimize impacts) must be prepared, and the results must be made available to public officials and citizens before decisions are made.

Natural Environment

• Geology/Groundwater Resources • Soils • Surface Water
• Floodplains • Wetlands • Aquatic Life • Wildlife

Section 404 of the Clean Water Act, Nontidal Wetlands Protection Act

Regulates dredge and fill of Waters of the United States. Guidelines published by the Environmental Protection Agency for evaluating alternatives require that the Corps of Engineers evaluate the proposed project for environmental impacts (including historic and rare/threatened/endangered species impacts) and select the least environmentally damaging, practicable alternative.

Endangered Species Act

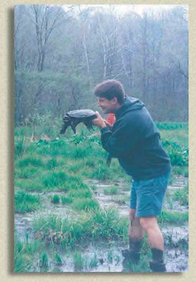
Ensures that actions are not taken to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species.

Cultural Environment

• Historic Structures • Archaeological Sites

Section 106 of the National Historic Preservation Act

Requires that agencies take into account the effects of a project on properties that are included in or eligible for the National Register of Historic Places.



Socio-Economic Environment

• Demographics • Community Facilities
• Economic Setting and Land Use • Noise • Air

Section 4(f) of the US Department of Transportation Act

Requires that special effort be made to preserve publicly owned public parks and recreation areas, wildlife/waterfowl refuges and historic sites. No project which requires land from these resources may be approved unless 1) there is no feasible and prudent alternative to the use of the land and 2) the action includes all possible planning to minimize harm to the property resulting from such use.

Clean Air Act and Clean Air Act Amendments

A microscale air quality analysis must be performed to determine if there are violations of the State or National Ambient Air Quality Standards for carbon monoxide. Also, a conformity analysis must be completed by the Metropolitan Planning Organization to make sure the Transportation Improvement Plan conforms to the State Implementation Plan.

Farmland Protection Policy Act

Requires that federal programs minimize conversion of farmland to non-agricultural uses (does not apply to farmland that is zoned or committed (planned) for urban development).

Executive Order 12898 (Environmental Justice)

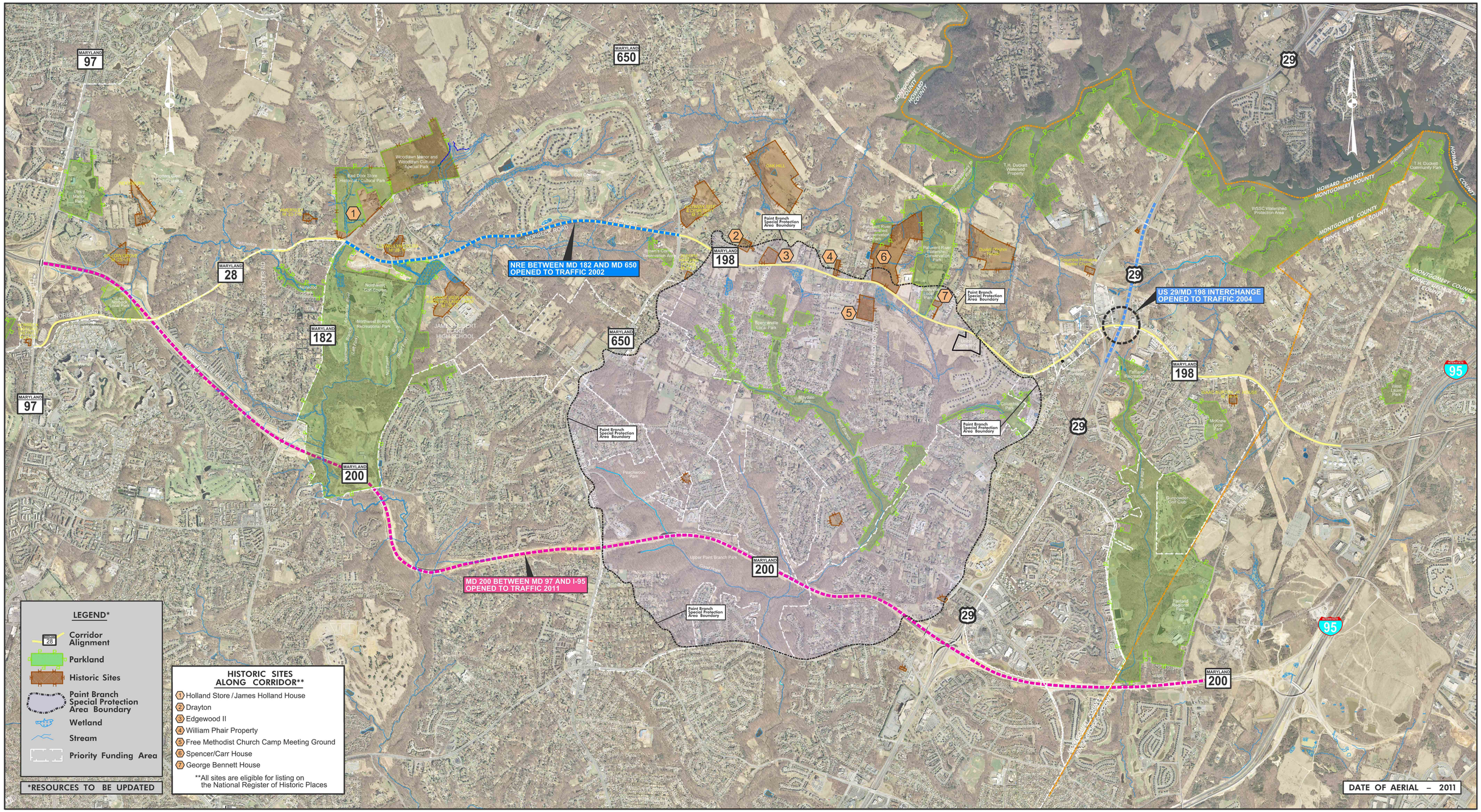
Requires that agencies identify and address disproportionately high and adverse human health or environmental effects on minority or low-income populations.

