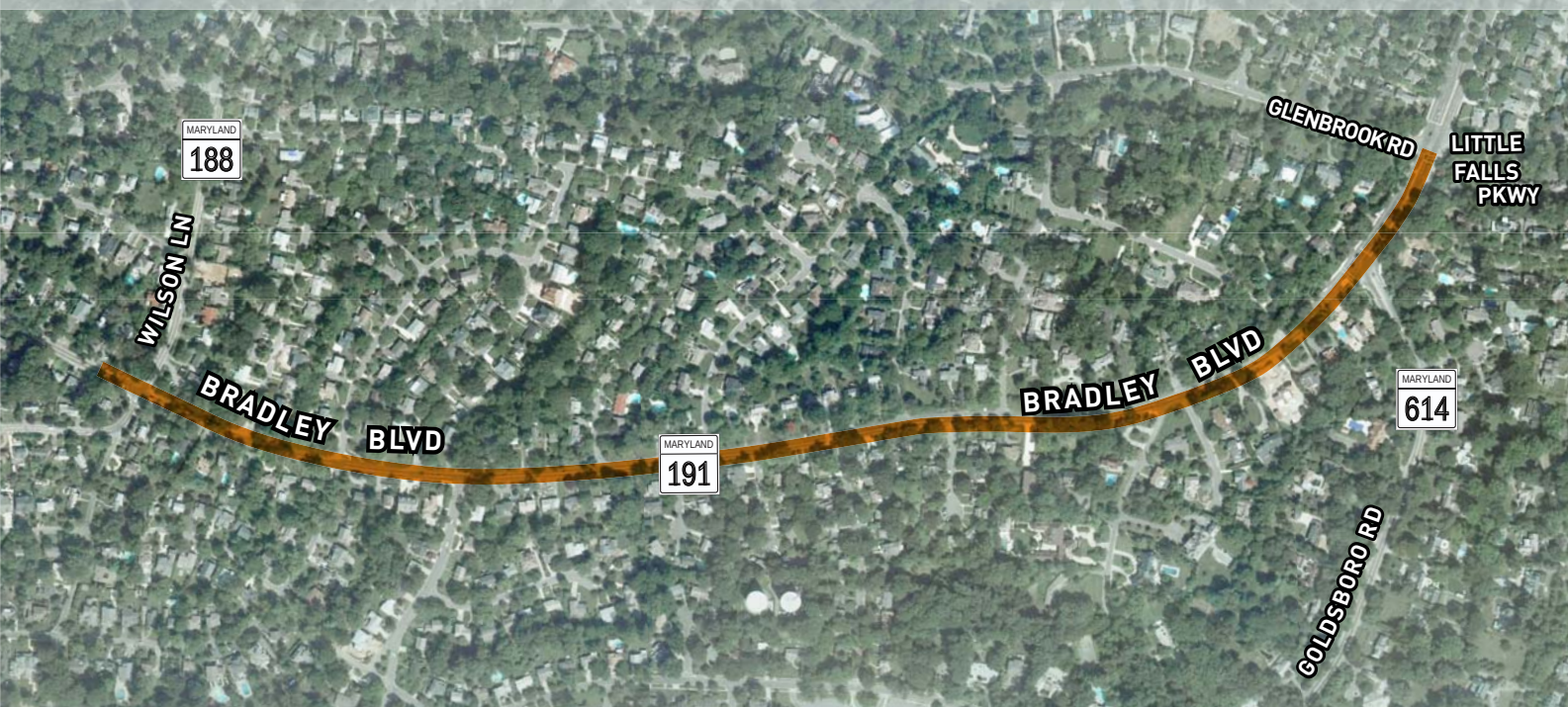
Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

PHASE I FACILITY PLANNING PROJECT PROSPECTUS



May 2011

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Executive Summary

Executive Summary

A. Introduction

The Montgomery County Department of Transportation (MCDOT) has completed a Phase I Facility Planning Study to evaluate the need for sidewalks, master planned bicycle facilities and traffic safety improvements along Bradley Boulevard (MD 191) between Wilson Lane (MD 188) and Goldsboro Road (MD 614). This Prospectus concludes the Phase I Study and will be used by the Director of MCDOT to determine whether the project should proceed to a Phase II Facility Planning Study.

B. Project Background and Description

Bradley Boulevard is a two-lane arterial roadway with an Average Daily Traffic (ADT) of 15,000 vehicles and a posted speed limit of 30 miles per hour. The public right of way is 100 feet wide.

The study area is located in a single-family residential community in Bethesda, Maryland. The Bethesda Central Business District (CBD) is located 1 mile to the east from the study area. Bradley Boulevard intersects the Capital Crescent Trail just east of the study area and is in close proximity to the North Bethesda Trail (also known as the Bethesda Trolley Trail). There are also on-road bike lanes on Fairfax Road and Little Falls Parkway just east of the study area. Nearby destinations for pedestrians and bicyclists in the study area include Chabad of BCC, the Bethesda Community School, Radnor Center, Bradley Hills Elementary School, Thomas W. Pyle Middle School, Walt Whitman High School and a Safeway grocery store. There are three Metro stations within 2 miles of the study area: Bethesda, Medical Center, and Friendship Heights. Montgomery County Transit's Ride-On Bus Route 36 provides weekday service along Bradley Boulevard to connect to the Bethesda Metro station.

This section of Bradley Boulevard is discussed in the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan* and the *2005 Countywide Bikeways Functional Master Plan*. According to the master plans, dual bikeways (shared use path and on-road bikeable shoulders) are proposed on Bradley Boulevard from Persimmon Tree Road to the north to Wisconsin Avenue to the south of which this project area is a small part of this length.

The east end of the study area was extended from Goldsboro Road to Glenbrook Road after the first public meeting and newsletter. There were many public comments that Glenbrook Road is the more logical project terminus due to its connection to the Capital Crescent Trail.

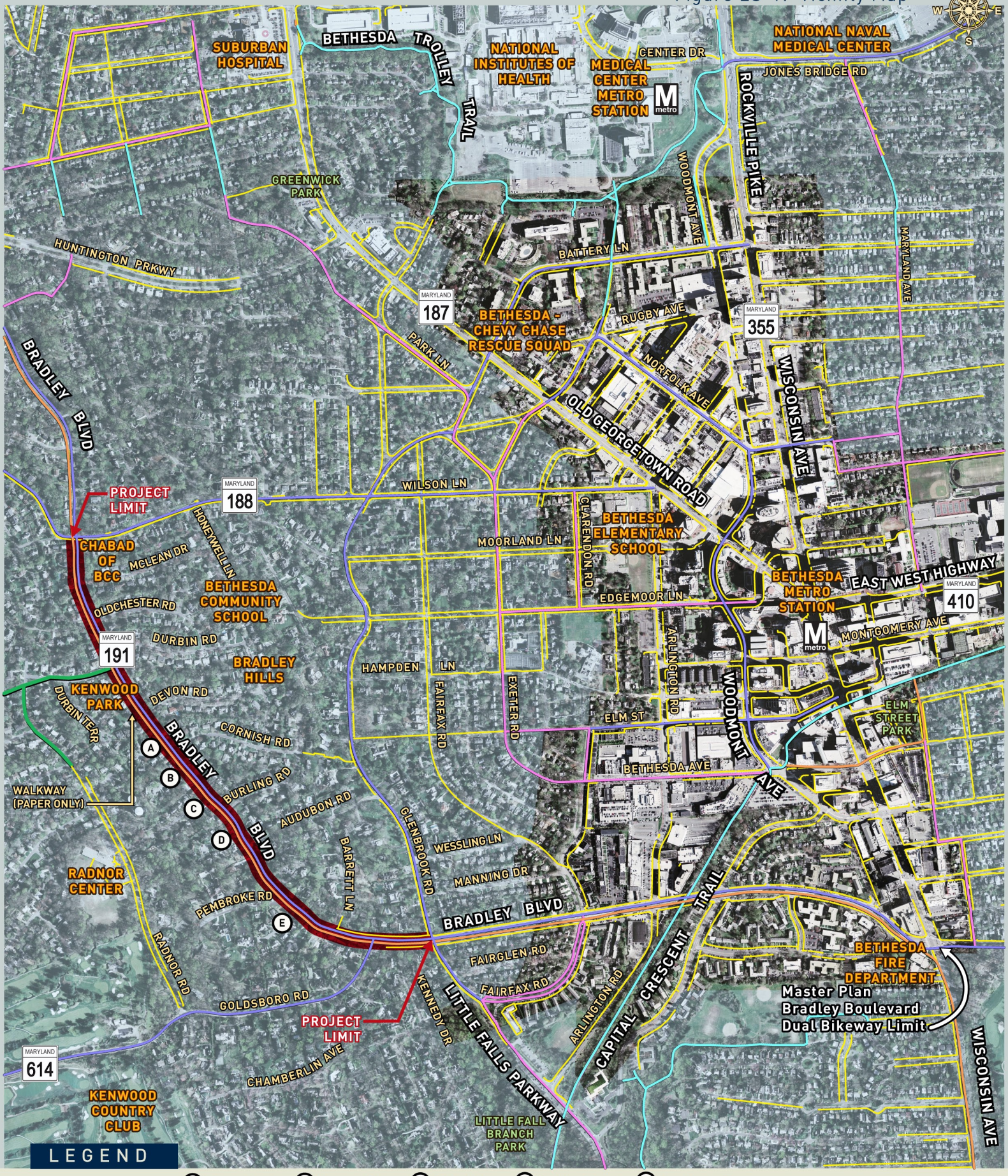
C. Project Purpose

The purpose of Bradley Boulevard Improvements Project is to:

- Comply with the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan
- Promote and enhance bicycling and continuous pedestrian facilities
- Encourage multi-modal transportation usage to work centers, places of worship, parks, trails, schools, shopping areas, transit stops, and homes
- Improve access to transit stops and the Medical Center, Bethesda, and Friendship Heights Metrorail stations

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure ES-1: Vicinity Map



- Promote a safe environment for pedestrians and bicyclists
- Improve observed existing traffic patterns and operations

D. Project Need

The need for the Bradley Boulevard Improvements Project is to:

- Improve access to major destinations along and beyond the study area as recommended in the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan
- Address existing sidewalk and bicycle facility disconnects
- Provide safe facilities to address pedestrian and bicycle demand
- Improve observed existing traffic patterns and operations to address critical safety and capacity issues

E. Alternates Evaluated

Six alternates were developed and evaluated based on the Master Plans, the project's purpose and need, the traffic study, safety, and the environmental assessment.

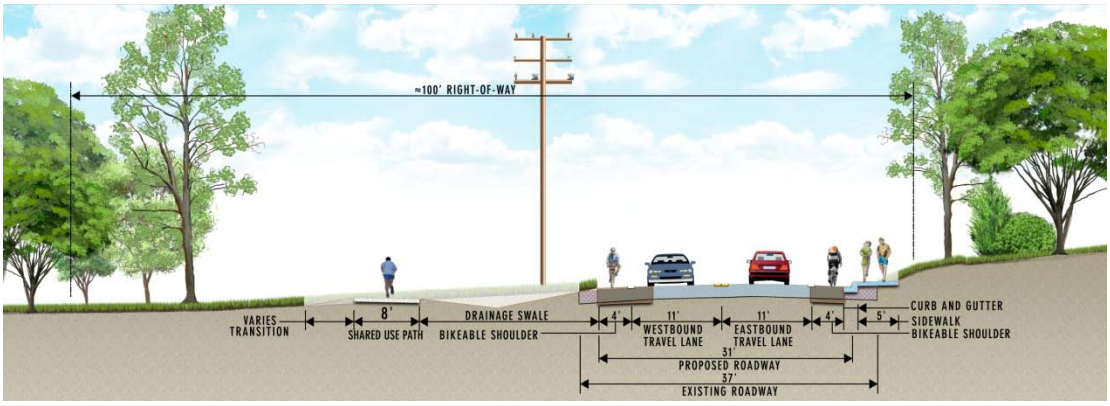
- Alternate 1 – No-Build
- Alternate 2 – Master Plan
- Alternate 3 – Enhanced Master Plan
- Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders **(Recommended Alternate)**
- Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders
- Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders

All build alternates include drainage improvements and the addition of left turn lanes along Bradley Boulevard at Wilson Lane.

F. Recommended Alternate

The team recommended alternate is Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders is a minimized version of the recommendations from the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and* the *2005 Countywide Bikeways Functional Master Plan.*

Figure ES-2. Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders Typical Section Looking East



BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE	
PROJECT STUDY INFORMATION	
Name of Project and CIP #	Bradley Boulevard (MD 191) Improvements Project CIP #509337
Study Phase	Facility Planning, Phase I
Transportation Category	Pedestrian and Bicycle Facilities
Study Performed by	Montgomery County Department of Transportation (MCDOT), Division of Transportation Engineering
Phase I Project Manager	Patricia Shepherd, (240) 777-7231
Phase I Consultant	Whitman, Requardt and Associates, LLP Jim Guinther, (443) 224-1583
Road Name	Bradley Boulevard (MD 191)
Project Limits	From Wilson Lane (MD 188) to Glenbrook Road
Project Length	Approximately 1 mile
Functional Classification of Roadway	Arterial (A-39)
EXISTING CONDITIONS	
Number of Lanes	2 from Wilson Lane to Goldsboro Road, 6 from Goldsboro Road to Glenbrook Road
Typical Lane Width	11 to 13 feet
Typical Shoulder Width	2 to 12 feet
Average Daily Traffic (ADT)	15,000
Bus Stops	17 Montgomery County Ride-On Bus Stops (Route 36) • 8 westbound • 9 eastbound
Metro Stations within 2 Miles	Bethesda, Medical Center, and Friendship Heights
Posted Speed Limit	30 miles per hour
Adjacent Communities	• Bradley Hills • Kenwood Park
Signalized Intersections	• Bradley Boulevard / Wilson Lane • Bradley Boulevard / Goldsboro Road • Bradley Boulevard / Glenbrook Road

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE	
EXISTING CONDITIONS	
Stop-Controlled Intersections	Minor Streets stop-controlled at Bradley Boulevard • McLean Drive • Oldchester Road • Durbin Road • Devon Road • Beam Court • Cornish Road • Vernon Place • Brite Drive • Burling Road • Burling Court • Audubon Road • Pembroke Road • Pembroke Terrace • Barrett Lane • Kennedy Drive
Homes Adjacent to Bradley Boulevard	81 from Wilson Lane to Goldsboro Road 4 from Goldsboro Road to Glenbrook Road
Homes with Driveway Access	56 from Wilson Lane to Goldsboro Road 4 from Goldsboro Road to Glenbrook Road
Schools	2 (Bethesda Community School and Radnor Center)
Places of Worship	1 (Chabad-Lubavitch Center of Bethesda-Chevy Chase)
Parks	N/A
Other Places of Interest	Bethesda Central Business District, Capital Crescent Trail
Portion with Closed/Open Section	Open Section: From Wilson Lane to Barrett Lane Closed Section: From Barrett Lane to Glenbrook Road
Portion with Sidewalk	Along north side of roadway from Barrett Lane to Glenbrook Road Along south side of roadway from Goldsboro Road to Glenbrook Roak
Right-of-Way Width	100’
Natural Environmental Resources	• 29 specimen trees (trees greater than 30 inches in diameter) • 25 significant trees (trees 24-30 inches in diameter)
CRASH HISTORY	
2003 to 2007 Additional information on the crash history of this section of Bradley Boulevard can be found in the Bradley Boulevard Traffic Study in Appendix F.	• 62 total crashes • 18 crashes at Bradley Boulevard / Wilson Lane • 19 crashes at Bradley Boulevard / Goldsboro Road • No fatalities • 30 crashes with injuries • 3 crashes involving a bicyclist

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE	
FACILITY PLANNING, PHASE I SUMMARY	
Transportation Category	Pedestrian and Bicycle Facilities
Referenced Master Plans	• 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan • 2005 Countywide Bikeways Functional Master Plan
Purpose	• Comply with the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan • Promote and enhance bicycling and continuous pedestrian facilities • Encourage multi-modal transportation usage to work centers, places of worship, parks, trails, schools, shopping areas, transit stops, and homes • Improve access to transit stops and the Medical Center, Bethesda, and Friendship Heights Metrorail stations • Promote a safe environment for pedestrians and bicyclists • Improve observed existing traffic patterns and operations
Need	• Improve access to major destinations along and beyond the study area as recommended in the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan • Address existing sidewalk and bicycle facility disconnects • Provide safe facilities to address pedestrian and bicycle demand • Improve observed existing traffic patterns and operations to address critical safety and capacity issues
Project Start Date	March 2009
Project Prospectus Completion Date	May 2011
Alternates Evaluated	• Alternate 1 – No-Build • Alternate 2 – Master Plan • Alternate 3 – Enhanced Master Plan • Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders • Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders • Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders
Recommended Alternate	The recommended alternate is Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders. Alternate 4A is a minimized version of the recommendations from the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan. The recommended alternate includes drainage improvements and the addition of left turn lanes along Bradley Boulevard at Wilson Lane.

