



THE MONTGOMERY COUNTY
BICYCLE MASTER PLAN

APPROVED AND ADOPTED | DECEMBER 2018

Contact

Montgomery County Planning Department (M-NCPPC)
8787 Georgia Ave
Silver Spring, MD 20910

MontgomeryPlanning.Org/BikePlan

Cover Photos

From left to right:

1. Michael Jackson
2. Montgomery County Planning Department
3. Lynn Ho
4. Scott Willets

Abstract

The Bicycle Master Plan contains the text and supporting maps and tables for a comprehensive amendment to the 1978 Master Plan of Bikeways, 2005 Countywide Bikeways Functional Master Plan and all bikeway recommendations in past functional plans, area master plans and sector plans, bringing Montgomery County in line with leading practices in bicycle planning. The plan is a key element in Montgomery County's Vision Zero Two-Year Action Plan to eliminate traffic-related fatalities and serious injuries.

This plan makes recommendations for a low-stress network of bikeways throughout Montgomery County. These recommendations are intended to help identify opportunities that may arise in the future to install bikeways. The goal of this system is to ensure cyclists of all ages and abilities are comfortable and safe riding to transit stations, employment centers, shops, public facilities and other destinations in Montgomery County.

A new classification system is proposed in the plan to evaluate cycling routes based on their level of separation from traffic. A new concept, the Breezeway Network, is recommended to create a high-capacity system of arterial bikeways between major activity centers. This network allows faster bicyclists to travel with less delay and is one in which all users – including slower moving bicyclists and pedestrians – can safely and comfortably coexist.

Long-term bicycle parking stations are recommended at all Metrorail Red Line and many MARC Brunswick Line, future Purple Line and Corridor Cities Transitway stations to encourage bicycling to transit.

In addition, this plan recommends capital, educational and outreach programs, and a legal and policy framework to encourage bicycling.

Source of copies

The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, MD 20910

Online at montgomeryplanning.org/bikeplan

EXECUTIVE SUMMARY

- The Bicycle Master Plan is a **comprehensive overhaul** of the 1978 Master Plan of Bikeways, 2005 Countywide Bikeways Functional Master Plan and all bikeway recommendations in past functional plans, area master plans and sector plans, bringing Montgomery County in line with leading practices in bicycle planning.
- To create a world-class bicycling community, this plan focuses on **four key goals**: 1) increasing bicycling rates in Montgomery County, 2) creating a highly-connected, convenient and low-stress bicycling network, 3) providing equal access to low-stress bicycling for all members of the community, and 4) improving the safety of bicycling.
- This plan recommends a framework for establishing a **network of low-stress bikeways** in Montgomery County. This will create an environment where people of all ages and bicycling abilities feel comfortable and safe riding bicycles to work, shop, transit, public facilities and other destinations in the county. The purpose of proposing an extensive network of bikeways is to identify options for bikeways that should be constructed if possible, to achieve the goal of creating a network that connects people and destinations by bicycle. The plan does not assume that every proposed bikeway in the master plan will be constructed.
- A **new bikeway classification system** is proposed to organize bikeways based on their level of separation from traffic. The system ranges from trails, which are fully separated from traffic, to shared roads, where it is appropriate for bicycles and automobiles to share the same space.
- After applying the **Level of Traffic Stress** methodology to Montgomery County's road network, appropriate bikeway recommendations were selected to create a low-stress bicycling network. The 1,125-mile network of bikeways includes 585 miles of sidepaths, 174 miles of trails, 130 miles of bikeable shoulders, 95 miles of separated bike lanes and 49 miles of neighborhood greenways. More than one-quarter of this network currently exists.
- The plan uses a **data-driven approach** to assess the amount of discomfort that people feel when they bicycle close to traffic on roads in the county. Currently, 16 percent of potential bicycling trips can be made on a low-stress bicycling network in Montgomery County. This plan aims to increase this measure of low-stress connectivity to 50 percent.
- A new concept, the **Breezeway Network**, is recommended as a high-capacity network of arterial bikeways between major activity centers, enabling bicyclists to travel with fewer delays, and where all users - including slower moving bicyclists and pedestrians - can safely and comfortably coexist.