SHA State Highway Administration
Maryland Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

STUDY AREA FEATURES

MARYLAND 28 | MARYLAND 198



ANNUAL AVERAGE DAILY TRAFFIC / PEAK-HOUR ARTERIAL TRAFFIC OPERATION

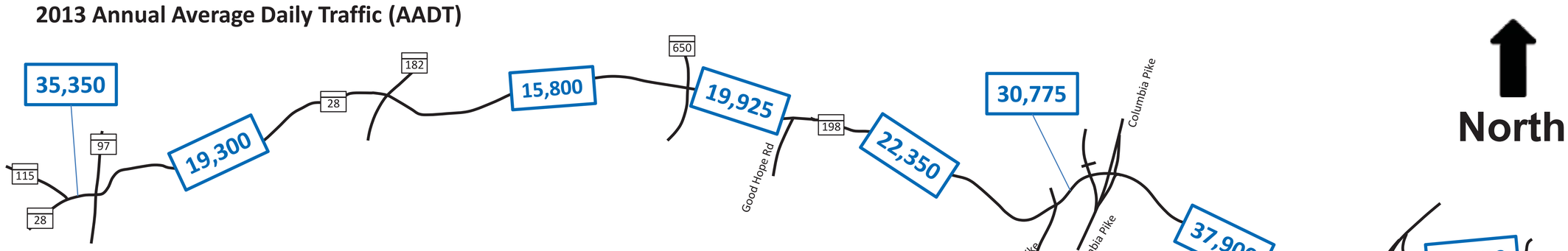
MARYLAND 28

MARYLAND 198

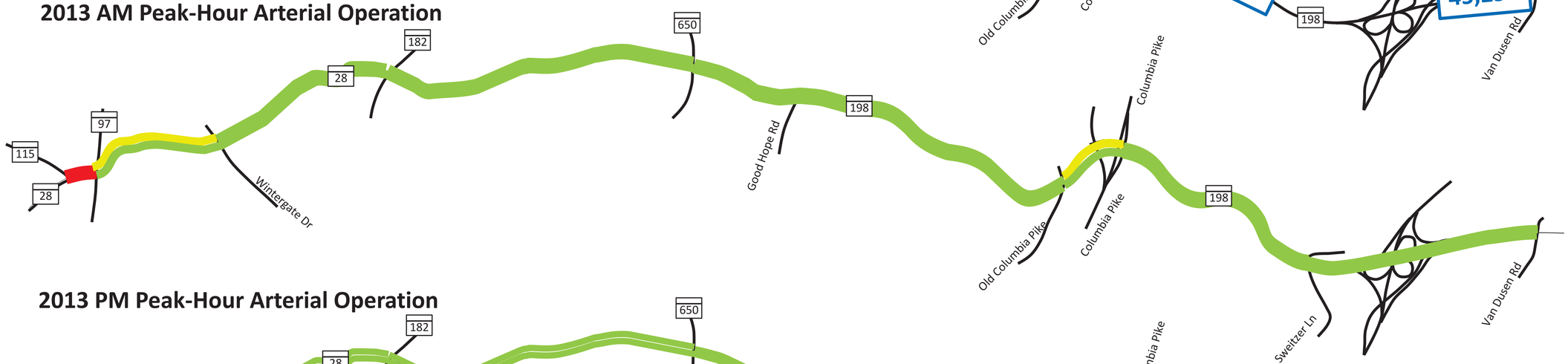
Maryland Department of Transportation

U S DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

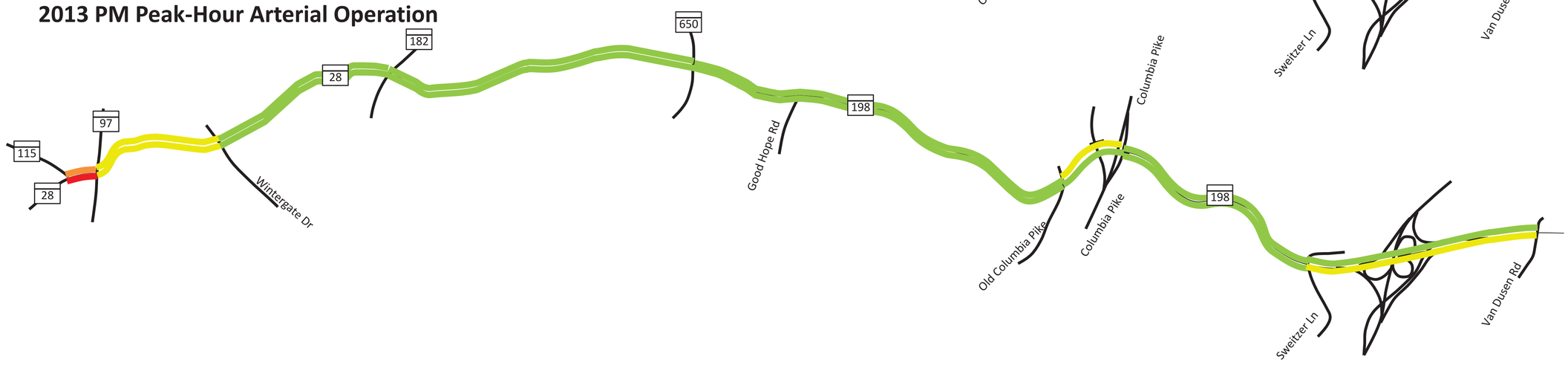
2013 Annual Average Daily Traffic (AADT)



