

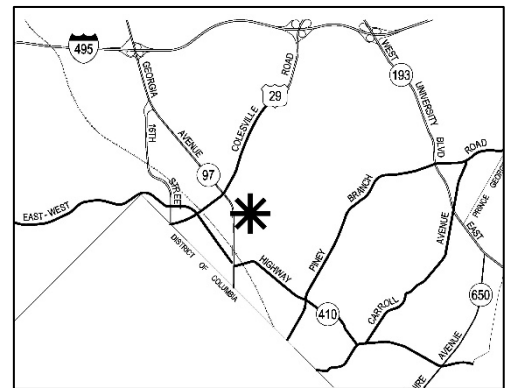
Fenton Street Bikeway Study Alternatives Selection

-  Eli Glazier, Planner/Coordinator, eli.glazier@montgomeryplanning.org, 301-495-4548
-  David Anspacher, Supervisor, david.anspacher@montgomeryplanning.org, 301-495-2191
-  Jason Sartori, Chief, jason.sartori@montgomeryplanning.org, 301-495-2172

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EXECUTIVE SUMMARY

The Fenton Street Bikeway is identified in the Bicycle Master Plan as one of the highest priority bikeways in Montgomery County. It would substantially improve the safety and comfort of the bicycle experience for people travelling to and through the Silver Spring Central Business District by providing a connection between the Metropolitan Branch Trail, the Silver Spring Library Purple Line station, the Silver Spring Green Trail, and the Spring Street Separated Bike Lanes. The Montgomery County Department of Transportation (MCDOT) has developed seven bikeway alternatives for the stretch of Fenton Street between Gist Avenue and Cameron Street. This agenda item provides the Planning Board the opportunity to recommend a preferred alternative to the County Council and transmit comments to MCDOT for further project refinement.



Applicant: Montgomery County Department of Transportation

RECOMMENDATION

Transmit the following comments to the Montgomery County Council's Transportation and Environment Committee (T&E) Committee:

- 1. Advance Alternative E as the preferred alternative.**
- 2. Coordinate with Montgomery Planning staff to undertake a design process to better separate pedestrians, bicyclists, motor vehicles and light rail vehicles at the Fenton Street/Wayne Avenue intersection.**

SITE DESCRIPTION

Fenton Street is an arterial roadway with a master-planned right-of-way of 80 feet that runs in the north-south direction between Takoma Avenue and Cameron Street. It has an average daily traffic volume of 10,600. It has two through lanes for most of its length, except between Ellsworth Drive and Colesville Road where two additional lanes are present – one in each direction – and between Ellsworth Drive and Wayne Avenue where there is an additional southbound lane. In addition to the through lanes, there are parking lanes on both sides of the street, except in a few locations. Today, the existing curb-to-curb street width varies between 44 and 48 feet, and the existing right-of-way is between 64 and 80 feet. Through the study area, the posted speed limit is 25 miles per hour.

Figure 1: Fenton Street Bikeway Project Extents



The project limits (*Figure 1*) are between Gist Avenue at the south to Cameron Street at the north, a distance of 0.7 miles (red line). One separate project currently in design continues the proposed bikeway south through the Fenton Street/Philadelphia Avenue (MD 410) intersection to the current endpoint of the Metropolitan Branch Trail at King Street (blue line). Construction is imminent on the bikeway connecting Cameron Street north to Planning Place (green line). Redevelopment of the former Montgomery County Planning Department building will complete the Fenton Street connection to Spring Street (brown line).

In addition to the future connection to the Purple Line at Wayne Avenue, WMATA (F4) and RideOn (16, 17, 20, 28) both maintain bus service along the corridor. There are eight bus stops in the southbound direction and six in the northbound direction.

Of the 12 intersections along the corridor, eight are currently signalized. Two additional intersections (Roeder Road and the Whole Foods driveway) will soon have pedestrian hybrid beacons (HAWKs) installed as part of a separate project. The only intersections without signalization once the HAWKs are installed will be at Gist Avenue and at Easley Street.

The MCDOT team has broken up the corridor into three distinct areas for their alternative development. At the south, the Fenton Village District extends from Gist Avenue to Wayne Avenue. It is typified by small businesses with storefronts using their frontage for café seating, access, on-street parking and loading. In the middle of the corridor, the Ellsworth District between Wayne Avenue and Colesville Road is also commercial, but has less reliance on the street itself for parking and loading, handling the majority of

these activities on-site or in off-street garages. The North Silver Spring District between Colesville Road and Cameron Street has few Fenton Street-fronting businesses, but strong on-street parking usage.

As part of this project, the MCDOT team reviewed public parking garage and surface lot data and collected the same for on-street parking along Fenton Street and side streets. *Figure 2* shows the locations and quantities of on-street and off-street parking along the corridor.

