



## Growing East County

January 25, 2021

From: Sebastian Smoot  
To: Council President Tom Huckler  
Cc: Councilmembers Hans Riemer and Evan Glass, Transportation and Environment Committee  
Dr. Glenn Orlin, Senior Analyst, County Council  
Christopher Conklin, Director, Department of Transportation (DOT)  
Joana Conklin, Rapid Transit System Development Manager, Department of General Services  
Corey Pitts, Planning Section Manager, Division of Transportation Engineering, DOT  
Casey Anderson, Chair, Montgomery County Planning Board  
David Anspacher, Supervisor, Countywide Planning, Planning staff  
Jesse Cohn, Planner Coordinator, Countywide Planning, Planning staff

Dear Mr. Huckler:

I am writing to express serious concerns regarding MCDOT's US 29 Mobility and Reliability Study. The study has several shortcomings that skew the findings, using overly optimistic assumptions for the managed lane alternative and overly pessimistic assumptions for the median bus lane alternative.

Planning Department staff identified these flaws in the study in their report to the Planning Board. They wrote, "*It is important to note that the analysis approach advantages the Managed Lanes alternative. ... This approach disadvantages the Median Bus Lane alternative by not recommending or evaluating operational tweaks that could improve performance ... Staff cannot conclusively find that one alternative is better than the other*"<sup>1</sup>. If the experts at Planning determined that MCDOT's analysis is flawed and short-sighted, it would be a mistake to proceed with MCDOT's recommendations.

I urge you to reject MCDOT's recommended alternative and instead request that MCDOT:

- Remove any assumptions that unfairly disadvantaged the Median Bus Lane Alternative and apply similar assumptions for both alternatives to provide a fair comparison of alternatives.
- Remove unrealistic assumptions for the Managed Lane Alternative, specifically: a) that 25% of all users on US 29 would carpool during peak hour and b) drivers of single-occupancy vehicles would not violate the HOV2+ restrictions without a robust and consistent enforcement program.
- Conduct a low-cost, short-term pilot to validate or refute the predicted impact of reconfiguring US 29 at University Boulevard to have six general-purpose lanes (see item 10 this letter).
- Engage elected officials, Planning Department staff, local transit/environmental organizations, and national BRT experts to identify measures to minimize impacts and reduce costs for the Median Bus Lane Alternative while also advancing the master-planned vision for dedicated bus-only lanes *on the entire corridor* between Silver Spring and Burtonsville.
- Revise the report based on the results of the above and present updated findings to the Planning Board, County Council, and the general public.

Some of the study's most unrealistic assumptions and findings are described on the following pages. Figures are provided at the end of this letter to illustrate many of these points.

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<sup>1</sup> Jesse Cohn, David Anspacher, Jason Sartori. US 29 Mobility & Reliability Study Staff Report to Planning Board. October 8, 2020 [montgomeryplanningboard.org/wp-content/uploads/2020/10/Item15\\_US-29-Mobility-Reliability-Study-Staff-Report-Draft\\_10-08-20\\_Final.pdf](https://montgomeryplanningboard.org/wp-content/uploads/2020/10/Item15_US-29-Mobility-Reliability-Study-Staff-Report-Draft_10-08-20_Final.pdf)



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1. **The study concludes that a bus sharing a lane with HOV automobiles will experience a shorter travel time than a bus operating in a bus-only lane.** MCDOT predicts that northbound PM bus travel time from Georgia Avenue to MD 198 would be 25 minutes in the Managed Lane Alternative and 33 minutes in the Median Bus Lane Alternative<sup>2</sup>. Note that based on the study results, for each bus in the HOV lane, there would be 100-150 HOV automobiles<sup>3</sup>.
2. **The Managed Lane Alternative does not provide high-capacity lanes between Burnt Mills Ave and Sligo Creek Parkway.** See map on page 6 & Figure 14. How is it possible to achieve a 46% reduction in AM bus travel time<sup>4</sup> if BRT runs in mixed traffic in Four Corners and Burnt Mills?
3. **The report states that removing a peak-direction traffic lane in the Burnt Mills area will not cause congestion but rather result in shorter commutes for drivers.** Specifically, the report states that rush-hour single occupancy vehicle travel time from MD 198 to Georgia Avenue in downtown Silver Spring would be shortened by 60% (from 46 minutes in the No Build Alternative to 19 minutes under the Managed Lane Alternative)<sup>2</sup>, even though it removes a peak-direction general-purpose lane between New Hampshire Ave (MD 650) and Southwood Avenue (Fig 13).
4. **MCDOT claims that 15% (one out of seven) of US 29 rush hour commuters are carpoolers and adding a managed lane will increase carpooling to 25% of US 29 trips<sup>5</sup>.** Neither of these assumptions are not supported by research or evidence. MWCOG's 2019 State of the Commute Survey Report<sup>6</sup> indicates a 3% carpool/vanpool mode share for users of US 29, and only one corridor in the region has a carpool/vanpool mode share greater than 20% (I-395 in Virginia)<sup>6</sup>. Finally, it should be noted that ride-hailing services such as Uber and Lyft are considered HOV 2+ vehicles, and a study commissioned by those same companies has revealed that these services make traffic congestion worse<sup>7</sup>, raising concerns that the managed lane would induce demand for ride-hailing trips, since doing so would likely be faster than driving.
5. **The study assumes no mode shift to BRT if bus service improves.** As noted above, MCDOT assumed that a managed lane would incentivize carpooling, resulting in thousands of drivers switching from single-occupancy vehicles to carpooling. However, no mode shift was assumed for people shifting from driving to BRT, *even though the bus travel time would be faster than driving.*
6. **MCDOT assumes perfect compliance with HOV restrictions.** The traffic analysis assumed that single-occupancy vehicles would never enter the managed lanes. Unlike on limited-access highways, HOV lanes on arterial roadways like US 29 are challenging to monitor and enforce. MCPD does not have the capability to adequately monitor three miles of managed lanes during rush hour. Automated enforcement of HOV lanes is not allowed under state law, not included in MCDOT's cost estimate, and complicated by the fact that single-occupancy vehicles would be allowed to drive in the managed lane briefly if they are making a turn at an upcoming driveway or cross street. The most similar nearby examples are the rush hour HOV 2+ lanes on Route 1 in Alexandria, VA and the bus/right turn lane on Veirs Mill Road, both of which are routinely disregarded by drivers (see Figures 3 and 4 on page 7).