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE	
FACILITY PLANNING, PHASE I SUMMARY	
Recommended Alternate Impacts	<u>Property Impacts</u> • 0 acres of right-of-way • Between ½ and 1 acres of grading easement • No building impacts <u>Natural Environmental Impacts</u> • 3-4 specimen trees • 7-12 significant trees • 76-138 smaller trees • 0.7 acres of additional impervious <u>Utility Impacts</u> • 7 utility poles • Minor surface feature adjustments for water, sewer, and gas <u>Parking Impacts</u> • Infrequent parking on the shoulder of Bradley Boulevard that occurs today will be impacted • 20 on-street parking spaces along westbound Bradley Boulevard between Barrett Lane and Glenbrook Road will be impacted
PUBLIC OUTREACH	
Public Meetings	• October 27, 2009 • November 10, 2010
Newsletters Distributed	• October 2009 • October 2010 • March 2011
Mailing List	• 155 residents • 36 organizations or public officials
OTHER	
Unresolved Issues	• During Phase II the study team will consider bus stop design, ADA compliance, and lighting for the project. The study team will also review the shared use path at side roads to develop the safest crossing locations. The study team will also consider including a buffer between the roadway and sidewalk on the south side wherever possible without impacting right-of-way. • The study team received many public comments concerning the aesthetics of the drainage swale and bioswales. Efforts will be made during Phase II design to minimize the size of the drainage swales and bioswales while still meeting the project's regulatory stormwater management requirements.

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE	
OTHER	
Unresolved Issues	• The study team received many public comments concerning the safety of pedestrians crossing Bradley Boulevard between the two signalized intersections. The study team will investigate additional crosswalk locations or enhanced crosswalks along Bradley Boulevard to enhance the project. Any changes or additions to crosswalks will require SHA approval. The study team received many public comments throughout the planning study, describing the community's desire to maintain the existing character and landscape of the neighborhood. Efforts will be made during Phase II design to further minimize tree impacts to the maximum extent practical including the following practices. • Pervious Pavement – The study team will investigate the soil conditions to determine whether the use of pervious pavement is recommended. If it is recommended, the study team will coordinate with DPS/MDE to use pervious pavement while reducing the use of other stormwater management measures such as bioswales to control water runoff. The reduction in the use of bioswales will reduce the project's disturbance and in turn have the added benefit of helping to reduce tree impacts. • Shared Use Path Alignment – There may be opportunities to optimize the shared use path alignment for further impact reduction. The study team will adjust the alignment of the shared use path to minimize tree impacts to the maximum extent practical while still meeting the project's design criteria. • Tree Save Methods – The study team will employ tree save methods for certain trees that have less than 50% of their root zone impacted by the proposed construction. During design, options shall be explored to bring new technologies and innovation to the design to help preserve trees. Some methods that may be explored include pruning the affected roots and aerating/fertilizing the area to reduce stress on the root zone. Other methods may include raising the path using a non compactable stone layer over the root zone and topping the stone with a concrete path built on top instead of an asphalt path which requires compaction.
Unique Features	None
Planning Board Briefing Date/Comments	TBD
Montgomery County Council's Transportation and Environment Committee (T&E) Briefing Date/Comments	TBD

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE		
STUDY TEAM CONTACT INFORMATION		
Name	E-mail	Phone
Montgomery County Department of Transportation (MCDOT)		
Patricia Shepherd, Project Manager	Patricia.Shepherd@montgomerycountymd.gov	(240) 777-7231
Aruna Miller, Planning Manager	Aruna.Miller@montgomerycountymd.gov	(240) 777-7194
Bob Simpson, Senior Planning Specialist, Director's Office	Bob.Simpson@montgomerycountymd.gov	(240) 777-7170
Lee Winestone, Transit Services	Lee.Winestone@montgomerycountymd.gov	(240)777-5831
Jeff Dunckel, Pedestrian Safety	Jeff.Dunckel@montgomerycountymd.gov	(240)777-7197
Dennis Robinson, Property Acquisition	Dennis.Robinson@montgomerycountymd.gov	(240)777-7255
Gail Tait-Nouri, Bikeway Program Coordinator	Gail.Nouri@montgomerycountymd.gov	(240) 777-7243
Carl Starkey, Traffic Operations	Carl.Starkey@montgomerycountymd.gov	(240) 777-8780
Maryland-National Capital Park and Planning Commission (M-NCPPC)		
Larry Cole, Transportation Planning	Larry.Cole@mncppc-mc.org	(301) 495-4528
Cherian Eapen, Transportation Planning	Cherian.Eapen@mncppc-mc.org	(301) 495-4525
David Anspacher, Transportation Planning	David.Anspacher@montgomeryplanning.org	(301) 495-2191

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT SUMMARY TABLE		
STUDY TEAM CONTACT INFORMATION		
Name	E-mail	Phone
State Highway Administration		
Kate Mazzara, District 3	KMazzara@sha.state.md.us	(301) 513-7346
Angel Tao, District 3	ATao@sha.state.md.us	(301) 513-7474
Consultant		
Jim Guinther, Project Manager, Whitman, Requardt & Associates, LLP	jguinther@wrallp.com	(443) 224-1583
Mark Roberts, Project Engineer, Whitman, Requardt & Associates, LLP	mroberts@wrallp.com	(443) 224-1573
Jason Cosler, Hydraulics Engineer, Whitman, Requardt & Associates, LLP	jcosler@wrallp.com	(443) 224-1559
Bob Klasen, Traffic Engineer, Whitman, Requardt & Associates, LLP	rklasen@wrallp.com	(443) 224-1624
Joann Trach Tongson, Landscape Designer, Mahan Rykiel and Associates	jtrachtongson@mahanrykiel.com	(410) 235-6001

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Table of Contents

Table of Contents

List of Figures

List of Tables

List of Appendices

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

I. Project Purpose and Need

I. Project Purpose and Need

A. Facility Planning, Phase I Study

The Montgomery County Department of Transportation (MCDOT) initiated a Phase I Facility Planning Study to evaluate the need for sidewalks, master planned bicycle facilities and traffic safety improvements along Bradley Boulevard (MD 191) between Wilson Lane (MD 188) and Goldsboro Road (MD 614).

This study included a review of the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan* and the *2005 Countywide Bikeways Functional Master Plan*. The study recommended providing a pedestrian connection between the existing sidewalk on Bradley Boulevard east of Goldsboro Road and the existing sidewalk on Wilson Lane.

This connection would provide safe pedestrian access to several transit stops and the Bethesda Central Business District, as shown in Figure I-1.

The study will also provide recommendations for general traffic improvements that may be required to accommodate the pedestrian and bicycle improvements.

The east end of the study area was extended from Goldsboro Road to Glenbrook Road after the first public meeting and newsletter. There were many public comments that Glenbrook Road is the more logical project terminus due to its connection to the Capital Crescent Trail.

B. Project Background

The study area is located in a single-family residential community in Bethesda, Maryland. As shown in Figure I-1, there are several important destinations for pedestrians and bicyclists in the study area, including Chabad of BCC (a Jewish community center and synagogue), the Bethesda Community School, Radnor Center (currently housing the Seven Locks Elementary School), Bradley Hills Elementary School, Thomas W. Pyle Middle School, Walt Whitman High School and a Safeway grocery store.

1. Community Facilities and Existing Employment Centers

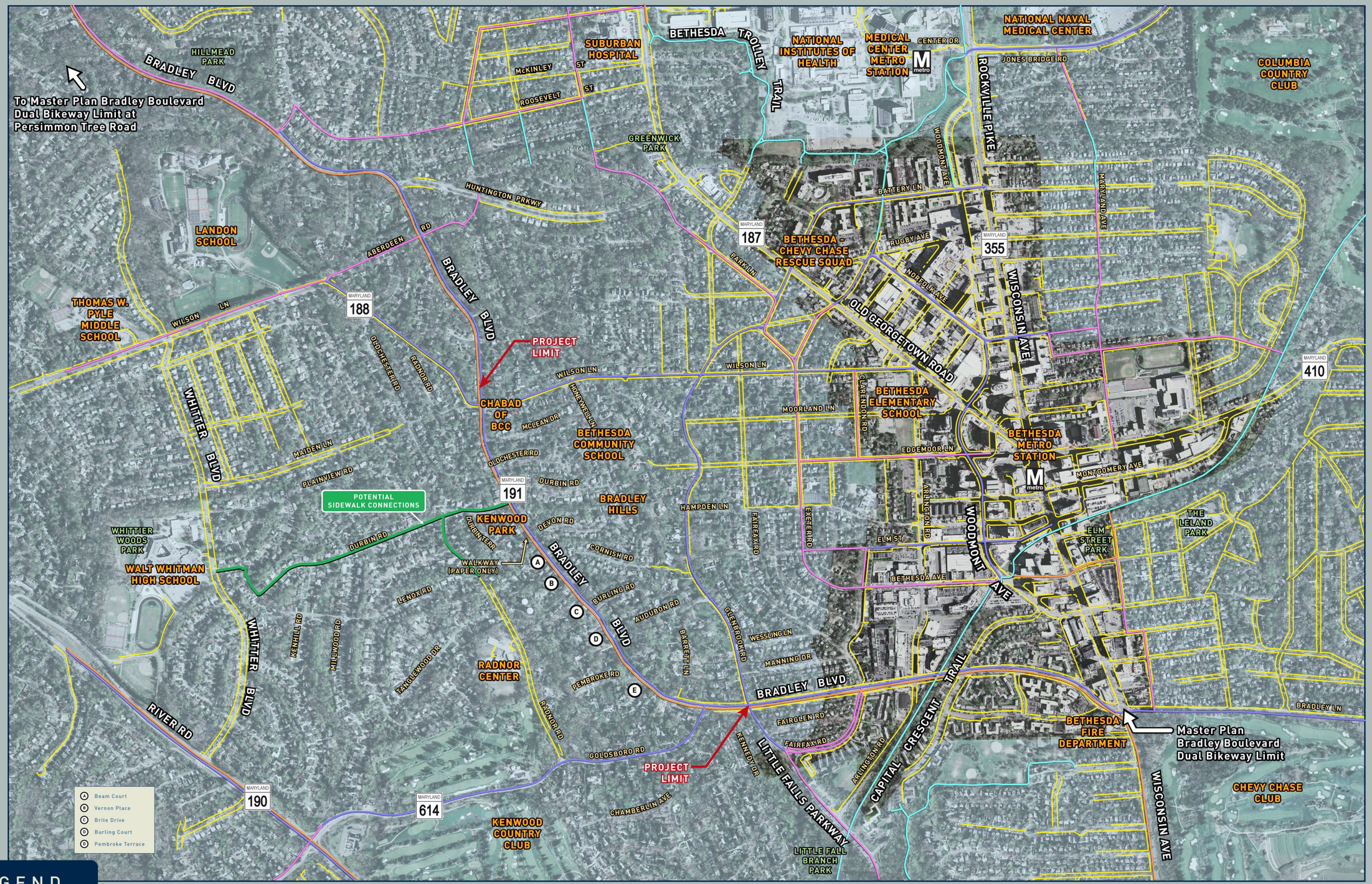
Chabad-Lubavitch Center of Bethesda-Chevy Chase (BCC) is a Jewish community center and synagogue located along Bradley Boulevard at the northern end of the study area. Under the Lubavitch tradition, members of the Chabad are required to walk to the synagogue on the Sabbath and other religious holidays.

There are two schools within a quarter mile of the study area, including the Bethesda Community School and Radnor Center. The Montgomery County Public Schools identifies the project area as being served by Bradley Hills Elementary School, Thomas W. Pyle Middle School, and Walt Whitman High School.

The Bethesda Central Business District (CBD) is located 1 mile to the east from the study area. The 2005 Countywide Bikeways Functional Master Plan defines CBDs as areas that feature the majority of the county's employers,

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

FIGURE I-1: PROJECT AREA



LEGEND

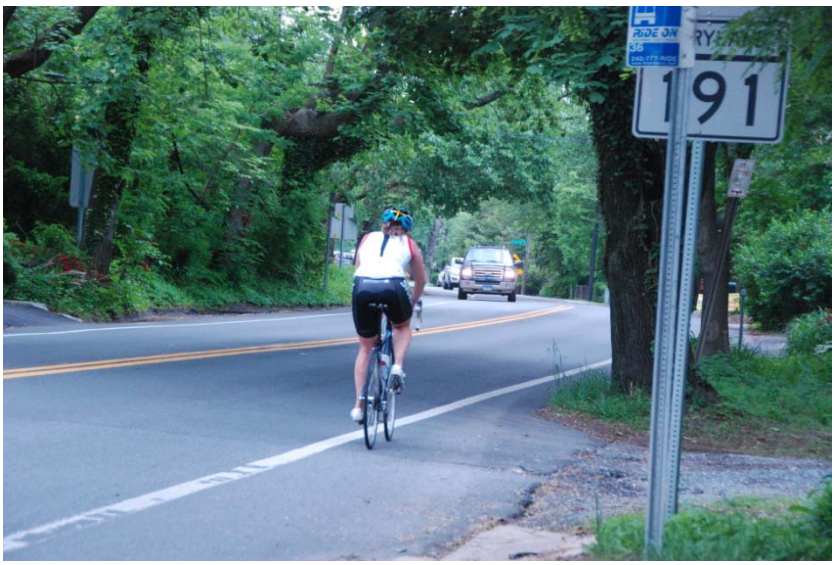
- Existing Sidewalks
- Existing Shared Roadway/Bike Lanes
- Existing Shared Use Path
- Planned Shared Roadway/Bike Lanes
- Planned Shared Use Path
- Potential Sidewalk Connections
- Bethesda Central Business District

office and commercial space, retailers and services, and specifies accordingly that bicycle access is important. The plan recommends providing dual bikeways along Bradley Boulevard to improve connections to the CBD and to reduce dependency on auto travel and the demand for limited downtown parking. A dual bikeway includes on-road bikeable shoulders and a shared use path to be shared by bicyclists and pedestrians.

