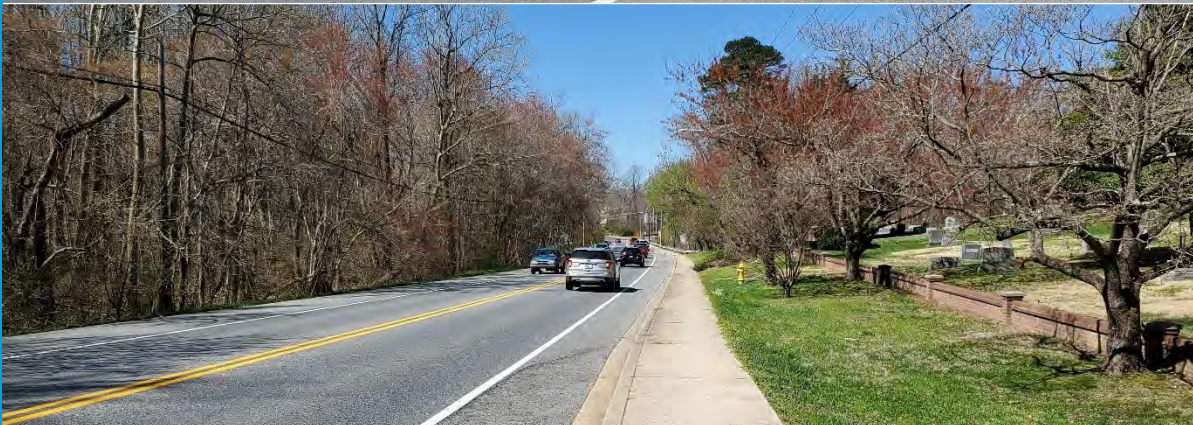




Radio Station Road Sidepath Preliminary Engineering Report

JUN 2, 2021

PRELIMINARY



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Purpose of Report

The purpose of this report is to document the existing conditions, alternatives considered, and preferred alternative for a bikeway between Laurel Springs Regional Park and downtown La Plata via Radio Station Road, MD 488/La Plata Road, MD 6/Charles Street, and Willow Lane – referred to throughout as the “Radio Station Road sidepath.” Accompanying this narrative report is a set of preliminary engineering plans commonly referred to as “30% design.” Together, the report and the plan set represent decisions made by the Town to achieve the purpose and need for the project based on desktop review of existing conditions, limited field inspection and input from numerous stakeholders. Issues for further evaluation during final design are identified in the discussion of the preferred alternative.

Project Purpose and Need

The purpose of this Radio Station Road sidepath project is to establish a north-south spine of the network and to connect to other existing and planned regional bicycle facilities. Through its comprehensive plan, the Town of La Plata has long envisioned a network of bicycle pathways throughout its limits, and beyond which connect neighborhoods, natural and recreational areas, schools, shopping, and other destinations. The bikeways network would serve both as a recreational amenity and a safe mode of transportation for short trips by users of all ages and abilities. Specifically, for residents of La Plata living east of US 301, the sidepath would provide a safe bicycle route to school for nearly every child and for every family to access three of the major parks and natural resources in the community. The Radio Station Road sidepath has a secondary benefit of narrowing roadways and providing for traffic calming approaching and within town limits.

Existing Conditions

Prior Studies

The Radio Station Road sidepath connecting downtown La Plata with St. Charles Parkway has been envisioned in several planning documents over the past two decades, resulting in the construction of one segment of the ultimate corridor project as part of a subdivision.

Vision Plan for Greater La Plata (2000) and Plan for the Future of Downtown La Plata (2001)

The *Vision Plan* established goals for the Town to “create a system of bicycle routes and sidewalks throughout Town,” with the specific steps of creating and implementing a “detailed design plan for sidewalks, bikeways and trails linking downtown to the surrounding natural areas and to outlying residential areas.” The plan also called for a traffic calming study for MD 6/Charles Street.

Town of La Plata Transportation Plan (2009)

The Town of La Plata and Charles County performed a transportation study and plan in 2009 to assess the Town’s roadway, pedestrian, and bicycle networks and identify recommended improvements to those networks. The plan’s recommendations in the Radio Station Road pathway corridor included the following:

- Adjusting pavement markings to extend the eastbound left turn lane from MD6/Charles Street onto MD 488/La Plata Road
- Continuation of the Radio Station Road 4-lane widening, to include a shared-use pathway and drainage improvements
- Addition of bike lanes through pavement marking changes along MD 6/Charles Street east of Oak Avenue
- ADA improvements along the MD 6/Charles Street corridor

Of these recommendations, ADA and bike lane improvements have been partially implemented, while the intersection recommendation at MD 6 and MD 488 and the Radio Station Road widening have not been implemented.

Charles County Bicycle and Pedestrian Master Plan (2012)

Charles County developed its current (and first) Bicycle and Pedestrian Master Plan from 2009 to 2012. The plan included a “1.6-mile path along Radio Station Road from Rosewick Road south to MD 488 La Plata Road” as a short-term recommendation, part of which was in design at the time as part of the ongoing Radio Station Road widening project. The plan also proposed MD 488/La Plata Road and MD 6/Charles Street as designated on-road bicycle routes but did not enumerate any specific improvements proposed for them.

Town of La Plata Comprehensive Plan (2020)

The Town’s 2020 Comprehensive Plan adopted the County’s revised phasing for the widening of Radio Station Road to four lanes, noting it would be planned, design, and constructed by the County, while adding a sidepath along Radio Station Road as an independent, Town-initiated project.

Recent and Ongoing Projects

The Radio Station Road Sidepath also relates to several ongoing projects in or near the Town of La Plata.

Charles Street Resurfacing (2020-21)

MDOT SHA completed a mill-and-resurface of MD 6/Charles Street between US 301 and Willow Lane in the fall of 2020. Following the resurfacing, in accordance with its Bicycle Policy, Bike Spine Map, and Context Zone map, MDOT SHA adjusted the pavement markings to provide shoulders for bicycle compatibility through the downtown area to the maximum extent possible within curb limits of the existing roadway.

Heritage Green development (Ongoing)

The large, forested area between the Popes Creek Branch and the Radio Station Road corridor has been subject to an evolving development plan since 1990. The most recent proposal is a revised Master Site Development Plan (MSDP) submitted in December 2020 that would permit 3,170 residential units, along with a variety of light to moderate commercial uses. In addition, the development would establish 2-lane low-speed parkways connecting to Charles Street at a newly signalized intersection across from Willow Lane and providing access north to Rosewick Road, east to the school driveway, and west to Heritage Green Parkway. Finally, the development would construct a network of shared-use pathways connecting its residential neighborhoods, commercial districts, and adjoining land uses.

Radio Station Road Upgrade to Minor Arterial (Ongoing)

Since at least 1997, the County’s Comprehensive Plans have included widening of Radio Station Road between MD 488/La Plata Road and St. Charles Parkway to a four-lane parkway, with accompanying drainage improvements and a shared-use pathway. That project was scaled back to a boulevard section that would start at Box Elder Road and the design advanced to approximately 90% design by 2015 before it was paused due to an uncertain funding timeline. If constructed, it would connect with a proposed upgrade of Jaybee Lane, which meets St. Charles Parkway approximately across from Radio Station Road, to provide a continuous roadway from the east side of La Plata to US 301.

As a breakout project, the County has proposed an intersection improvement at MD 488 to improve safety. The intersection has been the location of several serious injury and fatal crashes over the past several years.

Corridor Description

Environmental Characteristics

Surface Waters

Smaller streams and ponds are present on either side of the project corridor. Most prominently, Clark Run flows in a north/south direction and is joined by several smaller stream branches. In the Radio Station Rd. corridor, these stream branches extend east/west but do not intersect with the road. On the eastern side

of the corridor, stream branches extending from Zekiah Swamp Run travel north/south and east/west, but also do not intersect the road. West of the intersection of MD 6/Charles Street with MD 488/La Plata Road, the project corridor intersects Clark Run along Charles Street and then parallels it south along Willow Lane.

Wetlands

Other than several freshwater ponds, wetlands in the project area are primarily palustrine forested/shrub (PFO) wetlands associated with Clark Run, Zekiah Swamp Run, and their tributaries. The example nearest to Radio Station Rd is at the northern end of the project corridor, intersecting with Rosewick Road about 500 feet west of Radio Station Road. Wetlands are in much closer proximity to MD 6/Charles Street, with GIS-indicated (NWI) wetland boundaries within 15 feet of the edge of the existing sidewalk along MD 6/Charles Street east of Clark Run. However, GIS-indicated boundaries appear to show minimal wetlands west of Clark Run along MD 6. Wetlands also extend parallel to Willow Lane along Clark Run south of MD 6/Charles Street, coming within approximately 65 feet of the existing edge-of-pavement.