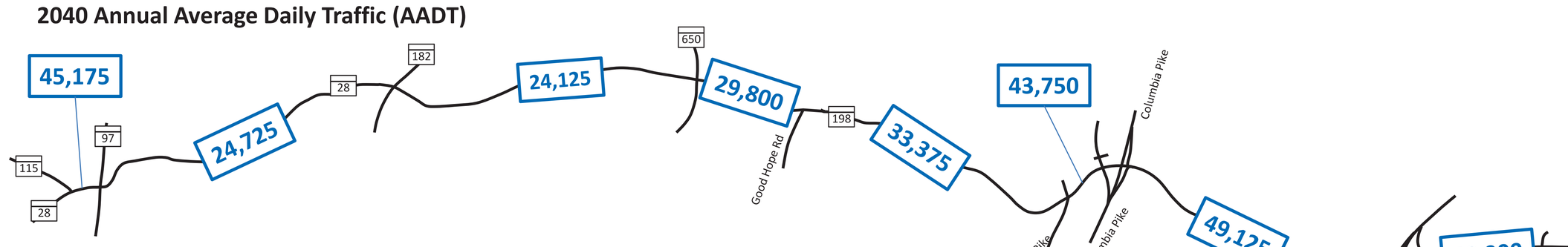
2013 AM Peak-Hour Arterial Operation



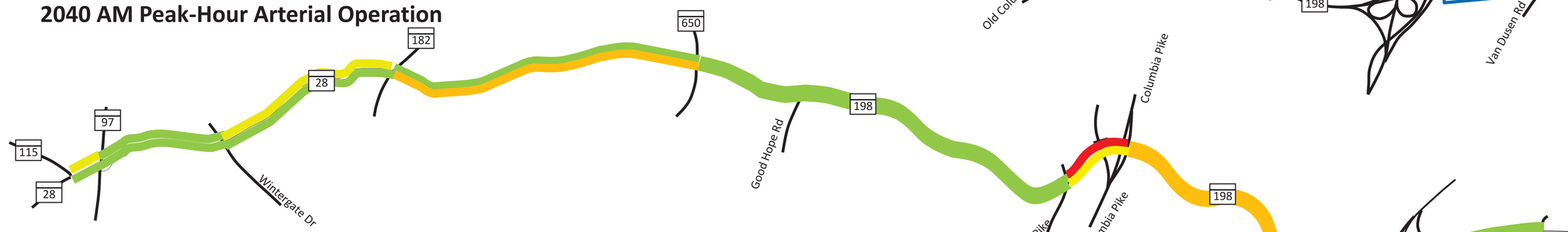
2013 PM Peak-Hour Arterial Operation



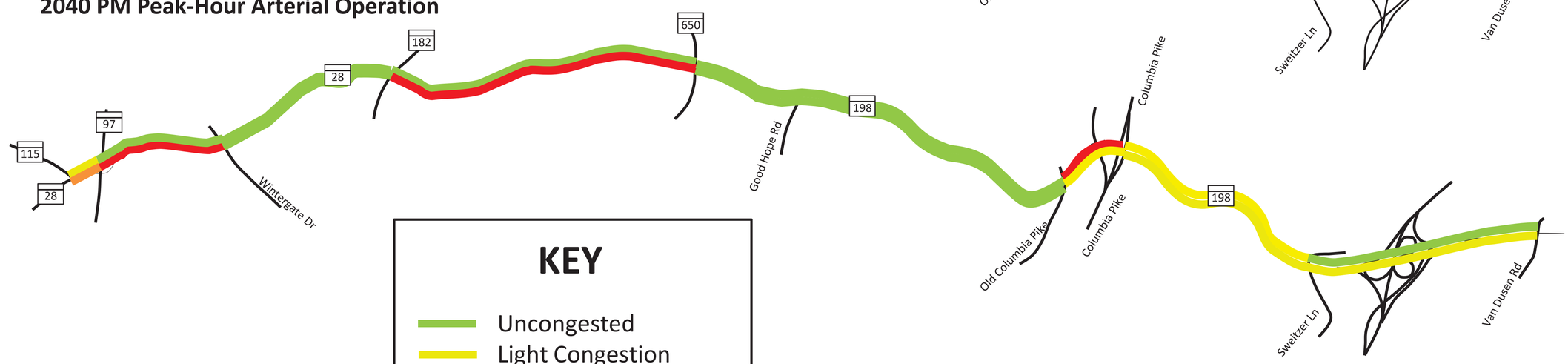
2040 Annual Average Daily Traffic (AADT)



