



**MONTGOMERY COUNTY DEPARTMENT OF PARKS**  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB  
Item: TBD  
Date: 06/13/19

May 23, 2019

**MEMORANDUM**

**TO:** Montgomery County Planning Board

**VIA:** Michael F. Riley, Director of Parks *MR*  
Mitra Pedoeem, Deputy Director of Parks  
Andy Frank, Acting Chief, Park Development Division *AP*  
Patricia McManus, Design Section Supervisor, Park Development Division

**FROM:** Kim Paniati, P.E., Acting Section Supervisor, Park Development Division *KP*  
Andrew Tsai, P.E., Project Manager, Park Development Division *AT*

**SUBJECT:** Facility Plan Recommendation for Capital Crescent Trail Crossing at Little Falls Parkway Safety Improvements Project

---

**STAFF RECOMMENDATION:** APPROVE the Recommended Facility Plan, including the cost estimate and recommendation for future long-term study.

**PROJECT DESCRIPTION**

**Introduction**

The purpose of this project is to prepare a facility plan for permanent safety improvements at the Capital Crescent Trail (CCT) crossing of Little Falls Parkway (LFP) in Bethesda. The crossing is located between the intersection of Little Falls Parkway and Arlington Road to the north and Little Falls Parkway and Hillandale Road to the south.

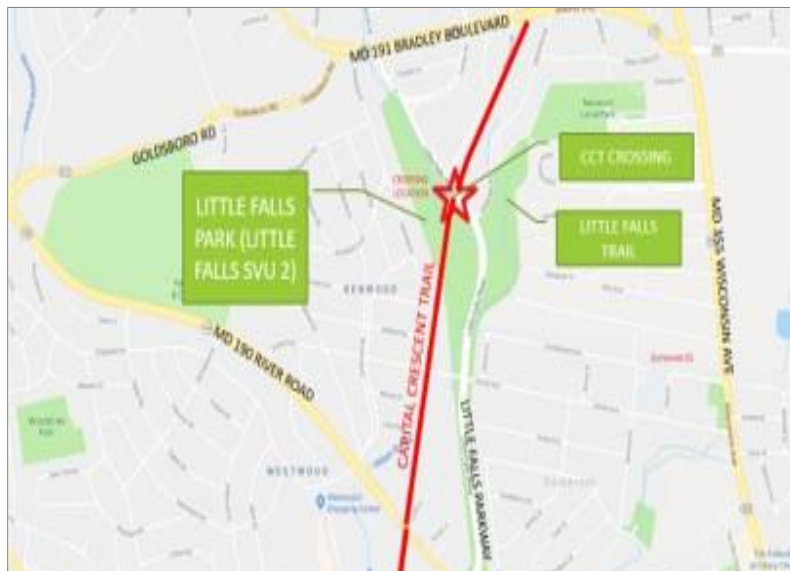


Figure 1: Location Map (Courtesy Google Maps)

The Capital Crescent Trail is an 11-mile hard surface shared use trail extending from Silver Spring to Georgetown in the District of Columbia. Approximately 5.5 miles of the trail are in Montgomery County. The Trail was created in the 1990's from the conversion of the Georgetown Branch of the B&O Railroad, as part of the ongoing nationwide "Rails to Trails" efforts to create off-road trails from abandoned railroad right of ways. The Capital Crescent Trail is the most heavily used trail in Montgomery County (2,000 – 5,000 users/day) and experiences both recreational and commuter traffic.

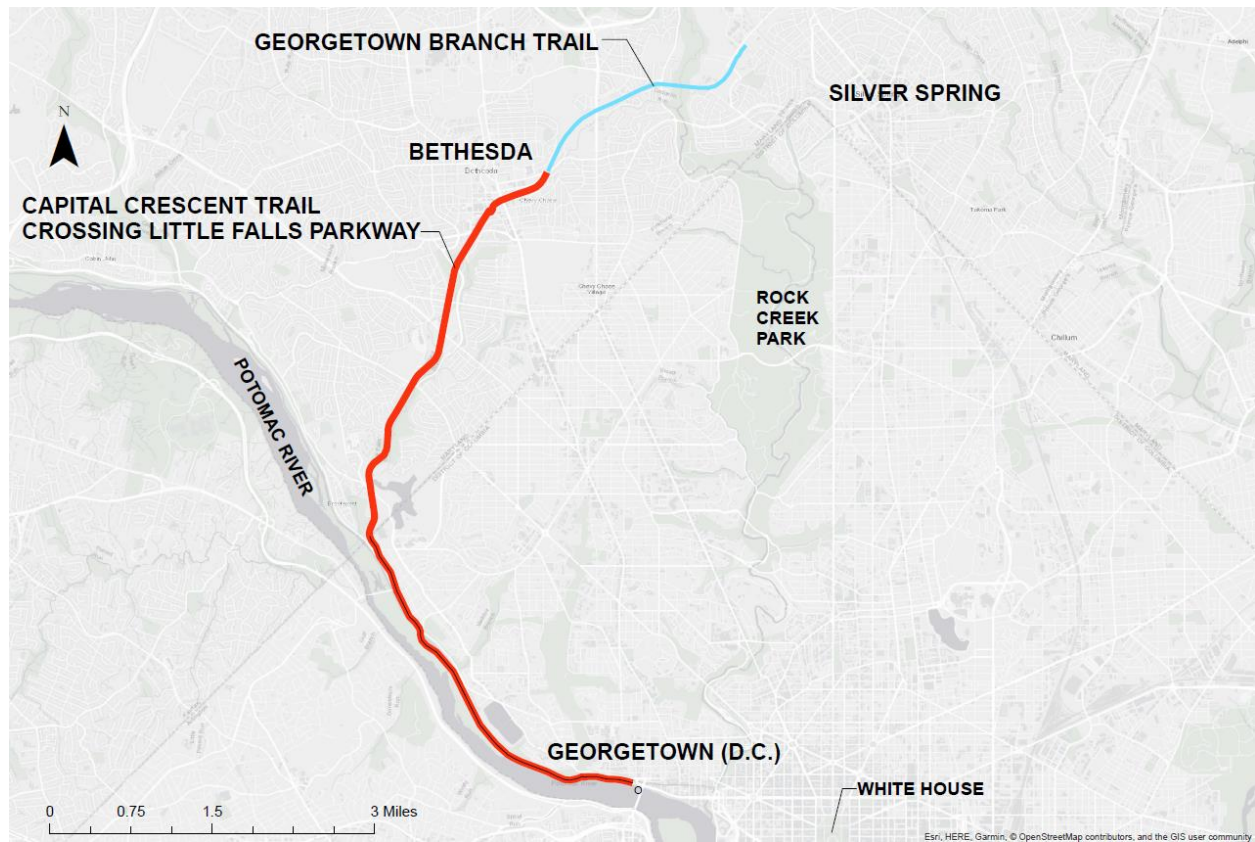


Figure 2: Capital Crescent Trail, Bethesda to Georgetown (D.C.)

The Trail crosses Little Falls Parkway, a four-lane roadway consisting of two lanes in each direction with a grass median, approximately one-third of a mile south of Bradley Boulevard near the Bethesda Pool. Little Falls Parkway was originally constructed in the 1960's to provide access to Little Falls Park and has provided a connection between MD 190 (River Road) and MD 191 (Bradley Boulevard), as well as to the residential communities in the area.

The Capital Crescent Trail crossing at Little Falls Parkway has historically been the site of frequent conflicts between trail users and motorists. The four-lane cross-section on Little Falls Parkway allowed for the multiple-lane threat scenario – a recognized traffic safety problem occurring along road sections that are more than two lanes wide and have an uncontrolled crossing (no traffic signal or stop sign). A multiple-lane threat crash involves a driver stopping in one lane on a multilane road to permit pedestrians/cyclists to cross, and an adjacent oncoming vehicle (in the same direction) striking the pedestrian who is crossing in front of the stopped vehicle. This crash is due to the initial stopped vehicle obscuring the view of the second advancing vehicle who subsequently fails to yield.

Following a bicyclist fatality at the crossing in October 2016, Montgomery Parks in coordination with Park Police and the Montgomery County Department of Transportation implemented a Vision Zero-based interim road diet along Little Falls Parkway between Arlington and Hillandale Roads. Montgomery County is the first suburban county in the United States to commit to [Vision Zero](#): a national initiative to eliminate pedestrian and bicyclist traffic fatalities and conflicts, while increasing safe, healthy, and equitable mobility for all pedestrians.

The interim road diet condition reduced the cross-section of Little Falls Parkway from four lanes to two lanes at the Trail crossing, by closing the outside travel lane in each direction. The travel lanes were closed off with chains and flexible posts, and the speed limit was reduced to 25 mph. The grass median dividing the northbound and southbound travel lanes remained.

In late 2017, Montgomery Parks initiated the Capital Crescent Trail Crossing at Little Falls Parkway Safety Improvements project to develop a facility plan (30% Design) recommendation for permanent safety improvements at the crossing. Sabra & Associates, Inc., a multi-disciplinary engineering firm specializing in transportation engineering was contracted to assist with the project.

### **Project Funding**

Facility planning represents thirty percent complete construction documents, including a proposed design, cost estimate, and determination of regulatory feasibility, including preparation and approval of a stormwater management concept and Natural Resources Inventory/Forest Stand Delineation plan. The facility planning study for the project was funded with \$200,000 from the FY 2018-2019 Capital Improvements Program in the Facility Planning: Non Local Parks project.

### **Facility Planning Process**

The facility planning process included the following sequence of work:

#### Initiation

1. Collect data and analyze existing site conditions.
2. Meet with the community to gather input.
3. Identify program of requirements and priorities: safety of trail users.

#### Concept

4. Develop concept alternatives.
5. Present concept alternatives to the community, stakeholders, and neighbors. (June 2018 Community Meeting #1)

#### Design Development and Preliminary Permits

6. Develop top (3) alternatives based on program priorities and public input.
7. Coordinate alternatives with the community, regulatory agencies, and stakeholders.
8. Present top (3) alternatives to the community, stakeholders, and neighbors. (October 2018 Community Meeting #2)

#### Facility Plan

9. Develop Recommended Plan based on feedback from the community and regulatory agencies.

10. Prepare stormwater management concept submission and obtain approval from the Department of Permitting Services.
11. Prepare and obtain approval of Natural Resources Inventory/Forest Stand Delineation Summary Map and Forest Conservation Plan Exemption from Montgomery County Planning.
12. Finalize facility plan and prepare 30% construction documents and cost estimate.

#### Final Documentation and Planning Board Approval

13. Prepare facility plan staff report, cost estimate and operating budget estimates.
14. Present facility plan recommendations and costs to the Montgomery County Planning Board for approval.

## **MASTER PLAN RECOMMENDATIONS**

### **Montgomery County Vision Zero Two-Year Action Plan, Approved and Adopted November 2017**

Montgomery County is one of the first counties in the United States to adopt Vision Zero policy, which originated in Sweden in 1997 and is credited with significant reductions in fatal and severe collisions there. Starting in the 2000's, numerous jurisdictions in the United States adopted Vision Zero policy, including New York City in 2014. As of October 2017, 31 jurisdictions in the United States have adopted the policy. Montgomery County adopted a Two-Year Action Plan with the goal of reducing severe and fatal collisions by 35 percent for vehicle occupants, bicyclists and pedestrians by November 2019. The long-term goal is to completely eliminate fatalities and severe injuries by 2030 by reducing crash frequency as well as severity.

Vision Zero policy consists of several common principles:

1. *Transportation-related deaths and severe injuries are preventable and unacceptable.*
2. *Human life takes priority over mobility and other objectives of the road system. The road system should be safe for all users, for all modes of transportation, in all communities, and for people of all ages and abilities.*
3. *Human error is inevitable; the transportation system should be designed to anticipate error so the consequences are not severe injury or death. Advancements in vehicle design and technology, roadway engineering, personal electronic devices, etc., are necessary components for avoiding the impacts of human errors.*
4. *People are inherently vulnerable, and speed is a fundamental predictor of crash survival. The transportation system should be designed for speeds that protect human life.*
5. *Safe human behaviors, education, and enforcement are essential contributors to a safe system.*
6. *Policies and practices at all levels of government need to align, making safety the highest priority for roadways.*

The Action Plan commits to utilizing non-traditional, evidence based “*safe system approaches*” to improve safety. Examples include narrowing travel lanes, reducing vehicle travel speeds, additional educational outreach, and enforcement. The interim road diet installed at the trail crossing along Little Falls Parkway in January 2017 is included on Page 20 as a highlighted example of corrective action to “*improving dangerous intersections*”.

