

T&E COMMITTEE #3
October 27, 2014

MEMORANDUM

October 23, 2014

TO: Transportation, Infrastructure, Energy and Environment Committee
FROM: ^{GO} Glenn Orlin, Deputy Council Administrator
SUBJECT: Facility planning review—Goldsboro Road Pedestrian and Bikeway Improvements

The Council has programmed \$1,285,000 under the Facility Planning—Transportation project for the Department of Transportation (DOT) for the planning of pedestrian and bikeway improvements along Goldsboro Road (MD 614) for approximately one mile, between MacArthur Boulevard and River Road (MD 191). During the past two years DOT has completed Phase I of facility planning for this project—the feasibility study stage—for which \$570,000 had been appropriated: \$139,000 in staff charges and \$431,000 in consultant funding.

This worksession is the opportunity for Committee members and other interested Councilmembers to provide informal feedback to DOT as to whether to proceed to Phase II of facility planning—the detailed planning stage—that would produce the precise project scope and develop reliable estimates of cost and community and environmental impact, and if so, what should be studied. DOT could proceed to Phase II soon after this review; its programmed cost is \$715,000: \$165,000 in staff charges and \$550,000 in consultant costs. If the Phase II study goes forward according to the funding schedule in the current capital program, a Goldsboro Road Pedestrian and Bikeway Improvements Capital Improvements Program (CIP) project may be ready to be included as an amendment to the FY17-22 CIP in early 2017.

Aruna Miller, DOT's facility planning manager, will brief the Committee on the Department's findings and recommendations; the executive summary of the Phase I prospectus is on ©1-12.¹ David Anspacher of the Planning staff will summarize the Planning Board's views; the Board's letter is on ©13, and the Planning staff's packet is on ©14-25. Council staff will conclude with analysis and recommendations. After the Committee has explored the issues it will be asked for its guidance to DOT, which subsequently will be transmitted in a memorandum from the Committee Chair to the DOT Director.

¹ The full Phase I prospectus can be viewed at: <http://www.montgomerycountymd.gov/dot-dte/Resources/Files/Goldsboro%20Project%20Prospectus%20August%202014.pdf>

Alternatives studied. DOT examined three alternatives in some detail (in addition to the no-build alternative). All three options assume an 11'-wide travel lane in each direction, a 5-5½'-wide bike lane in each direction, a continuous 5'-wide sidewalk on the north side, and a few short segments of 5'-wide sidewalk on the south side, mainly to access bus stops. None of the alternatives would require relocations of homes or businesses, although there would be small strips of property needed in fee simple and for easements. The alternatives differ as follows:

- Alternative 1: the continuous north-side sidewalk would be adjacent to the curb. The total cost (including design, construction, construction management, utility relocation, and land acquisition) is estimated to be \$14.2 million.
- Alternative 2 is the same as Alternative 1, except that a 6½'-wide landscaped buffer would be placed between the north-side sidewalk and the curb. The total cost estimate is \$14.3 million.
- Alternative 3 is the same as Alternative 2, except on the south side there would be a continuous 5'-wide sidewalk and 6½'-wide landscaped buffer. Because of the presence of Minnehaha Branch that runs parallel and (mainly) south of Goldsboro Road, extensive retaining walls and stormwater management will be needed, so the total cost estimate is \$27.8 million.

Of the 66 public comments received, 62 support the project. Only 18 identified a preference for a particular alternative: 4 for Alternative 1, 8 for Alternative 2, and 6 for Alternative 3.

DOT recommends carrying forward Alternative 2 for more detailed study in Phase II. Both the Planning Board and its staff concur with DOT.

Council staff concurs that Alternative 2 should be carried forward into Phase II of facility planning. It would provide a balance between the need to provide for basic and safe pedestrian and biking accommodation along this 35 mph road, while minimizing impacts on Minnehaha Branch. It would provide a horizontal separation between pedestrians and motor vehicles not afforded by Alternative 1, and it could be built for \$13.5 million less than Alternative 3—about half as much. There are very few points along the south side of Goldsboro Road not already connected by a sidewalk.

Cycle track alternative. DOT should also explore a variation of Alternative 2 that would replace the two proposed standard bike lanes with a cycle track physically separated from travel lanes. A majority of existing *and potential* bicyclists require the physical separation provided by a cycle track, especially along an arterial like Goldsboro Road.

M-NCPPC's Montgomery County Bicycle Planning Guidance (July 2014) supplies useful understanding about bicyclists' perceptions. It reports:

Research conducted at Portland State University has identified four general groups of attitudes towards bicycling. Very confident bicyclists who are comfortable operating in the roadway as a vehicle are classified as the "strong and fearless," and are estimated to make up only 4% of the population. Bicyclists who are comfortable riding on some roadways but prefer bicycle facilities separate from vehicular traffic (bike lanes or shared use path) are classified as "enthused and confident" and are estimated to make up approximately 9% of the population. Bicyclists who would like to ride more, but have safety concerns that are dissuading them are classified as "interested but concerned" and make up most of the population (56%). The remaining people [31%] are classified as "no way no how," and have no interest in riding a bike for transportation. (Montgomery County Bicycle Planning Guidance, p. 6)

A key is to cater to the needs not only of the “strong and fearless” and “enthused and confident” bicyclists—who together comprise a small proportion of the general population—but of the “interested but concerned” riders as well, who comprise the majority of existing and potential bicyclists. The Portland State research notes that while 96-97% of “strong and fearless” and “enthused and confident” bicyclists are “comfortable” or “very comfortable” with standard bike lanes, less than 40% of the “interested but concerned” riders are. However, introducing separated bike lanes—either buffered bike lanes, a cycle track, or a shared use path—raises the comfort level for this group to over 80% (©26).²

Providing this separation on Goldsboro Road would be desirable especially in the eastbound direction, which is a one-mile uphill climb. “Interested but concerned” bicyclists making that climb will be traveling next to cars driving at or in excess of 35 mph. Similarly, pedestrians headed in the westbound (downhill) direction may be uncomfortable sharing a path with bikers, who are likely to reach higher speeds as they head downhill towards MacArthur Boulevard.

One-way cycle tracks are 5-7’ wide, while two-way cycle tracks are 8-12’ wide, not including the buffer between the travel lane and the track. If an 8’-wide two-way cycle track with a 2’-wide buffer on the north side were to replace the two 5-5½’-wide bike lanes, it could fit in the same total cross-section width as Alternative 2. If it were a 10’-wide two-way cycle track with a 3’-wide buffer, it would also fit within Alternative 2’s cross-section, if the landscaped strip between the track and the north-side sidewalk were reduced to 3’ in width. Since the landscaped strip would, in this case, separate pedestrians from bicyclists instead of motor vehicles, it would not need to be as wide.

Council staff recommendation: During Phase II facility planning DOT should evaluate both Alternative 2 and another alternative that would replace the proposed bike lanes with a cycle track.

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² This research measured the comfort level of over 900 riders along a four-lane street with on-street parking and 30-35 mph vehicle speeds. Goldsboro Road is only two lanes and has no on-street parking. However, the motor vehicle speeds on Goldsboro Road are likely in the 35-45 mph range—the posted speed limit in 35 mph—so the results should be comparable.

EXECUTIVE SUMMARY

I. Introduction

The Montgomery County Department of Transportation (MCDOT), Division of Transportation Engineering, has completed a Phase I Facility Planning Study to evaluate the need for master planned bicycle lanes and sidewalks along a one mile segment of Goldsboro Road (MD 614) between MacArthur Boulevard and River Road (MD 190) (see Vicinity Map, **Figure 1**). This Prospectus presents the results of the Phase I Study and will be used to determine if the project should proceed to a Phase II Facility Planning Study.

II. Background and Description

Goldsboro Road is identified in the 1990 Bethesda-Chevy Chase Master Plan as Arterial A-84 from MacArthur Boulevard to Massachusetts Avenue, and as Major Highway M-93 from Massachusetts Avenue to River Road. The Master Plan recommends that A-84 retain its two-lane section and that M-93 retain its two-lane section with consideration for the long-term expansion to its ultimate width of four lanes. The *2005 Countywide Bikeways Functional Master Plan* proposes on-street bike lanes along Goldsboro Road (identified as Route #BL-1 in the Countywide Bikeways Functional Master Plan), directly connecting to MacArthur Boulevard existing shared use path and proposed bike lanes #DB-1, Massachusetts Avenue proposed shared signed roadway #SR-50, and River Road proposed shared use path / signed shared roadway #DB-2.