2040 AM Peak-Hour Arterial Operation



2040 PM Peak-Hour Arterial Operation



KEY

- Uncongested
- Light Congestion
- Moderate Congestion
- Heavy Congestion

Not Drawn to Scale

EXISTING AND PROJECTED CRITICAL LANE VOLUME OPERATION

MARYLAND 28

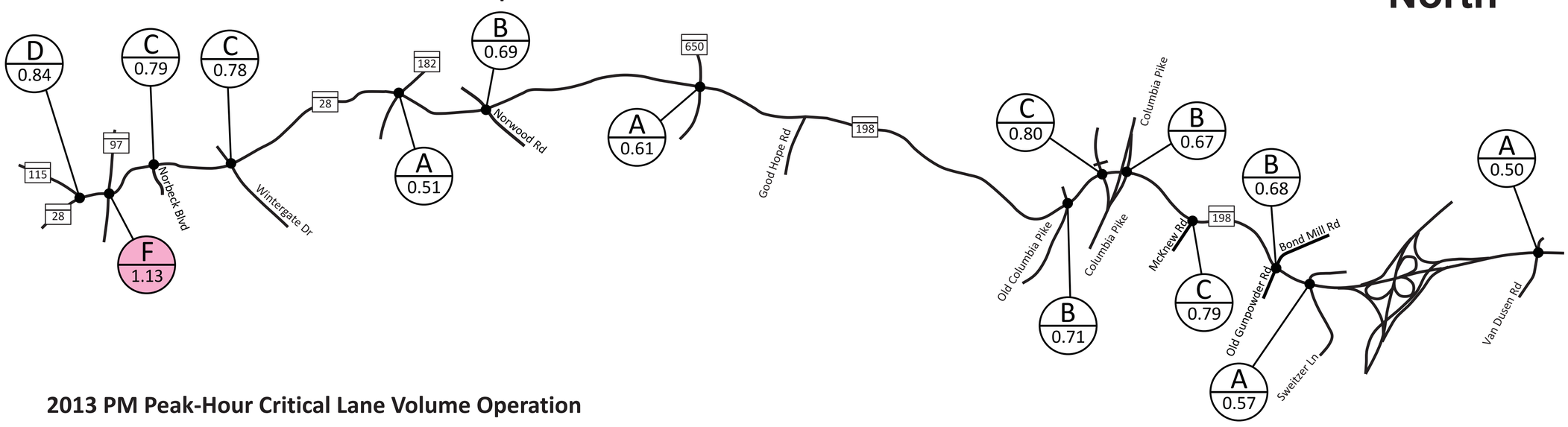
MARYLAND 198

State Highway Administration
Maryland Department of Transportation

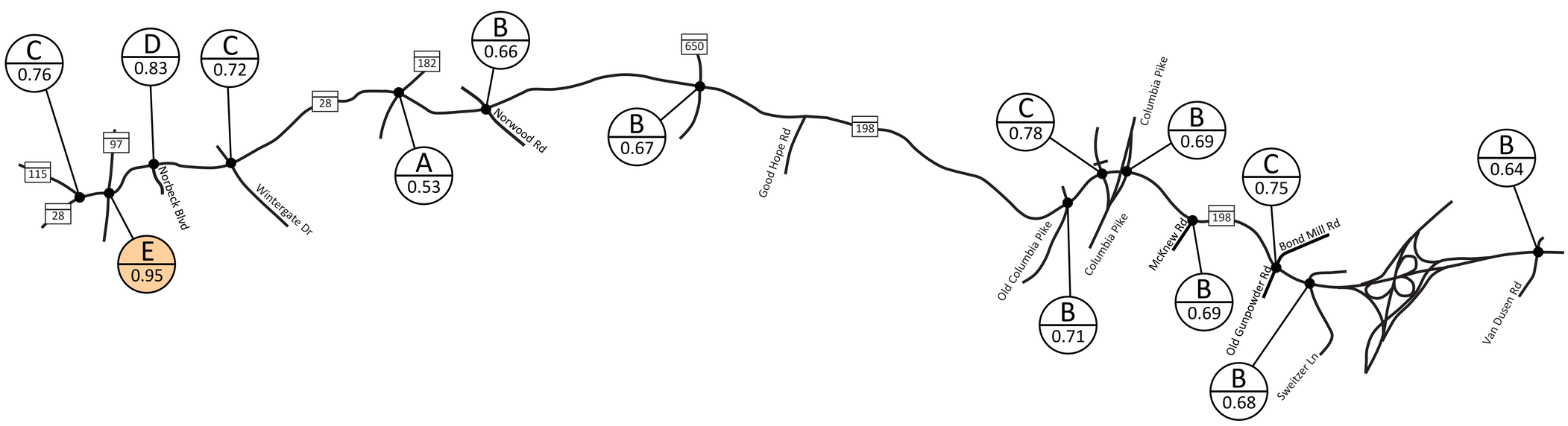
U S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

North

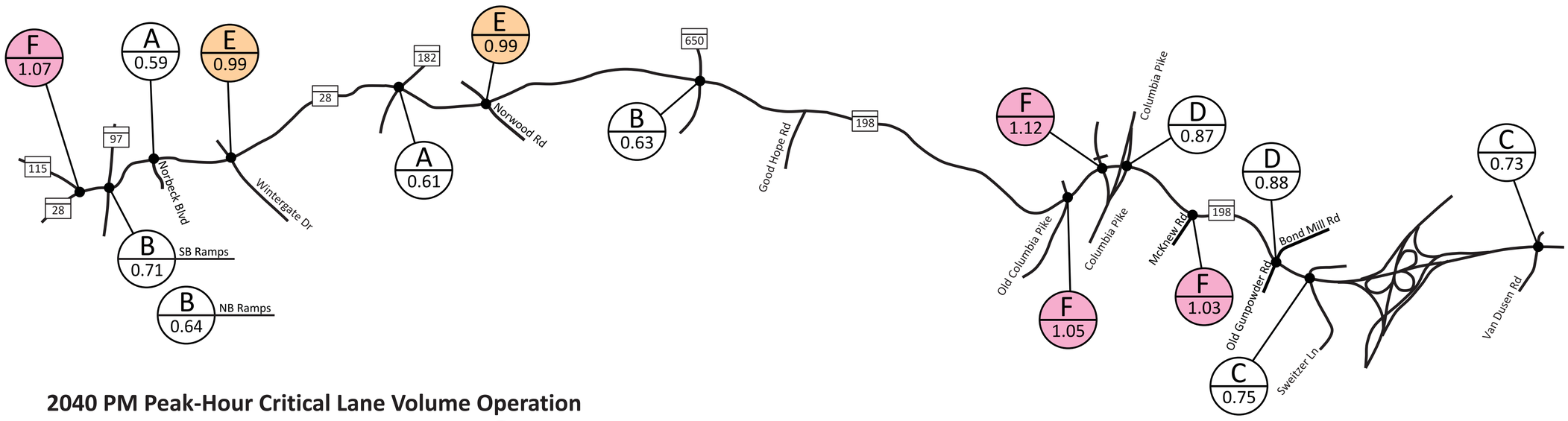
2013 AM Peak-Hour Critical Lane Volume Operation



