



TSMO SYSTEM 3 CORRIDOR EVALUATIONS

SEPTEMBER 2020



ACKNOWLEDGMENTS

This report is the result of traffic analysis, needs identification, and concept development by the Office of Planning and Preliminary Engineering (OPPE) and the Coordinated Highways Action Response Team (CHART) of the Maryland Department of Transportation State Highway Administration (MDOT SHA). The MDOT SHA project team thanks the Anne Arundel County Office of Transportation, the Anne Arundel County Department of Public Works and the MDOT SHA District Five Office for their guidance in setting study limits, identifying operational concerns, and providing local perspective.

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MD 2 & 3 EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Transportation Systems Management & Operations (TSMO) has emerged as a formal discipline for the transportation industry with the goal of effectively managing and operating existing facilities and systems to maximize their full potential. TSMO strategies aim to address capacity limitations due to recurring and non-recurring congestion (crashes, incidents, severe weather, work zones, special events, and other factors). The approach is used by the Maryland Department of Transportation State Highway Administration (MDOT SHA) to evaluate operations and capacity across regional networks to develop practical and innovative solutions. TSMO improvements include the addition of travel lanes using existing pavement and right-of-way; incident management; traffic signal modification and coordination; work zone management; freight management; transit prioritization and integration; and emergency response preparedness.

Maryland examples of TSMO solutions along interstates include the addition of a fourth travel lane utilizing existing pavement along US 50 eastbound over the Severn River Bridge and the Innovative Congestion Management (ICM) improvements implemented along I-270, including acceleration/deceleration lane extensions. Examples of TSMO operational improvements along Maryland arterial roadways include MD 337 at Suitland Road improvements which reduced lane widths to provide improved turn lanes at Suitland Road and the entrances to Joint Base Andrews, MD 2 at Magothy Bridge Road/Earleigh Heights Road improvements which added a third lane to improve traffic flow through the intersection, and the MD 97 at Burntwoods Road intersection project which improved operations by constructing exclusive turn lanes without requiring signalization.

