



Takoma/Langley Crossroads Pedestrian Access and Mobility Study

July 2007
FINAL

Metropolitan Washington Council of Governments (COG)
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TAKOMA/LANGLEY CROSSROADS PEDESTRIAN ACCESS AND MOBILITY STUDY

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CHAPTER 1: INTRODUCTION

The Takoma/Langley Crossroads area is a vibrant hub of pedestrian activity. The density of people living in the vicinity of the intersection of New Hampshire Avenue (MD 650) and University Boulevard (MD 193) are a near constant source of pedestrian activity and the presence of retail, public transportation, and employment opportunities further reinforces it. The international character of the Takoma/Langley Crossroads area contributes to its vibrancy, with over 120 nationalities represented in the community. This concentration of pedestrian activity has not occurred as a result of an appealing pedestrian environment. It has occurred in spite of the physical surroundings. In its present condition, the Takoma/Langley Crossroads area is difficult and inhospitable for people on foot or bicycles.

There are several catalysts for major change in the study area, which includes a ½ mile radius around the intersection of Maryland Routes 650 and 193. For the purposes of this study, these roads will be referred to as New Hampshire Avenue (MD 650) and University Boulevard (MD 193).



The Purple Line (formerly the Bi-County Transitway) will drive redevelopment in the Takoma/Langley Crossroads area. The planned 16-mile rapid transit line with a stop at the intersection of New Hampshire Avenue and University Boulevard offers an unparalleled opportunity to RETHINK land use and transportation connections in the area. It offers an exciting opportunity for redevelopment that enhances the quality of life in the community.

Development activity, including the expansion of existing buildings and redevelopment of properties, is already being generated by the future Purple Line transit stop.

A bus transit center, which will precede the Purple Line transit stop, is also planned in the next few years. It will consolidate many of the bus stops in the vicinity into one central location. Prince George's County and Montgomery County Planning Departments are working together on the upcoming Takoma/Langley Crossroads Sector Plan, a comprehensive plan and implementation strategy for the study area. The Sector Plan will provide a long-term vision for the future of the Takoma/Langley Crossroads area. This study is meant to inform the Sector Plan process. Additionally, the Maryland State Highway Administration has recently focused on the study area, with projects currently underway to improve conditions for pedestrians.

Now is the time to begin an extensive planning process that builds on improvements currently underway and ensures that the opportunity that exists today is fully captured. Through its emphasis on pedestrian issues, this study establishes multi-modal transportation (including transit, motor vehicles, walking and bicycling) as a cornerstone goal of all redevelopment in the area. Additional goals of this study are listed below.

- Improve pedestrian access and mobility
- Enhance connectivity
- Balance short-term safety versus long-term vision
- Provide recommendations that are transferable to other locations in the Metropolitan Washington region.

Chapter 2 describes the existing conditions for pedestrians in the study area. It is a dynamic point in time for the Takoma Langley Crossroads area; Chapter 3 briefly discusses the planning context for this study. Chapter 4 outlines a broad vision for pedestrian access and mobility in the study area. This vision is meant to serve as the starting point for a larger discussion of land use, transportation and economic issues as part of the Sector Plan process.

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Chapter 5 outlines short-term safety improvements to enhance the projects currently underway in the study area. These improvements will enhance the safety of pedestrians and bicyclists in the short-term and would require relatively modest costs. Chapter 6 provides mid-term capital improvements to enhance pedestrian and bicycle access and mobility. These improvements would involve more planning, time and investments, but should be considered as the area redevelops over time.

The Purple Line offers an incredible opportunity to drive redevelopment in the Takoma/Langley Crossroads area. A combination of focused short and mid-term improvements guided by a strategic long-term vision can ensure that redevelopment of the Takoma/Langley Crossroads area capitalizes on the unique opportunities that exist today.

CHAPTER 2: EXISTING CONDITIONS

This chapter focuses on existing conditions for pedestrians in the Takoma Langley Crossroads area. It discusses some of the core challenges that pedestrians face and outlines Maryland State Highway Administration (SHA) improvements in the study area that are currently underway.

Introduction

The Takoma/Langley Crossroads area is a vibrant hub of pedestrian activity. The density of people living in the area is a significant source of pedestrians. More than twenty-thousand people live in the Takoma/Langley Crossroads area. The presence of retail, public transportation and employment opportunities further contributes to the substantial volume of pedestrian activity that is evident today.

Many factors contribute to the high volume of pedestrian activity in the Takoma Langley Crossroads area. This area serves as a pick-up zone for day laborers, accounting for many of the people gathered in the expansive parking lots in the study area. These day laborers reflect the international character of the area, which includes immigrants from over 120 different countries. There are ten schools within two miles of the core of the study area and there is high transit ridership, with between 10,000 and 13,000 passengers per day on the bus routes that pass through the study area.

Core Challenges

Traffic

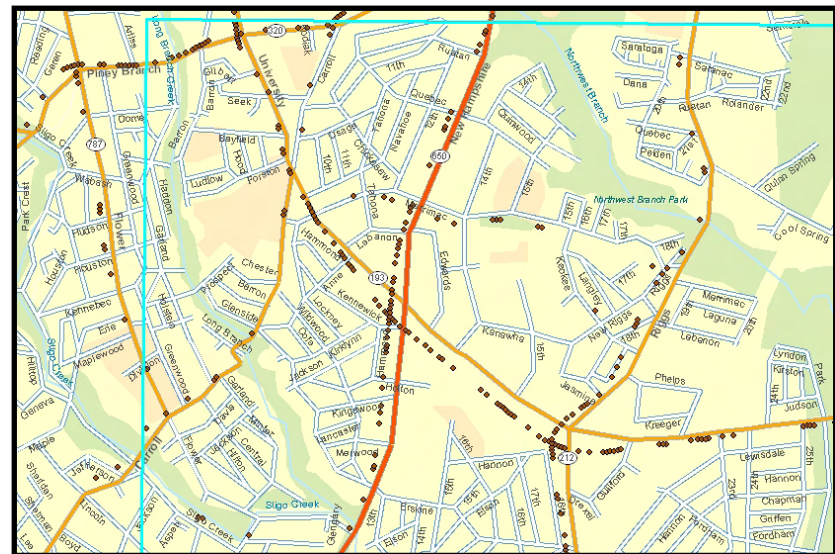
Heavy traffic volumes and high speeds are a defining characteristic of the study area. There are more than 44,000 cars traveling on University Boulevard every day, and more than 50,000 per day on New Hampshire Avenue. A critical challenge of redevelopment in the area is to encourage land use and transportation patterns that are safer and more comfortable for pedestrians and bicyclists, while still accommodating the large volumes of automobiles. While

pedestrian and bicycle facilities and transit opportunities may encourage people to walk and bicycle, motor vehicle traffic in the area is projected to increase over time.