2. Bicycle Facilities

The existing travel lanes on Bradley Boulevard vary from 11' to 13', and average 11.5'. The existing shoulders on Bradley Boulevard vary from 2' to 12', and average 4'. The existing shoulders provide some ability for bicyclists to ride outside of vehicle travel lanes, but they are not consistent throughout the study area. The edge of the existing shoulders in many locations along the study area is deteriorating due to storm drainage erosion.

Figure I-2. Bradley Boulevard looking east from Wilson Lane



Bradley Boulevard's public right of way is 100 feet wide with a posted speed limit of 30 miles per hour. At the intersection of Bradley Boulevard and Wilson Lane, motorists were observed bypassing left-turning vehicles on the right on three of the four intersection approaches. These vehicles are moving into the area typically occupied by bicyclists, creating conflicts.

Bradley Boulevard intersects the Capital Crescent Trail just east of the study area and is in close proximity to the North Bethesda Trail (also known as the Bethesda Trolley Trail). There are also on-road bike lanes on Fairfax Road and Little Falls Parkway just east of the study area. Providing pedestrian and bicycle improvements along Bradley Boulevard will make these trails and on-road bikeable shoulders more accessible to a larger number of bicyclists, providing more opportunities for recreational and commuter cycling.

3. Pedestrian Facilities

The Bradley Boulevard intersections with Wilson Lane, Goldsboro Road, and Glenbrook Road are controlled by traffic signals. There are marked crosswalks on the east and south legs of the Wilson Lane intersection. There is a marked crosswalk on the west leg of the Goldsboro Road intersection. There is a marked crosswalk on the west leg of the Glenbrook Road intersection. There is a marked crosswalk without a traffic signal crossing Bradley Boulevard at Brite Drive.

Figure I-3. Sidewalk at Wilson Lane looking north

There are intermittent sidewalks on Bradley Boulevard in the study area.

- Along both sides of Bradley Boulevard from Glenbrook Road to Goldsboro Road – consisting of a five foot sidewalk with no grass buffer.
- Along the north side of Bradley Boulevard from Goldsboro Road to Barrett Lane – consisting of five to six foot wide sidewalks with a grass buffer of varying width.
- Bradley Boulevard at Wilson Lane – short segments of six to seven foot wide sidewalks on the northwest and southwest corners of the intersection.
- Bradley Boulevard at Durbin Road – short segment adjacent to EB Bradley Boulevard on the northwest corner of the intersection.

4. Public Transportation

The Master Plan indicates that there are many opportunities to support bicycle access to transit. There are three Metro stations within 2 miles of the

study area: Bethesda, Medical Center, and Friendship Heights. All are accessed from Wisconsin Avenue, which already has continuous sidewalks between the Metro stations. Bradley Boulevard connects to Wisconsin Avenue just south of the Bethesda Metro station. Providing pedestrian and bicycle improvements along Bradley Boulevard will enable greater Metro accessibility to a larger number of bicyclists and pedestrians, providing alternative transportation for a densely populated business district and encourage and increase transit ridership.

Montgomery County Transit's Ride-On Bus Route 36 provides weekday service along Bradley Boulevard to connect to the Bethesda Metro station. A total of 88 passengers use the Bradley Boulevard bus stops on an average weekday. Details of bus ridership and stops are included in the Traffic Study in Appendix F. The busiest bus stops are eastbound at Brite Drive, see Fig. I-4 (17 riders/day), westbound at Audubon Road (15 riders/day), and at Durbin Road (9 riders/day in each direction). Bus Routes 29 and 32 travel along Wilson Lane and also connect to the Bethesda Metro station, see Fig. I-5.

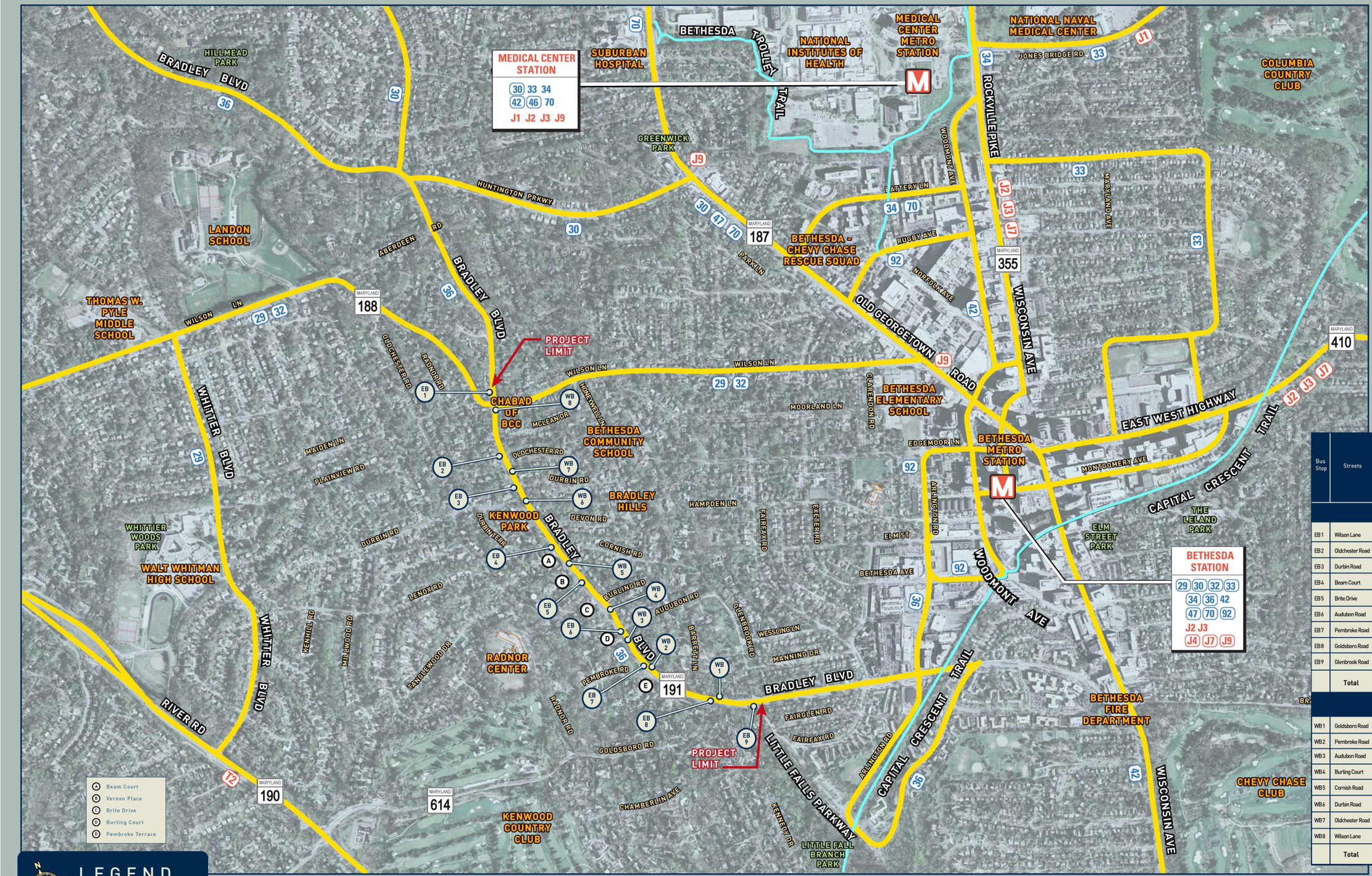
The Montgomery County Public Schools (MCPS) has a policy on Student Transportation. The policy states that students attending their home school who reside beyond 1 mile for elementary schools, 1.5 miles for middle schools, and 2 miles for high schools will be bused. The policy also states that busing will be provided for distances less than those listed if the walking route is considered hazardous. One hazardous condition is walking along primary roads with an insufficient shoulder or sidewalk. Another is middle and high school students having to cross a primary road without a pedestrian marked crosswalk, or elementary school students having to cross a primary road without a crossing guard.

The MCPS identifies the project area as being served by Bradley Hills Elementary School (BHES) which is greater than 1 mile from the project area, Thomas W. Pyle Middle School (TPMS) which is about 1 mile from the project area, and the Walt Whitman High School (WWHS) which is about 1 mile from the project area. Students attending these schools are not required to walk along or across Bradley Boulevard which is considered a primary road. All students from the project area who attend BHES are bused. Students who live just west of Bradley Boulevard and attend either TPMS or WWHS are required to walk. Students who live on or east of Bradley Boulevard and attend either TPMS or WWHS are bused. There are several school bus stops along Bradley Boulevard located at Wilson Lane, McLean Drive, Oldchester Road, Durbin Road, Devon Road, Beam Court, Cornish Road, Vernon Place, Brite Drive, Burling Road, Audubon Road, Pembroke Road, and Barrett Lane.

The addition of a sidewalk along the south side of Bradley Boulevard and a sidewalk or shared use path along the north side of Bradley Boulevard will provide connectivity for the neighborhood and community in the study area. If these facilities are constructed then Bradley Boulevard will no longer be considered hazardous for walking students under the Student Transportation Policy of MCPS.

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

FIGURE I-4: PUBLIC TRANSPORTATION



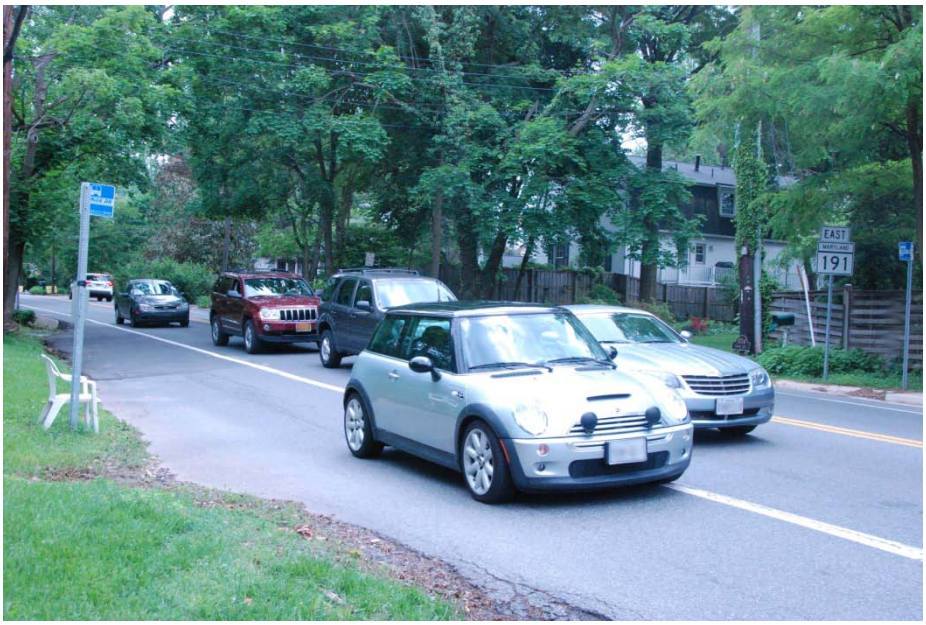
Bus Stop	Streets	AM 4:59 AM - 8:56 AM		MID-DAY 8:57 AM - 3:56 PM		PM 3:57 PM - 6:56 PM		NIGHT After 6:57 PM		TOTAL	
		ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Route 36 Eastbound FY09 Weekday											
EB1	Wilson Lane	0	0	0	3	0	0	0	0	0	3
EB2	Oldchester Road	1	0	1	0	0	0	0	0	2	0
EB3	Durbin Road	6	0	2	0	1	0	0	0	9	0
EB4	Beam Court	2	0	0	0	0	0	0	0	2	0
EB5	Brite Drive	6	0	6	1	4	0	0	0	16	1
EB6	Audubon Road	2	0	0	0	2	0	0	0	4	0
EB7	Pembroke Road	0	0	0	0	0	0	0	0	0	0
EB8	Goldsboro Road	0	0	1	1	0	0	0	0	1	1
EB9	Glenbrook Road	2	0	2	0	1	0	0	0	5	0
	Total	**19**	**0**	**12**	**5**	**8**	**0**	**0**	**0**	**39**	**5**
Route 36 Westbound FY09 Weekday											
WB1	Goldsboro Road	0	0	0	0	0	0	0	0	0	0
WB2	Pembroke Road	0	0	0	1	0	0	0	0	0	1
WB3	Audubon Road	0	6	1	2	0	4	0	2	1	14
WB4	Burling Court	0	2	0	1	0	4	0	0	0	7
WB5	Cornish Road	0	0	0	0	0	4	0	0	0	4
WB6	Durbin Road	0	2	0	3	0	3	0	1	0	9
WB7	Oldchester Road	0	0	0	0	0	2	0	0	0	2
WB8	Wilson Lane	0	3	1	1	0	1	0	0	1	5
	Total	**0**	**13**	**2**	**8**	**0**	**18**	**0**	**3**	**2**	**42**

LEGEND

Bus Route

Existing Shared Use Path

Figure I-5: Bypassing vehicle WB at Wilson Lane



5. Traffic

The following is a summary of the traffic analysis found in the Bradley Boulevard Traffic Study in Appendix F. The traffic analysis at Bradley Boulevard and Wilson Lane was conducted two different ways. The first analysis considered how lanes are currently marked. The second analysis took into account that motorists were observed bypassing left-turning vehicles on the right on three of the four intersection approaches (eastbound, westbound, and southbound). This analysis assumed the effective presence of left-turn lanes on these approaches, more accurately reflecting existing traffic conditions.

Results of the traffic analyses can be found in Table I-1. The effective left-turn lanes at the Wilson Lane intersection not only show improved operation at that location, but also at the Goldsboro Road intersection due to reduced queues from the Wilson Lane intersection.

Table I-1. Traffic Analysis Summary.