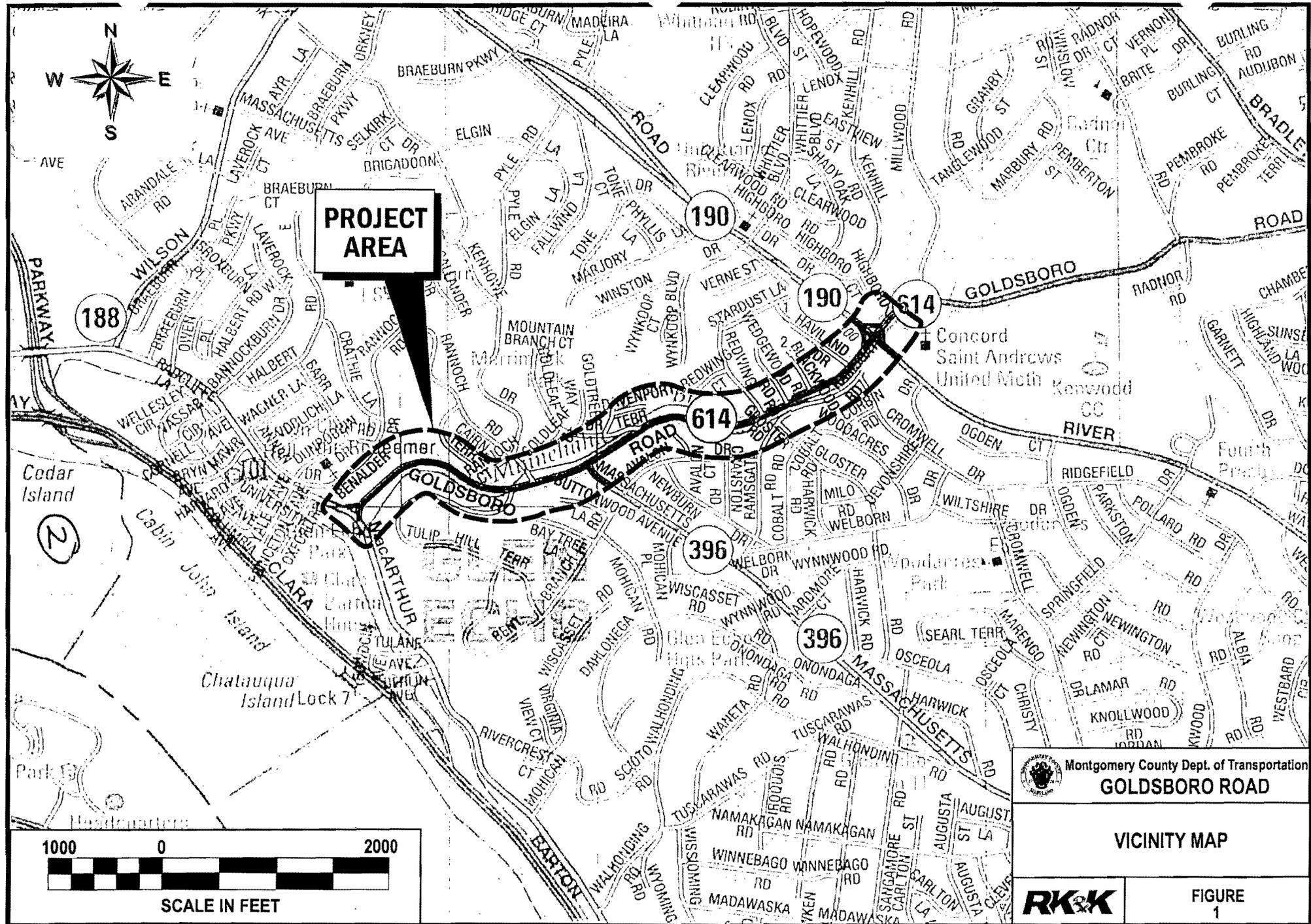


Photo 1 - Goldsboro Road at Goldleaf Drive

The study area is primarily residential, consisting mainly of low-density single family homes, some medium-density residential townhomes, and one commercial office building. Minnehaha Branch, a tributary to the Potomac River, runs adjacent to Goldsboro Road. Bus stops are located throughout the study area, served by RideOn Route 29. The 2013 average annual daily traffic on Goldsboro is 11,401 west of Massachusetts Avenue, and 16,371 east of Massachusetts Avenue. At the western limit of the project is Glen Echo Park, a major destination park that hosts many arts and cultural organizations, artist studios, a restored carousel, and numerous classes in visual and performing arts.

Within the study area, Goldsboro Road is an undivided, two-lane, two-way roadway, with a speed limit of 35 mph. There are existing sidewalks in select locations along the south side of the roadway, but overall there is limited pedestrian connectivity. There are no existing marked bicycle facilities along Goldsboro Road, and the existing shoulder widths vary from one to eight feet, with a typical width of two to four feet.

①



Montgomery County Dept. of Transportation
GOLDSBORO ROAD

VICINITY MAP

RK&K **FIGURE 1**

III. Purpose of the Project

The purpose of the project is to:

- Enhance safety for bicyclists and pedestrians along the Goldsboro Road corridor
- Provide connections to existing and proposed bicycle and pedestrian facilities
- Improve access and links for bicyclists and pedestrians between homes, schools, places of worship, parks
- Improve access for bicyclists and pedestrians to transit facilities
- Comply with the 1990 Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan

IV. Project Need

The need for the project is based on the following:

- Improve the bicycle and pedestrian network as well as access to destinations along and beyond the study area
- Address existing pedestrian and bicycle facility disconnects and inadequacies within the roadway section
- Create a safer environment for bicyclists and pedestrians that utilize the corridor

V. Alternatives Evaluated

As part of the Phase I Facility Planning Study, the following four alternatives were evaluated by the study team and presented to the public for input:

- ***No-Build Alternative***
- ***Alternative 1: Sidewalk + Bike Lanes***
- ***Alternative 2: Sidewalk with Green Buffer + Bike Lanes***
- ***Alternative 3: Sidewalk Both Sides with Green Buffer + Bike Lanes***

VI. Public Outreach

The Department provided outreach to the community initially with a newsletter mailing which provided an overview of the project, invitation to a public meeting, and postage paid form to return comments on feedback. The newsletter's distribution list included 616 property owners and civic associations. (See **Appendix D** for copy of November 2013 Newsletter). A public meeting was held on December 4, 2013 at Walt Whitman High School where 43 people attended. Three build alternatives were presented. The feedback and comments were positive, with 61 out of 65 comments expressing support for the project or one of the alternatives. The public did not express a strong preference for one specific build alternative.

VII. Preferred Alternative

In addition to the feedback from the community, the study team reviewed each of the alternatives for the advantages and disadvantages. Alternative 3 was subsequently eliminated due to its significant environmental impacts, and associated costs. Providing continuous

sidewalk along both sides of the roadway would cause numerous impacts to Minnehaha Branch, requiring retaining walls and significant stream impact mitigation/relocation. The crosswalks and refuge islands under the Preferred Alternative will allow the continuous northern sidewalk to serve all destinations in the study area.

Alternative 2, which incorporates green buffers between the roadway and sidewalk, was selected as the Preferred Alternative over Alternative 1 because the buffers were considered to be an important feature that will improve the comfort and safety of pedestrians utilizing the new sidewalks. The Preferred Alternative, however, does omit the buffers at select locations where their inclusion would have caused significant impacts to the adjacent stream or residential properties.

The Preferred Alternative (see **Figure 3** on pages vi and vii) proposes a continuous sidewalk and a continuous bike lane along the north side of Goldsboro Road, and a continuous bike lane and intermittent sidewalk along the south side of Goldsboro Road as needed to improve pedestrian and bicycle access and connectivity. The proposed improvements also include sidewalk, shared use path and bikeable shoulders at the MacArthur Boulevard intersection, to provide connections to adjacent pedestrian and bicycle facilities, including the MacArthur Boulevard Bike Trail.

The Preferred Alternative includes crosswalks and refuge islands to allow pedestrians to safely cross Goldsboro Road, River Road and MacArthur Boulevard. The proposed crosswalks address comments received from the public with concern that the existing crosswalks are ineffective at compliance from drivers.

Figure 2 below illustrates the proposed typical section for Goldsboro Road which meets the Montgomery County Design Standards and includes the following features:

- Two 11-foot travel lanes
- 5 to 5.5-foot bike lane in each direction
- 5-foot sidewalk along the north side, with green buffer
- 5-foot sidewalk along the south side at select locations, with green buffer
- Street lighting

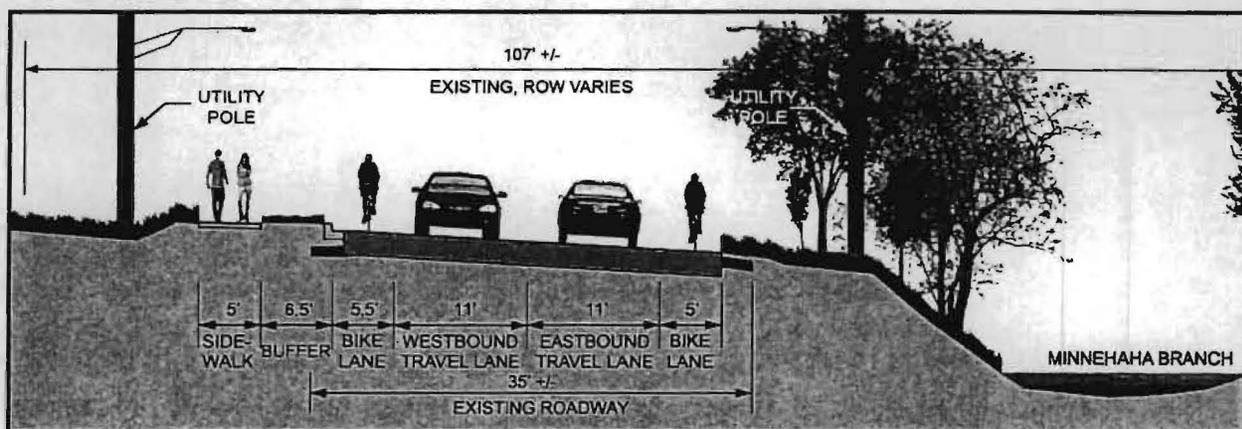


Figure 2 – Proposed Goldsboro Road Typical Section

The proposed project will include minor roadway widening, new curb and gutter, sidewalk, storm drainage, stormwater management, sediment control, traffic control, pavement markings,

signage, lighting, forest conservation, landscaping, and utility relocation/adjustments. The proposed traffic operation features along Goldsboro Road are subject to review and approval of SHA. A summary of the potential impacts associated with the Preferred Alternative are summarized in **Table 1**. During the design phase, refinements will be performed for the Preferred Alternative to minimize impacts, including maintaining natural overland sheet flow.