OVERVIEW

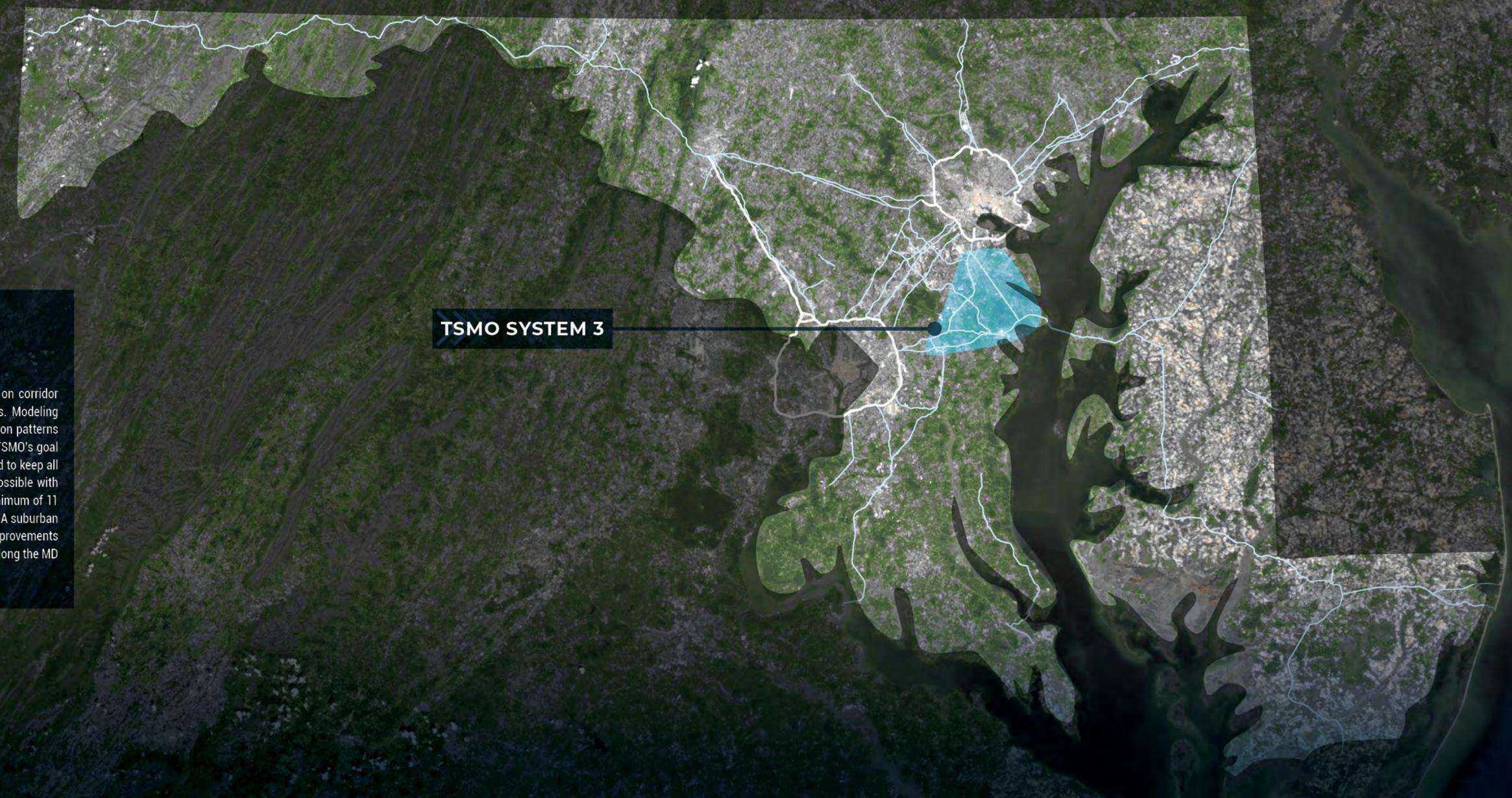
MD 2 AND MD 3 CORRIDOR EVALUATIONS

MDOT SHA's approach to evaluating the MD 2 and MD 3 corridors started with a larger TSMO system that includes I-97, US 50, MD 450, MD 2, and MD 3, per Figure 1 (TSMO system map). For this study, MDOT SHA narrowed the focus from the central Anne Arundel County and northern Prince George's County regional system to assess how the MD 2 and MD 3 corridors interact with the larger regional roadway network. Within these corridors, TSMO evaluated potential improvements to alleviate congestion, such as repurposing existing pavement and right-of-way, adding turn lanes and auxiliary lanes, signal timing and phasing adjustments, and intersection improvements. The study also evaluated the MD 2 and MD 3 corridors based on county and local concerns regarding pedestrian and bike connectivity, and access management.

MD 2 AND MD 3 CORRIDOR ANALYSIS & DESIGN ASSUMPTIONS

MDOT SHA developed operational and capacity needs along the MD 2 and MD 3 corridors based on corridor benefits identified through modeling, travel times, queuing, and safety issues along the corridors. Modeling was performed for an extended 4-hour peak period to capture a variety of peak hours and congestion patterns throughout the regional system. Analysis was based on existing year traffic conditions in line with TSMO's goal to maximize the full-service potential of existing facilities and systems. Improvements were designed to keep all impacts within the existing right-of-way and to repurpose the existing shoulder/pavement where possible with minor widening as needed. Roadway improvements assume a 12 feet lane width, narrowing to a minimum of 11 feet at intersections where necessary. Pedestrian improvements were designed based on a MDOT SHA suburban activity center context with continental striping provided at new crosswalks. The pedestrian/bike improvements at the MD 3/MD 175 intersection were designed as a 10 feet shared use path. Access modifications along the MD 3 corridor to prevent wrong way turns were designed to accommodate a SU-40 truck turning radius.

TSMO SYSTEM 3



MD 2 & 3 ANALYSIS, EVALUATIONS, AND ASSUMPTIONS

PROPOSED IMPROVEMENTS

MDOT SHA developed several improvement concepts for the MD 2 corridor based on the needs identified during the evaluation phase of the study. The following pages describe and illustrate the proposed improvements. See pages 10-15 for concept details.

- | | | | |
|--|--|---|---|
| 1 MD 2 at East West Boulevard & Pasadena Road | 5 MD 2 at Whites Road | 9 MD 2 NB: Arnold Road to West Campus Drive | 13 MD 2 SB: Arnold Road to US 50 |
| 2 MD 2 NB: MD 648/Whites Road to MD 10 | 6 MD 2 at Robinson Road/Leelyn Drive and MD 648 | 10 MD 2 SB: West Campus Drive to Arnold Road | 14 US 50 EB: MD 2 ramp to Bay Dale Drive |
| 3 MD 2 SB: MD 10 to MD 648/Whites Road | 7 MD 2 NB: Jones Station Road to Cypress Creek Road | 11 MD 2 at Arnold Road | 15 MD 450 at Ramps from MD 2 SB |
| 4 MD 2 at Earleigh Heights Road | 8 MD 2 SB: Cypress Creek Road to Jones Station Road | 12 MD 2 NB: US 50 to Arnold Road | |

MD 10 TO MAGOTHY BRIDGE RD

Significant queuing on MD 10 southbound at MD 2; high volumes destined to MD 10 with significant queuing on MD 2 northbound approaching MD 10; East West Boulevard/Pasadena Road intersection is significantly over capacity with two thru lanes on MD 2; poor utilization of short 3rd lane through Magothy Bridge Road intersection.

MD 2 AT CYPRESS CREEK RD

Bottleneck on MD 2 southbound at right lane drop beyond Cypress Creek Road.

MD 2 AT WEST CAMPUS DR

Bottleneck on MD 2 southbound at the right lane drop beyond West Campus Drive.

MD 2 AT ARNOLD RD

Poor utilization of short 3rd lane through the intersection; significant queuing on MD 2 northbound between US 50 ramps and Arnold Road.

MD 2 AT ROBINSON RD/LEELYN DR AND MD 648

Closely spaced intersection with complex signal phasing; queuing along MD 2 and MD 648 northbound; poor utilization of intersections due to downstream lane drops.

MD 2 AT JONES STATION RD

Bottleneck on MD 2 northbound at the right lane drop beyond Jones Station Road.