Intersection	Peak period	Level of service with existing lane configuration	Level of service assuming effective left-turn lanes
Wilson Lane	AM	F	D
	PM	F	F
Goldsboro Road	AM	C	C
	PM	F	C

6. Safety

Crash data from the five-year period 2003-2007 was provided by the Montgomery County Traffic Engineering and Operations Section and are included in the Bradley Boulevard Traffic Study. During the five-year period there were 62 total reported crashes in the study area. Three crashes involved a vehicle colliding with a bicyclist. Two of these crashes occurred at the intersection of Bradley Boulevard at Goldsboro Road, and one occurred near the intersection of Bradley Boulevard at Pembroke Terrace. There is a need for pedestrian and bicycle improvements that minimize the conflict between bicyclists and motorists. On-road bikeable shoulders will also help motorists to be more mindful of bicyclists thereby improving the safety of bicyclists on Bradley Boulevard. Additional information on the crash history of this section of Bradley Boulevard can be found in the Bradley Boulevard Traffic Study in Appendix F.

Figure I-6: Bicyclists riding WB at Brite Drive

7. Storm Drainage

The portion of Bradley Boulevard within the Study Area has no open (ditch) or closed (curb, inlets, and pipes) storm drainage system. The lack of storm drainage results in standing water on the roadway during rain events. The standing water is a safety problem for motorists and bicyclists. The standing water also causes deterioration of the roadway and shoulders. During the study it was decided that all alternate designs should include a storm drainage system to correct this deficiency. The study proposes a ditch and bioswale drainage system for the north side of the road which is the most effective system for controlling runoff from Bradley Boulevard and the residential lots to the north while also meeting the project's regulatory stormwater management requirements. The study proposes a closed storm drainage system along the south side of the road due to insufficient right-of-way for an open system.

8. Area Master Plans and Recommendations

According to Montgomery County's 2005 Countywide Bikeways Functional Master Plan, dual bikeways (shared use path and on-road bikeable shoulders) are proposed on Bradley Boulevard from Persimmon Tree Road to the north to Wisconsin Avenue to the south (see Figure I-1). The project area is in fact a small part of this length, extending for about a mile between Wilson Lane and Glenbrook Road. On-road bikeable shoulders and signed shared roadways are recommended by the master plans on Wilson Lane and Goldsboro Road. Signed-shared roadways are recommended by the master plans on Glenbrook Road and Little Falls Parkway. Wide outside lanes are proposed on Bradley Boulevard between Goldsboro Road and Wisconsin Avenue, adjacent to the study area of Bradley Boulevard. Providing pedestrian and bicycle improvements along Bradley Boulevard between Wilson Lane and Glenbrook Road will provide continuity in the network.

The Bethesda-Chevy Chase Master Plan classifies Bradley Boulevard between the Capital Beltway and Goldsboro Road as an Arterial road and the segment east of Goldsboro Road as a Major Highway. The Master Plan also recommended improving the intersection at Wilson Lane, which the Bradley Boulevard Traffic Study concurs with. Finally, the Master Plan recommends paying special attention during reconstruction of this road, to pedestrian safety, to a continuous path, and to pedestrian crossings.

Excerpts of the master plans are included in Appendix A.

C. Project Purpose

The purpose of Bradley Boulevard Bikeway Project is to:

- Comply with the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan
- Promote and enhance bicycling and continuous pedestrian facilities
- Encourage multi-modal transportation usage to work centers, places of worship, parks, trails, schools, shopping areas, transit stops, and homes
- Improve access to transit stops and the Medical Center, Bethesda, and Friendship Heights Metrorail stations
- Promote a safe environment for pedestrians and bicyclists
- Improve observed existing traffic patterns and operations

D. Project Need

The need for the Bradley Boulevard Bikeway Project is to:

- Improve access to major destinations along and beyond the study area as recommended in the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan
- Address existing sidewalk and bicycle facility disconnects
- Provide safe facilities to address pedestrian and bicycle demand
- Improve observed existing traffic patterns and operations to address critical safety and capacity issues

E. Summary

The Bradley Boulevard Improvements Project has been identified in the 1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and the 2005 Countywide Bikeways Functional Master Plan. The project is being studied to provide pedestrian and bicycle improvements along Bradley Boulevard consisting of on-road bikeable shoulders as well as an off-road shared use path and sidewalks, to provide continuous pedestrian facilities, and to improve the existing traffic patterns and operations.

The purpose of the project is to comply with the area master plans, to improve bicycle and pedestrian facilities, to encourage pedestrian and bicycle usage, and to improve safety for all users.

The need for the project is to improve access to major destinations in and beyond the study area, to connect existing sidewalk and bicycle facilities, and to improve safety for all users.

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

II. Alternates Evaluation

II. Alternates Evaluation

A. Introduction

The Montgomery County Department of Transportation (MCDOT) initiated a Phase I Facility Planning Study to evaluate the need for sidewalks, master planned bicycle facilities and traffic safety improvements along Bradley Boulevard (MD 191) between Wilson Lane (MD 188) and Goldsboro Road (MD 614). The Study Team, including representatives from MCDOT, Bethesda-Chevy Chase Regional Services Center, the Maryland-National Capital Park and Planning Commission (MNCPPC), and Maryland State Highway Administration (SHA) with input from the public, completed an analysis of numerous alternates. Following completion of the Purpose and Need Statement, Traffic Study, Environmental Assessment, design criteria, collection of data, and review of existing conditions, several alternates were evaluated. The width of the proposed shared use path, sidewalk, bikeable shoulders, and travel lanes were evaluated during the study. Different intersection schemes at Wilson Lane and Goldsboro Road and different combinations of shared use paths and sidewalks were evaluated to see which alternate best promoted the purpose and need of the project while minimizing impacts. A no-build and five build alternates, were analyzed in detail during this study.

Significant design factors for consideration in the study included the need for left turn lanes on Bradley Boulevard at Wilson Lane revealed in the Traffic Study, the need to improve the existing drainage situation, the need to minimize utility pole impacts due to relocation cost and relocation impacts, the need to minimize impacts to the existing trees, and the need to extend the project to Glenbrook Road. There were many public comments that Glenbrook Road is the more logical project terminus due to its connection to the Capital Crescent Trail.

The Recommended Alternate was developed based on the following: *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan*, the *2005 Countywide Bikeways Functional Master Plan*, technical analysis, impacts, public and agency input. Following is a summary of the process undertaken in the evaluation of the alternates.

B. Existing Conditions

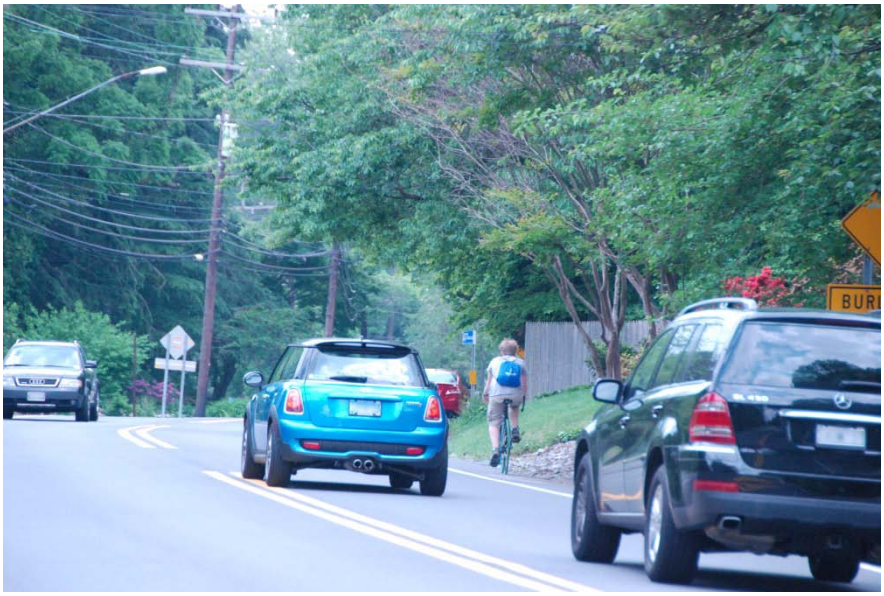
1. Roadway Geometry

The existing travel lanes on Bradley Boulevard vary from 11' to 13' and average 11.5'. The existing shoulders on Bradley Boulevard vary from 2' to 12', and average 4'. The existing shoulders provide some ability for bicyclists to ride outside of vehicle travel lanes, but they are not consistent throughout the study area. The edge of the existing shoulders in many locations along the study area is deteriorating due to erosion problems. Parking along Bradley Boulevard occurs intermittently.

2. Public Right-of-Way

The study area is located in a single-family residential community in Bethesda, Maryland. Bradley Boulevard's public right-of-way is approximately 100 feet wide.

Figure II-1. Bradley Boulevard looking east at Burling Road



3. Pedestrian Facilities and Transit

The Bradley Boulevard intersections with Wilson Lane, Goldsboro Road, and Glenbrook Road are controlled by traffic signals. There are marked crosswalks on the east and south legs of the Wilson Lane intersection. There is a marked crosswalk on the west leg of the Goldsboro Road intersection. There is a marked crosswalk on the west leg of the Glenbrook Road intersection. There is a marked crosswalk without a traffic signal crossing Bradley Boulevard at Brite Drive. There are intermittent sidewalks on Bradley Boulevard in the study area. Montgomery County Transit's Ride-On Bus Route 36 provides weekday service along Bradley Boulevard to connect to the Bethesda Metro station. A total of 88 passengers use the Bradley Boulevard bus stops on an average weekday.

C. Design Criteria

The design criteria were developed from several sources. The roadway criteria are based on *AASHTO, A Policy on Geometric Design of Highways and Streets* and *AASHTO, Roadside Design Guide*. The Shared Use Path criteria are based on *AASHTO, Guide for the Development of Bicycle Facilities* and the Montgomery County *Countywide Bikeways Master Plan* design characteristics. The sidewalk criteria are based on *ADA Accessibility Guidelines for Buildings and Facilities*. Table II-1 displays the project design criteria.

Table II-1. Design Criteria

	Sidewalk	Shared Use Path	Roadway
Design Speed	N/A	N/A	35 mph
Design Vehicle	N/A	Bicycle	WB-40
Horizontal Alignment			
Minimum Radius	N/A	36'	371'
Desirable Radius	N/A	100'	N/A
Sight Distance	N/A	125'	250'
Maximum Superelevation	N/A	3%	4%
Maximum Superelevation Transition Rate "C"	N/A	0.0016	0.0003
Maximum Superelevation Break on Roadway	N/A	N/A	7%
Normal Cross Slope	2%	2%	2%
Vertical Alignment			
Minimum Grade	0.50%	0.50%	0.50%
Maximum Grade	5%	6%	6%
Maximum Grade Desirable	N/A	5%	N/A
Sag Curve Minimum K Value	N/A	N/A	49
Crest Curve Minimum K Value	N/A	N/A	29
Minimum Length of Vertical Curve	N/A	10'	100'
Typical Sections			
Minimum Offset to Roadway	6'	6'	N/A
Minimum Offset to Utility Pole	1'	3'	6'
Path Width (Alternate 2)	5'	10'	N/A
Path Width (Alternate 3)	5'	12'	N/A
Path Width (Alternates 4A and 4B)	5'	8'	N/A
Side Slope	N/A	6:1	N/A
Side Slope Width (Min)	N/A	2'	N/A
Lane Width (Alternates 2 and 3)	N/A	N/A	12'
Lane Width (Alternates 4A and 4B)	N/A	N/A	11'
Shoulder Width (Alternates 2, 4A, and 4B)	N/A	N/A	4'
Shoulder Width (Alternate 3)	N/A	N/A	6'

D. Description of Alternates

Six alternates were developed and evaluated based on the Master Plans, the project's purpose and need, the traffic study, safety, and the environmental assessment. Alternate 1 – No-Build, Alternate 2 – Master Plan, and Alternate 3 – Enhanced Master Plan were developed for the first public informational meeting on October 27, 2009. These alternates were developed based on preferred design criteria. They were also designed to avoid impacts to the existing landscape and utility poles on the south side of Bradley Boulevard and instead pushed most impacts to the north side of Bradley Boulevard where there is ample right-of-way. Based on extensive public input requesting that the project be scaled down, Alternate 1 – No-Build, Alternate 4A, Alternate 4B, and

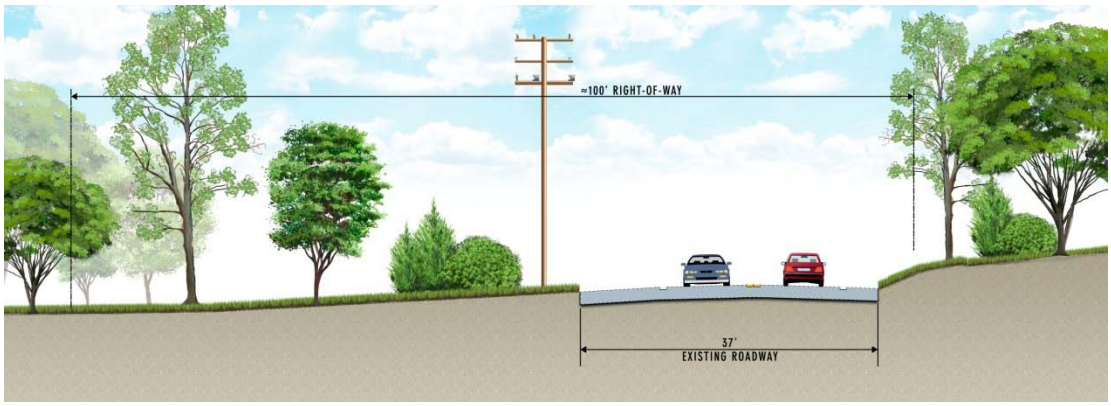
Alternate 4C were developed for the second public informational meeting on November 10, 2010. These alternates used minimum design criteria instead of preferred. They were designed to shift some of the impacts to the south side but to maintain the existing right-of-way on this side. This shift allowed for a large reduction in impacts to the existing landscape and utility poles on the north side of the roadway. For the second public meeting, the build alternates were also extended eastward to Glenbrook Road. There were many public comments that Glenbrook Road is the more logical project terminus due to its connection to the Capital Crescent Trail.

All build alternates include drainage improvements and the addition of left turn lanes along Bradley Boulevard at Wilson Lane.

1. Alternate 1 – No-Build

Alternate 1 – No-Build maintains the existing conditions. Figure II-2 illustrates the Alternate 1 - No Build Typical Section. For a larger scale typical section see Appendix H. See the Alternate 1 – No-Build plan views on Figures II-8 through II-10.