Figure 2: Corridor Parking Supply



On-street parking utilization along the totality of the Fenton Street corridor ranged from a minimum of 59% to a high of 95% with an average utilization of 78%. In general, the North Silver Spring District has the highest average on-street parking utilization with the Ellsworth District and Fenton Village District following in descending order. On-street parking in the corridor is generally limited to one hour on non-Sundays, though some side streets in Fenton Village allow two-hour parking. Block-by-block average on-street parking utilization along Fenton Street can be seen in *Figure 3*. *Tables 1, 2, and 3* provide average motor vehicle utilization information for each district in the project area, including side streets and off-street parking resources. A complete accounting of parking in the corridor can be found beginning on page 23 of the Fenton Street Bikeway Study Report and also on pages 156-157.¹

In addition to parking, deliveries and loading/unloading by truck are a specific concern in both the Ellsworth and Fenton Village districts. MCDOT staff has made observations and contacted business owners

¹ Fenton Street Bikeway Study Report. https://www.montgomerycountymd.gov/dot-dte/Resources/Files/Fentonvillage/Meetings/FentonBikewayStudy_Report_rsz.pdf

along the corridor to gauge their specific loading needs. Page 27 of the Fenton Street Bikeway Study Report details the block by block loading needs.²

Figure 3: Fenton Street On-Street Parking Average Utilization



² *Ibid.*

Table 1: Fenton Village Parking Summary

Type	Name/Location	No. of Spaces				Utilization	Notes
		Meter	Permit	Accessible	Bike		
On-Street	Fenton Street from Gist Ave to Wayne Ave	57			9	73% (avg)	1-hr Parking, 7 am – 6 pm ex. Sunday
	Side Streets (within 1 block)	102	29	1		79% (avg)	1- to 2-hr Parking 9 am – 6 pm ex. Sunday
Garages	#3 Thayer-Silver Spring 919 Silver Spring Ave	155		6	28	33%	
	#4 Fenton Village 8100 Fenton Street	295		18	0	61%	
Surface Lots	#29 Bonifant-Easley 809 Easley Street	66				86%	
	#38 Bonifant 920 Bonifant Street	21				98%	

Table 2: Ellsworth District Parking Summary

Type	Name/Location	No. of Spaces				Utilization	Notes
		Meter	Permit	Accessible	Bike		
On-Street	Fenton Street from Wayne Ave to Colesville Rd	12			20	83% (avg)	1-hr Parking 9 am – 6 pm ex. Sunday
	Side Street (within 1 block)	76				66% (avg)	
Garages	#60 Wayne 921 Wayne Ave	1,633		29	0	60%	
	#61 Town Square 786 Ellsworth Drive	1,241		24	4	59%	

Table 3: North Silver Spring District Parking Summary

Type	Name/Location	No. of Spaces				Utilization	Notes
		Meter	Permit	Accessible	Bike		
On-Street	Fenton Street from Colesville Rd to Cameron Street	22			0	91% (avg)	1-hr Parking 9 am – 6 pm ex. Sunday
	Side Street (within 1 block)	29				83% (avg)	
Garages	#2 Spring-Cameron 8700 Cameron Street	1,311		33	5	65%	
Surface Lots	#2 Planning Place	19		4		88%	

PROJECT DESCRIPTION

The Montgomery County Department of Transportation (MCDOT) is proposing to construct two-way separated bike lanes along the west side of a 0.7-mile section of Fenton Street between Gist Avenue and Cameron Street. This bikeway will connect communities to downtown Silver Spring, linking to the Metropolitan Branch Trail at the south end, the Silver Spring Library Purple Line Station, the Spring Street Separated Bike Lanes at the north end and all of the commercial destinations in between. While the completed Metropolitan Branch Trail/Capital Crescent Trail will provide a high-quality regional connection to downtown Silver Spring, the Fenton Street bikeway will provide local access to Silver Spring's civic, retail and commercial core. A brief history of this project can be found in *Attachment 1*.

MCDOT has developed seven alternatives that all provide improved bicycle connectivity along this corridor. All alternatives seek to minimize negative impacts to the community and to the corridor, but some impacts are inevitable. The different alternatives mix and match strategies to achieve a consistent bikeway section, varying the degree to which they remove on-street parking, increase through motor vehicle travel time, environmental/utility impacts and cost.

It is most helpful to understand the similarities between the alternatives before delving into the differences.

Similarities

- Fenton Street remains two-way for motor vehicle traffic.
- There is on-street parking along the corridor (in varying amounts).
- All seven alternatives include on-street loading zones, generally on each block.
- The two-way separated bike lanes are on the west side of the street in all alternatives.
- The bikeway is separated from the travel lane or parking lane by a raised concrete barrier.
- Protected corner island treatments are provided at as many intersections as possible.
- Curb extensions are generally removed along the corridor to provide space for the bikeway.

Additionally, *Attachment 2* identifies the design criteria all alternatives will strive to achieve for the different roadway elements. As design advances toward Mandatory Referral, there will be opportunities for the public, staff and the Planning Board to weigh in on specific streetscape dimensions including bikeway width and bikeway buffer width.

Differences

There are five differentiators that form the basis for staff's evaluation.

- **Safety** is ensuring that everyone moving through the Fenton Street corridor can do so without harm. This is achieved by separating different travel modes in space and/or time, reducing travel speeds, and improving visibility. Safety varies among the alternatives as they differ in their ability to separate through and left-turning vehicles due to tradeoffs between left-turn lanes and on-street parking.
- **Roadway Widening** is necessary in certain alternatives to fit in streetscape elements like on-street parking and left-turn lanes. Widening impacts utilities and street trees along the corridor. Some alternatives do not widen at all. Others selectively widen to provide additional space for on-street parking. Others widen the entire corridor by two feet.
- **On-street Parking** is considered an asset for businesses along the Fenton Street corridor, used by business patrons and those delivering to or picking up from storefronts in the area. On-street parking is reduced to varying degrees in some alternatives to accommodate left turn lanes.
- **Travel Time** through the corridor is the amount of time it takes to go from one end of the project area to the other. It varies across alternatives due to differences in presence of on-street parking and left-turn lanes.