## Westbard Sector Plan, Approved and Adopted July 2016

Westbard is a community in the southwestern part of Montgomery County, approximately two miles from the Bethesda and Friendship Heights commercial areas. The Capital Crescent Trail runs the length of Westbard. The Westbard Shopping Center is planned for mixed use redevelopment in the future, which will include new commercial space, residential homes, and other amenities. The planned Westbard redevelopment spurred approval of an updated Westbard Sector Plan in July 2016.

The Westbard Sector Plan considers the Capital Crescent Trail to be a major amenity as follows:

*A tremendous asset in the community is the Capital Crescent Trail (CCT) on the old B&O Railroad right-of-way. This pedestrian and bicycle trail is a major regional connection that also provides limited local service in the Westbard area. Increasing local connectivity to and from the CCT will allow it to be more integrated into the community.*

The Sector Plan makes many short and long term recommendations for the Capital Crescent Trail. A sampling of the recommendations include the following:

- *Create a road connection between River Road and Westbard Avenue, adjacent to the Capital Crescent Trail, to provide access to businesses and improve access to the Capital Crescent Trail.*
- *If a future Master Plan recommends additional density on the Whole Foods site, it should also explore options for a park or open space at this site and a trail connecting this site with the Capital Crescent Trail.*
- *If the Washington Episcopal School redevelops, renovate the associated portion of Willett Branch to restore the flood plain and provide a trail connection to the Little Falls Stream Valley and Capital Crescent Trail.*
- *Provide plantings to complete Westbard's Greenway network along the Capital Crescent Trail and Little Falls Parkway.*

Regarding transportation improvements in the area, the Sector Plan states on page 32: *"While the automobile still needs to be accommodated, data trends, at least in this area, indicate a shift in mode choice or commuting patterns away from the automobile. This shift provides the opportunity to use the existing and proposed rights-of-way for needed transportation facilities, other than just road capacity."*

The Sector Plan visualizes the framework for future transportation network development in the area, and includes recommendations for redevelopment of River Road, Westbard Avenue, and other roadways in the area. Consideration for additional bikeways, pedestrian paths, and public transportation networks is included. The Sector Plan includes results from traffic modeling of future traffic growth in the area as follows:

*In the 2012 SSP year 2040 TPAR analysis, the Bethesda-Chevy Chase Policy Area is shown to be adequate for the roadway test. Given that the Westbard Sector Plan area is a small subset of a much larger policy area and the planned growth in Westbard is anticipated to be relatively minor compared to what is zoned but not built, the transportation network is considered to be in balance with the land use and densities proposed by the Westbard Sector Plan.*

Little Falls Parkway is classified as a *"limited access park road that runs along the eastern boundary of the Sector Plan area with truck restrictions"*. As a park road, Little Falls Parkway is excluded from modeling and planning purposes as a primary means of traffic conveyance (as opposed to state highways and Montgomery County Department of Transportation owned





As bicycle and pedestrian infrastructure in downtown Bethesda is improved in the future, it will result in additional recreational and commuter users on the Capital Crescent Trail.

### **Montgomery County Bicycle Master Plan, Approved and Adopted November 2018**

The Bicycle Master Plan is a comprehensive update and amendment to all existing County bike plans, including the 1978 Master Plan of Bikeways, the 2005 Countywide Bikeways Functional Master Plan, and bikeway recommendations in past functional plans, master plans, and sector plans. The Bicycle Master Plan is a “*key element in Montgomery County’s Vision Zero Two-Year Action Plan to eliminate traffic-related fatalities and serious injuries*”.

The Bicycle Master Plan contains recommendations for a low stress network of bikeways and bicycle infrastructure throughout Montgomery County, including creation of a *Breezeway Network*, a high capacity system of arterial bikeways between major activity centers.

The Capital Crescent Trail, which follows an abandoned rail corridor and connects several major activity centers from Silver Spring through Bethesda into Washington D.C., is considered a major future Breezeway in the Plan:

*Breezeways feature intuitive and safe intersection and driveway crossings that minimize delay for pedestrians and bicyclists. The crossings are developed to prioritize non-motorized travel by making it easier and safer to travel through intersections. Breezeway crossings include elements that both separate bicycle movements from motor vehicles and make bicyclists and pedestrians more visible to other road users. Crossings will:*

- Slow motor vehicle traffic.*
- Improve bicyclist and pedestrian visibility.*
- Reduce bicyclist and pedestrian exposure.*
- Reduce or eliminate conflicts.*

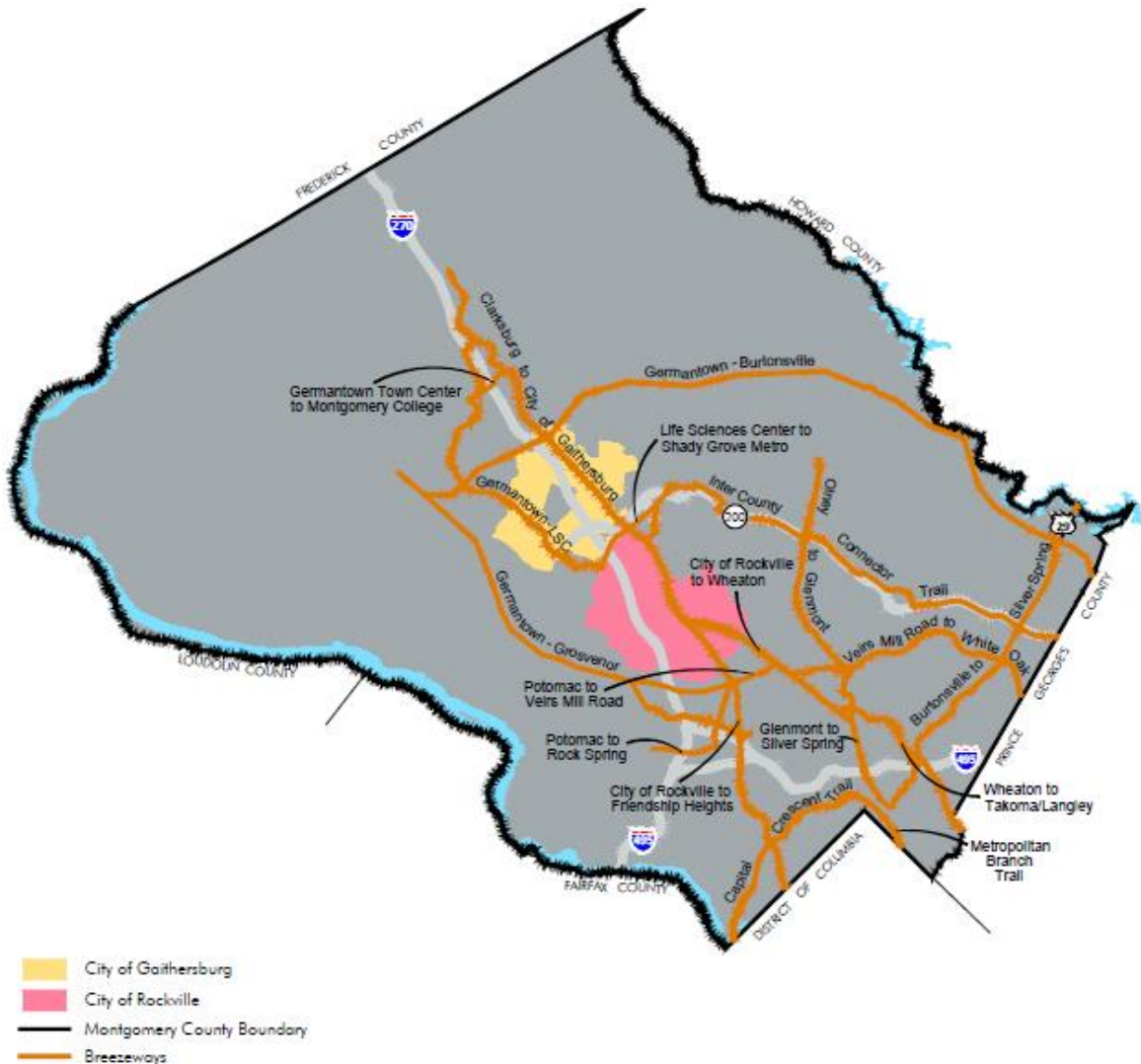


Figure 4: Capital Crescent Trail One of Fourteen Future Major Bicycle Breezeways (Bicycle Master Plan)

The Plan has several other long-term recommendations for the Capital Crescent Trail:

- Widening the trail to 15 feet with 2-foot-wide shoulders between Massachusetts Avenue and Bethesda Avenue, with a 5-7-foot-wide walkway and an 8-10-foot-wide bikeway.
- Added lighting along the trail between Bethesda Avenue and the Silver Spring Transit Center.
- Strongly considering trail lighting between River Road and Bethesda Avenue during the facility planning process.
- Studying an improved connection from the Capital Crescent Trail to MacArthur Boulevard.

Regarding mid-block trail crossings, such as the Capital Crescent Trail crossing at Little Falls Parkway, on Page 83 the Plan recommends “Traffic calming that removes traffic lanes and/or reduces the design speed of the road” as a viable solution to improve safety, in addition to trail re-alignment and grade separation.



## EXISTING CONDITIONS

Little Falls Parkway is located within Little Falls Stream Valley Unit 2, consisting of several parcels. The Capital Crescent Trail crossing, and the scope of this project, is limited to Parcel 330. Parcel 330 is a 32.10-acre parcel acquired via a land donation from the United States Government. The Capital Crescent Trail right of way (former railroad right of way) is owned by Montgomery County and maintained by the Maryland-National Capital Park and Planning Commission.