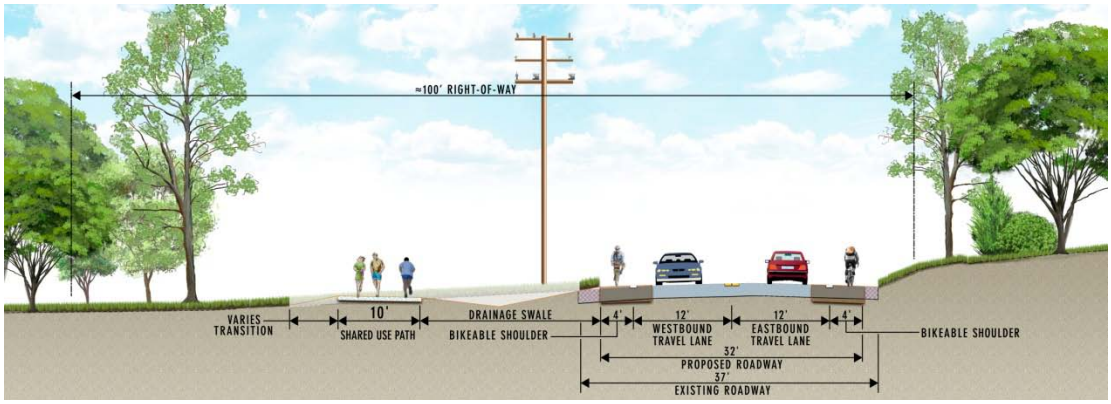
Figure II-2. Alternate 1 – No-Build Typical Section Looking East



2. Alternate 2 – Master Plan

Alternate 2 – Master Plan was developed to reflect the recommendations from the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and* the *2005 Countywide Bikeways Functional Master Plan*. Alternate 2 includes 12' lanes on Bradley Boulevard, 4' consistent bikeable shoulders, and a 10' shared use path on the north side of Bradley Boulevard. This alternate shifts the existing road north in selected locations to avoid any disturbance south of Bradley Boulevard. This alternate includes a drainage swale that runs the length of the project between the roadway and the shared use path including periodic stormwater management bioswales. This alternate leaves an open section for drainage along the south side of the roadway. Figure II-3 illustrates the Alternate 2 – Master Plan Typical Section. For a larger scale typical section see Appendix H. See the Alternate 2 – Master Plan plan views on Figures II-11 through II-13.

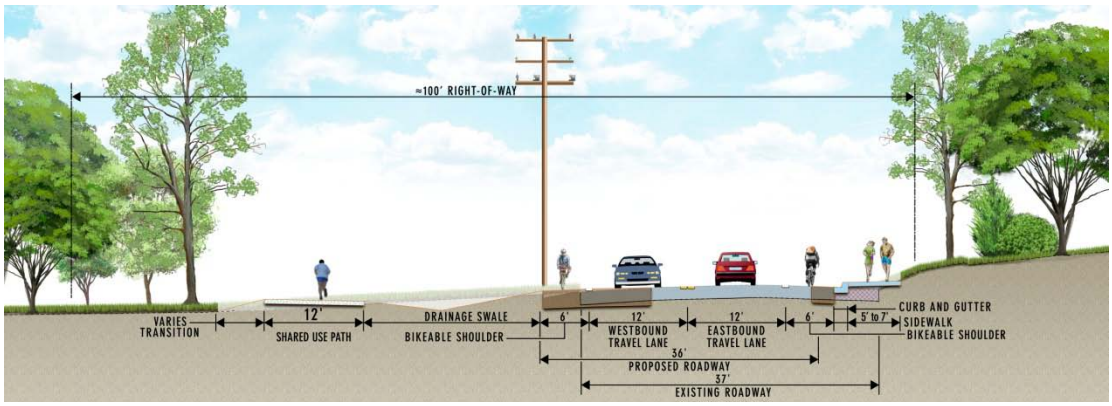
Figure II-3. Alternate 2 – Master Plan Typical Section Looking East



3. Alternate 3 – Enhanced Master Plan

Alternate 3 – Enhanced Master Plan was developed to reflect an enhanced version of the recommendations from the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and* the *2005 Countywide Bikeways Functional Master Plan*. Alternate 3 includes 12' lanes on Bradley Boulevard, 6' consistent bikeable shoulders, a 12' shared use path on the north side of Bradley Boulevard, and a 5' sidewalk on the south side of Bradley Boulevard. This alternate shifts the existing road north in selected locations to avoid any disturbance south of Bradley Boulevard. This alternate includes a drainage swale that runs the length of the project between the roadway and the shared use path including periodic stormwater management bioswales. This alternate adds curb and gutter along the south side between the roadway and the sidewalk. All drainage on the south side would be collected in inlets and discharged to the swale on the north side. Figure II-4 illustrates the Alternate 3 – Enhanced Master Plan Typical Section. For a larger scale typical section see Appendix H. See the Alternate 3 – Enhanced Master Plan plan views on Figures II-14 through II-16.

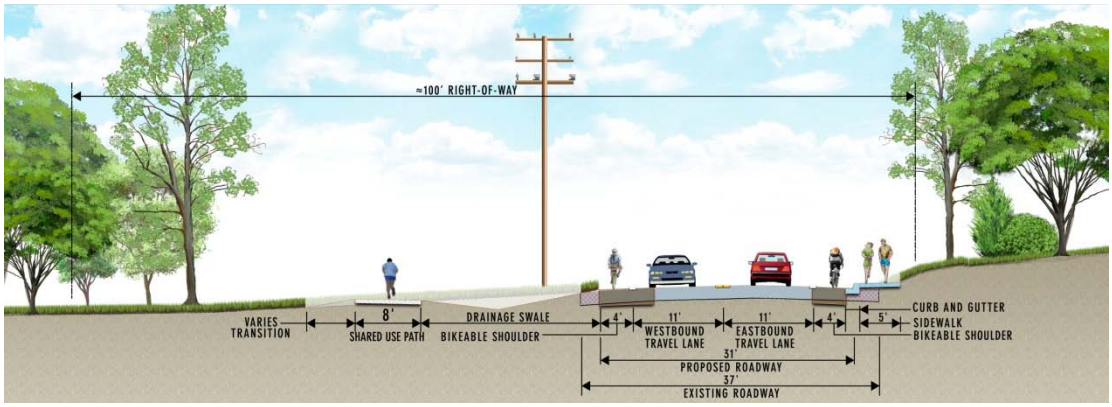
Figure II-4. Alternate 3 –Enhanced Master Plan Typical Section Looking East



4. Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders **(Recommended Alternate)**

Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders was developed to reflect a minimized version of the recommendations from the *1990 Approved and Adopted Bethesda-Chevy Chase Master Plan and* the *2005 Countywide Bikeways Functional Master Plan.* Alternate 4A includes 11' lanes on Bradley Boulevard, 4' consistent bikeable shoulders, an 8' shared use path on the north side of Bradley Boulevard, and a 5' sidewalk on the south side of Bradley Boulevard. This alternate shifts the existing road north in selected locations to avoid any permanent right-of-way impacts but does include some disturbance south of Bradley Boulevard. This alternate includes a drainage swale that runs the length of the project between the roadway and the shared use path including periodic stormwater management bioswales. This alternate adds curb and gutter along the south side between the roadway and the sidewalk. All drainage on the south side would be collected in inlets and discharged to the swale on the north side. Figure II-5 illustrates the Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders Typical Section. For a larger scale typical section see Appendix H. See the Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders plan views on Figures II-17 through II-19.

Figure II-5. Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders Typical Section Looking East **(Recommended Alternate)**

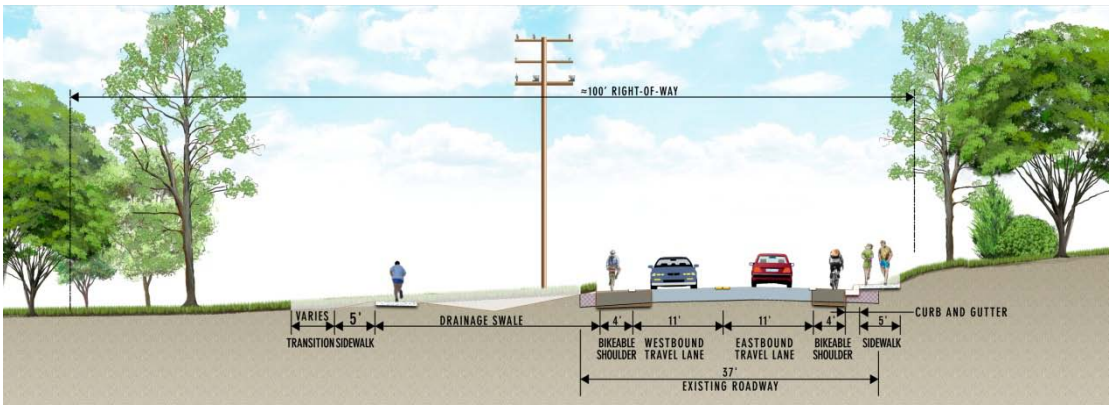


5. **Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders**

Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders was developed to further minimize impacts while still providing pedestrian and bicycle improvements. Alternate 4B includes 11' lanes on Bradley Boulevard, 4' consistent bikeable shoulders, a 5' sidewalk on the north side of Bradley Boulevard, and a 5' sidewalk on the south side of Bradley Boulevard. This alternate shifts the existing road north in selected locations to avoid any permanent right-of-way impacts but does include some disturbance south of

Bradley Boulevard. This alternate includes a drainage swale that runs the length of the project between the roadway and the sidewalk on the north side including periodic stormwater management bioswales. This alternate adds curb and gutter along the south side between the roadway and the sidewalk. All drainage on the south side would be collected in inlets and discharged to the swale on the north side. Figure II-6 illustrates the Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders Typical Section. For a larger scale typical section see Appendix H. See the Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders plan views on Figures II-20 through II-22.

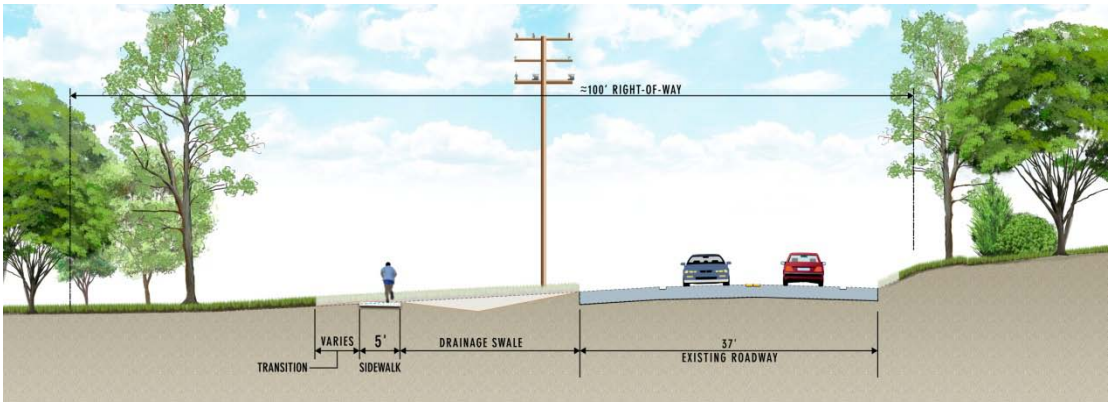
Figure II-6. Alternate 4B – Sidewalk North and South Sides with Bikeable Shoulders Typical Section Looking East



6. Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders

Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders was developed in response to some public input preferring sidewalk on the north side only. Alternate 4C includes consistent bikeable shoulders and a 5' sidewalk on the north side of Bradley Boulevard. This alternate does not have any impacts south of Bradley Boulevard. This alternate includes a drainage swale that runs the length of the project between the existing roadway and the sidewalk on the north side including periodic stormwater management bioswales. This alternate leaves an open section for drainage along the south side of the roadway. Figure II-7 illustrates the Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders Typical Section. For a larger scale typical section see Appendix H. See the Alternate 4C – Sidewalk North Side with Bikeable Shoulders Only plan views on Figures II-23 through II-25.

Figure II-7. Alternate 4C – Sidewalk North Side Only with Bikeable Shoulders Typical Section Looking East



E. Stormwater Management

The portion of Bradley Boulevard within the Study Area has no open (ditch) or closed (curb, inlets, and pipes) storm drainage system. The lack of storm drainage results in standing water on the roadway during rain events. The standing water is a safety problem for motorists and bicyclists. The standing water also causes deterioration of the roadway and shoulders. During the study it was decided that all alternate designs should include a storm drainage design to correct this deficiency. The study proposes a ditch and bioswale drainage system for the north side of the road which is the most effective system for controlling runoff from Bradley Boulevard and the residential lots to the north while also meeting the project's regulatory stormwater management requirements. The study proposes a closed storm drainage system along the south side of the road due to insufficient right-of-way for an open system. Excerpts from the latest MDE Stormwater Management Guidelines are included in Appendix G.

F. Traffic

During the study it was decided that all build alternates would include the installation of left turn bays along both Bradley Boulevard approaches to Wilson Lane to allow thru and right-turning vehicles to bypass left-turning vehicles safely, and to provide adequate sight distance for left-turning vehicles. These turn bays would reduce delay and queuing for thru and right-turning vehicles, as well as improve overall safety at the intersection. The left turn bays along Bradley Boulevard will prevent through vehicles from using the shoulder to bypass left-turning vehicles. The analysis of the turn lanes are discussed in the Traffic Study in Appendix F.

G. Alternates Comparison

The alternates comparison is shown in Table II-2.

Table II-2. Alternates Comparison

ALTERNATES COMPARISON						
	Alternate 1	Alternate 2	Alternate 3	Alternate 4A	Alternate 4B	Alternate 4C
	No-Build	Master Plan	Enhanced Master Plan	8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders	Sidewalk North and South Sides with Bikeable Shoulders	Sidewalk North Side Only with Bikeable Shoulders
Length	N/A	0.92 Miles	0.92 Miles	0.99 Miles	0.99 Miles	0.89 Miles
Project Goals	Does not meet project goals	Follows the master plan	Follows the master plan; Improves pedestrian access for the south side; Largest impacts	Follows the master plan; Improves pedestrian access for the south side	Improves pedestrian access for the north and south sides	Improves pedestrian access for the north side; Smallest impacts
Travel Lanes	Two 11' to 13' through lanes (average 11.5')	Two 12' through lanes	Two 12' through lanes	Two 11' through lanes	Two 11' through lanes	Two 11' through lanes
Shoulders	Shoulders vary from 2' to 12' (average 4')	4' Bikeable Shoulders	6' Bikeable Shoulders	4' Bikeable Shoulders	4' Bikeable Shoulders	Shoulders vary from 4' to 12'
Sidewalk	Intermittent in Study Area	Intermittent in Study Area	One 5' to 7' sidewalk with curb along the south side	One 5' sidewalk with curb along the south side	One 5' sidewalk with curb along the south side and one 5' sidewalk along the north side	One 5' sidewalk along the north side
Shared Use Path	None	10' path along the north side	12' path along the north side	8' path along the north side	None	None

The impact analysis of the six alternates is shown in Table II-3.