Floodplains

100-year floodplains (representing land that has a 1% chance of flooding during any given year) extend no closer than approximately 0.8 miles east of Radio Station Road or MD 488/La Plata Road, and 0.7 miles west of either roadway. As the project corridor turns west, MD 6/Charles Street does intersect the Clark Run 100-year floodplain. At that stream crossing, the base flood elevations of 136 feet (north of MD 6) and 129 feet (south of MD 6) are at or just below the minimum roadway elevation of 136 feet. The Clark Run 100-year floodplain boundary closely parallels Willow Lane 20 to 30 feet east of the roadway edge for approximately 650 feet north of the northernmost curve in Willow Lane. The 500-year floodplain of Clark Run intersects the east side of Willow Lane at one location 700 to 800 feet south of MD 6/Charles Street. The 2020 Charles County Nuisance and Urban Flood Plan did not identify any locations along the primary study corridor as subject to urban or nuisance flooding but did note that stormwater runoff-related flooding does take place at the intersection of Glen Albin Road and Oak Avenue, a possible connecting bicycle route just south of the study area.

Protected Lands

Laurel Springs Regional Park, classified as a local protected land, is adjacent to Radio Station Rd. between Audie Ln and St Charles Pkwy. The park has an area of about 197 acres and contains ball fields, walking trails, and several other recreational attractions. Tilghman Park borders Laurel Springs Regional Park to the south, and is also classified as a local protected land, but does not intersect with Radio Station Rd. East. South of Willow Lane, the Town of La Plata also owns approximately 50 acres on six parcels of undeveloped property designated as open space in the Clark Run stream valley. There appear to be no federal or state protected lands, private easements or conservation lands, or forest conservation easements in the study area.

Topography

Radio Station Road and MD 488/La Plata Road approximately follows the slight ridgeline that divides the Zekiah Swamp and Clark Run drainage areas within the project corridor. In this area, the topography is mostly level close to the roadway at elevations of 180 to 200 feet. The ridgeline turns south at the intersection of MD 488/La Plata Road with MD 6/Charles Street, while the project corridor turns west to cross the Clark Run stream valley, descending to approximately 130 feet at Clark Run before climbing to the next ridgeline at the Popes Creek Branch at approximately 180 feet.

Land Uses & Key Trip Generators/Attractions

Laurel Springs Regional Park is located on the eastern side of Radio Station Rd, just south of intersection with St Charles Parkway. This contains Laurel Springs Trail, features several sports fields, and an accessible playground. Bordering the southeastern edge of Laurel Springs Regional Park is Tilghman Park, which features a freshwater pond. A branch of the Heritage Green Proposed Trail extends near the western side of Radio Station Rd, along the roads at Matula Elementary School. Other points of interest near the corridor include La Plata High School to the west, and FB Gwynn Educational Center and Spring Dell Center to the east.

The center of the study corridor includes the Richard R. Clark Senior Center, which provides social, recreational, and fitness activities for older adults. At the west end of the study area, there are numerous

retail and commercial destinations in Downtown La Plata. The downtown area also includes several institutional destinations: County offices and courthouses, UM Charles Regional Medical Center, and the Charles County Public Library's La Plata branch. Finally, in the south, Willow Lane provides access to Walter J. Mitchell Elementary School and Milton M. Somers Middle School, which also serves as a school-based community center.

The study area intersects a variety of land use designations; however, the corridor is primarily residential with some governmental/institutional uses along MD 488/Radio Station Road.

Transportation Facilities

Except for downtown which is generally laid out in grid fashion, La Plata's communities and the Radio Station Road corridor specifically are auto-dominated suburbs. This project will provide an important bicycle spine network in the context of suburban arterial roadways.

Radio Station Rd

Radio Station Rd is a 2-lane major collector, connecting St Charles Parkway to the north and MD 488/La Plata Rd to the south. It provides access to several Charles County Administrative offices, as well as Mary Matula Elementary, La Plata High, College of Southern Maryland, Charles County Emergency Services offices and training center, and Laurel Springs Regional Park. It has an AADT of approximately 7,200 vehicles, as of a 2019 count, taken about 275 feet south of Llano Dr. The latest available turning movement count (Feb 2013), taken at the intersection of Radio Station Rd and MD 488, showed peak hours of 6:45-7:45 AM and 3:45-4:45 PM. The posted speed limit is 40 MPH.

There are no bicycling facilities on Radio Station Rd, on- or off-road. There is a shoulder on each side of the road, ranging 8 to 10 feet wide. The roadway drains to ditches off the side of the road; therefore, there are no curbs or storm drain inlets along the roadway. Pavement on Radio Station Rd is in good condition. The Level of Traffic Stress (LTS), a metric for comfort level for bicyclists on a roadway, calculated by factors including vehicle AADT, posted vehicle speed, number of travelling lanes, and bicycling facilities, among other factors, is graded by a 1-4 scale, 1 being the least stressful and 4 the most stressful.¹ Radio Station Rd has a posted speed of 40 MPH, an AADT greater than 3,000, one lane in each direction, with shoulders greater than 6 feet, which corresponds to an LTS of 3.



FIGURE 1. RADIO STATION RD AT BOX ELDER RD LOOKING SOUTH



FIGURE 2. RADIO STATION RD AT CSM LOOKING SOUTH TOWARDS FB GWYNN CENTER

MD 488/La Plata Road

MD 488/La Plata Rd is a 2-lane major collector, connecting MD 6/Charles St to the west and MD 5/Leonardtwn Rd to the east. It has an AADT of approximately 5,700 vehicles, as of a 2019 count conducted west of the intersection of MD 488 and MD 5. A 2019 turning movement count at the intersection of MD 488 and MD 6 show peak hours of 7:00-8:00 AM and 3:30-4:40 PM. The posted speed limit is 40 MPH.

¹ Criteria published in Mekuria, Maaza C., Peter G. Furth, and Hilary Nixon. "Low-stress bicycling and network connectivity." (2012).

There are no bicycling facilities on MD 488, on- or off-road. There is no shoulder on MD 488 between Radio Station Rd and MD 6, save a 500 ft section along the frontage of the Sagepoint Senior Services campus. The posted speed limit, AADT, and lack of shoulder make the segment have an LTS score of 4.

MD 6/Charles Street

MD 6/Charles Rd is a 2-lane minor arterial, serving as the main east-west arterial through La Plata. It has an AADT of approximately 22,7780 vehicles, as of a 2019 count conducted between Washington Ave and La Grange Ave. A 2019 turning movement count at the intersection of MD 6 and Garrett Ave shows peak hours of 7:00-8:00 AM and 4:30-5:30 PM. The posted speed limit is 40 MPH east of Severn Dr, and 30 MPH west of Severn Dr.

On MD 6/Charles Rd from MD 488/La Plata Rd to Willow Ln, there are no bicycling facilities. There are shoulders on both sides of the road, ranging from 6 to 12 feet wide. On the bridge over Clark Run, the shoulder on the WB side narrows to 4.5 feet, and 3 feet on the EB side. West of the bridge, a two way left turn lane begins, and the shoulder on the EB side disappears, and the WB shoulder becomes a parking lane. The lane geometry remains the same until the intersection with Oak Ave. West of Oak Ave, there is a shoulder on WB MD 6, and a 7.5 ft wide parking lane starts on EB MD 6. Parking on the westbound side of the road is restricted from 7:30AM – 5:30 PM Monday – Friday, from Willow Lane to Oak Ave. On eastbound Charles St, between Washington Ave the railroad crossing, there is a peak period restricted parking lane. East of the railroad crossing, between Graves Ave and Oak Ave, there is peak period restricted parking.

MD 6/Charles Rd between MD 488 and Willow Ln has an LTS score of 3, given the 40 MPH speed limit, AADT of greater than 3,000, and shoulders of greater than 6 feet. However, at the bridge over Clark Run, the road narrows, the shoulder on the EB side the road disappears, and the westbound shoulder narrows. This decreases the shoulder width on which cyclists can ride to 4.5 feet, increasing the LTS score to 4.

From Willow Ln to Oak Ave, there is a shoulder on the westbound side, and the speed reduces to 30 MPH at Severn Dr, so the LTS score decreases to 2 on the westbound side and 3 on the eastbound side. West of Oak Ln, there are no shoulders, and cyclists are forced to ride in mixed traffic. With the 30 MPH posted speed limit, the LTS score is 3.