MD 2 AT US 50/MD 450

Spillback queuing along MD 2 southbound and ramp to US 50 eastbound due to short merge on US 50 eastbound; queuing along MD 2 ramp to MD 450 with stop condition at end of ramp.

MD 2 CORRIDOR OVERVIEW

The study section of MD 2 extends from MD 100 south to the US 50 interchange. The MD 2 corridor primarily consists of two-lane sections in each direction with short three-lane sections constructed through most of the signalized intersections. Pedestrian crosswalks are located at most major signalized intersections with the B&A Trail paralleling the corridor and connected via side streets. A connection between the B&A Trail and Broadneck Peninsula Trail along Jones Station Road currently is being constructed.

There are significant volume changes at the MD 10, MD 648 (north), MD 648 (south), and College Parkway intersections. At the MD 10 intersection, volumes to/from MD 10 often exceed the through volumes on MD 2. At the southern end of the corridor, traffic divides to travel east or west along US 50 or to continue south along MD 450. The corridor has a variety of land uses, including Anne Arundel Community College, located at West Campus Drive, with commercial developments clustered around:

- Jumpers Hole Road, Magothy Bridge Road, Robinson Road to McKinsey Road, and Arnold Road

A summary of the operational and pedestrian access needs along the MD 2 corridor follows. Pages 10-15 provide more detail of needs with locations along the corridor included.

OPERATIONAL NEEDS

- Improve lane utilization at intersections and eliminate multiple merge locations resulting from the varying roadway section
- Accommodate the high volumes of MD 2 traffic destined to/from MD 10
- Improve traffic flow through the closely spaced Robinson Road/Leelyn Drive and MD 648 intersections
- Decrease congestion resulting from high volumes moving between to/from US 50 and MD 450

PEDESTRIAN ACCESS NEEDS

Pedestrian crossing of MD 2 at East West Boulevard/Pasadena Road to provide a connection between the B&A Trail and recently constructed sidewalk to Pasadena Elementary School

Pedestrian connections between MD 2 and the B&A Trail along the following County roadways:

- Earleigh Heights Road, Whites Road, Arnold Road/Severn Way

MD 2 CORRIDOR ANALYSIS & CONCEPTS

 Traffic Hotspot  Proposed Improvement

00 0.2 .4 0.8 Miles



1 >>> MD 2 AT EAST WEST BLVD & PASADENA RD

Connect recently constructed sidewalk along Pasadena Road to B&A Trail

This improvement provides protected pedestrian crossings on MD 2, East West Boulevard and Pasadena Road. It leverages the recently constructed sidewalk along the south side of Pasadena Road to complete pedestrian access between Pasadena Elementary School and the B&A Trail where it crosses East West Boulevard west of MD 2.



2 >>> MD 2 NB: MD 648/WHITES RD TO MD 10

Continuous third lane from MD 648/Whites Road through Magothy Bridge Road to MD 10

This improvement addresses the bottleneck and congestion on MD 2 northbound between MD 648 and MD 10, particularly the right lane that queues approaching the MD 10 intersection. It completes the continuous third lane from the existing lane drop north of MD 648 to the existing third lane at Magothy Bridge Road, and from Magothy Bridge Road through East West Boulevard/Pasadena Road ending at MD 10. To accommodate the heavy traffic volume turning right to MD 10, double right turn lanes are provided. The third northbound lane becomes a right turn only lane with an option to turn right onto MD 10 from the center lane or continue along MD 2 northbound. The continuous third lane increases the capacity of the East West Boulevard/Pasadena Road intersection and significantly reduce queuing approaching the MD 10 intersection. Additional consideration for the access to and from Hastings Lane would be appropriate during the design phase.



4 >>> MD 2 AT EARLEIGH HEIGHTS RD

Complete sidewalk between MD 2 and the B&A Trail

This improvement completes the sidewalk along Earleigh Heights Road to provide pedestrian access to the B&A Trail.



3 >>> MD 2 SB: MD 10 TO MD 648/WHITES RD

Continuous third lane from MD 10 through Magothy Bridge Road to MD 648/Whites Road

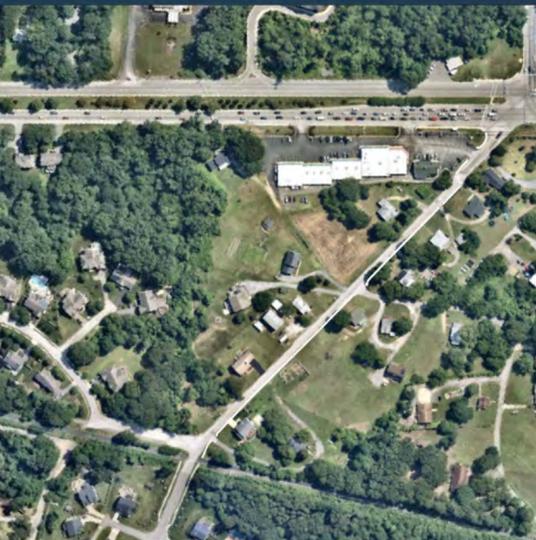
This improvement addresses the existing queuing on MD 10 southbound approaching at the MD 2 intersection and the congestion on MD 2 southbound between MD 10 and MD 648. It completes the continuous third lane from the existing lane drop north of MD 10 through East West Boulevard/Pasadena Road to the existing third lane at Magothy Bridge Road, and from Magothy Bridge Road to the existing third lane at MD 648/Whites Road. It also reconfigures the MD 10 southbound approach to provide a triple left turn onto MD 2 southbound. The continuous third lane increases the capacity of the MD 10 and East West Boulevard/Pasadena Road intersections and significantly reduces queuing, particularly on MD 10 southbound.