Safety

The Takoma/Langley Crossroads area provides a physical environment that is not only inhospitable but dangerous to people on foot and on bicycles. Pedestrian and bicycle safety is a key concern in the study area. Figure 1 below shows pedestrian and bicycle crashes (involving motor vehicles) in the vicinity of the study area in the last ten years. Each dot on the map represents one pedestrian or bicycle crash. It is important to note that there have been many crashes around the New Hampshire Avenue and University Boulevard intersection; however, crashes are not limited to a single location. The distribution of crashes throughout the area shows that pedestrian and bicycle safety is a concern at many locations.

Figure 1: Pedestrian and bicycle crashes in the last ten years



Source: SHA Crash data, 1995-2005, provided by the National Study Center for Trauma and EMS, University of Maryland - Baltimore

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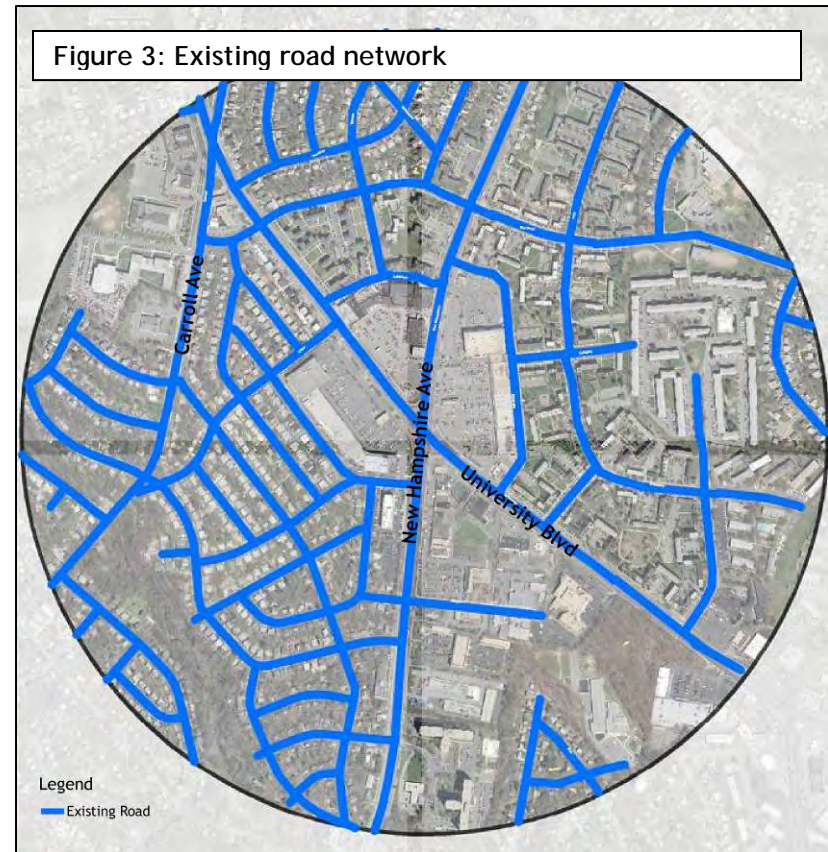
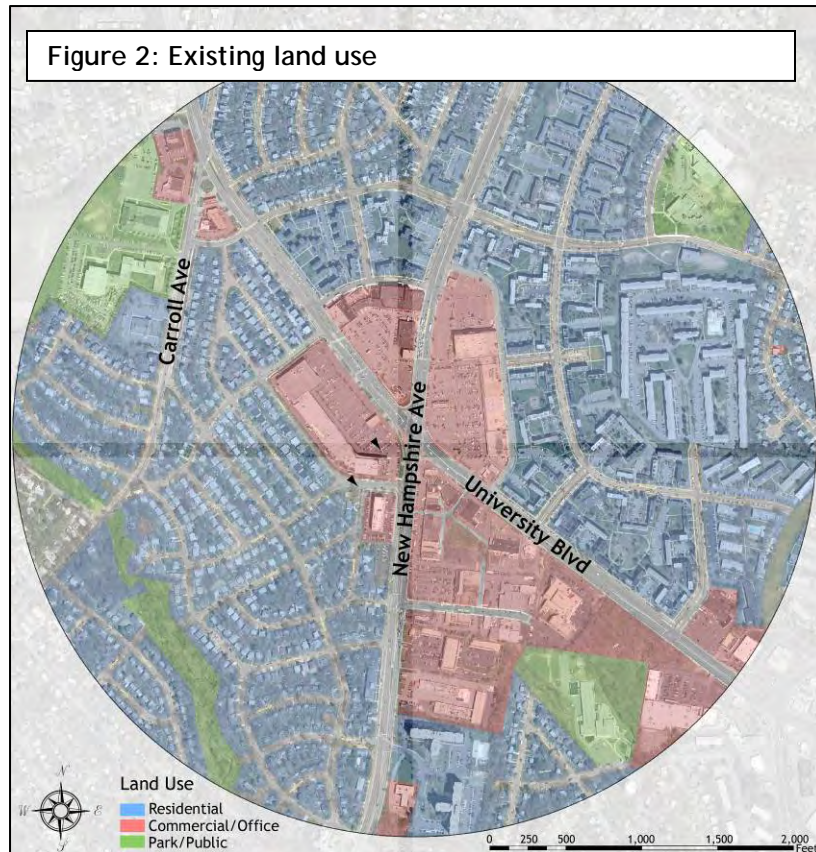
Existing Land Use

Existing land uses present many barriers to pedestrian access and mobility in the Takoma/Langley Crossroads area. Higher density residential areas east of New Hampshire Avenue are a significant contributor to pedestrian activity in the commercial core. The density of people in the vicinity supports nearby commercial uses and provides demand for transit.

As shown in Figure 2 below, the study area is characterized by single-use development patterns. A mix of land uses is desirable for pedestrians and bicyclists. In the study area, commercial uses dominate the core and residential uses dominate the periphery. Institutional and open space uses are located in the vicinity, but

there are few connections between them. There is very little mixing of land uses.

A second critical challenge is large blocks in the core commercial area created by strip-style development. As shown in Figure 3 below, on the outskirts of the study area, especially west of New Hampshire Avenue, the roadway network is a relatively well-connected urban grid. This is helpful for pedestrians and bicyclists as it provides them with a variety of routes that enable direct connections to destinations. However, the properties get bigger and the roadway grid is less dense as one gets closer to the core of the study area. This is the opposite of what is needed in terms of pedestrian mobility.



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The size and character of properties in the core of the study area limits pedestrian mobility. Large properties, many with fences along the outside border provide limited choices to those on foot. The buildings on these sites are set back at the rear of the property. Large parking lots in front of buildings are inhospitable to pedestrians because they are designed for motor vehicles. With one exception, most of the long strip-style buildings have no passageway to the back, creating longer travel distances for pedestrians.

Connectivity

Connectivity along sidewalks and across large streets is also a core challenge in the study area. The quality of the sidewalk network in the study area varies. The multi-family residential areas east of New Hampshire Avenue are relatively well served by sidewalk and trail networks. In contrast, there are very few sidewalks west of New Hampshire Avenue. Connectivity across major streets is generally very poor. Ongoing improvements by the Maryland State Highway Administration will enhance pedestrian connections across major roads in the study area. These improvements are described below.



