City of Bowie Trails Master Plan Update

**Legend**
- Existing Trails (City of Bowie, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidepath
- Bike Lane
- Private Trails

**Destination Trail Alignments - Existing and Planned**
- Capital Trails Coalition Trail (2018)
- Heritage Trail (City of Bowie, 2018)
- East Coast Greenway (2018)

**Data Sources:**
The City of Bowie Planning Department, Prince George's County Planning Department, Maryland IMAP

**Problems and Recommendations**
- **US 301**
  - Crosswalk blocking by cars.
  - Better connectivity between Bowie Marketplace and Free State Gap.
- **MD 3**
  - Trail crossing safety issues along 197 between 450 and 50.
  - Poor bike conditions along Highbridge Rd.
  - Poorly maintained bridge wood deteriorating, need trail amenities.
- **MD 214**
  - Bridge too narrow for cars & bikes.
  - Poor WB&A connection to neighborhood.
  - Difficult crossing due to cars. Needs better pedestrian access to stores.
  - Difficult to cross with a bike because of raised medians.
- **MD 564**
  - Challenging to cross on foot or bike.
  - Needed improvements/barriers to access.
  - Needed trail connection.
  - Improve crossing - major trail connection to South Bowie.
- **MD 197**
  - Bridge across Patuxent.
  - Bridge wood deteriorating, need trail amenities.
  - Difficult crossing due to cars. Needs better pedestrian access to stores.
- **MD 450**
  - Inadequate crossing.
  - Unsafe.
  - Bridge too narrow for cars & bikes.
  - Poor WB&A connection to neighborhood.
  - Challenging to cross on foot or bike.
  - Needed improvements/barriers to access.
- **US 50**
  - More crosswalks in Levittown.
  - Upgrade crosswalks.
  - Upgrade Northview sidepath.
  - Connectivity between Governor Bridge/stadium and Melford Hi.
  - Better connection between Governor Bridge/stadium and Melford Hi.
  - Better access across 3/301 to east Bowie.
- **MD 214**
  - City of Bowie Trails Master Plan Update.
  - Improve crossing - major trail connection to South Bowie.
  - Connect BTC to Allen Pond Park.
  - Maintainence-tree roots along Northview.
  - Connect to CVS.
  - Improve path connections between existing sidepath and shared road at Mt. Oak Rd.
  - Needed path improvements -- widen.
  - Needed path improvements -- widen.
  - Need more separation from cars along bike.
  - Trail crossing safety issues along 197 between 450 and 50.
  - Maintenance--tree roots along 197.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Unsafe.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Need sidewalks or dedicated trails along Mitchellville - to Mt. Oak.
  - Bridge across Patuxent.
  - Complete connection between existing sidepath and shared road at Mt. Oak Rd.
  - Unsafe.
  - Unsafe.
  - Unsafe.
City of Bowie
Trails Master Plan Update

prepared by
Lardner/Klein Landscape Architects, PC
DRAFT: August 2019
Acknowledgements
The Bowie Trails Master Plan Update was initiated in November of 2018. The plan was prepared with the input and contributions of many residents and stakeholders that participated in two public trails planning workshops and a public meeting to review the initial draft of the plan, taking the time to participate and provide ideas and suggestions as well as thoughtful comments on the plan. Many participants as well as the following staff and committee members contributed to the development of the plan:

City Council
G. Frederick Robinson, Mayor
Henri Gardner, Mayor Pro Tem & At-Large Councilmember
James Marcos, At-Large Councilmember
Michael Esteve, District 1 Councilmember
Dufour Woolfley, District 2 Councilmember
Darian Senn-Carter, District 3 Councilmember
Isaac Trouth, District 4 Councilmember

Planning Staff
Joe Meinert, AICP, Director of Planning and Community Development
Frank Stevens, AICP, Senior Planner
Ashleigh Armentrout, Sustainability Planner
Tiffany Wright, Watershed Manager
Marianne Baird, Administrative Assistant

Additional City Staff
Mati Bazurto, Business Operations Manager
Una Cooper, Communications Manager, Public Information
Ed Hall, Parks & Grounds Superintendent, Parks & Grounds
Sally Hein, Community Services Director
Bryan Hagin, Assistant Manager, Park Operations
George Jones, City Grant Administration
Kay Starr, Grant Writer
Mark Patterson, Audio Video Specialist, Public Information
Mike Schramm, Public Works Engineering Superintendent
George Stephanos, Public Works Director

Maryland-National Capital Park and Planning
Bob Patten, Parks Department
Fred Shaffer, Planning Department

MAPS Subcommittee of the Bowie Green Team
Bill Blussier
Dustin Kuzan
Ken McCaughey
Patricia McCaughey
John Teasdale
Joshua Wooten

Lardner/Klein Landscape Architects, PC
Jim Klein, Project Manager
Lori Moore, Project Planner
Elisabeth Lardner
Cara Smith
Contents

Chapter 1: Introduction 1
   Planning Process and Outreach 1
   Community Survey 1

Chapter 2: Bowie’s Trails Today 5
   Existing Trails 5
   Planned Trails in Bowie and Beyond 7
      Bowie Heritage Trail 8
      M-NCPCC Trails Planning 9
      Regional and National Destination Trails 9
      Capital Trails Network 9
      Trail Opportunities 10
      Trail Constraints and Barriers 10

Chapter 3: Vision, Goals and Priorities 13
   Criteria for Setting Network Priorities 13

Chapter 4: Network Gap Analysis and Alternatives Considered 15
   Alternative 1: Bowie City Loops 16
   Alternative 2: The Greater Bowie Loop 16
   Alternative 3: The Bowie Byway 17
   Common Segments to All Alternatives 18
   MDOT/SHA Trail Segments 18

Chapter 5: Recommended Trail Network 21
   Trail System Recommendations by Segment 23
   Priority Linkages 32
   Segments Needed to Complete the Long-Term Vision 34

Chapter 6: Trail System Design Recommendations 35
   Recommendations for Trail Types 35
      Accessibility 36
      Off-road Paved Trails 36
      Natural Surface Trails 37
      On-road Trails and Complete Street Concepts 39
      Increase Safety Crossing of Major Streets 40
      Increase Visibility 40
      Modify Intersection Traffic Controls 40
      Shorten Crossing Distances 41
   Use Complete Streets Concepts 42
   Slow Vehicular Speeds 43
   Enhancing and Maintaining the Trail Experience 44
      Branding and Identity 44
      Route Marking and Wayfinding 44
      Destination Signing 44
      Lighting 45
      Trailhead Concept - More Than Just a Kiosk or a Web App 45
   Urban Trailheads 46
   Bicycle Parking 46
   Expanding the Trail User Community 46
      Learn To Ride at Any Age 46
      Car Free Bowie 46
Bicycle Friendly Bowie 46
Using Trail Network to Promote Health and Wellness 48
Using Trail System for Events 48
Using Trail System to Promote Bowie’s History and Heritage 49
Trail Management and Maintenance Program 49

Chapter 7: Implementation 51
Ongoing Planning Coordination 51
Existing Capital Projects 51
Future Capital Improvement Priorities 51
Creating the “Bowie Byway” 54
Early Action 54
Primary Trail Network Enhancements 54
Creating the Secondary Trail Network 55
Linkages 55
Funding Sources 56
City of Bowie Capital Improvements 56
City of Bowie Operating Budget 56
Tax Increment Financing (TIF) Districts 56
Prince George’s County Capital Improvements 56
State Bicycle and Pedestrian Priorities and Consolidated Transportation Program 56
State and Federal Funding Programs 57
Annual Maintenance Programs 57
Development Coordination 57
Additional Funding Opportunities 57

Appendix A: Trail Network Maps 59

Appendix B: Funding Sources 61
Bicycle and Pedestrian Funding Programs in Maryland 61
Transportation Alternatives Program (SHA) 61
Maryland Bikeways Program (MDOT) 61
Recreational Trails Program (MDOT-SHA) 62
Safe Routes to Schools (SHA) 63
Motor Vehicle Administration (MVA) Maryland Highway Safety Office Grant 63
MDOT System Program Funding 64
Sidewalk Reconstruction for Pedestrian Access (Fund 33) 64
New Sidewalk Construction for Pedestrian Access (Fund 79) 64
Bicycle Retrofit (Fund 88) 64
Additional State Grant Opportunities 65
Maryland Department of Housing and Community Development (DHCD) Community Legacy Program 65
Maryland Department of Natural Resources (DNR) Program Open Space 65
Maryland Historical Trust (MHT) Maryland Heritage Areas Financial Assistance Programs 65
Additional Public and Private Grant Opportunities 66
Chapter 1: Introduction

Bowie is blessed with many small segments of bicycle and pedestrian facilities, but they lack an identifiable network with a strong community image. The purpose of this plan is to connect the dots and establish that strong community image while increasing the safety and connectivity of Bowie’s trail system.

The City of Bowie’s Trails Master Plan was originally approved in 2002 and it has been used to guide the City’s Capital Improvement Program, grant applications and several revisions to City standards. An interim update occurred in 2008 when the Bowie Heritage Trail system was endorsed by the City Council. More recently, the City’s 2016 Sustainability Plan targeted two new specific goals—to improve the City’s walkability and expand biking, hiking and walking trails as part of a safe interconnected trail network.

The City funded the update to the Trails Master Plan to address these goals and to set new priorities for future capital improvement projects to help achieve the goals. Updating the City Trails Master Plan presented an opportunity to address current issues and the needs of the trail system’s users.

Planning Process and Outreach
The Trails Plan Update was conducted over an eight month process that included a community survey and two trails planning workshops that formed the basis for the draft plan. This was followed by a stakeholders meeting to review the draft and then submission for review at a City Council public hearing.

An ad hoc work group was formed to provide guidance on the plan’s development and included City staff and County trail planners.

A community survey was developed and opened between December 2018 and January 2019. A total of three hundred twenty-two (322) responses were collected and analyzed with the results of the survey utilized to help guide the development of the plan. (See page 2 for a summary of the results.)

The February 2, 2019 trails planning workshop built upon the results of the survey to confirm the identified needs and brainstorm how best to meet those needs. The purposes of the trails planning workshop were to:
- Provide information about the planning process;
- Share what had been learned to date about bicycling and walking in Bowie; and
- Solicit input from participants about their issues, concerns and ideas on how to improve bicycling and walking in Bowie.

Information contained in Chapters 1-4 summarizes the results of the outreach activities, the existing conditions of Bowie’s trail system, and the vision, goals, and criteria for priorities for directing future trail improvements.

Community Survey
A total of three hundred twenty-two (322) people responded to a 14 question survey open between December 10, 2018 and January 21, 2019. Survey respondents trended toward active trail users that live in Bowie but work elsewhere (Figure 2 on page 2). More than a quarter of respondents stated that they live and work in Bowie. Twenty-two respondents noted that they live and work elsewhere, but visit Bowie, while one respondent lives elsewhere but rides to work in Bowie.
Respondents trended toward those that value bicycling and walking opportunities when making a decision about where to live or work (Figure 3).

Two-thirds of survey respondents trended toward active walkers, with nearly two-thirds walking for exercise or fun at least once per day (Figure 4).

More than 40% of respondents ride a bicycle for exercise or fun at least once a week (Figure 5).

The most active respondents of the survey walk more than a mile (74%) or ride more than 4-5 miles (70%) in one direction (Figure 6).

When asked what the biggest obstacles that prevented respondents from using Bowie’s trails, the following were the top choices for walking and bicycling.

Top obstacles for pedestrians:
- Darkness (57%)
- Unpredictable driver behavior (55%)
- Weather (52%)
- Too many barriers (47%)

Top obstacles for bicyclists:
- Uncomfortable sharing roadway (66%)
- Unpredictable driver behavior (61%)
- Too many barriers (43%)

With regard to destinations, an open ended question asked respondents to identify what places they would like to get to by bicycling or walking. An online map was also made available for those that wanted to identify specific locations.

Open ended responses included both generalized destinations (shopping, parks, trails) and specific locations (Bowie Town Center, Old Town Bowie and Allen Pond Park, for example). The word cloud (Figure 7) provides a graphic picture of the most often used words in the open ended responses. Destinations clustered around six distinct areas as shown on the Destinations Map (Map 1 on page 4).
41% ride for exercise at least once per week

39% fair weather
25% three or four season

44% ride for fun at least once per week

Connections to parks and community centers/facilities were the most frequently mentioned including:
- Allen Pond Park
- Whitemarsh Park
- Library (not specific)
Connections to business districts and commercial areas with the most frequently mentioned including:
- Bowie Town Center
- Old Bowie
- Free State/Hilltop/Bowie Marketplace
- Various grocery stores

Connections to institutional uses and destinations with the most frequently mentioned including:
- Bowie State University
- Prince George’s Stadium

Connections to other trails with the most frequently mentioned including:
- WB&A Trail
- Regional trail system
- Bowie Heritage Trail (when it opens)

Connections to/from transit with the most frequently mentioned including:
- MARC Station at Bowie State University
- Park and Ride (not specific)

Respondents identified the top-ranked physical improvements that would encourage more walking and bicycling as follows:

Top physical improvements for pedestrians:
- Connectivity and conditions
- More dedicated paths/walks
- Pedestrian crossings
- More vehicle separation

Top physical improvements for bicyclists:
- Improve trails and lanes
- More vehicular separation
- Improve street crossings
- More multi-use trails

Other frequently mentioned (within the open ended responses) improvements or spot improvements included:
- Race Track Road
- Annapolis Road

The full results of the community survey are on the Bowie Trails Master Plan Update website [https://www.cityofbowie.org/DocumentCenter/View/7762/BTMUpdate rawsurveyresults_012319](https://www.cityofbowie.org/DocumentCenter/View/7762/BTMUpdate rawsurveyresults_012319).
Update of City of Bowie Trails Master Plan

DESTINATIONS MAP

NOTE: See Appendix A for 11- by 17-inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size on line
Chapter 2: Bowie’s Trails Today

Existing Trails

In 2017, City staff completed an update of the public trail system inventory documenting the locations of City and County parkland and the public trail network consisting of the following types of trails:

- Multi-Use Trails\(^1\) (Figure 8)
- Multi-Use Trails in Parks (Figure 9)
- Sidepaths (Figure 10)
- Sidewalks\(^2\) (Figure 11)
- Bike Lanes (none within City limits, Figure 12)
- Shared Roads (Figure 13)

The following table summarizes the mileage of trails within the City that are identified in the inventory as City trails, and includes both on and off-road trail facilities. Mileage for other trail facilities are also identified (primarily M-NCPPC trails or those within the Maryland State Highway Administration right-of-way).

<table>
<thead>
<tr>
<th>Trail Type</th>
<th>City Facilities total miles (paved miles)</th>
<th>Other Trail Facilities total miles (paved miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Off-Road Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Use Trail (i.e. Collington Road)</td>
<td>4.8 (4.4)</td>
<td>4.9 (3.7)</td>
</tr>
<tr>
<td>Multi-Use Trail in Parks (i.e. Whitemarsh)</td>
<td>8.1 (5.7)</td>
<td>4.9 (3.9)</td>
</tr>
<tr>
<td>Sidepaths: 6-8’ wide (i.e. Annapolis Road)</td>
<td>5.6</td>
<td>10.1</td>
</tr>
<tr>
<td><strong>Off-Road Subtotal</strong></td>
<td><strong>18.5 (15.7)</strong></td>
<td><strong>19.9 (13.2)</strong></td>
</tr>
<tr>
<td><strong>On-Road Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle Lanes (example from Cambridge, MD)</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>Shared Roads (e.g. Race Track Road)</td>
<td>28.3</td>
<td>13.9</td>
</tr>
<tr>
<td><strong>On-Road Subtotal</strong></td>
<td><strong>28.3</strong></td>
<td><strong>14.6</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46.8</strong></td>
<td><strong>34.5</strong></td>
</tr>
</tbody>
</table>

Sidewalks

Includes sidewalks each side along all City, County and State Roads 168

The City’s official trail map showing all existing trails can be downloaded at: https://www.cityofbowie.org/DocumentCenter/View/7175/Trails3x4

Map 2 on page 6 includes the existing trails inventory for both the City of Bowie and Prince George’s County, and the planned trails from the most recent County Strategic

---

1 A “Multi-Use Trail” may also be referred to as a “Shared Use Path,” the designation most commonly used by AASHTO, FHWA, and other state and national sources.

2 Sidewalks were not included in the City inventory but are included in the table for informational purposes. The total mileage calculated for sidewalks is derived from Prince George’s County GIS data.
Update of City of Bowie Trails Master Plan

EXISTING AND PLANNED TRAILS MAP
Trails Plan (as of January 2019) for Prince George’s County. This data set incorporates most of the City’s planned but unbuilt trails from its 2002 Trails Plan and 2008 Trails Plan Update.

Nomenclature used by the City and County have both similarities and differences in the trail designations for each jurisdiction and are summarized in the following table.