Table II-3. Impact Analysis

IMPACT ANALYSIS						
	Alternate 1	Alternate 2	Alternate 3	Alternate 4A	Alternate 4B	Alternate 4C
	No-Build	Master Plan	Enhanced Master Plan	8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders	Sidewalk North and South Sides with Bikeable Shoulders	Sidewalk North Side Only with Bikeable Shoulders
> 30" Diameter Trees Impacts	0	1-4	3-6	3-4	2-4	2-3
24" to 30" Diameter Trees Impacts	0	5-12	5-13	7-12	5-8	5-8
18" to 24" Diameter Trees Impacts	0	10-26	16-30	19-24	12-24	10-15
< 18" Diameter Trees Impacts	0	32-87	31-104	57-114	43-75	43-54
Utility Poles Relocated	0	6	27	7	7	4
Disturbed Area (Acres)	0.0	3.8	4.3	4.9	3.7	2.7
Impervious Area (Acres)	6.5	6.9	7.5	7.2	6.9	6.9

The low range of tree impacts is for trees directly in the proposed roadway, drainage improvements, sidewalk, or shared use path. The high range is for trees directly impacted plus those where the improvements cover a significant portion of their root zones. The impacts are based on Phase I Planning and are subject to change during preliminary and final design.

H. Unresolved Issues

If the Bradley Boulevard Improvements Project is selected to proceed to Phase II, the following will be considered.

During Phase II the study team will consider bus stop design, ADA compliance, and lighting for the project. The study team will also review the shared use path at side roads to develop the safest crossing locations. Whenever possible, the shared use path should cross the side roads as close to Bradley Boulevard as possible to maximize sight distance. The study team will also consider including a buffer between the roadway and sidewalk on the south side wherever possible without impacting right-of-way.

The study team received many public comments concerning the aesthetics of the drainage swale and bioswales. Efforts will be made during Phase II design to minimize the size of the drainage swales and bioswales while still meeting the project's regulatory stormwater management requirements.

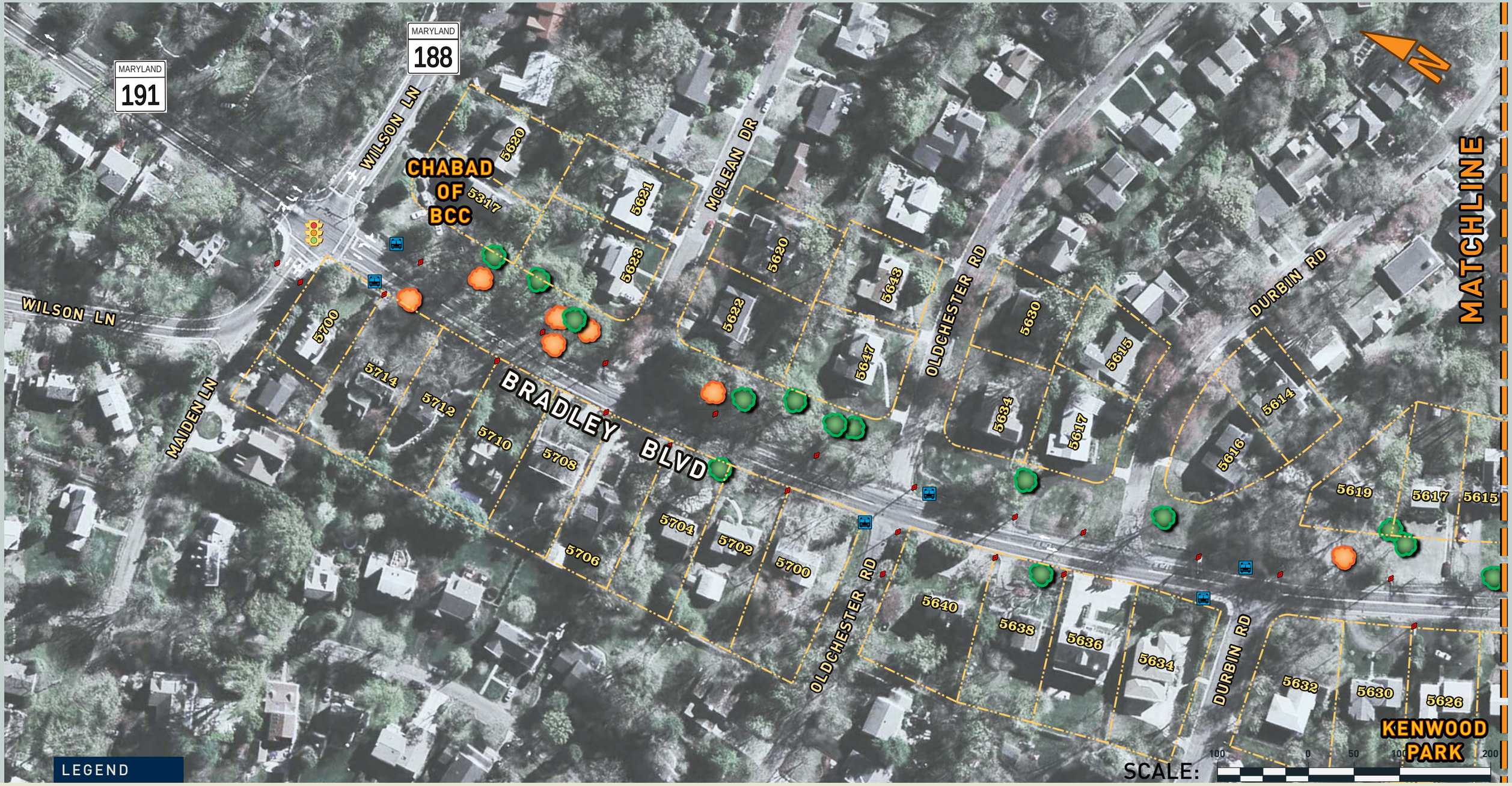
The study team received many public comments concerning the safety of pedestrians crossing Bradley Boulevard between the two signalized intersections. The study team will investigate additional crosswalk locations or enhanced crosswalks along Bradley Boulevard to enhance the project. Any changes or additions to crosswalks will require SHA approval.

The study team received many public comments throughout the planning study, describing the community's desire to maintain the existing character and landscape of the neighborhood. Efforts will be made during Phase II design to further minimize tree impacts to the maximum extent practical. The following practices will be used to attempt to reduce impacts.

- Pervious Pavement – The study team will investigate the soil conditions on the project site to determine whether the use of pervious pavement is recommended so that the water can soak into the underlying soils. If it is recommended, the study team will coordinate with the Department of Permitting Services/Maryland Department of the Environment (MDE) to use pervious pavement while reducing the use of other stormwater management measures such as bioswales to control water runoff. The reduction in the use of bioswales will reduce the project's disturbance and in turn have the added benefit of helping to reduce tree impacts.
- Shared Use Path Alignment – During Phase I the study team reviewed many concepts, but none were able to be engineered to a degree to evaluate every property or tree impact along the alignment. As such, there may be opportunities to optimize the shared use path alignment for further impact reduction. The study team will adjust the alignment of the shared use path to minimize tree impacts to the maximum extent practical while still meeting the project's design criteria.
- Tree Save Methods – The study team will employ tree save methods for certain trees that have less than 50% of their root zone impacted by the proposed construction. During design, options shall be explored to bring new technologies and innovation to the design to help preserve trees. Some methods that may be explored to further reduce impacts to the trees with nearby construction include pruning the affected roots and aerating/fertilizing the area to reduce stress on the root zone. Other methods may include raising the path using a non compactable stone layer over the root zone and topping the stone with a concrete path built on top instead of an asphalt path which requires compaction. These methods have been successfully used on projects to minimize tree impacts.

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure II-8: No-Build



LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-9: No-Build

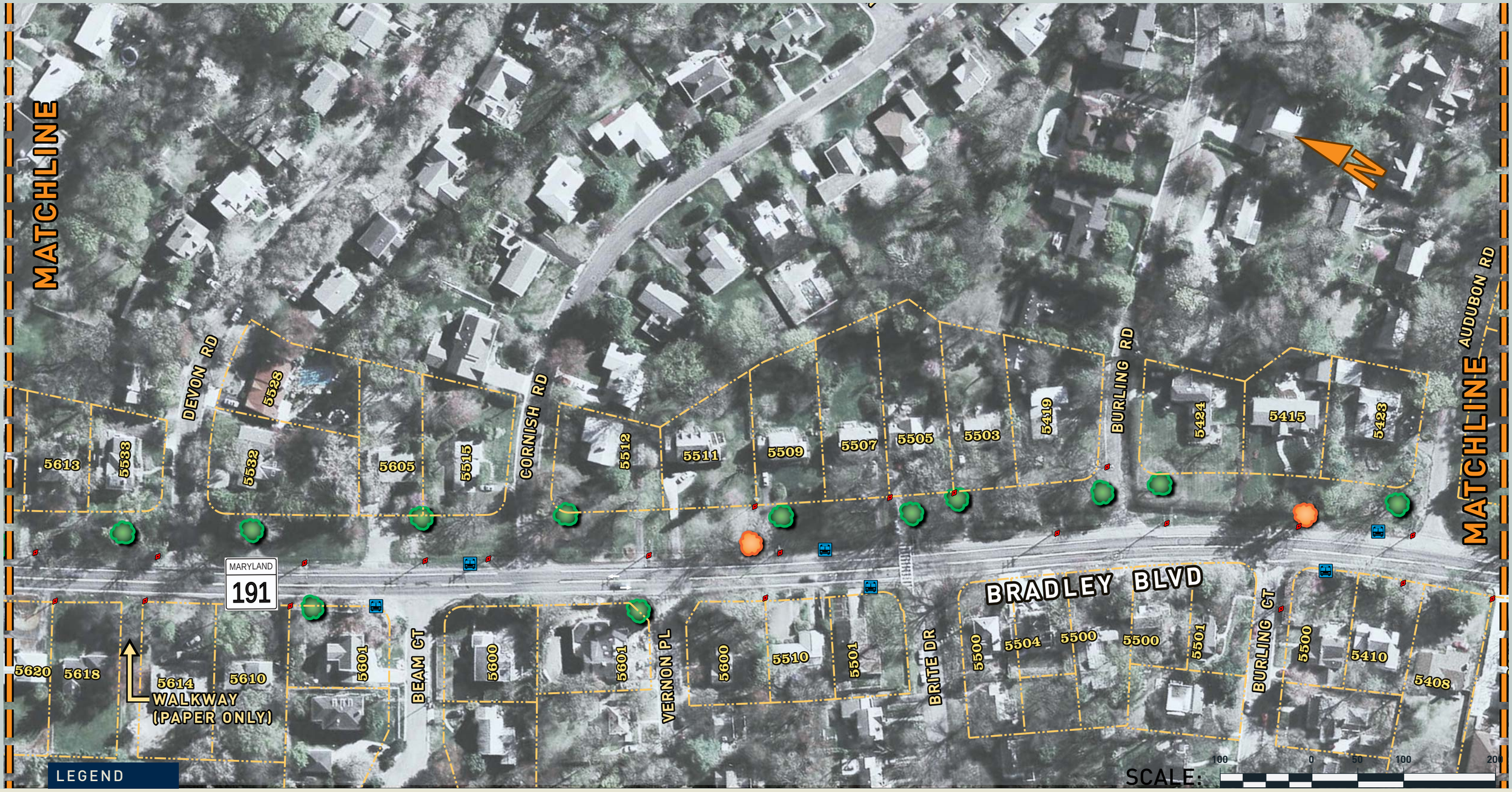
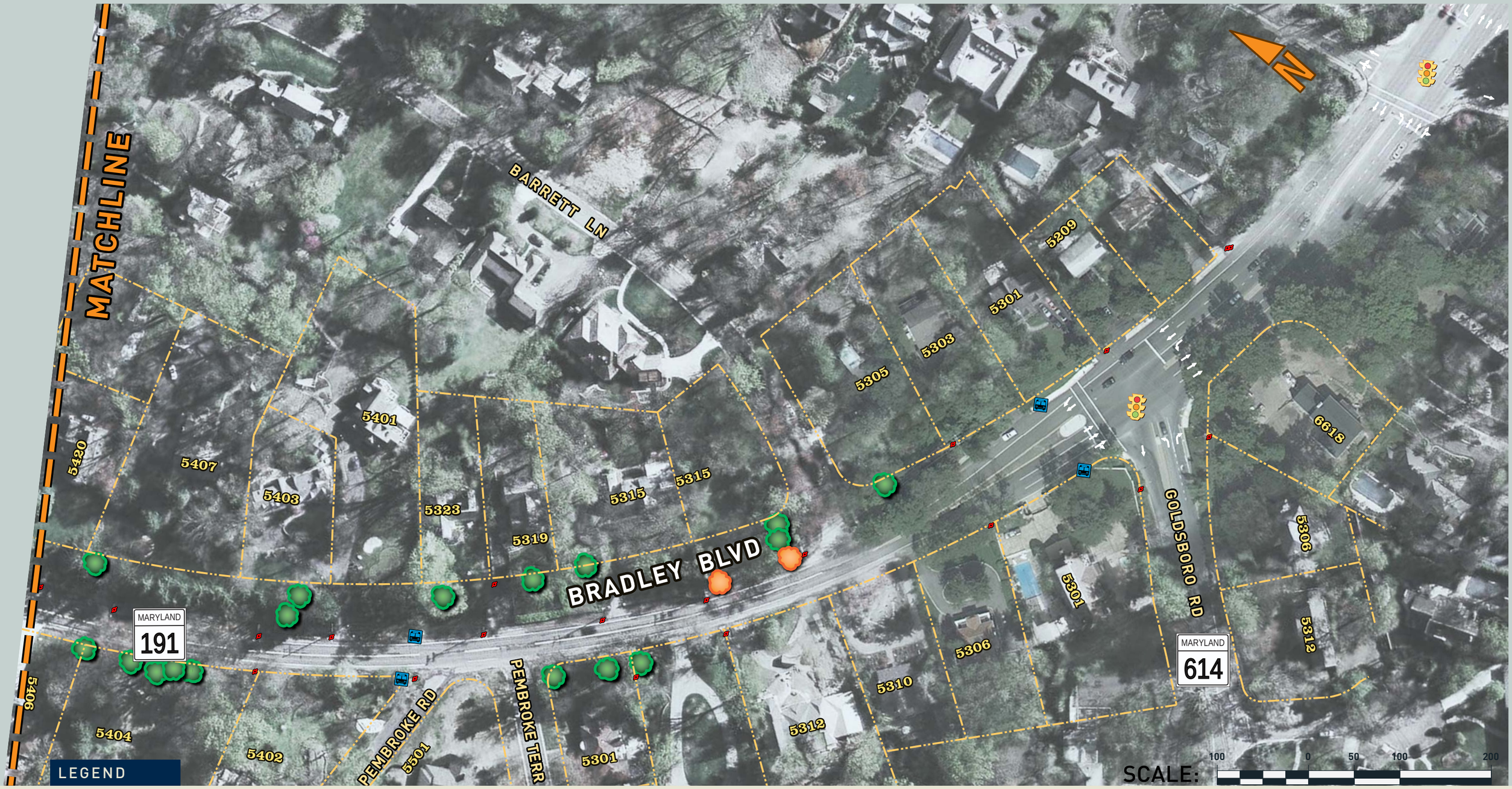