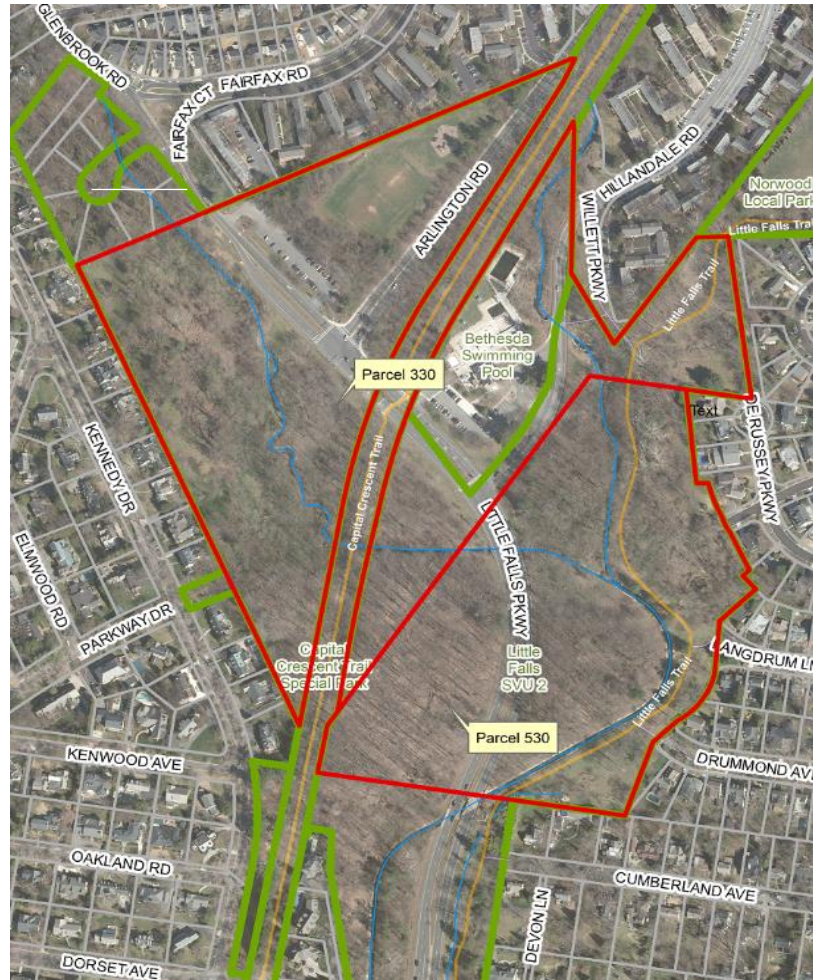
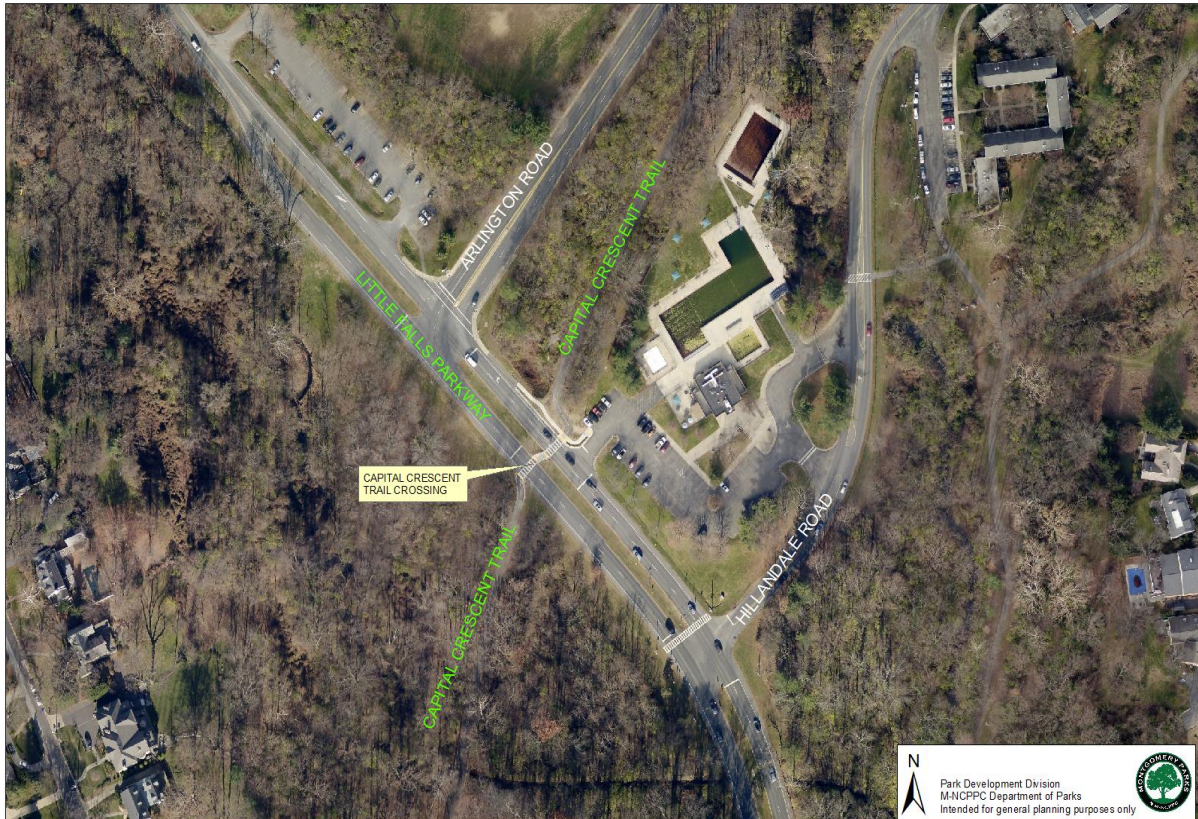


Figure 5: Project Park Boundaries

The project site is located at the Capital Crescent Trail crossing of Little Falls Parkway, between Hillendale Road and Arlington Road. Little Falls Parkway is owned by the Maryland-National Capital Park and Planning Commission (M-NCPPC). Arlington Road is a four-lane arterial roadway owned by Montgomery County Department of Transportation. Hillendale Road is a two-lane residential roadway owned by Montgomery County Department of Transportation. The southernmost portions of Hillendale Road and Arlington Road approaching Little Falls Parkway are M-NCPPC property.



*Figure 6: Aerial Image*

The area around the project site is predominantly undeveloped, with residential communities interspersed within a half-mile radius. The Bethesda Pool is located adjacent to the Trail along Hillendale Road. The site is within the Willett Branch watershed and stream buffer. Several established diverse forest stands consisting of tulip poplars, white oaks, and other species are located around Little Falls Parkway and the Trail. The Natural Resources Inventory / Forest Stand Delineation (NRI / FSD) is attached to this memorandum.

Little Falls Parkway is four lanes, two in each direction with a grass median at the project site. The Capital Crescent Trail is a ten-foot wide asphalt trail. There are two drive entrances to the Bethesda Pool in the area: one driveway from Little Falls Parkway, and one driveway from Hillendale Road. Vehicular traffic counts conducted in May 2017 along Little Falls Parkway show an average weekday daily traffic (ADT) of 6,030 vehicles/day northbound and 8,030 vehicles/day southbound, with peak traffic typically between 8:00 to 9:30 AM and 4:00 to 7:00 PM. Weekend traffic volumes are 20% to 25% lower than weekday daily traffic. Trail counts for the Capital Crescent Trail range from 2,000 to 5,000 users a day with peaks of over 400 users an hour.



Prior to implementation of the interim road diet and safety improvements in January 2017, the Trail crossing at Little Falls Parkway consisted of a marked crosswalk with associated warning signage. The speed limit was 35 mph. “Stop” signs were present at each end of the crossing for trail users.



*Figure 7: Trail Crossing Fall 2016 (Prior to Interim Road Diet), Courtesy Google Maps*

The Trail crossing at Little Falls Parkway has historically been the site of frequent conflicts between trail users and motorists. The four-lane cross-section on Little Falls Parkway allowed for the multiple-lane threat scenario – a recognized traffic safety problem occurring along road sections that are more than two lanes wide and have an uncontrolled crossing (no traffic signal or stop sign). A multiple-lane threat crash involves a driver stopping in one lane on a multilane road to permit pedestrians/cyclists to cross, and an adjacent oncoming vehicle (in the same direction) striking the pedestrian who is crossing in front of the stopped vehicle. This crash is due to the initial stopped vehicle occluding the view of the second advancing vehicle who subsequently fails to yield. In addition, the 35 mph speed limit and resulting higher vehicle travel speeds allows less reaction and stopping time for trail users and motorists. In the two-year period from 2014 to 2016, the crossing experienced twelve conflicts, with a conflict defined as an incident that generated a police report. Among these twelve conflicts was a fatality involving a bicyclist in October 2016.

## **INTERIM ROAD DIET DESCRIPTION**

In January of 2017, Montgomery Parks implemented a Vision Zero-based interim road diet along Little Falls Parkway to increase safety for trail users crossing the roadway in response to the fatal crash. The interim road diet reduced the cross-section of Little Falls Parkway from four-lanes to two-lanes between Arlington Road and Hillandale Road, by closing the outside travel lane in each direction approaching the trail crossing. The travel lanes were closed off with chains and flexible bollards. The speed limit was reduced to 25 mph. The grass median dividing the northbound and southbound travel lanes remained.

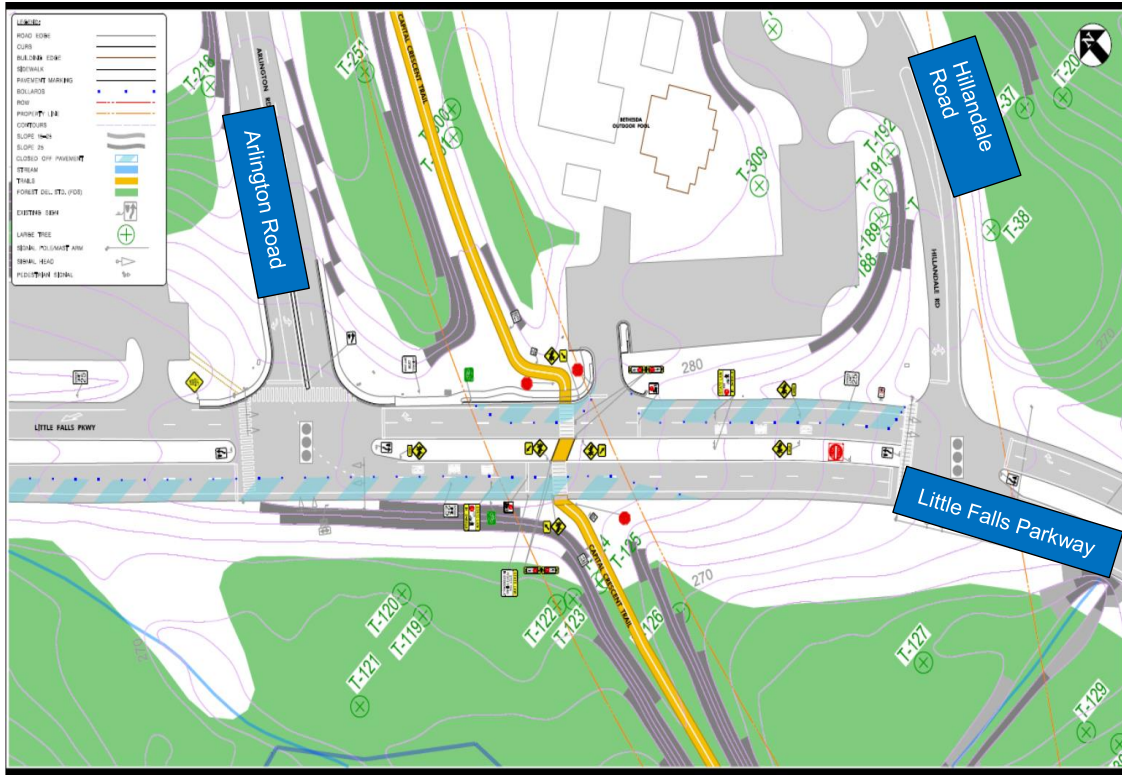


Figure 8: Plan View of Interim Road Diet



Figure 9: Trail Looking North at Little Falls Parkway, With Road Diet

## **INTERIM ROAD DIET SAFETY OBSERVATIONS**

Staff have continually monitored the interim road diet condition since implementation. The interim road diet eliminated the multiple-lane threat condition, while simultaneously slowing vehicle speeds along Little Falls Parkway. The interim road diet has resulted in a significant overall crash reduction, from twelve in the two-year period prior to the road diet (2014-2016) to five from January 2017 to March 2019. The number of pedestrian/bike crashes was reduced 50% from six to three, with no fatalities. “Severity” of conflicts appears reduced due to reduced vehicle speeds.

Multiple observations of interactions between motorists and trail users at the modified trail crossing of Little Falls Parkway showed extremely high levels of drivers yielding to trail users in the crosswalk. Corresponding pedestrian/cyclist delay (or waiting time to cross) was effectively zero seconds.

Additional observations from multiple hours of observation of the interim road diet and crossing by staff and Sabra & Associates during peak rush hours and different times of the year include:

- Northbound traffic on Little Falls Parkway (between Arlington and Hillandale) was observed to have an average speed of 14 mph, while southbound traffic had an average speed of 19 mph. The difference between northbound and southbound speeds is likely due to the uphill grade on Little Falls Parkway for northbound traffic and the downhill grade for southbound traffic.
- Arlington Road had the longest traffic queues of any approach, with drivers waiting to turn left onto southbound Little Falls Parkway varying in number from 15 cars to 0 cars. On several occasions during the peak hour, when Arlington Road received a green light, there were no cars queued up waiting to turn. This is likely due to the fact that the large majority of traffic on Arlington Road originates from Bethesda downtown using southbound Arlington Road, and traversing through Bradley Boulevard. The traffic signal at that location has a cycle length that is twice as long as the one at Arlington Road and Little Falls Parkway, which means that the Bradley Boulevard signal effectively meters traffic arriving at the Arlington Road and Little Falls Parkway intersection.
- Vehicles utilizing the secondary Bethesda Pool driveway along Little Falls Parkway to exit the Pool parking lot occasionally contribute to additional queuing and delay for vehicles on Little Falls Parkway. In addition, the right turn results in the vehicles immediately approaching the trail crossing with less reaction time.
- The short cycle lengths (60 seconds between the beginning of successive green lights) along Little Falls Parkway appear to be the critical factor in allowing traffic to progress through while keeping queues on all approaches to a minimum.