<sup>2</sup> MCDOT Draft Technical Report. July 2020. Figure 30: Travel Time Comparison (p. 89); Lane reduction shown on Figure 25 (81).

<sup>3</sup> The number of HOV vehicles per bus was estimated as follows: Appendix I shows 3,915 vehicles per hour going southbound on US 29 at Lorain Ave during peak hour at existing conditions (Sheet 3: "US 29 Line-volume Diagram: Existing Conditions: Lorain Ave To Prelude Dr"). 25% HOV 2+ mode share. 7.5 minute bus headway.  $3,915 \times 0.25 \times 7.5 \div 60 = 122$  HOV 2+ vehicles per bus.

<sup>4</sup> MCDOT Draft Technical Report. July 2020. Figure 30: Travel Time Comparison (p. 89).  $(43m - 23m) \div 43m = 46\%$ .

<sup>5</sup> MCDOT Draft Technical Report. July 2020. Appendix II. Traffic Analysis Worksheets. Footnote on pages 4 & 5.

<sup>6</sup> National Capital Region Transportation Planning Board Metropolitan Washington Council of Governments Table 15, Page 39. <https://www.mwcoq.org/documents/2020/06/17/state-of-the-commute-survey-report-carsharing-state-of-the-commute-travel-surveys/>

<sup>7</sup> <https://www.bloomberg.com/news/articles/2019-08-05/uber-and-lyft-admit-they-re-making-traffic-worse>



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7. **MCDOT needlessly assumes the Median Bus Lane Alternative requires a new bridge over the Paint Branch.** MCDOT assumed that an additional lane could be accommodated on the existing bridges for the Managed Lane Alternative, but not for the Median Bus Lane Alternative (See Figures 5 and 6 on page 8). This assumption alone adds nearly \$10 million to the Median Bus Lane Alternative (\$3 million times multipliers such as design, drainage, contingency, etc.).
8. **The total cost of the Managed Lane Alternative is actually *higher* than the total cost of the Median Bus Lane Alternative.** Page 80 of MCDOT's report states that the cost of the Managed Lane Alternative is \$50 million; however, Planning Department staff noted that the full cost for the Median Bus Lane Alternative is \$105 for the Managed Lane Alternative, \$117 million (page 7 of the staff report<sup>1</sup>). Traffic modeling for the Managed Lane Alternative was based on approximately \$83 million<sup>8</sup> of improvements as described in MCDOT's cost worksheets (Appendix V).
9. **MCDOT's report claims that the Median Bus Lane Alternative requires 9.8 acres of right-of-way acquisition.** *One of the key advantages of the "Better BRT" concept as initially proposed to the Council in 2017 was that it could fit within the existing right-of-way* while keeping three general purpose lanes in both directions. 9.8 acres is equivalent to adding a 24-foot wide two-lane busway for 3.3 miles—the distance from Sligo Creek Parkway to Stewart Lane! Additionally, the right-of-way impacts shown in Appendix IV for the Managed Lane Alternative are *nearly four times greater* than those of the Median Bus Lane Alternative (1.63 acres vs. 0.43 acres, respectively; see Figures 7 and 8). Finally, note that if a lower design speed were assumed, road lane widths could be narrowed further (see Figures 10 and 11) and the road curves could be slightly tighter to minimize right-of-way impacts. It should also be noted that total acquisitions for MCDOT's recommended alternative is 6.9 acres according to Appendix V<sup>8</sup>, not 2.2 as claimed in the body of the report and their presentation (see Table 1, page 11).
10. **MCDOT's traffic model claims that the Median Bus Lane Alternative would result in severe miles-long traffic jams due to the reduction of general purpose lanes at University Boulevard from four to three.** This finding is not borne out by historical evidence. There have been lane closures in this exact location in the recent past: for resurfacing, WSSC utility work, and (most recently) FLASH station construction. While it is true that travel times and delays increased during these temporary lane closures, the traffic congestion did not approach the severe levels predicted by the VISSIM model used in the MCDOT study. Additionally, during those lane closures, impacts reduced over time as people adjusted their commuting patterns in response to the congestion. Similarly, if the lane reduction were made permanent, people would likely make permanent changes to their commuting patterns to avoid driving during periods of peak congestion, including a mode shift to BRT. This concept is borne out by science: just as adding roadway capacity leads to more drivers in the long-run ("induced demand"), a reduction in roadway capacity will reduce congestion over the long-run (this phenomenon is referred to as "dissuaded demand" or "traffic evaporation")<sup>9</sup>. Finally, it should be pointed out that the lane proposed for removal in the Median Bus Lane Alternative is generally not heavily used because it ends abruptly 600 feet after the intersection with New Hampshire Ave (Figure 9).

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<sup>8</sup> The Managed Lane Alternative is presented across several sheets in the cost estimate. The total values of \$83 million and 6.9 acres were determined by adding the totals of Locations S1a, S1b, S1C, S2, S3, S4, S5, S6, S7, S8, S9, S10, all of which are components of the MCDOT recommended alternative that was used to determine travel time savings. See tables on page 11.

<sup>9</sup> See for example evidence from New York City's 14th Street Busway pilot: the city banned automobile traffic on 14th Street in October 2019 to improve bus reliability. Opponents tried to block the project, claiming that traffic would overwhelm adjacent streets and lead to congestion, confusion, and dangerous conditions. However, an independent analysis found that the pilot resulted in only minimal impacts to adjacent streets while increasing bus ridership and travel times by 30% (Anna Sanders "14th St. busway increased ridership, bus speeds with minimal impact on traffic, city analysis shows." *New York Daily News*, 18 Dec 2019)



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11. **South of Sligo Creek Parkway, MCDOT assumed one general purpose lane could be converted to a high-capacity lane for the Managed Lane Alternative, but did not do the same for the Median Bus Lane Alternative.** If the study is to assume reducing the number of general purpose lanes in downtown Silver Spring to allow buses to bypass congestion, it should have done so for both alternatives to allow a fair comparison. Additionally on the northern part of the corridor, MCDOT added a lane for buses north of Tech Road for the Managed Lane Alternative but not for the Median Bus Lane Alternative.
12. **MCDOT assumed various road and intersection improvements to reduce congestion and reduce travel times for the Managed Lane Alternative, but not for the Median Bus Lane Alternative.** This shortcoming in the alternatives comparison was also noted in the Planning Board staff report<sup>1</sup>, which noted, “this approach disadvantages the Median Bus Lane alternative by not recommending or evaluating operational tweaks that could improve performance” (page 8).

