

Town of Cheverly

Non-Motorized Transportation Study



Prepared For:

Metropolitan Washington Council of Governments
Department of Transportation Planning
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About the Transportation and Land Use Connections Program

The Town of Cheverly Non-Motorized Transportation Study was funded by a grant from the Washington Metropolitan Council of Governments Transportation Planning Board. The Transportation and Land Use Connections (TLC) Program provides support to local governments in the Metropolitan Washington region as they work to improve transportation and land use coordination. Through the program, the Council of Government’s Transportation Planning Board provides communities with technical assistance grants to catalyze or enhance planning efforts. TLC projects are generally targeted at a fairly small area or discrete set of issues. Lessons learned from these planning studies may then be implemented around the region. Guidance and support of this study was provided by representatives from the Metropolitan Washington Council of Governments (COG) and the TPB, Maryland-National Capital Park and Planning Commission, and the Town of Cheverly.

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I. INTRODUCTION AND BACKGROUND

The Town of Cheverly, incorporated in 1931, is a planned community rich in history and originally laid out as a residential neighborhood marketed as having convenient access to the downtown Washington, D.C. by both rail and road, while “retaining the beauty of its natural surroundings through saving as many of its trees as possible, and designing its streets to follow the rolling contours of the land”. However, further development of the railroad and highway network in later decades have left the Town bisected and isolated without any easy access by non-auto modes to adjacent communities, shopping, recreational resources and educational institutions. Additionally, the natural topography and winding roadways make for challenging environments for bicyclists and pedestrians.

The Town requested this study as part of an on-going effort to increase the availability and use of non-motorized modes of travel such as walking and bicycling for both transportation and recreation, including improving access to bus and rail transit. It is anticipated that this will improve the quality of life by increasing travel options for residents and visitors, and foster healthy lifestyles by enabling transportation to play a significant role in the health and well-being of its citizens. To that end, the Town, through a grant from Metropolitan Washington Council of Governments’ (MWCOC) Transportation Land Connection (TLC) Program, has engaged the firm of Sabra, Wang & Associates to prepare this Non-motorized Transportation Study, which is intended to serve as a formal and well-supported plan for an integrated system of pedestrian and bicycle facilities within and around the Town.

II. GOALS AND OBJECTIVES

The objective of the project is to develop a formal plan based on a publicly-supported vision with specific recommendations and concepts to create a bicycle and pedestrian network within and around the Town, which can be used to program future capital improvement projects, either by the Town or jointly with the County, Park and Planning and/or State Highway.

The goal of the Town of Cheverly Non-Motorized Transportation Study is to improve safety and accessibility for pedestrians and bicycles in the Town by recommending a transportation network to overcome existing physical barriers and re-connect the Town’s attractions and destinations. Key elements of the study to achieve these objectives/goals can be summarized as follows:

- To improve non-motorized transportation
- To support municipal and County planning efforts
- To incorporate work initiated by the Town of Cheverly and M-NCPPC to connect Cheverly to the Anacostia River Trail
- To support several County goals and objectives regarding multimodal transportation and pedestrian access
- To support the County’s “Livable Communities” Initiative by providing more attractive, walkable and safe routes





III. TECHNICAL APPROACH

The technical approach for this study included public outreach, data collection and inventories, planning and visioning, identifying recommendations, and developing conceptual designs to create a formal and well-supported plan for an integrated system of pedestrian and bicycle facilities within and around the Town. In addition, special attention was given to three specific areas:

- A Safe Routes to School Plan(SRTS) for Spellman Elementary
- Intersection Safety Improvements at MD 202 and Kilmer Street
- Conceptual Roadway Improvements along Tuxedo Road and Arbor Street

A brief summary of each phase of the study is presented below.

Field Inventory and Data Collection: Field visits were conducted along the roadways, transportation facilities, and key destinations in and around the Town including MD 202, Arbor Road, Tuxedo Road, the Metro Station, Hospital, schools, and parks, in order to become familiar with the study area. Photographs, field measurements and existing deficiencies and/or constraints (e.g. missing sidewalks) were noted and documented. In addition, traffic counts and crash data were obtained for review.

Planning and Visioning: A review of previous studies was completed including the *Tuxedo Road/Arbor Street Cheverly Metro Area Sector Plan and Map Amendment*, *SHA Neighborhood Conservation Plans*, the *Prince George’s County Master Plan of Transportation*, *Port Towns Sector Plan and Map Amendment*, *Anacostia Trails Heritage Area Plan*, *Bladensburg*, *New Carrollton and Vicinity Master Plan and Map Amendment*, as well as proposed land use and development plans with the Town of Cheverly.

Priority corridors were identified for each mode such as automobile, pedestrian, bicycle and transit. During the planning stages, key connections supporting County’s Master/Sector Plans, Transit-Oriented Development, Green Infrastructure Plans, and Safe Routes to School Program were identified.

Stakeholder Identification and Public Outreach: Key stakeholders were engaged as part of the project’s kick-off meeting and included the following:

- Town of Cheverly Mayor, Council, Public Works, and Police
- Prince George's County Department of Public Works and Transportation (DPW&T)
- Prince George’s County Department of Parks and Recreation
- Maryland-National Capital Park and Planning (M-NCPPC)
- Metropolitan Washington Council of Governments (MWCOC)
- Maryland Department of Transportation (MDOT)
- State Highway Administration (SHA)



- Gladys Noon Spellman Elementary School and St. Ambrose School

In addition, a public meeting was held on June 16, 2009 to solicit public input on pedestrian, bicycle safety and access concerns.

Safe Routes to School: A SRTS plan was developed for Gladys Noon Spellman Elementary School, which included review and selection of optimal routes & crossings for school children, proposed safety enhancements along those routes, coordination with school and community, and preparation of educational materials maps and brochures.



MD 202 and Kilmer Street Safety Study:

A detailed safety and traffic operations study was performed for this location, including review of crash data, traffic volumes, traffic speeds, intersection capacity and level of service, and driver & pedestrian behavior. Recommendations were developed to enhance safety such as signing, pavement marking, and signal improvements, as well as minor geometric improvements such as median refuge or reduced turning radii.

Tuxedo Road and Arbor Street Improvement: Conceptual plans from the SHA's Neighborhood Conservation Study were obtained and refined to develop a roadway design that accommodates pedestrian and bicycle traffic and to develop ultimate roadway cross-section elements, including sidewalks, parking, bicycle lanes, medians, turn lanes and appropriate traffic control based on planned mixed-use redevelopment along this corridor.

Development of a Recommended Non-motorized Network: Based on the field inventory, review of previous plans, stakeholder and public input, a draft network was developed, consisting of trails, sidepaths, sidewalks and pedestrian accessibility improvements, and on-road bicycle lanes and routes. In addition, performance measures were identified to benchmark the Plan's success.



IV. EXISTING CONDITIONS

A. *Roadways, Sidewalks, Bicycle Facilities and Transit*

The Town of Cheverly is located in Prince George’s County Maryland approximately one mile from the Washington, DC line. The BW Parkway, US 50, and MD 202 provide access to Cheverly, while the WMATA’s Orange Metro Line has a station in Cheverly.

Major points of interest for bicycle and pedestrian connections include the Anacostia River Trail, Cheverly Metro Station, Prince George’s County Hospital Center, retail and commercial businesses along MD 202, multi-family residential units along MD 202, schools, and other recreational areas such as Euclid Park and Beaverdam Creek. **Figure 1** shows the aerial view of the study area. A description of the major State roadways is provided below and traffic characteristics are illustrated in **Figure 2**.

MD 201 (Kenilworth Avenue), within the study area (from the B-W Parkway underpass to US 50 on/off-ramps), is a four-lane, divided, principal arterial with 68-ft total pavement width and high-type bituminous surface material. MD 201 runs in the northeast/southwest direction, travel lanes along MD 201 are 12-ft wide and 10-ft wide shoulders are provided on both sides of the roadway. MD 201 connects US 1 in Beltsville at its northern terminus and US 50 in Cheverly at its southern terminus. MD 201 is constructed as open section within the study area, and no sidewalks are provided on either side of the roadway.

MD 202 (Landover Road) is a six-lane facility with a posted speed limit of 35 mph. It is the primary roadway in the study area, and pedestrian traffic is concentrated near the intersection of MD 202 and Kilmer Street. The Annual Average Daily Traffic (AADT) is 33,100 vehicles to west of US 50. A recent streetscaping project by SHA has improved sidewalks and crosswalks along the MD 202 corridor.

Baltimore-Washington Parkway is a four-lane limited access parkway that connects Washington D.C. and Baltimore. The posted speed limit is 45 mph, and there is a partial cloverleaf interchange at MD 202. The AADT is 108,300 north of MD 202.