The road diet shifts the queuing space where vehicles are “stored” as they travel through the intersection. The southbound queue is shifted to Arlington Road and the northbound queue is shifted to south of the Hillandale Road intersection. However, northbound travel times are not drastically affected because most of the northbound traffic before and after the road diet is utilizing the right lane only to turn onto Arlington Road. The road diet increased travel time on average by 7 seconds.

## **INTERIM ROAD DIET TRAFFIC VOLUME OBSERVATIONS**

Traffic counts were conducted before and after the interim road diet along the affected segment of Little Falls Parkway. The results are summarized below.



Table 1: Before and After Interim Road Diet Little Falls Parkway Peak Hour Traffic Counts

| Direction  | Before Road Diet |      | After Road Diet |      | Change in Traffic |       |
|------------|------------------|------|-----------------|------|-------------------|-------|
|            | AM               | PM   | AM              | PM   | AM                | PM    |
| Southbound | 835              | 1045 | 840             | 923  | 5                 | -122  |
| Northbound | 783              | 863  | 713             | 932  | -70               | 69    |
| Total      | 1618             | 1908 | 1553            | 1855 | -65               | -53   |
|            |                  |      |                 |      | -4.0%             | -2.8% |

The traffic volume counts show that Little Falls Parkway is effectively processing the same amount of traffic before and after the interim road diet. The average 3.4% drop in traffic processed by the collective intersections could entirely be discounted by the fact that the “before” counts were conducted during early December and the “after” counts were taken in mid-May when the trail is more heavily used.

## INTERIM ROAD DIET IMPACTS TO ADJACENT ROADWAYS

There are several local roadways that could act as alternate routes for traffic that may wish to divert from Little Falls Parkway: Arlington Road, Dorset Ave, Kennedy Drive, and Hillandale Road.

Arlington Road: Traffic volume counts show that Arlington Road has experienced a decrease in traffic after implementation of the interim road diet. The Montgomery County Department of Transportation is currently conducting a road diet traffic study for Arlington Road independently of this project.

Dorset Avenue: A 48-hour traffic count was conducted on Dorset Avenue in Somerset in the Spring of 2018 when County schools were in session to see if there was noticeable diversion of traffic away from Little Falls Parkway. While no “before” count was conducted on Dorset Ave as part of this project, the Town of Somerset collected morning and afternoon peak period traffic data for vehicles entering the Town on Dorset Avenue in 2015. The traffic count showed that Dorset Avenue has not received any new cut-through traffic, as overall traffic was shown to be currently lower than in 2015.

Kennedy Drive: Kennedy Drive is a residential road connecting Bradley Boulevard and River Road, running through the Kenwood residential community. The Kenwood community is a potential area where cut through drivers could bypass Little Falls Parkway. After community concerns were raised regarding increased cut-through traffic, an origin-destination camera study was performed in Fall 2018 to quantify cut-through traffic through the Kenwood neighborhood.

Using time-stamped video, traffic entering Kenwood at Kennedy Drive from the Bradley Boulevard intersection was counted simultaneously with traffic exiting Kenwood at Dorset Avenue/Little Falls Parkway and at Brookside Drive/River Road. Traffic that entered the Kenwood neighborhood at Kennedy Drive and then exited at one of the other two exit points within 10 minutes was deemed to be a cut-through trip. The results of the study indicated that on average 5 vehicles during the morning peak hour and 3 vehicles during the evening peak hour satisfied the criteria for cut-through traffic. The average speed of cut-through traffic was 20 mph in the morning and 22 mph in the evening, which is below the speed limit of 25 mph.

The observed cut-through volumes were low and well below the minimum County thresholds for further study and implementation of additional traffic access restrictions. Per Montgomery County

Executive Regulation No. 17-94AM *Through Traffic Volume Access Restrictions in Residential Areas*, more than 100 cut-through vehicles per hour are needed to trigger further restrictions for a residential street like Kennedy Drive

The low volume of cut-through traffic through the Kenwood community is likely due to several factors:

- Morning peak hour turn restrictions from Bradley Boulevard onto southbound Kennedy Drive.
- Kennedy Drive is only about 20 feet wide, not including on-street parking.
- The traffic signal at Brookside Drive and River Road has a 2 ½ minutes long cycle length, meaning that any potential time saved by cutting through the Kenwood community to River Road is lost while waiting at the signal.
- Northbound Kennedy Avenue traffic (which is southbound only for most of its length) can only egress to eastbound Bradley Boulevard.

The data indicates that these turn restrictions, along with the partial one-way operation of Kennedy Drive, make it an inconvenient and slower cut-through for drivers that wish to use it to bypass Little Falls Parkway.

Hillandale Road: Hillandale Road is M-NCPPC-owned from approximately Willett Parkway south to River Road, and Montgomery County Department of Transportation-owned from Willett Parkway north to River Road. The Department of Transportation-owned portion of Hillandale Road includes the Kenwood Forest II condominium community, with on-street parking.

Based on the before and after traffic counts, Hillandale Road has received extra traffic due to the interim road diet. Peak hour morning traffic has increased along Hillandale Road by 24 cars (from 137 to 161 cars per hour); while afternoon peak hour traffic increased by 104 cars (151 to 255 cars per hour).

Montgomery Parks has received citizen complaints of speeding vehicles on Hillandale Road, as well as vehicles not yielding to pedestrians at the Hillandale Road and Chevy Chase Drive crosswalk. Montgomery County Department of Transportation conducted a spot speed study in January 2019 from 1 to 2 PM (as speeds are typically higher during non-rush hour volumes), just north of the Willett Parkway and Hillandale Road intersection, which showed an 85<sup>th</sup> percentile speed of 30 mph (25 mph speed limit). The observed 85<sup>th</sup> percentile speed of 30 mph is below the 34 mph requirement for speed humps, per Montgomery County *Executive Regulation 1-18 AM – Speed Humps for Residential Streets*. The Montgomery County Department of Transportation installed a radar speed sign along Hillandale Road near the Kenwood Forest condominiums in March 2019 and has been coordinating with the community on additional traffic calming measures, including curb bump outs and additional signage.

## **FACILITY PLANNING PROCESS**

### **Program of Requirements**

The scope of the Capital Crescent Trail Crossing at Little Falls Parkway Safety Improvements project is to develop the safest permanent crossing solution possible for trail users, consistent with Vision Zero design principles, while balancing construction costs, environmental impacts, maintenance costs, and traffic flow. Trail user safety is the priority for this project.

Staff met with the community on several occasions to discuss the project and obtain input for permanent safety improvements. The first community meeting was held in June 2018 to present

preliminary alternatives and gather community input. The second community meeting was held in October 2018, where the “top” three concept alternatives were presented. Staff has also met with various community groups and regulatory agencies throughout the facility planning process.

## **Overview of Facility Planning Process**

### **Community Meeting #1**

The first community meeting was held on June 13, 2018 at Somerset Elementary School in Bethesda. At the meeting, twelve concept alternatives were presented, which were grouped into three different safety approaches:

- Controlling the trail crossing: Concepts included diverting the Capital Crescent Trail to Arlington Road or Hillandale Road (Alternates #1 and #2), a new traffic signal or HAWK signal at the existing crossing location (Alternates #3 and #4), or stop signs at the crossing (Alternate #5).
- Removing trail user and motorist conflicts: Complete separation of the trail and road with a tunnel or bridge (Alternates #6 and #7), or complete closure of that segment of Little Falls Parkway to vehicle traffic (Alternate #8).
- Reducing trail user and motorist conflict potential: Concepts included a permanent road diet with speed table crossing (Alternate #9), dynamic lane usage along Little Falls Parkway (Alternate #10), a roundabout intersection at Arlington (Alternate #11), and a permanent road diet from Arlington Road south to Dorset Avenue (Alternate #12).

Parks utilized an informal sticker voting system at the Community Meeting to allow attendees to vote for their most popular and least popular alternates.

Based on the sticker votes, the most popular alternates were:

1. Diversion of the Trail to the Arlington Road Intersection
2. Diversion of the Trail to the Hillandale Road Intersection
3. Pedestrian Bridge

The three least popular alternates were:

1. HAWK pedestrian signal crossing
2. Dynamic lane use along Little Falls Parkway
3. Complete closure of Little Falls Parkway to vehicle traffic

The following observations, comments, and concerns were expressed by the attending community:

- Many attendees expressed concern about some of the bicyclists who use the trail. Some travel at a high rate of speed, do not yield to pedestrians, and do not slow down at the trail crossings.
- Concerns were raised about the interim road diet backing up and slowing down traffic in the area or contributing to cut through traffic on adjacent roadways.
- The interim road diet closure of two lanes has improved the safety for users, as they now only must cross two lanes instead of four, and vehicles are moving slower.
- There were split opinions on whether Little Falls Parkway should remain two lanes or be re-opened back to four lanes.
- There was a desire for additional lighting at the trail crossing.

- Requests were made for additional measures and enforcement to slow bicyclists on the trail.
- Concerns were expressed about the safety of the Capital Crescent Trail crossing of Dorset Avenue, further south.
- Requests were made to consider trail connectors from surrounding roads and communities in any permanent design.

During the Summer of 2018, the twelve concepts were narrowed down and revised to three concept alternatives based on the following factors:

- Trail user safety
- Consistency with Vision Zero policy
- Construction and operational / maintenance costs
- Environmental impacts
- Vehicle delay and traffic impacts
- Coordination and input from Montgomery County Department of Transportation
- Consistency with applicable master plans
- Public input obtained from Community Meeting #1 and additional project correspondence from the community received by Parks

## **Community Meeting #2**

The second community meeting was held on October 9, 2018 at Bethesda Chevy Chase High School. This was a joint meeting with the Montgomery County Department of Transportation to discuss downtown Bethesda bicycle and pedestrian facility improvements. Park staff presented the top three concept alternatives and maintained an informational booth to answer questions and gather feedback. All three concepts proposed reconfiguring Little Falls Parkway to a two lane road with one travel lane in each direction.