Table 1: Impacts for Preferred Alternative	
Erodible Soils	Yes
Prime Farmland / Farmland of Statewide Importance	Prime Farmland soils are present
Forest	0.8 Ac in 6 separate wooded areas
Specimen Trees (> 24" dbh)	32
Floodplains	Yes
Waters of the U.S.	40 LF - Culvert Extensions
Wetlands	0.02 Ac
Special Protection Area	No
Rare, Threatened and Endangered Species	No
Forest Interior Dwelling Bird Habitat	No
Historic and Archeological Resources	Washington Aqueduct; Not Impacted
Parks and Recreational Facilities	Minor Impacts to NPS Property
Community Facilities	None
Properties Impacted	5
Right-of-Way Required	0.02 Ac
Displacements	None
Hazardous Material Sites	Exxon Gas Station
Utilities	Overhead Utility Pole Relocation, Potential Water & Gas Relocation

GOLDSBORO ROAD PEDESTRIAN AND BICYCLE IMPROVEMENTS SUMMARY TABLE	
PROJECT STUDY INFORMATION	
Name of Project and CIP #	Goldsboro Road Pedestrian and Bicycle Improvements, CIP #509337
Study Phase	Facility Planning, Phase I
Transportation Category	Roadway/Pedestrian and Bicycle Facilities
Study Performed by	Montgomery County Department of Transportation (MCDOT) Division of Transportation Engineering
Phase I Project Manager	Greg Hwang, 240-777-7279
Phase I Consultant	Rummel, Klepper & Kahl, LLP (RK&K) Pat Martino, 410-462-9313
Road Name	Goldsboro Road (MD 614)
Project Limits	MacArthur Boulevard to River Road (MD 190)
Project Length	1 Mile
Functional Classification of Roadway	Arterial (A-84) / Major Highway (M-93)
EXISTING CONDITIONS	
# of Lanes	2
Typical Lane Width	11'
Average Daily Traffic (ADT)	11,401 west of Massachusetts Avenue 16,371 east of Massachusetts Avenue
# of Bus Stops	9
Signalized Intersections	River Road (MD 190) Massachusetts Avenue (MD 396)
Stop-Controlled Intersections	MacArthur Blvd / Goldsboro Road (Partial Stop Control @ Circle) Tulip Hill Terrace / Goldsboro Road Rannoch Road / Goldsboro Road Goldleaf Drive / Goldsboro Road Redwing Road / Goldsboro Road Wedgewood Road / Goldsboro Road Blackwood Road / Goldsboro Road Haviland Drive / Goldsboro Road
Posted Speed	35 mph
Adjacent Communities	Bannockburn Civic Association Goldsboro Homeowners Association Wood Acres Citizens Association Tulip Hill Citizens Association
Homes Adjacent to Goldsboro Road	36
Homes with Driveway Access	13
Schools	5 (Concord-St. Andrews Cooperative Nursery School, Bannockburn Elementary, Wood Acres Elementary, Thomas W. Pyle Middle, Walt Whitman High)



Places of Worship	2 (Concord-St. Andrews United Methodist Church, The Episcopal Church of the Redeemer)
Parks	2 (Glen Echo Park and Clara Barton National Historic Site, Merrimack Neighborhood Park)
Other Places of Interest	n/a
Portion with Closed/Open Section	Typically open section 1000 LF of partial closed section adjacent to homes at eastern limits of study area
Portion with Sidewalk	1300 LF along south side of Goldsboro Road between Tulip Hill Terrace and Goldleaf Drive
Portion with Shared Use Path	n/a
Right-of-Way Widths	Varies - 75' to 100' typically, some areas wider
CRASH HISTORY	
2007 to 2011 - Goldsboro Road	22 crashes, no fatalities, 0 crashes involving bikes or pedestrians
2008 to 2012 - MacArthur Blvd Circle and Adjacent Roadway	8 crashes, no fatalities. 3 of the crashes involved bikes. All 3 bicycle crashes had injuries.
FACILITY PLANNING, PHASE I SUMMARY	
Transportation Category	Roadway/Pedestrian and Bicycle Facilities
Referenced Master Plans	1990 Bethesda-Chevy Chase Master Plan 2005 Countywide Bikeways Functional Master Plan
Annual Growth Policy Area	Bethesda / Chevy Chase
Purpose	<ul style="list-style-type: none"> • Comply with the 1990 Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan • Promote bicycling and pedestrian use along the Goldsboro Road corridor • Provide connections to existing and proposed bicycle and pedestrian facilities • Improve access for bicyclists and pedestrians to transit stops, parks and recreation areas, places of worship, schools and homes • Enhance safety for bicyclists and pedestrians along the Goldsboro Road corridor, including at intersections and transit stops
Need	<ul style="list-style-type: none"> • Improve the bicycle and pedestrian network as well as access to destinations along and beyond the study area • Address existing pedestrian and bicycle facility disconnects and inadequacies within the roadway section • Create a safer environment for bicyclists and pedestrians that utilize the corridor
Project Start Date	December 2012
Facility Planning, Phase I Project Prospectus Completion Date	August 2014

Alternatives Evaluated	<ul style="list-style-type: none"> • No-Build Alternative • Alternative 1: Sidewalk + Bike Lanes • Alternative 2: Sidewalk with Green Buffer + Bike Lanes • Alternative 3: Sidewalk Both Sides with Green Buffer + Bike Lanes 	
Preferred Alternative	<p>Alternative 2</p> <ul style="list-style-type: none"> • Two 11-foot travel lanes • 5 to 5.5-foot bike lane in each direction • 5-foot sidewalk along the north side, with green buffer • 5-foot sidewalk along the south side at select locations, with green buffer • Street Lighting 	
Preferred Alternative Impacts	<p><u>Property Impacts</u></p> <ul style="list-style-type: none"> • 1 property with Right-of-Way required • 0.02 acres of Right-of-Way • 5 properties with grading easements required • 0.1 acres of grading easement • No displacements <p><u>Natural Environment Impacts</u></p> <ul style="list-style-type: none"> • 0.8 Ac in 6 separate wooded areas • 0.02 acres of wetland • 40 LF of waters (culvert extensions) • 1.1 acres of additional impervious area • 32 specimen trees <p><u>Utility Impacts</u></p> <ul style="list-style-type: none"> • 29 utility poles, w/ overhead electric & cable • Underground gas & water lines present <p>During the design phase, refinements will be performed for the Preferred Alternative to minimize impacts, including maintaining natural overland sheet flow.</p>	
PUBLIC OUTREACH		
Public Meeting	December 4, 2013	
Newsletters	November 2013	August 2014
Mailing List	616	661
PERMITS		
Permits Required	<ul style="list-style-type: none"> • Access Permit – Maryland State Highway Administration • NRI/FSD, Forest Conservation Plan – M-NCPPC • Erosion and Sediment Control and Stormwater Management – MCDPS • Joint Permit Application (JPA) - MDE & USACE • Floodplain Permit – USACE • Special Use Permit - NPS 	



<p>Agencies Requiring Coordination</p>	<ul style="list-style-type: none"> • Montgomery County Department of Transportation (MCDOT) • Montgomery County Department of Permitting Services (MCDPS) • Montgomery County Department of Environmental Protection (MCDEP) • Montgomery County Historic Preservation Commission (HPC) • Maryland-National Capital Park & Planning Commission (M-NCPPC) • Maryland Department of the Environment (MDE) • Maryland Department of Natural Resources (MDNR) • Maryland Historical Trust (MHT) • Maryland State Highway Administration (MDSHA) • US Fish and Wildlife Service (USFWS) • National Park Service (NPS) • U.S. Army Corps of Engineers (USACE)
<p>OTHER</p>	
<p>Unresolved Issues</p>	<ul style="list-style-type: none"> • Sidewalk widening on Glen Echo Park NPS Property is subject to NPS approval & coordination. • The width of the proposed pedestrian bridge and south approach will be determined during design to address the public input in the design phase and comply with AASHTO, SHA and MCDOT design guidelines and criteria. • Measures to mitigate existing flooding issues on Goldsboro Road at Massachusetts Avenue • Continue coordination with SHA for improvements at River Road intersection • Extend island between service road and MacArthur Boulevard to prohibit direct left turns from Glen Echo Center parking lot to southbound MacArthur Blvd. Coordination with property owner is required. • The design will include a wayfinding plan to help bicyclists navigate the transitions between the MacArthur Blvd (west side) shared use path and the Goldsboro Road bike lanes.
<p>Unique Features</p>	<p>Washington Aqueduct weight restrictions require ongoing coordination with USACE for MacArthur Boulevard improvements.</p>
<p>Basis for Typical Section</p>	<p>The proposed Goldsboro Road roadway typical section is based on MCDOT Standard No.MC-2004.26, Suburban Minor Arterial Road With Bike Lanes. The width of the green space buffer (where feasible) and sidewalk widths are based on Standard MC-2004.08A, Suburban Arterial Road, 4 Lanes with Bike Lanes.</p>
<p>Basis for Major Decisions of Preferred Alternative</p>	<p>The Preferred Alternative addresses the following goals:</p> <ul style="list-style-type: none"> • Meets the project's purpose and need; • Provides safe, direct pedestrian and bicycle access along the corridor and to transit stops within the project area • Minimizes impacts to Minnehaha Branch
<p>Basis for Streetscape, Landscape Panel, Streetlights, etc.</p>	<ul style="list-style-type: none"> • MCDOT Standard MC-2004.08A, Suburban Arterial Road, 4 Lanes with Bike Lanes.