Ongoing SHA Improvements

Ongoing and planned improvements undertaken by SHA will significantly enhance the safety of pedestrians. One of the most notable elements of the projects currently underway are fences in the center median at selected points along New Hampshire Avenue and University Boulevard. The fences will be four feet tall and placed on top of a two foot raised concrete median. The intent of the fences is to block dangerous mid-block pedestrian crossings and to funnel pedestrian traffic toward specific intersections. SHA's ongoing work will include a range of improvements that will significantly enhance the pedestrian experience, a few of which are described below. (Note: order does not indicate importance)

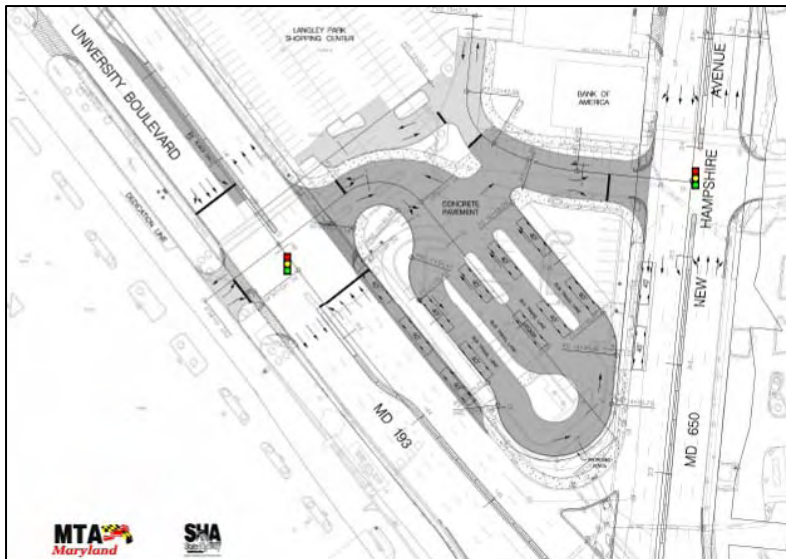


1. The fence project will, in some instances, provide a pedestrian refuge at intersections near pedestrian crossings. The length and width of the pedestrian refuge at the end of the median fence varies.
2. One of the driveway entrances for the 7-11 building on University Boulevard will be closed. This will eliminate a significant source of motor vehicle activity at the intersection - cars entering and exiting the parking lot. In addition, it will reduce conflicts between pedestrians and motor vehicles.
3. Overall sidewalk connectivity will be significantly improved as part of the SHA project. New sidewalks are being added on the south side of University Boulevard east of New Hampshire Avenue. With this new sidewalk, New Hampshire Avenue and University Boulevard will, by and large, have a continuous sidewalk network.

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4. SHA will improve many of the existing uncontrolled intersections in the study area. For example, traffic volumes and speeds and the lack of crossing treatments make the intersection of New Hampshire Avenue and Lebanon Street difficult for pedestrians. At this intersection, SHA will install a new traffic light with a pedestrian activated signal. This will significantly improve the safety of pedestrians crossing New Hampshire Avenue.
5. MTA plans to develop a Transit Center at 7900 New Hampshire Avenue, where the Taco Bell is currently located. The Transit Center will consolidate eight existing bus stops in the vicinity onto one central location. Consolidating bus stops at the Transit Center will eliminate unpleasant and redundant bus stops, which in many cases are difficult to access and that encourage dangerous pedestrian movements. The current design for the Transit Center is shown in Figure 4 below.

Figure 4: Final design of the Transit Center



6. As part of its planned improvements in the study area, SHA will be installing a number of additional crosswalks; some of which will be high-visibility crosswalks.
7. At selected locations, for example at the intersection of New Hampshire Avenue and Lebanon Street, pedestrian-activated cross signals will be added, which will provide pedestrians with the opportunity to stop traffic so that they can safely cross the street.
8. The intersection of New Hampshire Avenue and Holton Street is currently very wide because the curb for the access road parallel to New Hampshire Avenue does not connect with the curb on Holton Street west of New Hampshire Avenue. SHA plans to connect the two curbs. This will reduce the amount of exposure for pedestrians.
9. The intersection at the Takoma Langley Professional Center at 7676 New Hampshire Avenue is problematic. Bus stops are located on a narrow median between a service road and a large arterial road, which forces transit riders to sit adjacent to heavy traffic. There are no marked crosswalks across New Hampshire Avenue and there are many mid-block pedestrian crossings. SHA will be providing fences in the vicinity to prevent mid-block crossings, marked crosswalks across New Hampshire Avenue, and a pedestrian refuge median. In addition, a larger median will be provided along the northwest portion of New Hampshire Avenue and traffic movements turning out of the 7676 building will be clarified and simplified. These changes will all have a positive effect on pedestrian safety.
10. The angle of the right turn lanes on all four portions of the New Hampshire Avenue and University Boulevard intersection will be reduced, which will have the effect of reducing vehicular turning speeds. This will increase safety for pedestrians and bicyclists crossing onto triangular islands at each corner of the intersection.

Figure 5: Existing Conditions

EXISTING CONDITIONS
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CHAPTER 3: PLANNING CONTEXT

This chapter outlines planning initiatives that will significantly impact the future of the Takoma Langley Crossroads area.

Introduction

Parts of the ½ mile study area lie within the jurisdictions of Montgomery County, Prince George’s County and the City of Takoma Park. Each of these governmental entities has, over time, developed plans and studies for the area. Some of the most important include the International Corridor Community Legacy Plan, the General Plan Refinement for Montgomery County, the Prince George’s County Approved General Plan, the Takoma Park Master Plan and the Langley Park-College Park-Greenbelt Master Plan.

In addition to government led planning initiatives, there have been numerous other planning efforts in the study area, led by private businesses, local non-profit organizations and other stakeholders. Planning initiatives that will most closely impact the future of the Takoma Langley Crossroads areas are described briefly below.

The Purple Line

Planning for the Purple Line (formerly the Bi-County Transitway) is the most important planning effort currently underway in the study area. The Maryland Transit Administration is currently in the Alternative Analysis/Draft Environmental Impact Study phase. The Purple Line will connect Bethesda in Montgomery County to New Carrollton in Prince George’s County. It will provide a direct connection to the Red, Green and Orange lines on the WMATA Metrorail system, while also connecting to MARC, AMTRAK, and local bus services. Twelve initial station locations have been identified with additional stations under consideration. A station is planned at the intersection of New Hampshire Avenue and University Boulevard.