<table>
<thead>
<tr>
<th>Bowie Trails Master Plan</th>
<th>M-NCPPC Strategic Trails Plan (2019) and Master Plan of Transportation (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Off-Road Facilities</strong></td>
<td></td>
</tr>
<tr>
<td>Multi-Use Trail</td>
<td>A path (improved or unimproved) used for non-motorized transportation or recreation by cyclists, joggers or pedestrians.</td>
</tr>
<tr>
<td>Multi-Use Trail in Park</td>
<td></td>
</tr>
<tr>
<td>Natural Surface Trail (New Category of Planned Trail)</td>
<td>Recreation trail with stone dust or soil surface used by hikers, mountain bikers or equestrian</td>
</tr>
<tr>
<td>Sidepath</td>
<td>A hard surface trail that is also parallel to a road, and usually within the public right-of-way. (6-8’ wide)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>On-Road Facilities</strong></td>
<td></td>
</tr>
<tr>
<td>Bike Lane</td>
<td>None existing within Bowie city limits</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced Bike Lane (New Category of Planned On-Road Facility)</td>
<td>Buffered or protected bicycle lane marked by striping or a suitable barrier</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Road</td>
<td>Roadway surface shared between bicycle and vehicular traffic marked by “Shared Roadway,” “Sharrow” or “Bike Route” sign or roadway marking</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Both existing and planned private trails are indicated on Map 2 on page 6 for informational purposes only and include those trails that are owned by HOAs and other entities. Though the trails are not managed by the City and are beyond the scope of this document, they represent important connections for the community and are included for reference purposes only.

**Planned Trails in Bowie and Beyond**

The 2002 Trails Plan and 2008 Trails Plan Update included recommendations for trails including:

1. Linking Older Neighborhoods via Signed Shared Roadways (Signed Bike Routes)
   - City Streets: Alameda Drive, Aloha Place, Arden Forest Lane, Atlantis Drive, Belair Drive,
Figure 15 Planned route for the Bowie Heritage Trail

Bowie Trails Master Plan Update: August 2019 Final Draft

Bowie Trail
The Bowie Trail is the City’s first “destination trail” planned as part of a railroad heritage greenway that offers experiential learning opportunities and supports the educational mission of the Bowie Railroad Museum, serving children, youth and families and attracting the types of visitors sought by...
Old Town (Figure 15 on page 8). The trail presents an opportunity to interpret the history of the area and address the relationship between Old Town Bowie and Bowie State University.

**M-NCPPC Trails Planning**
The Department of Parks and Recreation (DPR) of the Maryland National Capital Park and Planning Commission developed a Strategic Trails Plan in 2018 that identified priorities for primary and secondary trails to help establish a network of trails throughout the County. The DPR trails planning effort builds on the 2009 Master Plan of Transportation (MPOT) recommendations for trails which were generally incorporated into the DPR trail planning document. The Existing and Planned Trails Map (Map 2 on page 6) includes planned routes in the vicinity of Bowie that were part of the City's 2002 Trails Plan and 2008 update.

**Regional and National Destination Trails**
The WB&A Trail, the East Coast Greenway and the American Discovery Trail are three regional and national trails that serve the City. Each trail will benefit from the planned construction of a new trail crossing of the Patuxent River (currently in design and funded for construction through multiple funding sources and managed through Anne Arundel County). The East Coast Greenway will likely benefit from the construction of this bridge and result in a more direct route. The current alignment of the East Coast Greenway along Old Collington Road will become an important linkage connecting City destinations with through travelers wishing to stop and enjoy what the City has to offer.

**Capital Trails Network**
The Capital Trails Coalition (CTC) seeks to “create a world-class network of multi-use trails throughout the Washington D.C. metropolitan region.” The CTC’s founding partners include the Washington Area Bicyclist Association, Rails-to-Trails Conservancy and the National Park Service and more than 40 public and private organizations and agencies—as well as citizen volunteers. According to its website, the CTC envisions creating “an equitable, connected and low-stress trail network that will transform public life by providing healthy, low-stress access to open space and reliable transportation for people of all ages and abilities.” (http://capitaltrailscoalition.org).

The CTC has incorporated several trails in Bowie and the surrounding areas in Prince George’s County as part of the network (as shown on the Existing and Planned Trails Map). These include:
- Annapolis Road (MD 450) including proposed facilities between Race Track Road and MD Route 3
- Bowie Heritage Trail
- Heritage Boulevard
- Jericho Park Road Extension to Bowie State University
- Laurel-Bowie Road and Collington Road (MD 197)
- Mitchellville Road
- Crain Highway Sidepath (US Route 301)
**Trail Opportunities**

Active development and transportation projects represent the best opportunity to chip away at some of the trail connectivity and safety needs identified through the trails plan update process. The Trail Opportunities Map (Map 3 on page 11) identifies these projects (as of October 2018). Two notable projects address Race Track Road (Figure 18) and Annapolis Road (Figure 19), which were frequently identified as having safety concerns as well as providing critical network linkages.

**Trail Constraints and Barriers**

US Route 50, US Route 301, MD Route 214 (Central Avenue), Annapolis Road (MD Route 450), the Patuxent River, and the railroad corridors present the biggest barriers to achieving network connectivity throughout the City. Crossing major streets from local neighborhoods also present a strong barrier to increasing the age range and confidence levels of potential trail users, including high operating speeds on Northview Drive (Figure 20) and Collington Road, among others.
NOTE: See Appendix A for 11- by 17-inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size on line

Legend

- Existing Trails (City of Bowie, 2016)
  - Multi-Use Trail
  - Multi-Use Trail in Park
  - Shaded Road
  - Sidewalk
  - Bike Lane
  - Private Trail
  - Barriers

- Water煮or
- Major Roads
- Railroads

Update of City of Bowie Trails Master Plan

EXISTING CONDITIONS MAP
Chapter 3: Vision, Goals and Priorities

The following draft goals are based upon common themes expressed throughout the initial public outreach effort for the plan including the Community Survey, Trails Planning Workshop, Trails Plan Update Work Group, and additional input received through the project website and other communications.

1. Adopt and implement an overall Bowie trail network map that links together existing and proposed trails.
2. Designate priority routes for at least one new destination bicycle trail and one new destination pedestrian trail (in addition to the Bowie Heritage Trail).
3. Remove barriers and increase connectivity to and from neighborhoods and priority destination trails.
4. Expand the use of advanced trail and roadway design techniques to provide greater separation between trail users and motor vehicles.
5. Increase confidence and age range of trail users through educational activities focusing on Safe Routes to Schools and Parks and Recreation programming.
6. Increase funding and volunteer programs for trail maintenance focusing on high priority destination trails, Safe Routes to Schools and Safe Routes to Parks.

Criteria for Setting Network Priorities

The purpose of the Trails Master Plan Update is to identify a new vision and goals for the City's trail system, and to set new priorities for future capital improvement projects to help achieve the vision and goals. An initial set of criteria were developed based upon input provided at the first public workshop and then reviewed with City Council at their March 4, 2019 meeting. At that meeting, safety and connectivity were identified as the top priorities. Council members noted that, consistent with the community survey results, the general use of Bowie's trail system should be for recreational use (including exercise) and short trip opportunities to local destinations. Although there are users that bike or walk as their primary means of transportation, priorities should stay focused on improving safety and connectivity that benefit the more typical trail user in Bowie.

Based upon the input provided, the following criteria are recommended for setting priorities, including evaluation of alternative approaches for achieving the desired vision:

1. Link existing trails together into a safe and desirable trail experience;
2. Increase safety and connectivity from neighborhoods to trails;
3. Increase safe pedestrian and bicycle access to schools, parks, and public facilities;
4. Increase safe pedestrian and bicycle access to shopping and entertainment centers;
5. Expand opportunities to separate bicycle and pedestrian uses from vehicular traffic; and,
6. Increase opportunities for drawing regional trail visitors to Bowie's commercial businesses.
NOTE: See Appendix A for 11- by 17-inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size on line

Legend

Existing Trails (City of Bowie, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidewalk
- Bike Lane
- Private Trails

Destination Trail Alignments - Existing and Planned
- Capital Trail (City of Bowie, 2018)
- East Coast Greenway (2018)

Map 5

Update of City of Bowie Trails Master Plan

TRAILS GAP ANALYSIS
Chapter 4: Network Gap Analysis and Alternatives Considered

Transforming Bowie's collection of individual trail segments into an identifiable trail network with greater connectivity and safety for all users will be implemented over the next decade or longer. Priorities for filling the gaps to establish the trail network were developed based upon stakeholder outreach conducted at two public trails planning workshops, outreach through the community survey, and guidance provided by the Bowie City Council and City staff. Map 5 on page 14 identifies the locations of the following types of gaps in the trail network:

- Crossing of state highways (US Route 50, US Route 301, MD Route 3, MD Route 450, MD Route 214, MD Route 564, MD Route 197)
- Crossing of other barriers (railroads, Patuxent River)
- Utilizing state highway corridors where there is no pedestrian and bicycle facilities and/or there is not enough separation between motor vehicles and pedestrians or bicycles (US Route 301, MD Route 3, MD Route 214, eastern end of MD Route 450, MD Route 564, MD Route 197 north of MD 450)
- Utilizing other vehicular routes where there are no pedestrian and bicycle facilities and/or there is not enough separation between motor vehicles and pedestrians or bicycles (Northview Drive, Mitchellville Road, portions of Mount Oak Road, Governor's Bridge Road, Race Track Road, among others)
- Within and around major shopping and destination clusters (e.g. Bowie Town Center, Bowie Marketplace, Old Town Bowie, Prince George's Stadium Complex, Allen Pond Park, Whitemarsh Park, schools and community centers, etc.)
- Getting in and out of neighborhoods onto existing shared use trails

Alternative approaches to completing a network were also identified at the first trails planning workshop. Six ideas for creating an identifiable Bowie Trails Network were developed at the workshop. The six ideas generally fit into three alternatives, each of which is described more fully on the following pages. The groupings generally fit into three alternatives:

- Loop or “link-node” system organized around the major destinations (below left)
- A “Greater Bowie Loop” (below middle)
- A north-south spine with links to destinations (below right)
**Alternative 1: Bowie City Loops**

The Bowie City Loops trail network would utilize three, distinct geographic loops to provide access throughout the City, listed as follows:

- The North Bowie Loop Trail utilizes the Bowie Heritage Trail (BHT) alignment and WB&A Trail with extensions to Bowie State University.
- The Central Loop connects Allen Pond Park, the Bowie Town Center, Annapolis Road Commercial Areas, Whitemarsh Park and then extending southward using on-street routes crossing Crain Highway (MD Route 3) to Melford, under US Route 50 along the Patuxent River (requiring private land easement) to Governor’s Bridge Road and back across US Route 301 to Mitchellville Road and returning to the Bowie Town Center.
- The South Bowie Loop extends southward along Mitchellville Road (a Capital Trails Coalition recommended alignment) with a connection to the East Coast Greenway route on Mill Branch Road.

**CHALLENGES**

- North Bowie Loop - linking from planned Bowie Heritage Trail to Bowie State University and then southward to the WB&A Trail
- Central Loop - crossing Crain Highway to Melford, then under US Route 50 at the Patuxent River, across private land and back across US Route 301
- South Bowie Loop - connecting from Mitchellville Road to the East Coast Greenway (Mill Branch Road)

---

**Alternative 2: The Greater Bowie Loop**

The Greater Bowie Loop would serve as a regional destination trail that would establish a hub and spoke system with connections between the regional trail system and two primary hubs located at Annapolis Road (Bowie Marketplace/Whitemarsh Park) and Bowie Town Center/Allen Pond Park.

The Greater Bowie Loop would include the following priority routes:

- Pin Oak Parkway/Nottinghill Drive/Northview Drive on the west with connections to Collington Stream Valley Park, Mt. Oak Park, and Allen Pond Park
- MD 197/Highbridge Road extending to the Bowie Heritage Trail and WB&A Trail to the north
- Race Track Road and Whitemarsh Park Trail to MD 3 on the east
- Extended trail east of MD 3 to Melford, under US 50 along the Patuxent River (requiring private land easement) to Governor’s Bridge Road and back to run along US Route 301
- Pointer Ridge Drive connection to the planned trail at South Lake (requiring a bridge over MD 214) and connection back to Pin Oak Parkway via Hall Road

**CHALLENGES AND OPPORTUNITIES**

- The eastern route would require utilization of the MD Route 3/US Route 301 corridor (multi-use trail) and/or the Patuxent River Corridor (planned natural surface trail). There are extensive median areas along US Route 301 that could be utilized for a multi-use trail or such a trail could be incorporated into future plans for MDOT/SHA improvements.
### Alternative 3: The Bowie Byway

The Bowie Byway would be a north-south travel corridor where bicycle and pedestrian use would be given priority to the extent practical, and would be reinforced by signage, pavement markings, environmental design, street design (e.g. bumpouts and pedestrian crossings), etc. Vehicular traffic would be managed for slow and safe operating speeds compatible with bicycle and pedestrian travel.

The Bowie Byway would include the following priority routes:
- Bowie Old Town (trail head) and connection to Bowie Heritage Trail
- 11th Street (MD Route 564) shared roadway paired with alternate pedestrian route (12th Street extended to transmission line right-of-way to WB&A Trail
- Race Track Road and related trails
- Superior Lane to Stonybrook Drive (coupled with natural surface and/or improved trails in Whitemarsh Park)
- Belair Drive to Kenhill Drive to MD Route 197
- Northview Drive - US Route 50 - Collington trail
- Easthaven Lane to Evergreen Parkway to Town Center Park and Excalibur Road (series of existing paved trails and sidepaths)
- Mitchellville Road from Excalibur Road to Mount Oak Road
- Peach Walker Drive and Collington Stream Valley Park (natural surface) paired with connections to the planned South Lake Trail via Hall Road

### CHALLENGES AND OPPORTUNITIES
- 11th Street is not pedestrian friendly and would require pedestrian trail alternate
- Parallel natural surface and shared roadway segments would need to be appropriately signed and connected at both ends

---

In evaluating the alternatives under consideration, there are quantifiable factors and qualitative judgements that must be addressed. The following table summarizes the quantifiable factors.

<table>
<thead>
<tr>
<th>Notes</th>
<th>Alternative 1 (32 Mile Total Trail Network)</th>
<th>Alternative 2 (51 Mile Total Trail Network*)</th>
<th>Alternative 3 (40 Mile Total Trail Network)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Access (out of 90 neighborhoods)</td>
<td>60</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>Existing Trails Utilized (off road)</td>
<td>14</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Existing Trails Utilized (on-road)</td>
<td>6</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Parks Connections (out of 56 parks)</td>
<td>26</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>New Trail Construction</td>
<td>12</td>
<td>24</td>
<td>19</td>
</tr>
</tbody>
</table>

* 16 miles natural surface trail not included in total trail network calculation. Natural surface trails only shown in Alternative 2 but may be applied to any of the alternatives. Additional 4 neighborhoods and 5 parks accessed by natural surface trails in Alternative 2 which are not shown in chart calculations.
Alternative One has the lowest number of total trails in its network and requires the least amount of new trail construction. Alternative Two provides access to more neighborhoods and utilizes more existing trails, both on-road and off-road. It also has the greatest number of total miles in its trail network, requiring the highest amount of new trail construction. Alternative Three provides access to the most parks.

**Common Segments to All Alternatives**

Some priority should be given to these segments relative to their importance to any potential network recommendations. Map 6 on page 19 identifies several segments that were common to all three alternatives. These include:

1. Mitchellville Road (from US Route 301 to Heritage Boulevard)
2. Northview Drive (from MD Route 197 to Nottinghill Drive)
3. East Coast Greenway/Multi-Use Trail (from Old Collington Road/Northview Drive, across US Route 50, to Kenhill Drive)
4. Patuxent River Park Trail I (Governor’s Bridge Road to US 50)
5. Marconi Drive Connector
6. Patuxent River Park Trail II (from Marconi to Science Drive)
7. Science Drive/Melford Boulevard (to US Route 301)
8. Belair Drive (from US Route 301 to Beechtree Lane)
9. Whitemarsh Park Trail West (between MD 450 and Stonybrook Drive)
10. Race Track Road (from MD 450 to the WB&A Trail)
11. MD 450 (from MD Route 197 to Race Track Road)
12. MD 197 (from MD 450 to Old Chapel Road)
13. Bowie Heritage Trail

**MDOT/SHA Trail Segments**

Map 6 on page 19 also identifies trail segments under consideration as part of an alternative, and that are the responsibility of the Maryland SHA, including portions of the Greater Bowie Loop alternative. From a qualitative perspective, the idea of a Greater Bowie Loop appealed to a majority of the participants at the second trails planning workshop. However, when drilling down into the comments collected at that meeting, there were many concerns expressed about potential trail route segments that would rely upon the construction of new trail facilities or enhancement of existing bicycle and pedestrian facilities along State Highways. These segments include:

- **US Route 301 and MD Route 3**: Although identified as having existing on-road facilities (shared roadway) and there are paved shoulders that can be utilized by an experienced bicyclist, the mix of relatively high traffic volumes and relatively high operating speeds, coupled with several complex intersections, make it an unsuitable route as it currently exists for average trail users in Bowie. The section of US Route 301 and MD Route 3 through Bowie is identified for future planned construction projects including:
  - US 301/MD 197 interchange (Prince George's County CTP Line 23)
  - US 301 from Excalibur Road to Leeland Road (a Bowie priority but not in CTP)
  - MD 3 from US Route 50 to MD Route 32 (Prince George's County CTP Line 16)

These roads have a fairly wide right-of-way. However, utilizing lands within the State of Maryland right-of-way for a shared-use path would need to rely upon highway related improvements to US
COMMON TRAIL SEGMENTS & MDOT/SHA TRAIL SEGMENTS
Route 301 and Maryland Route 3 that may or may not ever happen. It would be difficult to build a shared use pathway independently of planned road improvements. Without large sections of a shared-use path built along US Route 301 or Maryland Route 3, it would be difficult to establish adequate trail facilities to be utilized as a section of the “Greater Bowie Loop” within the time frame of this plan (ten years).