Basis for Stormwater Management (SWM) Design	<ul style="list-style-type: none"> • Incorporates the new Chapter V protocols and subsequent guidance documents of the Maryland Stormwater Design Manual dealing with the Environmental Site Design (ESD) criteria as required by the SWM Act of 2007. • Design projects utilizing Environmental Site Design (ESD) practices in landscaped areas for stormwater treatment.
Planning Board Briefing Date/Comments	TBD
Montgomery County Council's Transportation, Infrastructure, Energy and Environment Committee (T&E) Date/Comments	TBD



MONTGOMERY COUNTY PLANNING BOARD
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

OFFICE OF THE CHAIR

RECEIVED

September 26, 2014

SEP 30 2014

Arthur Holmes, Jr. Director
Montgomery County Department of Transportation
1010 Monroe Street, 10th Floor
Rockville, Maryland 20850

**DOT
DIRECTOR'S OFFICE**

RE: Goldsboro Road Pedestrian and Bicycle Improvements Project Phase I Facility
Planning

Dear Mr. Holmes,

The Planning Board reviewed the Project Prospectus for the Goldsboro Road Pedestrian and Bicycle Improvements project on September 18, 2014, and made the following recommendations:

1. The Goldsboro Road Bicycle and Pedestrian Improvements project should proceed to Phase II of the facility planning process to develop a detailed design for the completion of the Preferred Alternative (#2).
2. MCDOT should conduct a future facility planning study to further evaluate ways to reconfigure the intersection of MacArthur Boulevard and Goldsboro Road to simplify pedestrian and bicycle crossing movements and improve the operation and safety for all intersection users.

Thank you for your attention to this matter. If you have any questions or comments concerning our review, please contact David Anspacher 301-495-2191.

Sincerely,

Casey Anderson
Chair

Goldsboro Road Pedestrian and Bicycle Improvements Study – Facility Planning Phase I

- DA David Anspacher, Planner Coordinator, david.anspacher@montgomeryplanning.org, 301-495-2191
- TA Tom Autrey, Supervisor, thomas.autrey@montgomeryplanning.org, 301-495-4533
- PD Pam Dunn, Acting Chief, pamela.dunn@montgomeryplanning.org, 301-650-5649
- Tina Schneider, Senior Planner, tina.schneider@montgomeryplanning.org, 301-495-2101
- Matthew Folden, Planner Coordinator, matthew.folden@montgomeryplanning.org, 301-495-4539

Completed: 09/11/2014

Description

Staff will brief the Planning Board on the Project Prospectus for the Goldsboro Road Pedestrian and Bicycle Improvements project and solicit your comments, which will be considered in MCDOT's preparation of the final document to be submitted to the County Council.

Summary

MCDOT's Preferred Alternative (Attachment 1) includes bike lanes along Goldsboro Road between MacArthur Boulevard and River Road; a continuous sidewalk on the north side of the road with a landscaped buffer where space is available; a sidewalk along portions of the south side of the road to facilitate access to bus stops; and additional crossing improvements such as pedestrian medians and crosswalks.

The majority of public comments received are in favor of this project.

We believe that MCDOT has adequately addressed the issues raised by staff and we support the Preferred Alternative with the comments recommended below.

Recommendations

1. The Goldsboro Road Bicycle and Pedestrian Improvements Study should proceed to Phase II of the facility planning process to develop a detailed design for the completion of the Preferred Alternative (#2).
2. MCDOT should conduct a future facility planning study to further evaluate ways to reconfigure the intersection of MacArthur Boulevard and Goldsboro Road to simplify pedestrian and bicycle crossing movements and improve the operation and safety for all intersection users.

Previous Planning Board Actions: None

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Figure 1: Study Area



Background

The project study area (Figure 1) includes approximately one mile of Goldsboro Road, between MacArthur Boulevard and River Road. Goldsboro Road is a two-lane road with a posted speed limit of 35 mph. It is classified as an arterial road Between MacArthur Boulevard and Massachusetts Avenue, with an average daily traffic (ADT) of approximately 11,500 vehicles, and as a major highway between Massachusetts Avenue and River Road, with an average daily traffic (ADT) of approximately 16,500 vehicles.

The study area is approximately one and a half miles west of Downtown Bethesda. Glen Echo Park is on the west end of the study area and is a major destination park that hosts many arts and cultural organizations, artist studios, a restored carousel, and numerous classes in visual and performing arts. The study area is primarily residential, with mainly single-family homes, but also some townhomes and commercial buildings.

Minnehaha Branch, a tributary to the Potomac River, runs adjacent to Goldsboro Road. It crosses Goldsboro Road in two locations.

RideOn Route 29 provides bus service along Goldsboro Road. There are 9 bus stops in the study area with around 70 boardings and 110 alightings per day. The majority of boardings and alightings occur at MacArthur Boulevard.

There are two signalized intersections on Goldsboro Road in the study area: Massachusetts Avenue and River Road. A complex traffic circle is located at the intersection with MacArthur Boulevard.

Project Description

The purpose of this project is to improve pedestrian and bicycle safety and connectivity on Goldsboro Road and to nearby public facilities, and to improve access to transit stops. Currently, Goldsboro Road has bikeable shoulders of varying width and condition that are used by some bicyclists, but there are no designated bicycle facilities. Over the entire one-mile length of the project, sidewalks exist for only about a quarter mile on the south side of Goldsboro Road at the intersection with Massachusetts Avenue.

The Phase I study conducted by MCDOT evaluated four alternatives, including a no-build alternative. Each build alternative is composed of two 11-foot-wide vehicular travel lanes, on-road bike lanes, continuous 5-foot-wide sidewalks on the north side of the road, pedestrian scale lighting, 3 to 6-foot-tall retaining walls in some locations, and culvert extensions.

- The No Build Alternative proposes no construction, leaving inadequate facilities for pedestrians and most bicyclists.
- Alternative 1 includes bike lanes on both sides of the road and 5-foot-wide sidewalks on the north side of the road directly behind the curb. Sidewalks are provided on the south side of the road in limited locations.

- Alternative 2 is the **Preferred Alternative** and is similar to Alternative 1 except that it adds a 6.5-foot-wide landscaped panel between the bike lane and the sidewalk along the north side of the road where space is available.
- Alternative 3 is similar to Alternative 2 except that it adds a consistent 6.5-foot-wide landscaped panel and a 5-foot-wide sidewalk on the south side of the road.

Stormwater management facilities will be provided to treat additional impervious area associated with the proposed sidewalk, roadway widening, and bike lane construction. Stormwater management design will incorporate the latest Maryland Stormwater Design Manual including the requirements of the Stormwater Management Act of 2007. Design strategies will focus on the use of Environmental Site Design techniques such as bio-swales, infiltration, and submerged gravel wetlands.

All build alternatives include curb and gutter on the north side of the roadway. Alternative 3 also has curb and gutter on the south side of the roadway, while Alternatives 1 and 2 leave an open section for drainage along the south side of the roadway.

Typical sections for the three alternatives are shown below.

Figure 2: Typical Section for Alternative #1

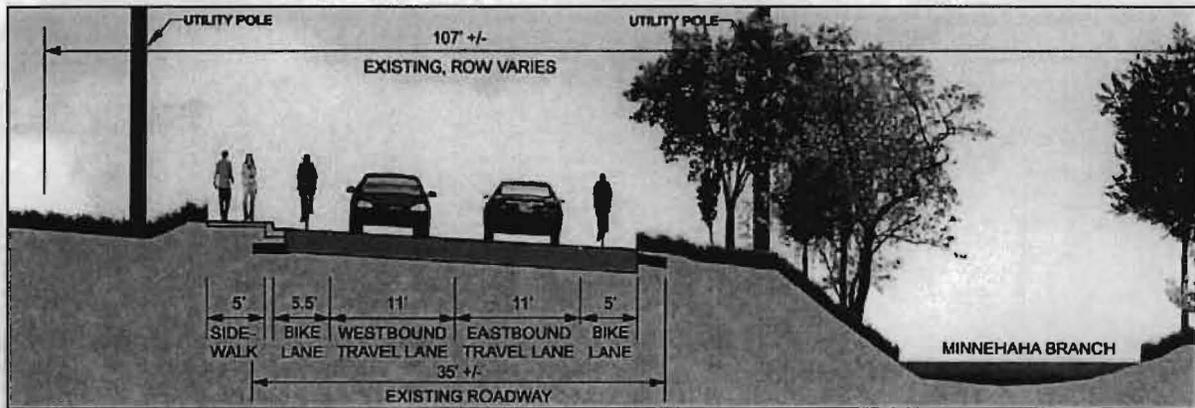


Figure 3: Typical Section for Alternative 2 (Preferred Alternative)