5 >>> MD 2 AT WHITES RD

Provide sidewalk between MD 2 and the B&A Trail

This improvement adds sidewalk along Whites Road to provide pedestrian access to the B&A Trail.



6 >>> MD 2 AT ROBINSON RD/LEELYN DR AND MD 648

Improved signal phasing

This improvement modifies the signal timing at the MD 648 and Robinson Road/Leelyn Drive intersections to reduce queuing along MD 648 northbound. It provides increased green time to the MD 648 approach and maintains the amount of green time for MD 2 traffic at the Robinson Road/Leelyn Drive intersection. The signal modifications could be implemented by the MDOT SHA District 5 Office.



7 >>> MD 2 NB: JONES STATION RD TO CYPRESS CREEK RD

Continuous third lane from Jones Station Road to Cypress Creek Road

This improvement addresses the bottleneck on MD 2 northbound at the existing right lane drop beyond the Jones Station Road intersection. It provides a continuous third lane between Jones Station Road and Cypress Creek Road. The continuous third lane eliminates the bottleneck north of Jones Station Road and increases capacity on MD 2 northbound to Cypress Creek Road.



Continuous third lane from Arnold Road to West Campus Drive

This improvement addresses the bottleneck on MD 2 northbound at the existing right lane drop beyond the Arnold Road intersection. It provides a continuous third lane between Arnold Road and West Campus Drive. The continuous third lane eliminates the bottleneck north of Arnold Road and increases capacity on MD 2 northbound to West Campus Drive. It improves the capacity of the Arnold Road intersection and reduces northbound queuing south of Arnold Road.



2

2

8 >>> MD 2 SB: CYPRESS CREEK RD TO JONES STATION RD

Continuous third lane from Cypress Creek Road to Jones Station Road

This improvement addresses the bottleneck on MD 2 southbound at the existing right lane drop beyond the Cypress Creek Road intersection. It provides a continuous third lane between Cypress Creek Road and Jones Station Road. The continuous third lane eliminates the bottleneck south of Cypress Creek Road and increases capacity on MD 2 southbound to Jones Station Road.



10 >>> MD 2 SB: WEST CAMPUS DR TO ARNOLD RD

Continuous third lane from West Campus Drive to Arnold Road

This improvement addresses the bottleneck on MD 2 southbound at the existing right lane drop beyond the West Campus Drive intersection. It provides a continuous third lane between West Campus Drive and Arnold Road. The continuous third lane eliminates the bottleneck south of West Campus Drive and increases capacity on MD 2 southbound to Arnold Road. The third lane could make the crossovers at Joyce Lane and MD 648 more difficult to utilize and additional analysis of potential impacts would be appropriate during the design phase.



12 »» MD 2 NB: US 50 TO ARNOLD RD

Continuous third lane from US 50 to Arnold Road

This improvement addresses the congestion on MD 2 northbound between the US 50 ramps and the Arnold Road intersection. It provides a continuous third lane between the ramp from US 50 westbound and Arnold Road. The continuous third lane increases the capacity of MD 2 northbound and improves the throughput of the Arnold Road intersection, significantly reducing north bound queuing south of Arnold Road.



13 »» MD 2 SB: ARNOLD RD TO US 50

Continuous third lane from Arnold Road to US 50

This improvement addresses the bottleneck on MD 2 southbound at the existing right lane drop beyond the Arnold Road intersection. It provides a continuous third lane between Arnold Road and ramp to US 50 westbound. It also provides a second lane to the ramp to US 50 eastbound/MD 450 southbound, alternate merging to a single lane downstream. The continuous third lane eliminates the bottleneck south of Arnold Road and increases capacity on MD 2 southbound to the US 50 ramps. The second lane to the ramp to US 50 eastbound greatly decreases the queuing along MD 2 southbound approaching the US 50 ramps.



14 »» MD 450 AT RAMPS FROM MD 2 SB

Convert stop condition to roundabout

This improvement addresses the queuing on the ramp from MD 2 southbound to MD 450 which high-speed conflict point. It replaces the existing stop condition for the ramp from MD 2 southbound with a roundabout. The roundabout reduces the speed of free-flow traffic on MD 450 and allow multiple vehicles on the ramp from MD 2 to proceed without stopping. This improvement greatly reduces the queuing along the ramp from MD 2 southbound.