In March 2018, the County Council allocated half a million dollars for MCDOT to study how bus lanes could be added to US 29—instead, MCDOT used most of this money to study something else entirely: interchange and intersection widening, adding more automobile capacity, rush-hour HOV lanes, and pedestrian/bicycle improvements. The residents along the US 29 corridor deserve high-quality rapid transit service, and dedicated bus lanes deserve a fair and thorough evaluation.

Advancing MCDOT’s recommendations will be a wasted opportunity to achieve the master-plan vision of dedicated bus lanes and is unlikely to achieve the benefits predicted by MCDOT’s flawed analysis. Taking away a general purpose lane so that buses will share a lane with automobiles will not only disappoint transit advocates, but also automobile drivers and local residents. This is a lose-lose proposition, and an expensive one at that! This in turn will weaken public support and political will for future bus lane projects.

Finally, I respectfully disagree with the Planning Department staff’s opinion that MCDOT’s Managed Lane Alternative is an interim step towards the master-planned vision: MCDOT has not provided any evidence that their proposal could be upgraded to provide a dedicated bus-only lane along the entire corridor from Burtonsville to Silver Spring. If MCDOT sincerely considers the Managed Lane Alternative to be an interim step, a plan on how to achieve the master-planned vision should have been provided in the report.

Politically, it will be extremely challenging to repurpose an automobile or HOV lane to a bus-only lane, as opposed to converting a landscaped median to a bus lane. Additionally, delaying dedicated bus lanes for a future phase will require spending millions of additional dollars on studies, design, construction, marketing, public relations, public hearings, and workshops. Let’s stop spending money on studies and instead just focus on getting dedicated bus lanes on US 29 as soon as possible.

Please do not advance MCDOT’s recommended Managed Lane Alternative as currently proposed.

Respectfully yours,

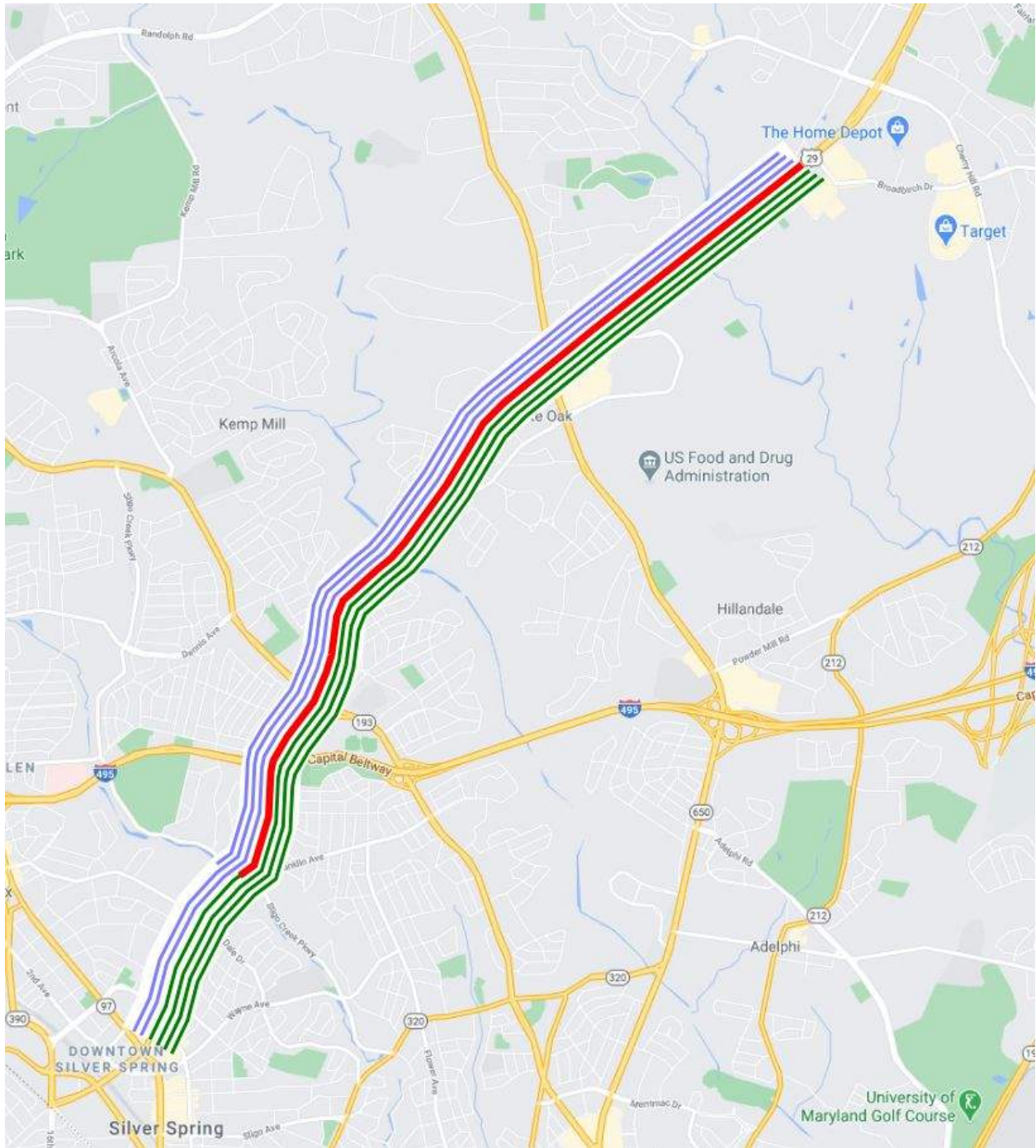
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**Figure 1. Median Bus Lane Alternative, PM Lane Configuration**