Figure II-10: No-Build



LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure II-11: Alternate 2 - Master Plan

LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-12: Alternate 2 - Master Plan

Figure II-13: Alternate 2 - Master Plan

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-14: Alternate 3 - Enhanced Master Plan

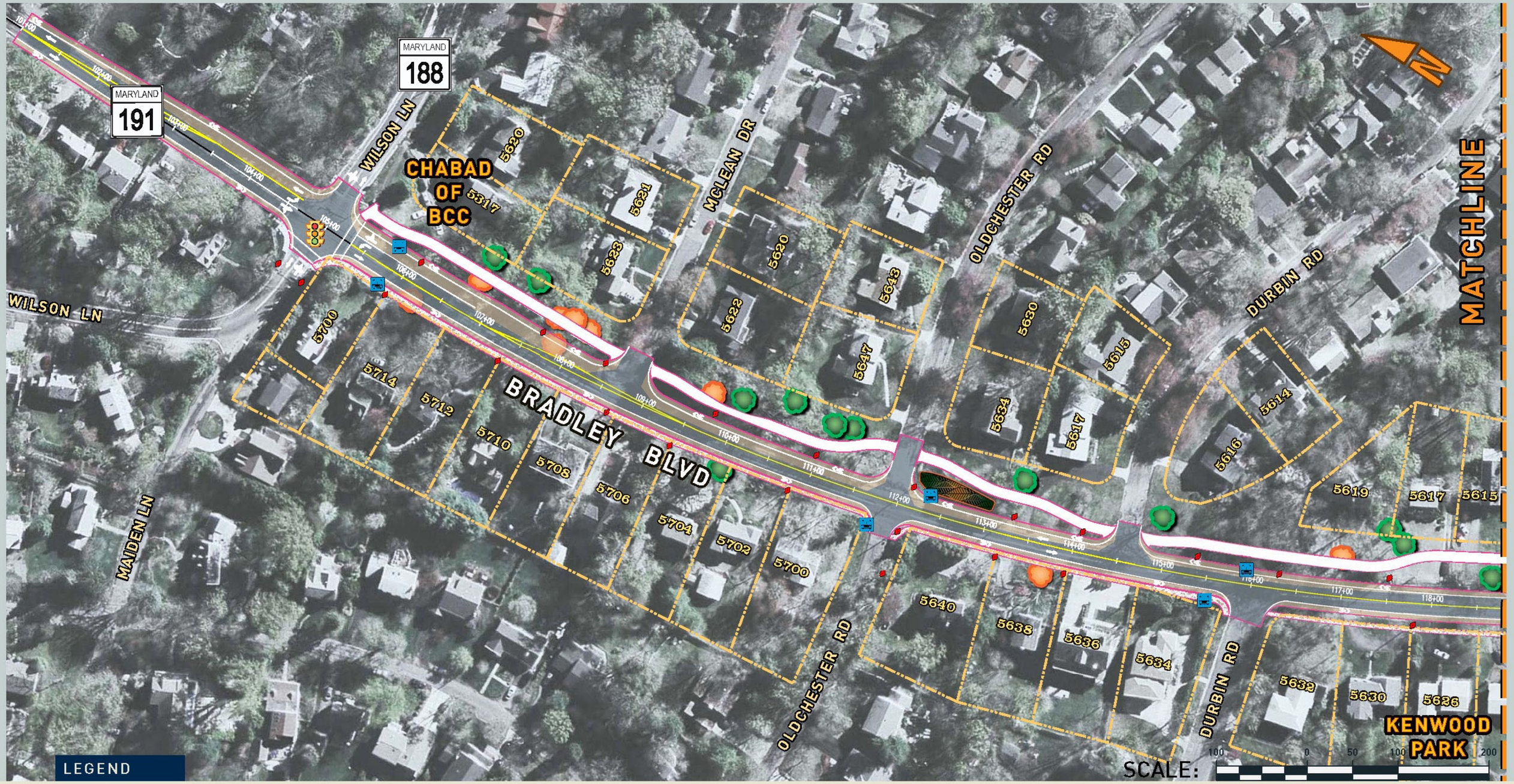


Figure II-15: Alternate 3 - Enhanced Master Plan

Figure II-16: Alternate 3 - Enhanced Master Plan

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure II-17: Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders **(RECOMMENDED ALTERNATE)**

LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-18: Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders **(RECOMMENDED ALTERNATE)**

Figure II-19: Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders **(RECOMMENDED ALTERNATE)**

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure II-20: Alternate 4B - Sidewalk North and South Sides with Bikeable Shoulders

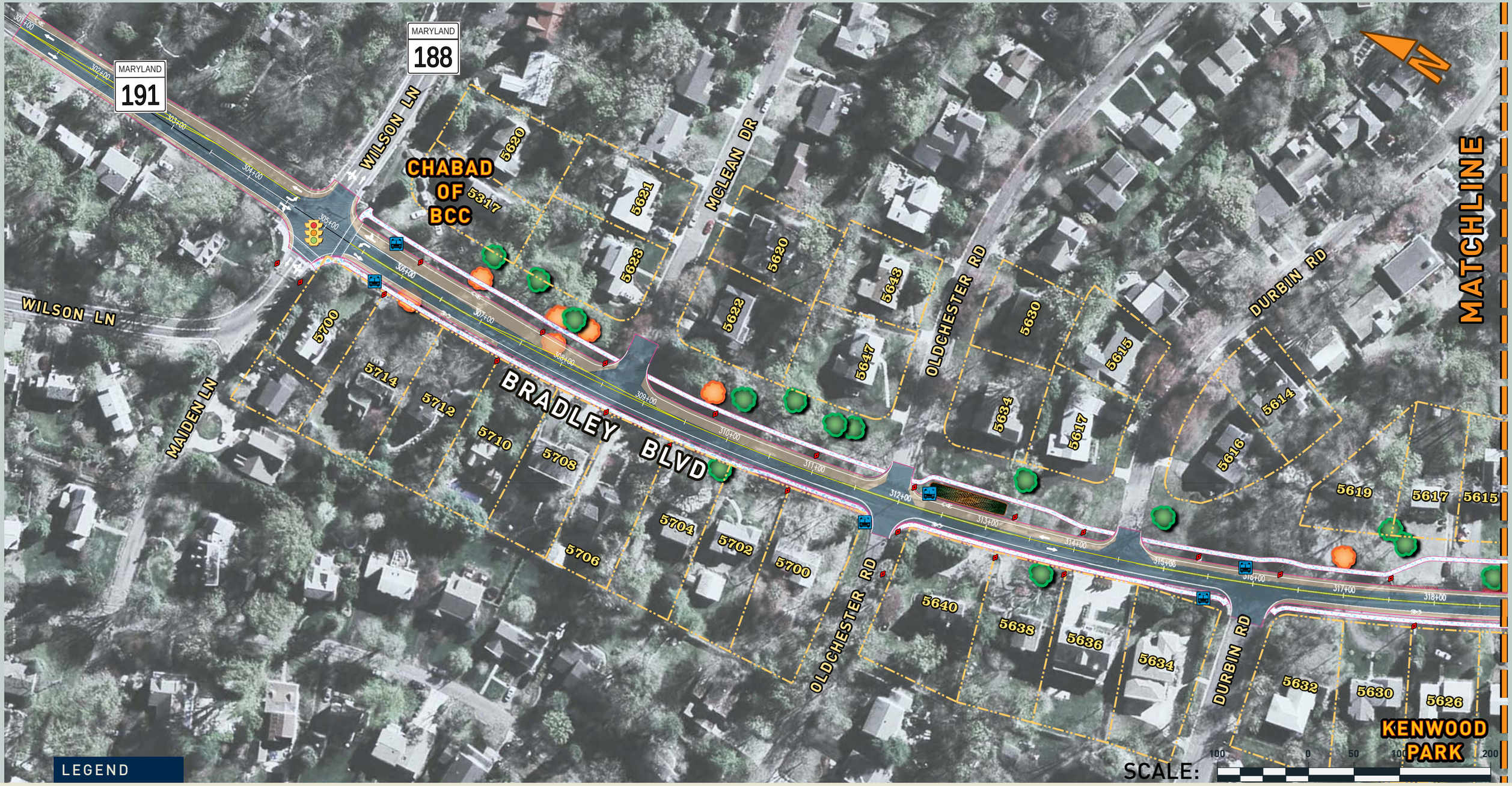


Figure II-21: Alternate 4B - Sidewalk North and South Sides with Bikeable Shoulders

Figure II-22: Alternate 4B - Sidewalk North and South Sides with Bikeable Shoulders

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

Figure II-23: Alternate 4C - Sidewalk North Side only with Bikeable Shoulders

LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-24: Alternate 4C - Sidewalk North Side only with Bikeable Shoulders

LEGEND

- PROPOSED ASPHALT PAVEMENT WIDENING
- PROPOSED CURB AND SIDEWALK
- PROPOSED SHARED USE PATH
- RIGHT-OF-WAY
- EXISTING ROADWAY TO BE REMOVED
- STORMWATER MANAGEMENT BIOSWALE
- TRAFFIC FLOW
- BUS STOP
- BIKEABLE SHOULDERS
- UTILITY POLE
- >24" DIAMETER TREE LIKELY TO BE PRESERVED
- >24" DIAMETER TREE LIKELY TO BE IMPACTED

Figure II-25: Alternate 4C - Sidewalk North Side only with Bikeable Shoulders

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

III. Environmental Assessment of the Study Area

III. Environmental Assessment of the Study Area

A. Introduction

The Montgomery County Department of Transportation (MCDOT) initiated a Phase I Facility Planning Study to evaluate the need for sidewalks, master planned bicycle facilities and traffic safety improvements along Bradley Boulevard (MD 191) between Wilson Lane (MD 188) and Goldsboro Road (MD 614). No property acquisitions are proposed although some easements will be required. The east end of the study area was extended from Goldsboro Road to Glenbrook Road after the first public meeting and newsletter. There were many public comments that Glenbrook Road is the more logical project terminus.

Prior to the study initiation, SHA prepared an Environmental Assessment Form (EAF) for a separate project with the same project limits. The original EAF can be found in Appendix E. This document supplements the EAF with additional environmental information. On May 18, 2009, the project area was investigated by Mike McQuade and Glenn Wilson of Whitman, Requardt & Associates, LLP for the presence of wetlands, waters of the U.S. and specimen trees. See the Site Location Map in Appendix E.

B. Wetlands and Floodplains

As previously mentioned, WR&A personnel investigated the project site on May 18, 2009 for the presence of wetlands and waters of the U.S. There were no non-tidal wetlands or streams identified within the project area. According to the National Wetlands Inventory *Wetlands Mapper* (http://www.fws.gov/wetlands/data/Mapper.html) no wetlands are mapped within the project corridor. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 24031C0455D, the entire project area is located outside of the 100-year floodplain.

C. Historic Properties

There is one known area in the northern section of the project area listed on the Maryland Inventory of Historic Properties. The Bradley Hills English Village District (MHT Site No. M35-143) is located in the area surrounding the intersection of Wilson Lane and Bradley Boulevard. The Maryland Historic Trust website has no documentation of the site available online. A letter was sent to MHT on June 24, 2009 requesting records of historic properties within the project area. A response dated July 30, 2009, was received from MHT, which stated "The Maryland Historical Trust has determined that there are no historic properties affected by this undertaking." See the response in Appendix E. According to the Montgomery County Park and Planning website *Information Locator Wizard* (http://www.mcmaps.org), there are no Montgomery County Historic Districts or Sites located within the project area. There are no proposed impacts to historic sites as a result of this project.

D. Rare, Threatened, Endangered Species

Letters were sent to Maryland Department of Natural Resources (MDNR) and U.S. Fish and Wildlife Service (USFWS) on June 9, 2009 requesting any records of rare, threatened or endangered species within the project area. A response letter dated July 16, 2009 from USFWS was received, which stated that no federally proposed or listed endangered or threatened species are known to exist within the project area, and that no further Section 7 Consultation with USFWS is required unless the project plans change. A response letter dated August 6, 2009 from MDNR was received, which stated, "there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated." See the response letters in Appendix E. No rare, threatened or endangered species were observed during the site visit on May 18, 2009.

E. Specimen Trees and Significant Trees

Twenty-nine specimen trees (trees greater than 30 inches in diameter) and twenty-five significant trees (trees 24-30 inches in diameter) were identified within the project area. Their locations were recorded using a handheld GPS unit. See the Specimen Tree and Significant Tree List and Map in Appendix E which includes detailed information on each tree, including species, diameter and condition.

The study team received many public comments throughout the planning study, describing the community's desire to maintain the existing character and landscape of the neighborhood. Efforts will be made in the engineering phase to further minimize tree impacts to the maximum extent practical.

F. NRI/FSD

According to Section 22A of the Montgomery County Code, the Bradley Boulevard (MD 191) Improvements Project from Wilson Lane to Goldsboro Road is exempt from a full Natural Resources Inventory/Forest Stand Delineation (NRI/FSD) (Article II. Forest Stand Delineations and Forest Conservation Plans). The two exemptions which apply to the project are included below: Sec. 22A-5. Exemptions (a) and (e). Exemption (a) states that Article II does not apply to projects which do not result in the cutting, clearing or grading of more than a total of 40,000 square feet of forest. Exemption (e) applies to state or county construction activity subject to Section 22-A9 (also included below). Per section 22A-6(b) of the forest conservation law, an activity or development which would be exempt from forest conservation requirements, but involves clearing of specimen or champion trees is required to obtain approval of a tree save plan.

Excerpts from Montgomery County Code:

Sec. 22A-5. Exemptions.

The requirements of Article II do not apply to:
(a) an activity conducted on an existing single lot of any size that is required to construct a dwelling house or accessory structure (such as a pool, tennis court, or shed) intended for the use of the owner, if the activity:
(1) does not require a special exception;
(2) does not result in the cutting, clearing, or grading of:
(A) more than a total of 20,000 square feet of forest;
(B) any forest in a stream buffer,
(C) any forest on property located in a special protection area which must submit a water quality plan,
(D) any specimen or champion tree, or
(E) any trees or forest that are subject to a previously approved forest conservation plan or tree save plan; and
(e) a State or County highway construction activity that is subject to Section 5-103 of the Natural Resources Article of the Maryland Code, or Section 22A-9;

Sec. 22A-9. County Highway Projects.

(a) General.
(1) This section applies to construction of a highway by the County as part of an approved Capital Improvements Program project.
(2) The construction should minimize forest cutting or clearing and loss of specimen or champion trees to the extent possible while balancing other design, construction, and environmental standards. The constructing agency must make a reasonable effort to minimize the cutting or clearing of trees and other woody plants.
(b) If the forest to be cut or cleared for a County highway project equals or exceeds 20,000 square feet, the constructing agency must reforest a suitable area at the rate of one acre of reforestation for each acre of forest cleared.
(c) Reforestation for County highway projects must meet the standards in subsections 22A-12(e), (g) and (h).
(d) Any mitigation requirement for loss of specimen or champion trees must be based on the size and character of the tree. (2001 L.M.C., ch. 19, § 1; 2010 L.M.C., ch. 55, § 1.)