11 »» MD 2 AT ARNOLD RD

Complete sidewalk between MD 2 and the B&A Trail

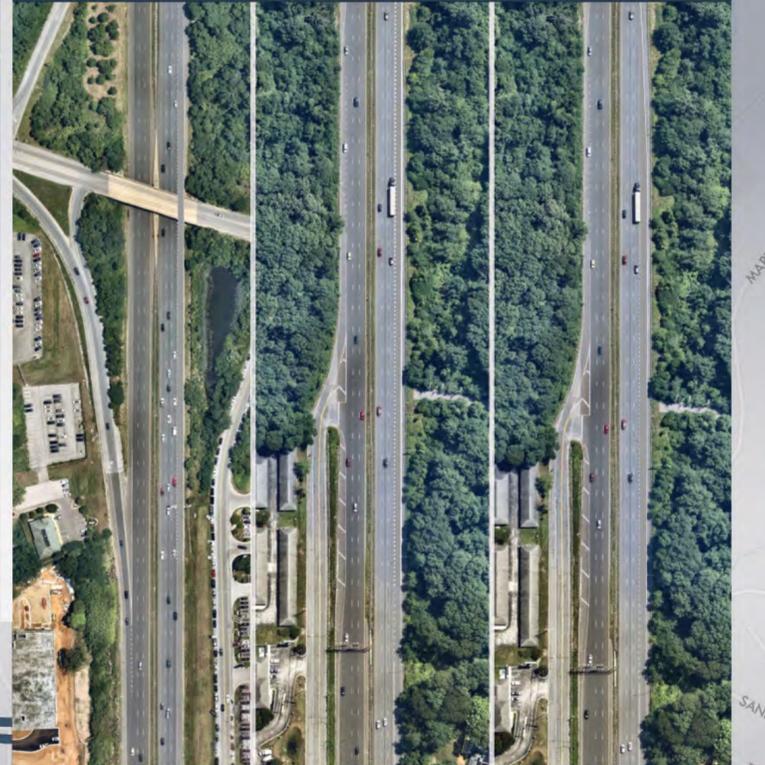
This improvement provides new sidewalk along Arnold Road and Severn Way to provide pedestrian access to the B&A Trail.



15 »» US 50 EB: MD 2 RAMP TO BAY DALE DR

Extend lane from MD 2 Ramp

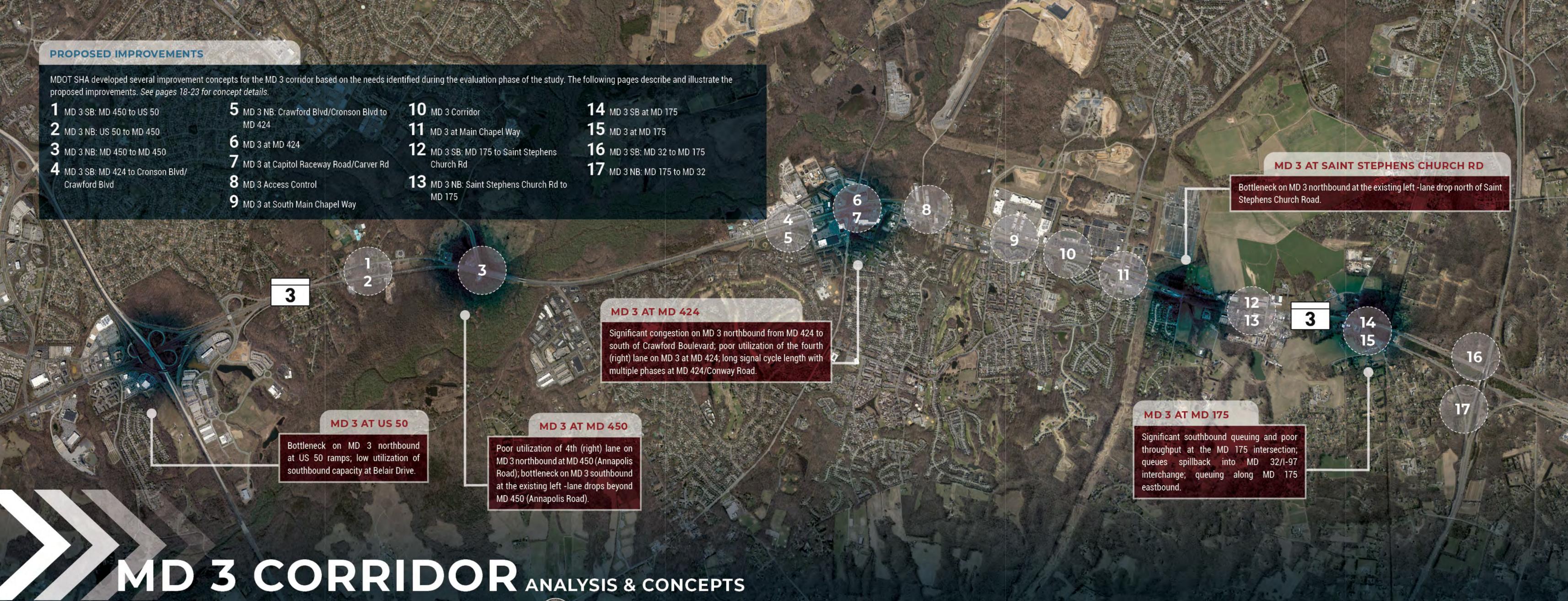
This improvement addresses congestion on the ramps from MD 2 southbound/MD 450 where traffic quickly merges onto US 50 eastbound. It provides a continuous auxiliary lane from the MD 2 ramp to the ramp to Bay Dale Drive. The auxiliary lane extends the distance for traffic to merge onto US 50 eastbound and reduces the speed differential between the ramp and mainline traffic. An optional configuration extends the acceleration lane for the MD 2 ramp by 800 feet in lieu of the full auxiliary lane.