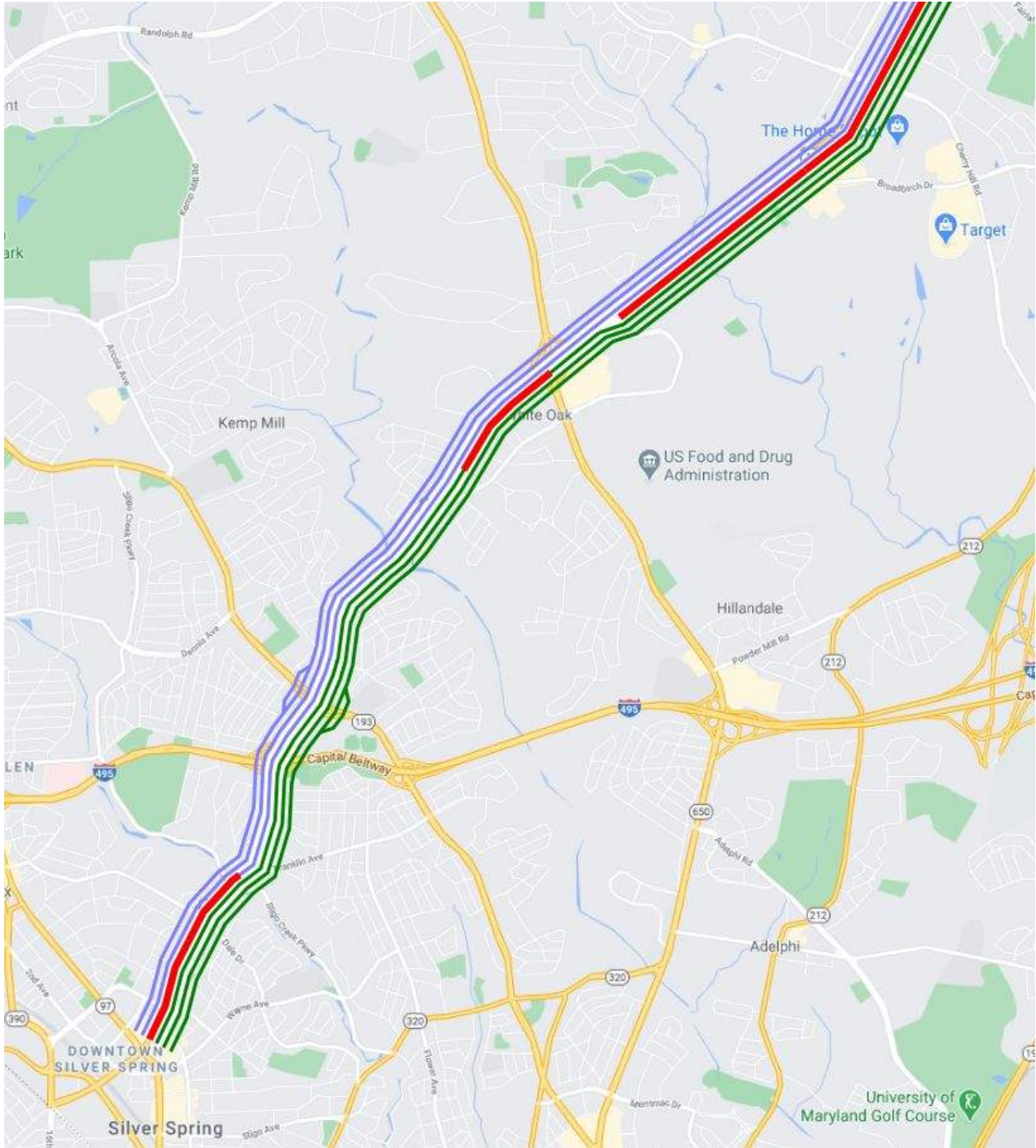
Red = 4.6 miles of bidirectional/reversible bus-only lane south of Tech Road

Violet = southbound general purpose lanes

Green = northbound (peak-hour) general purpose lanes



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**Figure 2. Managed Lane Alternative, PM Lane Configuration**

Red = 2.5 miles of Managed lane (Bus, HOV2+) south of Tech Road

1.3 miles from Tech Road to Stewart Lane + 0.7 mi from MD 650 to Burnt Mills Ave + 0.5 mi from Dale Dr to Spring St

Violet = Southbound general purpose lanes

Green = Northbound (peak-hour) general purpose lanes





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**Figure 3. Example of HOV lane on an arterial road. Route 1 in Alexandria, VA.**

Note the “LEFT LANE HOV 2+ ONLY 3PM - 7PM MON-FRI” sign next to the traffic signal. Someone from the County should visit this roadway during rush hour to observe compliance with the HOV restrictions.



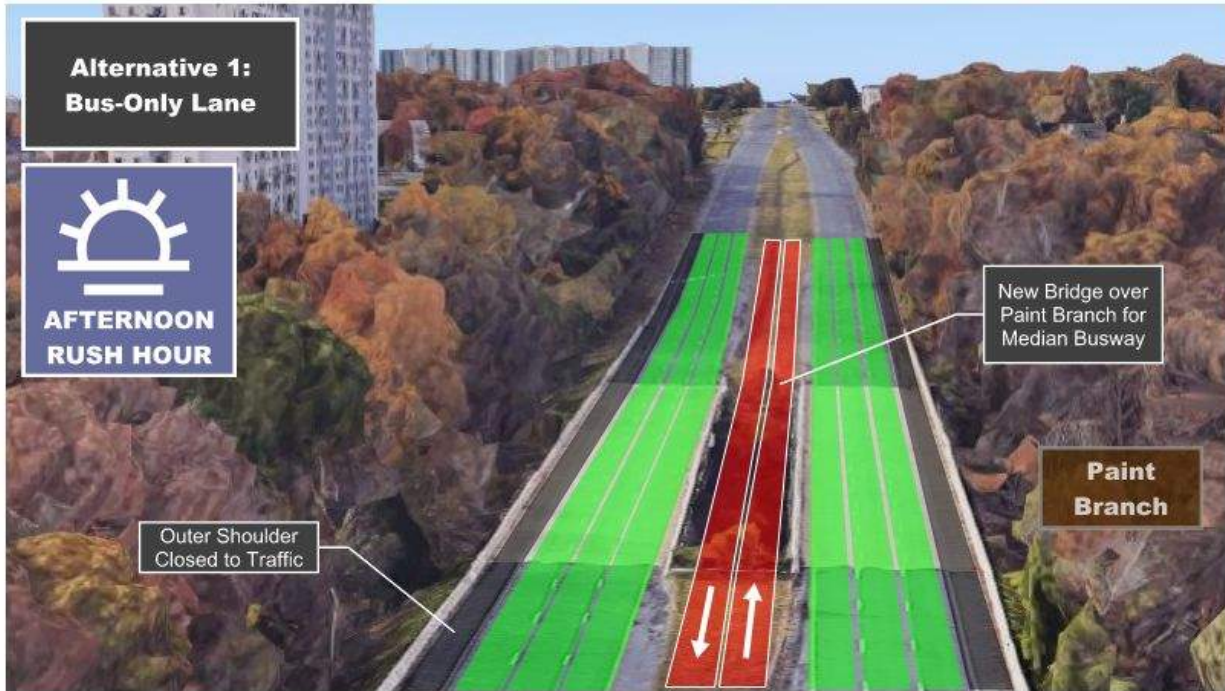
**Figure 4. Example of bus priority lane in Montgomery County. Viers Mill Rd near Matthew Henson Trail.**

The right lane is intended for right turning vehicles and buses only (note the shorter dashed lines—“RIGHT LANE MUST TURN RIGHT” signage is not visible in this screenshot); however automobiles commonly use the right lane as a through lane, thereby negating the value of allowing buses to use the right lane to bypass automobile traffic.