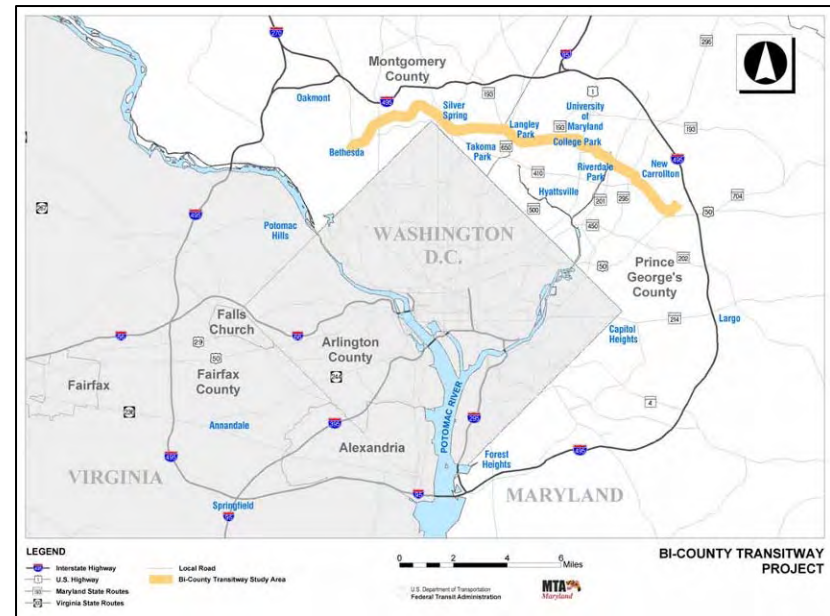


Figure 6: The Purple Line

MTA is studying a range of alternatives relating to the Purple Line, including alignment, mode, design and phasing. The Purple Line will be either light rail or bus rapid transit, and will operate primarily at street level, though there may be areas where tunnels or aerial structures are used. The final design, including the choice between light rail or BRT, will have profound implications on pedestrian access and mobility in the area. Additional information is provided in the long-term recommendations section of this study.

Maryland SHA Policy Documents

As noted in the previous chapter, current SHA improvements in the study area represent a significant improvement for pedestrians. However, as set forth in the Maryland SHA Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways, SHA’s preference is to provide four crosswalks per corner, and to design medians to serve as pedestrian refuges at intersections (i.e.

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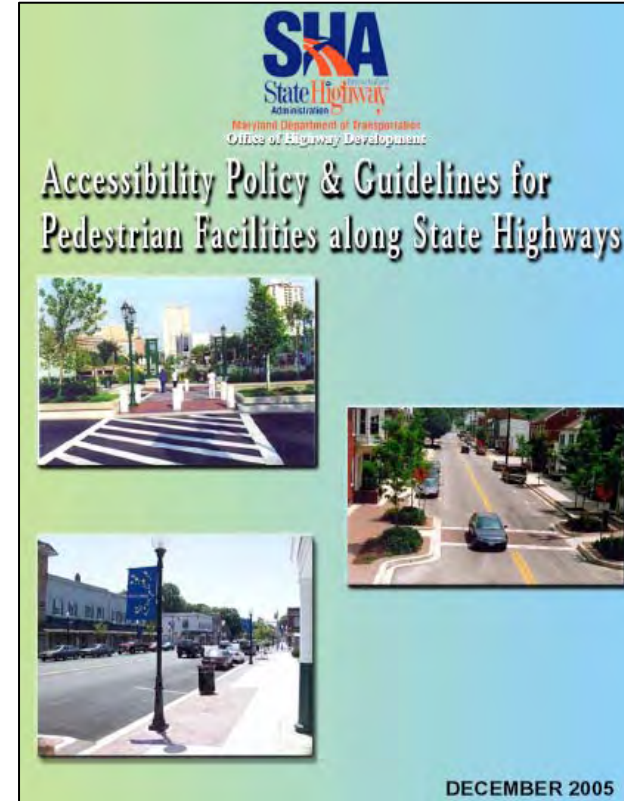
crosswalk extends to and through the median). The current design does not accomplish this in a number of locations. Furthermore, the current design was completed prior to the publication of the Maryland SHA Bicycle and Pedestrian Design Guidelines, which indicate the need for a pedestrian signal at uncontrolled crossings of roadways with 4 or more lanes and over 15,000 vehicles per day. This guideline is relevant to the study area, specifically at the uncontrolled crossing in between Anne Street and the shopping center entrance on University Boulevard.

Takoma/Langley Crossroads Sector Plan

The Prince George's County Planning Department and the Montgomery County Planning Department of the Maryland-National Capital Park and Planning Commission (M-NCPPC), in conjunction with the City of Takoma Park, will work together in the development of the Takoma/Langley Crossroads Sector Plan

The goal of the Sector Plan is to create a joint Bi-County plan that will enhance the unique character of the community and implement both Counties' existing General Plan recommendations for mixed-use development to support the Purple Line transit station. The process is scheduled to begin in the fall of 2007. It will be a comprehensive plan and implementation strategy for the planning area with an emphasis on transit-oriented development (TOD). The process will involve extensive outreach and public engagement, economic development planning and community planning. The study area for the Sector Plan is the same as the study area for this study (1/2 mile radius around the intersection of New Hampshire Avenue and University Boulevard).

The Sector Plan will include a detailed analysis of land use, transportation and economic considerations in the Takoma Langley Crossroads area. The purpose of this pedestrian study is to provide information that can be incorporated into the Sector Plan. Many of the ideas are in a conceptual phase due to the limited scope of this effort and may be fleshed out as part of the Sector Plan process.



CHAPTER 4: LONG-TERM VISION

This chapter outlines a long-term (15 years and beyond) vision for pedestrian access and mobility in the Takoma/Langley Crossroads area. In this study, the long-term vision is presented first because it is meant to guide and inform land-use and transportation decisions made over time. In doing so, the long-term vision provides the foundation for short and mid-term recommendations, which are detailed in the chapters that follow.

Introduction

As the Takoma/Langley Crossroads area develops over time, physical spaces should be provided that build community and that are well-connected, accessible and comfortable for pedestrians and bicyclists. Pedestrians should be a central component of the long-term vision for the area. The transportation system and surrounding land uses should encourage walking and development should place a high priority on the pedestrian environment.

Maintain Traffic Volumes

The intersection of New Hampshire Avenue and University Boulevard currently accommodates more than 90,000 vehicles per day. The area must meet the challenge of accommodating this volume of traffic and their associated turning movements while still placing the priority on a high-quality, safe pedestrian experience. As this number is projected to increase in the future, maintaining traffic flows in the area is an important element of the future vision. More pedestrian-friendly urban design and the availability of the Purple Line will encourage more people to walk and bicycle. However, given its regionally significant location, effectively dealing with heavy traffic volumes will be a critical goal as the area develops over time.

Create Vibrant Civic Space

Vibrant civic space should be created in the Takoma Langley Crossroads area. The Transit Center and the Purple Line station will

draw large numbers of pedestrians into a central area. These pedestrians should be provided with visible public spaces to gather, which encourage community cohesiveness. Surrounding land uses and buildings should celebrate and reinforce this civic space. The physical spaces occupied by bus stations that will be moved to the Transit Center should also be considered as opportunities to create vibrant civic space. The Sector Plan process should explore opportunities to provide civic space within the study area, and should evaluate opportunities to create large public plazas as well as various smaller civic spaces.