• MD Route 197 north of MD Route 450 is a segment that potentially connects directly to the WB&A Trail on a State Highway. It has four, eleven-foot travel lanes, separated by a nine- to ten-foot continuous central turn lane, leaving two bikeable and striped, but narrow (four- to five-foot) paved shoulders with drainage grates. Frequent bicyclists note that they try and avoid the northern section due to high vehicular operating speeds.

The five-lane road has a nine- to ten-foot wide central turn lane. The City of Bowie Transportation Priority List includes the segment near Rockledge Elementary School where a concept plan was developed for a median retrofit, but it did not move forward for lack of funding. The segment, as of December 2018, is still a priority for the City.

If this segment of MD Route 197 were to be utilized as part of a “Greater Bowie Loop,” additional safety measures would be needed to accommodate the types of bicyclists and walkers that would be using the loop system. The approximately four-foot wide bicycle lanes should be converted to buffered bicycle lanes (or protected), crosswalks improved and signage enhanced. The space for the buffered bicycle lanes could be accomplished by converting the continuous center turn lane to a narrower painted median that widens out at intersections (narrowing the buffered bike lane). The end result would be a series of splitter islands that also serve as traffic calming devices. More details about lane narrowing and buffered bicycle lanes are included in Chapter 6.

More detailed design and traffic studies should be completed prior to determining if this is feasible. Since it has been difficult to get the section near Rockledge Elementary School advanced beyond the concept stage, it is not likely that this segment could be converted within the time frame of this plan.

Alternatives to these segments include the trail system along the Patuxent River Corridor to the east or the high voltage transmission line corridor to the west. Natural surface trails are planned for the Patuxent River Corridor, but off-road shared use pathways are not currently planned. Use of the power line easement is possible (with the utility companies more amenable to shared use), but the road crossings are isolated and would be difficult to establish as safe pedestrian and bicycle crossings. In addition, wetlands and steep grades are plentiful throughout the corridor and would increase the cost and environmental impact. High Bridge Road and Church Road were also considered for inclusion in the “Greater Bowie Loop,” but both are relatively narrow, two-lane roadways with limited shoulders and therefore were not considered further. The Church Road Greenway Trail should also be considered as a Greater Bowie Loop option using the former A-44 (Intercounty Connector) alignment, on property owned by M-NCPPC or Prince George’s County, between Dolphin Way in Woodmore Estates and Dunwood Crossing Drive in Woodmore Highlands.
Chapter 5: Recommended Trail Network

Based upon the input provided at the second trails planning workshop, and an evaluation of both the quantifiable factors (relative to providing access to parks, neighborhoods and destinations) and qualitative judgement, including the ability to overcome some of the challenges inherent in the segments with MDOT/SHA responsibilities, the recommended approach is to establish a north-south trail spine, or “Bowie Byway”, as the primary focus of the master plan update, but continue to advocate for a second north-south route that could eventually form the Greater Bowie Loop.

The idea of a Greater Bowie Loop (Map 9 on page 33) is an important vision for the long-term, but the challenges and opportunities, many of which are outside the municipal boundaries, would require extensive coordination with M-NCPPC/Prince George's County. The vision of a “Greater Bowie Loop” should be retained as a long term goal and should be recommended for inclusion in the Strategic Trails Plan (M-NCPPC Department of Parks and Recreation), an update of the Master Plan of Transportation (M-NCPPC Planning Department), and the Capital Program for roadway upgrades (Prince George's County Department of Public Works and Transportation).

Map 7 on page 22 illustrates the recommended trail network as the focus of City efforts for the next ten years to create a north-south spine. The trail network should include:

- A Primary Trail Network
  - A north-south spine that could transition over the long term into the “Greater Bowie Loop”
  - Two longer distance natural surface trails: along Collington Branch between South Lake and Old Town Bowie and paralleling the Patuxent River between Governor's Bridge and the WB&A Trail planned crossing
- Major Existing and Planned Regional Destination Trails that go through and connect Bowie with regional trail users
  - WB&A Trail
  - East Coast Greenway (existing and future route when the new Patuxent River bridge is built)
  - Collington Branch Trail (planned) - a Prince George's County effort to connect Beltsville Agricultural Research Center/Patuxent Wildlife Refuge with Upper Marlboro along or parallel to the Collington Branch
- A Secondary Trail Network consisting of three major destination spurs and loops: Bowie Town Center/ Allen Pond Park Loop; Governor's Bridge/ Melford Loop; and, Annapolis Road/ Collington Road Loop
- Linkages to Neighborhoods, Parks, Schools, and other nearby destinations (Map 8 on page 31) - these would include smaller scale safety and connectivity projects patterned after the “Safe Routes to Schools” initiative but also including safe routes to parks and nearby shopping and entertainment options
- Long Term Trail Network (Map 9 on page 33): Greater Bowie Loop. A long term goal is to form a second north-south trail to take advantage of coordinated trail projects with future trail projects along the Patuxent River and improvements to US Route 301, MD Route 3, and MD Route 197 (north of Route 450) to create the “Greater Bowie Loop”

The primary trail network is envisioned as an identifiable route suitable for use by the widest range of trail users (sometimes referred to as “from eight to eighty”). The system would be comprised of nineteen miles of trail facilities including:

- **Existing Multi-use Trails and Sidepaths** - Approximately 8.6 miles of the proposed trail network takes advantage of existing multi-use pathways or sidepaths separated from vehicular traffic.
- **Planned Multi-use Trails** (South Lake and Bowie Heritage Trail) - Comprise approximately 6.8 miles of the proposed trail system
- **Enhanced Bicycle Lanes with Adjoining Sidewalks** - Approximately 3.6 miles of the network already include sidewalks and significantly wide enough pavement to accommodate bicycle lanes and generally accommodate more separation or differentiation to expand the range of users that are comfortable riding a bicycle on those lanes.
The Bowie Byway

Bowie Heritage Trail

Annapolis Road/ Collington Road Loop

Governor’s Bridge/ Melford Loop

Bowie Town Center/ Allen Pond Park Loop

North - South Spine

NOTE: See Appendix A for 11- by 17-inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size on line

Legend
Existing Trails (City of Bowie, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidewalk
- Bike Lane
- Private Trails

Planned Trails (Prince Georges Co., 2019)
- Hard Surface Trail
- Sidewalk
- Hiker-Biker
- Natural Surface Trail
- Off-Road
- Other
- Planned Private/Unknown Ownership Trail

Destination Trail Alignments- Existing and Planned (2018)
- Capital Trails Coalition Trail (2018)
- Heritage Trail (City of Bowie, 2018)
- East Coast Greenway (2018)
- Patuxent River Water Trail

* Proposed Trail Network Alignment (Primary)
  Trail Segment I.D. No.

New Trail Segment*

Proposed Trail Network Alignment (Secondary)

Proposed Trail Network Alignment (Natural Surface)

Proposed Trail Network Alignment (Proprietary)

Sidewalks (PGC, 2017)
- City Parks
- County Parks

To Patuxent Wildlife Refuge (Prince George’s County Laurel/ Bowie Trail)

Proposed East Coast Greenway Route

Prince George’s Planned Collington Branch Trail to Upper Marlboro

Map 7

Scale: 1.200 Feet
### Trail System Recommendations by Segment

The following segment table describes the proposed primary trail network including the connecting loop trails. The table includes:

- Segment name or identifying information
- Segment mileage
- Existing facilities
- Planned facilities (Prince George's County Strategic Trails Plan or Prince George's County Master Plan of Transportation)
- Desired future facilities

Chapter 6 illustrates a range of tools and techniques that can be applied to the conditions throughout the network to achieve the desired future condition.

The following color coding applies to the various segments within the segment table indicating whether the segment is part of the Primary, Secondary or Natural Surface Trail network. The yellow highlighted segments indicate that funded and/or planned upgrades could result in the segment being added to the Primary Network over time.

#### Table Key

<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>South Lake Trail</td>
<td>None</td>
<td>DEVELOPMENT PROJECT: Part of future South Lake pipeline project P-191 – Collington Branch hiker-biker trail proposed to extend to Upper Marlboro Library; Ensure safe bike connection in addition to pedestrian improvements.</td>
<td>Multi-use trail</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Bridge over 214 (long-range County priority) connecting to Hall Road.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Primary wayfinding</td>
</tr>
<tr>
<td>2</td>
<td>Hall Road Connector</td>
<td>None</td>
<td>TRANSPORTATION CTP T-16 (SHA, M-NCPPC, City), planned curb, gutter, sidewalks and crossing of the CSX railroad tracks, access to South Bowie Library; Ensure safe bike connection in addition to pedestrian improvements.</td>
<td>Enhanced bike lane/sidewalk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• New sidewalks and wayfinding.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• New pavement marking and width for bike lanes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Intersection safety enhancements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Primary wayfinding</td>
</tr>
<tr>
<td>3</td>
<td>Pin Oak Parkway</td>
<td>Sidepath &amp; Shared Road</td>
<td></td>
<td>Enhanced bike lane/sidewalk/intersection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Continuous sidepath on one side and sidewalk on the other side</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Primary wayfinding</td>
</tr>
</tbody>
</table>

3 NOTE: Letter and number references are from the City of Bowie 2019 Development Sites and Transportation Projects Outline.
<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Mount Oak Park Connector (terminus of Pin Oak Parkway, along Mount Oak Road to Mitchellville Road)</td>
<td>Short sidepath segment</td>
<td>Prince George’s County planned trail</td>
<td><strong>Multi-use Trail (within parkland)</strong> and <strong>Enhanced sidepath/bike lanes</strong> on Mount Oak Road. At the terminus of Pin Oak Parkway, a multi-use path would extend through the neighborhood open space (city-owned property) and connect to Mount Oak Park (M-NCPPC parkland) where it then aligns with the M-NCPPC planned trail. Then, new sidepath or multi-use trail would need to be constructed along Mount Oak Road (County) where it would connect up to the existing sidepath west of Mitchellville Road.</td>
</tr>
<tr>
<td>5</td>
<td>Alignment from US Route 301 to Mill Branch Road (along Queen Anne Bridge Road)</td>
<td>None</td>
<td>Shared road planned (County Master Plan of Transportation) Very narrow with no shoulders in many areas.</td>
<td><strong>On-Road Bicycle Route</strong></td>
</tr>
<tr>
<td>6A</td>
<td>Mitchellville Road (from Heritage Blvd. to Excalibur Road)</td>
<td>Shared Road, sidewalks</td>
<td></td>
<td><strong>Shared roadway, sidepath on one side, sidewalk on the other</strong> Requires comprehensive look at opportunities and constraints on both sides of the road to select the most appropriate side for sidepath expansion</td>
</tr>
<tr>
<td>6B</td>
<td>Mitchellville Road (from Excalibur Road to Mount Oak Road)</td>
<td>Shared Road, sidewalks, sidepath</td>
<td></td>
<td><strong>Shared roadway, sidepath on one side, sidewalk on the other</strong> Requires comprehensive look at opportunities and constraints on both sides of the road to select the most appropriate side for sidepath expansion</td>
</tr>
<tr>
<td>6C</td>
<td>Mitchellville Road (from Mount Oak Road to US Route 301)</td>
<td>Shared Road</td>
<td></td>
<td><strong>Shared roadway/sidepath</strong> Extend sidepath from Mount Oak Road to US 301. Improve crossing at US 301.</td>
</tr>
<tr>
<td>7</td>
<td>Collington Branch Trail (Hall Road Connector to Mount Oak Park and Mount Oak Park to Bowie Health Center)</td>
<td>None</td>
<td>M-NCPPC parkland. Request that Prince George’s County include this trail in their Strategic Trails Plan Gas line present in portion of park area</td>
<td><strong>Natural Surface Trail</strong> Trailheads at intersections with Primary Trail Marking, signage at access points and trailheads</td>
</tr>
<tr>
<td>8</td>
<td>Bowie Health Center Connector</td>
<td>Some sidepaths</td>
<td>Link existing trails to pedestrian trail network</td>
<td><strong>Natural Surface Trail</strong> Behind/west of Health Center</td>
</tr>
<tr>
<td>I.D. No.</td>
<td>Segment Name</td>
<td>Existing Facilities</td>
<td>Notes</td>
<td>Recommendations</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
<td>---------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>9</td>
<td>Heritage Blvd. (from Mitchellville to US 301)</td>
<td>Shared Road</td>
<td>301 improvements, T-12, CTP-24, 301-1</td>
<td><strong>Shared roadway, sidepath on one side, sidewalk on the other</strong>&lt;br&gt;Requires comprehensive look at opportunities and constraints on both sides of the road to select the most appropriate side for sidepath expansion</td>
</tr>
<tr>
<td>10</td>
<td>Northview Drive (connecting Old Collington Road and Mitchellville Road)</td>
<td>Shared Road (Sidepath some segments)</td>
<td>Need continuous sidewalks and dedicated trails. Provide sidepath or multi-use trail on both sides of roadway. Take advantage of existing trail overpass over MD 197. Maintenance issues – tree roots. Improve safety at crossings.</td>
<td>NOTE: Upon completion of the planned upgrades included in the CIP and additional safety measures, this segment should replace Segments 6B and 12-16 as the Primary Network to include:&lt;br&gt;Short term: Restriping lane markings for wider outside lane; traffic calming program; increase safety of intersection crosswalks&lt;br&gt;Long-term: Extend, widen and maintain continuous sidepath on one side and sidewalk on the other (comprehensive preliminary design study required)</td>
</tr>
<tr>
<td>11</td>
<td>MD 197 from Northview Drive to Town Center Blvd.</td>
<td>None</td>
<td></td>
<td><strong>Sidepath</strong></td>
</tr>
</tbody>
</table>

**Legend**
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidepath
- Bike Lane
- New Trail Segment (Recommended Sidepath)
<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Town Center Park Trail</td>
<td>Multi use trail in park and multi-use trail</td>
<td>Bowie Town Center</td>
<td>Existing Trail with Primary Wayfinding</td>
</tr>
<tr>
<td>13</td>
<td>Evergreen Parkway</td>
<td>Sidepath</td>
<td>Bowie Town Center</td>
<td>Existing Trail with Primary Wayfinding</td>
</tr>
<tr>
<td>14</td>
<td>MD 197 from Evergreen Parkway to Town Center Blvd.</td>
<td>Sidewalk</td>
<td>Bowie Town Center</td>
<td>Existing Trail with Primary Wayfinding</td>
</tr>
<tr>
<td>15</td>
<td>Bowie Town Center connector (between MD 197 and Old Collington Road)</td>
<td>Multi-use trail and sidewalk</td>
<td>Bowie Town Center</td>
<td>Remedy gap, extend multi-use trail Primary wayfinding</td>
</tr>
<tr>
<td>16</td>
<td>East Coast Greenway route along Old Collington Road between Northview Drive and Easthaven Lane</td>
<td>Sidewalk</td>
<td>Bowie Town Center</td>
<td>Existing Trail with Primary Wayfinding</td>
</tr>
<tr>
<td>17</td>
<td>Northview Drive/Route 50/Old Collington Road (Northview Drive to Kenhill Drive)</td>
<td>Multi-use Trail</td>
<td>Includes Route 50 crossing</td>
<td>Existing Trail with Primary Wayfinding</td>
</tr>
</tbody>
</table>