MD 450 (Annapolis Road) is a six-lane facility with a posted speed limit of 35 mph. MD 450 provides access between Cheverly and Annapolis to the east and Bladensburg to the west. The AADT is 31,800 east of Baltimore Washington Parkway.

US 50 (John Hanson Highway) is a four lane freeway facility that provides access between Cheverly and I-495 to the east and Washington DC to the west. The posted speed limit is 55 mph. There is a modified partial cloverleaf with MD 202 in vicinity of the intersection of MD 202 at Kilmer Street where vehicles entering and exiting the freeway are traveling at high speeds, posing safety issues for pedestrians in the area. The AADT on US 50 is 76,600 south of MD 202.



Figure 1. Town of Cheverly Study Area



Figure 2. Roadway Network Traffic Characteristics – Average Daily Traffic [% Trucks]



A review of the Town’s *sidewalk network* inventory and observed pedestrian desire lines are shown in Figures 3 and 4.



Figure 3. Study Area Sidewalk Network

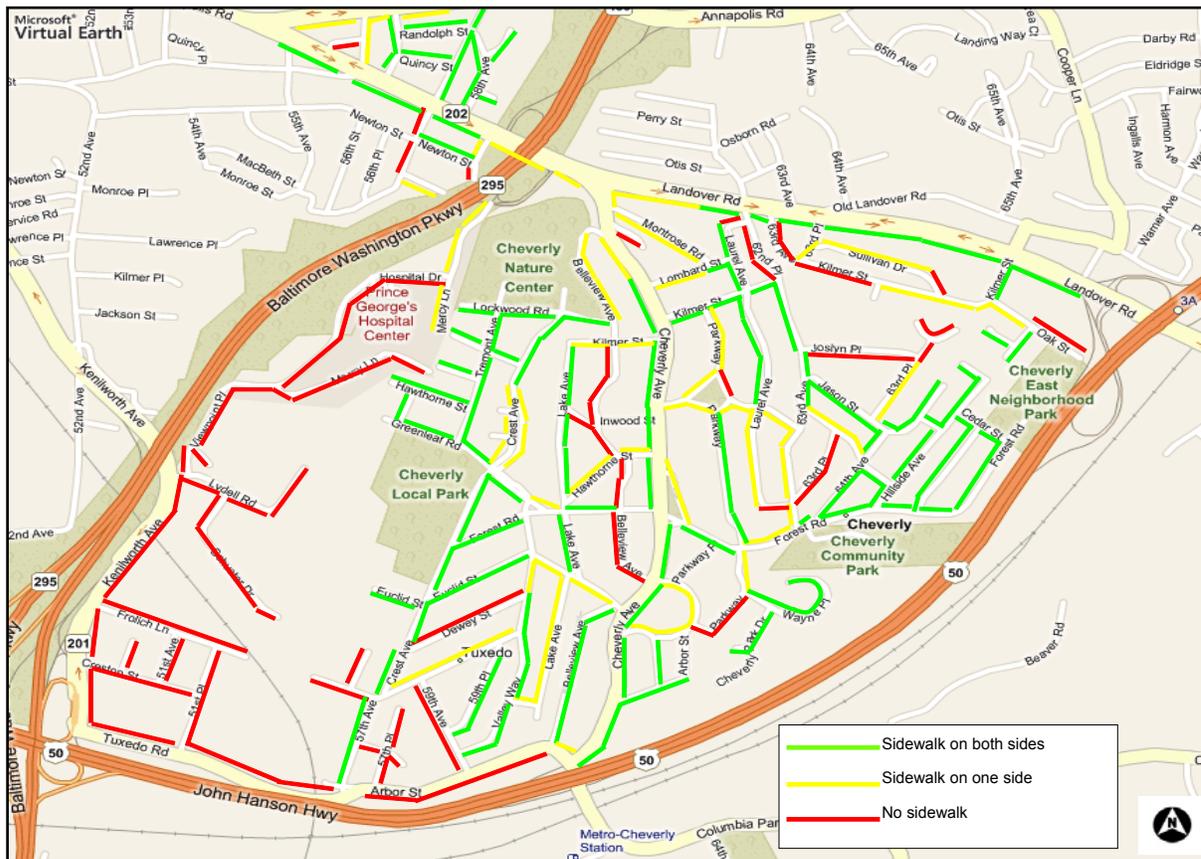
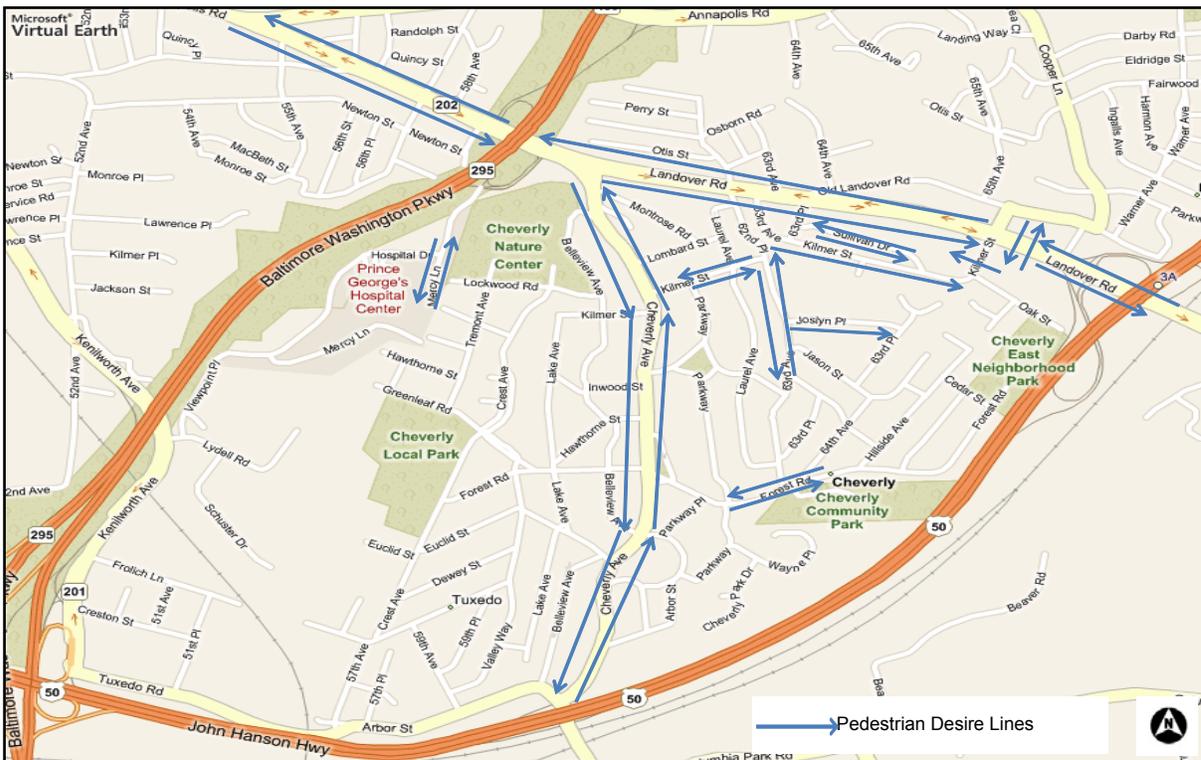


Figure 4. Observed Pedestrian Desire Lines





Currently, there are no designated **bicycle facilities** within the Town. Cheverly is served by the following **transit lines**, and an excerpt from WMATA’s bus route map is shown in **Figure 5**:

- Metrorail Orange Line
- Metrobus Lines A11, A12 – Martin Luther King Jr.
- Metrobus Lines F8, F13 – Prince George’s-Langley Park and Cheverly-Washington Business Park
- Metrobus Lines R12 – Kenilworth Avenue-New Carrollton
- Metrobus Lines W4 – Deanwood – Alabama Avenue
- Prince George’s County ‘The Bus’ lines 18 and 23

.Bus stops are primarily located along MD 202, MD 201, Cheverly Road, Tuxedo Street, Columbia Park Road, Cabin Branch Drive and Hospital Drive.