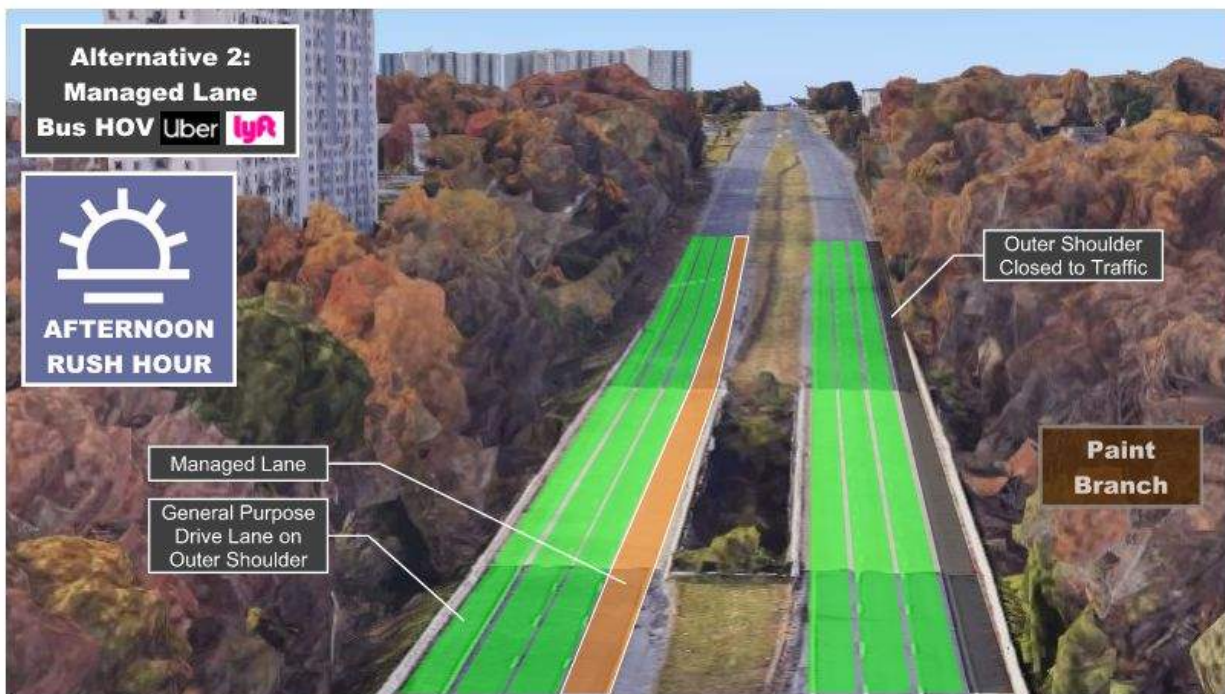


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**Figure 5. Median Bus Lane Alternative at Paint Branch**

MCDOT assumed a lane could not be added to the existing bridges for this alternative.



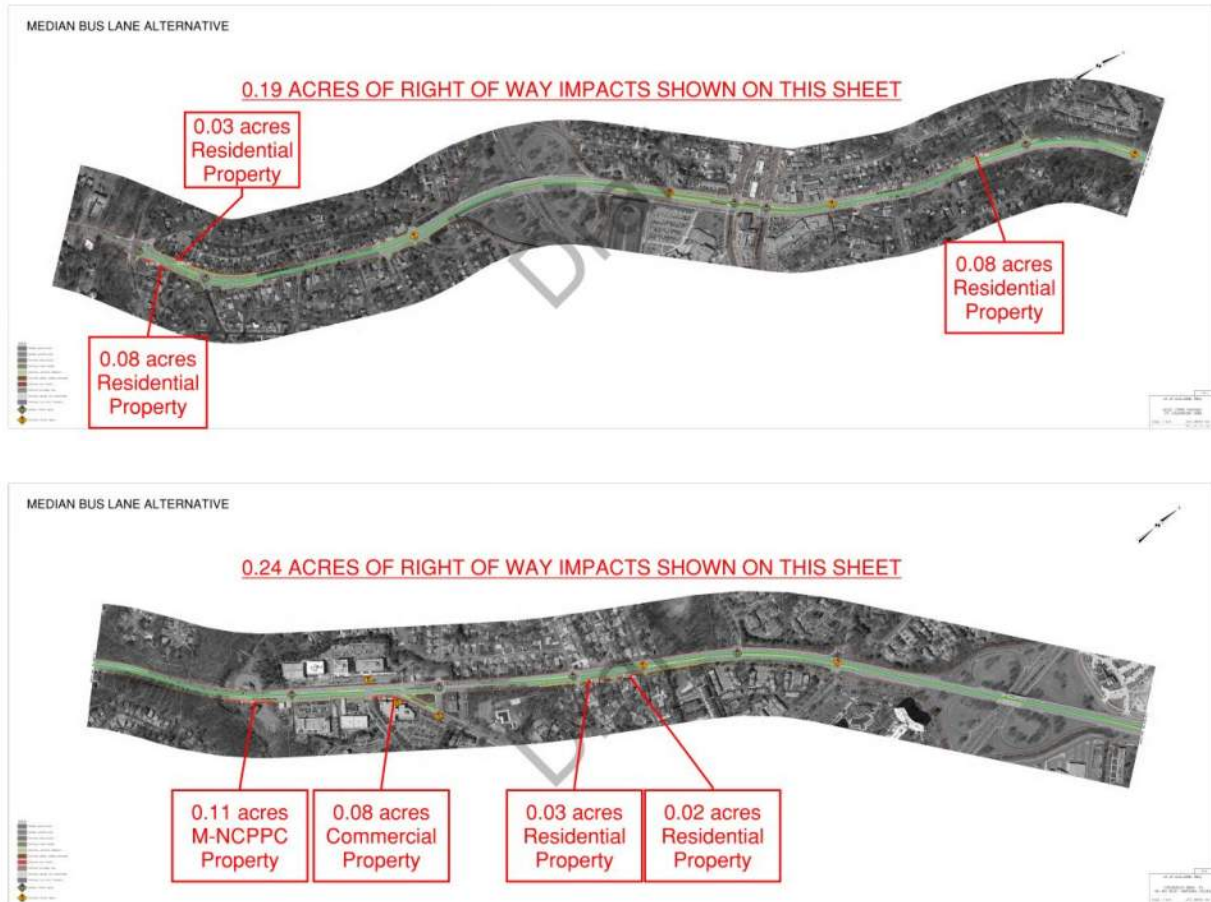
**Figure 6. Managed Lane Alternative at Paint Branch**

MCDOT assumed a lane could be added to the existing bridges for this alternative.