Detailed studies are needed for incorporating marked bicycle lanes with traffic calming and intersection modifications.
<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| 18      | Kenhill Drive from MD 197 to Belair Drive | Shared road, narrow sidewalks | Needs safety improvements. | Enhanced bike lane and sidewalks  
Upgrade crossing at Kenhill Drive and MD 197  
Primary wayfinding |
| 19      | Belair Drive between Kenhill Drive and Stonybrook Drive | Shared road, very narrow sidewalks | | Enhanced bike lane and sidewalks  
Primary wayfinding  
Detailed studies are needed for incorporating marked bicycle lanes with traffic calming and intersection modifications. |
| 20      | Stonybrook Drive from Belair Drive to Spur Way | Shared road, very narrow sidewalks | | Enhanced bike lane and sidewalks  
Primary wayfinding  
Detailed studies are needed for incorporating marked bicycle lanes with traffic calming and intersection modifications. |
| 21      | Ballpark Road (US 301 to Governor's Bridge Road) | None, sidewalks | Prince George County planned trail | TBD – study options for multi-use trail, on-road facilities and/or natural surface trail (more detailed study required)  
Upgrade crossing at US 301 |
| 22      | Governor's Bridge Road/ Patuxent connector to John Hanson Hwy. | None | Governor's Bridge reconstruction (T-11)  
Prince George's County planned trail | TBD – study options for multi-use trail, pursue easement for access under US 50 |
| 23      | Patuxent River Trail Segment/Marconi Drive/ connection to Science Drive along park | None | | TBD – study options for multi-use trail or natural surface trail with on-road options) |
| 24      | Science Drive/ Melford Blvd. to MD 3 | None | (T-10) sidewalk extension by developer between Kendale Lane and Science Drive, improvements to crossing at MD 3/Belair Drive | Enhanced bicycle lanes and sidewalks |
| 25      | Belair Drive (between MD 3 and Beechtree Lane) | Shared road | (T-10) sidewalk extension by developer between Kendale Lane and Science Drive, improvements to crossing at MD3/Belair Drive | Enhanced bicycle lanes and sidewalks  
Multi-use Trail |
| 26A     | Nash Woods Trail | None | Prince George County planned trail  
(natural surface) | Multi-use Trail |
| 26B     | Fox Hill/ Kinderbrook Connector | None | Runs along neighborhood roads and then connects to primary route via drainageway | Sidewalks, shared road, natural surface trail  
Prince George's County planned trail |
<p>| 27A     | Whitemarsh Park | Multi-Use Trail in Park | | Multi-use Trail |</p>
<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>27B</td>
<td>Whitemarsh Park Multi-Use Trail</td>
<td>Multi-Use Trail in Park/Shared Road</td>
<td>(SHA – T-6) Planning studies completed in 1988 but no funds for construction—project is on hold. Would convert the area between Stonybrook Drive (1,000 feet east) and MD Route 3 to a multi-lane divided highway</td>
<td><em>Extend multi-use trail facilities</em> where shared road exists</td>
</tr>
<tr>
<td>28</td>
<td>Annapolis Road (Race Track Rd. to driveway/intersection at St. Pius X Church)</td>
<td>Sidepath</td>
<td><strong>TBD</strong>  Design study needed to enhance pedestrian and bicycle safety throughout; Proposed improvements include: • Connect gaps in existing sidewalk along MD 450: 1) Shell Station entrance to Whitemarsh Park Trail (connect sidewalk to Whitemarsh Park trail approximately 500 feet east of Scarlett Oak Terrace) 2) Remedy sidewalk gap on north bound Grenville Lane between MD 450 and Gulliver’s Trail. • Current design plan for MD 450 shifts road to the south, relocates existing sidepath along north side of road, and remedies gap in sidepath between Archer Tract and Race Track Road. • Provide increased safety/traffic improvements at driveways and neighborhood entrances to reduce automobile conflicts with two-way bicycle/ped movement. • Improve sidewalk ADA ramps at intersections. • Improve bike/ped crossing facilities at the following intersections (provide crossing facilities at all four legs): - Grenville Lane - Moylan Drive/Trinity Drive - Belair Drive - Race Track Road - Stonybrook Drive - Superior Lane • Improve connectivity issues between Marketplace and Free State.</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Annapolis Road east access</td>
<td>Multi-use trail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>MD 197 between Kenhill Drive and Annapolis Road east access</td>
<td>Sidepath</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Collington Branch Trail - North</td>
<td>None</td>
<td>Trail runs along east side of railroad and connects to the proposed Collington Branch Trail south of US 50</td>
<td><em>Natural surface trail</em></td>
</tr>
<tr>
<td>I.D. No.</td>
<td>Segment Name</td>
<td>Existing Facilities</td>
<td>Notes</td>
<td>Recommendations</td>
</tr>
<tr>
<td>----------</td>
<td>--------------</td>
<td>---------------------</td>
<td>-------</td>
<td>-----------------</td>
</tr>
<tr>
<td>32</td>
<td>Patuxent River Trail</td>
<td>None</td>
<td>On County Master Plan of Transportation</td>
<td>Natural surface trail</td>
</tr>
<tr>
<td>33</td>
<td>Segment west of MD 3 connecting to proposed Patuxent River Trail</td>
<td>Prince George’s County planned trail</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 34       | Race Track Road | Shared Road | As part of the Race Track Road Reconstruction Project (County – T-5), improvement for the segment between Clearfield Drive and Marquette Lane is planned to be completed in 2022. Proposed improvements include:  
- Relocation of Yorktown Elementary School driveway entrance  
- Installation of a new traffic signal at the relocated school driveway entrance to operate in tandem with Grace Baptist Church and Church of the Redeemer driveways  
- Installation of pedestrian activated signals at the new crosswalks  
- Constructing a hiker-biker sidewalk on the north bound side of Race Track Road that extends along the length of the project and installing a continuous sidewalk on the southbound side  
- Reconfiguring and resurfacing of the Yorktown Elementary parking lot  
- Upgrading the traffic signal at the intersection of Race Track Road, Marquette Lane, and Idlewild Drive  
- Upgrading existing street lighting to include LED lighting fixtures  
- Storm water management (SWM) environmental site design practice installation | TBD – provide maximum separation between bicycle and pedestrian uses (e.g. multi-use trail, sidepath, cycle tracks) As part of the proposed trail network, the hiker-biker trail on north bound side and sidewalk on southbound side should extend to run entire length between WB&A Trail and MD 450 (MD 450 to Marquette Lane and Clearfield Drive to the WB&A Trail). In addition, pedestrian and bicycle facilities suitable for a broad range of users, on both sides of the road, should be included in the proposed plans (under development). |
| 35       | WB&A Trail segment as part of the BHT Loop | Multi-use trail | | |
| 36       | Pollinator Corridor | None | | |

Existing Multi-use Trail
Connect Chestnut Ave. to the WB&A Trail at Mockingbird Lane.

Natural surface trail
<table>
<thead>
<tr>
<th>I.D. No.</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>11th St. / Race Track Road north of WB&amp;A Trail</td>
<td>Shared road</td>
<td>• (City- T-1) Phase 1 was constructed in 2018 and consists of a 10-foot wide hiker-biker trail between 12th Street and 10th Street, including a pedestrian underpass of the MD Route 564 bridge over Amtrak.</td>
<td>Sidewalks along 11th Street, dedicated trails along segment of Race Track Rd.</td>
</tr>
</tbody>
</table>
| 38      | Bowie Heritage Trail with WB&A Spur Trail and bridge crossing | Short Multi-Use trail in park segment near WB&A, some multi-use trail segments | • (City-T-1) Design plans for Phase 2 include the following improvements:  
  - Expansion of the Railroad Museum and creation of a new park/ playground on 10th Street  
  - Extension of the Phase 1 trail to 9th Street  
  - (City-T-1) Plans for the Jericho Park segment (1,415 linear feet of trail from Jericho Park to the Adnell subdivision) approved in 2017.  
• (M-NCPPC – T-3) The WB&A Spur Trail, between the Horsepen Branch Trailhead and the PEPCO power lines, was completed in 2016.  
• (M-NCPPC – T-3) The trail extension project and will extend the Bowie Heritage Trail from the Bowie State/ MARC trail station eastward through Bowie State University to the PEPCO power lines.  
• (T-3) The proposed bridge over the Patuxent River is in design phase and will be a cooperative effort between the State of Maryland, Anne Arundel County, and Prince George's County | Multi-Use Trail                                    |
PROPOSED TRAIL LINKAGES

**Destinations List**
- A Old Bowie
- B Jenkins Park Road
- C Hillwood Trail East Coast Greenway
- D Bowie Stream Valley National Wildlife Refuge
- E Hermitage Park
- F Hermes Farm Equine Center
- G Singlewood Park
- H Norridge Park
- I Norcross Park
- J Samuels Oak Park
- K Wellington Park
- L Wellington Branch Park
- M Norcross Trail
- N Norcross Trail
- O Prince George’s County Parks
- P Town Center Park
- Q Capital Trails Coalition Trail
- R Heritage Trail (City of Bowie, 2018)
- S East Coast Greenway (2018)
- T Patuxent River Water Trail
- U Back Creek Trail
- V Annapolis Road/ Collington Road Loop
- W Governor’s Bridge/ Melford Loop
- X Bowie Town Center/ Allen Pond Park Loop
- Y Bowie Heritage Trail
- Z Bowie Byway

**Legend**
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidewalk (PGC, 2017)
- City Parks
- County Parks
- Proposed Trail Network Alignment (Primary)
- Proposed Trail Network Alignment (Secondary)
- Proposed Trail Network Alignment (Natural Surface)
- New Trail Segment*
- Proposed Linkage
- Destination
- Capital Trail Coalition Trail (2018)
- Heritage Trail (City of Bowie, 2018)
- East Coast Greenway (2018)
- Patuxent River Water Trail

* proposed trail segments where no trail facilities (both on-road and off-road) currently exist or are planned

NOTE: See Appendix A for 11- by 17-inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size on line.
Priority Linkages

Connecting to and from existing neighborhoods, parks, school facilities, and other destinations was noted as a top priority by both Stakeholders and City Council for future capital improvement related to Bowie’s Trail System. The primary and secondary trail networks play an important role in making those connections. Approximately 57 neighborhoods will have direct access to the north-south spine that will serve as Bowie’s primary network. The north-south spine will provide access to 25 parks. In the long term, enhancing pedestrian and bicycle access along the sections of US Route 301, MD Route 3, and MD Route 197 north of Annapolis Road will provide access for 10 additional neighborhoods one additional park. Map 8 on page 31 identifies the locations of the following trail connections (and the destinations they serve) that could be enhanced to further improve pedestrian and bicycle access to neighborhoods, parks, schools, shopping areas and other destinations as identified through public outreach and professional analysis.

L1 Link from Collington Station neighborhood to South Lake Trail via County parkland
L2 Link from South Bowie Library to Hall Road Connector as part of CTP T-16
L3 Link from Pointer Ridge Elementary to Hall Road Connector via Pointer Ridge Recreation Area
L4 Link from Pointer Ridge Neighborhood to Collington Branch Trail
L5 Link from Devonshire Neighborhood to Church Road Park via a “Paper Street” R/W (trail through park is a County planned trail)
L6 Link from Church Road Park to Mt. Oak Park Connector along Driftwood Road (provide sidewalks and enhanced bike facilities along Driftwood Road). Extend primary trail route facilities along Mount Oak Road to provide connection to Driftwood Road.
L7 Link from North Oak Court Park to Mitchellville Road
L8 Link from Allen Pond Park to Collington Branch Trail
L9 Link from Northview Elementary School, Bowie Dog Park, and Enfield Chase Park to Collington Branch Trail
L10 Link from existing sidepath along Evergreen Parkway to Northview Drive (between Ernst Drive and Northview Drive)
L11 Link from Kenilworth Elementary School to Kenhill Drive
L12 Link from Foxhill Park and Benjamin Tasker Middle School to Kenhill Drive
L13 Link from Pope’s Creek Park to Collington Branch Trail at Old Annapolis Road
L14 Link from Belair Mansion and Bowie High School Annex to Annapolis Road and MD 197 along Tulip Grove Drive and Belair Drive
L15 Link from Buckingham Park to Stonybrook Drive
L16 Link from Acorn Hill Park to Annapolis Road
L17 Link from Patuxent River Water Trail to Patuxent River Trail
L18 Link from Yorktown Park and Patuxent River Park to Race Track Road via neighborhood drainage easements (County Master Plan of Transportation planned natural surface trails)
L19 Link from Whitehall Elementary School and Samuel Ogle Park to Race Track Road
L20 Link from Northridge neighborhoods and Northridge Park to Bowie Heritage Trail (along county planned trail route)
L21 Link from Merkel Farm Equestrian Center to Bowie Heritage Trail
L22 Link from proposed bridge crossing over Patuxent River to Bowie Heritage Trail

4 An additional three neighborhoods and four parks will be accessed by the natural surface trails which are identified on Map 7 on page 22
The Greater Bowie Loop

Proposed Trail Network

Legend:
- Existing Trails (City of Bowie, 2018)
  - Multi-Use Trail
  - Shared Road
  - Sidewalk
  - Bike Lane
- Proposed Trail Network Alignment (Highway)
- Proposed Trail Network Alignment (Secondary)
- Proposed Trail Network Alignment (Natural Surface)
- New Trail Segment* 
- Other

Destinations List:
A Old Bowie
B parch Park
C Old Mill Trail-East Coast Greenway
D Beall Park (Brownstone Park)
E Volleyball Court
F Market Farm Eskapers Center
G Teapot Park
H Race Track
I Northridge Park
J Samuel Ogil Park
K White Oak Park
L Watermark Bluff Park
M Arcadia Hill Park
N Sargent's Park

Note: See Appendix A for 11 by 17 inch foldout or go to https://www.cityofbowie.org/2410/Trails-Master-Plan for viewing full size online.
## Segments Needed to Complete the Long-Term Vision

There are three distinct segments that are needed to complete the Greater Bowie Loop, two of which are within right-of-way managed by MDOT/SHA and would require some innovation by MDOT/SHA (Complete Street Concept for MD 197, Innovative Intersections for US 301/MD 3).

<table>
<thead>
<tr>
<th>#</th>
<th>Segment Name</th>
<th>Existing Facilities</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>US 301/MD 3 between Whitemarsh Park and Mitchellville Road</td>
<td>Shared road</td>
<td>US 301 road improvements planned (refer to T-12, CTP-24, and 301-1)</td>
<td>OFF-ROAD SHARED USE PATH: Advocate for off-road shared use trail parallel to US 301 as part of future road improvements; would require innovative intersection design to enhance safety</td>
</tr>
<tr>
<td>NA</td>
<td>MD 197 between MD 450 and the WB&amp;A Trail</td>
<td>Shared road only, narrow striped shoulder, sidewalks</td>
<td>Existing conditions noted in public meeting as being very hazardous—referred to as “the runway” Concept Plan developed for vicinity of Rockledge School</td>
<td>COMPLETE STREET: Consider narrowing median by six feet to create buffered bicycle lanes (intersections would need turn lanes so bicycle lanes would narrow at each intersection but could be treated with green paint approaching intersection)</td>
</tr>
<tr>
<td>NA</td>
<td>Pointer Ridge Drive and Pittsfield Lane</td>
<td>Shared Road with sidewalks on both sides</td>
<td>Exiting 33’ wide pavement width on both streets with some existing parking use along curbside (no pavement markings)</td>
<td>Enhanced bike lane and sidewalks Consider narrowing travel lanes to ten-feet with five-foot bicycle lanes separated by a three-foot painted buffer, leaving a seven-foot parking lane on one side.</td>
</tr>
</tbody>
</table>
Chapter 6: Trail System Design Recommendations

In addition to the trail network map, achieving the vision of transforming the City’s impressive, but aging, collection of existing individual trail segments into a network of safe and enjoyable trail experiences for biking, hiking and family walks would need to address the following:

- Existing off-road multi-use trails need to be connected.
- Existing on-road routes need to be upgraded so that a wider range of users feel comfortable using those routes.
- Safety and accessibility when crossing major roads and other barriers needs to be enhanced.
- Trails and routes that comprise the primary network and the nearby destinations need a signage system to help users to find their way along the system and to find those nearby destinations.
- More and better places are needed to store bicycles near destinations.
- Trail users need more and better information about how to safely use the trail system.
- Novice users need to gain confidence in their ability to navigate and use the trail system.
- Additional traffic calming and intersection safety measures are needed to self enforce traffic regulations (speeding, left and right turning movements).
- Drivers need to increase their understanding of the rules of the road when interacting with bicyclists and pedestrians.
- Residents need to recognize the importance of maintaining the many decades of investment in Bowie’s trail system.

Recommendations for Trail Types

The primary trail network forms a north-south spine through Bowie connecting the new development at South Lake with Old Town Bowie, a trail distance of approximately 19 miles, broken down as follows.

<table>
<thead>
<tr>
<th>Trail Type</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Multi-use Trails</td>
<td>5.37</td>
</tr>
<tr>
<td>Existing Sidepaths</td>
<td>3.21</td>
</tr>
<tr>
<td>Planned Multi-use Trails (pipeline development projects)</td>
<td>0.8</td>
</tr>
<tr>
<td>Planned Multi-use Trails (Bowie Heritage Trail)</td>
<td>6.05</td>
</tr>
<tr>
<td>Proposed enhancements to on-road facilities (includes Hall Road; Pin Oak Parkway and connections to and including Mount Oak Road; and Race Track Road)</td>
<td>3.62</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19.05</td>
</tr>
</tbody>
</table>

The secondary network consists of three destination oriented loops:

<table>
<thead>
<tr>
<th>Loop</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collington Road/Annapolis Road Destination Loop</td>
<td>0.25</td>
</tr>
<tr>
<td>Existing Multi-use Trail</td>
<td>0.25</td>
</tr>
<tr>
<td>Existing Sidepath</td>
<td>2.47</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.72</td>
</tr>
<tr>
<td>Governor's Bridge/Melford Loop</td>
<td>2.99</td>
</tr>
<tr>
<td>New multi-use trail</td>
<td>2.99</td>
</tr>
<tr>
<td>Enhanced bike lane/sidewalk/complete street sections</td>
<td>2.52</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5.51</td>
</tr>
<tr>
<td>Bowie Town Center/Allen Pond Park Loop</td>
<td>1.65</td>
</tr>
<tr>
<td>Enhanced bike lane/sidewalk/complete street sections</td>
<td>1.65</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1.65</td>
</tr>
</tbody>
</table>

The total secondary trails on the trail system would be 9.88 miles. (2.72 miles are on existing multi-use trails or sidepaths.)