Pursue Alternative Means of Channelization

The median fences that are currently being installed in the center median of New Hampshire Avenue and University Boulevard will reduce dangerous mid-block crossing by channeling pedestrians to specific intersections. However, due to the fact that there are also fences on the perimeter of several large properties, this creates a fenced-off pedestrian environment that is uncomfortable and uninviting. Similar to a prison walkway, pedestrians are unable to escape should there be a need to quickly exit the sidewalk, for example, to avoid a threatening situation. While the median fences may serve a positive safety purpose for their initial years, in the long-term, fences should be used *sparingly* and only in situation where there is no other solution to channelize pedestrians away from a clear safety hazard.

In the long term, alternative means of channelization should be pursued. As the area develops over time, building entrances and other key destinations should be planned in a way that will naturally encourage pedestrians to cross in safer locations. As the land uses, building forms and channelization measures are implemented, the fences should be removed.

Promote Greenway Connections

In the long-term, connections between the core of the study area and existing greenway resources should be enhanced. The Sligo Creek Trail, Long Branch Trail and Northwest Branch Trail are surprisingly close to the core of the study area. Providing a

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continuous sidewalk network, signage and other facilities would encourage more people to take advantage of the resources in the vicinity.

Create Distinctions Between Pedestrian and Automobile Spaces

Heavy traffic volumes and high speeds and little space between the roads and sidewalks create an inhospitable environment for pedestrians. As the area develops over time, pedestrian space should be separated from automobile space with landscape buffers that include street trees, as well as other design approaches.

In addition, pedestrian space should be clearly articulated through design. The length and width of center medians should be maximized. Stop lines should be placed 10 feet from crosswalks and sidewalk surfaces should continue across driveways. Warning signs can alert drivers to pedestrians, but appropriate design is a more effective strategy for articulating pedestrian space.

Reduce Pedestrian Crossing Distances

Pedestrians should not have to cross more than 60 feet of road width at a time. Center medians should be pedestrian refuges. Crosswalks should be brought to and through medians so pedestrians are not forced to choose between a median refuge and a crosswalk. The width of the pedestrian curb ramp through the center median should be as wide as possible (5 feet minimum) given the heavy volumes of pedestrian traffic.

Maximizing the length and width of medians should be considered a priority given the key safety function that they serve. Medians are needed not only at mid-block crossings, but at signalized intersections as well. While each signal should be designed to enable pedestrians to clear the entire width of the road, the median provides a refuge for slower moving pedestrians who may become caught in the center.

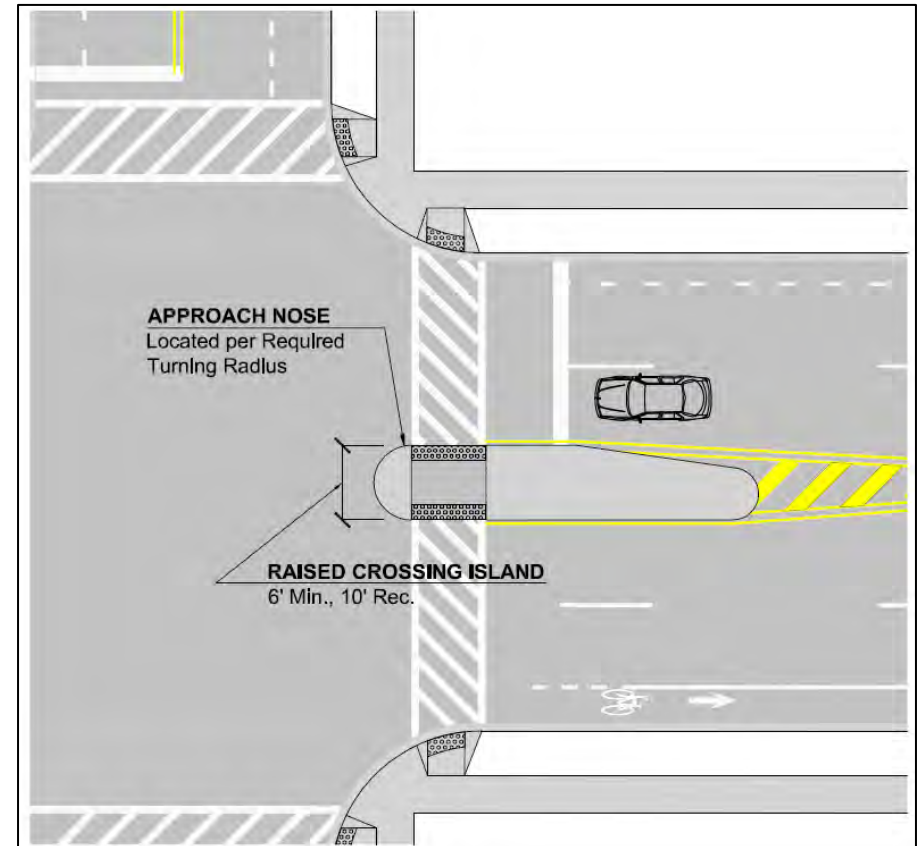


Figure 7: Median design, Maryland SHA Bicycle and Pedestrian Guidelines

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Encourage Pedestrian-Friendly Land Use and Urban Design

Mixed-use development is more convenient and accessible for people on foot, because it provides more destinations in close proximity to one another. As shown in Figure 8, the central core of the study area should be redeveloped with a mix of residential, commercial and office uses. The transit center and a vibrant civic space should be provided in the central core of the study area (shown in the map at right in red).

One of the reasons that the Takoma Langley Crossroads area is not easily accessible on foot is that the properties get larger the closer you get to the core. At the same time, the road grid becomes less dense. In the long-term, large properties should be subdivided into multiple uses and a road grid should be established. Roads should be extended through larger properties, providing an opportunity to create traditional main street areas that tie into an urban street grid. Buildings should be brought to the edge of the property and parking and access should be provided either in structures or at the rear of properties. Example locations for new roads that accomplish many of the goals described above are shown in orange on Figure 8 (note that these are conceptual locations that are expected to be fully analyzed in the Sector Plan).

Creating a more finely grained pedestrian network that provides pedestrians with choices about how to get to any location should be a critical element of the long-term vision for the area. This would also create the opportunity to move buildings closer to the road and provide parking and access from the back. Development of this nature is more pedestrian friendly because it is at a scale comfortable for those on foot.