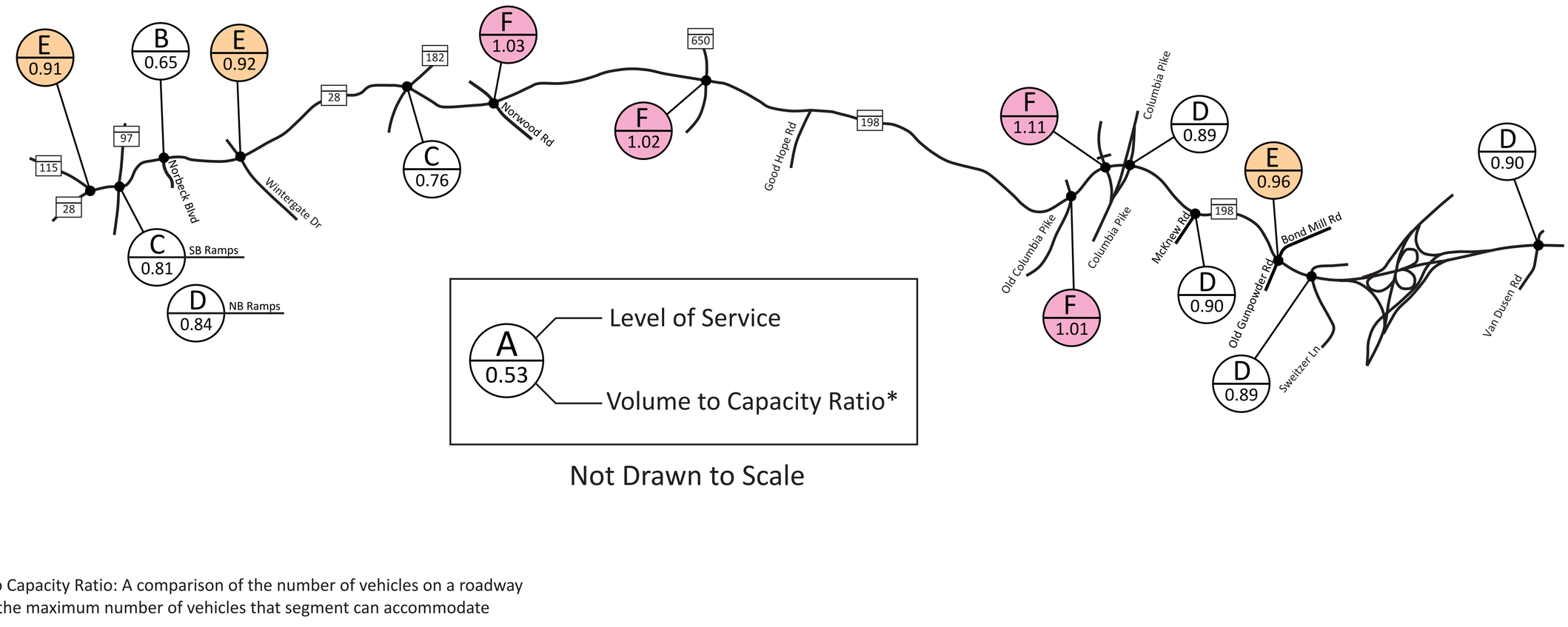
2013 PM Peak-Hour Critical Lane Volume Operation



2040 AM Peak-Hour Critical Lane Volume Operation



2040 PM Peak-Hour Critical Lane Volume Operation



A 0.53 — Level of Service; Volume to Capacity Ratio*

Not Drawn to Scale

* Volume to Capacity Ratio: A comparison of the number of vehicles on a roadway segment to the maximum number of vehicles that segment can accommodate

SAFETY SUMMARY

MARYLAND 28 | MARYLAND 198

January 1, 2010 through December 31, 2012

Crash Type	MD 97 to MD 182	MD 650 to Santini Road	Santini Road to US 29	US 29 to County Line	County Line to Van Dusen Road
Opposite Direction					
Sideswipe					
Left Turn					
Angle					
Fixed Object					
Other Collision					
Truck Related					

Significantly higher than the statewide average crash rate for similar types of highways

Higher than the statewide average crash rate for similar types of highways

* 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 catchall category that includes crashes not among the major crash types (i.e., u-turns, overturned vehicles, etc.).

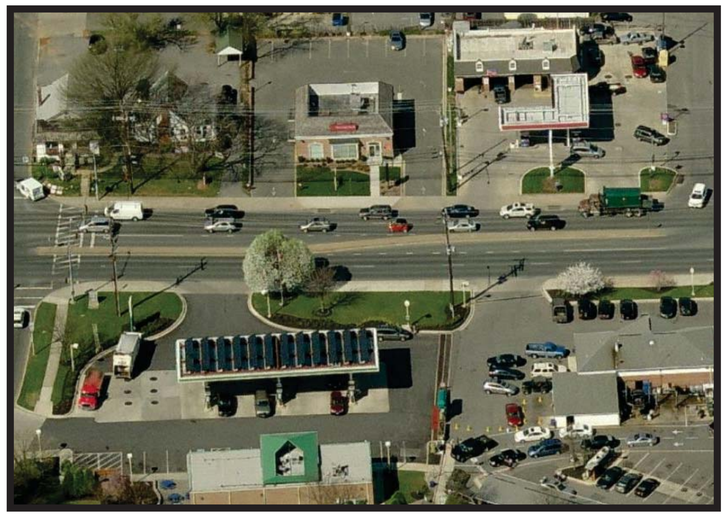
** Norbeck Road Extended is not part of the SHA roadway system

CONCEPTUAL CORRIDOR IMPROVEMENT FEATURES

MARYLAND 28 | MARYLAND 198

TOWN CENTER

TWO-WAY CENTER TURN LANE



MEDIAN BARRIER

OPERATIONAL IMPROVEMENTS

ADDITIONAL THROUGH LANES

TURN LANES

TRANSIT

SHELTERS

PULL-OFFS

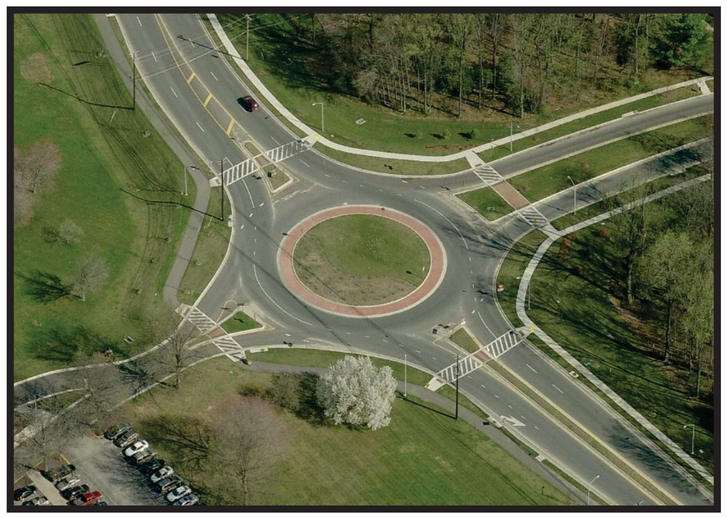
CONCEPTUAL CORRIDOR IMPROVEMENT FEATURES