Completing the Greater Bowie Loop as the long-term vision for the trail system would result in a trail system with an additional 6.5 miles (including 3.73 miles of enhanced bike lanes/sidewalks/complete street sections along Collington Road and Pointer Ridge Drive/Pittsfield Lane; and 2.8 miles of new multi-use trails along US Route 301 and MD Route 3).
Accessibility

Pedestrian routes should be designed to be accessible to the widest range of users. The U.S. Access Board’s Public Rights-of-Way Accessibility Guidelines (PROWAG), an Advanced Notice of Proposed Rulemaking on Shared Use Paths, and the Guidelines for Outdoor Developed Areas, provide the most recent guidance on accessibility. (Refer to website: https://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way.)

The PROWAG guidelines have not been formally adopted, but the guidance represents the most recent best practices research. The guidelines should be used in advance of formal adoption to ensure that access for persons with disabilities is provided at the same degree of convenience, connection, and safety afforded the public generally. Once these guidelines are adopted by the Department of Justice, they will become enforceable standards under title II of the Americans with Disabilities Act (ADA).

The Board is supplementing its rulemaking on public rights-of-way to also cover shared use paths. The proposed rights-of-way guidelines, which address access to sidewalks, streets, and other pedestrian facilities, provide requirements for pedestrian access routes, including specifications for route width, grade, cross-slope, surfaces, and other features. The Board proposes to apply these and other relevant requirements to shared use paths as well as adding provisions tailored to shared use paths into the rights-of-way guidelines.

The U.S. Access Board’s Guidelines for Outdoor Developed Areas provides guidance for accessibility in outdoor environments with inherent challenges and constraints posed by terrain, the degree of development, construction practices and materials, and other factors. The guidance currently applies to National Parks and other outdoor areas developed by the federal government as part of the Architectural Barriers Act (ABA) Accessibility Standards. The guidelines do not apply to outdoor areas developed with federal grants or loans. The Board intends to develop guidelines for non-federal outdoor sites covered by the ADA and areas developed with federal grants and loans covered by the ABA through a subsequent rulemaking.

Off-road Paved Trails

Approximately 6.9 miles of new off-road paved trails will be needed to complete the recommended short- and mid-term primary trail network along a north-south spine through Bowie. Off-road trails are located outside the travel ways with a minimum of five-feet separation from any travel way. Off-road trails consist of both multi-use trails and sidepaths.

Multi-use trails are designed with a ten-foot minimum width as an off-road hard surface trail on an alignment independent from the roadway. Multi-use trails accommodate bidirectional travel with a limited number of intersecting streets.

The primary design guidance for multi-use trails is the American Association of State Highway and Transportation Official’s Guide for the Development of Bicycle Facilities (AASHTO Bike Guide). The document provides guidance on user characteristics, trail alignment, trail width, and surfaces among other issues. For planning purposes, the Federal Highway Administration’s Shared Use Path Level of Service Calculator (FHWA Shared Use Path LOS Calculator) should also be utilized to determine optimal trail widths. Trail widths do not need to be the same throughout the length of a trail segment; widening of a trail segment may take place where there are higher levels of anticipated use and a broader range of users. Trails may also need to be narrowed to address environmental constraints, right-of-way limitations, and to minimize impacts on historic and/or cultural resources.
Sidepaths have a minimum width of eight-feet and are also separated from the travel lanes by a minimum of five-feet. Differing from multi-use trails, sidepaths are typically located parallel to the roadway alignment. Bowie’s existing sidepaths function as wide sidewalks with bicycles allowed. These older pathways still function for bicyclists for bidirectional travel, but greater care is needed when riding on them with a higher rate of intersecting driveways and side streets and a mix of users.

Moving forward, consideration should be given for using a cycle track (either one-way cycle tracks or two-way) rather than creating new sidepaths. This is consistent with the direction provided by Prince George’s County’s general plan, PLAN 2035 (2014) and Prince George’s County’s Department of Public Works and Transportation’s Urban Street Design Standards (2017). The Bowie Center is designated as one of 26 local centers where the Urban Street Design Standards can be used.

The Urban Street Design Standards recommend separating bicycle lanes from through traffic, creating a one-way cycle track on each side of the street and also separating pedestrians from bicyclists. This would reduce conflicts for left and right turning vehicles in and out of intersections.

Natural Surface Trails
Primarily used for recreation, natural surface trails are variable width graded surfaces with drainage primarily used for walking and jogging, with equestrian and mountain bicycling uses also allowed. The City of Bowie may choose to manage some natural surface trails for pedestrian use only (walking, running) and prohibit mountain bicycles and/or equestrian uses if conditions are unsuitable for those uses. The majority of the proposed natural surface trails are within M-NCPPC parklands. Two primary natural surface trails are proposed:

- **Collington Branch Stream Valley Trail** - new single track trail connecting together the various sections of the M-NCPPC-managed stream valley parkland, as well as some additional City-owned land. This trail system will need to be added to the Prince George’s County Strategic Trails Plan and the Master Plan of Transportation.

- **Patuxent River Trail** - new single track trail connecting together various sections of M-NCPPC-managed parklands, some with existing trails, along the Patuxent River between the WB&A Trail and US Route 50. Two trail easements would be required through private lands (the Race Track parcel and land owned by the Roman Catholic Clergymen of Maryland). At US Route 50, a third easement would be needed under the Route 50 Bridge to connect the system between Melford and Governor’s Bridge Road (as a multi-use trail connection).
Prince George’s County does not regulate the use of these trails within their parks and public lands. Natural surface trails are often used by mountain bikers and equestrians. Mountain bike use in the vicinity of Bowie is likely to increase with the soon to be opened skills course at Horsepen Branch.

Earlier planned alignments of trails through the Collington Branch Stream Valley Park were removed from the Prince Georges County Trails Plan and MPOT. However, a natural surface trail can be designed to fit within the stream valley environment and be sustainable by carefully managing the trail’s surface runoff to always maintain positive drainage. Figure 28 illustrates the typical tread widths and clearances for a single track trail.

On side slopes, a natural surface trail may need to traverse terrain steeper than the desired maximum trail grade requiring the trail to traverse the side slope. Figure 28 illustrates how the sidehill trail should be narrowed to minimize the need for excessive grading. Figure 30 (top) illustrates how best to use the cross pitch to shed water. In some situations, it may be desirable to steepen the trail to as much as 15% grade for short distances to minimize cutting into a slope or filling along the downslope side.

Light duty boardwalks can be utilized to traverse wetland areas outside of the floodway (Figure 29).

Positive drainage can be achieved by using the techniques illustrated in Figure 30.

---

5 Trail grade refers to the change in elevation divided by distance along the trail profile. For example a 1’ rise in elevation for every 10’ of trail length results in a 10% trail grade.

---

*Figure 30* Water management techniques using a rolling grade dip helps to retain a quality trail surface while accommodating the widest range of trail users (Source: IMBA Trail Solutions)
On-road Trails and Complete Street Concepts

Approximately 3.6 miles of on-road routes will need to be enhanced to increase safety and broaden the range of users comfortable using these routes in order complete the recommended short and mid-term primary trail network along a north-south spine through Bowie.

The types of enhancements that will be needed to increase the comfort level of pedestrians and bicyclists will depend upon the type of road, the mix of traffic, and the anticipated types and number of trail users.

- **Connecting the Primary Trail Network**: Within existing neighborhoods where traffic volumes and traffic speeds are low, a shared roadway with marked pavement may be enough to increase safety for all users.
- **Recommended segments with existing sidewalks and sufficient pavement width** can be remarked as a designated bicycle lane. Pavement markings can be enhanced with green paint through intersections to increase visibility.
- On multi-lane roads, it may be feasible to narrow travel lanes or convert one of the lanes to a center or convertible lane using the space gained to buffer the bicycle lanes, further separating trail users from traffic.
- On county or municipal roads that additional space can be converted into one-way or two-way cycle tracks.
- Where shared roadways are needed to complete the network system, either temporarily until facilities are built, or permanently, a “Bike May Use Full Lane” sign can be used at locations where it is deemed desirable to remind motorists of the legal right of bicyclists to occupy any space within the travel lane when conditions warrant doing so. This could include shared roads that are too narrow to accommodate both a motor vehicle and a bicycle with sufficient separation (see section 3.4 of MDOT’s “Bicycle Policy and Design Guidelines” for examples of appropriate sign usage).

<table>
<thead>
<tr>
<th>Segment ID #</th>
<th>Segment Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Hall Road Connector</td>
</tr>
<tr>
<td>3</td>
<td>Pin Oak Parkway</td>
</tr>
<tr>
<td>4</td>
<td>Mount Oak Park Connector (Terminus of Pin Oak Parkway, along Mount Oak Road to Mitchellville Road)</td>
</tr>
<tr>
<td>6B</td>
<td>Mitchellville Rd. (from Excalibur Road to Mount Oak Road)</td>
</tr>
<tr>
<td>10</td>
<td>Northview Drive</td>
</tr>
<tr>
<td>18</td>
<td>Kenhill Drive from MD 197 to Belair Drive</td>
</tr>
<tr>
<td>19</td>
<td>Belair Drive between Kenhill Drive and Stonybrook Drive</td>
</tr>
<tr>
<td>20</td>
<td>Stonybrook Drive from Belair Drive to Whitemarsh Park Trail (Spur Way)</td>
</tr>
<tr>
<td>34</td>
<td>Race Track Road</td>
</tr>
<tr>
<td>NA</td>
<td>Pointer Ridge Drive and Pittsfie٠d Lane (long-term)</td>
</tr>
</tbody>
</table>

Figure 31  Increasing visibility and varying degrees of separation for on-road bicycle facilities
Increase Safety Crossing of Major Streets
Trail users in Bowie identified crossing major roads and other barriers as the biggest challenge that detracts from an enjoyable trail experience, decreasing the comfort level of most novice users and limiting the expansion of recreational trail users that are able to enjoy the trail system. The majority of the barriers identified are the higher volume and higher speed state highways. Due to higher traffic volumes and operating speeds, MDOT/SHA may be more limited in the range of measures they can employ to increase safety and comfort of trail users crossing intersections. The following strategies should be considered.

Increase Visibility
As intersections get more complex and as conflict points increase, pedestrians and bicycles tend to be more difficult to see. In addition, pedestrians and bicyclists have to compete for signal time to ensure that they have enough time to cross the street. Two techniques are readily available and relatively inexpensive to implement:

- Install Pedestrian Hybrid Beacon Signals—also referred to as High-Intensity Activated crossWalk beacon (HAWK)—allow warning and stop signals to be activated on demand. The high visibility mast arms help to warn drivers to slow down prior to a pedestrian entering a crosswalk (Figure 32).
- Many of the intersections in Bowie are not marked on all four corners. Even though there is not a continuous sidewalk, pedestrians will use all four corners to reach the sidewalk in the next segment. Marking all four corners also increases the visibility of all crosswalks (Figure 33).
- For bicycles moving through a complex intersection on a bike lane, green paint can be used to mark bike lanes in advance of the intersection and bike boxes can be installed at the head of a traffic lane at a signalized intersection, providing bicyclists with a safe and visible way to get ahead of waiting traffic during the red signal phase. It also helps to prevent a right turning vehicle from cutting off the through bicyclists (Figure 33).

Modify Intersection Traffic Controls
Beyond visibility, giving pedestrians and bicyclists more time or a head start in getting through the intersection is another way to increase safety at major intersections:

- Incorporate pedestrian and bicycle signals into intersection controls including the use of Countdown Heads and for coordinating left turn signal phases with pedestrian crossing phases (Figure 34).
- Use a Split Phase - Leading Pedestrian Interval (LPI) signal timing strategy to give pedestrians a head start (typically 3-7 seconds) when crossing with a corresponding green signal in the same direction of travel (Figure 35). According to the National Association of City Transportation Officials (NACTO), LPI signals reduce pedestrian-vehicle collisions as much as 60% at treated intersections. They are particularly useful at intersections with a history of pedestrian and vehicular crashes and other incidents.

Treatment Description
- Allows pedestrians (and bicyclists on bike routes) to get a 7+ second head start before turning vehicles begin to move
- Only turns are held during LPI phase. Thru vehicles permitted to move.
- Requires turn bay or lane

Applications
- High vehicular thru volumes
- Low vehicular turning movement volumes and/or short storage lengths

Benefits
- Same benefits for pedestrians as LPI
- No impact to thru vehicle delay

Considerations
- Increases delay for turning vehicles
- Potential loss of parking for turn lane

Figure 32  Hybrid Beacon - Phoenix, AZ

Figure 33  Bike Boxes

Figure 34  Pedestrian signals left and middle; left turn signals

Figure 35  Split Phase - Leading Pedestrian Interval
Shorten Crossing Distances

If changing the signal timing is not possible due to the mobility needs of higher traffic volumes, then shortening the crossing distances should be considered. Pedestrians typically walk at four feet per second. A four lane highway with a center turn lane is approximately 60-feet wide, taking at least fifteen seconds to walk across the street. Reducing the crossing length can be accomplished in two direct ways:

- **Decrease turning radii** - Figure 37 illustrates the effect of turning radii on crossing distances. Within more dense urban areas, with speed limits at 25 mph, the radii can be tightened considerably. On higher speed roadways, it is also possible and desirable to reduce turning radii to the extent practicable. Slowing down turning traffic also increases safety. A large radius is often designed to accommodate large fire trucks and other large trucks and school buses. At the same time, that larger radius allows drivers to make higher speed turns, making it less likely that they will stop for pedestrians. Working directly with the local EMT drivers, including mocking up and testing tighter radii, will often result in an optimized turning radius that shortens crossing distances while accommodating the needs of the largest vehicle in the fleet.

- **Install median refuge islands** - For wider roads, crossing distances can be shortened into two phases for those pedestrians that move more slowly or have mobility challenges. Installing a pedestrian safety island (sometimes called a median refuge island) if large enough (at least 6 feet wide and 40' long), can provide a protected space for pedestrians that cannot make it across in the time available. A six foot minimum provides enough space for a pedestrian, a bicyclist or a stroller to sit behind a curb while remaining highly visible to motorists. Refuge islands can also help to calm traffic by breaking up long sight distances if built wide enough to allow for tree planting (see Figure 36 on page 41).

Potential Candidates for Intersection Pedestrian Safety Measures

- **US 301 Signalized Intersections**
  - Harbour Way/Governor Bridge
  - Heritage Road/Ballpark Road
  - Excalibur Road/Mill Branch Road
  - Mitchellville/Queen Ann Bridge
- **MD 450 Signalized Intersections**
  - MD 197
  - Bowie High School (existing signalized entrance and pedestrian crossing)
  - Belair Drive (on-road linkage)
  - Stonybrook Drive (on-road linkage)
  - Superior Lane (shopping areas)
  - Race Track Road (link to Whitemarsh Park and shopping)
Use Complete Streets Concepts

Maryland Law 717 (2018) defines complete streets as applied to all state highways in Maryland as:

(I) “Complete streets design features” means design features that accommodate and facilitate safe and convenient access and mobility to facilities by all users, including bicyclists, motorists, pedestrians, and public transportation users.

Prince George’s County adopted a Complete Streets Policy, requiring that the policy shall:

(1) Be implemented with the objective of creating a comprehensive, integrated, and connected transportation network that allows users to choose among different modes of transportation;
(2) Ensure that all users are considered…
(3) Benefit all users equitably …
(4) When practicable, require the accommodation of other modes of transportation …
(5) Recognize that all facilities are different and user needs should be balanced to ensure community enhancement; and
(6) Incorporate best practices related to complete streets design elements features.

The City is considering adopting a similar set of policies. Three strategies can be used to enhance safety and connectivity for all users as part of an overall complete street concept.

- Using streetscape elements to reinforce crossing locations provides a consistent set of clues for drivers that they should slow down in advance of pedestrian crosswalks
- Decreasing the visual prominence of travel lanes in the overall street cross section (including reducing travel lane widths where traffic allows) decreases vehicular operating speeds and reinforces the separation between vehicular travel lanes and the space allocated for pedestrians and bicyclists
- Increase separation at intersections and reducing the number of potential conflict points between bicyclists, pedestrians and
motor vehicles including (and especially) turning movements. Corner safety islands have multiple roles: offering a protected place for bicyclists to queue when crossing and turning, and managing the speed of turning vehicles when permitted turn conflicts are allowed. This type of intersection, although becoming more frequently utilized in the United States, is not a current practice employed by MDOT/SHA.

Slow Vehicular Speeds
Traffic calming measures are needed to more closely match the physical design of the road with the desired operating speeds. Suburban drivers in a community with limited options for other modes of travel have high expectations for mobility and being able to get in and out of their neighborhoods. Those expectations have always been met with wide streets often designed with a safety factor of five to ten miles per hour over the posted speed limit. A driver who is expecting to travel as fast as the roadway and traffic will allow, often above the posted speed limit, has less time to react to a bicyclist sharing the roadway or a pedestrian trying to cross the street. The cone of vision narrows considerably as speeds increase as well as the severity of crashes when they do occur.

Three primary traffic calming concepts are recommended to help change driver expectations and slow vehicular operating speeds. These measures can (and should) be integrated with on road bicycle use.