PROPOSED IMPROVEMENTS

MDOT SHA developed several improvement concepts for the MD 3 corridor based on the needs identified during the evaluation phase of the study. The following pages describe and illustrate the proposed improvements. See pages 18-23 for concept details.

- | | | | |
|--|--|---|------------------------------------|
| 1 MD 3 SB: MD 450 to US 50 | 5 MD 3 NB: Crawford Blvd/Cronson Blvd to MD 424 | 10 MD 3 Corridor | 14 MD 3 SB at MD 175 |
| 2 MD 3 NB: US 50 to MD 450 | 6 MD 3 at MD 424 | 11 MD 3 at Main Chapel Way | 15 MD 3 at MD 175 |
| 3 MD 3 NB: MD 450 to MD 450 | 7 MD 3 at Capitol Raceway Road/Carver Rd | 12 MD 3 SB: MD 175 to Saint Stephens Church Rd | 16 MD 3 SB: MD 32 to MD 175 |
| 4 MD 3 SB: MD 424 to Cronson Blvd/Crawford Blvd | 8 MD 3 Access Control | 13 MD 3 NB: Saint Stephens Church Rd to MD 175 | 17 MD 3 NB: MD 175 to MD 32 |
| | 9 MD 3 at South Main Chapel Way | | |



MD 3 CORRIDOR OVERVIEW

The study section of MD 3 extends from I-97 south to the US 50 interchange. The MD 3 corridor varies between two and four lanes in each direction with sections of continuous left- and right-turn lanes. Portions of the MD 3 corridor are divided with businesses located in the wide median. Major intersections include MD 175, Waugh Chapel Road/Riedel Road, South Main Chapel Way, Johns Hopkins Road/Evergreen Road, MD 424/Conway Road, and MD 450 (north and south). At the southern end of the corridor, an interchange with Belair Drive/Melford Boulevard is located north of US 50.

The corridor has a variety of land uses with large residential areas east of MD 3 between MD 175 and MD 450. Commercial development is primarily located between Waugh Chapel Road and Crawford Boulevard and within the wide median that includes developed parcels. The largest concentration of commercial development is Waugh Chapel Towne Center, south of Waugh Chapel Road. Industrial development is located west of the corridor with access via Waugh Chapel Road, Evergreen Road, and Capitol Raceway Road. The corridor has few pedestrian crosswalks and limited bicycle facilities.

A summary of the operational and pedestrian access needs identified along the MD 3 corridor follows. Pages 18-23 provide more detail of needs at specific locations along the corridor.

Operational Needs

- Reduce queuing and eliminate multiple merge locations resulting from the varying roadway section along the MD 3 corridor between MD 32 at Saint Stephens Church Road and between MD 450 (Annapolis Road) and US 50
- Improve lane utilization and operations at MD 175, MD 424, and MD 450 intersections
- Improve utilization of existing pavement at Belair Drive/Melford Boulevard interchange

Access Management Concerns

- Reduce cut-through trips into Crofton Area neighborhoods caused by congestion along MD 3
- Reduce weaving concerns at Capital Raceway Road for U-turning trucks destined to MD 3 northbound
- Reduce median access points that create a high risk for wrong-way turns along the MD 3 corridor

Pedestrian/Bike Access Needs

- Improve pedestrian/bicycle connections to the future South Shore Trail phase
- Increase pedestrian access between neighborhoods on east side of MD 3 and commercial areas on the west side
- Increase bicycle accommodations MD 3 along the corridor