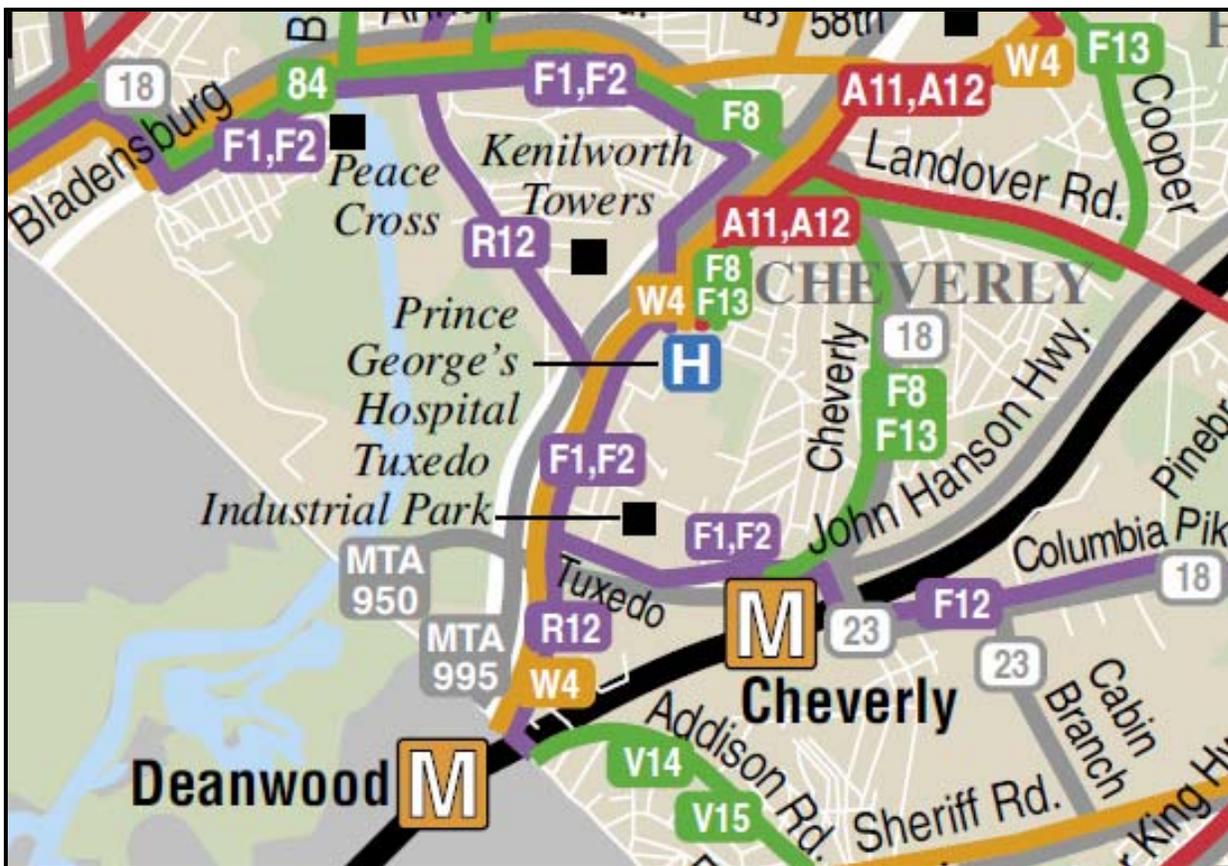


Figure 5. Existing Transit Routes



B. Schools and Parks

The Town of Cheverly is served by several schools (**Figure 6**):

- Cheverly Weekday Nursery School on Cheverly Avenue
- Judith Hoyer Early Childhood Center on Bellevue Avenue serves approximately 180 students
- Gladys Noon Spellman Elementary School on 64th Avenue serves approximately 750 students
- St. Ambrose Catholic Elementary School on Jason Street serves approximately 250 students
- Gholson Middle School on Nalley Road serves approximately 750 students
- Bladensburg High School, on 57th Avenue, serves approximately 1,900 students

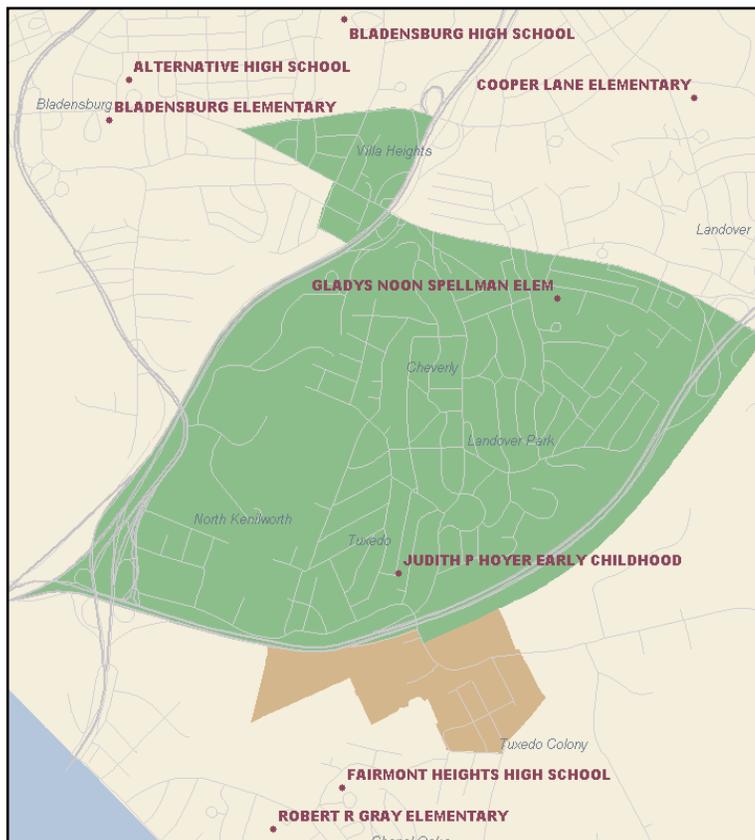


Figure 6. Existing Schools

Public parks in Cheverly which provide fitness trails, tennis and basketball courts include (**Figure 7**):

- Cheverly Community Park
- Euclid Park
- East Cheverly Park/Old Landover Park
- Cheverly Nature Park
- Cheverly Park

Other major recreational destinations outside the Town include the Anacostia waterfront and Bladensburg Marina, the W, B&A trail, Kenilworth Aquatic Gardens and National Arboretum, North Englewood Park, Prince George’s Country Club and Kentlands Park.