- **Use roadside landscape treatments** to induce speed reduction through the use of landscape clusters, tinted shoulders, entry signs, or gateways to reduce operating speeds when developed in a coordinated manner (Figure 41).
- **Use road narrowing** at crosswalk points to reinforce desired operating speeds and increase the visibility of the crosswalk (Figure 43).
- **Use splitter/refuge islands** to break up long straight views by shifting the horizontal alignment, forcing drivers to slow down to navigate around the splitter island. The vehicle path alignment should be designed for the desired operating speed (Figure 44).

---

### Potential Candidates for Complete Street and Traffic Calming Applications

1. **Northview Drive (City of Bowie)**
   - Major Collector/20,275 AADT
2. **Mitchellville Road (Prince George’s Co.)**
   - Major Collector/5,325 AADT
3. **Race Track Road (Prince George’s Co.)**
   - Minor Arterial/10,210 AADT
4. **Kenhill Drive/Belair Drive/Stonybrook Drive (City of Bowie)**
   - Kenhill Drive: Major Collector 9,810 AADT
   - Stonybrook Drive: Major Collector 5,085 AADT

1 AADT published April 2019 for data year 2017
Enhancing and Maintaining the Trail Experience
In addition to enhancing the safety and connectivity of pedestrian and bicycle travel routes in the City, more ancillary support facilities and programs are needed to increase the attractiveness of bicycling and walking in Bowie including:

- Establish a distinct and identifiable image and branding for the Bowie Trails Network
- Improved signage and wayfinding for bicycles and pedestrians, clearly visible landmarks, color coded sites, improved educational markers, etc.;
- Secure bicycle parking, bicycle valet and/or covered bike parking;
- Create attractive rest areas for bicyclists and pedestrians with racks, visitor info, water, etc.;
- Visitor information kiosks in close proximity to bicycle parking;
- Establish bicycle friendly program for local retailers;
- Install bicycle “fixit” stations with air pumps and tools for repairs;
- Public Education (drivers, bicyclists and pedestrians) on safety and etiquette.

Branding and Identity
Establishing a distinct identity for the Bowie Trails System can be accomplished in several ways including:

- Design and implement an unique route shield (sign) incorporated into the wayfinding system and/or pavement marking system
- Work collaboratively with artists and designers to develop a visual identity for trail related elements (trailhead and trail design elements such as mile markers, bollards, lighting, banners, water fountains, bike racks and bike repair stations, for example)
- Use color and graphic identity as part of wayfinding signage system
- Introduce a system of sculptural business district and neighborhood entry features or gateways as a place-making opportunity for artist-designer-community collaborations.

Route Marking and Wayfinding
When signage is placed along state highways, Federal and Maryland Manual of Uniform Traffic Control Devices (MUTCD) standards must be met and approved by MDOT/SHA. On City roads and in City and M-NCPPC parks, there may be more flexibility in developing a wayfinding system. However, the entire system must work together so elements that meet MUTCD standards must carry through and into the wayfinding system that is utilized for roads and parks (Figure 45).

Destination Signing
A more extensive municipal wayfinding program could be developed for those portions of the primary and secondary trail network that are served by municipal and county roads. Figure 46 illustrates a signage system for Davis, California which highlights key destinations and uses color coding to denote distinct geographic areas within the City. A destination list was developed as part of the Trails Master Plan Update and should be utilized as the starting point for establishing a wayfinding system for Bowie.
**Lighting**

As part of the stakeholder outreach, questionnaire respondents identified lack of lighting as one of the barriers for increasing trail usage. While lighting the entire trail system is neither feasible nor desirable, carefully designed lighting can increase the safety and increase comfort levels of trail users. Trail lighting should be considered in the following situations:

- Within commercial centers and destinations with operating hours that extend past dusk (in all seasons)
- Trail segments that serve transit facilities (MARC, Park-and-ride)
- Pedestrian crossings (mid-block and intersections)
- Trailheads
- Trails serving employment centers, medical facilities, or other public facilities
- Trail lighting is not recommended within parks that are typically open only dawn to dusk.

Trail lighting should be sized and scaled for pedestrians with lighting focused on the surface not on the area, without glare and light trespass extending beyond the trail corridor. Refer to M-NCPPC Department of Parks and Recreation’s Trail Lighting Study (January 2019) for additional guidance on trail lighting.

**Trailhead Concept - more than just a kiosk or a web app**

In order to attract more users to Bowie’s network of trails, the City and trail system supporters need to think about the entire system as a destination. The following principles can be used to help structure the overall experience of getting to a trail, getting oriented, and gaining confidence in using the trail system.

- **Orientation and trip planning are easily accessible** - Information is provided (web-based, mobile application, or at the trailhead) indicating the level of experience for various portions of the route and options for all levels of experience and trip duration.
- **Access by transit is convenient** - Getting to the system without a car is a strong benefit for enhancing pedestrian and bicycle access. Bowie is served by MARC and by bus transit, both of which have capability for users to bring their bicycle along to access the desired destination. Access by transit should be front and center on any visitor/user information sources (web, mobile, or print).
- **The trail system is supported by trail heads at key locations** - Providing locations along the route for parking, trail access, orientation, and support facilities.
- **Access to destinations** facilitated by giving bicyclists and walkers a reason to make the trip, is critical to the success of establishing a trail system as a destination unto itself for “human-powered" travel and travelers. Planning to increase pedestrian and bicycle access to these destinations is similar to increasing pedestrian and bicycle access to schools (e.g. Safe Routes to Schools) and work places (Bike to Work Day). However, instead of serving the needs of existing and known users (school children or bicycle commuters), the goal is to identify new users and attract them to the trail system by increasing connectivity between historic, cultural, natural, scenic, or recreational features.
- **Establishing a journey as a destination** - Using the Bowie Trails System in combination with Old Town Bowie merchants, the County’s and City's park systems, or as part of larger regional trail experiences (East Cost Greenway or WB&A Trail), helps to define the trail system as a destination. Bowie's access to the Patuxent River, points of interest along the Bowie Heritage Trail and proximity to dining and entertainment at the Bowie Town Center can be marketed as bicycling and walking destinations.
- **Existing itineraries are available** - Bicycle clubs, event sponsors, and others already provide a wealth of information about touring routes and, to some degree, destinations and descriptions about why a particular route is worthwhile. The City should develop itineraries that make it easier for trail users to choose the Bowie Trails system as a destination.
- **Bicycle repair stations** provide access to an air pump and tools to make minor repairs.

Locations should be considered at Allen Pond and Whitemarsh Parks, the parking lot in Old Town Bowie along the Bowie Heritage Trail, and the WB&A Trailhead off Race Track Road (County property).
**Urban Trailheads**
While the M-NCPPC’s Strategic Trails Plan for Prince George’s County provides good information about trailheads in a natural or parklike setting, the City would benefit from the development of an urban trailhead that accommodates both automobiles and bicycles (with bike stations, bike racks, shade, water, and business directory), including the opportunity for vendors to rent bicycles or scooters or for a bike-share program to be accommodated. Parking for bicyclists within the commercial centers is not easily found, especially in close proximity to stores.

**Bicycle Parking**
In addition to “full service” bicycle parking at trailheads, inserting bicycle parking into the commercial centers “streetscape” can be accomplished in simple and functional ways using the basic hoop system and adding storefront bicycle parking in the “street furniture zone” or parallel to the curb line (Figure 48 on page 45). Removing a single on-street parking space can accommodate ten bicycles (Figure 49 on page 45).

**Expanding the Trail User Community**
There are three programs that the City may want to develop to help broaden the range of trail users, increase the confidence of potential trail users and address issues related to the anticipated increase in the types of wheeled users. There are three additional initiatives that would help to increase utilization of the trail system through coordinated marketing and promotions.

**Learn To Ride at Any Age**
The development of “traffic gardens” continue to be an important tool to teach young children walking and bicycling safety concepts like who has the right-of-way, how to stop and watch out for others. Placing a traffic garden at an elementary school or an actively used park, where it can be programmed by teachers and volunteers to educate the next generation of walkers and bicycle riders, will help to increase the confidence level of both current users (the parents) and future users (the children). The City’s Department of Community Services (DCS) could also offer events (or partner with the Washington Area Bicyclists Association) for novice bicyclists geared towards adults that have never learned to ride a bicycle or whose body and mind has aged and are now lacking in confidence.

**Car Free Bowie**
Expanding the public information and community education programs provided to the residents of Bowie about how to use the trail system for short trips will both increase physical activity and reduce vehicular trips. As the trail system evolves, developing a “Car-Free” Bowie marketing program can be packaged through real estate professionals, business promotion organizations and other new resident and visitor information about “safe routes” to schools, parks, shopping and entertainment.

**Bicycle Friendly Bowie**
The City’s interest in promoting the trail system to boost economic activity can be supported by working with local businesses to help ensure that pedestrians and bicyclists will stay in town, shop at local businesses and increase the economic activity of its commercial destinations.
Bowie’s commercial centers can build on their assets and encourage residents (and visitors) to find and patronize bicycle friendly businesses by following a few simple principles:

- Welcome “human powered” visitors and customers (arriving on foot or by bicycle) to the destination and help them get oriented;
- Provide a place to park bicycles and store gear;
- Establish safe and enjoyable walking routes through commercial areas; and
- Help businesses to serve the needs and wants of visitors that are traveling by bicycle (or walking).

The City should consider developing a simplified recognition program for bicycle friendly businesses that provide bicycle parking, display and distribute bicycle maps of the trail system and for employees, offer a bicycle friendly workplace. The League of American Bicyclists has a bicycle friendly business designation, but it is geared towards larger employers and businesses encouraging employees to use bicycles for transportation (https://bikeleague.org/sites/default/files/Attributes_of_BFB.pdf). Instead, the City should work with its shopping and entertainment destinations (as well as its own park and recreation facilities) to encourage better practices for attracting customers that travel by bicycle to these destinations.

The City can also continue to work towards gaining designation from the League of American Bicyclists as a “Bicycle Friendly Community.” While the City applied for this designation many years ago, great progress has been made towards achieving an initial bronze level designation. The following table summarizes the ten criteria and the progress that has been made since the previous application:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>City Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Speed Roads with Bicycle Facilities (target 20%)</td>
<td>These are mostly state highways and are likely to meet this criteria with the increase in bike route markers.</td>
</tr>
<tr>
<td>Total Bicycle Network mileage to Total Road Network Mileage (target roughly 1 mile of bike network for every 4 miles of road network)</td>
<td>Likely to meet this criteria with the increase in bike route markers.</td>
</tr>
<tr>
<td>Bicycle Education in Schools</td>
<td>Would qualify by implementing the “Learn to Ride” at any age program.</td>
</tr>
<tr>
<td>Share of Transportation Budget Spent on Bicycling (target 9% of its transportation budget is invested in bicycle projects)</td>
<td>This is averaged over the past five years, so investments in the Bowie Heritage Trail, budgeted items for Northview Drive can contribute.</td>
</tr>
<tr>
<td>Bike Month and Bike to Work Events</td>
<td>The City already meets this criteria by participating in regionally sponsored event through MWCOG.</td>
</tr>
<tr>
<td>Active Bicycle Advocacy Group</td>
<td>Active citizen participation in WABA may qualify.</td>
</tr>
<tr>
<td>Active Bicycle Advisory Committee</td>
<td>Green Team/MAPS Subcommittee may qualify, or a new committee could be appointed by Council to guide the implementation of the plan.</td>
</tr>
<tr>
<td>Bicycle Friendly Laws &amp; Ordinances</td>
<td>Complete Streets policy would help.</td>
</tr>
<tr>
<td>Bike Plan is Current and is Being Implemented</td>
<td>This Trails Plan update would qualify, while showing progress on early action items.</td>
</tr>
<tr>
<td>Bike Program Staff to Population target one FTE per 148,000 residents per one staff person</td>
<td>Green Team / Sustainability Planner staff support may qualify.</td>
</tr>
</tbody>
</table>

These existing programs provide practical advice and resources to help make places better for bicycling. The designation provides additional reassurance that the City values walking and bicycling and is investing in the necessary infrastructure, education, and incentives to expand the trail user community.
Bowie's system of trails is ideal for increasing access to the health-related benefits of walking and bicycling as well as increasing access to nearby parks. As part of a community-wide health and wellness initiative, the City should continue and expand programs related to walking and bicycling through the use of the trail system. Initial efforts could include:

- Using the “Walk Wednesdays” program as a starting point, produce wellness maps portraying the overall experience of both short and long walks or rides through and around Bowie. In addition to distances and desired walking or riding times, the maps should note points of interest and interesting stories encountered along the way. Distributing customized maps to Bowie businesses, employers, libraries and other commonly accessed places will spread the word about the benefits of short walking or bicycling trips and healthy and safe outdoor recreation near workplace or homes.

- Fostering stronger partnerships with more organizations, physicians, clinics and the Bowie Health Center can help to build support for developing a safe and well-connected trail system as a way to increase health and wellness of all Bowie residents. The broader movement taking shape across America, that a “primary-care physician, psychiatric nurse practitioner, or cardiologist might prescribe a park before a pill” is in line with the community’s interest in a well connected system of trails. The result is increased access to nature, parks, schools, shopping and entertainment and decreased medical bills.

Using Trail System for Events

Bowie’s trail system, as envisioned, will be long enough and well connected enough to run a marathon or ride a 50-mile route, and interesting enough to attract organized events for fun and competition. In addition, the trail system can be used to promote non-competitive and family-oriented walking and biking events (e.g., Volkssporting). As the “Greater Bowie Loop” evolves, the route can be used for long distance circuit walking through and around Bowie. Interim routes can be established, especially for event and group rides and walks, that begin to promote the system and further build support for its full implementation.
Using Trail System to Promote Bowie’s History and Heritage

As part of the Anacostia Trails Heritage Area now branded as “Maryland Milestones,” Bowie has additional opportunities to use the trail system to help portray both local and regional themes and stories associated with its history and heritage. Developing destination trails supported by interpretive communication tools (signs, mobile apps, displays, and events) is one of the best ways to draw more visitors to Bowie from nearby areas.

Trail Management and Maintenance Program

Expanding the age and range of trail users has the additional benefit of raising interest in trail management and maintenance. The City currently maintains its trails through either the Department of Public Works or the Department of Community Services, depending upon the location and type of trail.

Funding for trail maintenance can be thought of in terms of the life cycle of a trail and its ongoing renewal. With over 19 miles of existing off-road trails, and an assumed 50-year\(^6\) replacement period, in an ideal situation, the City would be expected to replace a minimum of approximately 0.4 miles (2,112 linear feet) of trail every year (not including trails affected by construction, natural hazards such as flooding, or higher than average wear and tear). Using an annual average trail cost of $750,000 per mile ($140/foot)\(^7\), a minimum annual maintenance budget of $300,000 dollars would serve to replace the current system of off-road trails over the fifty year period\(^8\) and keep those trails fully functioning and sustained over time. Unfortunately, the City has not had a proactive trail maintenance and renewal program. Trails are maintained on an as-needed basis. Any backlog of deferred maintenance would need to be added to a renewal and replacement annual cost.

The Rails-to-Trails Conservancy (RTC) studied trail maintenance costs by interviewing 200 trail managers from across the country. RTC performed similar studies in 2014 resulting in an annual average maintenance cost for standard maintenance practices of approximately $1,971/mile for asphalt trails and $1,006/mile for non-asphalt surfaces. Maintenance activities as a percent of budget included:

- Surface clearing of trail (10.8%)
- Mowing (12%)
- Vegetation Management (leaf clearing and pruning) (11.2%)
- Trash and Debris along trail side areas (11.5%)
- Whole tree removal (5.4%)
- Application of herbicides and pesticides (2.3%)
- Clearing of drainage channels and culverts (5.4%)
- Surface maintenance of parking areas (2.7%)
- Litter clean up, trash cans (2.7%)
- Maintenance of toilets at trailheads (13.0%)
- Maintenance of toilets along the trail (1.2%)
- Trailhead parking snow removal (6.3%)
- Repair/maintenance of signs (6.3%)
- Repair of vandalism/dumping (5.3%)
- Other trail maintenance activities (9.1%)

In the past, the City has not fully utilized targeted maintenance funds exclusively for trails. Instead, City maintenance personnel in Community Services and Public Works take on trail maintenance as part of other responsibilities. On-road trails are currently maintained as part of road maintenance activities, while trails in parks are maintained as part of the DCS budget for each park. The City has a leaf vacuum and sweeper that is used for ongoing trail maintenance.

---


7 Assumes 10’ wide asphalt paved trail with moderate side slope, exclusive of structures (bridge maintenance should be evaluated separately)

8 A shorter replacement period can be substituted, 50-year replacement assumes regular maintenance is performed, especially addressing stormwater issues, debris buildup, and sealing surface cracks, etc.
A more detailed maintenance plan is needed to pro-actively maintain the trail system for a 50-year (or shorter) life-cycle and renewal period, while continuing to perform the standard trail maintenance activities, such as those listed above. The current 19 miles of off-road trails, using an average cost of $2,000 per mile for annual maintenance would suggest a current investment of $38,000 dollars for ongoing trail maintenance, in addition to the life cycle replacement costs noted above if those funds were to be dedicated directly.