MARYLAND 28

MARYLAND 198

ROUNDABOUTS

SINGLE LANE



DOUBLE LANE

STORM RUNOFF TREATMENTS

PASS-THROUGH INLET

BIO SWALE

MEDIAN TREATMENTS

DIVIDED WITH LANDSCAPING

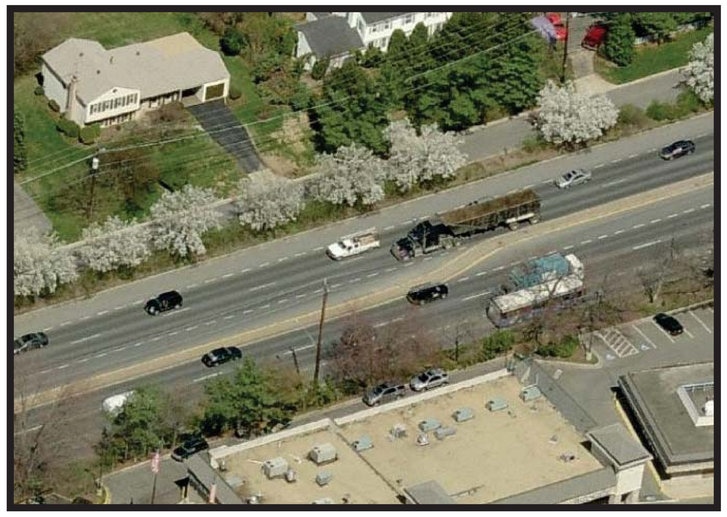
TWO-WAY CENTER TURN LANE

CONCEPTUAL CORRIDOR IMPROVEMENT FEATURES

MARYLAND 28

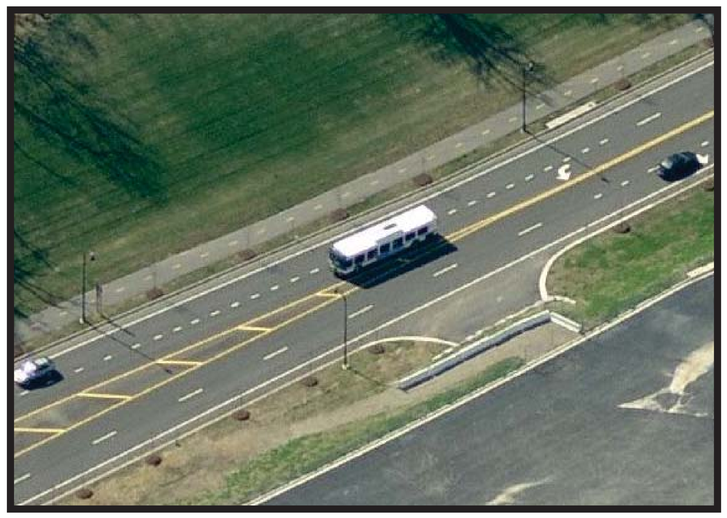
MARYLAND 198

FRONTAGE ROADS



SHARED-USE PATHS

TWO-LANE ROADWAY



FOUR-LANE ROADWAY

ON-ROAD BIKE FACILITIES

TWO-LANE ROADWAY

FOUR-LANE ROADWAY

AS VEHICLE OPERATORS ON MARYLAND ROADS BICYCLISTS HAVE RIGHTS AND RESPONSIBILITIES

It's the law:

Section 21-1202 Annotated Code of Maryland

It's MDOT Policy:

Twenty-Year Bicycle and Pedestrian Access Master Plan

> "Vehicle" means any device in, on, or by which any individual or property is or might be transported or towed on a highway.
>
> *Annotated Code of Maryland*

As part of roadway construction projects, SHA provides on-road features like these:

wide outside lane for bicycle compatibility

minimum four-foot-wide shoulder

bicycle lane/pocket bike lane markings

bicycle signage

And off-road features like:

shared-use path (hiker/biker trail)

Bicycles provide a valuable transportation option for many people and will help Maryland meet our state's long-term transportation needs.

BICYCLE FAQ

Why are bicyclists allowed on the road?

Bicyclists are vehicle drivers, too. By law, "vehicle" means "any device in, on, or by which any individual or property is or might be transported or towed on a highway." (Section 11-176, Annotated Code of Maryland) Every person operating a bicycle in a public area has all the rights granted to and is subject to all the duties required of the driver of a vehicle. (Section 21-1202, Annotated Code of Maryland)

Why are bicyclists allowed to ride next to cars that are going fast?

Bicyclists are prohibited on roadways with a posted maximum speed greater than 50 mph unless a continuous paved shoulder or bicycle lane is provided. In addition, a person may not ride a bicycle on an expressway or on any controlled-access highway with signs stating that bicycles are prohibited.