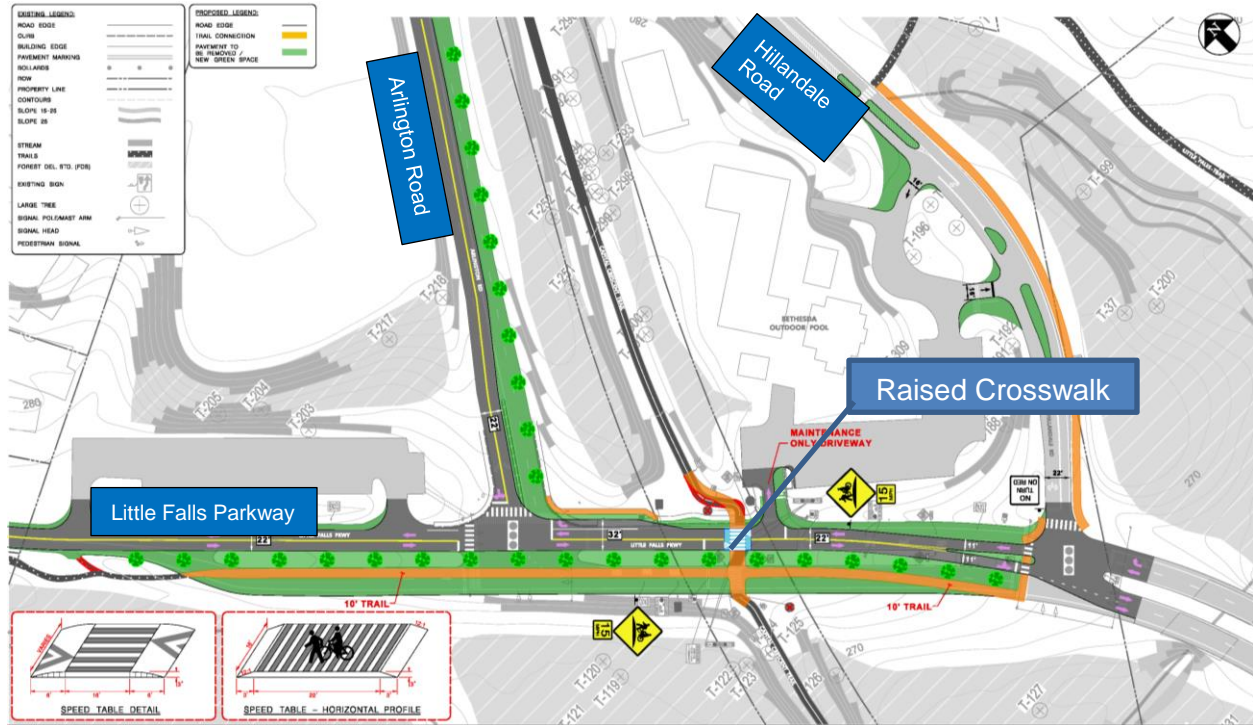


Figure 10: Alternate A: Permanent Road Diet (As Presented At Community Meeting #2)

Alternate A builds on the successful interim road diet. The existing southbound travel way is removed completely, and the northbound travel way is converted to bi-directional traffic flow resulting in one travel lane in each direction with no median. This permanently eliminates the multiple-lane threat potential, while the removal of the wide median provides a further safety benefit by simplifying the driver's decision-making for when to yield the right-of-way to trail users in the crossing or approaching the crossing. The raised crosswalk (speed table) will enhance safety by helping to ensure vehicles slow down as they approach the crossing.



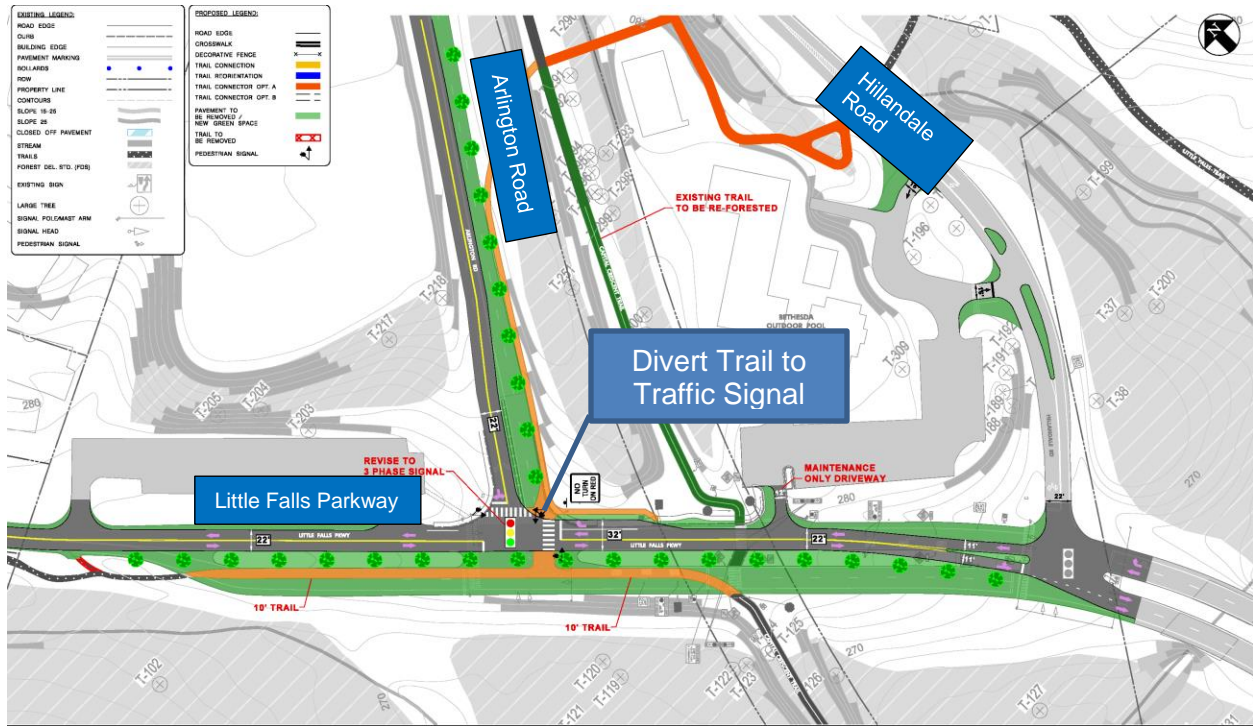


Figure 11: Alternate B, Trail Reorientation to Arlington Road Signal

Alternate B shifts the Capital Crescent Trail to the existing signalized intersection at Arlington Road and Little Falls Parkway. The existing traffic signal would be re-configured to control conflicts between trail users and motorists with the addition of a pedestrian-only signal phase. The pedestrian only signal phase would provide red indications for all vehicular movements while trail users are given the walk indication. The northbound right-turn pocket from Little Falls Parkway to Arlington Road would remain, but a “no turn on red” restriction would be required for safety. As with Alternate A, the existing southbound travel way is removed completely, and the northbound travel way is converted to bi-directional traffic flow resulting in one travel lane in each direction with no median. The reduction in travel lanes and removal of the wide median reduces the crossing distance for trail users, further limiting their exposure to conflicts with vehicular traffic. The reduction in travel lanes also reduces the time required for the pedestrian only signal phase, which limits delays for vehicles. In order to prevent people from jaywalking across Little Falls Parkway instead of utilizing the new signalized crossing, this alternative would also require physical barriers along the edge of northbound and southbound Little Falls Parkway.

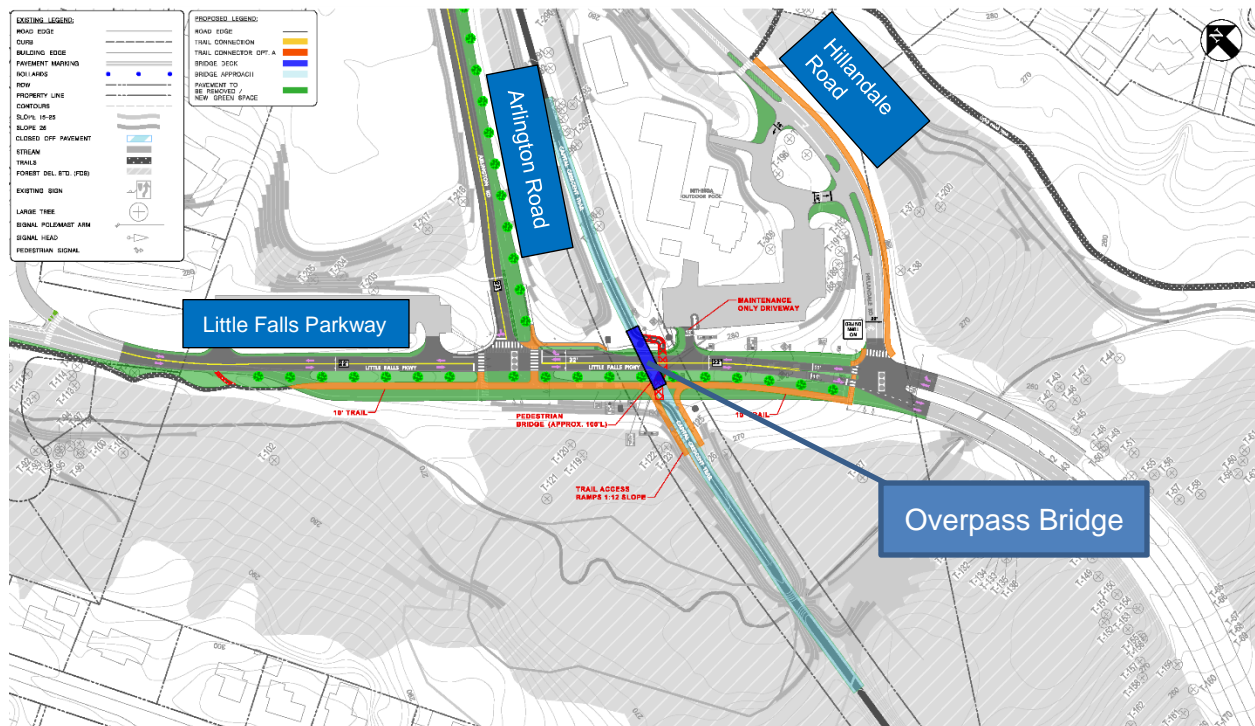


Figure 12: Alternate C, Pedestrian Bridge

Alternate C is a grade-separated trail crossing via a pedestrian bridge over Little Falls Parkway. The grade separation would provide superior safety benefits over all other alternates under consideration by eliminating conflict points between trail users and vehicular traffic on Little Falls Parkway. Alternate C includes the re-configuration of Little Falls Parkway to a two-lane road (as with Alternates A and B) in order to minimize the length of the bridge span (i.e. the distance between bridge abutments) and impacts to adjacent environmental features, while maintaining vehicle capacity. This alternative requires the construction of significant retaining walls to provide trail connections from the Little Falls Trail and the neighborhood to the west.

Staff distributed surveys at the community at the meeting, asking interested attendees to vote on their favorite alternative and to provide any other input. The results of the survey:

- Alternate A Permanent Road Diet: 45% chose this as most preferred.
- Alternate B Trail Reorientation to Arlington Road Signal: 6% chose this as most preferred.
- Alternate C Pedestrian Bridge: 49% chose this as most preferred.

Many attendees expressed concern about future traffic in the downtown Bethesda area, such as from the Westbard re-development. Some expressed a desire that Little Falls Parkway be configured to function more like Rock Creek Parkway in Washington D.C., which is 6 lanes total, 3 in each direction. There was concern that the interim road diet was negatively affecting adjacent neighborhood roadways. However, some attendees supported the interim road diet and its success in increasing safety for trail users. Most attendees agreed that the interim flexible posts and signage along Little Falls Parkway could be confusing for drivers. Many attendees requested a solution that minimized travel delays for motorists and trail users.

The following observations, comments, and concerns were also expressed by the attending community:

- The Little Falls trail connector behind the Bethesda Pool shown on Alternate B was not popular.
- There was significant support for a permanent pedestrian bridge.
- A request was made for lighting at the crossing.
- There was concern that trail users and cyclists would not obey a “Don’t Walk” signal in Alternate B, some bicyclists would just cross at the former crossing unless a barrier was installed, and that vehicles would ignore “No Right on Red” restrictions.
- There was a desire to minimize environmental impacts.
- Many attendees expressed concern about bicyclists who use the trail. Some travel at a high rate of speed, do not yield to pedestrians, and do not slow down at the trail crossings.
- Many attendees expressed concern that the interim road diet was causing additional cut-through traffic in adjacent neighborhood roadways, decreasing safety in the neighborhood.

### **Open Town Hall**

An online Open Town Hall forum was opened by Montgomery Parks in November 2018 and closed February 2019. The format allows for on-line comments and was identical to the survey distributed at the October 2018 community meeting. Montgomery Parks received the following 318 individual positions on the alternatives:

- Alternate A: 51 votes (16%)
- Alternate B: 94 votes (30%)
- Alternate C: 156 votes (49%)
- No position: 17 votes (5%)

Many Town Hall users supported a pedestrian overpass bridge, and many commented that the existing interim road diet could be confusing. Some users also requested a return to four lanes of travel on Little Falls Parkway. Some users indicated that the interim road diet had resulted in increased traffic on adjacent neighborhood roadways.