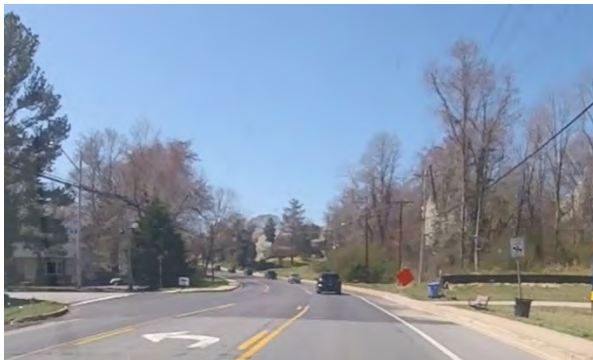


FIGURE 3. CHARLES ST AT WILLOW LN LOOKING WEST



FIGURE 4. CHARLES ST FOOTBRIDGE OVER CLARK RUN

Willow Lane

Willow Lane is a 2-lane local road, providing access to Milton M. Somers Middle School and Walter J Mitchell Elementary. Willow Lane is estimated to have an AADT of approximately 1,500 vehicles, based on a 13-hour count conducted in 2014. The peak hours on Willow Lane are 7:00-8:00 AM and 4:30-5:30 PM, based on a turning movement count conducted in 2014 at the intersection of Charles Rd and Willow Lane. The posted speed limit is 25 MPH.

There are no bicycling facilities on Willow Lane, on- or off-road. There is no shoulder on Willow Lane, but there is a 9-foot-wide parking lane on the west side of the road between Charles St and Willow Woods Dr. South of Willow Woods Dr, the road narrows and parking lane disappears. Based on the posted speed and lack of shoulder, the LTS is between 2 and 3, however given the uncertainty of AADT on Willow Ln, it is more conservative to give Willow Ln an LTS score of 3.

Summary

TABLE 1. BIKE LTS SUMMARY TABLE

Roadway	Segment	Lanes	Speed	ADT	Shoulder	Parking	LTS
Radio Station Rd	St. Charles Pkwy to MD 488/La Plata Rd	2	40 MPH	>3,000	>6 Ft	None	3
MD 488/La Plata Rd	Radio Station Road to MD 6/Charles St	2	40 MPH	>3,000	Intermittent	None	4
MD 6/Charles St	MD 488/La Plata Rd to Clark Run Bridge	2	40 MPH	>3,000	>6 Ft	None	3
MD 6/Charles St	Clark Run Bridge to Willow Ln	2	40 MPH	>3,000	4.5 Ft	None	4
MD 6/Charles St	Willow Ln to Oak Ave (WB)	2	30 MPH	>3,000	>6 Ft	Parallel	2
MD 6/Charles St	Willow Ln to Oak Ave (EB)	2	30 MPH	>3,000	None	None	3
Willow Lane	MD 6/Charles St to CCBBoE Property	2	25 MPH	1,501-3,000	None	Parallel	3

General Design Requirements and Assumptions

In general, the feasibility study assumed that the pathway would follow the design guidance and standards in three documents: the Charles County Detail Manual, the MDOT SHA Bicycle Policy and Design Guidelines, and the AASHTO Guide for the Development of Bicycle Facilities. Design assumptions and deviations specific to this project are enumerated below.

Pathway Geometry

Curves and longitudinal slope will generally follow the adjacent roadway, with deviations as needed to match topography and reduce impacts to trees, utilities, monument signs, and other features. Horizontal curves not associated with the roadway alignment generally have a minimum radius of 100 feet, corresponding to a design speed of just over 23 miles per hour. In three constrained locations radii as low as 50 feet are included and in one additional location (just east of the Heritage Green stormwater management facility at the Willow Lane/MD 6 intersection), a radius of 25 feet is necessary to avoid impacts to the stormwater management and minimize impacts to trees.

Typical Section

The preferred typical section for the Radio Station Road Sidepath project is a minimum 10' wide pathway with a maximum 1% cross slope. Preferred pathway shoulders are a 5' landscaped buffer between the pathway and adjacent roadway and 2' outboard landscaped shoulder. If topography or right-of-way limit available width, the following measures may be used to reduce impacts, in descending order of preference:

- Narrower buffer. In one location, for a distance of approximately 100 feet, the proposed buffer is 1 to 3 feet wide. That location is adjacent to a 10-foot-wide paved shoulder, which will provide additional space between pathway users and motorists.
- Reduce pathway width to no less than 8'

This study assumes that the paving material will be asphalt and the pavement section will be according to the Charles County standard detail for an asphalt pathway (R-2.47), as shown below.

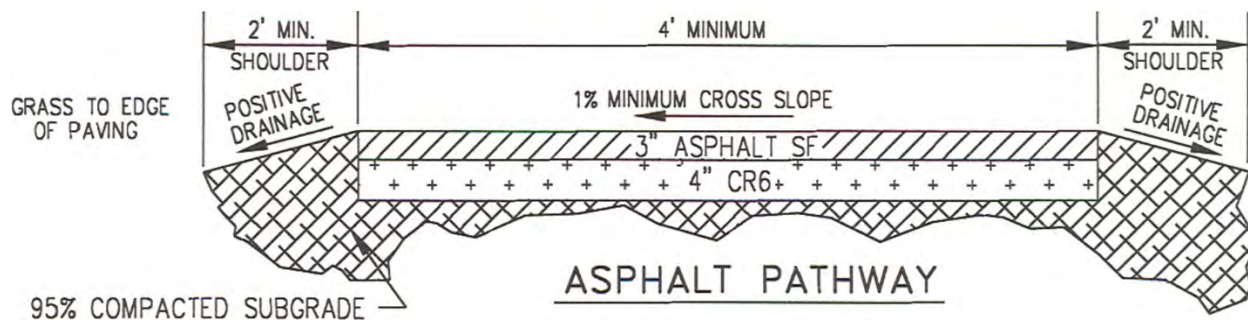


FIGURE 5. EXCERPT FROM CHARLES COUNTY STANDARD DETAIL R-2.47 (PEDESTRIAN TRAVEL WAYS)

Signing and Pavement Marking

The concept plans do not propose any pavement markings on most of the pathway. However, it does propose signing and marking at roadway crossings to warn pathway users and motorists of each other's presence and clarify who must yield to whom.

Geotechnical

No geotechnical analysis has been performed at this phase, but this feasibility study assumes that no geotechnical issues exist that would require adjustments to the pathway alignment.

Stormwater Management

The project must comply with Charles County's Stormwater Management Ordinance. A preliminary stormwater concept is described in the Permitting and Coordination section of this study.

Traffic Operations and Signalization

This feasibility study assumes an 11-foot minimum roadway lane width when considering changes to curb-to-curb width of the study area roadways. The concept design to move the roadway curb inward provides space for the pathway and buffer with few or no impacts to trees, utilities, or structures.

The proposed pathway alignment would not cross any currently signalized intersections east of Garrett Avenue. However, two intersections (MD 6/Charles Street at Willow Lane and Radio Station Road at the school driveways) will likely be signalized as a result of the Heritage Green development. Costs and impacts of providing pedestrian indications for the sidepath are not included in this feasibility study, as they would be provided by the developer of Heritage Green.

Finally, this feasibility study incorporates pedestrian crossing treatments, such as pedestrian refuge islands and high-visibility crosswalk markings at midblock locations, according to MDOT SHA's *Pedestrian Safety Treatments Best Practices Guidelines*.

Alternatives Considered

Corridor Alternatives

This section provides a narrative overview of conceptual alternatives considered in the Radio Station Road Sidepath Feasibility Study. Figure 6, on page 15, displays the locations of the corridors discussed below.