EXECUTIVE SUMMARY

- To complement the low-stress bicycling network, the plan recommends **abundant and secure bicycle parking**. These facilities include bicycle parking stations at all Metrorail Red Line stations and at the higher demand MARC, future Purple Line and Corridor Cities Transitway (CCT) stations. The plan also includes guidelines for short-term and long-term bicycle parking at commercial and multi-family residential developments.
- The innovative **Bicycle Facility Design Toolkit** is included to guide planners and designers on building high-quality bikeways and intersections.
- A strategic, thoughtful and effective **outreach program** was executed for the plan with traditional and new ways to engage with the community. This outreach included a stress-reducing coloring book to educate the public about bicycle facility types, a bicycling photo contest to collect real-world examples of bicycling in Montgomery County and multiple online maps for crowdsourced feedback and documenting of bicycling conditions.
- To encourage bicycling, the plan recommends bicycle-supportive **programs and a legal and policy framework**.
- The plan creates a **two-step approach to implementing** networks of **separated bike lanes** in urban areas of the county. In the first step, the county constructs low-cost separated bike lanes through retrofits to existing roads. Over time, these bikeways are upgraded as part of development approvals and county facility planning studies. These permanent designs will incorporate more aesthetically pleasing treatments and stormwater management, and increase the capacity of the bikeways.
- The plan creates a new approach to understanding **potential bicycle demand** by converting the regional travel demand model to a potential demand model for bicycling. This analysis was a primary factor in prioritizing bikeway recommendations.
- A **biennial monitoring report** will track progress in implementing the Bicycle Master Plan's vision. The report sets goals, objectives, metrics and targets that enable transparency and accountability in plan implementation.
- The plan is a key element in Montgomery County's **Vision Zero Action Plan** to eliminate traffic-related fatalities and serious injuries by 2030.

CONTENTS

| | |
|--|------------|
| INTRODUCTION | 9 |
| Master Plan Purpose | 13 |
| Master Plan Framework | 14 |
| DEFINING THE VISION | 17 |
| The Vision | 19 |
| Goals, Objectives, Metrics and Targets | 19 |
| ACHIEVING THE VISION | 35 |
| Bikeways | 37 |
| Bicycle Facility Classifications | 41 |
| General Bikeway Applications | 66 |
| Breezeway Network | 68 |
| Bikeway Recommendations | 80 |
| Bicycle Parking | 86 |
| Short-Term Bicycle Parking | 88 |
| Long-Term Bicycle Parking | 90 |
| Bicycle Parking Stations | 92 |
| Bicycle-Supportive Programs | 98 |
| Summary of Bicycle-Supportive Programs | 98 |
| Existing Bicycle-Supportive Programs | 100 |
| Recommended Expanded Bicycle-Supportive Programs | 103 |
| Recommended New Bicycle-Supportive Programs | 105 |
| Bicycle-Supportive Legal and Policy Framework | 109 |
| Summary of Bicycle-Supportive Legal and Policy Framework | 110 |
| Existing Legal and Policy Framework | 111 |
| Recommended Laws, Regulations and Policies | 113 |
| IMPLEMENTING THE VISION | 123 |
| Encouraging A Strong Bicycling Community | 124 |
| Establishing A Bicycle Master Plan Implementation Task Force | 126 |
| Small Area Infrastructure Plans | 126 |
| Bikeway Design Standards | 127 |
| Implementation Mechanism | 139 |
| Implementing Separated Bike Lanes In Constrained Corridors | 145 |
| Prioritization | 150 |
| Prioritization of Bikeways | 151 |
| Programmed Bikeways | 152 |

CONTENTS

| | |
|---|-----|
| Tier 1 Bikeway Projects | 154 |
| Tier 2 Bikeway Projects | 164 |
| Tier 3 Bikeway Projects | 174 |
| Tier 4 Bikeway Projects | 184 |
| Prioritization of Bicycle Parking Stations | 192 |
| Prioritization of Bicycle-Supportive Programs | 194 |
| Prioritization of Bicycle-Supportive Laws, Regulations and Policies | 195 |

MONITORING THE VISION 199

BIKEWAY RECOMMENDATIONS 203

APPENDICES

| |
|---|
| Appendix A: Detailed Monitoring Report |
| Appendix B: Bicycle Facility Design Toolkit |
| Appendix C: Issue Papers |
| Appendix D: Level of Traffic Stress Methodology |
| Appendix E: Bikeway Prioritization Methodology |
| Appendix F: Short-Term Bicycle Parking Supply Analysis |
| Appendix G: Bicycle Parking Recommendations at Transit Stations |
| Appendix H: Silver Spring to Glenmont Bikeway |
| Appendix I: Outreach |
| Appendix J: Neighborhood Connectors |
| Appendix K: Bicycle Parking Guidelines |
| Appendix L: Carbon Emissions Analysis |
| Appendix M: Bikeway Guidance for Municipalities |



Photo: City of Calgary Bike Program