There's a hiker/biker trail right next to the road. Shouldn't bicyclists be riding there?:

Maryland law requires SHA to include bicycle accommodations in roadway construction projects whenever appropriate and feasible. That's because not everyone who rides a bicycle does so for the same purpose. Hiker/biker trails are shared-use paths suitable for joggers, pedestrians, dog-walkers, children, babies in strollers, inexperienced or recreational cyclists, and others who enjoy exercising and spending time outdoors. Individuals who use a bicycle as their primary means of transportation may find that on-road bicycle accommodations better suit their needs. By removing themselves from the "mix" of hiker/biker trail-users, on-road bicyclists can reach their destinations more efficiently and lessen the risk that trail-users will find themselves in the path of bicyclists focused on getting from Point A to Point B as quickly as possible.

Shouldn't bicyclists ride on sidewalks?

The law allows bicyclists to ride on sidewalks only in Montgomery County. Not permitting bicycles on sidewalks minimizes conflicts between bicyclists and pedestrians.

Isn't it a law that bicyclists have to wear a helmet?

In Maryland, everyone under age 16 is required to wear a helmet when riding a bicycle on public property. Some local jurisdictions have requirements for helmet use that are tougher than State law. Wearing a helmet is a good safety measure for everyone who rides a bike: 85 percent of head and brain injuries resulting from bicycle crashes could be prevented if riders wore bicycle safety helmets.

Every day as I drive downtown I see bicyclists and motorists behaving in rude and dangerous ways. Whatever happened to common courtesy?

Motorists and bicyclists who share the road—especially in heavily traveled urban and suburban areas—need to look out for one another. Motorists should leave at least three feet between their vehicles and any bicycles they pass, and bicyclists should leave at least three feet between themselves and parked cars. By law, bicycles are vehicles: motorists should treat them as such, and bicyclists should obey all traffic laws, including those that govern left- and right-turns, lights and stop signs, right-of-way, and proper lane position.

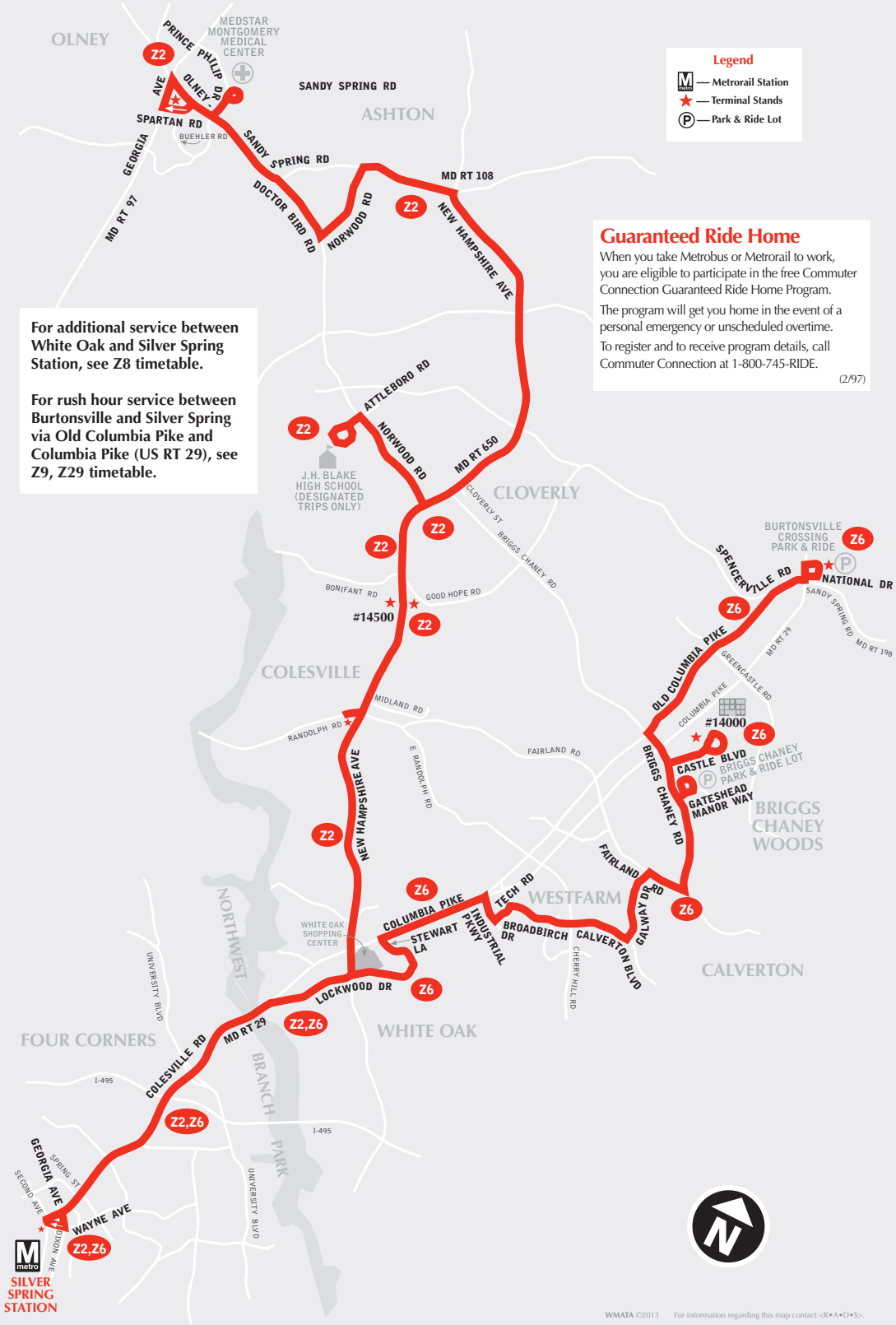
I bike—where can I get more information on bicycling in Maryland?

Additional information is available on SHA's website at *www.marylandroads.com,* **click on Bicycling under EXPLORE MD, or by telephone at 1-888-204-4828.**

Handout materials are also available at the bicycling station during today's meeting.

Z2 Colesville-Ashton Line
Z6 Calverton-Westfarm Line

For route and schedule information
Call 202-637-7000
www.wmata.com



Legend
- Metrorail Station
- Terminal Stands
- Park & Ride Lot

For additional service between White Oak and Silver Spring Station, see Z8 timetable.