## Growing East County



**Figure 7. Median Bus Lane Alternative, Property Impacts**

0.03	West side of US 29 north of Sligo Creek Parkway (spot widening for curve)
0.08	East side of US 29 north of Sligo Creek Parkway (spot widening for curve)
0.08	West side of US 29 south of Southwood Ave (spot widening for curve)
0.11	M-NCPPC property at Northwest Branch (spot widening for curve and turn lane)
0.08	Colewood Centre (spot widening for curve)
0.03	West side of US 29 south of Southwest Dr (spot widening for left turn lane)
+ 0.02 acres	West side of US 29 south of Southwest Dr (spot widening for left turn lane)
= 0.43 acres	Total right-of-way impacts for Median Bus Lane Alternative

Source: MCDOT Draft Technical Report. July 2020. Appendix IV.

Note that if the speed limit is reduced, lane widths could be narrowed further and highway curves could be made tighter to minimize right-of-way impacts. See Figures 10 and 11.



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**Figure 8. Managed Lane Alternative, Property Impacts**

0.79	Blair High School
0.32	Burnt Mills Auto Body
0.39	Colesville Business Park
+ 0.13 acres	Dumont Oaks HOA
= 1.63 acres	Total right-of-way impacts for Managed Lane Alternative

Source: MCDOT Draft Technical Report. July 2020. Appendix IV.

Note that if the speed limit is reduced, lane widths could be narrowed further and highway curves could be made tighter to minimize right-of-way impacts. See Figures 10 and 11.



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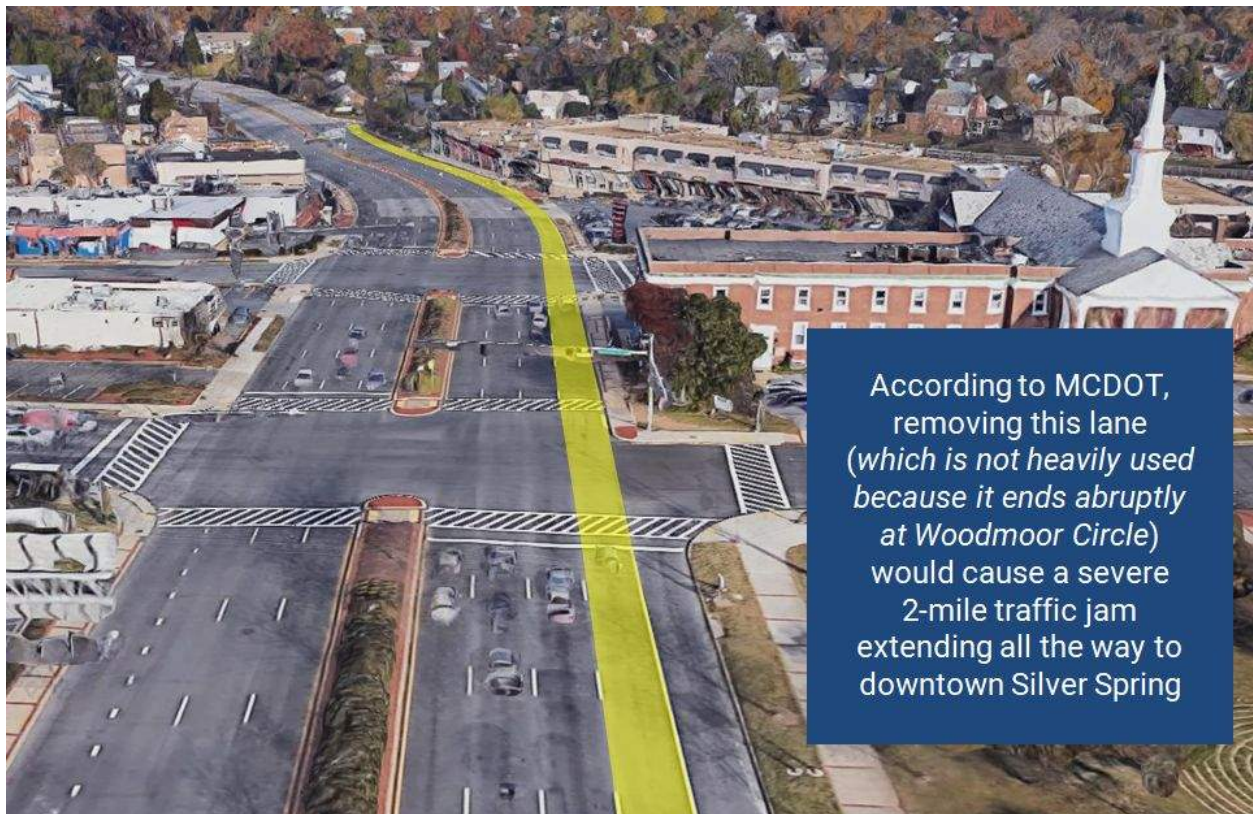
**Table 1. Summary of Project Costs for MCDOT Managed Lane Alternative**

Location	Description	Project Cost	Acres	Stations	Asphalt, Tons	Base Course, SY
S1a	US 29 from Musgrove to Stewart	\$ 40,001,740	2.2	-	18,400	60,500
S1b	US 29 from MD 650 to Burnt Mills	\$ 4,090,528	-	-	-	-
S1c	US 29 from Dale Dr to Spring Street	\$ 87,033	-	-	-	-
S2	US 29 at Greencastle Road	\$ 3,605,627	0.8	-	1,300	6,400
S3	US 29 at Tech Road	\$ 1,959,187	0.4	-	500	2,100
S4	US 29 at Stewart Lane	\$ 2,680,296	0.2	-	300	4,200
S5	US 29 at MD 650	\$ 6,492,535	0.6	-	600	5,800
S6	Relocate Burnt Mills Station to Median	\$ 12,422,927	1.5	2	1,300	5,200
S7	Southwood Drive	\$ -	-	-	-	-
S8	Relocate Four Corners Station to Median	\$ 7,373,999	1.2	2	700	3,500
S9	US 29 at I-495	\$ 1,709,666	-	-	100	1,400
S10	US 29 at Sligo Creek Parkway	\$ 3,096,790	-	-	300	1,900
<b>Total of all Recommendations</b>		<b>\$ 83,520,327</b>	<b>6.9</b>	<b>4</b>	<b>23,500</b>	<b>91,000</b>

**Table 2. Summary of Project Costs for Median Bus Lane Alternative**

Location	Description	Project Cost	Acres	Stations	Asphalt, Tons	Base Course, SY
n/a	<b>Total of all Bus Lane Alt. Recommendations</b>	<b>\$ 105,984,358</b>	<b>9.8</b>	<b>6</b>	<b>19,000</b>	<b>148,200</b>

Source: MCDOT Draft Technical Report. July 2020. Appendix V. Cost Estimate Worksheets.