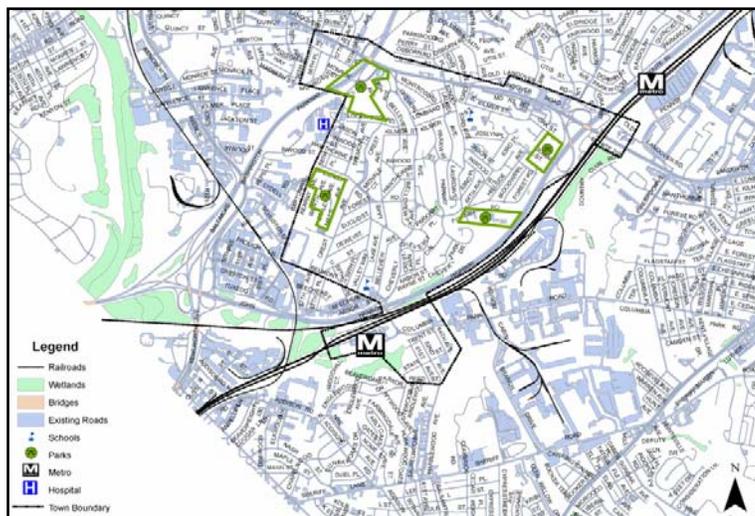


Figure 7. Existing Public Parks

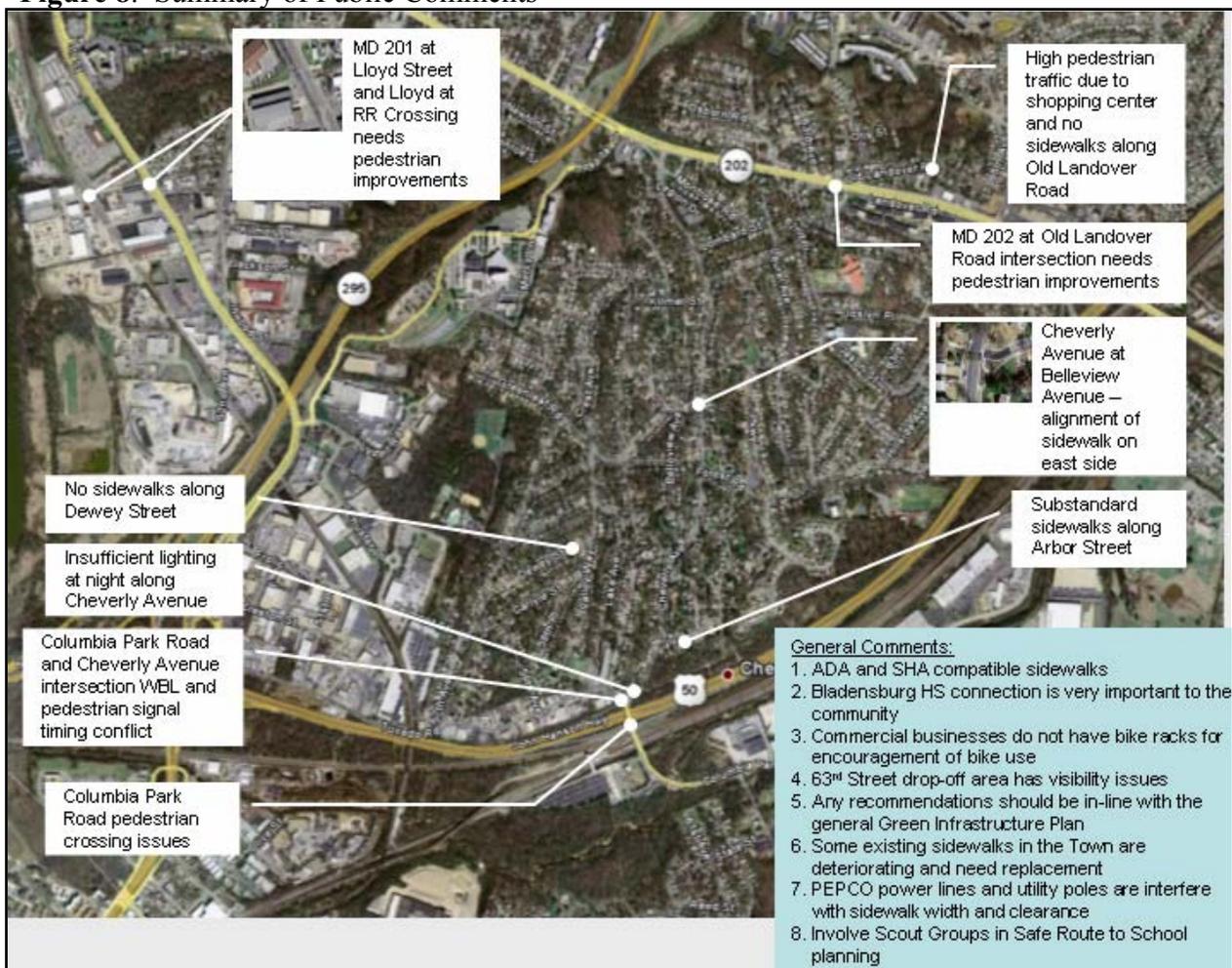


C. **Existing Deficiencies and Public Comments** Based on the field inventory, plan review, and stakeholder and public outreach, the following major constraints and opportunities were noted:

- No connection to Anacostia Waterfront
- Lack of on-road bicycle facilities
- Lack of pedestrian and trail connections within Town and between Cheverly and surrounding communities
- Safety improvements needed at MD 202/Kilmer Street intersection
- Railroad, US 50, MD 202 and Industrial Park create topographic barriers to non-motorized travel
- Missing sidewalk on Euclid Street
- No safe pedestrian route to Bladensburg High School from south of MD 202
- Limited pedestrian access to the Hospital, Cheverly Metro, and Landover Metro stations

Additional public comments are illustrated in **Figure 8**.

Figure 8. Summary of Public Comments





V. FUTURE CONDITIONS

This section summarizes planned land use and transportation elements within and around the Town that shaped the recommendations in the Non-Motorized Transportation Plan including trail alignments, facility types, Safe Routes to School plans and conceptual roadway improvements along Tuxedo Road and Arbor Street. The references for these improvements include:

- *Tuxedo Road/ Arbor Street Cheverly Metro Area Sector Plan and Map Amendment*
- *SHA Neighborhood Conservation Plans*
- *Prince George’s County Master Plan of Transportation*
- *Port Towns Sector Plan and Map Amendment*
- *Anacostia Trails Heritage Area Plan*
- *Bladensburg, New Carrollton and Vicinity Master Plan and Map Amendment*

A. *Master Planned Trails*

In total, 11 facilities were identified and are summarized in **Table 1**.

The Cheverly Metro pedestrian bridge is recommended for further study beyond this report (e.g. preliminary alignment and profile, size and location, options for bridge superstructure prefabrication, substructure locations, rudimentary plan and elevation details, height and length of retaining walls, and preliminary cost estimate).

The Anacostia River Trail extension is not included as the project is fully funded and under construction.



Table 1. Summary of Master Planned Trail and Bicycle Facilities

Master Plan Trail ID	Facility Name (adjoining road, where applicable)	Facility Type	Project Limits	Owner	Master Plan Citation(s) (and year of approval)	Comments
5	Anacostia River Trail Extension	Multiuse trail hiker/biker/equestrian)	Bladensburg Marina to DC Line	M-NCPPC	Bladensburg Town Center Plan (2007)	Extend the Anacostia River Trail along the east side of the Anacostia River from Bladensburg Marina into the District of Columbia. This trail will extend the existing Anacostia Tributary
64	Cabin Branch Stream Valley Trail	Multiuse trail (hiker/biker/equestrian)	MD 214 to Beaverdam Creek	M-NCPPC	Landover and Vicinity (1993) Addison Road Metro Area Sector Plan (2000)	This park trail will provide needed recreational opportunities in the Landover and Seat Pleasant areas. It will provide access to numerous park and school facilities, as well as to the Cheverly and Addison Road Metro Stations.
169	Cheverly Metro Area Pedestrian Bridge	Pedestrian bridge	Arbor Street to Cheverly Metro	TBD	Tuxedo Road/ Arbor Street/ Cheverly Metro Area (2005)	Provide a pedestrian bridge connecting the Cheverly Metro Station to the Arbor Street mixed-use area. This long-term recommendation will provide safe and convenient pedestrian access between a revitalized Arbor Street and the Cheverly Metro Station.
170	Cheverly Avenue Shared-Use Bikeways	Shared-use bikeways	Cheverly Avenue (MD 202 to US 50) Crest Avenue (Cheverly Nature Park to Belmont St)	Cheverly	Tuxedo Road/ Arbor Street/ Cheverly Metro Area (2005) Bladensburg-New Carrollton and Vicinity (1994)	These roads are recognized as important bicycle and pedestrian corridors through the Town of Cheverly.
171	Columbia Park Road Sidewalks and Designated Bike Lanes	Standard or wide sidewalks with designated bike lanes	MD 704 to US 50	DPW&T	Tuxedo Road/ Arbor Street/ Cheverly Metro Area (2005) Landover and Vicinity (1993)	Provide continuous standard or wide sidewalks with designated bike lanes. These facilities will improve access to the Cheverly Metro Station, Kentland Community Center, South Columbia Community Park, and Columbia Park Elementary School.
172	Cabin Branch Drive Shared-Use Sidepath or Wide Sidewalk	Shared-use sidepath or wide sidewalk	Columbia Park Road to Sheriff Road	DPW&T	Tuxedo Road/Arbor Street/Cheverly Metro Area (2005)	This facility will provide better multimodal access through an employment area and to the Cheverly Metro Station. It may also serve as a segment of the trail facility planned along Cabin Branch.





173	Beaverdam Creek Stream Valley Trail	Multiuse trail (hiker/biker/equestrian)	Anacostia River Park to Pennsy Drive	M-NCPPC	Tuxedo Road/ Arbor Street/ Cheverly Metro Area (2005) for Anacostia River Park to Columbia Park Road. MPOT (new recommendation) for Columbia Park Road to Pennsy Drive.	This trail will utilize a park trail corridor as well as some on-road improvements along Pennsy Drive to provide non-motorized access to the Cheverly and Landover Metro stations. It will also provide access from Subregion 4 to the Anacostia Tributary Trails Network. This planned trail along the entire length of Beaverdam Creek within Subregion 4 will be a substantial addition to the existing Anacostia Tributary Trails Network and will provide needed urban green space within an industrial corridor. This is a long-term recommendation as significant land acquisition and stream restoration will be required.
	Parkwood Street (part of Anacostia to WB&A trails connection)	8- 10 foot sidepath on east side adjacent to US 50	Warner Ave to New Carrollton Metro	TBD	New addition to MPOT	These improvements will serve as a segment of the Cheverly to New Carrollton bicycle and pedestrian route
	Quincy Street	sidepath or wide sidewalks	55th Ave to Bladensburg Waterfront Park	TBD	Bladensburg Town Center Plan (2007)	Includes new bridge over CSX to Bladensburg Waterfront Park
	Magruder Spring Trail (part of Anacostia to WB&A trails connection)	Natural surface Trail	Cheverly Avenue to MD 202	TBD	Bladensburg New Carrollton and Vicinity Master Plan	This trail will improve connections between the Cheverly Metro, recreational facilities and the MD 202 corridor
	Cheverly to Anacostia Connection	Combination of sidewalk, side path and trail	Cheverly Euclid Park to Bladensburg Waterfront Park	Various agencies	Port Towns Sector Plan (2009)	This connection will provide access from the town of Cheverly and points to the south to the Anacostia Tributaries Trails Network. It will involve improvements along state, county and municipal roads, as well as some park trail construction. This recommendation is already incorporated into the Preliminary Port Towns Master Plan.

