



I-695 @ MD 144



Capital Projects

The MDOT SHA has established the Consolidated Transportation Program which identifies the projected six-year outlay of funds to address system upgrades and maintenance. There are many challenges involved in developing projects including funding, right-of-way and utility impacts, environmental constraints, time to complete the Federal requirements, and permitting. With increasing volumes and congestion, MDOT SHA employs a variety of projects and programs to meet the needs of the traveling public. This is completed through a performance-based approach to identify and plan/design/construct congestion mitigation solutions from a practical design standpoint.

There are a wide range of projects developed by MDOT SHA. These projects and programs identify both short and long-term solutions to address transportation issues. In addition to major projects, MDOT SHA continues to focus on alleviating congestion hotspots through a variety of low cost

geometric improvements such as turn lanes and roundabouts. Other projects include upgrades to the freight network and new pedestrian and bicycle facilities. Transportation System Management and Operations (TSM&O) incorporate methods to maximize operations such as the I-270 Innovative Congestion Management Progressive design-build project which maximizes vehicle and person throughput using methods such as ramp metering and hard shoulder running.

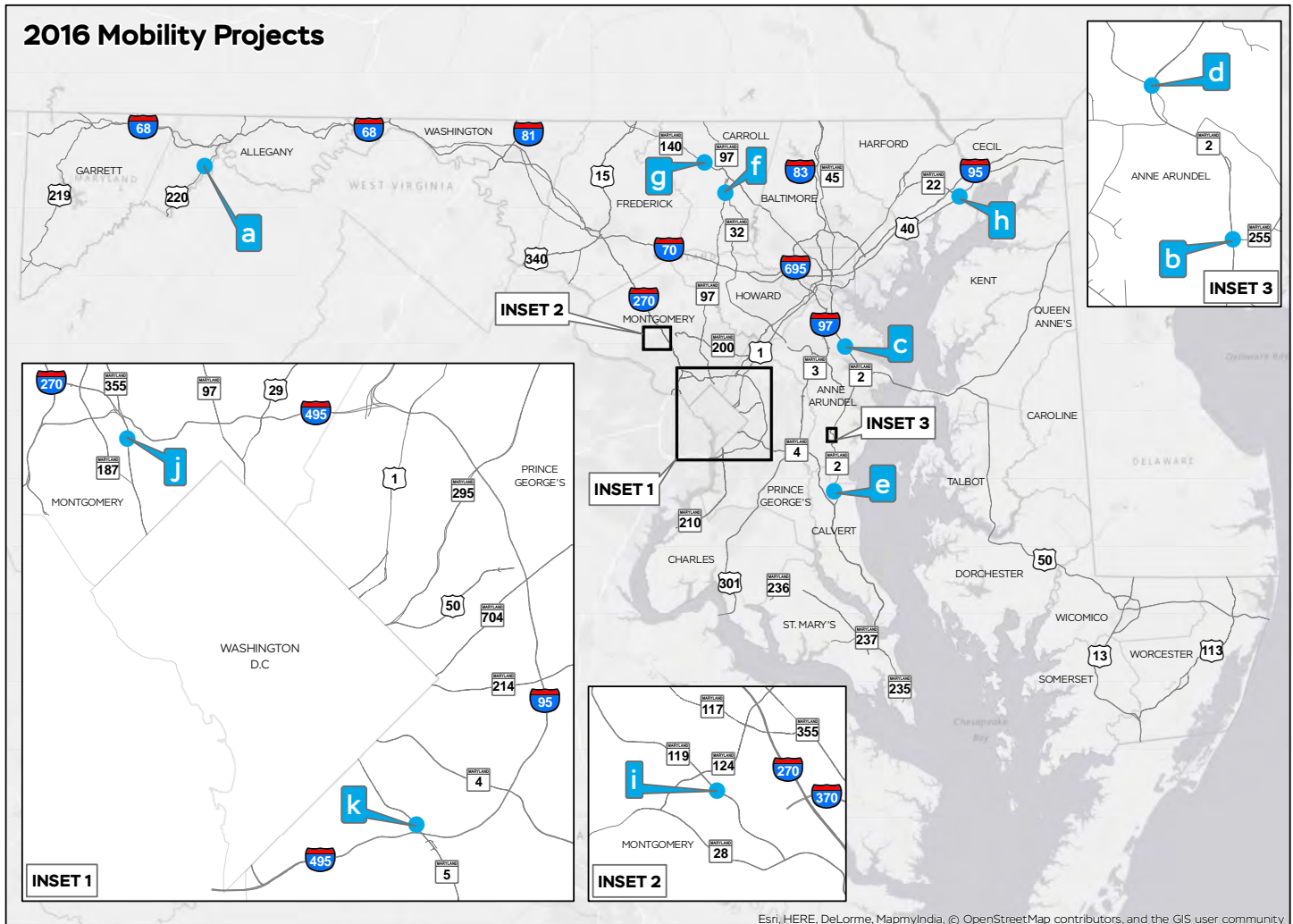
In 2016, to address mobility issues throughout the State, eleven mobility improvement projects were opened to traffic. These projects provide for congestion relief, improve safety, and enhance traffic operations. All projects are reviewed from a practical design standpoint to insure the proposed project is addressing just the defined purpose and need.