- **Cost** is the amount of money required to construct the project. Generally, those alternatives that widen the roadway have higher costs than those that minimize changes to the roadway.

What follows is a brief description of each alternative and its associated tradeoffs. Concept plans for each alternative can be found in *Attachment 3*.

- **Alternative A** is designed to minimize the reduction of on-street parking along the corridor. It achieves this by eliminating the two-way left turn lane through Fenton Village and turn lanes at intersections throughout the corridor. The only turn lane along Fenton Street in this alternative is northbound Fenton Street at Colesville Road. This is detrimental to safety because you cannot eliminate conflicts between left turning vehicles, pedestrians, and bicyclists without dedicated turn lanes.

Because the alternative includes roadway widening, on-street parking would generally be provided on both sides of Fenton Street. This alternative has the potential to increase the number of parking spaces in the corridor by 3 (from 91 existing to 94).

However, traffic impacts are significant, with the end-to-end travel time at peak periods increasing by 3 minutes 24 seconds from 4 minutes 6 seconds today to 7 minutes 30 seconds under Alternative A.

Alternative A would cost between \$10.3 and \$13.6 million. The alternative envisions widening Fenton Street by 2' throughout the corridor.

- **Alternative B** is designed to maximize traffic throughput. At intersections, Fenton Street generally has a northbound left turn lane and a southbound left turn lane. This reduces the instances where left-turning vehicles will block through traffic. In the mid-block areas, the two-way left turn lane is removed to permit parking to be retained. Dedicated left-turn lanes in both directions have a strong safety benefit by allowing the separation of northbound and southbound pedestrians and bicyclists from left-turning vehicles through appropriate signalization.

Because the alternative includes roadway widening, on-street parking would generally be provided on both sides of Fenton Street. This alternative would remove slightly more than half the existing parking spaces on Fenton Street, reducing the 91 existing spaces by 48 to leave 43 spaces remaining. This alternative is tied with Alternative E for the largest impact to parking.

Traffic impacts fall in the middle of the pack. The approximate increase in travel time under Alternative B is 54 seconds, increasing the existing end-to-end travel time from 4 minutes 6 seconds to 5 minutes.

Like Alternative A, this alternative envisions widening Fenton Street by 2' throughout the corridor, making it one of the most expensive options, tied with Alternative C, and only slightly more expensive than Alternative A, at a cost of between \$10.3 and \$13.7 million.

- **Alternative C** is focused on balancing traffic flow with preserving on-street parking by eliminating southbound left turn lanes generally. Fenton Street's northbound left turn lanes are generally retained at intersections, though the two-way left turn lane is removed. This alternative generally performs well from a safety perspective with its dedicated northbound left turn lanes.

Because the alternative includes roadway widening, parking would generally be provided on both sides of Fenton Street. This alternative would remove just under a third of the parking spaces in the corridor, reducing the existing number of 91 spaces by 26, leaving 65 spaces.

In terms of traffic impacts, it does slightly better than Alternative B, increasing end-to-end travel time at peak hours by 42 seconds, taking it from 4 minutes 6 seconds to 4 minutes 48 seconds.

Like Alternative A and Alternative B, this alternative envisions widening Fenton Street by 2' throughout the corridor, making it one of the most expensive options, tied with Alternative B, and only slightly more expensive than Alternative A, at a cost of between \$10.3 and \$13.7 million.

- **Alternative D** assumes that Fenton Street will not be widened, other than at intersections, where the curb extensions will be removed. Alternative D is designed based on the goal of saving as many parking spaces as possible while still holding the curbs at their current locations. As a result, the two-way left turn lane in Fenton Village is removed, and no intersections have left turn lanes, except northbound Fenton Street at Colesville Road. This is detrimental to safety because with shared lanes you cannot eliminate conflicts between left turning vehicles, pedestrians, and bicyclists.

Because this alternative does not include roadway widening, on-street parking would only be retained on the east side of Fenton Street. West side on-street parking would be removed. This alternative would remove approximately one-third of the parking spaces on Fenton Street, which is slightly more impactful than Alternative C. Alternative D would remove 30 of the 91 parking spaces in the corridor, leaving 61 remaining.

Alternative D has a similar impact to traffic as Alternative A. These two alternatives have the highest end-to-end travel times. Alternative D is expected to nearly double end-to-end travel time in the corridor by increasing it by 3 minutes 24 seconds from 4 minutes 6 seconds to 7 minutes 30 seconds.

Because this alternative envisions only minimal roadway widening, it is one of the cheapest alternatives, tied with Alternative E for cheapest, at a cost of between \$8.1 million and \$10.9 million.

- **Alternative E** assumes that Fenton Street will not be widened, other than at intersections, where the curb extensions will be removed. Alternative E is designed based on the goal of minimizing additional congestion rather than saving on-street parking.

Because this alternative does not include roadway widening, on-street parking would only be retained on the east side of Fenton Street. West side parking would be removed. This alternative would remove just over half of the parking spaces on Fenton Street, reducing the existing 91 parking spaces by 48 spaces to leave 43 spaces remaining. This alternative is tied with Alternative B for the largest impact to parking. Removed parking provides space for dedicated northbound left-turn lanes, though all southbound movements take place in a single lane. The safety impact is similar to Alternative C.