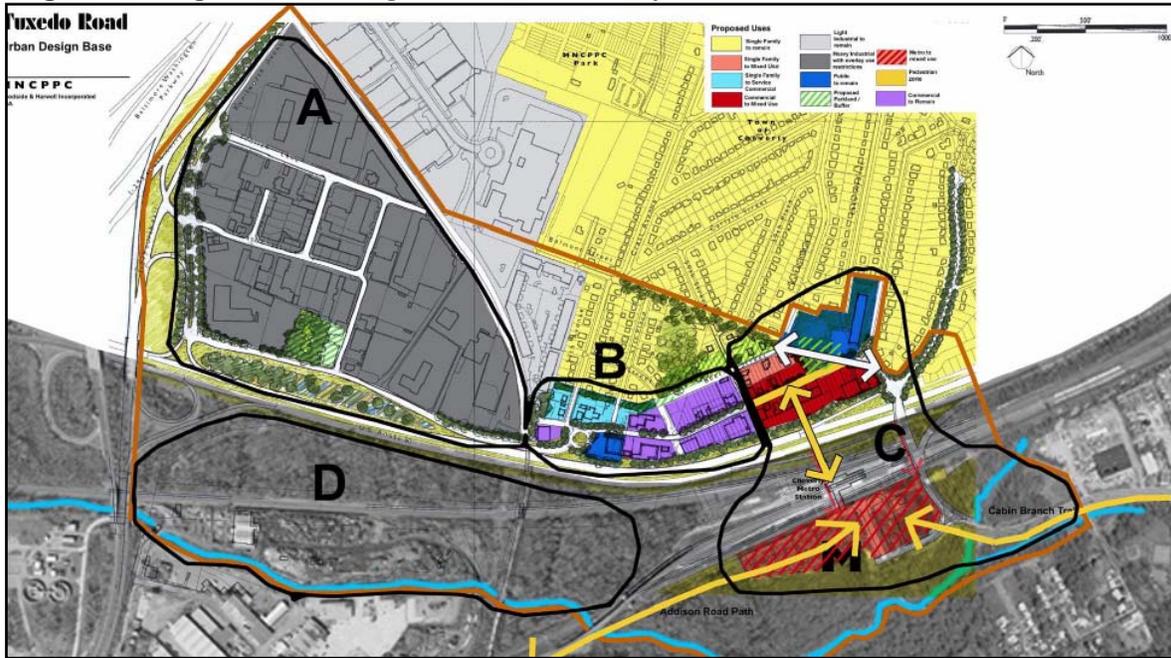
B. Master Planned Land Uses

In addition, land use plans identified in the Tuxedo Road/ Arbor Street Cheverly Metro Area are shown below in **Figure 8**. The April, 2005 Tuxedo Road/ Arbor Street Cheverly Metro Area Sectional Map Amendment recommends the rezoning of the majority of industrial properties between the railroad bridge and Cheverly Avenue as mixed-use Transit-Oriented Development with commercial, office, and residential uses.





Figure 9. Proposed Rezoning around the Cheverly Metro Station





VI. SAFE ROUTES TO SCHOOLS

A. Existing Conditions

In support of the overall Non-Motorized Transportation Study, a Safe Route to School (SRTS) plan for the Gladys Noon Spellman Elementary School (**Figure 10a**) and the nearby St. Ambrose School (**Figure 10b**) was prepared. Gladys Noon Spellman Elementary School is located on 64th Avenue south of Kilmer Street. Gladys Noon Spellman Elementary School is located near St. Ambrose School on 63rd Avenue and as such, the SRTS plan encompasses both schools.

Figure 10a. Gladys Noon Spellman Elementary School



Figure 10b. St. Ambrose School



The schools are located in a residential neighborhood marked by rolling terrain which limits the sight distance at some of the nearby intersections. Sidewalks are intermittent in proximity to the school; and the locations of sidewalks are a function of the hilly terrain which limits the available right-of-way to some degree. Field observations indicated that there is a notable school-aged walking population in the area, with a number of students observed walking to school in the morning and back home in the afternoon. A recent



streetscaping project along the main thoroughfare near the school, MD 202, has improved sidewalks and crosswalks along that corridor.

For the purposes of this study, the roadway network was defined based on the study limits identified in the Safe Routes to School analysis. The Maryland Safe Routes to School Handbook recommends a walking radius of 1-2 miles from the school site location. Consultation with the Spellman school administration indicated that the school district boundary is roughly US 50 to the south and east, MD 202 to the north, and BW Parkway to the west, hence these roadways serve as the study area boundary for the SRTS plan.

In addition to the State roadways (US 50, Baltimore-Washington Parkway, MD 450 and MD 202), there are a number of residential streets in the study area which provide access between nearby activity centers and local households. Kilmer Street and 62nd Avenue are the primary access routes to Spellman Elementary School and St. Ambrose School; both have signalized intersections with streetscaped crosswalks at MD 202. Old Landover Road/63rd Place has an unsignalized intersection with MD 202 and can also be used to access Spellman Elementary and St. Ambrose Schools. Residential streets are the primary routes for school aged walking children. A review of the roadway network indicated that most of the streets in the study area have sidewalks on one or both sides, with approximately 50-60% of the study area having sidewalks on both sides. This is important to note in the context of SRTS, as streets with no sidewalks oftentimes requires pedestrians to walk in the street. Sidewalks located on one side of the street lead to increased pedestrian crossings which can lead to unsafe conditions and conflicts between vehicular and pedestrian traffic.

Bus stops are located near the intersection of MD 202 at Kilmer Street, MD 202 at 63rd Place/Old Landover Road, MD 202 at Neighbor Lane/62nd Place, MD 202 at 58th Place, MD 202 at 56th Avenue, MD 202 at MD 450, and along Cheverly Avenue and Arbor Street.

Pedestrian desire lines are an indication of pedestrian demand and are a function of land use form, pedestrian amenities, traffic volumes and speed. Mid-block pedestrian crossings pose significant safety problems as pedestrian collisions with vehicles traveling at speeds greater than 35 mph are highly likely to result in a fatality. Pedestrian desire lines collected along MD 202 between US 50 and 62nd Place indicate a significant number of mid-block crossings on MD 202 east of Kilmer Street which is a particularly unsafe condition, given the high speeds of vehicles exiting US 50 near the intersection of MD 202 at Kilmer Street. Mid block crossings were also observed south of MD 202 on Kilmer Street. These mid-block crossings are a direct result of the land use along MD 202, which includes multi-family housing units directly across the street from retail establishments with large parking lots and no defined pedestrian walkway. Moreover, the bus stop on the westbound approach of MD 202 at Kilmer Street is located several hundred feet east of the intersection. Pedestrians were observed exiting the bus and crossing the street at the bus stop location en lieu of using the crosswalk at the Kilmer Street intersection.



Additional pedestrian desire lines exist along MD 202, Cheverly Avenue, and near Spellman Elementary School and St. Ambrose School. It is important to note that while school aged walkers are concentrated near the schools and traveling relatively short distances, there were a significant number of school aged children observed on Kilmer Street south of the intersection at MD 202.

B. Plan Development

The Safe Routes to School (SRTS) program is an opportunity for the Town of Cheverly and Prince George’s County to make walking and bicycling to school safer. On a broader level, a successfully implemented SRTS program can reduce childhood obesity, remove vehicles from congested roadways and improve the sense of community. The Gladys Noon Spellman Elementary Public School is located at 3324 64th Avenue and St. Ambrose School is located at 6310 Jason Street. The proximity of the two schools led to the development of one Safe Route to School Plan for both schools.

There are eight steps in the successful implementation of a SRTS plan. These steps include:

1. Bringing together the right people; these people included the principals of Spellman Elementary School and St. Ambrose School, local citizens, the Town of Cheverly, and Maryland SHA.
2. Hold a Kick-off Meeting; once the appropriate stakeholders were identified, a kick-off meeting was conducted which allowed each representative to share their perspective and add suggestions and goals to the SRTS Plan.
3. Gather information and identify issues; one of the objectives of the existing conditions analysis was to develop a baseline for safety issues facing pedestrians and bicyclists in the study area, particularly school aged children. Data on sidewalk conditions, crosswalks, ADA ramps, bicycle facilities, signage, and pedestrian desire lines were mapped for use in the development of the SRTS plan.
4. Identify Solutions; a review of the existing conditions assessment combined with a review of future plans by the Town of Cheverly and MSHA were used to develop recommendations to improve the safety for pedestrians and bicyclists. Consultation with school principals and Citizen’s Advisory Groups were useful in identifying solutions as well.
5. Make a Plan; Consistent with the STRS program, the identified solutions included a combination of education, encouragement, engineering, and enforcement strategies. In addition a time schedule and cost of implementation was developed for each element of the plan.
6. Fund the Plan; there is a wide range in the cost of planned improvements identified in the SRTS plan. Funding sources are identified as a part of the plan.
7. Act on the Plan; parts of the plan, particularly the educational components can be implemented immediately. These elements are identified in the Spellman Elementary School SRTS.