### **Analysis of Top Three Alternates**

After Community Meeting #2, and based on community feedback and coordination with other community groups and agencies, Alternates A, B, and C were refined, modeled and assessed in detail. Table 2 below is a summary of several metrics. The “No Build” in Table 2 is a baseline scenario representing Little Falls Parkway pre-January 2017 with two lanes of travel in each direction.

Prior to the construction of the interim condition, traffic counts were taken in late Fall of 2016 along Hillandale Road, Arlington Road, and Little Falls Parkway. Subsequently in May of 2017, traffic counts were conducted along the same roads to determine how the interim road diet restricted vehicle travel or diverted traffic to alternate streets. Along with multiple field visits, additional data collected included:

- Trail user delays experienced at the crossing of Little Falls Parkway under the existing interim road diet;
- Observations of interactions between trail users and motorists at the trail crossing;

- Existing interim road diet queuing observations;
- Before and after crash data for Little Falls Parkway between Arlington Road and Hillandale Road;
- Dorset Road peak hour traffic counts in Somerset;
- Average peak hour speed for vehicles along Little Falls Parkway between Hillandale and Arlington Roads;
- Cut-through data collected along Kennedy Avenue in Kenwood; and
- Current traffic signal timing for Hillandale/Little Falls Parkway and Arlington/Little Falls Parkway.

This data was used to determine and estimate impacts to:

- Trail user safety;
- Trail user delay;
- Vehicle delay (modeled in VISSIM multimodal traffic modeling software);
- Diversion of traffic onto other local roads (modeled in VISSIM software); and
- Adjacent environmental features including forests, streams, water channels, and wetlands.

*Table 2: Assessment of Alternates*

| Metric                       | No Build (pre-January 2017 condition)                 | Interim Road Diet                             | Alt A – Perm Road Diet            | Alt B – Arlington Road Signal                                       | Alt C - Bridge   |
|------------------------------|---|---|-----------------------------------|---|--|
| Trail User Safety            | Unsafe – 12 conflicts in 2 years including 1 fatality | Safe – 5 conflicts in 2+ years, no fatalities | Safe – includes raised crosswalk  | Safe – controlled crossing  | Safe – complete separation   |
| Trail User Delay             | Minimal   | Minimal                                       | Minimal                           | ~30+ seconds  | None   |
| Vehicle Delay                | 0 (baseline)  | +7 seconds                                    | +7 seconds                        | +13 seconds   | -3 seconds   |
| Diverted Traffic             | None (baseline)                                       | Additional diversion to Hillandale Road       | Consistent with Interim Road Diet | Slightly higher diversion to Hillandale Road than Interim Road Diet | None   |
| Design and Construction Cost | \$0 (baseline)  | N/A   | \$1.4 M                           | \$2.0 M   | \$5.8 M  |
| Operational Budget Impact    | \$0 (baseline)  | N/A   | \$8,000 / year                    | \$17,500 / year   | \$50,000 / year, eventual complete bridge replacement / reconstruction |
| Environmental Impacts        | None  | Negligible                                    | Negligible                        | Moderate  | Major  |
| Public Input                 | N/A   | Public support                                | Public support                    | Public support  | Significant public support   |



All three alternatives maintain a two-lane configuration for Little Falls Parkway, consisting of one travel lane in each direction. This is a similar section as other Park roads, including Sligo Creek Parkway and Beach Drive. Crossing two lanes is always safer for trail users than crossing four lanes.



*Figure 13: Alternate A Permanent Road Diet (Looking North Towards Crossing)*

#### Alternate A: Permanent Road Diet

Alternate A has many advantages: it is an extension of the interim road diet that has been in place for over two years which has demonstratively increased safety at the crossing, it is the least expensive to maintain and construct, and has negligible environmental impacts.

The drawbacks for Alternate A are slightly higher travel times for motorists, and without additional improvements may not decrease the traffic that has been diverted to Hillandale Road during the interim road diet.





*Figure 14: Alternate B Trail Reorientation to Arlington Road Signal Rendering (Little Falls Parkway and Arlington Road Intersection Looking South)*

#### Alternate B: Trail Reorientation to Arlington Road Signal

Alternate B controls the crossing by shifting the Trail to the Arlington Road intersection traffic signal. There would be a full pedestrian phase for the signal where all traffic is stopped, and Trail users have the right of way to cross. The pedestrian phase results in increased delay for both motorists and trail users compared to other alternatives. This may result in increased frustration among trail users and vehicles.

There is a likelihood that some trail users may not comply with a “Don’t Walk” pedestrian signal and attempt to cross between gaps in traffic, decreasing safety and increasing the potential for a conflict. Additionally, staff has concerns regarding motorist compliance with “no turn on red” for the right turn from Little Falls Parkway onto Arlington Road, which will decrease safety. While these actions are against the law, Vision Zero policy acknowledges that safe solutions must account for real world behavior of motorists and trail users.

Expansion of Little Falls Parkway back to four lanes of traffic, as requested by some motorists, is not recommended because it increases the travel distance and time of exposure for trail users, decreasing safety. Four lanes would also not decrease motorist travel times through Little Falls Parkway because the pedestrian phase of the traffic signal would be increased to account for the additional crossing distance, negating any increased roadway capacity and resulting in additional motorist delay and additional traffic diverted to adjacent neighborhood roads. Traffic models indicate that under this Alternate, motorist and trail user delays will always be higher than any other alternative whether with two or four lanes open on Little Falls Parkway, due to the requirement of a full pedestrian crossing phase at the Arlington Road signal.



*Figure 15: Alternate C Pedestrian Bridge (Little Falls Parkway Looking North at Trail Crossing)*

### Alternate C: Bridge

An overpass trail bridge (Alternate C) is a very popular option amongst the community because it completely separates vehicle traffic and trail users. It is the only alternative which would decrease motorist travel times while still maintaining safety for trail users.

However, Alternate C has significant disadvantages, including substantial construction (\$6M) and maintenance costs.

Alternate C has significant impacts to adjacent environmental features. The pedestrian bridge would be 15 feet above Little Falls Parkway, requiring placement of substantial amounts of fill in sensitive natural areas, and retaining walls for the ramps to the bridge. The ramps and retaining walls would extend to the bridge elevation and block viewsheds of the adjacent stream valley. The ramps would introduce unavoidable steeper segments than the current trail, which may deter some less able-bodied users from using the bridge. The bridge abutments, ramps, and associated sidewalk connections would impact an existing mixed wetland forest stand as well as the Willett Branch stream valley buffer, thus requiring additional environmental mitigation.

Restoring Little Falls Parkway to four lanes would require a substantially longer bridge span, mitigation of significant environmental impacts to Willett Branch and adjacent forest stands, and much higher costs.

Alternate C also has the longest design and construction timeframe and impacts to Capital Crescent Trail users during construction, including temporary closures and detours, would be required to construct the bridge.

## Recommended Facility Plan

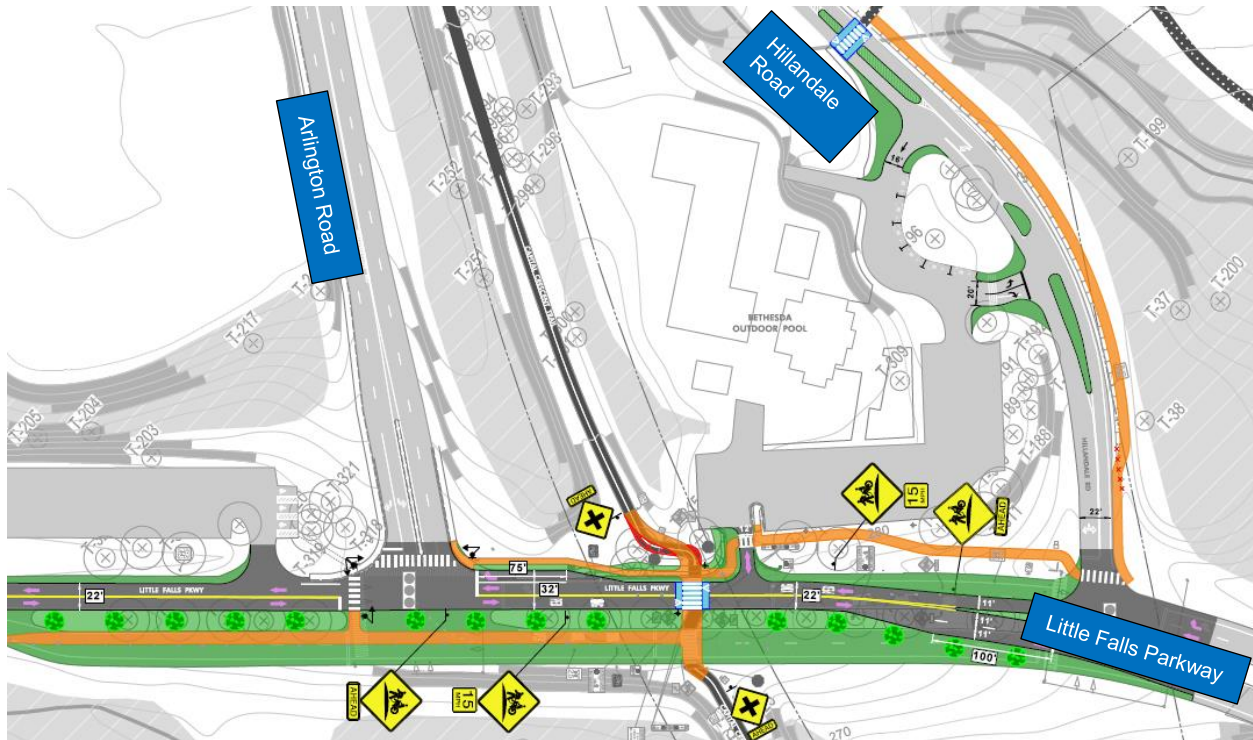


Figure 16: Recommended Facility Plan: Permanent Road Diet with Speed Table Crossing

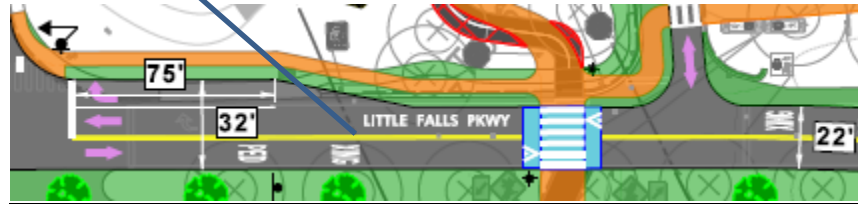
Installation of the interim road diet along Little Falls Parkway approaching the Capital Crescent Trail was quantitatively shown to significantly improve safety at the trail crossing while also minimizing adverse impacts to vehicular operations along the corridor. The interim road diet has eliminated the multi-lane threat, slowed vehicle speeds through this segment of Little Falls Parkway, and increased visibility between trail users and drivers. Before and after traffic count data reveals minimal reductions in vehicular throughput along Little Falls Parkway due to the road diet, with some traffic diverting from Arlington Road to Hillandale Road. However, Little Falls Parkway is capably processing traffic with minimal delays.

Based upon Vision Zero policies adopted by Montgomery County and the measured success of the interim road diet in increasing trail user safety, the Recommended Facility Plan is based upon Alternate A, which consists of reducing Little Falls Parkway to one drive lane in each direction at the Capital Crescent Trail crossing and having trail users cross via an elevated speed table. Alternate A has the lowest cost and least environmental impact of all the alternatives. Improved lighting is included, along with improved connectivity from the Capital Crescent Trail to adjacent sidewalks and the Little Falls Trail. Traffic calming is also recommended on the M-NCPPC-owned portion of Hillandale Road to discourage its use as an alternative to Arlington Road. The Recommended Facility Plan has the flexibility to be modified in the future with additional intersection controls, if warranted.