Traffic impacts are minimal with this alternative. This alternative, along with Alternative C and Alternative F is tied for second place in terms of least impact to traffic. Alternative E increases end-to-end travel time by 42 seconds, from 4 minutes 6 seconds to 4 minutes 48 seconds.

Because this alternative envisions only minimal roadway widening, it is one of the cheapest alternatives, tied with Alternative D for cheapest, at a cost of between \$8.1 million and \$10.9 million.

- **Alternative F** is a modified version of Alternative C. This alternative minimizes costs by reducing widening in places where there is less demand for on-street parking. It also seeks to maximize parking on the block between Silver Spring Avenue and Thayer Avenue, where there are a lot of small businesses. To maximize parking on this block while still providing a safe bicycle and pedestrian experience, this alternative prohibits northbound left turns at the Thayer Avenue intersection. This alternative generally performs well from a safety perspective with its dedicated northbound left turn lanes.

Alternative F would remove slightly more than a third of the parking spaces on the corridor, reducing the existing 91 spaces by 37 and leaving 54 spaces to remain.

Travel times would increase by 42 seconds, an increase identical to Alternative C and Alternative E. This would increase the end-to-end travel time from 4 minutes 6 seconds to 4 minutes 48 seconds.

Because this alternative minimizes roadway widening where possible, it falls in the middle of the pack on cost, between \$9.1 million and \$12.2 million.

- **Alternative G** is a modified version of Alternative C. It is essentially the same as Alternative F except that parking is maximized on the block between Sligo Avenue and Silver Spring Avenue rather than the block between Silver Spring Avenue and Thayer Avenue. In this scenario,

northbound left turns from Fenton Street onto Silver Spring Avenue would be banned, instead of at Thayer Avenue in Alternative F. This alternative generally performs well from a safety perspective with its dedicated northbound left turn lanes.

This alternative impacts slightly fewer parking spaces than Alternative F, reducing the existing 91 spaces by 35 and leaving 56 spaces remaining.

Alternative G is the best of all alternatives for traffic flow. It increases end-to-end travel time in the corridor by only 36 seconds, from 4 minutes 6 seconds to 4 minutes 42 seconds.

Because this alternative minimizes roadway widening where possible, it falls in the middle of the pack on cost, between \$9.1 million and \$12.2 million.

Table 4 summarizes the cost estimates and trade-offs involved in the pursuit of the respective alternatives. A more detailed explanation of the cost estimates can be found beginning on page 86 of the Fenton Street Bikeway Study report.³

³ *Ibid.*

Table 4: Alternative Trade-offs and Cost Estimates

Alternative		A			B			C			D			E			F			G		
District		FV	E	NSS	FV	E	NSS	FV	E	NSS	FV	E	NSS	FV	E	NSS	FV	E	NSS	FV	E	NSS
Right-of-Way Impacts	Number of Impacted Parcels	14	0	0	14	0	0	14	0	0	4	0	0	4	0	0	9	0	0	9	0	0
	Driveways Impacted (during construction)	18	1*	0	18	1*	0	18	1*	0	8	1*	0	8	1*	0	12	1*	0	12	1*	0
	Café Zone Impacted	3	0	0	3	0	0	3	0	0	1	0	0	1	0	0	2	0	0	2	0	0
Potential Relocations	Storm Drains	17	5	0	17	0	0	17	5	0	15	5	0	15	5	0	17	5	0	17	5	0
	Utility Poles	11	0	0	11	2	1	11	0	0	7	0	0	7	0	0	7	0	0	7	0	0
	Fire Hydrants	2	2	1	2	5	0	2	2	1	2	2	1	2	2	1	2	2	1	2	2	1
	Street Lights	44	5	0	44	4	3	44	5	0	23	5	0	23	5	0	34	5	0	34	5	0
Potential Environmental Impacts	Street Trees	33	4	3	33	4	3	33	4	3	9	4	3	9	4	3	20	4	3	20	4	3
Traffic Impacts	Level of Service D or Better at All Intersections	No			Yes			Yes			No			Yes			Yes			Yes		
	Average Travel Time (Change from Existing), minutes	7.5 (+3.4)			5 (+0.9)			4.8 (+0.7)			7.5 (+3.4)			4.8 (+0.7)			4.8 (+0.7)			4.7 (+0.6)		
	Reconstruct Traffic Signal	4	0	1	4	0	1	4	0	1	4	0	1	4	0	0	4	0	1	4	0	1
Parking Impacts	Change in On-Street Parking Spots	0	+3	0	-22	-5	-21	-18	+2	-10	-33	+3	0	-40	+2	-10	-21	-5	-11	-19	-5	-11
Cost		\$13.6 million			\$13.7 million			\$13.7 million			\$10.9 million			\$10.9 million			\$12.2 million			\$12.2 million		

* Hotel drop-off area

FV - Fenton Village

E - Ellsworth District

NSS - North Silver Spring

MASTER PLAN CONSISTENCY

All alternatives are in substantial conformance with the following master plan recommendations:

- The 2018 Bicycle Master Plan recommends separated bike lanes along this corridor. It assigns the entirety of this Fenton Street Bikeway project in its “highest priority” category. Additionally, the portion of the bikeway from Cameron Street to Ellsworth Drive is part of the Glenmont to Silver Spring Breezeway. The Breezeway design standard is for an 11-foot bikeway excluding the gutter pan with a five-foot minimum buffer from traffic.
- The 2018 Master Plan of Highways and Transitways classifies Fenton Street as an arterial with one travel lane in each direction and a 25 mph target speed.