The cost of on-road trail maintenance for enhanced bike lanes, assuming no change in street width, would be the same. With a one to five year life cycle, depending upon material used and a per mile average cost of $150,000 per mile⁹, the investment in renewal would be approximately $30,000 per mile per year. Note that the less costly painted road markings would need more frequent replacement, but could be done much less expensively.

At the current time, the City has not established a volunteer trail maintenance program that could help to increase levels of trail maintenance and reduce the maintenance burden on the City. With proper training and risk management, volunteers can effectively perform surface cleaning of trails, mowing, vegetation management and trash and debris removal, which is close to 44% of the annual maintenance budget for off-road trails. The City’s Weed Warrior program is a recent effort to utilize volunteer labor (in this case for invasive species management) and could be used as a model for volunteers to engage in limited volunteer work along trails.

A 2011 Parks and Grounds Operation Review, prepared by the University of Maryland’s Institute for Governmental Service and Research, recommended that the City track usage levels for its trails to determine efficient maintenance scheduling and explore involving the community in taking care of the City’s trails by way of a volunteer trail maintenance program. The study’s recommendations should continue to be implemented.

---

⁹  Costs for Pedestrian and Bicyclist Infrastructure Improvements, UNC Highway Safety Research Center; prepared for Prepared for the Federal Highway Administration and supported by the Robert Wood Johnson Foundation through its Active Living Research program, October, 2013. (Costs increased to account for inflation and other factors).
Chapter 7: Implementation

Achieving the desired vision for Bowie’s network of safe and enjoyable trail experiences for biking, hiking and family walks will require a coordinated effort among the City, Prince George’s County, Maryland Department of Transportation and the enthusiastic stakeholders that support trails in Bowie.

Ongoing Planning Coordination

Recommendations contained in the Trails Master Plan Update need to be coordinated with and referenced in four directly related planning efforts:

- Prince George’s County, working with the City, has initiated planning efforts to update the Bowie Area Master Plan.
- Prince George’s County is completing its Strategic Trails Plan. The recommendations included in this plan need to be referenced and coordinated with the County’s Strategic Trails Plan. Of particular importance would be to re-insert in the County’s Strategic Trails Plan: the natural surface trails along the Collington Branch Stream Valley Park (M-NCPPC) as a parallel waking path for the Collington Branch Trail; and recommendations for trail connections to the Patuxent River Trail.
- Prince George’s Master Plan of Transportation (MPOT) may be updated in the near future. Recommendations from the City’s Trails Plan Update need to be referenced into the MPOT.
- Pedestrian and bicycle safety measures along Annapolis Road (MD Route 450) are needed to address the crash history along multiple intersections of this route. The Bowie Pedestrian and Bicycle Crash Analysis 2013-2017 was prepared February 2019 for MDOT (on contract by Washington College). The results of the study identified MD 450 through the City as an area of concern. The initial priority should be an immediate request to MDOT /SHA to prepare a detailed bicycle and pedestrian safety audit and make specific recommendations for improvements to the state maintained highway.

Existing Capital Projects

Priorities will need to be established for both the pursuit of outside funding for capital improvements related to enhancements to the primary trail network, and for the City’s ongoing investments in trail maintenance, safety, and connectivity enhancements. The City has established a fund for ongoing maintenance, repair and safety modifications to the City’s Hiker/Biker trails. The City’s Long Term Funding Plan in the proposed FY 2020 CIP includes out-year increases in investments in hiker-biker trails up to $323,000 in FY 2025.

The City, working with Prince George’s County, continues to pursue funding for the Bowie Heritage Trail and the completion of the City’s contributions to that trail continue to be the highest priority. The FY 2019 and FY 2020 budgets both include CIP projects for the Bowie Heritage Trail, including $919,000 for the 10th Street Park construction and storm water management.

Future Capital Improvement Priorities

In addition to the ongoing commitment to implementing the Bowie Heritage Trail, and based upon the criteria for establishing priorities listed on page 13, three Network Scale priorities are recommended for early action and implementation:

1. Inventory Existing Trails and Facilities - While the Trails Plan Update was based upon existing and available GIS data and a visual inventory of conditions, a more detailed existing conditions inventory is now needed to determine the scope of anticipated projects needed along the proposed trail network to enhance connectivity and safety. The focus of the inventory should...
1. Start with the Primary Trail Network and then be phased to include each of the Secondary Trail Network loops and linkage routes. The inventory should be conducted in accordance with FHWA guidance (https://safety.fhwa.dot.gov/ped_bike/tools_solve/fhwasa12018/fhwasa12018.pdf) for a bicycle Road Safety Audit (RSA) for bicycling conditions and a pedestrian safety audit for walking.

2. Develop route branding, route marking signage and a wayfinding system for primary and secondary trail routes. Develop a wayfinding system for getting to nearby destinations and for connecting neighborhoods to the trail system. Establishing an identity and brand for the City's trail system will require graphic design, marketing and branding expertise. The resulting brand should be incorporated into the route marking and wayfinding system.

3. Pursue coordinated investment in pedestrian and bicycle safety improvements for trail intersections with MD Route 450 (Annapolis Road) in the vicinity of Race Track Road and Whitemarsh Park by MDOT/SHA and Prince George's County.

4. Create a new walking and bicycling map for Bowie with existing trails for distribution to the public. Walking elements should graphically display sidewalk routes as part of the information provided starting with data from PGAtlas (the sidewalk layer under Transportation) and based upon results of inventory work in item 1, above.

The current Long Range Funding plan included with the FY 2020 CIP prioritizes improvements to existing trails and intersections along Northview Drive. One of the reasons that Northview Drive was not identified as part of the Primary Trail Network was the concern about safety, high motor vehicle operating speeds, and the width of the existing trail. Many of these concerns may be resolved if the modifications are made. The facilities along Northview Drive are part of the Secondary Trail Network providing important connections between Allen Pond Park and Bowie Town Center, as well as improving the safety of pedestrian and bicycle facilities serving Northview Elementary School. Upon completion and/or additional changes made to increase pedestrian and bicycle safety along Northview Drive, then it would become the primary Trail. Segments 6b and 12-16 would become a secondary network serving Bowie Town Center.

Priorities for City investments should utilize the six criteria consistent with the recommendations of this Trails Plan Update on page 13. The Northview Drive improvements directly meet four of the six criteria while indirectly supporting the other two. The following table is recommended for use in evaluating future maintenance, safety and connectivity projects:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Directly Supports (+2)</th>
<th>Indirectly Supports (+1)</th>
<th>Does Not Support (0)</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Link existing trails together into a safe and desirable trail experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Increase safety and connectivity from neighborhoods to trails</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Increase safe pedestrian and bicycle access to schools, parks, or public facilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Increase safe pedestrian and bicycle access to shopping and entertainment centers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Expand opportunities to separate bicycle and pedestrian uses from vehicular traffic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Increase opportunities for drawing regional trail visitors to Bowie's commercial businesses</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LEGEND

EXISTING TRAILS (CITY OF BOWIE, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidewalk
- Bike Lane

PRIVATE TRAILS

PLANNED TRAILS (PRINCE GEORGE'S CO., 2019)
- Hard Surface Trail
- Side Path
- Bike Path
- Natural Surface Trail
- Off-Road
- Other
- Planned Private/Unknown Ownership Trail

DESTINATION TRAIL ALIGNMENTS - EXISTING AND PLANNED (2018)
- Capital Trails Coalition Trail (2018)
- Heritage Trail (City of Bowie, 2018)
- East Coast Greenway (2018)
- Patuxent River Water Trail

DATA SOURCES: THE CITY OF BOWIE PLANNING DEPARTMENT, PRINCE GEORGE'S COUNTY PLANNING DEPARTMENT, M-NCPPC, USGS, AND THE GIS USER COMMUNITY
Creating the “Bowie Byway”
The Primary Trail Network will be created utilizing a combination of existing on- and off-road pedestrian and bicycle facilities to form a north-south spine referred to as the Bowie Byway. The following steps are recommended for first establishing the Bowie Byway and then enhancing the route over time to improve the overall trail experience.

Early Action
Prior to formally marketing and marking the route, the following early actions will need to be completed to identify any initial safety and maintenance measures that are needed:
1. Complete the inventory of existing conditions and safety audit for the route utilizing a systematic approach based upon FHWA guidance.
2. Any identified safety recommendations should be remedied before signing and marketing the route. If measures are recommended that cannot be remedied through small projects or repairs, then the route should be marked as “interim” and marketing and signage measures should reflect the suitability of sections of the route for more experienced users, as applicable.
3. Based upon the results of the existing conditions inventory and safety audit, a marketing and signage plan can be developed.
4. Outside funding for trail enhancement priorities should be pursued as an early action.

Primary Trail Network Enhancements
5. Route marking and wayfinding sign system: After the early action steps are completed, the route of the north-south spine should be marked. Wayfinding signage to destinations should be phased depending upon the suitability of the linkage routes between the primary trail network and the destination.
6. Enhance on-road bicycle facilities: The primary trail network takes advantage of existing and planned multi-use trails as well as on-road segments with existing bicycle and pedestrian facilities. Upgrading the existing on-road facilities can be accomplished, in many cases at the time the route is re-paved. Re-pavement and re-striping should also include updated lane markings enhanced with green paint through intersections to increase visibility (as per most recent MUTCD guidance). (See Figure 31 on page 39.) A design study needs to evaluate potential changes to on-street parking patterns in residential neighborhoods and striping adjusted accordingly. If residential parking concerns are raised, the focus of the striping should be on intersections where parking is not allowed. The two priorities for these types of enhancements are:
   • Pin Oak Parkway (Segment 3 from Hall Road to the planned Mount Oak Community Park Connector Trail); and,
   • Kenhill Drive between MD 197 to Belair (Segment 18); Belair between Kenhill and Stonybrook (Segment 19); and Stonybrook Drive from Belair Drive to Spur Way (Segment 20).

The City should utilize the guidance provided by NACTO (https://nacto.org/publication/urban-bikeway-design-guide/bikeway-signing-marking/colored-bike-facilities/) for use on City maintained streets. Use of the enhanced bike lane markings may not be approved, as yet, for use on State and County highways.
7. Mitchellville Road (Segment 6B, County) - expand the sidepath between Mount Oak Road and Allen Pond Park until modifications can be made to widen the existing sidepath on one side of Mitchellville Road.
8. Race Track Road (Segment 34, County) - interim measures may be needed for the section of Race Track Road outside of the pedestrian safety improvement project (anticipated completion 2022, from Clearfield Drive to Marquette Lane), as well as a construction route for the area in between. Two interim options are available:
   • Buffered bicycle lanes could be striped between Marquette Lane and Clearfield Drive in advance of construction to increase separation between vehicles and pedestrians and bicyclists currently using the shoulder; and,
• An on-road bicycle route could be signed using Millstream Drive, Chapel Forge Drive, and Old Chapel Road back to Race Track Road. This section of the Bowie Byway should not be signed until such time as more safety measures are put in place on either an interim, or permanent basis.

Creating the Secondary Trail Network
Creating the three secondary trail loops will require the following modifications before they can be signed:
- **Collington Road/Annapolis Road Loop** - requires intersection improvements across Annapolis Road between the sidepath on Annapolis Road and the Annapolis Road East Access Trail (Segment 29)
- **Bowie Town Center/Allen Pond Park Loop** - requires planned modifications to Northview Drive to be implemented to maintain the south bound side as a sidepath and make intersection safety improvements throughout
- **Governor’s Bridge/Melford Loop** (Segments 21-25) - requires completion of the Melford segments through developer coordination, development of the US Route 50 underpass (requiring an easement from a private landowner) and connections through Green Branch Athletic Complex, Prince George’s Stadium and across US Route 301 from Ballpark Drive to Heritage Boulevard (requiring Prince George’s County and MDOT/SHA coordination)

Linkages
Linkage paths are routes that provide a direct connection to the Primary Trail Network (or vice versa). The linkage route should provide a safe and comfortable experience for both bicyclists and pedestrians. Where only on-road routes exist, other trail facilities and/or enhancements should be provided so as not to deter the less experienced riders from getting to their destination or getting to the trail network. The linkage routes should incorporate wayfinding and be clearly marked so that it is easy to negotiate getting to a destination from the trail network. Road crossings should have enhanced full crosswalks (all four legs) and consideration given to modifying traffic signals and other safety measures as discussed in Chapter 6 (see page 40).

Figure 59 Plan and section diagrams (above) illustrate how existing roadways can be retrofitted to accommodate enhanced bike facilities within the existing right-of-way.
Funding Sources

City of Bowie Capital Improvements
An important purpose of the Trails Master Plan Update is to prioritize projects for inclusion in the City’s Capital Improvement Program. The City’s Capital Improvement Fund can be used for the following:
- Provide matching funds for other funding sources such as federally funded programs like the Transportation Alternatives Program, Recreational Trails, Safe Routes to Schools, etc.; and,
- Establish a bicycle and pedestrian safety project fund to address small projects along the Primary and Secondary Trail Network.

City of Bowie Operating Budget
Support trail user education, volunteer coordination, and incentives for businesses to create urban trailheads and parking within the commercial centers that serve as destinations for many residents. The “urban trailhead” program could be operated in a manner similar to the City’s energy audit rebate program, whereby a limited number of the U-shaped bike racks could be distributed at a greatly reduced cost to qualified businesses that also sign up as a bicycle friendly business.

Tax Increment Financing (TIF) Districts
Bicycle and pedestrian facilities within the commercial districts in Bowie could also be funded as part of broader plans to invest in public improvements. TIF is a mechanism that helps fund public improvements related to economic development such as parking facilities, roadways and other public infrastructure (including bicycle and pedestrian facilities). According to Maryland law, when a development or redevelopment project creates additional tax revenues for a jurisdiction, that jurisdiction can, in certain cases, issue bonds to pay for public improvements for related infrastructure and can finance those bonds through the incremental increase in revenue that the project will generate. City Council has supported this approach for South Lake.

Prince George’s County Capital Improvements
The proposed Primary and Secondary Trail Network incorporates several road segments that are the responsibility of Prince George’s County DPWT and/or M-NCPPC for planned trails that traverse through County-managed parklands. Given Bowie’s geography and the relationship of existing and potential trails to desired destinations, its trail system is dependent upon several trail segments whose management and maintenance responsibilities fall to Prince George’s County DPWT or M-NCPPC: These include:
- Race Track Road, Hall Road, and Mount Oak Road (desired improvements have been coordinated through the M-NCPPC Strategic Trails Plan Draft);
- Natural surface trails proposed as part of the Collington Stream Branch park system (to be added back into the Strategic Trails Plan). Melford/Governor’s Bridge loop trails (coordinated through the Strategic Trails Plan); and,
- Portions of the Bowie Heritage Trail (planned and phased to incorporate both City of Bowie and Prince George’s County responsibilities).

The M-NCPPC Capital Improvement Program (CIP) contains all sources of funding for capital improvements, which include major trail maintenance, rehabilitation and new construction projects. The Bowie Heritage Trail has received funding through the CIP Program. Prince George’s County DPWT receives its funding through the County’s Capital Improvement Program. Pedestrian safety improvements are funded through a county-wide allocation which is currently supporting design work for Race Track Road pedestrian safety improvements.

State Bicycle and Pedestrian Priorities and Consolidated Transportation Program
“Trail Opportunities” on page 10 describes the City’s priorities relative to transportation priorities contained in the Consolidated Transportation Program (CTP). Modifications to Crain Highway (US Route 301 and MD Route 3) and Collington Road (MD Route 197) should continue to be monitored for opportunities to create the “Greater Bowie..."
Loop,” as shown in Map 9 on page 33, as the long-term vision for the City Trail System. Modifications to intersection crossings on MD Route 450 and MD Route 197 were identified as areas of concern due to past crash history. Pedestrian and safety improvements to these intersections should be added to the City’s list of transportation priorities.

**State and Federal Funding Programs**

Appendix B contains a list of active Federal Transportation Programs that support bicycle and pedestrian projects. Intersection safety measures on MD Route 450 and MD Route 197 may be eligible for related highway safety programs based upon the crash analysis performed by the Maryland State Highway Administration.

Bicycle and pedestrian funding programs in Maryland include the following primary funding programs (see Appendix B for details and website link for each program):

- Transportation Alternatives Program;
- Maryland Bikeways Program;
- Recreational Trails Program;
- Safe Routes to Schools;
- New Sidewalk Construction for Pedestrian Access (Fund 79);
- Bicycle Retrofit (Fund 88);
- Maryland Highway Safety Office Grants;
- Sidewalk Reconstruction for Pedestrian Access (Fund 33); and,
- Community Legacy Program (DHCD).

**Annual Maintenance Programs**

Each time the City, County or State repaves roads through Bowie, an opportunity is presented to re-stripe bicycle lanes, add crosswalks and other low cost safety measures. Future repaving plans should be coordinated with this Master Plan Update to take advantage of these potential opportunities.

**Development Coordination**

Currently, trail projects at South Lake and Melford are part of ongoing development activities. Coordination with developers of the Bowie Town Center, Bowie Marketplace and other commercial properties could result in additional bike parking and other contributions, should those properties redevelop or be reconfigured.

**Additional Funding Opportunities**

Appendix B includes additional state and non-governmental funding sources.