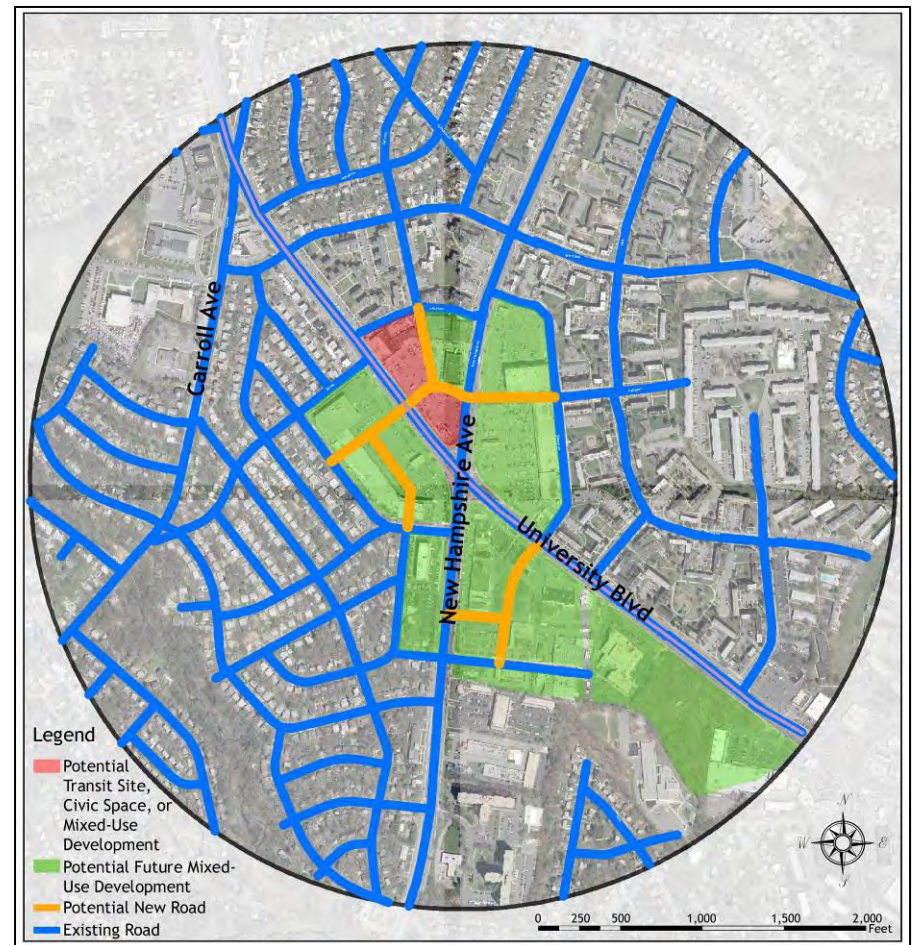


Figure 8: Conceptual long-term redevelopment options

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Enhance Connectivity in the Study Area

Connectivity should be a guiding principal as the Takoma Langley Crossroads area develops over time. Pedestrians and bicyclists should be provided with a range of choices on how to get where they need to go. Breaking down large properties and reestablishing the road grid will contribute to overall connectivity.

A well-connected sidewalk network should be provided throughout the area. For example, the sidewalk network on the west side of New Hampshire Avenue should be as well-connected and accessible as the sidewalk network already provided on the east side of New Hampshire Avenue.

Pedestrians and bicyclists should be provided with opportunities to get through the core of the study area. They should also be provided with ways to get from one side of the study area to another without going directly through the middle. In addition, connections to nearby greenway resources should be provided. Figure 9 is an example of the enhanced connectivity that could occur as the area develops over time.

Additional long-range recommendations

Additional long-range recommendations are included below. (Note: order does not indicate importance)

1. A key consideration of all future development in the area should be Crime Prevention Through Environmental Design (CPTED). As the area redevelops, the built environment should be designed in a way that reduces crime, reduces the fear of crime, and improves the quality of life.
2. Civic space and high-quality facilities should be provided that respect all modes of transportation, ensuring a comfortable and dignified bicycle and pedestrian experience.

3. Opportunities to create activity centers should be encouraged at key locations, for example at the pedestrian crossings near the future Transit Center.
4. Service roads should be better utilized as a key element of the transportation network. The roads should display a broad range of "Great Streets" characteristics, for example on-street parking, landscaping and hardscaping and separate pedestrian spaces. In addition, they should accommodate all users. The MTA may use these service roads to accommodate the Purple Line. If so, pedestrians should be provided with alternative ways to reach their destinations.
5. Pedestrian and bicyclists should be safe and welcome in all parking lots. Sidewalks should be provided through the middle and along the periphery of parking lots. Sidewalks should be designed to provide direct connections between destinations and should be conveniently located.
6. Bus stops that remain on University Boulevard and New Hampshire Avenue should be moved back from the road and barriers should be provided between people and motor vehicles. Design features that ensure a pleasant and comfortable experience should be introduced. The spaces left empty because the bus stop was moved to the Transit Center should be redeveloped to provide comfortable and "people friendly" public spaces that use CPTED.
7. Traffic should be naturally slowed through a combination of physical and other changes. Traffic speeds should be reduced through a combination of traffic calming devices including chicanes, raised intersections, raised pedestrian crosswalks, neck downs, and other similar types of devices.
8. It is preferable that the Purple Line be light rail rather than Bus Rapid Transit. Light rail is more predictable for pedestrians seeking to cross the travel way and creates less noise and pollution, which is especially important for those on foot. If the Purple Line is Bus Rapid Transit, special

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effort will be needed to ensure pedestrian access, mobility and comfort, given the vital link between pedestrians and transit. The Sector Plan process will look into this in working with MTA to develop recommendations for the Purple Line.

9. All four legs of intersections should have striped crosswalks.
10. Pedestrian crossing treatments should be used that have been shown to have high compliance rates with respect to motorists obeying the "stop for pedestrians" law. Effective traffic control measures are especially important at unsignalized intersections.
11. The width of automobile travel lanes should only be as wide as it needs to be. Excessively wide lanes encourage drivers to travel at higher speeds and forces pedestrians to cross wider streets, while consuming space that could possibly be used for center medians or bicycle lanes.
12. Curb cuts should be provided for every crosswalk, to ensure safety and accessibility for all.
13. Design elements should be selected that improve pedestrian safety and naturally calm traffic.
14. Local community organizations should be encouraged to assist with pedestrian and bicycle education efforts, as well as minor maintenance tasks.

Figure 9: Long-term connectivity

LONG TERM VISION

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CHAPTER 5: KEY SHORT-TERM SAFETY IMPROVEMENTS

This chapter outlines short-term (0-5 years) safety improvements to enhance the improvements currently underway in the study area. These improvements will enhance the safety of pedestrians and bicyclists in the short-term. The improvements can be done quickly and would require relatively modest investments. (Note: order does not indicate importance)

1. Through the current SHA project, a new traffic signal will be added at the intersection of New Hampshire Avenue and Lebanon Street and crosswalks will be striped on three of the four corners of the intersection. In addition, shifting the crosswalk on New Hampshire Avenue further south and increasing the length and width of the median would enhance safety measures already planned.
2. The angled crosswalk currently under construction on University Boulevard at the Exxon gas station will require pedestrians to cross nearly one-hundred feet of road width. The intersection and pedestrian crossing should be re-aligned to provide a ninety degree crossing with a center median refuge. This will offset the crosswalk from the intersection; however, it will decrease the total pedestrian crossing distance and the amount of time a pedestrian is exposed to traffic.

Automobiles traveling eastbound on University Boulevard (turning into the shopping center) should not be permitted to turn right when the traffic signal is red. This will reduce potentially dangerous turning movements into the crosswalk. Shifting the automobile stop line on eastbound University Boulevard back from the crosswalk would provide more distance between stopped vehicles and crossing pedestrians. In addition, a pedestrian push button (with signs in English and Spanish) should be installed in the median to eliminate the possibility of a pedestrian getting stuck in the middle of the road without a pedestrian signal.