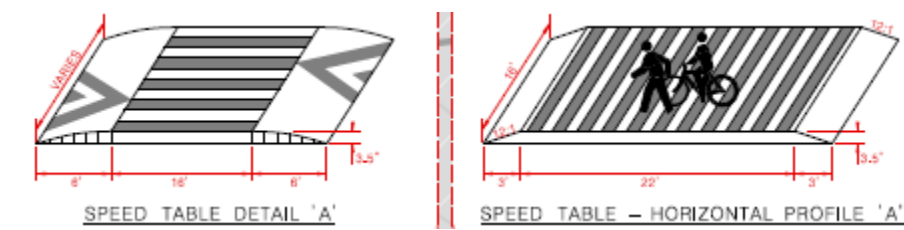


Key elements include:

Little Falls Parkway  
two total lanes at  
Crossing



Permanent Road Diet – Conversion of Little Falls Parkway from four lanes to two lanes reduces vehicle speeds, eliminates the “multi-threat” lane condition, and is consistent with Vision Zero policy.

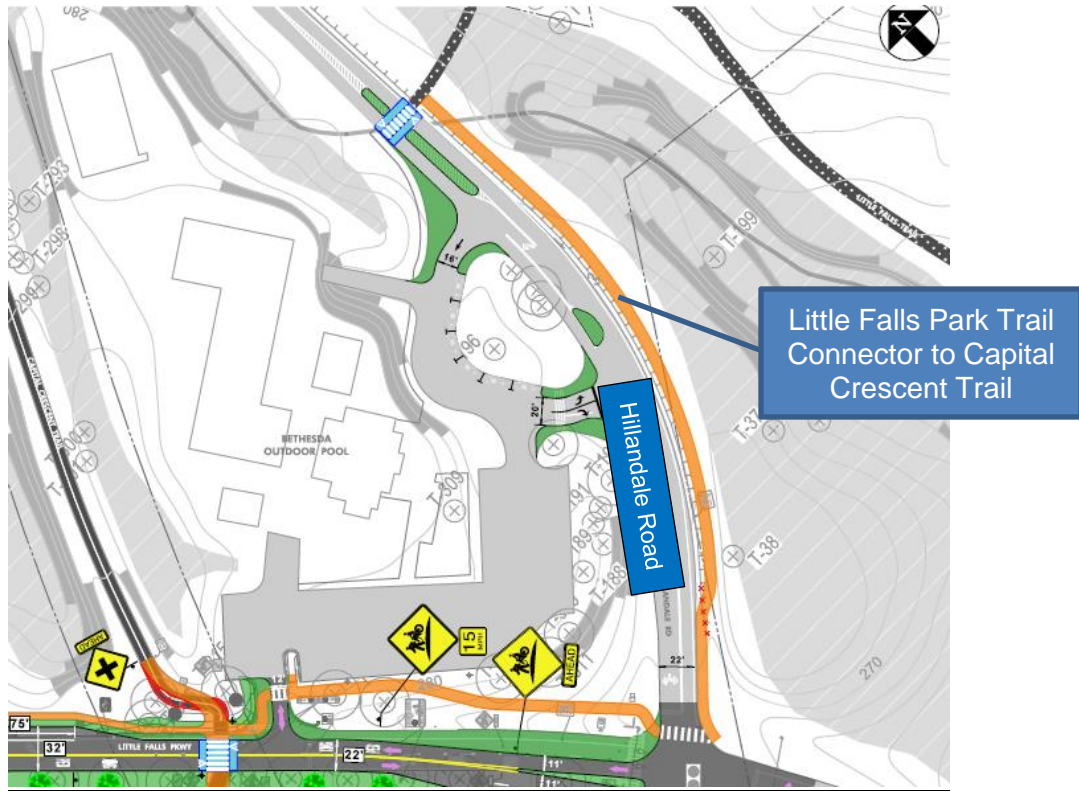


Speed Table Crossing – The Capital Crescent Trail crossing will be converted to a speed table, which is an elevated hump with a flat top. Speed tables effectively reduce vehicle speeds and increase driver awareness. Park staff have found similar installations along Sligo Creek Parkway to be effective at reducing speeds and improving crossing safety.

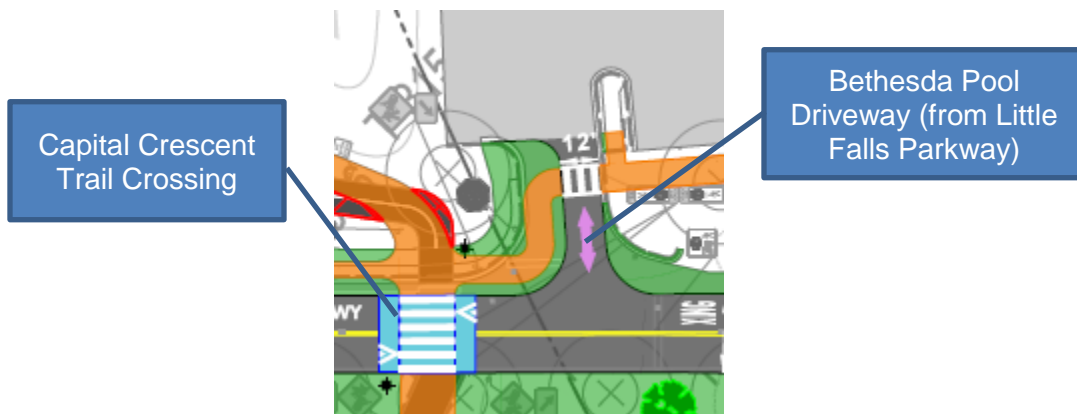
Removal of Median – Reconfiguration of Little Falls Parkway to two total lanes also removes the existing median. Median removal is recommended after coordination with Park Police, as it increases confusion and miscommunication between drivers and trail users at the crossing and has been a factor in several crashes. One common scenario is that approaching drivers in the far lane believe oncoming trail users will stop in the median and proceed through the crossing, while trail users are in the crosswalk, have the right-of-way and believe drivers will stop.

Improved Lighting – New street lighting will improve visibility at the crossing for all users.

“Stop” Signs for Trail Users – The “Stop” signs for trail users on both ends of the crossing will remain. The “Stop” signs make it clear to users that it is unsafe to cross without stopping and observing traffic.

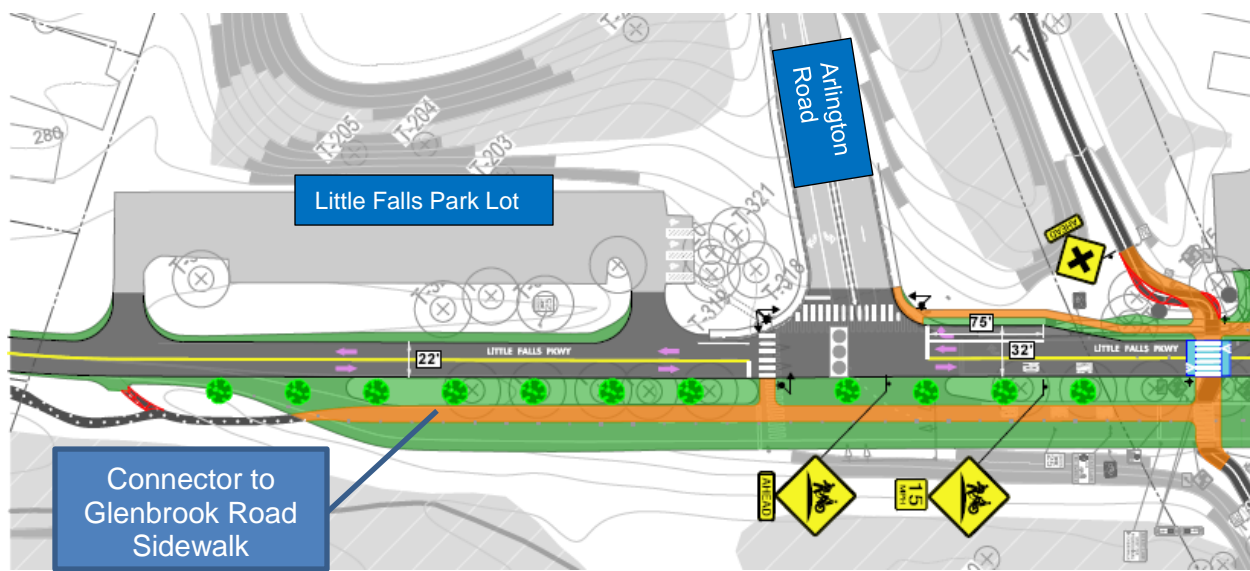


Connection to Little Falls Park Trail – The Little Falls Trail parallels a portion of the Capital Crescent Trail east of Hillandale Road, allowing users to access the Trail and other areas of Bethesda from Norwood Local Park and points east. A new 8' asphalt trail connection along Hillandale Road will connect Little Falls Park Trail directly with the Capital Crescent Trail. The trail connection will be designed in conjunction with the Hillandale Road traffic calming to minimize impacts to the stream valley buffer.



Conversion of Bethesda Pool Driveway – The existing driveway to the Bethesda Pool from Little Falls Parkway would be narrowed and converted to a maintenance and event egress only driveway. This modification will increase safety of the crossing by reducing the number of vehicles utilizing Little Falls Parkway to enter and exit the pool. It will also reduce the chances of conflicts at the crossing by minimizing cars exiting the pool onto Little Falls Parkway, a turning movement that takes them directly into the crossing and proposed Little Falls Trail connector. The modifications will not affect parking at the pool.





Connectivity with Little Falls Park Lot and Glenbrook Road – an existing parking lot at the intersection of Little Falls Parkway and Arlington Road provides overflow parking for Bethesda Pool, Little Falls Park, the Capital Crescent Trail, and other park amenities in the area. There is an existing sidewalk along Glenbrook Road that ends at Little Falls Parkway and the Little Falls parking lot. The sidewalk along Glenbrook Road will be extended and connected to the Capital Crescent Trail, and the existing trail connection from the Capital Crescent Trail to the Little Falls parking lot will be upgraded. Users on the Capital Crescent Trail will have the option of traveling to the intersection of Little Falls Parkway and Arlington Road to cross Little Falls Parkway at the existing traffic signal if desired.

Stormwater Management – the Recommended Facility Plan removes a substantial amount of impervious asphalt surfaces, reducing the amount of stormwater runoff and pollutants discharging to Willett Branch. A bio-swale is proposed alongside Little Falls Parkway to provide additional water quality treatment and address project stormwater management requirements. Storm drainage improvements will include replacement of a trench drain at the Bethesda Pool entrance and replacement of a culvert at Little Falls Parkway and Hillandale Road.

Open Space – With the reduction in Little Falls Parkway from four lanes to two lanes, portions of the previous asphalt roadway will be converted to green open space.

Landscape Improvements – There are negligible impacts to existing forest stands. Several individual trees may need to be removed to construct the new Little Falls trail connection. Additional shade trees will be planted throughout the project. Low maintenance groundcovers will be used on the project periphery to enhance the space and provide environmental benefits.

Hillandale Road Traffic Calming – Hillandale Road is a residential road that has experienced an increase in traffic volumes since implementation of the interim road diet. The Recommended Facility Plan includes installation of traffic calming measures on the Park owned portion of Hillandale Road, including a speed table crossing for the Little Falls Trail at the Bethesda Pool entrance, an additional speed hump closer to the Kenwood Forest condominiums, curbed grass medians, and roadway narrowing.

## **Community Group, Agency Coordination, and Regulatory Approvals**

The following is a summary of coordination performed with agency and community groups for this project:

### M-NCPPC Department of Planning

Planners from Area 1 have been part of the Planning, Design, Construction, and Operations (PDCO) project team process since project inception. A Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) and Forest Conservation Plan Exemption for the Recommended Facility Plan was approved in March 2019 (Project #42019124E). The Forest Conservation Plan exemption was approved because the Recommended Facility Plan is classified as a County highway project with minimal forest clearing and no impacts to champion, specimen, or significant trees. To comply with the requirements of the Forest Conservation Plan exemption, a Tree Save Plan will be submitted for approval during the detailed design phase.

### M-NCPPC Park Police

Park Police staff have been part of the PDCO project team process since project inception. Park Police continue to monitor the crossing and Capital Crescent Trail.