- 1. Bikeway along Radio Station Road between Laurel Springs Regional Park and St. Charles Parkway.** *This option would comprise a continuous sidepath that closely parallels Radio Station Road. The 100- to 150-foot right-of-way would amply accommodate the pathway, needed drainage relocations, and future widening of Radio Station Road. This option would also provide direct connectivity to any future pathway constructed north along the future Jaybee Lane.*
- 2. Pathway through or around Laurel Springs Regional Park between Radio Station Road and St. Charles Parkway.** *This option would traverse Laurel Springs Regional Park directly and meet St. Charles Parkway between Radio Station Road and the SMECO substation, providing more direct access to the park and the future Parklands neighborhood of St. Charles. This corridor would allow re-use of some park pathways, but would overall result in greater new impervious surface, impacts to trees and right-of-way, and safety/security concerns at the SMECO substation. This corridor would also align with the planned Indian Head Rail Trail extension's preferred alignment.*
- 3. Proposed Heritage Green pathway network from Rosewick Road to MD 6/Charles Street.** *The Heritage Green development has proposed a comprehensive pathway network that would include links north to Rosewick Road at a future intersection with to-be-constructed La Plata Parkway. While this pathway network would have no new impacts along Radio Station Road and connect Rosewick Road to MD 6/Charles Street, it would not serve Laurel Springs Regional Park or the Clark Senior Center and the development timeline for the full pathway network is uncertain.*
- 4. Proposed Heritage Green Pathway Network via the school driveway.** *This option would designate the La Plata High School/Mary H. Matula Elementary School pathway and driveway as the main project corridor, relying on the Heritage Green pathway network to connect south towards MD 6/Charles Street from the school and new pathway along Radio Station Road towards Laurel Springs Regional Park to for access northwards. This option would dramatically limit impacts along Radio Station Road while providing access to Laurel Springs Regional Park but would still not serve the Clark Senior Center and would still rely on Heritage Green's uncertain development timeline.*
- 5. Direct connection between Agricopia and schools.** *This option would formalize an existing desire path between Agricopia and La Plata High School. While this would provide direct access between those two destinations, it would be an indirect corridor for longer-distance trips. In addition, safety and security concerns with an alignment on school property, as well as potential impacts to trees, challenge this option.*
- 6. Bikeway along Radio Station Road and MD 488/La Plata Road between Laurel Springs Regional Park and MD 6/Charles Street.** *This option would comprise a continuous sidepath that closely parallels Radio Station Road and MD 488/La Plata Road, incorporating the existing Agricopia frontage pathway into its full length. It would directly serve Agricopia and Sagepoint Senior Living but would require either moving the edge of roadway or impacting slopes, utilities, and vegetation on the west side of the roadway.*
- 7. Bikeway along MD 6/Charles Street between MD 488/La Plata Road and Willow Lane.** *This option would comprise a continuous sidepath along the north side of MD 6/Charles Street west to Charles Overlook Lane, and then either a continuation of the sidepath as far as Willow Lane or a transition to on-road bike lanes for the segment west of Charles Overlook Lane. The fully off-road option would provide greater separation and protection for bicyclists but would require rebuilding an existing sidewalk and either impacting drainage or slopes, vegetation, and utilities. Transitioning to an*

on-road bicycle facility at Charles Overlook Lane would reduce construction impacts but place bicyclists and motorists in closer proximity.

Both options would require measures to address the crossing of Clark Run: the sidepath option would require widening the existing pedestrian bridge or—at a minimum—adding warning signs, while the on-road option would likely require extending the existing culvert under the roadway.

- 8. Pathway south along MD 6/Charles St, then west via Town easement to school campus.** This option would add a pedestrian/bike crossing of MD 6/Charles St at MD 488 as well as a pathway that closely parallels MD 6/Charles Street for approximately 1,500 feet south of the intersection then proceeds west, through a 20-foot-wide Town easement, across a new bridge over Clark Run, into the school campus at the south end of Willow Lane. This option would avoid challenging impacts along MD 6/Charles Street west of MD 488/La Plata Road, but the appurtenant impacts to wetlands and floodplains near the proposed new crossing of Clark Run would likely be on par or greater than impacts of maintaining an alignment along MD 6/Charles St. In addition, the town-owned easement is very close (less than 20') from several homes and adding a pathway to the easement would be disruptive to those homeowners.
- 9. On-road bike route along Glen Albin Rd and St. Marys Ave between Oak Avenue and MD 6/Charles Street.** This option would route bicyclists along Glen Albin Road between the school campus and St. Marys Avenue, and then north along St. Marys Avenue between Glen Albin Road and MD 6/Charles Street. It would provide access all the way to the Charles County Circuit Court, as well as take advantage of the only grade-separated crossing of the Popes Creek Branch tracks in La Plata. However, it would add approximately a half-mile to bicycle route distance as compared to an on-road bike route on Oak Avenue.
- 10. Bikeway along Willow Lane south of MD 6/Charles Street to meet existing pathway on school property.** This option would comprise a continuous pathway or on-road bike facility along Willow Lane between MD 6/Charles Street and the existing asphalt pathway on the school property. This would provide direct access to the schools from points east along MD 6/Charles Street or north in Heritage Green but would not provide direct access to the Courthouse or other destinations in Downtown La Plata. It would have no impacts to traffic or parking along MD 6/Charles Street itself but may impact parking and drainage along Willow Lane.
- 11. On-road bike route along Oak Ave between Milton M. Somers Middle School and MD 6/Charles Street.** This option would route bicyclists along Oak Ave from Milton M. Somers Middle School north to MD 6/Charles Street, providing a direct routing that minimizes deviation distance for people bicycling to Downtown from points east, but would not provide access all the way to the Courthouse.
- 12. Bikeway along MD 6/Charles Street between Willow Lane and Washington Ave.** This option would provide either a continuous sidepath or on-road bicycle facility along MD 6/Charles Street through the downtown area. It would provide the most direct routing between the main project corridor and the Charles County Circuit Courthouse but would potentially impact traffic and parking along MD 6/Charles Street. In addition, this corridor includes 3% to 7% grades for a total elevation change of 45 feet between Willow Lane and Charles Regional Medical Center.

Table 2, below, assigns a qualitative rating for each corridor across four impact categories, as well as a qualitative rating of the directness with which each corridor serves the destinations identified in the study's purpose and need statement.

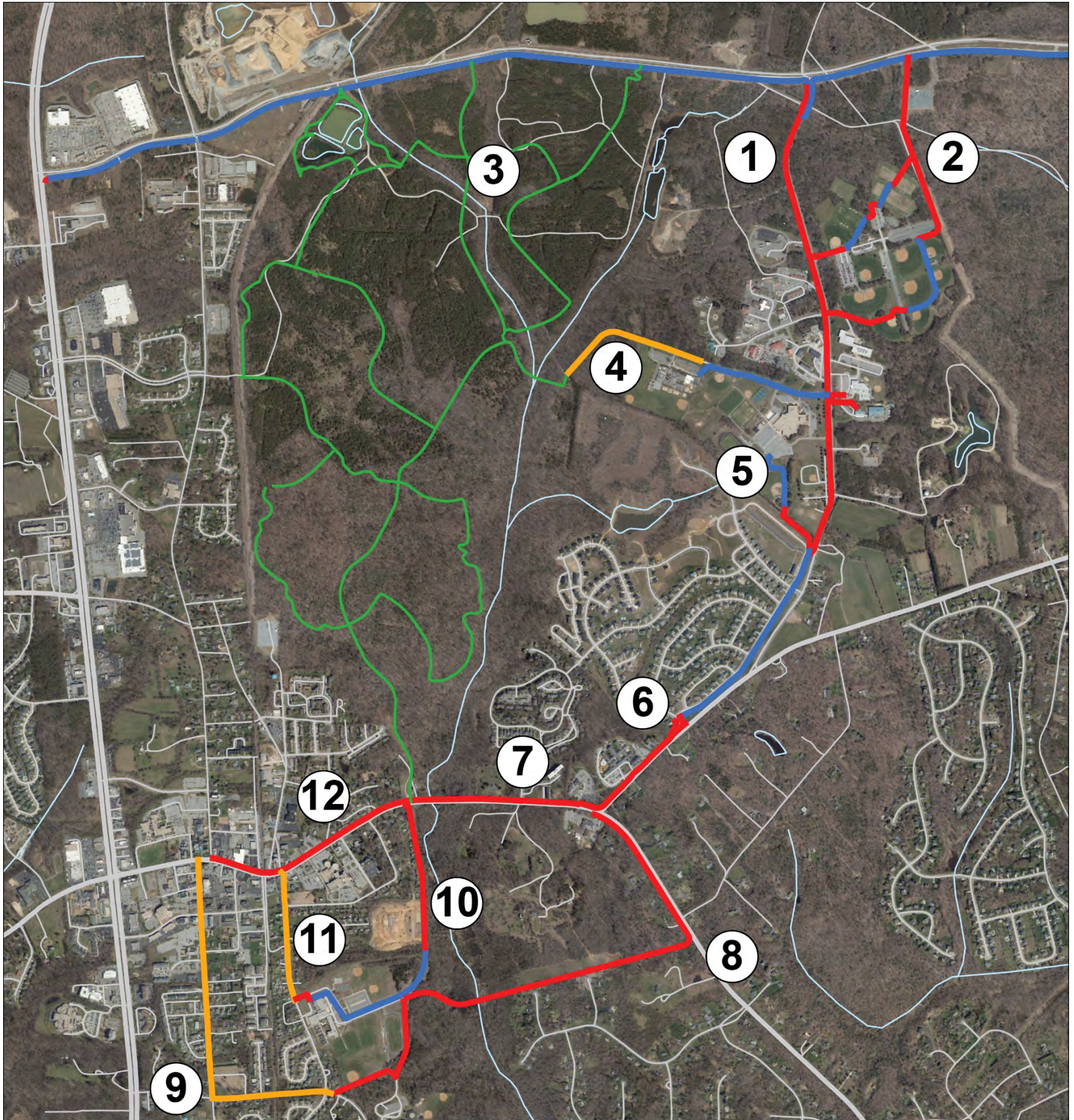
TABLE 2. CORRIDOR-LEVEL IMPACTS MATRIX

Corridor	Directness	Right-of-Way	Roadside ²	Traffic	Stream Crossings
1	High	Low	Moderate	Low	0
2	High	High	Low	Low	0
3	Low	N/A ³			
4	Moderate	N/A ³			
5	Moderate	Moderate	Moderate	Low	0
6	High	Low	Moderate	Low	0
7	High	Moderate	High	Moderate	0/1
8	Low	High	High	Low	1
9	Low	Low	Low	Moderate	0
10	Moderate	Low	Moderate	Low	0
11	Moderate	Low	Low	Moderate	0
12	High	Moderate	High	High	0