3. Geometric design of intersections and driveways should reinforce the notion that pedestrians have the right-of-way by making it more evident that drivers are crossing over spaces intended for pedestrian travel. For example, sidewalk material should continue across driveway entrances and stop lines and signage should be used to indicate that motorists should yield to pedestrians at these locations. Automobile stop lines should be added at all signalized intersections in the study area. Given the volume and speed of traffic and the size of vehicles on the road, these stop lines should be ten feet from the crosswalk.
4. Accessible pedestrian crossing signals should be added (wherever they are not already planned) at all traffic lights in the area. Pedestrians traveling on the sidewalk would benefit from pedestrian crossing signals at driveways where automobiles are pulling out of parking lots with a traffic signal.
5. Crosswalks should be striped on all four legs of intersections. This is being done as part of the current SHA project; however, important neighborhood intersections should also be striped on all four legs. There may be instances where striping less than four legs is appropriate, but this should only be in limited cases. It is particularly important that the intersection that people will use to cross University Boulevard to and from the site of the Transit Center include crosswalk markings on all four legs. It may also be an appropriate location for a leading pedestrian interval, as discussed below.
6. Any locations in the study area with missing curb ramps or curb ramps that exceed the slope values required by ADA Accessibility Guidelines and SHA's Accessibility Policy and Guidelines should be improved. As stated in SHA's Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways, "SHA preference is to utilize paired perpendicular ramps, (two ramps on each corner). While this is more easily accomplished on intersections of smaller

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radius, seek to apply this approach more broadly. Large diagonal ramps tend to mislead pedestrians who are blind.”

¹ Two ramps per corner should be provided throughout the study area, including in surrounding neighborhoods that are not part of the current SHA improvements.

7. Raised medians or pedestrian refuge islands are very useful for improving the safety of pedestrian crosswalks, particularly on multi-lane roadways with heavy traffic volumes and high speeds. They improve pedestrian safety at locations with and without traffic signals and may be used at both intersection and midblock locations. According to a Federal Highway Administration (FHWA) study on crosswalks at uncontrolled locations, “the presence of a raised median was associated with a significantly lower pedestrian crash rate at multi-lane sites with both marked and unmarked crosswalks.” ²

In order to provide safety benefits, a median must physically protect pedestrians. In the study area, medians should be extended to make them as long and wide as possible. Accessible pedestrian walkways should be provided through medians and crosswalks should be shifted to create additional space for a raised approach nose. Design considerations from the Maryland SHA Bicycle and Pedestrian Guidelines are included below. ³

- a. Raised medians require at-grade cut throughs or curb ramps to provide an accessible path
- b. Should be aligned directly with crosswalks

¹ Maryland SHA *Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways*, December 200, page 16.

² Zegeer, C., J. Stewart, H. Huang, and P. Lagerwey. “Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations- Executive Summary and Recommended Guidelines.” Report No. FHWA-RD-01-075, Federal Highway Administration, Washington, D.C., February 2002.

³ Maryland SHA *Bicycle and Pedestrian Design Guidelines*, May 2007, page 10-11 through 10-14.

- c. Raised approach noses should be included at intersection crossing islands
- d. Should meet the luminance contrast levels needed to improve detection by older drivers, per the recommendations in FHWA’s *Highway Design Handbook for Older Drivers and Pedestrians* (2001)
- e. If median is landscaped, the vegetation must not obstruct necessary clear sight triangles
- f. Must meet SHA’s *Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways*



Existing SHA crosswalk and median, Rockville, MD

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8. Traffic signals in the area should not rely entirely on pedestrian actuated systems. A number of studies have shown that pedestrians typically are unaware that they must press the push button in order for the signal to provide adequate time for a pedestrian clearance. Given the international character of this study area, it is even more important that all signal phases be timed so that they accommodate pedestrian crossings on all phases and that activated signals be used primarily for locations where pedestrians need to “call” a red phase (such as at minor streets). Signs for pedestrian-activated cross signals should be provided in English and Spanish. Leading pedestrian intervals should be used at locations with heavier volumes of pedestrian crossings with many turning movements, such as near transit stops.
9. Signage at uncontrolled intersections throughout the study area should be critically evaluated. Pedestrian crosswalk signs reflecting that it is state law to stop for pedestrians should be placed on sign posts on the side of the road (not in the middle) at uncontrolled crossings. For additional information, see the Maryland Manual on Uniform Traffic Control Devices.⁴
10. Explore opportunities to provide education and training classes regarding traffic rules and safe pedestrian behavior. These classes should be provided in both English and Spanish.



R1-6a(1) - Pedestrian Crossing Sign (alternative sign placement), Maryland SHA Bicycle and Pedestrian Design Guidelines

⁴ Maryland SHA *Manual on Uniform Traffic Control Devices*, 2006 Edition, page 2B-18.

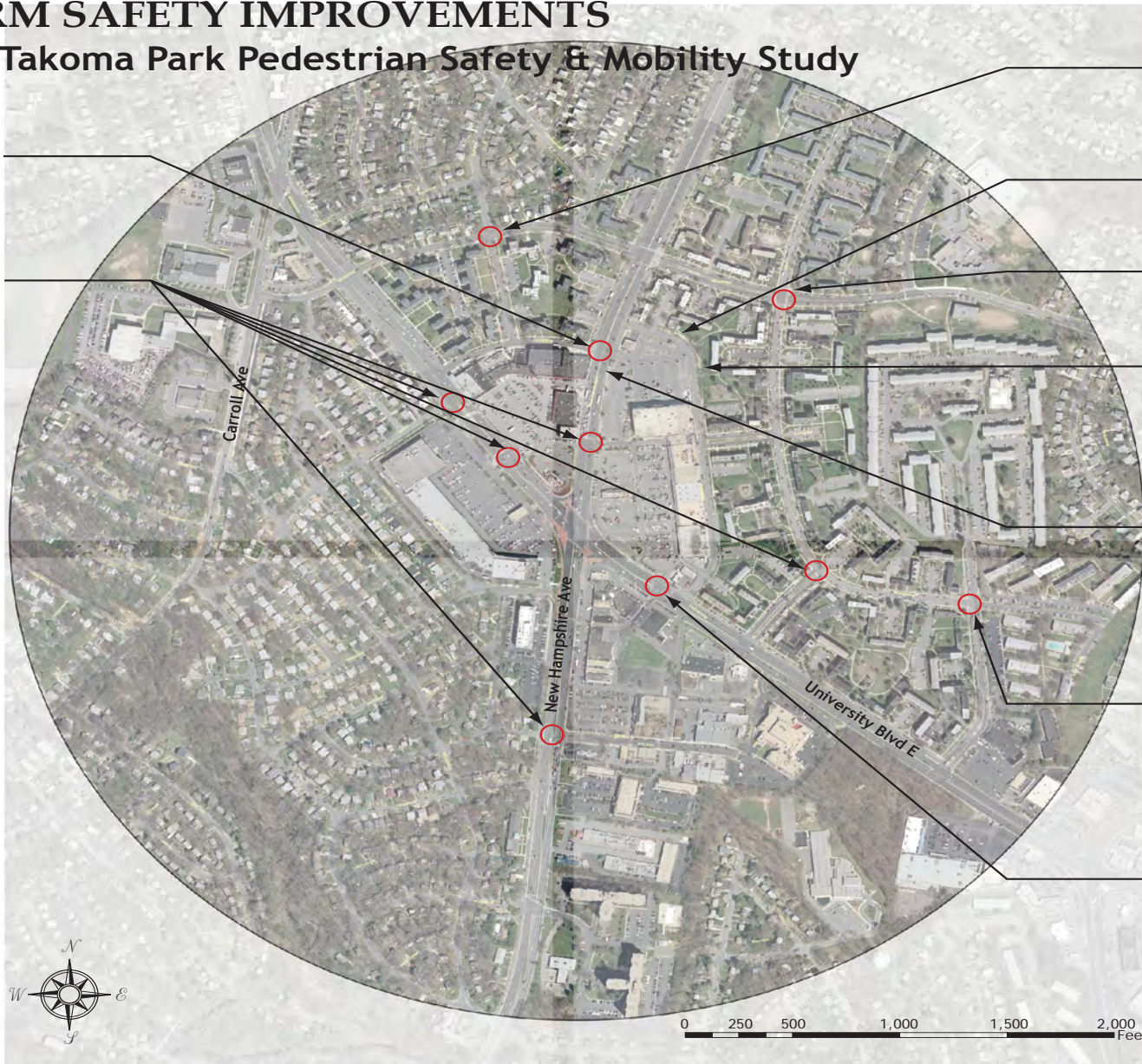
Figure 10: Short-term safety improvements (in addition to the SHA improvements currently underway)