8. Evaluate, make improvements, and keep moving; after the program begins, careful monitoring will identify which strategies are best at increasing the number of children walking and bicycling to school safely. Recommendations are included for monitoring and improving the plan performance in the future.

The results of the existing conditions analysis indicate the following pedestrian and bicycle operational and safety issues in the SRTS Plan area:

- Mid block pedestrian crossings near the intersection of MD 202 at Kilmer Street
- Lack of sidewalks, particularly along Kilmer Street lead to children walking in the street
- Front drop-off at Spellman Elementary School leads to students walking between parked vehicles with limited visibility
- Back drop-off at Spellman Elementary School has queuing conditions which limit sight distance
- Pedestrian access on MD 202 at BW Parkway, particularly pedestrians associated with Cheverly High School
- Poor sidewalk conditions on MD 450
- Bus stop location at MD 202 and Kilmer Street leads to mid-block crossings
- Excessive speeds on residential streets, particularly around elementary schools
- Intersection of Cheverly Avenue at Arbor Street
- Large parking lots at retail establishments with no pedestrian or bicycle facilities
- Lack of bicycle amenities along MD 202

C. Recommendations

The SRTS plan includes the following elements: Engineering, Enforcement, Encouragement, Education, Student Drop-off and Pick-up, and Evaluation.

i. Engineering

Based on the review of the existing conditions and State of Maryland SRTS Guidelines, consultation with stakeholders, and a review of State Highway Administration and Town of Cheverly plans the following engineering recommendations are suggested for the study area:

- Install pedestrian barriers along MD 202 between Kilmer Street and US 50; street side landscaping that is consistent with the recent streetscaping project is recommended. The barriers should be located beyond the SHA right-of-way.
- Install sidewalks as needed on Kilmer Street so that sidewalks are present on both sides of the street; this may require the removal of on-street parking where the topography limits right-of-way
- Install stairs and a crosswalk at the Spellman Elementary School front drop off



- Designate a school drop off and pick up parking area in the rear of the Spellman Elementary School; install school zone per Maryland MUTCD guidelines in rear of school

Figure 11. Spellman Elementary Front Drop off Improvements

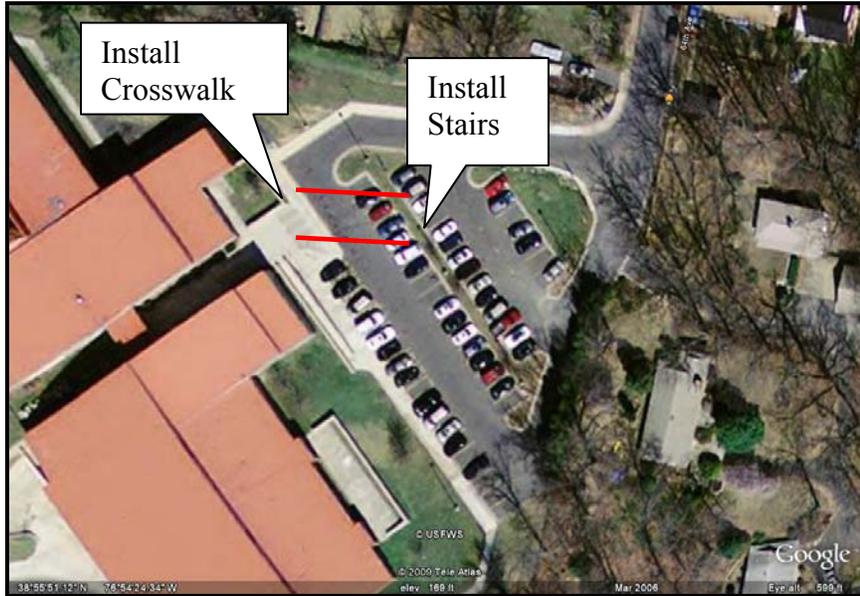


Figure 12. Spellman Elementary Back Drop off Improvements





- Add sidewalk on north side of MD 202 under the BW Parkway overpass; this would require reconstruction of MD 202 which was recently improved by the State Highway, therefore this should be considered a long term improvement
- Install new sidewalks on MD 450 east of MD 202 to BW Parkway
- Install bicycle racks at major retail establishments located on MD 202 and MD 450

ii. Enforcement

A number of residents at the public meeting and the school principal at Spellman Elementary School mentioned that speeding vehicles are a problem near the school. Site visits confirmed that vehicles were traveling above the speed limit, on Kilmer Street and MD 202 in particular. Given the Town of Cheverly has recently passed an ordinance allowing for speed cameras, speed cameras are recommended along MD 202 and Kilmer Street.

The existing crossing guard located behind Spellman Elementary school could be utilized to enforce the proposed pick-up and drop-off zone at the back of the school. Improved enforcement of the pick-up times would also improve the queuing conditions behind the school.



Figure 13. Speed Camera

iii. Encouragement

Encouragement strategies are about having fun; they generate excitement and interest in bicycling and walking. Encouragement strategies are low cost, and hence can be implemented immediately. Given the proximity of Spellman Elementary School and St. Ambrose School, there are a number of opportunities for the schools to work together and with the local community to make walking fun and safe. The following encouragement strategies are recommended:

Safe Routes to School Kickoff Party; this would be a fun filled event that would include both schools and local citizens. Families could walk or bicycle to school on this day and signs, balloons, and banners could be located along the primary walking and bicycling routes to the school. Snacks and beverages are always welcome!

Mileage Clubs and Contests; mileage clubs and contests encourage children either to begin walking and bicycling to school or to increase their current amount of physical activity by making it fun and rewarding. Generally children track the amount of miles



they walk or bicycle and get a small gift or a chance to win a prize after a certain mileage goal is reached.

Mileage clubs and contests are usually designed in one of three ways:

1. On an individual basis where every child logs miles walked or bicycled and has a chance to win.
2. As a classroom competition where a classroom's collective miles are compared against other classes.
3. As a competition among schools.



Figure 14. Walking School Bus

Winners are rewarded with prizes including medals, certificates or trophies.



Figure 15. Bicycle Train

Ongoing Activities; Ongoing walking and bicycling activities are defined as activities that are held daily, weekly or several times per month throughout the school year. Walking school buses, bicycle trains, park and walk activities and routine on-campus walks all are ongoing encouragement activities. St. Ambrose and

Spellman Elementary schools could have both individual and combined ongoing activities to foster relationships between the schools and surrounding communities.

iv. Education

Education is a complimentary strategy and should be coordinated with Encouragement Events. For example, at the Safe Routes to School kickoff event, fireman and police officers could be invited to review crossing procedures at intersections, the importance of using sidewalks when available, and how to deal with strangers they may encounter on the way to school. Planning education strategies includes identifying:

- Who needs to receive information?
- When the education should be delivered?



- What information needs to be shared?
- How the messages will be conveyed?

In the case of Spellman Elementary and St. Ambrose Schools, education materials should be sent to children, parents, drivers, and neighbors. Given the multi-lingual nature of the study area, education and encouragement materials should be printed in both English and Spanish.

When pedestrians between the ages of five and nine are injured, it is most often when motor vehicles have hit them as they cross the street midblock, particularly from between parked motor vehicles. Running across intersections and getting off of school buses are also common times for children to be hit by motor vehicles. In general, children are not ready to cross a street alone until age 10. However, children vary in their developmental readiness to make decisions about where and when to walk and cross a street. Parents are often the best judges of when their child is ready to walk without an adult. When they are ready for this level of independence, children need to know how to choose where to walk as well as when, where and how to cross a street. These skills also require an understanding of how to interact with drivers.

Children need to know the following points:

- Ask a parent before walking anywhere without them.
- Use sidewalks or paths. If there are no sidewalks or paths, walk as far from the motor vehicles as possible on the side of the street facing traffic.
- Watch for motor vehicles turning or pulling out of driveways.

Children who are old enough and have parental permission to cross the street need to know the following additional points:

- Choose the route with the fewest streets to cross. Avoid crossing busy or high-speed streets.
- Be more visible to drivers by wearing bright clothing in the daytime. When there is little or no light, such as at sunrise or sunset, wear retro-reflective gear or carry a flashlight.
- Always look for motor vehicles. Drivers are supposed to obey the rules and watch for pedestrians, but they cannot be relied on to always do so.
- Do not cross behind or within 10 feet of the front of a bus or other large motor vehicle because the driver can not see this area.
- Stop at the edges of driveways and curbs or edges of the street where no curb exists and look for motor vehicles before proceeding.