After considering these options and impacts, the feasibility study team elected to pursue corridors 2, 6, 7, and 10 (highlighted in blue above). This combination of corridors provides a high level of directness to destinations in the study area, especially Laurel Springs Regional Park, the schools, and Board of Education headquarters along Radio Station Road, Agricopia, Clark Senior Center, and Milton J. Somers Middle School. It leverages but does not duplicate the recent MDOT SHA improvements along MD 6/Charles Street in Downtown La Plata, and avoids the complex traffic, right-of-way, and building impacts along MD 6/Charles Street through the downtown core. Pursuing the Willow Lane alignment also provides an opportunity for an advance phase, implemented as an on-street protected bike lane, to demonstrate connectivity and develop stakeholder buy-in during the design and construction phases of the remainder of the pathway.

² "Roadside" impacts include trees, utilities, drainage, etc.

³ These pathways are proposed by the developer of Heritage Green; therefore responsibility for addressing those impacts would lie with the developer



— Existing Pathway — Proposed On-Road Bike Route
— Proposed Pathway — Heritage Green Proposed Pathway

0 0.25 0.5 0.75 1 Miles



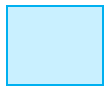
- | | |
|---|--|
| <p>1 Bikeway along Radio Station Road between Laurel Springs Regional Park and St. Charles Parkway</p> <p>2 Pathway through or around Laurel Springs Regional Park between Radio Station Road and St. Charles Parkway</p> <p>3 Proposed Heritage Green pathway network from Rosewick Road to MD 6/Charles Street.</p> <p>4 Proposed Heritage Green Pathway Network via the school driveway</p> <p>5 Direct connection between Agricopia and schools</p> <p>6 Bikeway along Radio Station Road and MD 488/La Plata Road between Laurel Springs Regional Park and MD 6/Charles Street</p> | <p>7 Bikeway along along MD 6/Charles Street between MD 488/La Plata Road and Willow Lane</p> <p>8 Pathway south along MD 6/Charles Street, then west via Town easement to school campus.</p> <p>9 On-road bike route along Glen Albin Rd and St. Marys Ave between Oak Avenue and MD 6/Charles Street</p> <p>10 Bikeway along Willow Lane south of MD 6/Charles Street to meet existing pathway on school property</p> <p>11 On-road bike route along Oak Ave between Milton M. Somers Middle School and MD 6/Charles Street</p> <p>12 Bikeway along MD 6/Charles St between Willow Lane and Washington Ave</p> |
|---|--|

FIGURE 6. CORRIDOR ALTERNATIVES CONSIDERED

Alignment Alternatives

Each selected corridor contains multiple segments for which exact alignment and configuration decisions must be made; for example, whether a bikeway comprises on-road bike lanes or an off-road sidepath, or whether space for a pathway segment would be made by moving a curb to narrow an existing roadway or by cutting into a slope or vegetated area. The *Alternatives and Concepts Analysis Matrix* below enumerates detailed options for each segment and impacts, pros and cons for each option, and indicates the selected option with light blue shading. The numbered segments in the matrix correspond to the selected segments (2,6, 7 and 10) from among the corridor alternatives discussed above. Corridors that did not advance from the Corridor Alternatives analysis are not included in the below matrix.

Matrix Legend:



Preferred Alternative



Option Remaining Under Consideration



Option Removed From Consideration

Radio Station Road Sidepath Feasibility Study and Preliminary Engineering *Alternatives and Concepts Analysis Matrix*



TABLE 3. ALIGNMENT-LEVEL IMPACTS MATRIX

Corridor	Segment	Concept Alternatives	Impact Categories								Pros/Cons of Concept Alternatives	
			Right-of-Way	Cut/Fill	Structure	Utilities	Drainage	Trees/Vegetation	Traffic	Parking		
Corridor 2	Segment 1 St. Charles Pkwy to Laurel Springs Trail	Option A Pathway on west side of park near Radio Station Road intersection		X					X			Pros: No right-of-way impacts; connects to St. Charles Parkway pathway at intersection Cons: Tree impacts
		Option B Pathway on east side of park near SMECO substation	X	X					X			Pros: Greater consistency with planned Indian Head Rail Trail alignment Cons: Tree impacts; greater impacts to existing natural surface trail
	Segment 3 Laurel Springs Trail to Laurel Springs Regional Park entrance	Option A On-road route through park roads and parking lots								X	X	Pros: Lower impacts to trees, vegetation, cut/fill Cons: Conflicts between pedestrians/bicyclists and motorists driving and parking
		Option B Pathway on west side of park from		X			X		X			Pros: Greater directness; greater separation from motorists Cons: Tree impacts; greater impacts to existing natural surface trail
Corridor 6	Segment 4 Laurel Springs Regional Park entrance to La Plata HS/Mary Matula ES/F.B.Gwynn Ctr entrance	Option A Pathway on west side; add ped crossing with refuge median							X		Pros: Ample space within existing ROW Cons: Would require pedestrian crossing for access to Laurel Springs Regional Park	
		Option B Pathway on east side; relocate drainage ditches				X	X				Pros: Ample space within existing ROW, direct access to park Cons: Conflicts with utilities and drainage ditches	
	Segment 5 La Plata HS/Mary Matula ES/F.B.Gwynn Ctr entrance to ~200' south of Box Elder Drive	Option A Pathway on west side just outside edge of pavement; add ped crossing with refuge median				X	X		X		Pros: Direct access to schools pathway Cons: Impacts to utilities and drainage from Box Elder to the south. Required taper for refuge median would eliminate several right-turn lanes.	
		Option B Pathway on west side; add ped crossing with refuge median and re-use old park roadway alignment ("between the trees" south of schools driveway)							X		Pros: Direct access to schools pathway; lower impacts than new alignment Cons: Location away from roadway may not conform to driver expectations; possible safety/security concerns with alignment closer to schools/athletic fields	
	Segment 6 ~200' south of Box Elder Drive to Rye Drive	Option A Pathway on west side; tie in about 50 feet south of the existing pathway end to stay on public ROW							X			Pros: Direct connection to existing pathway Cons: Tree impacts just north of Rye Drive

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Radio Station Road Sidepath

Feasibility Study and Preliminary Engineering

Alternatives and Concepts Analysis Matrix



Corridor	Segment	Concept Alternatives	Impact Categories								Pros/Cons of Concept Alternatives	
			Right-of-Way	Cut/Fill	Structure	Utilities	Drainage	Trees/Vegetation	Traffic	Parking		
Corridor 6 (cont'd)	Segment 7 Rye Drive to Agricopia Drive	Option A Maintain existing 6- to 7-foot pathway on west side										Pros: No impacts Cons: Width less than preferred design criteria to allow for passing
		Option B Widen existing pathway up to 10 feet				X		X				Pros: Width is up to preferred design criteria to allow for passing Cons: Possible tree/utility impacts or "weaving" alignment to avoid trees/utilities
	Segment 8 Agricopia Drive to ~250' south	Option A Pathway on west side; widen existing Agricopia sidewalk to pathway width and provide crosswalk/median refuge across Agricopia Drive at MD 488/La Plata Rd				X						Pros: Conforms to driver expectations see bikes/peds at intersection Cons: Additional LF of pathway construction needed perpendicular to MD 488 as compared to "diagonal" alignment; potential utility impacts south of Agricopia Drive
		Option B Pathway on west side; provide crosswalk/median refuge across Agricopia Drive directly at existing pathway ~150 west of MD 488/La Plata Rd and proceed diagonally south towards roadway edge								X		Pros: More direct alignment for pathway users; closer access from within Agricopia community; avoids utility impacts Cons: Drivers generally do not expect to see bikes/peds several hundred feet away from the intersection
	Segment 9 ~250' south of Agricopia Drive to MD 6/Charles St	Option A Pathway on west side; build out curb into existing shoulder	X						X		X	Pros: Maintain preferred pathway width; curb will need to be constructed regardless of final pathway alignment Cons: May not allow space for preferred buffer width without cutting; shoulder ends ~400' north of MD 6/Charles St so the RT lane would need to be removed to accommodate pathway
		Option B Pathway on west side; maintain edge of roadway and cut into slope or replace drainage ditch with closed section to accommodate pathway	X	X		X	X	X				Pros: Maintain preferred pathway width and shoulder as buffer from roadway Cons: Impacts to vegetation, drainage, and utilities
		Option C Pathway curves away from roadway to parallel Sagepoint Senior Living parking lot towards the Clark Senior Center	X	X								