The City, with its approved Sustainability Plan, is a designated Sustainable Community, increasing eligibility and/or competitiveness for many of the pedestrian and bicycle funds within the state, and also for Community Legacy grants, of which bicycle and pedestrian facilities can be a part. It may be possible to use these funds to develop a branding, route marking and wayfinding plan, including the development of a graphic identity for the trail system through the use of these programs.

The City is also within the Certified Heritage Area boundary of the Anacostia Trails Heritage Area now branded as “Maryland Milestones.” One of criteria for establishing priorities for future investments in Bowie's Trail System is to increase opportunities for drawing regional trail visitors to Bowie's commercial businesses. The Bowie Heritage Trail is one piece of the system that expressly focuses on building upon Bowie's history and heritage to attract visitors. The Maryland Heritage Areas Authority provides funding that could be used to help interpret and tell the stories of Bowie's history and heritage as part of the trail experience.
Appendix A: Trail Network Maps
Update of City of Bowie Trails Master Plan

EXISTING CONDITIONS MAP

Legend
- Existing Trails (City of Bowie, 2018)
  - Multi-Use Trail
  - Multi-Use Trail in Park
  - Shared Road
  - Sidepath
  - Bike Lane
  - Private Trails
- Waterbodies (2017)
- Wetlands (1992)
- 100 Year Floodplain (2016)
- St Parks
  - City Street
  - County Road
  - State Highway
  - Other
  - Unclassified
- Barriers
  - Water
  - Major Roads
  - Railroads
Update of City of Bowie Trails Master Plan

TRAILS GAP ANALYSIS

Legend

Existing Trails (City of Bowie, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidepath
- Bike Lane
- Private Trails

Destination Trail Alignments - Existing and Planned
- Capital Trails Coalition Trail (2018)
- HeritageTrail (City of Bowie, 2018)
- East Coast Greenway (2018)

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Public input from planning workshop, February 2, 2019

Case # 4-04035 1/10/2019
APPROVED PPS 4-04035

Slide 8 of 9

Crosswalk blocking by cars. Better connectivity between Bowie Marketplace and Free State.

Gap Trail crossing safety issues along 197 between 450 and 50.

Bridge too narrow for cars & bikes. Poor WB&A connection to neighborhood. Difficult crossing due to cars. Needs better pedestrian access to stores.

Needed improvements/barriers to access.

Needed trail connection.

Bridge across Patuxent Poor bike conditions along Highbridge Rd. Poorly maintained. Needed tunnel lighting.

Needed path improvements—widen.

Connect from 450 to Pope's Creek Park—currently, ends at field.

Bridge across Patuxent Dangerous. Needed tunnel lighting.


Needed path improvements—widen.

Needed improvements—barriers to access.

Needed trail connection.

Improve crossing—major trail connection to South Bowie.

Connect to CVS.

Upgrade crosswalks.

Upgrade Northview sidepath.

Maintenance—tree roots along 197.

Safety issues at end of trail on north side 450.

Inadequate crossing.

Sidewalks needed along 11th St.

Need crosswalk at Scarlet Oak Terrace and at Superior Lane.

Need dedicated pedestrian access to stores at Marketplace, Free State, and Hilltop. Safety issues where trails and sidewalks intersect w/ driveways along 450.

More crosswalks in Levitt sections of City.
COMMON TRAIL SEGMENTS & MDOT/SHA TRAIL SEGMENTS
Update of City of Bowie Trails Master Plan

PROPOSED TRAIL NETWORK

Neighborhood/ Park/ School Linkages
The Greater Bowie Loop

Proposed Trail Network

Long Term: The Greater Bowie Loop
Legend

Existing Trails (City of Bowie, 2018)
- Multi-Use Trail
- Multi-Use Trail in Park
- Shared Road
- Sidepath
- Bike Lane
- Private Trails

Planned Trails (Prince George Co., 2019)
- Hard Surface Trail
- Side Path
- Hiker-Biker
- Natural Surface Trail
- Off-Road
- Other
- Planned/Private/Unknown Ownership Trail

Destination Trail Alignments - Existing and Planned (2018)
- Capital Trails Coalition Trail (2018)
- Heritage Trail City of Bowie, 2016
- East Coast Greenway (2015)
- Patuxent River Water Trail
- Sidewalks (PGC, 2017)
- City Parks
- County Parks

PREFERRED TRAIL NETWORK - SEGMENT RESPONSIBILITY
Appendix B: Funding Sources

Bicycle and Pedestrian Funding Programs in Maryland

Maryland offers a wide variety of federal and state funded programs to help plan, design, and build projects throughout the state. The following summarizes key grant criteria and requirements for these federal and state funding programs which are the primary funding sources for bicycle and pedestrian projects. State staff offer workshops annually to help potential applicants to identify ways to combine the grants to successfully to implement projects. All grant funding is provided on a reimbursement basis.

Transportation Alternatives Program (SHA)
The program provides funding for projects that enhance the cultural, aesthetic, historic, and environmental aspects of the intermodal transportation system. (https://www.roads.maryland.gov/Index.aspx?PageId=144)

Eligible Bike/Pedestrian Projects:
- Planning and design of bike/pedestrian facilities and safe routes for non-drivers ($25,000 maximum);
- Construction of bike/pedestrian facilities;
- Construction of safe routes for non-drivers; and
- Conversion of abandoned rail to bike/pedestrian trails.

Requirements:
- Funding source: Federal. All TAP projects must comply with ADA, NEPA, Davis-Bacon wage rates, Buy America, and other applicable state and federal regulations;
- Local match: 20% of total eligible project costs as a cash match. A TAP grant can cover up to 80% of the design and/or construction costs. Prior project work and right-of-way acquisition and in-kind services match cannot be counted toward the 20% match requirement.
- All TAP projects must meet the following criteria:
  - Open to the public and benefit all Marylanders, not a specific group or individual;
  - Relate to transportation and serve a transportation purpose, connecting two destinations. (TAP projects cannot be solely recreational in purpose, but may be phased as long as each phase continues to serve transportation destinations);
  - Unrelated to planned or existing highway projects, routine highway improvements, or required mitigation for a planned or existing highway project; and.
  - Located on publicly-owned right-of-way or on right-of-way encumbered with a permanent easement held by a state agency or the government agency sponsoring or co-sponsoring the project.

Maryland Bikeways Program (MDOT)
The program supports projects that maximize bicycle access and fill missing links in the state’s bicycle system, focusing on connecting shared-use paths and roads and enhancing last-mile connections to work, school, shopping and transit.

Eligible Bike/Pedestrian Projects:
To be eligible for funding through the Bikeways program, a project must meet one (1) eligibility criteria at a minimum:
- Access to Transit: project is located within 3 miles of a rail transit station or major bus transit hub;
- Missing Link: project provides bicycle access along missing trail links, as identified in MDOT’s statewide trail network vision document, “Maryland Trails: A Greener Way to Go”;
- County Priority: project is identified as a transportation priority in a County’s most recent annual priority letter submitted to MDOT;
- Sustainable Community: project enhances bicycle circulation within, or access to, a Maryland Sustainable Community area;
- Main Street: project enhances bicycle circulation within, or access to, a designated Maryland Main Street;
- Access to Low Income area: project enhances bicycle circulation within, or access to, a Census tract(s) within which 50% or more of householders have incomes below 60% of area median income; or,
- Access to Points of Interest: Project enhances bicyclist access to a major institution (e.g. university) OR to an important tourist or heritage attraction OR to a central business district (as evidenced by land uses).
**Project Types**

**Design**
- For completion of Design Plans and Feasibility Assessments of proposed or potential bikeways.
- To assess issues, such as environmental impacts, right-of-way issues, ADA compatibility, local support, and cost estimates.

**Construction**
- For construction or installation of bikeways infrastructure.
- May include transportation trails, side-use paths, bicycle and pedestrian shared-use bridges, cycle tracks, bicycle lanes, bikeshare station installation, and other major projects.

**Minor Retrofits**
- For installation of low-cost treatments to enhance bicycle routes.
- May include bicycle route signing, pavement markings, bicycle parking, drainage grate replacement, and similar low-cost treatments.
- Maximum grant award for this project type is $100,000.

**Matching Fund Requirements**
Grantees are required to provide a minimum of 20% of total project cost as match. The matching fund contribution can be in the form of cash, an in-kind contribution, or a 3rd party contribution.

**Recreational Trails Program (MDOT-SHA)**
This federally-funded program is designed to assist development and maintenance of smaller scale motorized and non-motorized trail, trailhead and restoration projects. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, canoeing, kayaking, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

**Eligible Bike/Pedestrian Projects:**
- Construction of new trails;
- Maintenance and restoration of existing trails;
- Development/rehabilitation of trailside facilities and linkages;
- Purchase/lease of trail construction equipment;
- Acquisition of easement or property for trails; and,
- Improvements to signage and structures.

**Requirements:**
- Funding source: Federal. Grant awards cannot exceed $80,000 for new construction and $30,000 for other projects;
- Local match: 20% of total project cost as a cash or in-kind match.

**Recreational Trails projects with the following criteria are preferred:**
- Connect communities with natural/cultural areas or tourism areas (ie. Scenic Byways, Heritage Areas, Canal Towns, etc.);
- Broad-based community support;
- Complete a missing link in the State Trails Plan;
- Link or complete existing trails;
- Mitigate trail impacts on the natural environment; and,
- Construction or maintenance accomplished with youth conservation corps or service groups.
**Safe Routes to Schools (SHA)**

A program providing reimbursable funding for education and infrastructure improvements in the vicinity of state-funded K-8 institutions that promote students walking and cycling to school. Safe Routes to School projects must be requested through the larger Transportation Alternatives Program due to the latest federal transportation law, FAST Act.

**Eligible Bike/Pedestrian Projects:**
- Bike/Pedestrian safety classes for students;
- Traffic education and enforcement near schools;
- Public awareness campaigns for press and community leaders;
- Sidewalk Improvements within 2.0 miles of school;
- Traffic calming and speed reduction improvements;
- On- and off-Street bike/pedestrian improvements;
- Bicycle parking; and,
- Traffic diversion, education and enforcement near schools.

**Requirements:**
- Funding source: Federal (part of Transportation Alternatives Program);
- Local match: 20% of total project cost as a cash match;
- Safe Routes to School projects with the following criteria are preferred:
  - The project and its outcomes are viable; and,
  - Addresses an infrastructure or programmatic gap.

**Motor Vehicle Administration (MVA) Maryland Highway Safety Office Grant**

This grant aims to reduce the number of motor vehicle-related crashes, deaths, and injuries on Maryland highways. The State's Strategic Highway Safety Plan (SHSP) is a data-driven plan that identifies the top safety priorities that are eligible for funding. Pedestrian and Bicycle Safety is one of six of Maryland’s top safety priorities and these are called priority emphasis areas (http://www.mva.maryland.gov/safety/mhso/grants%E2%80%90management.htm).

**Eligible Bike/Pedestrian Projects:**
Pedestrian safety projects consistent with SHSP strategies (see below).

**Requirements:**
- Funding source: Federal (Highway Safety Improvement Program funds);
- Local match: 20% of total project cost as a cash match;
- Projects must match one of the top safety priorities and implement the strategies identified in the Strategic Highway Safety Plan:
  - Identify and target pedestrian and bicycle safety issues, populations and locations of concern through collection, analysis, and evaluation of data and information;
  - Promote safe behaviors of all road users appropriate for the environment through education and enforcement initiatives;
  - Create and improve roadway environments for safe walking and bicycling through implementation of engineering treatments, land use planning and system-wide countermeasures;
  - Create and improve pedestrian and bicycle safety culture in Maryland, including the promotion and implementation of legislation and the training of professionals and stakeholders about best safety practices;
  - Develop, apply, and promote technological approaches, including those in vehicles and emergency response equipment, in order to better prevent and reduce the severity of collisions involving pedestrians and bicyclists; and,
  - Identify and promote safe driving and pedestrian behaviors for all motorists and public safety professionals at the scene of emergency events.
MDOT System Program Funding
These are MDOT/SHA dedicated funding programs that support bicycle and pedestrian improvements on state roads. SHA, typically with the request of local government, identifies, designs and constructs these projects (https://www.roads.maryland.gov/Index.aspx?PageId=707)

Sidewalk Reconstruction for Pedestrian Access (Fund 33)
The primary purpose of this fund is to upgrade existing pedestrian facilities along state highways to meet Americans with Disabilities Act Accessibility Guidelines (ADAAG) and the SHA Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways.

Requirements:
- Considered at locations where no other project is planned;
- Projects must be along a State Highway;
- Projects must provide access and connectivity to pedestrian generators (transit, government and public facilities) within ½ mile;
- Projects are not limited to Priority Funding Areas; and,
- Projects do not require any funding participation from the local jurisdiction.

New Sidewalk Construction for Pedestrian Access (Fund 79)
The primary purpose of this fund is to construct new sidewalk along the state highway system where it does not currently exist.

Requirements:
- Projects must be requested by the local jurisdiction where the sidewalk would be located;
- Projects must be along an “urban highway,” as defined in Maryland Transportation Code Annotated § 8-630;
- Projects must be at locations where no other project is currently planned to construct or reconstruct the roadway;
- The local jurisdiction must agree to the following as required by Maryland Transportation Code Annotated § 8-630:
  - To fund or secure all right-of-way outside of SHA right-of-way;
  - To provide opportunities for public involvement prior to construction; and,
  - To maintain the sidewalk upon construction completion.
- Construction of projects not located within a Priority Funding Area shall be funded equally between SHA and the local jurisdiction;
- Construction of projects located within a Priority Funding Area shall be 75% funded by SHA and 25% funded by the local jurisdiction;
- If a sidewalk is located in a “Sustainable Community,” per Housing and Community Development Article §6-301, construction may be funded entirely by SHA; and,
- If a sidewalk is located in a Priority Funding Area and it is determined that a substantial public safety risk or significant impediment to pedestrian access exists, and the adjoining roadway is neither under construction nor reconstruction, sidewalk construction shall be identified as a system preservation project and may be funded 100% by SHA.

Bicycle Retrofit (Fund 88)
The primary purpose of this fund is to provide bicycle facilities along the state highway system to promote connectivity or address safety concerns. Improvements may include on-road facilities (marked bicycle lanes or marked shared use lanes or marked shared use lanes) or off-road facilities such as shared-use paths.

Requirements:
- Considered where no other project is planned;
- Projects for on-road improvements do not require any funding participation from the local jurisdiction; and,
- Projects for off-road improvements are subject to the same requirements as the New Sidewalk Construction for Pedestrian Access program.
Additional State Grant Opportunities

Maryland Department of Housing and Community Development (DHCD) Community Legacy Program
This program provides local governments and community development organizations with funding for essential projects aimed at strengthening communities through activities such as business retention and attraction, encouraging home ownership and commercial revitalization. Projects must be located within an approved Sustainable Community to be eligible for funding. Bicycle and pedestrian opportunities include streetscape improvements and as part of mixed-use developments.

https://dhcd.maryland.gov/Communities/Pages/programs/CL.aspx

Maryland Department of Natural Resources (DNR) Program Open Space
This program consists of two components: a local grant component often called Localside POS; and, a component that funds acquisition and recreation facility development by the State. The Localside component provides financial and technical assistance to local subdivisions for the planning, acquisition, and/or development of recreation land or open space areas.

http://dnr.maryland.gov/land/Pages/ProgramOpenSpace/home.aspx

Maryland Historical Trust (MHT) Maryland Heritage Areas Financial Assistance Programs
Projects within Maryland Certified Heritage Areas are eligible for various tax credits, grants and loans. These financial assistance programs support a wide variety of historic, natural, and cultural resource-related activities that support heritage tourism. Bicycle and pedestrian related infrastructure and events can be supported through this program as they relate to heritage-based tourism and could include projects such as bike and pedestrian trail development, development of directional and interpretive signage, and trailhead development if they can be shown to directly benefit heritage-based tourism of the Anacostia Trails Heritage Area now branded as “Maryland Milestones” (http://www.anacostiatrails.org/about).
Additional Public and Private Grant Opportunities

There are a variety of other public and private grant opportunities available to fund bicycle and pedestrian projects. The specific project type is the first step to determine funding eligibility. Several examples are included below.

Metropolitan Washington Council of Government’s Transportation Land-Use Connections Program (TLC) provides short-term consultant services to local jurisdictions for small planning projects that promote mixed-use walkable communities and support a variety of transportation alternatives. The program provides consultant assistance of $30,000 to $60,000 for planning projects, and up to $80,000 for conceptual design or preliminary engineering projects. This program provided funding for studies and design services that led to the Bowie Heritage Trail. (See https://www.mwcog.org/transportation/planning-areas/land-use-coordination/tlc-program/).

The Robert Wood Johnson Foundation (http://www.rwjf.org/) invests in grantees (e.g., public agencies, universities, and public charities) that are working to improve the health of all Americans. Current or past projects in the topic area “walking and biking” include greenway plans, trail projects, advocacy initiatives, and policy development.

The People For Bikes Community Grant Program (http://www.peopleforbikes.org/pages/community-grants) provides funding for important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.

The National Center for Safe Routes to School (http://www.saferoutesinfo.org/) identifies ways for communities to solicit non-government funding for Safe Routes to School activities. The multiple benefits of Safe Routes to School (SRTS) programs, including the safety, health, environment and community impacts, often align with the interests of the local community.