- Watch for parked motor vehicles that may be getting ready to back up or pull forward.
- Before crossing, always look for motor vehicles even after a crossing guard, parent or other adult says it is okay to cross.
- Walk, don't run, across the street.
- If crossing the street at midblock:
 - Stop at the curb and look left, right, and left again for traffic.
 - Wait until no traffic is coming and begin crossing. Keep looking for traffic until you have finished crossing.
- If crossing between parked motor vehicles is necessary:
 - Stop at the curb and check to see if the motor vehicles are running or if anyone is in the driver seat. If there is a driver, make eye contact and be sure you are seen before stepping in front or behind the motor vehicle.
 - If safe, walk to the edge of the parked motor vehicles, and look left, right, and left again before crossing. Keep looking for traffic until you have finished crossing.
- If crossing the street at an intersection:
 - Obey traffic signs and signals.
 - When the signal indicates it is time to cross, check for motor vehicles. Drivers may not obey the rules and turning drivers may not look for pedestrians.
 - Look to see if motor vehicles are coming. Look left, right and left; then behind and in front for turning motor vehicles. Keep looking for traffic until you have finished crossing.

Bicycle Helmets

The protective effects of bicycle helmets are well-documented. Studies on bicycle crashes have shown that helmet wearers have a significantly lower risk of head and facial injuries than bicyclists without helmets. In fact, one study found that bicyclists wearing helmets had reductions in their risks of head and brain injuries of 85 percent and 88 percent respectively.

Bicycle helmets must be used by students participating in a bicycling program. Some schools have rules that require students to attend a bicycle safety education class before bicycling to school and to wear a helmet whenever bicycling to school. In addition, many states and municipalities have laws requiring helmet use. See the [Bicycle Helmet Safety Institute](#) for a list of locations with laws.



Bicyclist Safety Skills

Riding a bicycle is a major step towards independence and mobility for children and, like walking, is a skill that can be used throughout a lifetime. Supervised practice time on the bicycle is the most important way for children to gain riding and safety skills. It can also instill confidence and create better riders as well as better future drivers who are more aware of bicyclists on the street.

Before riding to school, children first need to have sufficient bicycle handling skills, including the ability to:

- Ride in a straight line.
- Ride in a straight line while scanning the situation ahead, behind, and to the side.
- Stop quickly using the bicycle's brakes without swerving, falling, or colliding with anything.
- Swerve in a controlled manner to avoid a hazard or collision.

When children have these skills, they should learn and be able to demonstrate the following safety behaviors before riding to school:

Preparing for the ride

- Dress appropriately. Wear brightly colored, close-fitting clothing. Tie your shoes and secure long laces and loose pant legs. Do not wear headphones.
- Wear a properly fitted helmet. See the Resources section for information about bicycle helmet fit.
- Ride a bicycle that fits. When seated on the bicycle, both feet should be firmly planted on the ground and hands should reach the handlebars.
- Ride a bicycle that is in good condition. Tires should be firm, brakes should prevent tires from rotating when pushed, chain should not droop or be rusty and the seat and handlebars should be tight.
- Do not carry anyone else on the bicycle. A bicycle with one seat is a bicycle for one person.
- Do not carry anything in your hands. Use a backpack, basket or panniers to carry school supplies and books.
- It is best to ride only in daylight. If riding when it is dark, use headlights, taillights and reflectors, and wear bright clothing with reflective material.

During the ride

- Choose the route with the fewest streets to cross. Avoid busy and high-speed streets.
- Before entering the street, look for other vehicles to the left, right, in front and behind.



- Keep paying attention to your surroundings. Watch for other vehicles and hazards, such as potholes and parked motor vehicles, along the route.
- Watch for vehicles turning into or exiting at driveways.
- Stop at all intersections, and check for traffic before crossing. When possible, cross at locations where adult school crossing guards are present. It may be best to dismount and walk your bicycle across large or busy intersections.
- Ride in a straight line with two hands on the handlebar unless signaling.
- Follow all traffic laws, including:
 - If riding in the street, ride in the same direction as motor vehicles, on the right hand side of the street, about two or three feet from the edge.
 - Use hand signals when turning and stopping.
 - Obey traffic signs and signals.
- Always check in front and behind for traffic before changing lanes, crossing intersections or turning.
- If riding on a sidewalk or path, ride slowly and be prepared to stop quickly.

Personal Safety

In addition to pedestrian and bicyclist skills, many schools teach children ways to avoid potential risks in their environment beyond traffic, like criminal activity and people that may want to harm them. Fear of abduction or assault discourages some parents from allowing their child to walk or bicycle to school. Although child abduction, particularly near a school, is very rare, SRTS programs need to address not only the real dangers from crime, but also parents' perceptions. Whether dangers are real or perceived, both affect parents' decisions to allow their children to walk or bicycle to school. Some students and parents worry about bullying by other children while walking or bicycling to school. Schools address bullying as part of violence prevention programs, which can be incorporated into the SRTS program.

Walking school buses can help address personal safety concerns by providing a way for children to walk in a group with adult supervision.

Health and Environment Benefits

Beyond safety, education for children may also address benefits to personal health and the environment provided by walking and bicycling. Health benefits often focus on the importance of physical activity. Children learn about how the cardiovascular and muscular systems function, and how physical activity can strengthen these systems. Although most children engage in physical activity



primarily because they think it is fun, highlighting the relationship between personal health and physical activity gives children another reason to be physically active.

Education may also include information about the impact of motor vehicle use on air quality and limited energy resources. Children learn that they can help keep the environment healthy by walking and bicycling instead of traveling in a motor vehicle.

In relation to Safe Routes to School (SRTS), parents play a role in their child's safety in three ways:

1. As teachers of safety behaviors.
2. As drivers on the school campus during drop-off and pick-up times.
3. As drivers near the school.

Different messages apply to parents for each of these roles. Parents, as teachers, practice safe walking and bicycling with your child. Parents teach and model safe behavior for their children. Children have the best chance of retaining and applying walking and bicycling skills if they have a chance to practice them with supervision and reinforcement. It is similar to the need to teach teens to drive; new drivers are not expected to have the skills or knowledge to drive safely without receiving instruction.

Parents need detailed information about proper safety practices specific for their child's age. Most parents naturally want to do what is best for their child and need to be aware of the appropriate safety messages to share with their child. An informed and interested parent can identify safe walking and bicycling routes for his or her child, teach his or her child rules as they walk or bicycle, and model safe behavior themselves.

Follow correct drop-off and pick-up procedure if driving to the school is necessary. Drivers need to know the appropriate locations for pick up and drop off at the school and any special rules that apply at these times. A well-designed drop-off and pick-up procedure along with drivers who correctly follow the procedure will improve the safety of everyone arriving to or departing from school.

Parents, as drivers near the school, are no different than other drivers. Some contribute to safety problems by speeding through school zones and failing to obey traffic signals.

Many parents, community members, and school personnel drive near the school on most weekdays. Each driver can contribute to or detract from the safety of the walking and bicycling environment for children. Failure to comply with traffic laws and posted speed limits are examples of driving behaviors that result in unsafe conditions.

A National Safe Kids study of 27 cities found that of the vehicle speeds recorded during the 30 minutes before and after school, 65 percent of drivers exceeded the posted speed limit with 23 percent of these drivers traveling at least 10 mph above speed limit. This is



consistent with field observations on Kilmer Street near Spellman Elementary School. The need to reduce the number of speeders and the speeds at which they travel is crucial to ensure the routes to school are safe. As motor vehicle speed increases, so does the pedestrian injury severity and the likelihood of death. A pedestrian struck by a motor vehicle moving 20 mph has a 5 percent chance of dying. As motor vehicle speed increases to 30 mph and 40 mph, the likelihood that the pedestrian will be killed increases to 45 percent and 85 percent, respectively. Slowing motor vehicle speeds not only reduces the chance of a pedestrian-vehicle collision because of the reduced stopping distance required, but it also reduces the chance of a pedestrian fatality or serious injury.

Along with speeding, failure to comply with stop signs and traffic signals also contributes to unsafe environments. A National Safe Kids study on driver behavior at intersections in school zones and residential neighborhoods found that 45 percent of drivers failed to completely stop at the intersection even though a stop sign was present, and of these, 7 percent did not even slow down for the sign. Although the study found that drivers were more likely to stop when a pedestrian was present compared to not present, 36 percent of drivers violated the stop signs when pedestrians were waiting at the curb to cross and 24 percent of drivers did not come to a complete stop at the intersection while pedestrians were crossing.

Additionally, a study of crosswalks in school zones shows that approximately 30 percent of drivers stopped within or beyond the boundaries of crosswalks, thus blocking the pedestrian path.