1. MOBILITY IMPROVEMENT PROJECTS

There were eleven mobility improvement projects completed in 2016. The location of these projects is shown in Figure II-1.

2016 mobility projects provide \$50.1 million in annual user savings in the opening year.

Figure II-1



MOBILITY PROJECT LOCATIONS:

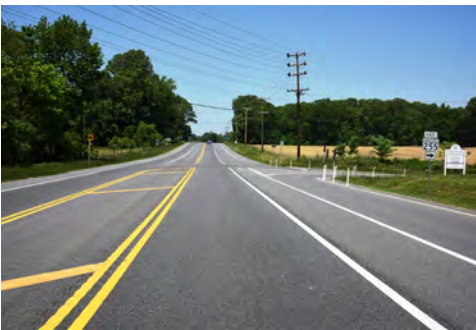
- a. US 220 @ Louise Dr.
- b. MD 2 @ MD 255
- c. MD 2 @ Earleigh Heights Rd./Magothy Bridge Rd.
- d. MD 2 @ Harwood Dr.
- e. MD 2 @ Mt. Harmony Rd.
- f. MD 32 @ MD 97
- g. MD 140 @ Pleasant Valley Rd. South
- h. MD 22 @ Old Post Rd.
- i. MD 119 @ Orchard Ridge Dr./Kentlands Blvd.
- j. MD 355 from Center Dr. to W. Cedar Ln.
- k. MD 5 from Auth Way to I-95/I-495

The following describes in detail the improvement at each location.



US 220 @ Louise Drive (Allegany County)

US 220 is a two-lane roadway south of Cresaptown. Motorists northbound on US 220 were forced to stop in the through lane to make a left turn into Louise Drive which provides access to numerous residential dwelling units. This project consisted of providing a left turn lane to Louise Drive from US 220 northbound.



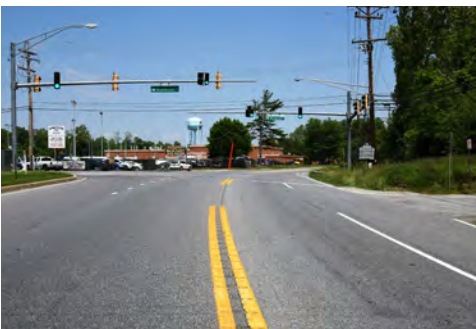
MD 2 @ MD 255 (Anne Arundel County)

MD 2 at MD 255 is a T-intersection located just north of Lothian in southern Anne Arundel County. Various improvements were constructed at this location in 2016 including extending the right turn lane from MD 2 northbound, constructing an acceleration lane from MD 255 to MD 2 northbound and modifying MD 2 southbound to provide for a left turn lane instead of a bypass lane. These improvements assisted in reducing delay to motorists especially from MD 255 and along MD 2 southbound.



MD 2 @ Earleigh Heights Road/Magothy Bridge Road (Anne Arundel County)

MD 2 is a four-lane divided north-south roadway. It intersects with Earleigh Heights Road/Magothy Bridge Road in the Pasadena area. Earleigh Heights Road is to the west and Magothy Bridge Road is on the east leg. Left and right turn lanes are provided along MD 2. Earleigh Heights Road has a right turn lane, a through lane and a left turn lane. Magothy Bridge Road has four lanes approaching the intersection including a double left, through and right. This project consisted of providing a third through lane on MD 2 northbound and southbound. The right turn lanes along MD 2 were channelized.



MD 2 @ Harwood Drive (Anne Arundel County)

Another location that improvements were constructed in southern Anne Arundel County was at the intersection of MD 2 and Harwood Drive. MD 2 is a two-lane roadway with Harwood Drive teeing in on the east leg. Harwood Drive is two lanes. This meant that along MD 2 left turning motorists would queue in the through lane forcing through motorists southbound to stop quickly. This project constructed a left turn lane on MD 2 southbound and the right turn lane on MD 2 northbound was extended.



MD 2 @ Mount Harmony Road (Calvert County)

The intersection of MD 2 and Mount Harmony Road is located in Calvert County west of Chesapeake Beach. The eastbound and westbound Mount Harmony Road approaches consisted of a single lane. MD 2 northbound and southbound had one through lane and one right turn lane. This project provided a left turn lane on both MD 2 approaches and channelized the right turn lanes. Bike lanes were added with the improvement along MD 2.



MD 32 @ MD 97 (Carroll County)

MD 32 intersects with MD 97 just south of Westminster. The MD 32 westbound approach consisted of two unmarked lanes entering the intersection while MD 32 eastbound provided for two lanes with the right most lane merging in immediately following the intersection. MD 97 southbound was a three lane approach to the intersection (left, through, right) while northbound a left turn lane and a through/right lane were provided. Both MD 32 northbound and southbound were widened to provide for three lanes including a right turn lane, a left turn lane and a through lane. The right turn lanes were physically channelized on three approaches.