MD 3 CORRIDOR ANALYSIS & CONCEPTS

15 FIGURE 2. MD 3 Corridor Showing Congestion Hotspots and Proposed Improvements

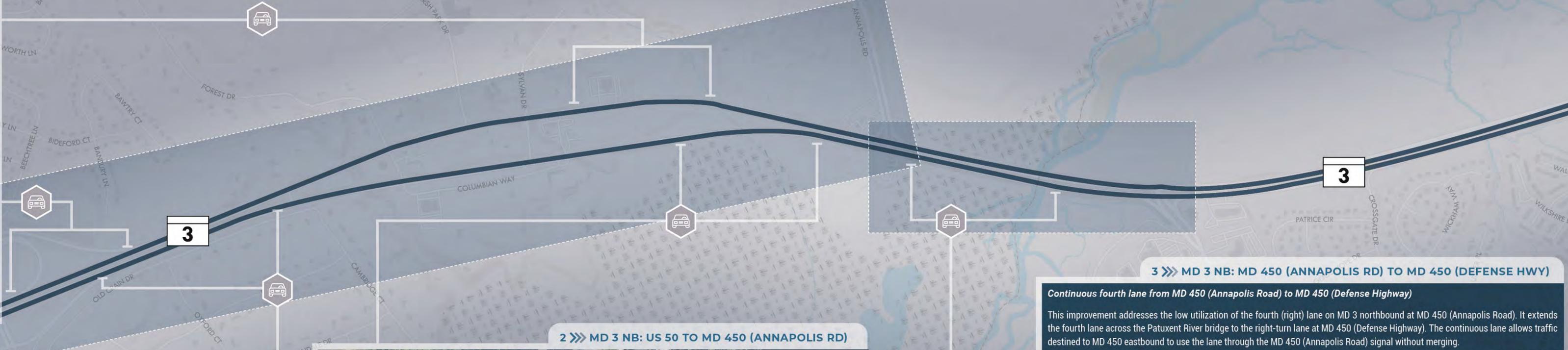


1 >>> MD 3 SB: MD 450 (ANNAPOLIS RD) TO US 50



Continuous third lane from MD 450 (Annapolis Road) to US 50

This improvement addresses the bottleneck on MD 3 southbound at the existing left-lane drops beyond the MD 450 (Annapolis Road) intersection. It provides a continuous third lane between MD 450 (Annapolis Road) and US 50. The continuous third lane eliminates the bottleneck south of MD 450 (Annapolis Road) and increases capacity to US 50. The excess capacity at the Belair Drive interchange is reconfigured to accommodate the third lane on MD 3 southbound.



2 >>> MD 3 NB: US 50 TO MD 450 (ANNAPOLIS RD)



Continuous third lane from US 50 to MD 450 (Annapolis Road)

This improvement addresses the bottleneck on MD 3 northbound at the existing ramp merge from US 50. It provides a continuous third lane between the ramp from US 50 and MD 450 (Annapolis Road). The continuous third lane eliminates the bottleneck at the ramp from US 50 and increases capacity to MD 450 (Annapolis Road).



3 >>> MD 3 NB: MD 450 (ANNAPOLIS RD) TO MD 450 (DEFENSE HWY)

Continuous fourth lane from MD 450 (Annapolis Road) to MD 450 (Defense Highway)
 This improvement addresses the low utilization of the fourth (right) lane on MD 3 northbound at MD 450 (Annapolis Road). It extends the fourth lane across the Patuxent River bridge to the right-turn lane at MD 450 (Defense Highway). The continuous lane allows traffic destined to MD 450 eastbound to use the lane through the MD 450 (Annapolis Road) signal without merging.



4 >>> MD 3 SB: MD 424 TO CRONSON BLVD/CRAWFORD BLVD

Extended fourth lane from MD 424 from Crofton Boulevard/Crawford Boulevard to Emerald Branch Drive

This improvement addresses the low utilization of the fourth (right) lane on MD 3 southbound at MD 424. It extends the fourth lane through the Crofton Boulevard and Cronson Boulevard intersections, ending at Emerald Branch Drive. The extended fourth lane improves the lane utilization and throughput of MD 3 southbound through the MD 424 intersection.



8 >>> MD 3 ACCESS CONTROL

This improvement modifies median (left-side) access points along the MD 3 corridor to prevent wrong-way turns. Curb openings are modified to physically restrict a right (wrong-way) turn out of the access point. The improvement also adds more right-in, right-outs on right-side access points to physically restrict a left (wrong-way) turn.



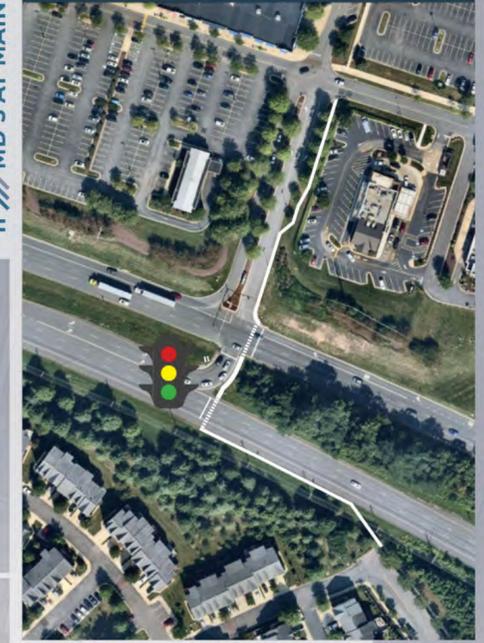
7 >>> MD 3 AT CAPITOL RACEWAY ROAD/CARVER RD

Access management/ Pedestrian crossing

This improvement provides a new signal at Capitol Raceway Road to address the existing yield and weaving concerns at this location. Capitol Raceway Road traffic destined to MD 3 northbound is able to directly turn into the left lane in advance of U-turning at MD 424. This improvement provides protected pedestrian crossings at Capitol Raceway Road and Carver Road. This proposed new signal is required to meet signal warrants.



This improvement provides a protected pedestrian crossing of MD 3 at Main Chapel Way – connecting the Chapel Court and Ogden Way community to The Village at Waugh Chapel. A new traffic signal allows for the pedestrian crossing of MD 3 northbound, which is required to meet signal warrants.