Continued next page

Radio Station Road Sidepath Feasibility Study and Preliminary Engineering *Alternatives and Concepts Analysis Matrix*

Corridor	Segment	Concept Alternatives	Impact Categories								Pros/Cons of Concept Alternatives	
			Right-of-Way	Cut/Fill	Structure	Utilities	Drainage	Trees/Vegetation	Traffic	Parking		
Corridor 7	Segment 10 MD 488/La Plata Rd to Charles Overlook Lane	Option A Pathway on north side; build out curb into existing shoulder					X			X		Pros: Maintain preferred pathway width Cons: May not allow space for preferred buffer width; will severely reduce curb radius on NW corner of MD 6/MD 488 intersection
		Option B Pathway on north side; maintain curb line and cut into vegetated area to accommodate pathway		X		X		X				Pros: Maintain preferred pathway width and shoulder as buffer from roadway Cons: Impacts to vegetation and utilities
		Option C Pathway away from roadway, parallel to the Clark Senior Center parking lot		X				X				Pros: Provide full width pathway with strong separation from the roadway and no impacts to traffic operations Cons: Tree impacts
		Option D Shared-lane markings through the Clark Senior Center driveway								X		Pros: Low impacts and limited construction to provide connectivity separated from MD 488/MD 6 traffic Cons: Does not provide fully separated pathway; conflicts with traffic and parking in the Clark Senior Center driveway.
	Segment 11 Charles Overlook Lane to Hickory Lane	Option A Pathway on north side; move curb south to accommodate pathway width					X					Pros: Provide protected, off-road bike facility; no impacts to slope, vegetation, or utilities Cons: Cost of moving curb
		Option B Pathway on north side; maintain curb line and cut into slope to accommodate pathway		X		X		X				Pros: Provide fully-protected, off-road bike facility; shoulder as buffer from roadway Cons: Impacts to slope, vegetation, and utilities
		Option C/D Maintain existing sidewalk and shift existing roadway lanes to provide protected, on-road bicycle facility on the north side (Option C) or protected, one-way bike lanes on both sides (Option D)								X		Pros: No impacts to curbline, slope, vegetation, or utilities Cons: Potential traffic and road-maintenance impacts of on-road protected bike lane

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Radio Station Road Sidepath

Feasibility Study and Preliminary Engineering

Alternatives and Concepts Analysis Matrix



Corridor	Segment	Concept Alternatives	Impact Categories								Pros/Cons of Concept Alternatives	
			Right-of-Way	Cut/Fill	Structure	Utilities	Drainage	Trees/Vegetation	Traffic	Parking		
Corridor 7 (cont'd)	Segment 12 Hickory Lane to Mount Rest Cemetery west driveway	Option A Pathway on north side; move curb south to accommodate pathway width					X				Pros: Provide protected, off-road bike facility; no impacts to slope, vegetation, or utilities Cons: Cost of moving curb	
		Option B Pathway on north side; maintain curb line and cut into slope to accommodate pathway		X		X		X			Pros: Provide fully-protected, off-road bike facility; shoulder as buffer from roadway Cons: Impacts to slope, vegetation, and utilities	
		Option C/D Maintain existing sidewalk and shift existing roadway lanes to provide protected, on-road bicycle facility on the north side (Option C) or protected, one-way bike lanes on both sides (Option D)								X		Pros: No impacts to curblines, slope, vegetation, or utilities Cons: Potential traffic and road-maintenance impacts of on-road protected bike lane
	Segment 13 Mount Rest Cemetery west driveway to Willow Lane	Option A Pathway on north side; replace existing pedestrian bridge to maintain pathway width		X	X				X			Pros: Provide fully-protected, off-road bike facility with preferred width Cons: Cost and impacts of replacing bridge
		Option B Pathway on north side; retain existing pedestrian bridge and provide "Narrow Bridge" warning signs. If on-road bike facilities are adjacent, provide bike ramps before/after bridge to transition riders from on-road bike lane onto short sidewalk segment		X						X		Pros: Provide fully-protected, off-road bike facility Cons: Does not maintain preferred width and may contribute to pathway conflicts between oncoming bicyclists and pedestrians
		Option C/D Maintain existing sidewalk/pedestrian bridge and provide protected, on-road bicycle facility on north side (Option C) or protected, one-way bike lanes on both sides (Option D)		X	X						X	Pros: No impacts to existing bridge structure Cons: Would need to extend roadway culvert to provide width for protected bike lane

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Radio Station Road Sidepath

Feasibility Study and Preliminary Engineering

Alternatives and Concepts Analysis Matrix



Corridor	Segment	Concept Alternatives	Impact Categories								Pros/Cons of Concept Alternatives	
			Right-of-Way	Cut/Fill	Structure	Utilities	Drainage	Trees/Vegetation	Traffic	Parking		
Corridor 10	Segment 14 MD 6/Charles Street to Milton J. Somers Elementary School pathway	Option A Protected bike lane on east side; narrow travel and parking lanes		X				X	X	X	X	Pros: Limited construction required; east-side alignment would eliminate one crossing at MD 6/ Charles Street between Willow Lane and points east/north. Cons: To fit bike lane/buffer on existing roadway while maintaining two lanes and a parking lane, the bike lane and buffer would need to be well below standard widths, while the parking lane would be only 8 feet, exposing parked vehicles to the risk of sideswipes. Access from the north would also require adjustments to Heritage Green stormwater management.
		Option B Parking-protected bike lane on west side; narrow travel and parking lanes								X	X	Pros: Limited construction required; parked vehicles would provide some measure of protection for bicyclists; would allow for 1 additional foot of clearance for parked vehicles Cons: If the bike lane is not heavily used, vehicles tend to park in parking-protected bike lanes; could present ADA access issues between parked vehicles and homes; if there are no vehicles parked there is no physical separation between the bikeway and the roadway. East-side alignment would add one crossing between Willow Lane and points east/north.
		Option C Shared-use pathway on west side; narrow travel lanes and maintain parking lane						X	X	X		

Preferred Alternative

As illustrated in Table 3, the *Alternatives and Concepts Analysis Matrix*, the project team the following alignment:

St. Charles Parkway to Laurel Springs Regional Park

The northern terminus of the Radio Station Road sidepath will join the alignment of the future Indian Head Rail Trail Extension beginning at St. Charles Parkway. In concept, construction of the IHRT would include a signalized (form to be determined) at-grade crossing across St. Charles Parkway into Laurel Springs Regional Park. Once at Laurel Springs Park, it is envisioned that cyclists will have alternative routes to access the Radio Station Road sidepath or continue south to Tilghman Lake Park.

- *Coordination with the Charles County Department of Parks and Recreation and the IHRT project team will be required to determine the final alignment of the pathway along either the utility corridor east of the existing fence line (owned by St. Charles Community LLC) or west of the fence line in a pathway that nominally exists today.*
- *Within the park itself, there is general agreement that the eastern edge of the park should be a paved trail rather than the gravel surface that exists today.*
- *No decisions have been made regarding which party would pay for construction of the connecting pathway through the park and to St. Charles Parkway, however, for the purpose of the Bikeways project, this connection is essential.*

The sidepath would exit Laurel Spring Regional Park at near the northeast corner of the Audie Lane/Radio Station Road intersection.



FIGURE 7. AUDIE LANE INTERSECTION



FIGURE 8. EXISTING LAUREL SPRINGS TRAIL
(CREDIT: TOOLE DESIGN)

Radio Station Road from Audie Lane to La Plata High School

South of Audie Lane, the sidepath will continue along the east side of Radio Station Road to the driveway intersection of the Mary Matula Elementary School/La Plata High School/F.B. Gwynn Center where a mid-block crossing would be located. From the driveway intersection south to MD 488, the sidepath would continue along the westside of MD 488. The concept plan has been developed to match the ultimate cross section of Radio Station Road which is shown in the County's comprehensive plan as...