**Figure 9. Northbound lane proposed for elimination in Median Bus Lane Alternative**

Required to accommodate a median busway and bus station within the existing right-of-way





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**Figure 10. Example of narrow lanes on Maryland State Highway. MD 150 in Dundalk, MD.**  
This 35 mph arterial roadway carries heavy truck traffic and has several intersections with 7-to-8 foot wide left-turn lanes.



**Figure 11. Example of narrow lanes on Maryland State Highway. MD 185 in Chevy Chase, MD.**  
The general purpose lanes on this 30 mph arterial roadway are between 8 and 9 feet wide. Trucks are banned on this road.



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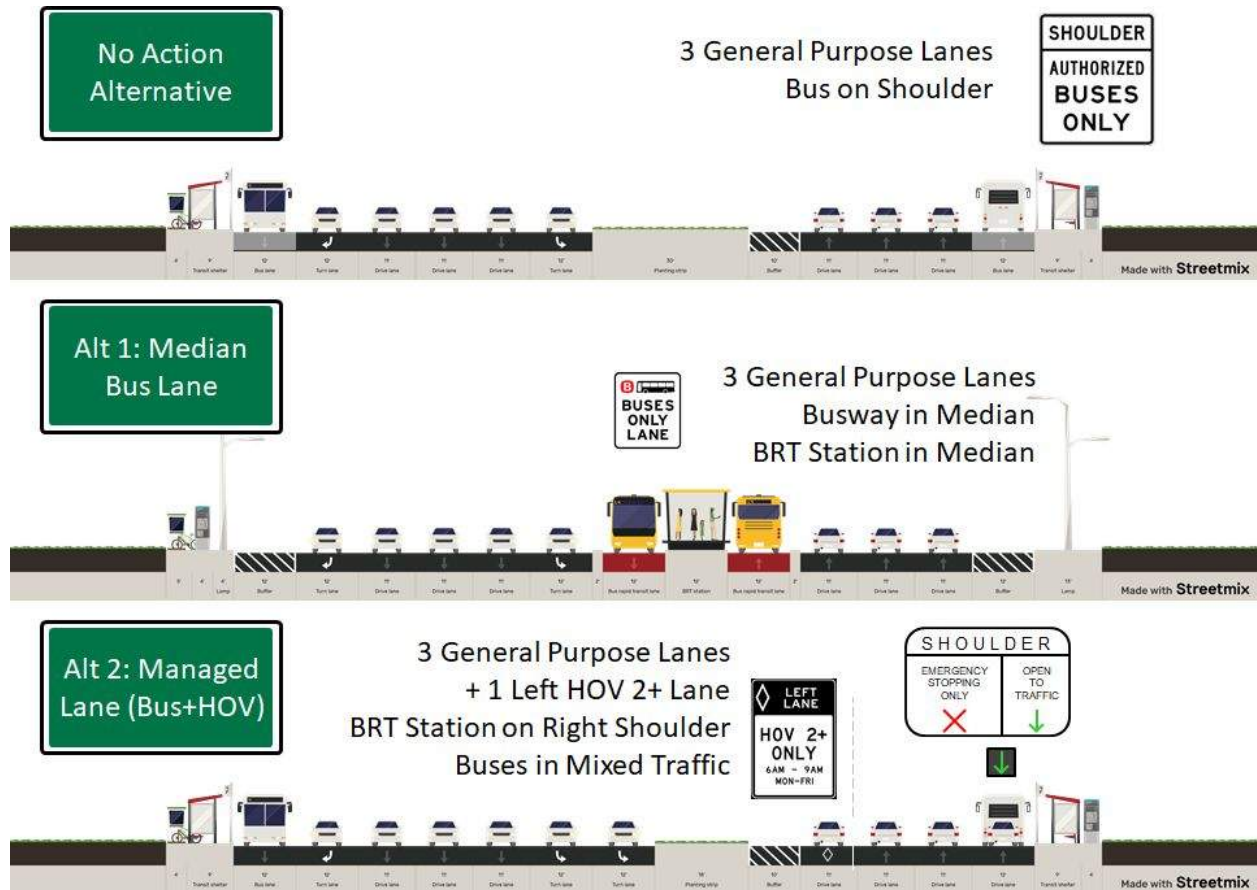


Figure 12. Cross Sections at Tech Road Station, as Evaluated by MCDOT.

Note: Planning Department recommends relocating the BRT Station to the Median for the Managed Lane Alternative.