As currently designed, all alternatives would be regarded as “interim” bikeways from a master plan perspective as the bikeway width and buffer width both do not meet the standards. With redevelopment along the roadway, the project can be upgraded to “permanent” status.

STAFF ANALYSIS

As each alternative provides a similar bikeway alignment and dimensions, staff’s recommendation for a preferred alternative is based on the alternative’s effect on safety, travel time, on-street parking, roadway widening, and estimated cost.

Figure 4: Fenton Street/Silver Spring Avenue Intersection

Tradeoffs

Safety

Safety along the Fenton Street corridor can be improved by reducing the number and severity of conflicts between road users. This includes reducing conflicts between motorists and between motorists and pedestrians and bicyclists.

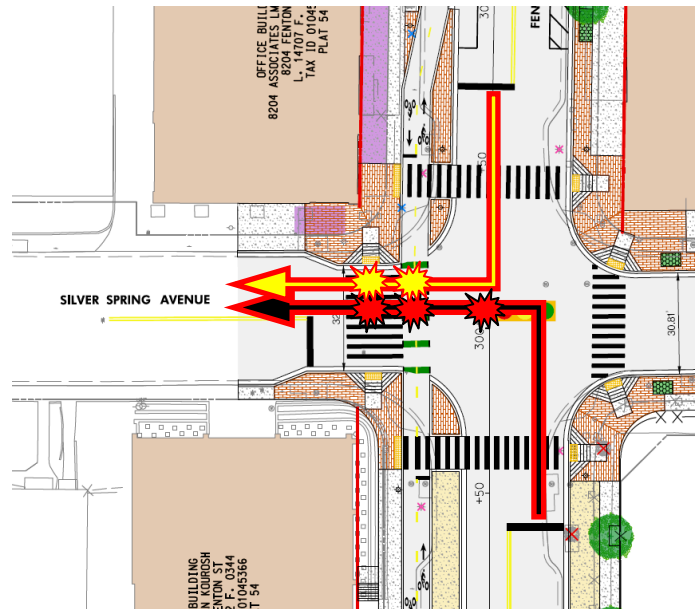
Turning movements are the main opportunities for conflict because they are where people traveling in different directions at different speeds are most likely to cross paths.

Left turns are typically more dangerous than right turns for a few reasons. First, motorists tend to accelerate when turning left, and greater speeds are associated with greater crash severity. Second, left turns result in additional conflicts. For instance, in *Figure 4*, making a right turn from southbound Fenton Street onto westbound Silver Spring Avenue, a driver must cross a two-way separated bike lane and a crosswalk (yellow arrow). These represent two conflict points. A driver making a left turn onto westbound Silver Spring Avenue must address the same conflicts, but also cross a lane of oncoming motor vehicle traffic (red arrow).

Third, left-turning drivers often focus on finding a gap in oncoming traffic, but only look for pedestrians and bicyclists in the middle of executing the turn. Finally, oncoming traffic may block a left-turning driver’s view of crossing pedestrians and bicyclists, especially those crossing in the same direction as oncoming traffic.

Because left turns provide more opportunities for conflict, staff focused on how each alternative facilitated these turns as the crux of the safety analysis.

Staff proceeded with the understanding that improving the safety of left turns requires separating them from motor vehicle, pedestrian, and bicyclist through movements. This can be done either by prohibiting left turns outright or by using traffic signalization to provide time for left turns when through traffic



(pedestrians, bicyclists and motor vehicles) are stopped. The safety merits of each alternative then rest on the quality of this separation and how often it is present at intersections in the project area. Staff understands that all intersection approaches are not equal. At locations where there is strong left turn volume and also a strong parallel pedestrian movement, this left turn separation is more urgently needed than at locations where either the left turn volume or pedestrian volume are absent. The locations with the highest left turn volume are northbound at Wayne Avenue (Saturday Peak), northbound at Cameron Street (Weekday AM, Saturday Peak) and northbound at Colesville Road (Saturday Peak). Southbound at Wayne Avenue (Saturday Peak) has the highest southbound left turn volume on the corridor, but the volume is unremarkable when comparing to northbound locations. In general, northbound left turns are more prevalent than southbound left turns.

Left turns that take place while all other traffic movements are stopped are called “exclusive left turns.” Exclusive left turns are typically only provided when a left turn lane is present. If dedicated left turn lanes exist, a specific traffic signal can be provided to show red, yellow, and green arrows indicating when turns from this lane can be made. The alternative to exclusive left turns is “permissive” left turns, where turning drivers wait for a gap in traffic.

Today, Fenton Street generally has left turn lanes at each intersection, but these left turns are generally “permissive” and don’t have a dedicated signal phase.

On Fenton Street, left turns can be made in the northbound and southbound directions, but no design alternative would provide exclusive left turns in the southbound direction. As southbound left turning volumes are generally lower than northbound ones, the potential for conflicts from the southbound movement is lower than in the northbound direction. The northbound movement is also more important because it crosses the proposed bikeway. For these reasons, this analysis centers on northbound left turns.

Along the corridor within this project area, Fenton Street has two main intersections, with Wayne Avenue and with Colesville Road. Staff compared how each alternative handled northbound left turns at these two intersections individually and at all of the other intersections in the project area in total. *Figure 5* summarizes this information.