For rush hour service between Burtonsville and Silver Spring via Old Columbia Pike and Columbia Pike (US RT 29), see Z9, Z29 timetable.

Guaranteed Ride Home

When you take Metrobus or Metrorail to work, you are eligible to participate in the free Commuter Connection Guaranteed Ride Home Program.

The program will get you home in the event of a personal emergency or unscheduled overtime.

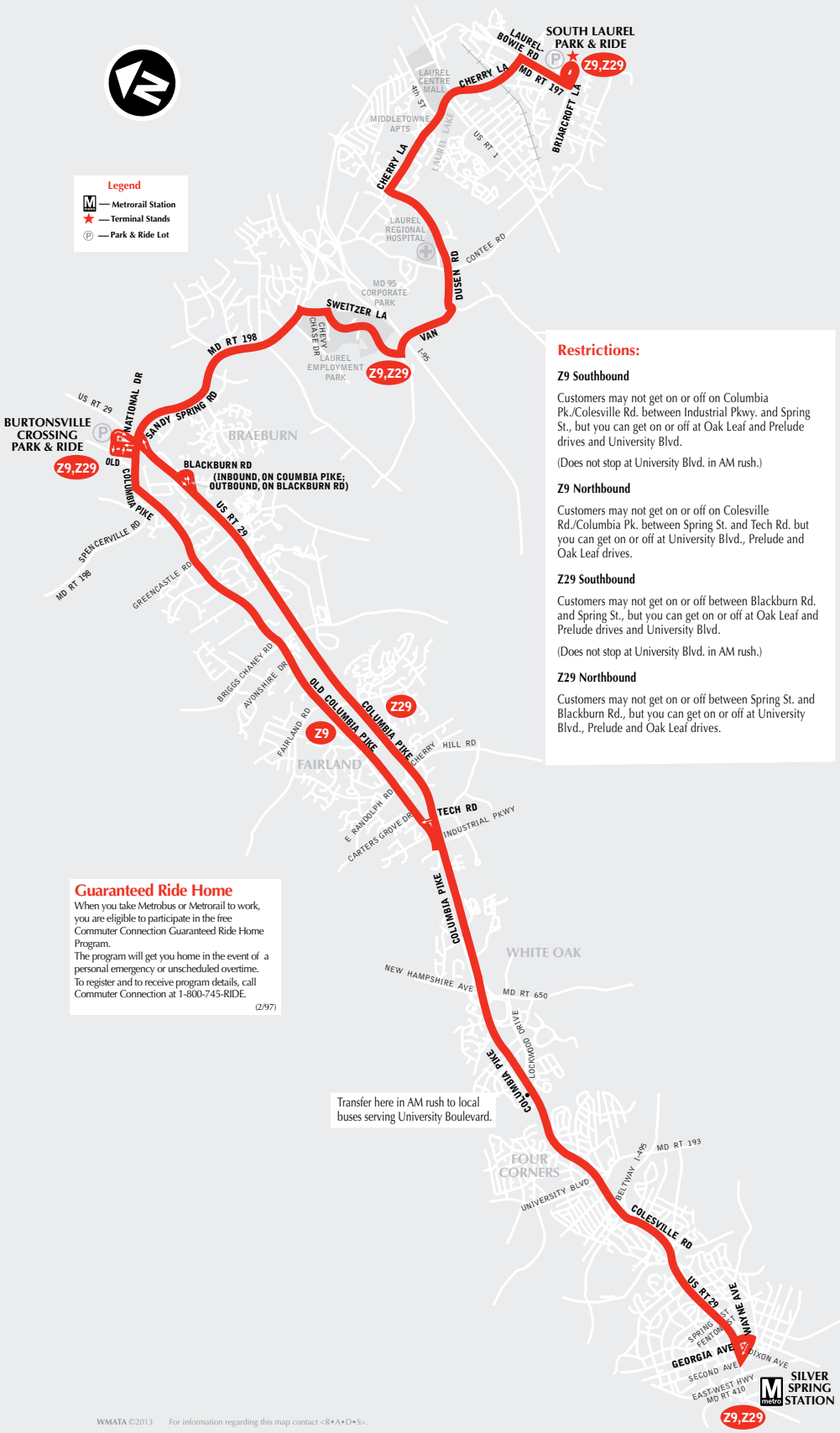
To register and to receive program details, call Commuter Connection at 1-800-745-RIDE.

(2/97)

WMATA ©2013 For information regarding this map contact <R•A•D•S>.

Z9, Z29
Laurel - Burtonsville Express Line

For route and schedule information
Call 202-637-7000
www.wmata.com



Restrictions:

Z9 Southbound

Customers may not get on or off on Columbia Pk./Colesville Rd. between Industrial Pkwy. and Spring St., but you can get on or off at Oak Leaf and Prelude drives and University Blvd.

(Does not stop at University Blvd. in AM rush.)

Z9 Northbound

Customers may not get on or off on Colesville Rd./Columbia Pk. between Spring St. and Tech Rd. but you can get on or off at University Blvd., Prelude and Oak Leaf drives.

Z29 Southbound

Customers may not get on or off between Blackburn Rd. and Spring St., but you can get on or off at Oak Leaf and Prelude drives and University Blvd.

(Does not stop at University Blvd. in AM rush.)

Z29 Northbound

Customers may not get on or off between Spring St. and Blackburn Rd., but you can get on or off at University Blvd., Prelude and Oak Leaf drives.

Guaranteed Ride Home

When you take Metrobus or Metrorail to work, you are eligible to participate in the free Commuter Connection Guaranteed Ride Home Program.
The program will get you home in the event of a personal emergency or unscheduled overtime.
To register and to receive program details, call Commuter Connection at 1-800-745-RIDE.
(2/97)

Transfer here in AM rush to local buses serving University Boulevard.

WMATA ©2013 For information regarding this map contact <R•A•D•S>.