- *In between the driveways for the Charles County Board of Education and the FB Gwynn Education Center there is a stormwater conveyance which is believed to be non-compliant with county and state standards. Further investigation is warranted to determine the status of the facility and potential retrofit solutions that would be of benefit to the sidepath and the school system properties.*
- *Placement of the midblock crossing whether immediately north or south of the driveway intersection has not been determined. Further analysis of the roadway cross section, bypass and turn lanes and the median refuge island is required, including coordination with the Charles County Public Schools.*
- *Charles County standards require installation of Rectangular Rapid Flashing Beacons at all mid-block crossings; however, consideration should also be given to installation of a traffic signal at the driveway intersection. High speeds and growing traffic volumes along Radio Station Road may meet traffic signal warrants when considered with the sidepath as well as well as difficulty exiting the schools during pick-up and drop-off times.^{4,5}*
- *Charles County Public Schools has noted that the monument signs for the elementary and high school may need to be relocated; this should be avoided. No commitment has been made to relocate or replace the signs as part of this project.*
- *Charles County Public Schools currently holds a master lease to the properties west of Radio Station Road from the United States Navy. CCPS does not believe there will be any problem with locating the sidepath and will handle coordination with the Navy if any is required.*

Radio Station Road from La Plata High School to MD 488

From the southern edge of the La Plata High School property to MD 488, the sidepath remains on the west side of Radio Station Road. As above, the concept plan has been developed to match the ultimate cross section of Radio Station Road.

- *Per coordination with the Charles County Public Schools, the sidepath is intended to remain along the frontage of Radio Station Road rather than the "desire line" across the ballfields to the high school.*
- *The existing Agricopia sidepath would be widened from six to eight feet using the west edge of the pathway side to avoid impacts to the trees on the east side of the pathway which are more mature.*

⁴ Although not as part of this project, consideration should be given to consolidating the four driveways on the east side of Radio Station Road if the ultimate cross-section of Radio Station Road.

⁵ It is noted that the developer of Heritage Green intends to pursue reconstruction of the driveway to Matula Elementary School as an eastern entry to the development. No such plans have been agreed to by the Charles County Public Schools as of this writing.

- *The southern end of the pathway widening segment will tie into a new crossing of Agricopia Drive. Two alternatives have been conceptualized for crossing Agricopia Drive – a standard crosswalk at Radio Station Road and a mid-block crossing just east of Fescue Drive. There are safety and comfort reasons to select either alternative. This decision should be made at the next phase of design.*

South of Agricopia Drive, the pathway will closely parallel the west side of MD 488/La Plata Road as far as the Sagepoint Senior Living driveway, then parallel the east side of the Sagepoint driveway towards the south, and then continue through the Clark Senior Center driveway and parking area towards MD 6/Charles St.

- *There is uncertainty as to right-of-way ownership in the vicinity of intersection of MD 488 and MD 6. Some combination of state and county property along with small parcels which may have reverted from SHA to prior owners is apparent. The Town of La Plata does hold an easement for a water line over a portion of the property. This issue will need to be further explored during the 60% design phase.*
- *A preliminary determination was made to keep the sidepath separate from the driveway/access roadway (Charles Overlook Lane) and closer to the tree line. Value engineering should be considered for this area if tree impacts, slopes and utility coordination become a concern.*

MD 6 (Charles Street) from Clark Senior Center to Clarks Run

From the Charles Overlook Lane, the pathway will continue as sidepath on the north side of MD 6. The existing travel lanes on MD 6 will shift southwards to accommodate widening of the existing sidewalk into an 8- to 10-foot pathway and a 4- to 5-foot landscaped buffer.

The Town's goal of slowing traffic along MD 6 as it approaches downtown is accomplished by reducing the speed limit from 40 mph to 30 mph and placing two horizontal deflection devices along the roadway.

Clarks Run Stream Crossing

The existing steel pedestrian bridge over Clarks Run is 4' wide x 26' long and was built adjacent to an existing box culvert that is approximately 54' wide, with a 7' rise and 14' span. Per discussions with Town and MDOT SHA staff, the bridge was not formally reviewed and approved by MDOT SHA at the time of its installation in the early 1990s. Per field investigation and measurements conducted by Mead & Hunt staff, the existing pedestrian bridge has an independent foundation well beyond the limits of the exiting culvert and the south edge of the bridge is offset 2' (+/-). The bottom of side path bridge is placed over 6" (+/-) the top of existing tapered wingwall.

It is intended that a new pedestrian bridge be constructed at 10' wide to match or exceed the width of the sidepath along MD 6. Every effort shall be made to ensure that the new pedestrian bridge does not touch the existing culvert nor interfere with its functioning.

Two options were considered for replacing the existing bridge:

- A galvanized steel beam span with timber deck and timber railings as per attached transverse section. The span for this option will be 32 ft. The span is located based on assumed foundation with of existing side path bridge. The profile may need to be raised to clear the top of wingwall. Foundations would be located outside the limits of existing foundations.
- A prefabricated truss bridge with a 40' span. This option would require new foundations and additional grading to adjust the approaches to the bridge. Prefabricated truss spans for pedestrian-type bridges are generally constructed in 32' sections. While a prefabricated bridge is feasible, this option is likely to be considerably more expensive without any additional user benefit.

Subject to review by MDOT SHA Office of Structures, the galvanized steel beam and wood railing is the recommended alternative. To minimize long term maintenance cost and to have reduced structure depth galvanized steel beams were chosen as the superstructure members. To prevent interference with culvert, the proposed trail would be widened on the northern side. The span length of 40' was determined based on locating the proposed foundation outside the limits of existing side path's assumed foundation width. Abutments are sized based on assumed on foundation sizes of similar size bridges. The concept design of steel beams was based on AASHTO guide specifications for Pedestrian Bridges and AASHTO LRFD Specification, 9th edition.

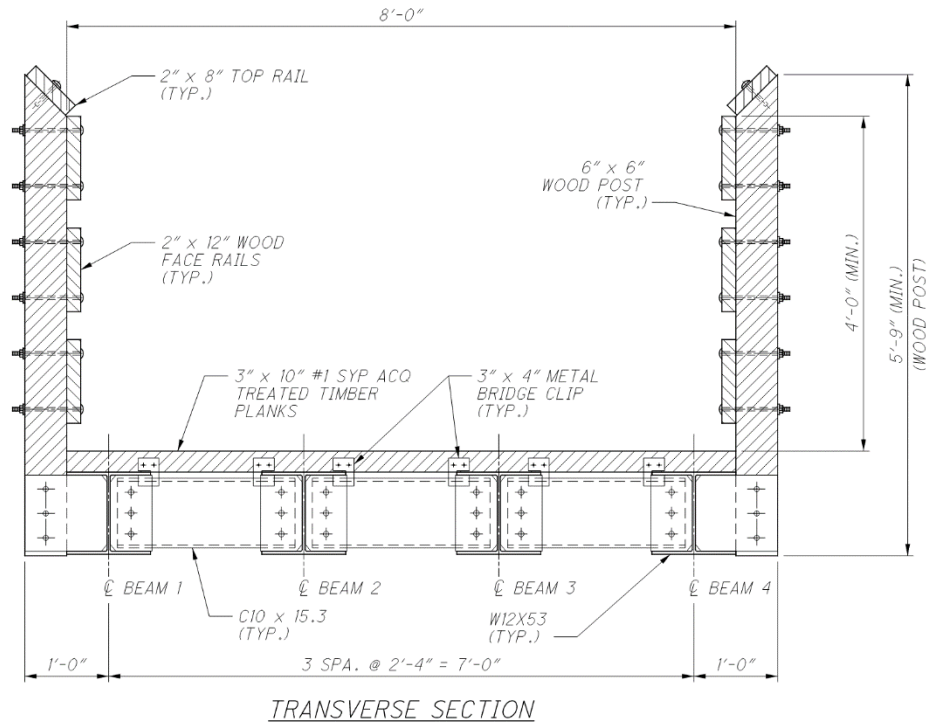


FIGURE 9. TRANSVERSE SECTION CONCEPT FOR PATHWAY BRIDGE

Field survey will be required to determine the elevation of top of culvert and wingwall to arrive at proposed grade of bridge to clear the culvert and wingwall. Geotechnical borings and recommendations will be required for final design of the foundations.

Span length 3"x10" treated southern pine timber decking and timber railing was selected for the trail setting. To obtain more rigidity and longer life, 5 1/4" glulam or IPE deck can be considered for final design with one less beam line.

MD 6 (Charles Street) from Clarks Run to Willow Lane/La Plata Parkway

The approximately 300' section of pathway between Clarks Run and Willow Lane/La Plata Parkway is to be closely coordinated with the developer of the Heritage Green subdivision. The pathway would cross MD 6 on the east side of Willow Lane/La Plata Parkway at a marked mid-block crossing. Preliminary coordination has occurred; however, several issues must be resolved before construction advances too far on the first phase of the subdivision.