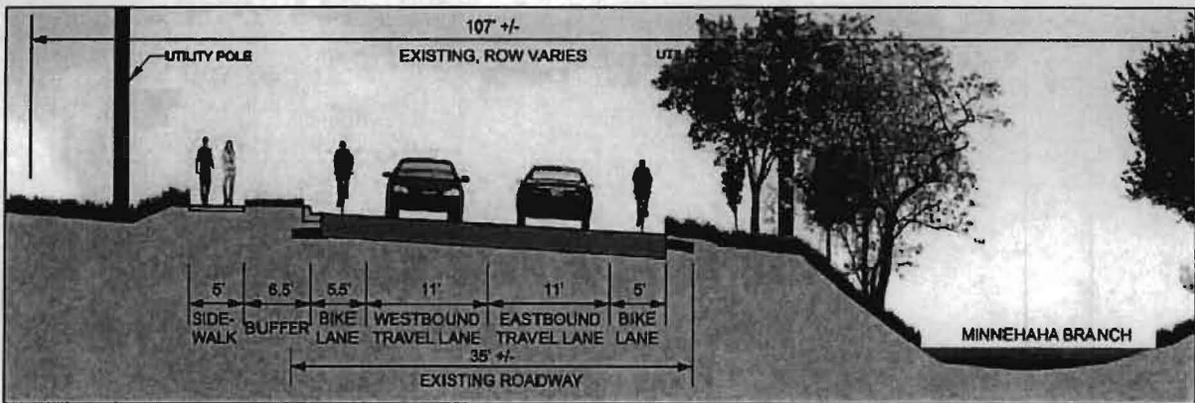
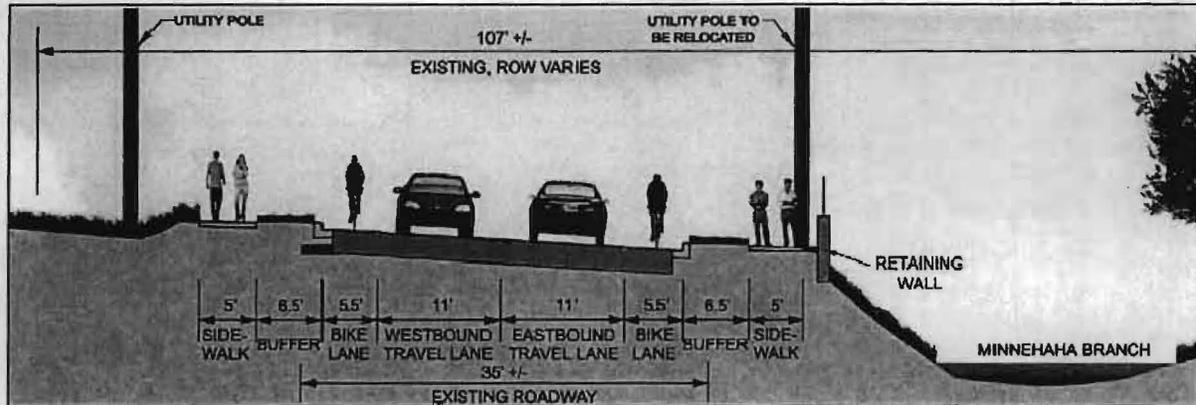


Figure 4: Typical Section for Alternative #3



Master Plan Consistency

The following recommendations in the 1990 Bethesda Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan should be considered in the evaluation of the Goldsboro Road Pedestrian and Bicycle Improvements Project. They are listed below and shown in Figure 1:

- The Countywide Bikeways Functional Master Plan (page 44) recommends bike lanes (BL-1) on Goldsboro Road from MacArthur Boulevard to Bradley Boulevard.
- An overarching goal of the Bethesda Chevy Chase Master Plan (page 97) is the "Expansion of the system of pedestrian paths and bikeways to link residential areas with public facilities, commercial areas, and transit services."
- The Bethesda Chevy Chase Master Plan (page 102) also "endorses the expansion of pedestrian paths and bikeways to form a network linking residential neighborhoods with public facilities." Further, the plan recommends (page 103) "that pedestrian safety improvements be supported and expanded along major highways and arterials."

The No Build Alternative is not consistent with these Master Plan recommendations. The build alternatives are all consistent with the master plan. MCDOT selected Alternative 2 as the Preferred Alternative because it accomplishes the project objectives while minimizing impacts. While Alternative 1 has the least impacts, those impacts are only slightly less than the impacts of Alternative 2 and were deemed to be not significant. Alternative 3 provides the best pedestrian accommodation but has the greatest environmental impacts.

Staff Analysis

We concur with MCDOT's evaluation of the Goldsboro Road study area, which found that there is a need for better pedestrian and bicycle safety and connectivity, and with their selection of Alternative 2 as the Preferred Alternative.

Bicycle Planning Guidance

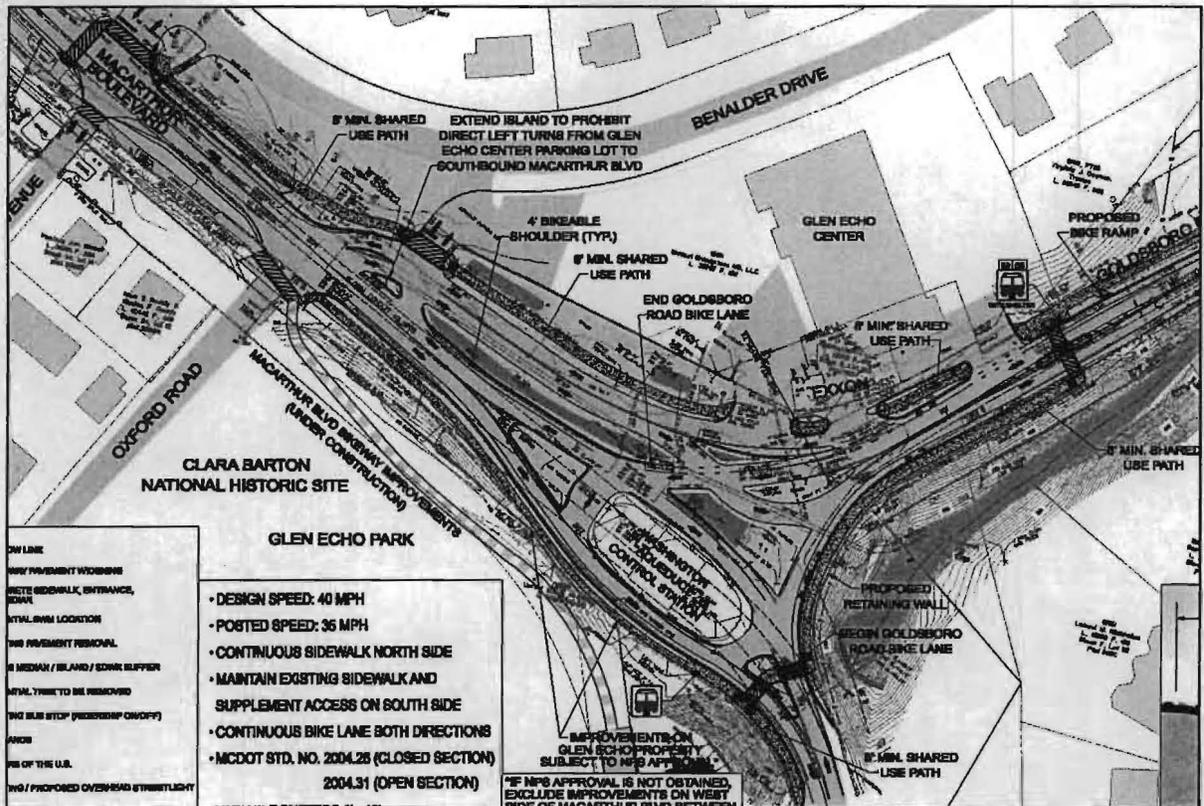
The Bicycle Planning Guidance that the Planning Board reviewed on September 4, 2014 includes two graphs to identify the types of bicycle facilities that are most appropriate under different traffic speed and traffic volume conditions: one graph for “Confident Cyclists” and another for the “Interested but Concerned” population (Attachment 2)¹. Since the posted speed limit on Goldsboro Road is 35 mph; the average daily traffic (ADT) is approximately 11,500 between MacArthur Boulevard and Massachusetts Avenue and is 16,500 between Massachusetts Avenue and River Road, bike lanes are sufficient to address the needs of the “Confident Cyclist” population, but are likely insufficient to meet the needs of the “Interested but Concerned” population, who would prefer a physically separated bicycle facility, such as a cycle track or a shared use path, to ride comfortably on Goldsboro Road. However, either facility type would require additional paved areas and will increase the environmental impacts adjacent to a tributary.

MacArthur Boulevard / Goldsboro Road Intersection

The intersection of MacArthur Boulevard and Goldsboro Road has an unconventional design that functions somewhat like a traffic circle due to the presence of the Washington Aqueduct Control Station, located in the middle of the intersection. The project team evaluated several options for reconfiguring the intersection to simplify pedestrian and bicycle crossing movements, while improving the operation and safety of all intersection users. All of the options were deemed infeasible because each would have routed traffic on top of the existing aqueduct in areas that could be damaged by heavy truck traffic. To accommodate pedestrian and bicycle transitions between Goldsboro Road and MacArthur Boulevard, shared use paths are provided on both sides of Goldsboro Road and connect to crosswalks at MacArthur Boulevard (see Figure 5). This is not ideal, but the constraints at the intersection are beyond the scope of this study to address.

¹ “Confident Cyclists” represent about 10% of the population. They are comfortable bicycling on some roadways, but prefer bicycle facilities separated from traffic, especially on higher speed roads. “Interested but Concerned” bicyclists represent over 50% of the population. They like to ride bicycles, but do not ride regularly due to safety concerns. They will not ride on higher volume and higher speed roads such as arterials, without separated bicycle facilities.

Figure 5: MacArthur Boulevard / Goldsboro Road Intersection



Benefits of Preferred Alternative

The Preferred Alternative addresses the need for continuous bicycle facilities on both sides of Goldsboro Road as well as continuous sidewalks on the north side of the road. While there are not continuous sidewalks along the south side of the road, the Preferred Alternative does provide sidewalks for much of the alignment. Furthermore, there are eight crossing opportunities – and all but one have a pedestrian refuge – to facilitate access to transit stops and to residences on the south side of the road. These facilities would increase pedestrian and bicyclist comfort and accommodation, serve bus stops and local destinations and community facilities, and enhance connections to the Bethesda CBD, Glen Echo Park, and the MacArthur Boulevard shared use path.