SHORT TERM SAFETY IMPROVEMENTS

Langley Park/Takoma Park Pedestrian Safety & Mobility Study

Provide pedestrian safety improvements

Provide marked crosswalks on all sides of the intersection



Provide marked crosswalks on all sides of the intersection

Remove obstructions in the pathway network

Restripe marked crosswalks

Remove obstructions in the pathway network

Remove obstruction to ensure visibility of pedestrian crossing sign

Provide a marked crosswalk

Provide pedestrian safety improvements

Prepared by:
Toole Design Group

CHAPTER 6: MID-TERM CAPITAL IMPROVEMENTS

This chapter provides recommendations for mid-term (5-15 years) capital improvements to enhance pedestrian and bicycle access and mobility. These improvements would involve more planning and higher levels of investment, but should be considered as the area redevelops over time. (Note: order does not indicate importance)

1. Pedestrian and bicycle access and mobility within large parking lots should be addressed. Large expanses of pavement, minimal pavement markings, and limited accommodations make parking lots problematic for pedestrians and bicyclists. Sidewalk networks through the middle and along the perimeter of parking lots can organize space with only a minimal decrease in overall parking.
2. Raised table crosswalks should be considered for all of the right turn merge lanes at the intersection of New Hampshire Avenue and University Boulevard.
3. Where possible, physical buffers such as trees or decorative lights, should be provided between roads and sidewalks. For example, New Hampshire Avenue north of the University Boulevard on the east side of the road could provide an opportunity to introduce measures to separate the pedestrian and automobile travelways without reducing the overall road width.



Raised table crosswalk, Boulder, CO



Physical buffers, Boulder, CO

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4. Median islands should be considered on selected side roads to break-up expansive pavement widths, provide green space and calm traffic. Landscaped islands also increase pervious surface in the area, which has beneficial environmental benefits such as filtering stormwater runoff and lowering the heat island effect. Median islands could be provided on Kirkland Street and near the Exxon gas station. These spaces could also be improved by adding curb extensions, sidewalks and other improvements.
5. The bus stop on the southwest side of the New Hampshire Avenue and Holton Street intersection should be moved to the northwest side of the intersection. This will take advantage of the new curb line connecting the access road and Holton Street and would provide for a more pleasant and comfortable waiting area.
6. The potential of side roads such as 14th Street, Lebanon Street, Merrimac Street, Tahona Street, and Wildwood Street to provide critical links in the bicycle route network should be explored. These should be designed to provide comfortable and efficient bicycle routes.
7. A High-intensity Activated Crosswalk (HAWK) signal should be considered at the intersection of 14th Street and University Boulevard. The HAWK signal is similar to a traditional pedestrian crossing signal but has a different signal operation.⁵ There are a significant number of pedestrians crossing University Boulevard at this intersection. A HAWK signal will enable pedestrians to cross University Boulevard without an inordinate delay to motor vehicles.



Potential location for a median island on Kirkland Street



HAWK signal, Tucson, AZ

⁵ For additional information, see the *Maryland SHA Bicycle and Pedestrian Design Guidelines*, February 2007, page 11-9.

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8. The total number of driveways and curb cuts in the area should be reduced. These curb cuts introduce dangerous turning movements, inhibit the flow of traffic and create distractions for drivers and pedestrians. A critical evaluation is needed of driveways and curb cuts, turning movements and alternate access management strategies in the entire study area. This is in line with existing SHA policy regarding access management. For example, eliminating a second driveway at the 7-11 property should be considered.
9. Intersection and driveway corner radii should be re-examined with the goal of reducing pedestrian crossing distance. The design philosophy should be to provide the smallest radii possible, rather than the largest radii possible. This can be achieved by taking a more creative urban approach to intersection design such as recessed stop bars.
10. A rigorous maintenance and re-stripping plan should be developed to ensure that crosswalks, stop lines and other road markings are visible.
11. Opportunities to slow traffic through a range of traffic calming initiatives on neighborhood streets should be implemented.
12. All crosswalks at important intersections off of main arterial roads should be striped. Recent intersection improvements on Carol Avenue provide good examples of crossing treatments. Intersections that need crosswalks include Merrimac Street/Tahona Street; Merrimac/14th Street; Lebanon Street/Tahona Street; 14th Street/Langley Street; 14th Street/Kanawha Street; 15th Street/Kenawha; Wildwood Street/Anne Street.
13. The existing landscaped median island on Holton Street should be redesigned to encourage bicyclists and pedestrians to use the route as an alternative connection between New Hampshire Avenue and University Boulevard.

As part of this effort, a safe connection from the new path to the University Boulevard and 14th Street should be provided.



Existing landscaped median on Holton Street

Figure 11: Mid-term capital improvements

MID-TERM CAPITAL IMPROVEMENTS

Langley Park/Takoma Park Pedestrian Safety & Mobility Study



CHAPTER 7: CONCLUSION

The Takoma/Langley Crossroads area has the right ingredients to become one of the most vibrant pedestrian spaces in the Washington region. Many challenges lie ahead, as the area is characterized today by suburban style development that is primarily oriented to motor vehicle travel. With the Purple Line as an important catalyst for new development, now is the time to redesign the Takoma/Langley Crossroads area to achieve a balanced transportation system that equally accommodates all modes.