All alternatives provide a northbound exclusive left turn at the Colesville Road intersection, though for Alternatives A and D, this is the only one they provide. All remaining alternatives (B, C, E, F, and G) provide a northbound exclusive left turn at Wayne Avenue. For the minor intersections with Fenton Street, Alternatives B, C and E provide a northbound exclusive left turn at four locations, while Alternatives F and G provide the same at two intersections and prohibits northbound left turns completely at a third (Thayer Avenue and Silver Spring Avenue respectively). The intersection that has a northbound exclusive left turn in Alternatives B, C, and E and does not in

Figure 5: Northbound Exclusive Left Turns Provided

Alternative	Colesville Road	Wayne Avenue	Minor Streets
<i>Existing</i>	<i>0</i>	<i>1</i>	<i>0</i>
Alt A	1	0	0
Alt B	1	1	4
Alt C	1	1	4
Alt D	1	0	0
Alt E	1	1	4
Alt F	1	1	3*
Alt G	1	1	3*

* Includes an intersection where left turns are banned

Alternatives F and G is Cameron Street, the northern terminus of this project and the connection to the Cameron Street-Planning Place Bikeway.

Travel Time

Alternatives that prioritize on-street parking over dedicated left turn lanes result in larger increases in travel time than those that do not. Dedicated left turn lanes provide a place for left-turning vehicles to queue outside the flow of traffic, allowing through-moving vehicles to proceed.

Private automobiles are not the only through-moving vehicles. Five bus routes travel along the Fenton Street corridor and any increase in travel time along Fenton Street also impacts bus riders.

All alternatives increase travel time, but Alternatives A and D are by far the worst. The other alternatives are within a few seconds of each other (*Figure 6*).

Figure 6: Travel Time Differences

Alternative	Average End-to End Travel (min:sec)	Change (min:sec)	
Existing	4:06	-	
Alt A	7:30	+3:24	← Most impact to traffic congestion
Alt B	5:00	+0:54	
Alt C	4:48	+0:42	
Alt D	7:30	+3:24	← Most impact to traffic congestion
Alt E	4:48	+0:42	
Alt F	4:48	+0:42	
Alt G	4:42	+0:36	← Least impact to traffic congestion

On-street Parking

On-street parking is considered an asset for businesses along the Fenton Street corridor used by business patrons and those delivering to or picking up from storefronts in the area. It is convenient to park in front of a business you intend to patronize. In general, those alternatives that preserve more on-street parking result in slower travel times through the corridor. Those alternatives that minimize

road widening preserve fewer parking spaces. All alternatives maintain some amount of on-street parking. The net on-street parking change for each alternative can be seen in *Figure 7*.

Figure 7: On-Street Parking Differences

Alternative	Total On-Street Parking	Change	
Existing	91	-	
Alt A	94	+3	← Least impact to parking
Alt B	43	-48	← Most impact to parking
Alt C	65	-26	
Alt D	61	-30	
Alt E	43	-48	← Most impact to parking
Alt F	54	-37	
Alt G	56	-35	

Alternative A increases the on-street parking supply in the corridor by three spaces. Alternative C reduces the on-street parking supply by 26 spaces, Alternative D by 30 spaces, Alternative G by 35 spaces, Alternative F by 37 spaces, and Alternatives B and E both by 48 spaces.

Roadway Widening

Widening Fenton Street is the one way the bikeway, left-turn lanes, existing travel lanes, and on-street parking can all be accommodated to a certain extent. In addition to the expense involved in moving curbs, there are additional environmental and utility impacts involved, namely the necessary relocation of streetlights, drainage infrastructure, and the removal of street trees. Alternatives A, B and C all generally move the western curb two feet. Alternatives F and G selectively move the western curb. Alternatives D and E only remove curb extensions that extend beyond the existing curb.

Figure 8: Roadway Widening Differences

Alternative	Roadway Widening?
Existing	N/A
Alt A	Yes, 2'
Alt B	Yes, 2'
Alt C	Yes, 2'
Alt D	Curb Extensions only
Alt E	Curb Extensions only
Alt F	Selective Widening
Alt G	Selective Widening

 **Most Widening**
 **Most Widening**
 **Most Widening**
 **Least Widening**
 **Least Widening**

Estimated Cost

Each alternative takes a different approach to providing the same bikeway; this leads to different project costs. In general, the more the roadway is widened, the greater the cost of the alternative. The MCDOT team has developed very conservative cost estimates for each alternative that assume a worst-case scenario to account for unknowns that may arise in the design process and potential right-of-way acquisition costs. As the design process moves forward, these estimates will be refined.

Figure 9: Cost Estimate Differences

Alternative	Cost Estimate
Existing	N/A
Alt A	\$10.3M - \$13.6M
Alt B	\$10.3M - \$13.7M
Alt C	\$10.3M - \$13.7M
Alt D	\$8.1M - \$10.9M
Alt E	\$8.1M - \$10.9M
Alt F	\$9.1M - \$12.2M
Alt G	\$9.1M - \$12.2M

 **Most expensive**
 **Most expensive**
 **Cheapest**
 **Cheapest**

Analysis

Staff's highest priority is the completion of a bikeway connection that is as safe as possible for pedestrians, bicyclists, and everyone using this corridor. This means selecting an alternative that allows for an exclusive left turn phase across the bikeway to reduce conflicts. Because this phasing is not possible in Alternatives A and D, they should be removed from consideration.