- Pursuant to its access permit from MDOT SHA, Heritage Green is constructing an acceleration/deceleration lane on either side of La Plata Parkway (see Appendix F.) At present, the developer's design includes only a 5' sidewalk with no landscaped buffer between the roadway which is not consistent with the Town's design standards. To accommodate the pathway and meet the design standards, the developer would need to adjust the grading plan to push the hill in approximately 10 – 12'.
- There is general agreement from the Town and the developer that a traffic signal is desirable on MD 6 at Willow Lane/La Plata Parkway; however, based on traffic volumes alone even with the new subdivision, it does not appear that SHA warrants would be met. The SHA access permit requires that the need for a traffic signal be revisited at each phase of development or at such other time that the developer believes the signal to be warranted. There is no record to indicate that a full warrant study was conducted to also consider travel speeds, sight distance, anticipated pedestrian crossings between Willow Lane and the subdivision which would be within the walkshed of Milton Sommers Middle School. It is recommended that a full warrant study be prepared to assess full signalization upon the opening of the first phase of the subdivision.
- At a minimum, RRFB's will need to be placed approaching Willow Lane/La Plata Parkway to account for the trail crossing.

Willow Lane

Once across MD 6, the pathway would pass just east of the planned stormwater management facility to be constructed by the developer of Heritage Green and then run approximately 200' south adjacent to Willow Lane before entering the roadway as a protected bicycle lane. At the entrance to Milton M. Somers Middle School, the pathway would cross Willow Lane to join the existing asphalt pathway on the Charles County Board of Education property.

- The on-street bicycle facility was selected in part as a traffic calming measure after review and consideration of three alternatives. Due to the width of school buses which use Willow Lane, accommodations are to be made to accommodate safe passing as follows:
 - The separator between travel lanes and the bicycle path should be a mountable curb; flexposts should only be used as delineators at the northern and southern end of Willow Lane and opposite Willow Woods Way.
 - Intermittent breaks of approximately 100' should be provided along the parking lane
- Widening of the pathway to ten feet on school property will match other sections of the pathway; coordination should occur with Charles County Public Schools. It was determined to locate the pathway on the west side of the school access road to avoid the need for reconstruction if a new school is built on the property.



FIGURE 10. POTENTIAL REPLACEMENT SCHOOL SITE ON WILLOW LANE

Permitting & Coordination

Stormwater Management

The project is located the Zekiah Swamp watershed (02-14-01- 08). There are two POIs for the entire project, POI 1 is located east of Willow Lane at Clark Run. POI 2 is located east of Radio Station Rd. Residential development is the predominant land use surrounding the project. The project corridor includes Hydrologic Soil Groups (HSG) 'A', 'C', and 'D'.

Based on the concept plans, the total estimated limit of disturbance (LOD) for the project is 2.59 ac. It is assumed that there is no disturbance to the base of existing pathway along Radio Station Road. The LOD was also used to determine POI classification as shown below:

TABLE 4. POI CLASSIFICATION

POI	SWM Study Area (ac)	Existing Imp Area (ac)	% Existing Imp.	Classification Based on LOD
1	2.00	0.13	6.5%	New Development
2	0.59	0.00	0%	New Development

The total ESDv required for POI 1 is approximately 11,432 cf and approximately 3,642 cf for POI 2. In order to meet the stormwater requirements. Eleven ESDs has been proposed for this project. There are Eight facilities being proposed for POI 1, including four bioretention and four bioswales. There are three facilities being proposed for POI 2 which are all bioswales.

TABLE 5. PRELIMINARY STORMWATER CALCULATION SUMMARY

Study Point	New Impervious (ac)	Impervious Removed (ac)	Impervious Area Requiring Treatment (ac)	ESDv Required (cu ft)	ESDv Provided (cu ft)
POI-1	1.50	0.13	1.50	11,432	13,439
POI-2	0.48	0.00	0.48	3,642	4,258
TOTAL	1.98	0.13	1.98	15,074	17,697

Locations of the potential facilities are shown in the concept plans. Calculations and preliminary recommendations have not yet been reviewed by appropriate Charles County agencies.

Erosion and Sediment Control

Plans for this project must be submitted to the Charles County Soil Conservation District for review and approval.

Wetlands and Waters of the United States

Assuming that the concept design for the pedestrian bridge over Clark's Run is acceptable to MDOT SHA, no impacts to wetlands or waters of the United States are expected. Review by the Maryland Department of Environment or Army Corps of Engineers is not expected.

Forest Conservation

With the potential exception of the alignment near the Clarks Run Senior Center and a connection into Laurel Springs Regional Park northeast of Audie Lane, there are no anticipated tree impacts as part of the project. Even if both impacts were to occur, the extent of tree cutting would fall well below the 20,000 square foot threshold of the Forest Conservation Act. Review of these assumptions by the Maryland Department of Natural Resources may be required.

Right of Way

Nearly all the project is within the public right-of-way or on public property; however, the following should be reviewed:

- *There is uncertainty as to right-of-way ownership in the vicinity of intersection of MD 488 and MD 6. Some combination of state and county property along with small parcels which may have reverted from SHA to prior owners is apparent. The Town of La Plata does hold an easement for a water line over a portion of the property.*
- *It is unclear whether the pathway along Radio Station Road along the Agricopia subdivision was transferred to the County as intended for future widening of the roadway. At a minimum, coordination with the Agricopia Homeowners Association will be required.*

Utilities

Water and sewer service in the project corridor is owned and managed by the Town of La Plata. There are no specific impacts anticipated to water or sewer assets at this time.

Electric service is provided by SMECO. At this stage of design, no impacts to above ground utilities have been identified as the side path along MD 6 is built towards the roadway, while utility poles sit well behind the existing sidewalk. Final design of the pedestrian bridge over Clarks Run should be cognizant of a utility pole just northwest of the structure, but it is believed that impact to this pole can be avoided. Any impacts identified during final design should be coordinated with SMECO.

There is no buried conduit in the study corridor.

Cost Estimate

The total estimated cost for the project is \$1.57 million inclusive of project management, construction inspection and permitting/mitigation costs within the 30% contingency. Design costs not expected to be borne within the Bikeways grant are anticipated at approximately \$400,000. A complete cost estimate is located in Appendix B.

The cost of the project is further expressed in terms of segments. While it is not intended that (except for Willow Lane) the project be segmented, it is useful to understand the cost of each segments as cost-sharing and partnerships are considered.

TABLE 6. COST ESTIMATE

SEGMENT	COST
WILLOW LN	\$ 71,900
MD 6	\$ 644,020
MD 488 & RSR	\$ 756,200
LAUREL SPRINGS PARK	\$ 94,445
TOTAL	\$1,566,565

The potential exists for cost sharing and transfer of responsibility for constructing the sidewalk in partnership with third parties. Opportunities are as follows.

Willow Lane

The cost estimate includes the net cost of the pathway on the northside of MD 6 (Charles Street) and just east of La Plata Parkway to the pedestrian bridge which is expected to be borne by the developer of Heritage Green. Additionally, the developer plans to build a stormwater management facility on the northeast corner of MD 6 at Willow Lane; the pathway is to be included in that project. As such, the Town's costs for Willow Lane are expected to be reduced by \$50,000 - \$60,000.

MD 6 (Charles Street)

It is anticipated that the entire cost of the project along MD 6 would be borne by the Town of La Plata.

MD 488/Radio Station Road

It is anticipated that the entire cost of the project along MD 488/Radio Station Road would be borne by the Town of La Plata; however, the Town should consider requesting that the developer of Agricopia take on the responsibility of widening the side path along its frontage. Doing so would save the project between \$75,000 - \$90,000.

Laurel Springs Regional Park

As the work within Laurel Springs Regional Park is entirely within County property and beyond the initial scope of the Town's project, the Town should request that the County fund that portion of work that lies within the park – approximately \$80,000 - \$100,000.

Charles County Public Schools

Construction of the sidepath could make more students eligible to walk to school and thereby potentially avoid some transportation costs for the Charles County Public Schools. The school system should be asked to make a onetime contribution to the project or at the very least charge any review or right of entry fees nor pay for the cost to relocate the school monument signs, if needed.

Finally, each of the above contributions can be used as part of the County's matching contribution towards any state or federal grants received for the bikeway project. If fully successful in creating these partnerships, the Town could save \$200,000 - \$250,000 of the total construction cost – or more than half of the matching cost of a state or federal grant. The Town should carefully document any such contribution and be sure that the cash or in-kind contributions are timed to be eligible as matching funds.

Appendix A. Complete Preliminary Engineering Plans

Appendix B. Complete Cost Estimate

Appendix C. Stormwater Management Calculations

Appendix D. Existing Pedestrian Bridge Documentation

Appendix E. Existing Roadway Culvert Documentation

Appendix F. Heritage Green Access Plan Excerpts

Appendix G. Radio Station Road Improvements Plan Excerpts

Appendix H. Stakeholder Review Record