G. Socioeconomic Features

Bradley Boulevard is located in Bethesda, Maryland which according to the U.S. Census Bureau is a census designated place (CDP), defined by the USCB as "…closely settled, named, unincorporated communities that generally contain a mixture of residential, commercial, and retail areas similar to those found in incorporated places of similar sizes." A summary of socioeconomic indicators for Bethesda, Maryland are listed in the table below entitled "Census data for Bethesda, Maryland from the 2000 Census and the 2005-2007 American Community Survey":

Table III-1. Bethesda Census Data

Census data for Bethesda, Maryland from the 2000 Census and the 2005-2007 American Community Survey			
Category	2000 U.S. Census (Bethesda, MD)	2005-2007 ACS (Bethesda, MD)	2005-2007 ACS (U.S. Population)
Percentage of Population - White	87.7 %	84.3 %	74.1 %
High school grads or higher (→ 25 years old)	97.0 %	97.8 %	84.0 %
Bachelors Degree or higher (→ 25 years old)	78.9 %	80.5 %	27.0 %
Median Family Income	$130,160	$168,385	$60,374
Families below poverty level	1.7 %	1.9 %	9.8 %

According to the 2000 U.S. Census and the 2005-2007 American Community Survey (ACS), the population of Bethesda has a smaller minority population, has fewer families below the poverty level, is better educated, and is more affluent compared to the overall U.S. population. Based on this information, there is not expected to be an adverse socioeconomic affect on minority populations as a result of this project.

H. Soil Survey

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey website (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), there are three soil types that potentially underlie the project site, 1C-Gaila silt loam, 2UB-Glenelg-Urban land complex (0 to 8 percent slopes), and 2UC-Glenelg-Urban land complex (8 to 15 percent slopes). The vast majority of soils on the project site consist of 2UB-Glenelg-Urban land complex. Glenelg soils make up approximately 50% and Urban land makes up approximately 45% of the complex. Glenelg soils are characterized as well drained and generally have greater than 80 inches to the water table and restrictive features. Glenelg soils profiles generally include silt loam in the upper 8 inches. Urban lands are defined as areas where a majority of the land surface is impervious and covered by asphalt, concrete, and buildings. 2UC-Glenelg-Urban land complex (8 to 15 percent slopes) soils may be encountered in a small area of the northeastern portion of the

project site. 1C-Gaila silt loam soils may be encountered to the west of Bradley Boulevard in the southeastern portion of the project site. NRCS describes Gaila soils similar to Glenelg soils: soil profiles of Gaila soils generally include silt loam in the upper 8 inches, they are well drained and generally have greater than 80 inches to the water table and restrictive features. See the NRCS Soils Map in Appendix E.

I. Emergency Facilities

According to the Montgomery County Park and Planning website *Information Locator Wizard* (http://www.mcmaps.org), there are no emergency facilities within the project study area. The closest Fire Departments are Station R1-Bethesda/Chevy Chase Rescue located at 5020 Battery Lane approximately ¾ mile from the northernmost portion of the study area and Station 6-Bethesda Fire Department located at 6600 Wisconsin Avenue approximately 0.86 mile from the southernmost portion of the study area. The closest police station is the Montgomery County Police Station-District 2 (Bethesda) located at 7359 Wisconsin Avenue approximately 0.84 mile from the southernmost portion of the study area. The closest hospital is Suburban Hospital located at 8600 Old Georgetown Road approximately 0.79 mile from the northernmost portion of the study area.

J. Community Facilities

According to the Montgomery County Park and Planning website *Information Locator Wizard* (http://www.mcmaps.org), the only community facilities within the project study area consist of two schools, including the Bethesda Community School and Radnor Center. The closest Library is the Bethesda Regional Library located at 7400 Arlington Road approximately 0.62 mile from the southernmost portion of the study area. Two post offices are located within a 1-mile radius of the project site-the Bethesda Post office located at 7400 Wisconsin Avenue and the Bethesda Annex Post Office located at 701 Arlington Road. The Bethesda-Chevy Chase Regional Services Center is located at 4805 Edgemoor Lane approximately 0.81 mile from the southernmost portion of the study area. There are also eleven parks, six playgrounds, two basketball courts, and seven ball fields located within a 1 mile radius of the project site.

K. Land Use/Zoning

According to the Montgomery County Park and Planning website *Information Locator Wizard* (http://www.mcmaps.org), the land use on the project site is residential and is zoned R-90-One Family Residential. According to the Montgomery County Department of Permitting Services, R-90 zoning applies strictly to building structures. Ms. Robin Ferro, Plan Reviewer with Zoning with the Building Construction Division for the Montgomery County Department of Permitting Services, stated that unless the project entailed building structures, there would be no zoning restrictions involved with this project. In addition, if the project is located entirely within the right of way and no

private properties are involved, there would be no zoning restrictions regarding this project.

L. Parklands

According to Ms. April O'Neill with the Maryland National Capital Parks Planning Commission (MNCPPC) there are no current or future parklands planned along Bradley Boulevard in the study area. The land is primarily existing residential property. Plans may change in the future, but it usually requires a park planning effort by the community before a park is planned in a residential community.

M. Hazardous Materials

WR&A performed a search of Federal and State regulatory agency databases for the project corridor. The search identified five Maryland Lead Inspection database (MD LEAD) sites, three Oil Control Program Cases (OCPCASES) sites, one Environmental Protection Agency Facility Index System (FINDS) site, one Resource Conservation and Recovery Act-Small Quantity Generator (RCRA-SQG) site, and one Emergency Response Notification System (ERNS) site in the project corridor. On August 21, 2009, MDE Office of Administrative-Waste forwarded the regulatory information available for the Bradley Boulevard project site. The databases that were searched and a summary of the located sites including their regulatory status, and information received from MDE are shown in Appendix E.

WR&A contacted the Montgomery County Department of Environmental Protection (DEP) to request any information regarding hazardous materials in the vicinity of the project site along Bradley Boulevard. In a letter dated August 20, 2009, DEP stated that they could not locate any records in the complaint-tracking database for the period from 1989 to the present. DEP is therefore not aware of any environmental issues regarding the project site.

There are no open OCPCASES files on the project site. Due to the proposed construction activities and the distance to the identified cases, it does not appear that hazardous materials would likely be encountered on the project site.

Planning

Montgomery County Department of Transportation

BRADLEY BOULEVARD (MD 191) IMPROVEMENTS PROJECT

IV. Public Participation

IV. Public Participation

A. Public Informational Meetings

MCDOT's Division of Transportation Engineering hosted two public informational meetings for the purpose of informing residents about the status of the Bradley Boulevard (MD 191) Improvements Project. Project newsletters were mailed to homeowners associations and property owners adjacent to the study area as determined by the County's Geographical Informational System (GIS) Database, prior to the meetings. The project newsletters are included in Appendix B. Other newsletter recipients were added as requested through MCDOT. The contact list included 155 residents and 36 organizations or public officials.

The first public meeting was held on October 27, 2009 at the Bethesda Chevy Chase Regional Services Center in Bethesda from 7pm to 9pm. At the meeting, display boards showed the existing and proposed regional bike routes and sidewalks, an existing photo montage of the project area, a map of local public transportation, and alignment plans and typical sections for the three proposed alternates. A presentation was given during which the study team was introduced, the purpose and need that initiated the project were provided, preliminary design team findings were explained, and preliminary concepts were reviewed. The approximately 40 citizens in attendance were encouraged to share their comments at the meeting, via e-mail, or through the Public Comments Form sent in the newsletter or available at the meeting. Following the meeting all information was posted on the County's project website at http://www2.montgomerycountymd.gov/DOT-DTE/Common/Projects.aspx?id=509337-18&DatabaseType=SQL&section=Facility%20Planning.

The second public meeting was held on November 10, 2010 at the Thomas W. Pyle Middle School Cafeteria in Bethesda from 7pm to 9pm. At this meeting, display boards showed the existing and proposed regional bike routes and sidewalks, an existing photo montage of the project area, a map of local public transportation, alignment plans and typical sections for the four refined alternates, photo simulations of the proposed alternates, and an impact chart. The photo simulations are included in Appendix B. The project status was provided and comments and feedback were received from approximately 55 attendees. Following the meeting, MCDOT invited comments via e-mail or through the Public Comments Form sent in the newsletter or available at the meeting. Public comments were initially requested to be returned by December 8, 2010 but later the deadline was extended to January 12, 2011 to provide more time for community review. Following the meeting all information was posted on the County's project website at http://www2.montgomerycountymd.gov/DOT-DTE/Common/Projects.aspx?id=509337-18&DatabaseType=SQL&section=Facility%20Planning.

B. Public Comments

A Matrix of public comments is included in Appendix C. Below is a summary of the comments received.

Prior to the first public meeting 6 comments were received. All of these comments were in support of the project as a means of improving bicyclist safety.

October 27, 2009 Public Meeting

The public comment period was from October 27, 2009 to November 10, 2010. MCDOT received 158 comments via e-mail, mail, and the County's project blog site at http://www2.montgomerycountymd.gov/DOT-DTE/Common/Projects.aspx?id=509337-18&DatabaseType=SQL&section=Facility%20Planning. Of these respondents, 106 were in support of the project, 51 were opposed to the project, and 1 comment provided general information. Most of those who commented did not specify the alternate they preferred, but provided general comments on elements of the alternates that they liked. The alternate that was most often cited as being preferred was Alternate 3 which includes 12' lanes on Bradley Boulevard, 6' bikeable shoulders, a 12' shared use path on the north side of Bradley Boulevard, and a 5' sidewalk on the south side of Bradley Boulevard. The summary of the comments are as follows:

Reasons for support include:

- Will improve safety of pedestrians, cyclists, or motorists
- Will improve drainage and flooding issues
- Will improve congestion issues
- Desire to expand project beyond limits currently shown
- Wanting improvements to address intersection movements
- Wanting additional crosswalks across Bradley Boulevard
- Consistent with Master Plan
- Wanting the issues of safety, lighting, and minimizing impacts to private property to be furthered studied
- Improvements to community and public health
- Improve cycling and pedestrian opportunities to minimize automotive use
- Need to address maintenance concerns for adjacent property owners
- Adding an option of bike lanes and sidewalks only
- Making roadway lanes and shoulders / more consistent-currently varies greatly

Reasons for opposition include:

- Not warranted to create a meaningful trail system
- Too expensive in the current economic climate
- Negative impact on trees, landscaping, and property values
- Safety, will move traffic closer to cyclists, pedestrians, and private property
- Need more improvements for adjacent property owners
- Maintenance burden to homeowners
- Will lead to widening of Bradley Boulevard for more lanes of traffic
- Not possible for grading and drainage reasons
- Will increase congestion

Other comments include:

- There was insufficient response time provided to the community
- The concerns of residents should take priority over non-residents

Following the First Public Meeting:

Between the end of the first public comment period until the day before the second public meeting MCDOT received 17 comments in the form of blog comments or blog responses to previous comments. 16 respondents favored the project and 1 opposed the project. The summary of the comments are as follows:

- The safety of pedestrians and cyclists are noted as reasons for support
- Pedestrian crossing of Bradley Boulevard noted as difficult and a reason for project support
- Improved bicycle access would encourage more cyclists to use Bradley Boulevard rather than navigate through neighborhoods
- Impacts to trees and neighborhood aesthetics were seen as important considerations for the design of the bioswales
- Opposing view did not feel the project would result in eliminating the safety concerns and drainage issues and would have a negative impact on the neighborhood

November 10, 2010 Public Meeting

During the second public meeting, 35 questions and comments were received. The summary of the comments are as follows:

- The addition of a separator of bike and motorist travel lane desired
- Concern for increased back-ups and difficulty with turning movements including from driveways was expressed
- Concern regarding increasing conflict points between cyclist and motorists as a result of the project was worrisome to attendees
- Cost of improvements was questioned
- Length of construction time was questioned
- Concern for maintenance of bioswales and their proper functioning expressed
- Aesthetics of design should reflect character of Bradley Boulevard neighborhoods

Following the second public meeting, 86 comments were received by MCDOT. Of these respondents, 63 were in support of the project, 21 were opposed to the project, and 2 wanted additional information. Of those who supported the project, 23 preferred Alternate 4A, 9 prefer Alternate 4B, 10 prefer Alternate 4C, 3 support all of the Alternates, and 18 were unspecified. The summary of the comments are as follows:

Reasons for support include:

- Safety of pedestrians, cyclists, and motorists

- Separating modes of mobility desired
- Encouraging multi-modal transportation (cycling and walking)
- Will improve traffic calming
- Streetscape improvements
- Providing connections to other trails
- Environmental and drainage improvements
- Improved crossing of Bradley Boulevard by pedestrians
- Intersection safety and congestion improvements
- If an alternate with sidewalks on both sides of the road is not selected then there is the desire for at least a sidewalk or path on the north side of Bradley Boulevard with shoulder improvements for cyclists
- Roadway needs to be improved

Reasons for opposition include:

- Too expensive
- No build preferred
- Will increase congestion for motorists
- Will create unsafe conditions for residents when exiting their properties
- Project is not warranted for the small number of cyclists and pedestrians that use Bradley Boulevard
- Removal of trees and detriment to appearance of neighborhood

Following the comment period, a newsletter was sent out to the public describing that the selected alternate is Alternate 4A – 8' Shared Use Path North Side and Sidewalk South Side with Bikeable Shoulders. This newsletter generated 11 responses. Of these respondents, 2 were in support of the project and 9 were opposed to the project. The summary of the comments are as follows:

Reasons for support include:

- Safety of pedestrians, cyclists, and motorists

Reasons for opposition include:

- Too expensive
- No build preferred
- Will increase congestion for motorists
- Will create unsafe conditions for residents when exiting their properties
- Project is not warranted for the small number of cyclists and pedestrians that use Bradley Boulevard
- Removal of trees and detriment to appearance of neighborhood

C. Other Public Involvement

The Transportation Committee of the Western Montgomery County Citizens Advisory Board held a meeting on January 27, 2010. The committee discussed the Bradley Boulevard Project. Also discussed was the need for improved pedestrian crossings along Bradley Boulevard, particularly for young people. Many of the citizens feel that the road needs some signals and crossing lights. Various locations were mentioned in conjunction with school bus stops. The committee then decided to write a letter to the County Executive requesting that county staff examine whether and how this can be accomplished. The project team then referred the committee to contact the Maryland State Highway Administration District 3 to request improved pedestrian crossings.

A meeting was requested by a resident for the project team to describe the relationship of the project to their property. The meeting was held on April 7, 2011 at the resident's property. The resident expressed concern with the project impacts on the property's trees and the high speed of traffic along Bradley Boulevard. The team demonstrated the approximate location of the planned improvements and addressed the resident's concerns.