With this project then, the decision point comes down to whether limiting on-street parking loss is worth the increased costs of widening Fenton Street. Of the remaining alternatives, E is the only alternative that does not widen Fenton Street and would result in the net loss of 48 spaces. Widening the road by two feet along the corridor allows Alternative C to maintain 22 of those spaces for a net loss of 26. Alternatives F and G, by selectively widening, remove 37 and 35 net spaces, respectively. Those alternatives that save more on-street parking are generally more expensive than those that save less.

On-street parking is heavily used in this corridor, particularly in Fenton Village and the North Silver Spring District. Indeed, concern about on-street parking is one of the reasons this project has been delayed to this moment.

However, staff is not convinced that widening Fenton Street to save more on-street parking is worth the expense. *Table 5* breaks down the cost of each additional parking space provided by those alternatives that widen Fenton Street.

Table 5: Cost per Parking Space by Remaining Road Widening Alternative

Alternative	B	C	E	F	G
Change in Number of Parking Spaces from Today	-48	-26	-48	-37	-35
Project Cost Estimate	\$13,700,000	\$13,700,000	\$10,900,000	\$12,200,000	\$12,200,000
Parking Space Change from Alternative E	0	22	N/A	11	13
Cost Difference from Alternatives E	\$2,800,000	\$2,800,000	N/A	\$1,300,000	\$1,300,000
Additional Cost per Space	N/A	\$127,273	N/A	\$118,182	\$100,000

In comparison to Alternative E, the remaining alternatives would have the following benefits and costs:

- Alternative B saves no on-street parking spaces for an additional cost of about \$2.8 million.
- Alternative C saves 22 on-street parking spaces for an additional cost of **about \$2.8 million or about \$127,000 per space.**
- Alternative F saves 11 on-street parking spaces for an additional cost of **about \$1.3 million or about \$118,000 per space.**
- Alternative G saves 13 on-street parking spaces for an additional cost of **about \$1.3 million or about \$100,000 per space.**

This is a lot of money to spend on parking spaces with no significant improvement in bikeway safety, pedestrian safety, travel time savings, etc.

Fortunately, the additional expense is not necessary to address short-term or long-term parking needs:

- 1) Long-Term Parking: For longer trips, like a seated dinner or medical appointment, it is a parking management best practice for parking to occur off-street, with the on-street spaces prioritized for quick turnover visits. Fenton Street on-street parking is not the only parking available for people intending to patronize Fenton Street businesses. There are 207 on-street parking spaces within one block of the corridor and there are many off-street public parking facilities – both surface lots and structures – within a short walk of every part of Fenton Street. The MCDOT team's parking study indicated that there are more than enough off-street spaces available at

any given time to accommodate the potential loss of on-street parking. MCDOT parking policy is already geared toward this best practice, with on-street parking in Silver Spring priced at \$2.00 per hour while off-street spaces are between \$1.00 and \$1.25 per hour.

- 2) Short-Term Parking: The greatest impact to local business from removing on-street parking is that quick trips can become more difficult. Those trips, such as a stop at the coffee shop or dry cleaners, are typically less than 10 minutes. This impact can be successfully neutralized through thoughtful parking management.

Remaining on-street spaces on Fenton Street can be made more efficient, effectively creating multiple spaces from each one, by reducing the maximum time vehicles are allowed to park in each space. Currently, one can park for an hour at an on-street space along Fenton Street and up to two-hours on some side streets. This encourages the use of these spaces by people parking for longer durations, occupying business-adjacent spaces while people who may just need to park to quickly get a takeout food order have to park further away or circle several times to find a parking space. If the hour time limit were shortened to 15 minutes, for example, each space could potentially serve three more patrons in the same amount of time, effectively creating four spaces where one currently exists. Even if MCDOT does not increase enforcement of the shorter time intervals, turnover will increase. From the correspondence MCDOT has conducted with business owners, this short-term parking is what is really needed, particularly in Fenton Village. Adjusting the parking time limits would help address this need without moving curbs and without adding additional cost.

Furthermore, keeping curbs in place reduces utility and environmental impacts, lowering project cost while protecting the nascent tree canopy along the corridor and limiting the construction impacts with which this corridor has become too familiar over the past several years.

With this in mind, staff recommends advancing **Alternative E** as the Planning Board's preferred alternative. It provides a high level of safety and minimal travel time increase at a low cost and with few impacts to trees and utilities.