Existing and proposed bikeways in the vicinity of the study include:

- MacArthur Boulevard is recommended to have a Dual Bikeway (DB-1), including an existing shared use path and a proposed bike lanes.
- River Road is recommended to have a Dual Bikeway (DB-2), including a proposed shared use path and a proposed signed shared roadway.
- Massachusetts Avenue is recommended to have a signed shared roadway (SR-50).
- Bradley Boulevard is recommended to have a Dual Bikeway (DB-4), including a shared use path and a signed shared roadway, but is proceeding through Facility Planning Phase II as an 8-foot-

wide shared use path and bike lanes with the concurrence of the Council and the Planning Board.

When fully implemented, these bikeways will comprise a robust network that enables cyclists of various abilities to access local and regional destinations.

The Preferred Alternative includes potential stormwater management in various locations along the corridor, which could include bio-swales, infiltration, and submerged gravel watersheds.

Impacts of Preferred Alternative

The Project Prospectus identifies environmental impacts of the Preferred Alternative. These preliminary assessments will be refined in Phase II when a Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) is performed and more facility design details are developed. The environmental impacts identified in the Prospectus include 32 specimen trees (>24" dbh) and 0.02 acres of wetlands, and 0.8 acres of forest.

The Project Prospectus states the Preferred Alternative will impact approximately 5 properties and will require approximately 0.02 acres of right-of-way acquisition. Temporary construction and grading easements will be required from an additional 4 properties for a total of approximately 0.20 acres. There are no displacements.

According to the United States Fish and Wildlife Service, "Except for occasional transit individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact areas."

Recommendations

MCDOT adequately addressed most of the comments that Planning staff made during the course of the Facility Planning Phase I study. Therefore, we do not have any additional recommendations for improving the study. However, we do believe that a future facility planning study is needed to further evaluate the unconventional intersection of MacArthur Boulevard and Goldsboro Road.

Community Outreach

A public meeting was held for this project on December 4, 2013. The purpose of this meeting was to discuss the project alternatives and to receive community input and answer questions. As of April 30, 2014, 66 comments have been received. Of those, 62 support the project and 4 oppose / disagree with the project. Several of the comments expressed a preference for an alternative: 4 for Alternative 1, 8 for Alternative 2, and 6 for Alternative 3. In addition, newsletters were distributed to 616 addresses in November 2013 and to 661 addresses in August 2014.

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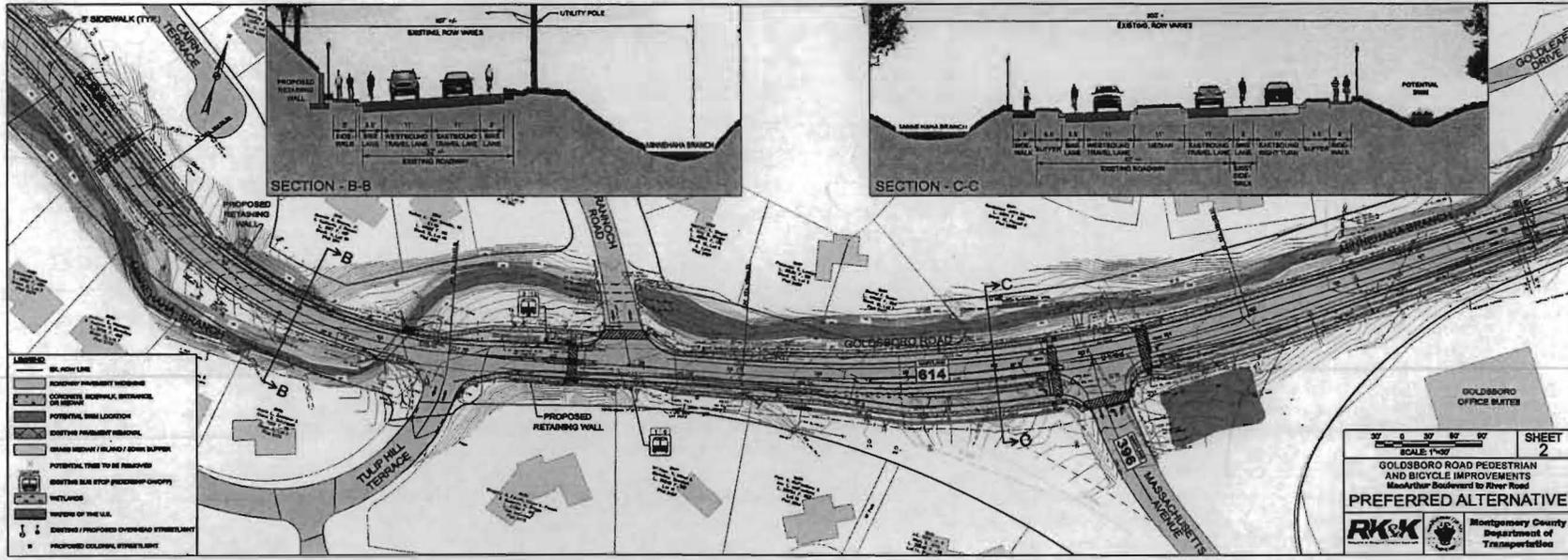
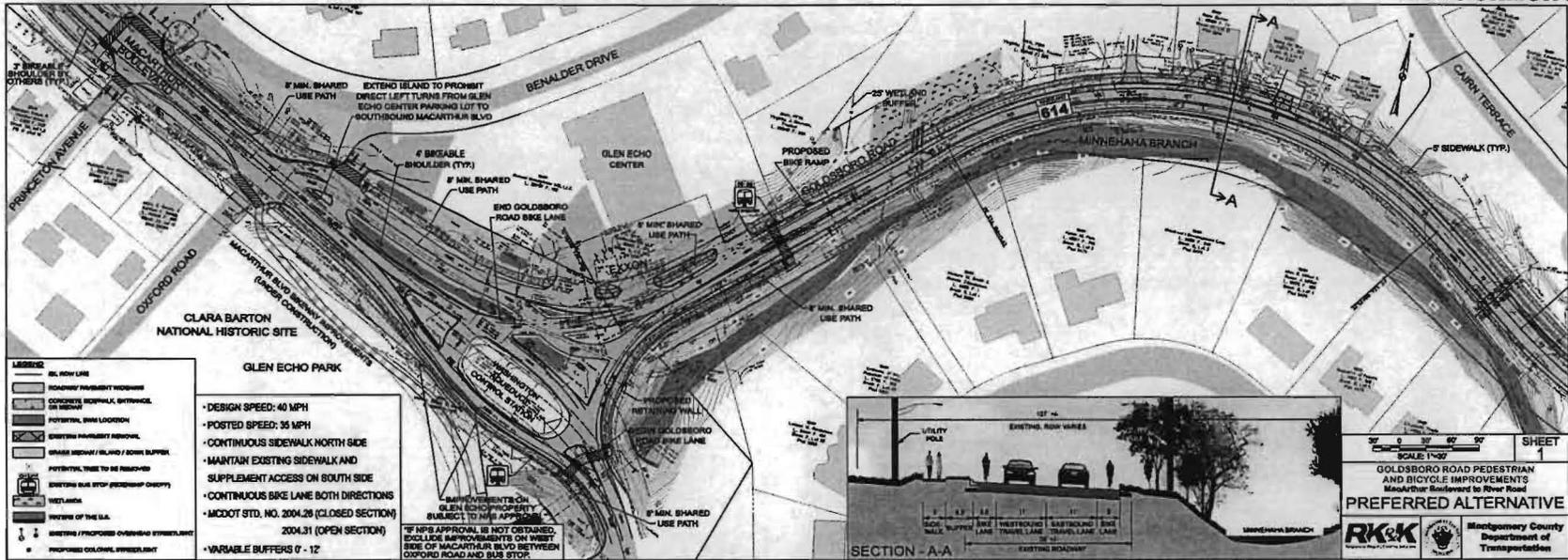