### Montgomery County Department of Permitting Services (DPS)

The stormwater management concept for the Recommended Facility Plan was submitted in February 2019 (#284594). Staff met with Montgomery County Department of Permitting Services staff to present the project in March 2019, and a revised concept was re-submitted in March 2019. The concept proposes the installation of a bio-swale alongside Little Falls Parkway to address stormwater management requirements. If future geotechnical testing determines high groundwater levels, the concept proposes replacement of the bio-swale with approved bio-filtration structures.

### Montgomery County Department of Transportation (DOT)

Staff has coordinated with the Montgomery County Department of Transportation throughout the project process. Montgomery County Department of Transportation staff provided review and support for implementation of the interim road diet in January 2017. Park staff met with Department of Transportation personnel from the Division of Traffic Engineering in August 2018 and November 2018 to discuss the alternatives being evaluated. The Department of Transportation's Division of Traffic Engineering personnel have also reviewed the Recommended Facility Plan for general compliance with County traffic standards.

### Montgomery County Fire and Rescue Service

Little Falls Parkway is utilized by emergency vehicles to respond to nearby service calls. Staff met with Montgomery County Fire and Rescue Service in August 2018 to present the concept alternates. Fire and Rescue Service reviewed the alternatives, including the Recommended Facility Plan, and confirmed that they would have minimal effect on emergency response times.

### Bethesda Area Homeowner Associations

Representatives from several homeowner associations and communities around the project area requested a meeting with Staff in February 2019. Communities represented included the Town of Somerset, the Citizens Coordinating Committee on Friendship Heights, Kenwood Citizens Association, Kenwood House, Hillandale Town Houses, and the Kenwood Community. The communities re-iterated their desire that any permanent improvements include opening Little Falls Parkway back to four lanes of traffic, and they expressed their concerns with future traffic impacts from the Westbard re-development and planned residential communities. Staff shared the results of ongoing traffic studies on adjacent roadways and observations of the interim road diet.

### Coalition for the Capital Crescent Trail (CCCT)

The Coalition for the Capital Crescent Trail is a non-profit volunteer group that was instrumental in development of the Trail and provides continued advocacy for improvements and trail upgrades. Staff met with the Coalition in March 2019 to give an overview of the project and present the Recommended Facility Plan. The Coalition presented their preferred solution of shifting the Capital Crescent Trail to the intersection of Little Falls Parkway and Arlington Road, having trail users cross with the traffic signal, and re-opening all four lanes of traffic. Park staff and the Coalition discussed a potential future study for re-alignment of the Little Falls Parkway to curve into Arlington Road to improve traffic flow. The Coalition also stated their concerns with future traffic from planned development in the Bethesda area.

### Pedestrian, Bicycle, and Traffic Safety Advisory Committee (PBTSAC)

The Pedestrian, Bicycle, and Traffic Safety Advisory Committee is a group of citizens, elected officials, and government representatives focused on pedestrian and bicycle safety issues in Montgomery County. During the November 2018 PBTSAC meeting, a vote was held that favored the Recommended Facility Plan, except for removing the median refuge. However, staff believe removal of the median will reduce confusion between drivers and trail users and increase overall safety, particularly in combination with the proposed speed table crossing.

## COST ESTIMATE

### Design and Construction Costs – Recommended Facility Plan

A summary of design and construction costs for the Recommended Facility Plan (two lane roadway with speed table crossing) is outlined in the table below. A detailed cost estimate is included in the attachments.

| Item  | Total Cost         |
|---|--------------------|
| Site Preparation and Maintenance of Traffic             | \$61,000           |
| Erosion and Sediment Controls                           | \$36,500           |
| Demolition  | \$99,125           |
| Earthwork and Grading                                   | \$14,000           |
| Storm Drainage  | \$39,030           |
| Stormwater Management                                   | \$47,520           |
| Asphalt Pavement and Trail                              | \$67,200           |
| Traffic Signage   | \$7,375            |
| Lighting and Electrical                                 | \$48,000           |
| Pavement Markings                                       | \$19,100           |
| Curb and Gutter   | \$32,500           |
| Speed Tables and ADA Pads                               | \$20,000           |
| Miscellaneous Traffic / Shoulder Improvements           | \$11,400           |
| Relocate Signal Poles and Mast Arms (Arlington Road)    | \$150,000          |
| Landscape Improvements                                  | \$52,250           |
| Hillandale Road Traffic Calming and Narrowing           | \$200,000          |
|   |                    |
| <b>CONSTRUCTION SUBTOTAL</b>                            | <b>\$905,000</b>   |
| General Contractor Overhead and Profit @ 8%             | \$72,400           |
| Construction Contingency @ 15% of Construction Subtotal | \$135,750          |
| <b>CONSTRUCTION TOTAL</b>                               | <b>\$1,113,150</b> |
|   |                    |
| Design, Permitting and Long-Term Study                  | \$181,000          |
| Staff Chargebacks for Detailed Design                   | \$39,000           |
| Construction Management and Inspections                 | \$44,500           |
|   |                    |
| <b>TOTAL PROJECT COST</b>                               | <b>\$1,378,000</b> |

### Operating Budget Impact

The total operating budget impact is estimated at \$8,000 per year. Operating budget costs include landscaping, spot trail repairs at the crossing, maintenance of stormwater management structures and storm drains, and general maintenance and upkeep.

## LONG-TERM SITE PLAN STUDY RECOMMENDATION

The community has voiced continual concerns with anticipated traffic increases in the Bethesda area under proposed redevelopment plans. Therefore, staff recommends the traffic counts and analysis be repeated five years after construction of the Recommended Facility Plan, with the assistance of a traffic engineering consultant and coordination with the Montgomery County Department of Transportation. The analysis will assess conditions at Little Falls Parkway, the trail crossing, and adjacent roadways post-improvements. If this analysis shows results that are significantly different than current predictions, the Department of Parks will assess the viability of an “ultimate” site plan solution that prioritizes minimal delays for motorists and trail users. A concept level “ultimate” site plan building on the Recommended Facility Plan has been developed:

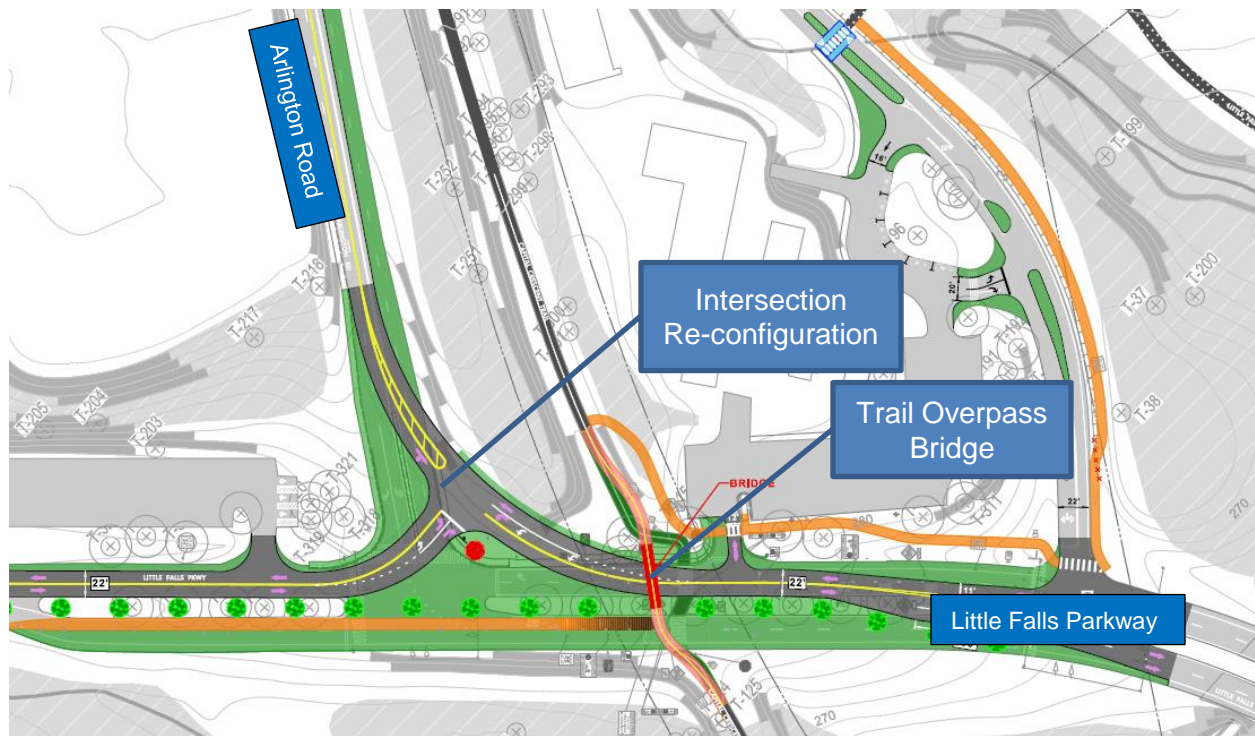
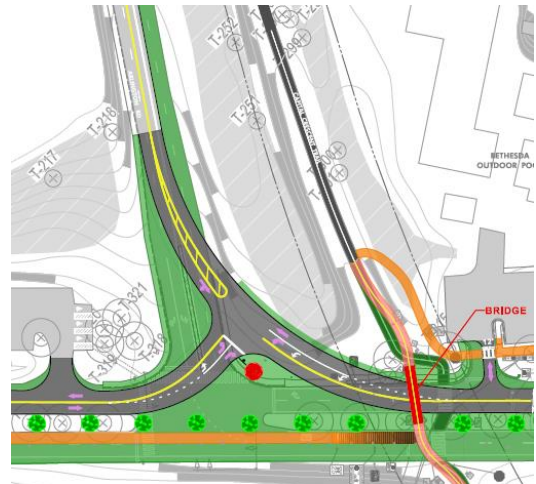


Figure 17: Concept “Ultimate” Site Plan

Key elements of the “Ultimate” Site Plan include:

Capital Crescent Trail Overpass Bridge – A completely separated crossing for trail users minimizes vehicle and trail user delays and maintains safety.



*Figure 18: Existing Intersection (Left) and Potential "Ultimate" Re-configuration (Right)*

Re-configuration of Intersection of Little Falls Parkway and Arlington Road – The predominant traffic movement for northbound Little Falls Parkway traffic is to turn right onto Arlington Road, while the predominant movement for southbound Arlington Road traffic is to turn left onto Little Falls Parkway. Most vehicles from Glenbrook Road approaching Little Falls Parkway turn right onto the Parkway. Re-configuration of the intersection to merge Little Falls Parkway with Arlington Road, with removal of the traffic signals, will consolidate the dominant turning movements and reduce vehicle travel delays. Glenbrook Road will intersect with the new consolidated roadway with "Stop" sign control. Coordination and approval from Montgomery County Department of Transportation is required to re-configure the intersection as the portion of Arlington Road is managed by the Department of Transportation.

The Recommended Facility Plan cost estimate includes funding to perform the future traffic analysis and study.

## CONCLUSION

Staff recommends approval of the Recommended Facility Plan, consisting of the conversion of Little Falls Parkway at the Capital Crescent Trail crossing to a two-lane road with a speed table crossing, and associated improvements. Five years after construction of the Recommended Facility Plan, staff recommends a traffic study and counts be re-done to assess post-improvement conditions along Little Falls Parkway and adjacent neighborhood roadways.

Vision Zero represents a paradigm shift in traffic policy, stating that pedestrian and bicyclist severe injuries or fatalities are unacceptable, and putting the onus on system designers rather than road and trail users to ensure a safe transportation system. By removing the multi-lane threat, slowing vehicles, and reducing confusion between trail users and motorists, the Recommended Facility Plan will significantly increase safety and meet Montgomery County's Vision Zero policy.



**Attachments:**

- Appendix A: 30% Construction Documents
- Appendix B: Natural Resource Inventory / Forest Stand Delineation Drawings and Approval Letter
- Appendix C: Stormwater Management Concept
- Appendix D: Cost Estimates
- Appendix E: Traffic Engineering Study Data
- Appendix F: Concept Site Plan Sketches
- Appendix G: Correspondence