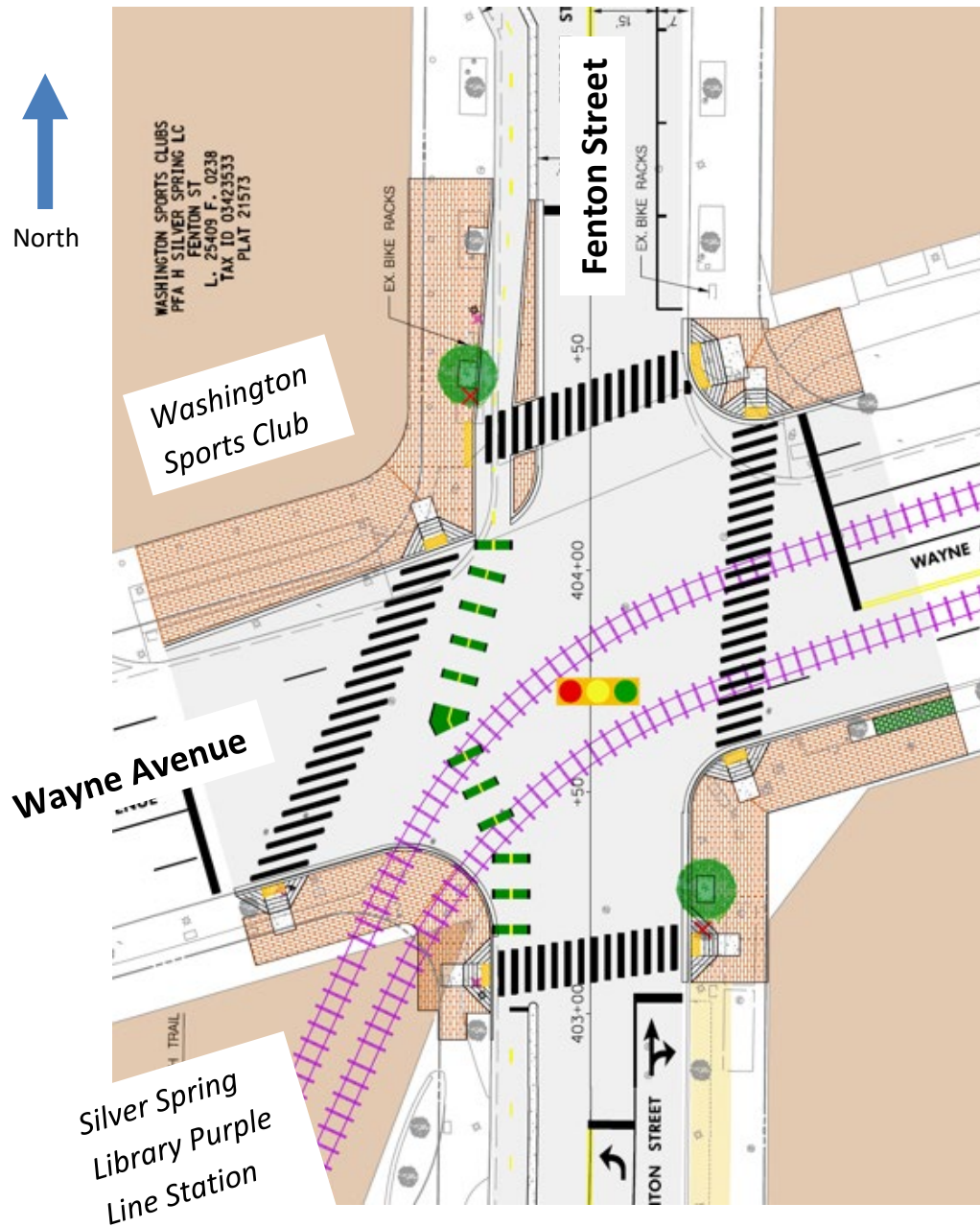
Additional Considerations

The Purple Line will help people from across the region access the Fenton Street corridor. The station at the Silver Spring Library is within a very short walk of Fenton Village and the Ellsworth District. *Figure 10* illustrates how the intersection is currently designed in all alternatives.

The orientation of the Purple Line tracks through the intersection make it very difficult for pedestrians and bicyclists to safely and directly cross the west leg of the intersection. The bike lane markings have an awkward bend in them to encourage bicyclists to cross the Purple Line tracks at as close to a 90-degree angle as possible. This reduces the likelihood of a bicyclist crashing by getting a wheel caught in the trackbed. These markings encourage the safest riding behavior, but they are not likely to be followed. Most bicyclists will continue straight across the intersection.

Similarly, the western curb ramps and crosswalk markings are shown in a configuration that pedestrians are not likely to comply with. Pedestrians are more likely to walk in the bikeway at this location or cross outside the crosswalk as the marked crossing is not along a likely path of travel for most people. Finally, pedestrian waiting space is very limited at the southwest corner of this intersection and pedestrians are likely to overflow into the bike lanes or onto the Purple Line tracks.

Figure 10: Fenton Street/Wayne Avenue Intersection



Staff will engage MCDOT in a design process to improve this important intersection and increase compliance with crossing markings on the western leg.

RECOMMENDATIONS

Staff recommends that the Planning Board transmit the following comments to the Montgomery County Council's Transportation and Environment Committee (T&E) Committee:

- 1. Advance Alternative E as the preferred alternative.**
- 2. Coordinate with Montgomery Planning staff to undertake a design process to better separate pedestrians, bicyclists, motor vehicles and light rail vehicles at the Fenton Street/Wayne Avenue intersection.**

PUBLIC OUTREACH

For several years, MCDOT has engaged very closely with the local residential and business community about this project. A summary of public engagement activities is available in *Attachment 4*.

NEXT STEPS

The Fenton Street Bikeway Study will go to the Council's T&E Committee in Spring 2021 in order to get recommendations about which alternative to move into design.

Following selection of an alternative, MCDOT estimates that the design and permitting process will take a minimum of 24 months. Currently, construction is not anticipated before 2023, however, MCDOT is looking at options for accelerating construction in certain segments.

ATTACHMENTS

Attachment 1: Fenton Street Bikeway Project History

Attachment 2: Street Section Design Criteria

Attachment 3: Plan View Alternatives

Attachment 4: Public Engagement Summary