FIGURE 3
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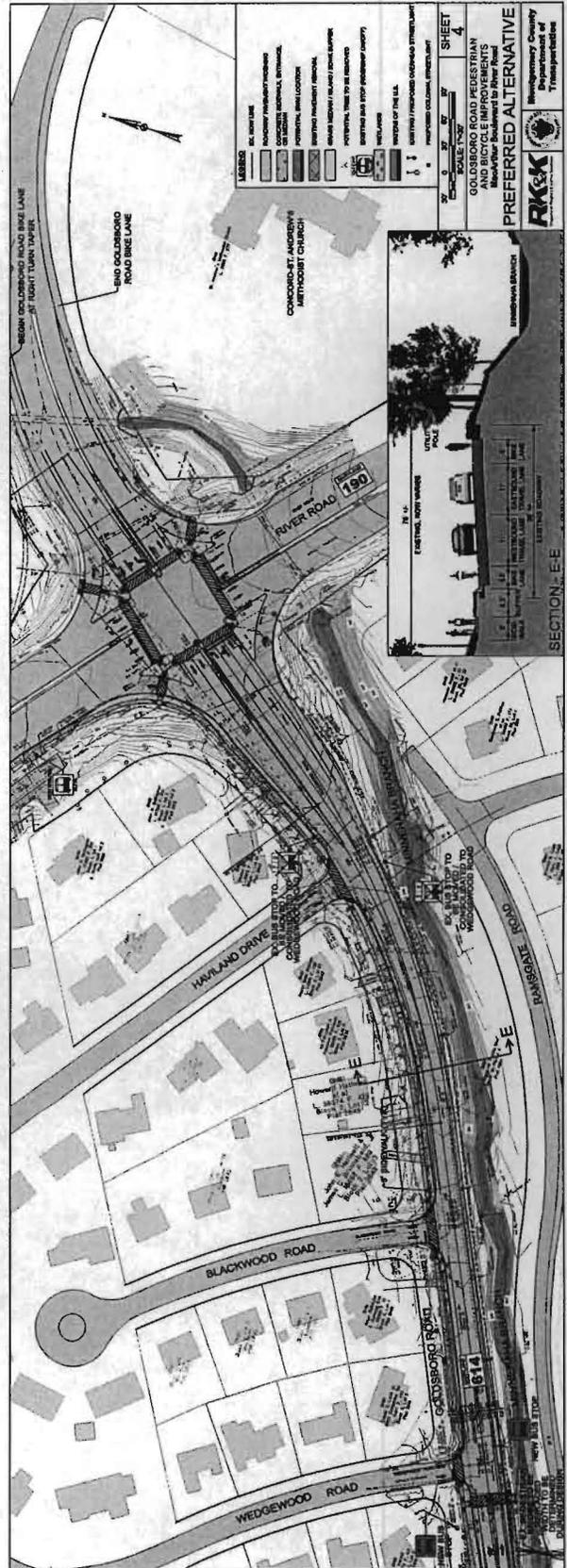
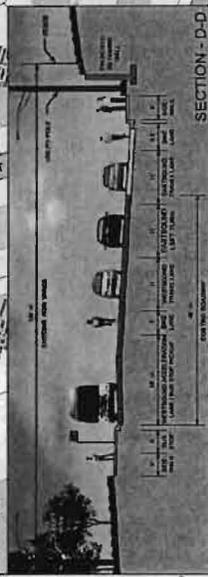
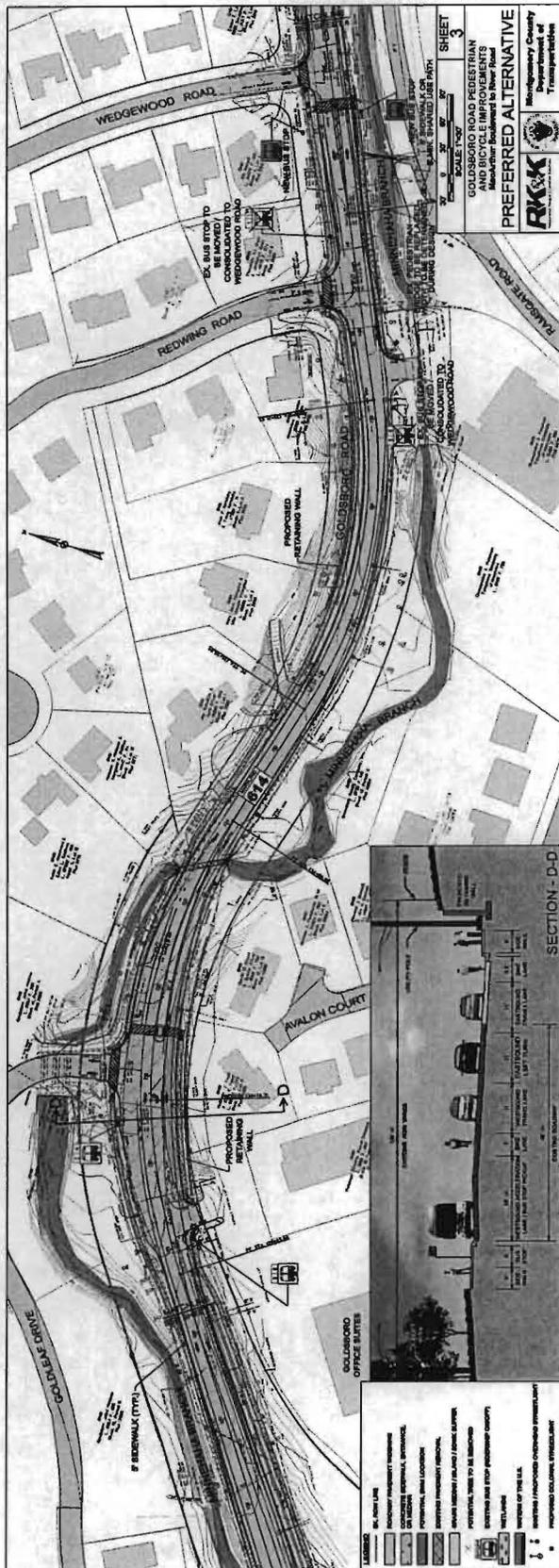


FIGURE 3
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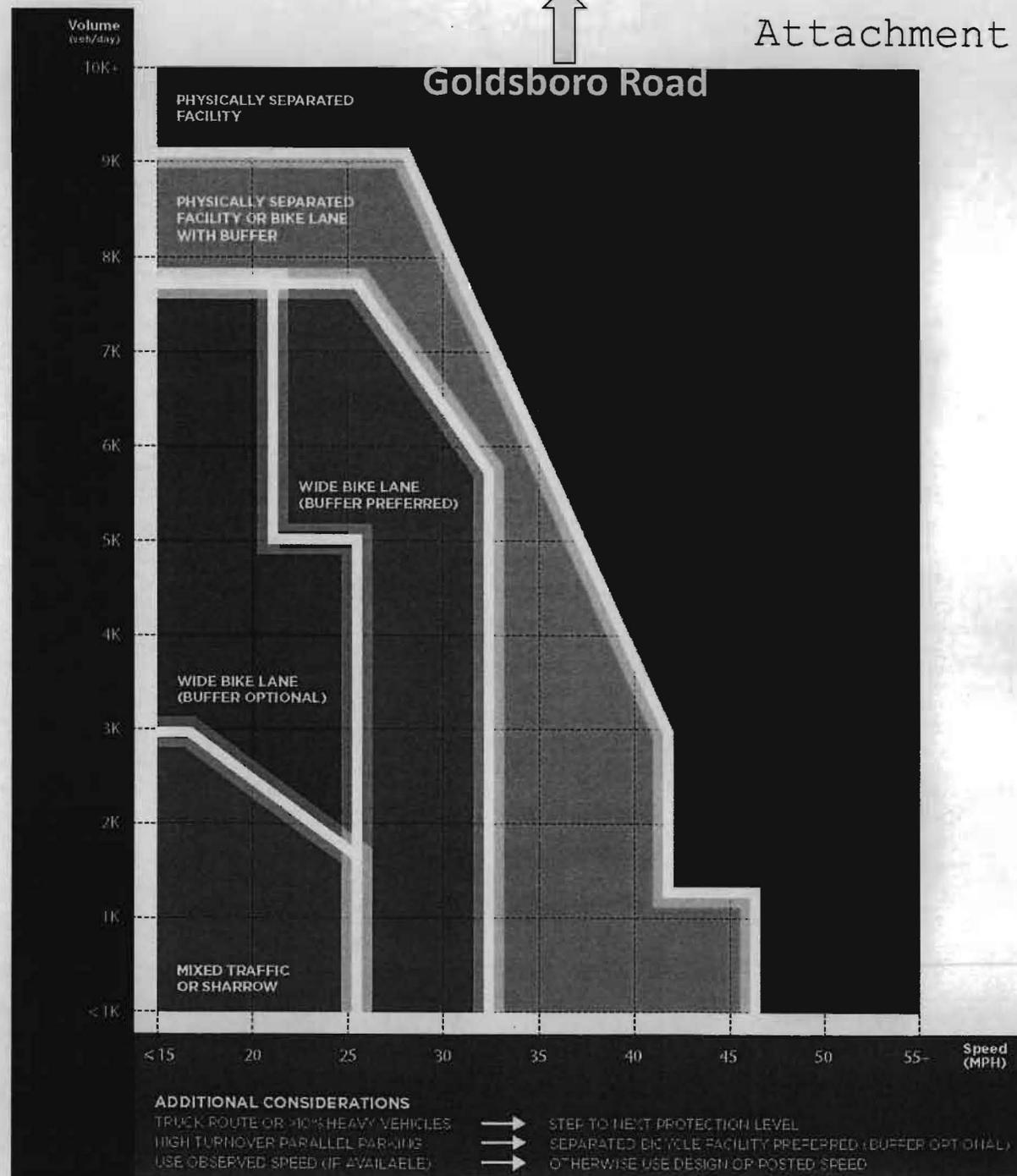
DESIGNING FOR THE INTERESTED BUT CONCERNED

The "interested but concerned" population requires additional levels of separation at lower traffic volumes and speeds than have traditionally been provided. The chart at the right helps the planner identify what types of facilities are appropriate in different speeds and traffic volumes.

Traffic volumes (on the y-axis) are daily volumes, and traffic speed (on the x-axis) is actual (e.g. 85th percentile). In the absence of observed speed data, design or posted speeds may be used.