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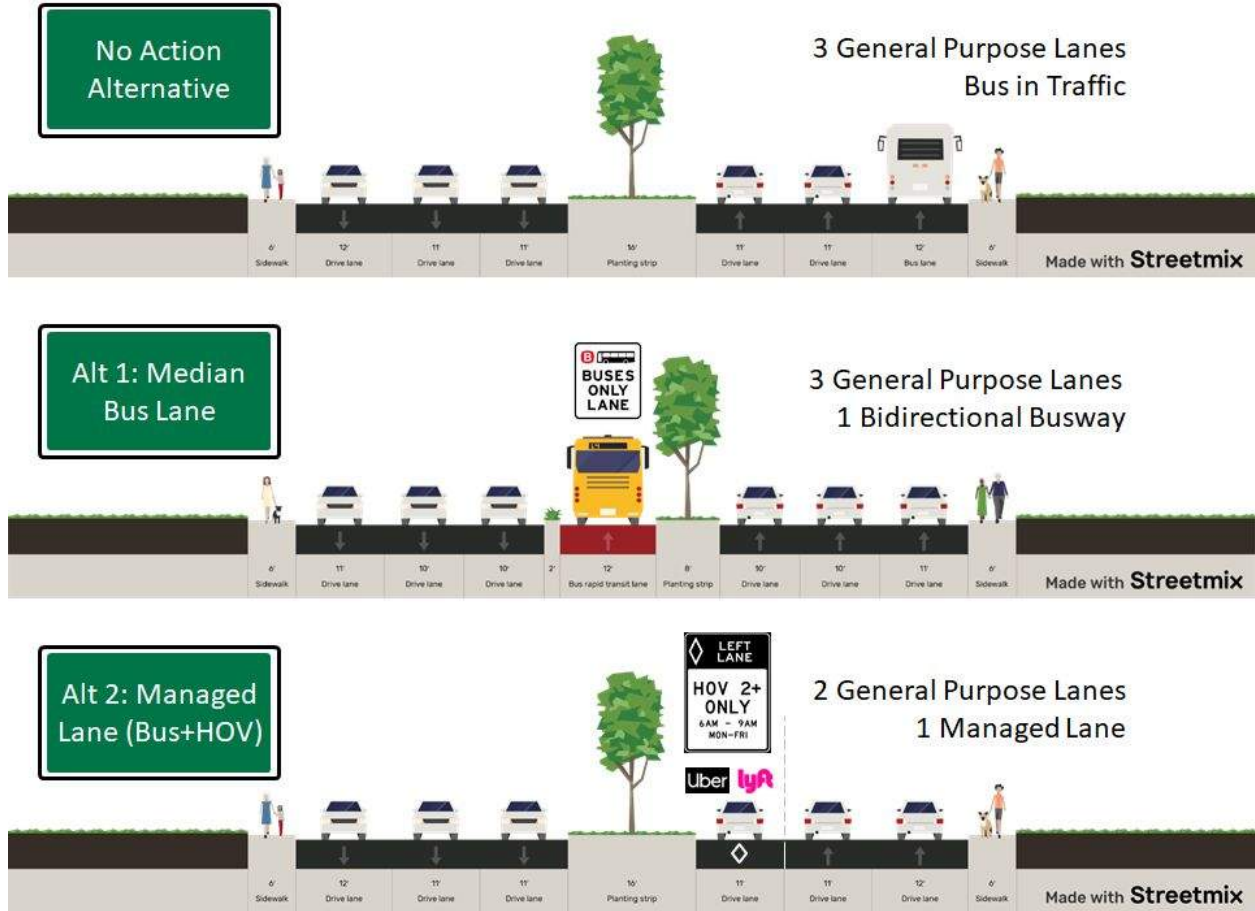


Figure 13. Typical Cross Sections, between MD 650 and Burnt Mills/Southwood Avenue.





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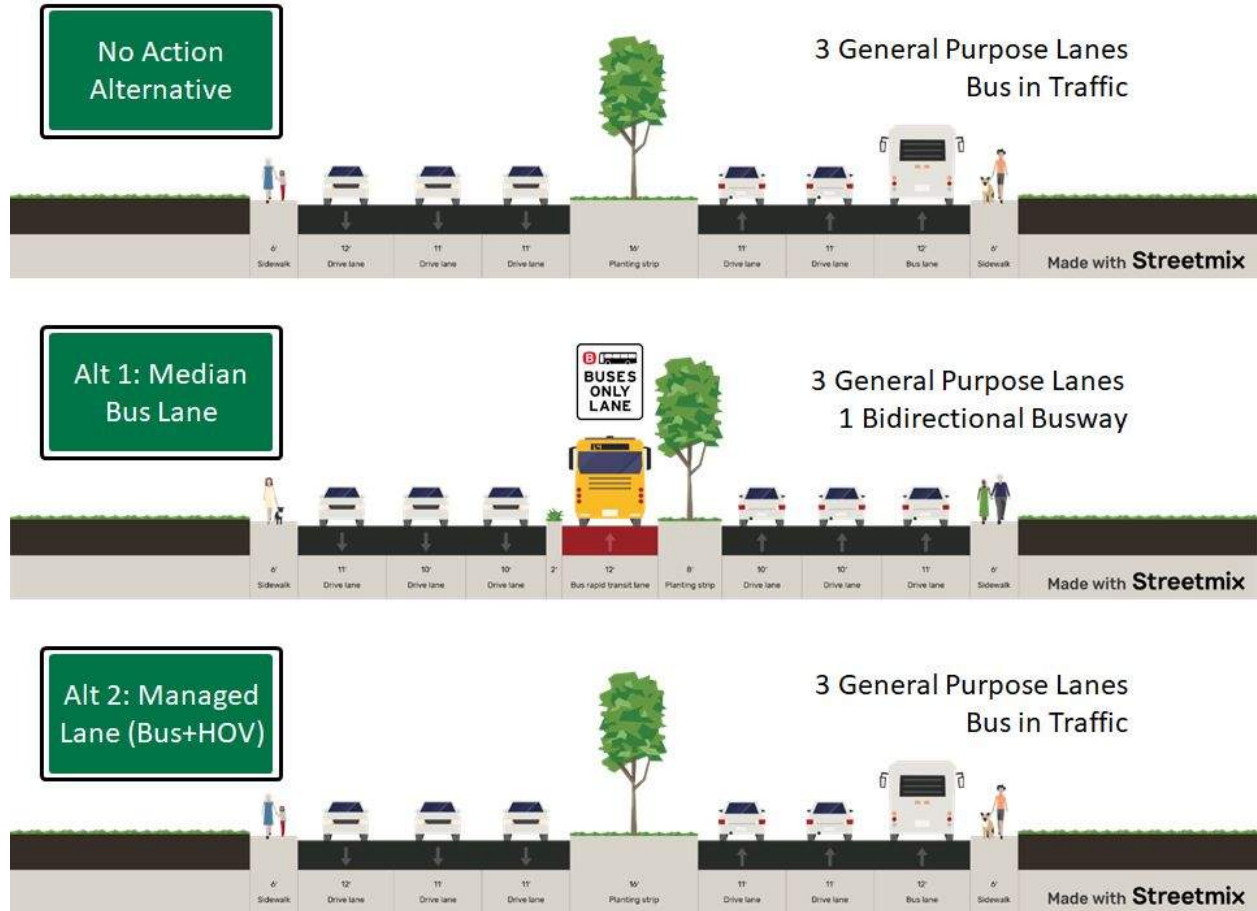


Figure 14. Typical Cross Sections, between Southwood Ave (Four Corners) & Sligo Creek Parkway