MD 140 @ Pleasant Valley Road South (Carroll County)

This project improved operations and safety at the MD 140/Pleasant Valley Road South intersection. The unsignalized intersection located between Westminster and Taneytown provided two lanes on each of the MD 140 approaches while single lane approaches occurred on both legs of Pleasant Valley Road South. A third lane was added to provide a separate through, left and right turn lane along both approaches to MD 140 at the intersection. The right turn lanes on MD 140 were extended and bike lanes were added.



MD 22 @ Old Post Road (Harford County)

A major entrance to the Aberdeen Proving Grounds occurs on MD 22 just to the east of Old Post Road. Due to the amount of volume entering the Base in the morning and leaving the Base in the evening, this caused congestion at the intersection. Two through lanes plus a left and a right turn lane were provided along MD 22. Old Post Road southbound has a left, through and a right lane while a two-lane approach occurs on Old Post Road northbound. This project consisted of providing an additional through lane on MD 22 eastbound and westbound and a double left turn from MD 22 eastbound to Old Post Road. This project was directly related to the BRAC (Base Realignment and Closure) Act which increased the number of jobs at Aberdeen Proving Grounds.



MD 119 @ Orchard Ridge Drive/Kentlands Boulevard (Montgomery County)

The MD 119/Orchard Ridge Drive/Kentlands Boulevard intersection is in the Gaithersburg area of Montgomery County. Left turning motorists from Orchard Ridge Drive to MD 119 southbound were at times unable to access the left turn lane or would block through motorists on Orchard Ridge Drive. In order to alleviate this congestion, the project extended the left turn lane to improve the storage for this movement.



MD 355 - Center Drive to West Cedar Lane (Montgomery County)

Another project completed to support the BRAC Act employment growth at the Walter Reed National Medical Center was along MD 355 in the Bethesda area of Montgomery County. At the West Cedar Lane intersection with MD 355 several modifications occurred. This included constructing an additional lane on both West Cedar Lane approaches and eliminating the split phasing of the signal. Along MD 355 northbound a separate right turn lane was added. On MD 355 southbound a fourth through lane is provided through the intersection to Wilson Drive. On MD 355 northbound a left turn lane was provided to the gate entrance for National Institute for Health and the north exit from the gate at Walter Reed National Medical Center was modified.



MD 5 - Auth Way to I-95/I-495 (Prince George's County)

The Branch Avenue Metro Station is located inside the Capital Beltway (I-95/I-495) just off of MD 5. The majority of motorists accessing the Metro Station are destined to MD 5 to the south. There was no direct access to MD 5 from the Metro parking lots with motorists having to use Auth Road and Capitol Gateway Drive from one of the cross streets. In addition, operations on MD 5 were impacted by the proximity of the MD 5/Auth Road signal to the I-95/I-495 ramps. This project provided for a new roadway from the Metro Station to MD 5 bridging over MD 5 northbound. Direct access ramps were provided to and from MD 5 southbound. A pedestrian bridge was constructed across the MD 5 southbound lanes. The existing intersection at MD 5/Auth Road was converted into a right-in/right-out with the traffic signal being eliminated.

a. Mobility Improvement Project Benefits

The eleven projects were analyzed to determine the benefits they provide to the traveling public. This included before and after safety and traffic analysis to determine the annual user cost benefits of the completed mobility projects. The benefits are related to the reduction in delay incurred by motorists and commercial vehicles, fuel savings, the safety benefit resulting from the improvement, and the benefit provided by increased reliability of the system.

2016 Mobility Projects provided 610,000 hours of delay reduction and 330,000 gallons of fuel savings in opening year of operation.

The benefits from the eleven projects are shown in Table II-1. Further information is included in Appendix C.

Table II-1

MOBILITY PROJECTS OPENING YEAR BENEFITS			
Location	County Name	Safety Savings	Annual Cost Savings
		\$ Savings (Thousands)	\$ Savings (Thousands)
US 220 @ Louise Drive	AL	6	17
MD 2 @ MD 255	AA	2	18
MD 2 @ Earleigh Heights Road/ Magothy Bridge Road	AA	254	7,891
MD 2 @ Harwood Drive	AA	6	26
MD 2 @ Mt. Harmony Road	AA	105	274
MD 32 @ MD 97	CL	560	3,005
MD 140 @ Pleasant Valley Road South	CL	60	75
MD 22 @ Old Post Road	HA	550	6,047
MD 119 @ Orchard Ridge Drive/ Kentlands Boulevard	MO	0	52
MD 355 - Center Drive to West Cedar Lane	MO	51	10,848
MD 5 - Auth Way to I-95/I-495	PG	460	21,835
Total		2,054	50,088

It should be noted that the projected mobility savings for future years would be higher than opening year savings shown in Table II-1. (Compared to no-build condition.)