Goldsboro Road



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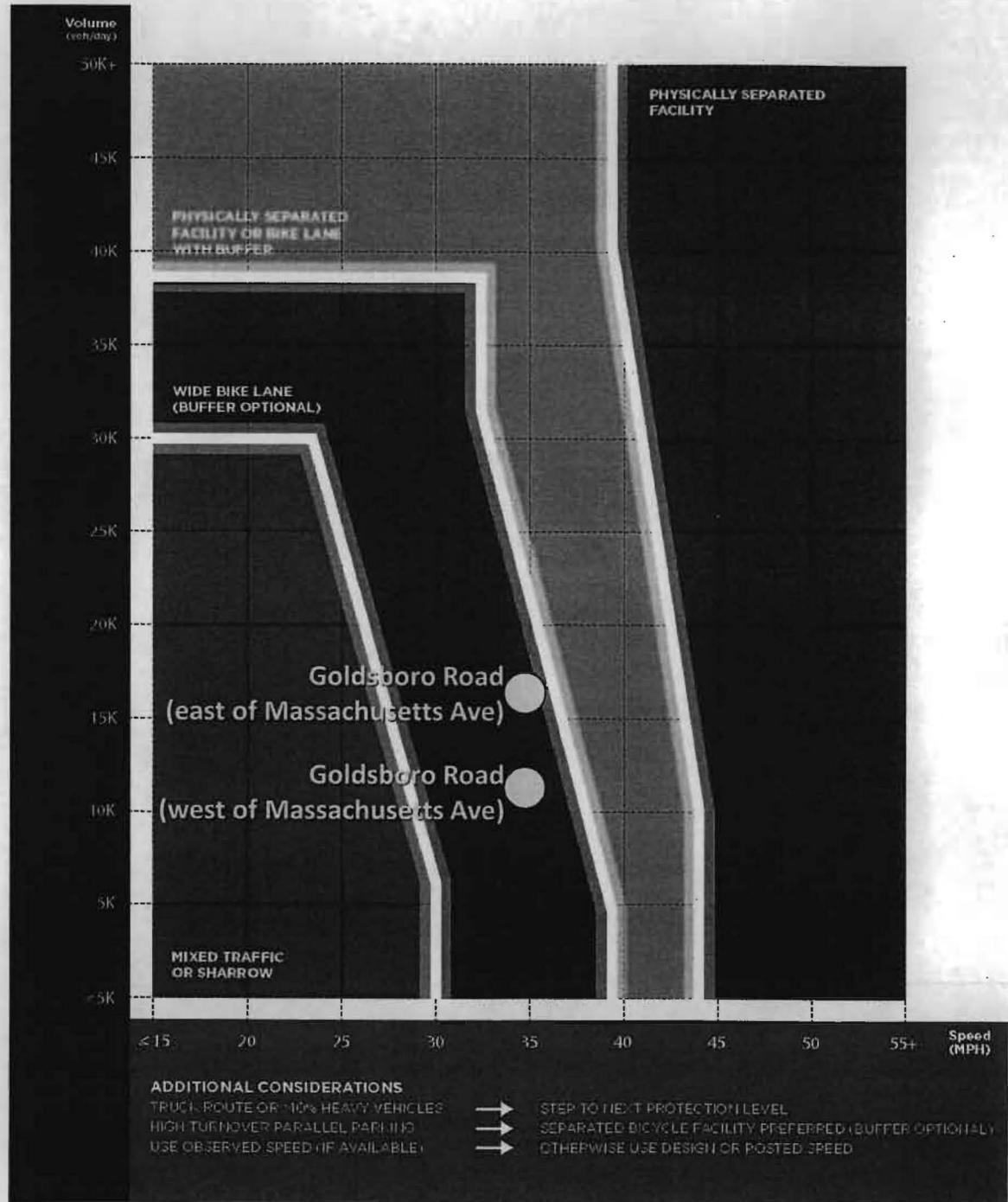
Note: a physically separated facility is a cycle track or a shared use path

FIGURE 5 | PRE-SELECTION FOR INTERESTED BUT CONCERNED

DESIGNING FOR CONFIDENT CYCLISTS

Confident cyclists generally require less physical separation from traffic than the general population. They are comfortable riding in roads where the traffic operates at higher volumes and speeds, so planning for confident cyclists usually requires less dedicated space within the roadway.

As with the "Interested but Concerned" chart, the Confident Cyclists facility selection tool (at right) is based on daily vehicle volume (y-axis) and observed vehicle speed (x-axis).



Note: a physically separated facility is a cycle track or a shared use path

FIGURE 6 | PRE-SELECTION FOR CONFIDENT CYCLISTS

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BACKGROUND RESEARCH

TYPES OF BICYCLISTS

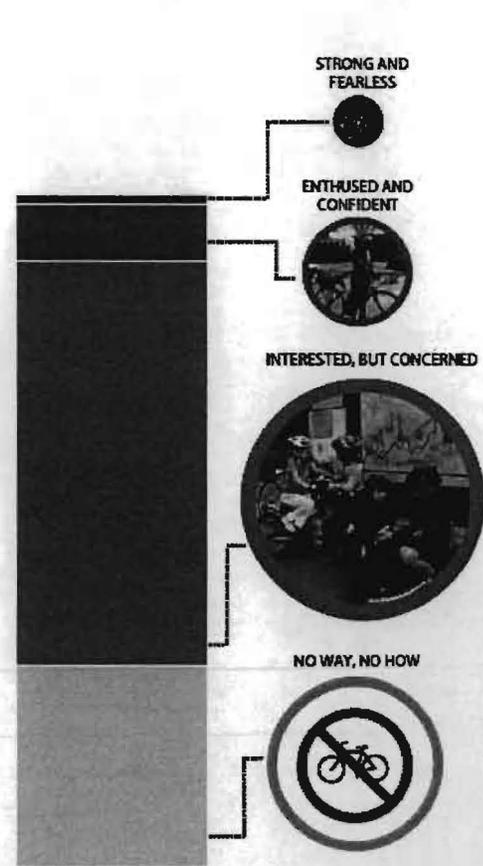
Research conducted at Portland State University has identified four general groups of attitudes towards bicycling.¹ Very confident bicyclists who are comfortable operating in the roadway as a vehicle are classified as the "strong and fearless," and are estimated to make up only 4% of the population. Bicyclists who are comfortable riding on some roadways, but prefer bicycle facilities separate from vehicular traffic (bike lanes or shared use path) are classified as "enthusied and confident" and are estimated to make up approximately 9% of the population. Bicyclists who would like to ride more, but have safety concerns that are dissuading them are classified as "interested but concerned" and make up most of the population (56%). The remaining people are classified as "no way no how," and have no interest in riding a bike for transportation.

Figure 1 below shows the comfort level of each of these groups with different facility types on a four-lane street with on-street parking and 30-35mph vehicle speeds.² The responses of the "interested but concerned" group are circled in yellow, because they are the largest segment of the population and represent the greatest opportunity for increasing bicycling. *It is important to note that less than half of this group feels comfortable in a standard bike lane, but most feel comfortable in a separated bike lane (such as a cycle track).* This highlights the importance of physically separated facilities in creating bicycle facility networks that appeal to this very large subset of the population, and thus have the potential to attract many more riders than standard bicycle facilities.

1 Dill, Jennifer, and Nathan McNeil. "Four Types of Cyclists." Transportation Research Record: Journal of the Transportation Research Board 2387.1 (2013): 129-138.

2 The survey sampled 902 adults in urban and suburban areas to understand characteristics and preferences.

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"What is your comfort level bicycling under the following conditions?"

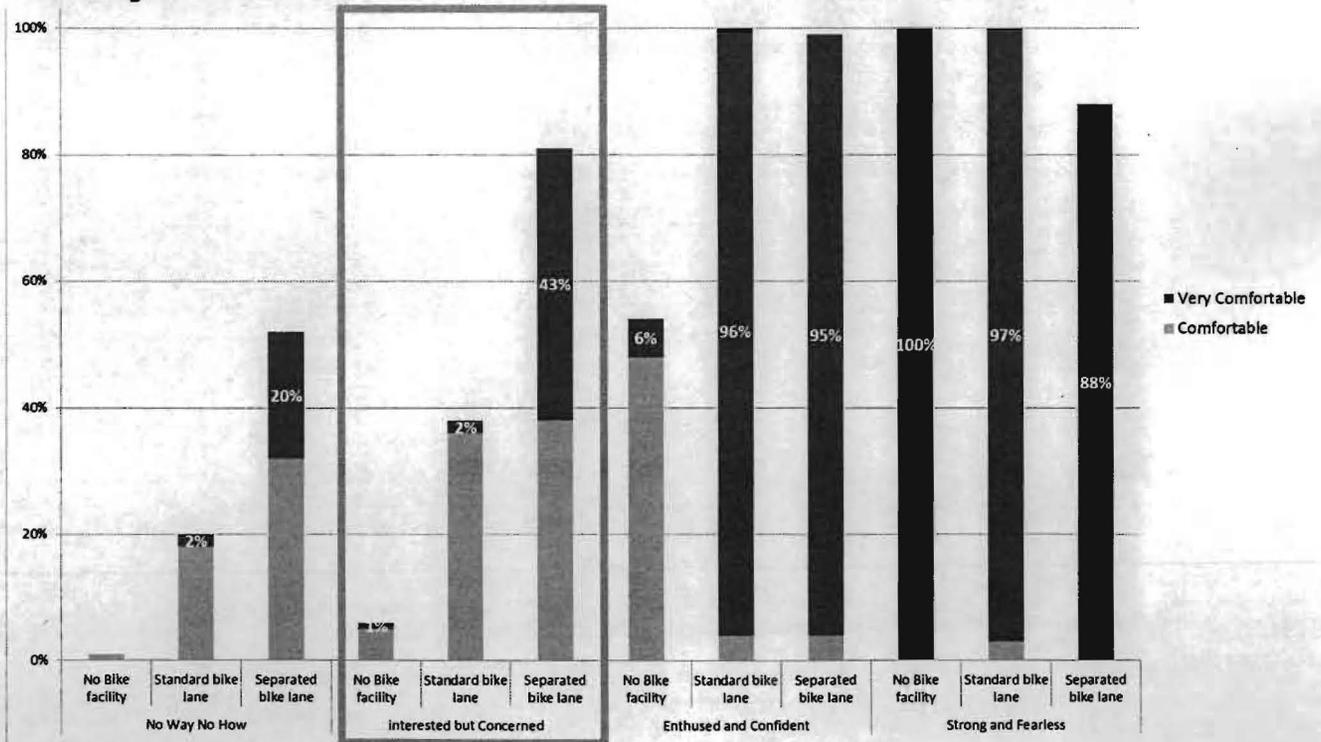


FIGURE 1 | TYPES OF BICYCLISTS AND THEIR FACILITY COMFORT LEVELS