5 >>> MD 3 NB: CRAWFORD BOULEVARD/CRONSON BLVD TO MD 424

Extended fourth lane from Crawford Boulevard through Crofton Boulevard to MD 424

This improvement addresses the low utilization of the fourth (right) lane on MD 3 northbound at MD 424. It extends the fourth lane through the Cedar Grove Road and Crawford Boulevard intersections. The extended fourth lane improves the lane utilization and throughput of MD 3 northbound through the MD 424 intersection and significantly reduce congestion on MD 3 northbound south of Crawford Boulevard.



6 >>> MD 3 AT MD 424

This improvement reconfigures the MD 3 at MD 424 intersection to simplify the signal phasing and increase intersection capacity. The reconfiguration is very similar to the existing MD 3 at Waugh Chapel Road and Riedel Road intersection. Left turns from MD 3 run concurrently with right turns from MD 424 and Conway Road. **Signalized J-turns** have been constructed along MD 3 nearby. This improvement improves the throughput of MD 3 at the MD 424 intersection and reduce queuing and congestion approaching the intersection.



9 >>> MD 3 AT SOUTH MAIN CHAPEL WAY

This improvement provides a protected pedestrian crossing of MD 3 at South Main Chapel Way, connecting the Wellfleet Lane community to Waugh Chapel Towne Centre.



10 >>> MD 3 CORRIDOR

This improvement provides pedestrian and bicycle accommodations along the MD 3 corridor through a parallel shared-use path between MD 175 and MD 424. It also provides a neighborhood pedestrian connection between Cheyenne Drive and Chilmark Court.



11 >>> MD 3 AT MAIN CHAPEL WAY

Double arrows indicate improvements extend beyond current page view. See description for details.



3

12 >>> MD 3 SB: MD 175 TO SAINT STEPHENS CHURCH RD

Continuous third lane from MD 175 to Saint Stephens Church Road

This improvement addresses the bottleneck on MD 3 southbound at the existing left-lane drop beyond the MD 175 intersection. It provides a continuous third lane between MD 175 and Saint Stephens Church Road. The continuous third lane eliminates the bottleneck south of MD 175 and increases capacity on MD 3 southbound to Saint Stephens Church Road.



13 >>> MD 3 NB: SAINT STEPHENS CHURCH RD TO MD 175

Continuous third lane from Saint Stephens Church Road to MD 175

This improvement addresses the bottleneck on MD 3 northbound at the existing left-lane drop beyond the Saint Stephens Church Road intersection. It provides a continuous third lane between Saint Stephens Church Road and MD 175. The continuous third lane eliminates the bottleneck north of Saint Stephens Church Road and increases capacity on MD 3 northbound to MD 175.



14 >>> MD 3 SB AT MD 175

Second through lane on MD 175 eastbound

This improvement addresses the existing queuing on MD 175 eastbound at the MD 3 southbound intersection. It provides a second through-right lane on MD 175 eastbound and improves capacity for eastbound through traffic. The second through lane ties directly into the widened section of MD 175 beyond the intersection.



15 >>> MD 3 AT MD 175

This improvement provides a protected pedestrian and bike crossing of MD 3 and MD 175 for the South Shore Trail. It builds on the existing sidewalk constructed along Royal Farms and connects to the existing trailhead to the west side.



16 >>> MD 3 SB: MD 32 TO MD 175

Continuous third lane from MD 32 EB ramp to MD 175

This improvement addresses the existing queuing on MD 3 southbound approaching the MD 175 intersection. It provides a continuous third lane between the ramp from MD 32 eastbound and the MD 175 intersection. The continuous third lane significantly reduces southbound queuing and improves throughput at the MD 175 intersection. It also eliminates queue spillback into MD 32/I-97 interchange.



17 >>> MD 3 NB: MD 175 TO MD 32

Third lane from ramp to I-97 southbound to ramp to Veterans Highway

This improvement addresses the low utilization of the right lane on MD 3 northbound at MD 175. It provides a third lane on MD 3 northbound beyond the ramp to I-97 southbound, ending at the ramp to Veterans Highway. The extended third lane improves the lane utilization and throughput of MD 3 northbound at the MD 175 intersection.



3



MD 2 & 3 IMPLEMENTATION STRATEGIES

MD 2 AND MD 3 IMPLEMENTATION STRATEGIES

MDOT SHA has evaluated congestion and capacity needs on the MD 2 and MD 3 corridors within the context of the larger regional roadway network, including I-97, US 50, MD 450, MD 2, and MD 3. With a focus on operational improvements, this analysis and study identified improvement concepts for several locations along each corridor. Report contents were informed by input from the MDOT SHA District 5 Office, the Anne Arundel County Office of Transportation, and the Anne Arundel County Department of Public Works.

Next steps will include coordination with Anne Arundel County to prioritize proposed improvements along each corridor and develop implementation strategies. Upon completion of this report, related County projects and development considerations, as well as cost estimates, will be included in a memorandum to inform future coordination efforts and development of an MDOT Purpose and Need analysis that will be completed by the MDOT SHA Office of Planning and Preliminary Engineering in the Fall of 2020. MDOT SHA will remain an active partner with Anne Arundel County to engage the community and move improvements along MD 2 and MD 3 towards construction as County and State funding and resources allow.