Drivers traveling at safe speeds, yielding to pedestrians and bicyclists, and stopping at stop signs and crosswalks help create a pedestrian and bicyclist-friendly environment.

v. Student Drop-Off and Pick-Up

The drop-off and pick-up process must be safe and efficient for students and parents arriving by bus or private motor vehicle, as well as those who arrive on foot and bicycle. Some parents are reluctant to allow their children to walk or bicycle to school due to the traffic congestion and perceived traffic danger during student arrival and dismissal. This often results in more parents driving their children to school which adds to the extra congestion and safety problems at the school, creating an increasing cycle of more traffic problems and less walking. This problem currently exists behind Spellman Elementary School. By improving the drop-off and pick-up process, traffic conditions become safer for all, including pedestrians and bicyclists. Better organized and safer traffic conditions will ease the concerns of parents, making them more willing to allow their children to walk or bicycle.

In addition to the engineering recommendations at the school drop-off/pick-up locations, the school's arrival and dismissal procedures should be explained in multiple media formats to children's parents including internet, brochures, and phone calls if possible. As referenced in the enforcement section of the report, the existing staggered dismissal schedule could be enforced by the existing crossing guard located behind Spellman Elementary School. For example, parents parked more than five minutes without picking



up a child could be asked to return at the appropriate time as a number of parents were observed queuing behind the school in advance of the school dismissal.

A review of the St. Ambrose School drop-off/pick-up zones indicated acceptable operations. St. Ambrose School utilizes older students to coordinate the process, and field observations indicated that they performed in an acceptable manner. It is recommended that the students volunteering for these positions be given an advanced education course using this document and the Maryland Safe Routes to School brochure which can be obtained from MSHA.

D. Evaluation

Around the country, communities are conducting Safe Routes to School (SRTS) programs in order to enable and encourage children to walk and bicycle safely to school. Communities tailor a combination of engineering, education, encouragement and enforcement strategies to address the specific needs of their schools. Evaluation is an important component of any SRTS program. Evaluation is used to determine if the goals of the strategies are being met and to assure that resources are directed toward efforts that show the greatest likelihood of success. Also, evaluation can identify needed adjustments to the program while it is underway. Every SRTS program, no matter the size, can benefit from evaluation. For local programs, evaluation allows for:

- Making sure that the underlying problem is identified so that proper strategies to address the problem are picked. Sometimes a SRTS program begins without a good understanding of the underlying issues resulting in a less successful program.
- Setting reasonable expectations about what the program can do. By knowing the starting point, SRTS programs can set specific and reasonable objectives.
- Identifying changes that will improve the program. Part of evaluation is monitoring what happens throughout the life of a project so that mid-course corrections can be made, if needed, to improve chances of success.
- Determining if the program is having the desired results. This is a primary purpose of any evaluation and can be used to inform funding sources, the media, and the public to help build support for SRTS.

There are benefits that extend beyond an individual program. Data collected and shared by local programs can influence future funding at the local, state and national level. There are, however, a number of potential funding sources at the state level that could be solicited for SRTS engineering improvements. The current MWCOG TIP (2009-2014) indicates over \$80,000 is available in the State of Maryland for congestion management, and over \$60,000 is available for safety and spot improvements. In addition, the SRTS programs are funded at \$183 million for the year 2009 at the federal level. More information on the federal funding can be located at:
<http://www.safety.fhwa.dot.gov/saferoutes/funding/>



Figure 16. Pedestrian Hotspot Locations

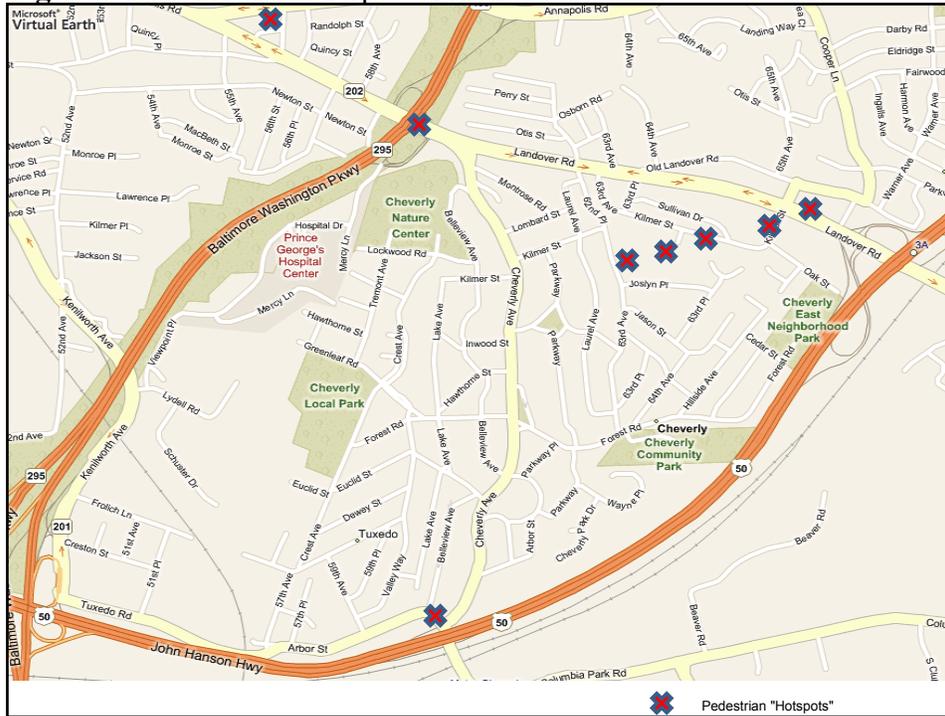


Figure 17. Safe Routes to School Plan Proposed Improvements





VII. MD 202 AT KILMER ROAD INTERSECTION STUDY

MD 202 at Kilmer Road was identified by the Town of Cheverly as a candidate for a safety improvement study. The intersection is located near numerous multi-family housing units, and retail and commercial establishments. The intersection of MD 202 at Kilmer Street is also located within walking distance of both schools. There are a number of retail establishments and multi-family housing units near the intersection which generate significant amounts of foot traffic at the intersection. As a part of the streetscape project, new, textured crosswalks were installed along with signage that discourages mid-block crossings.

This particular land use form leads to significant pedestrian demand which poses additional operational and safety issues at the subject intersection. MD 202 is a six lane, urban arterial with a posted speed limit of 35 mph in the study area. Kilmer Street is a local street that serves residential neighborhoods to the south of MD 202 as well as Spellman Elementary School. Notable characteristics of the study intersection include:

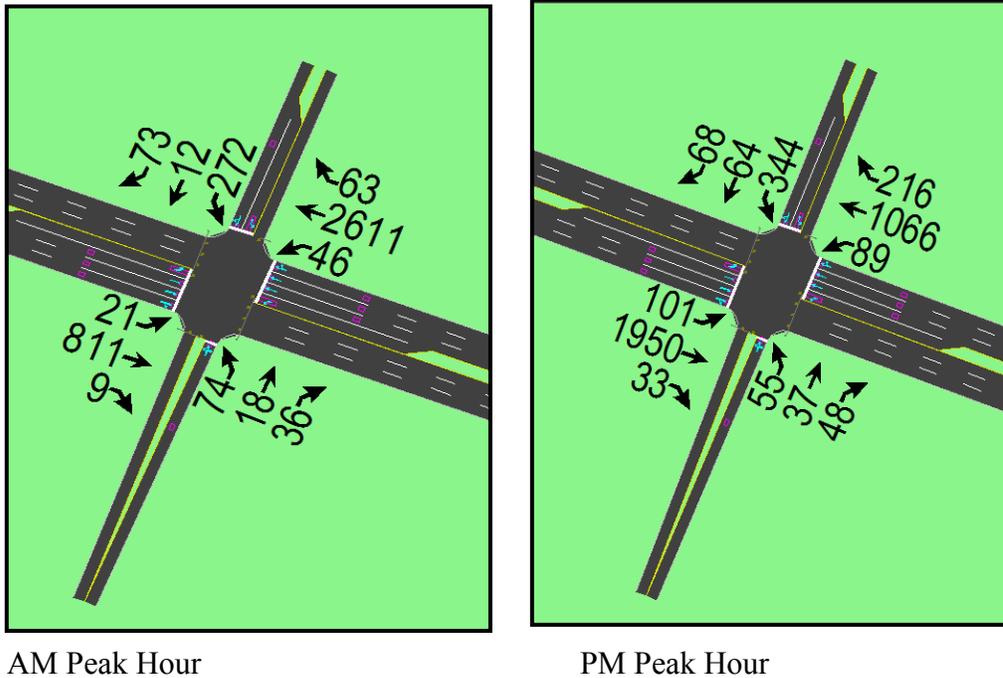
- The intersection is located immediately adjacent to the US 50 off ramp. The westbound US 50 off ramp carries traffic at high speeds and limited visibility when approaching the study intersection
- Textured crosswalks are present at all of the approaches; these crosswalks were part of the MD 202 streetscaping project
- New sidewalks are located on MD 202; these sidewalks were also installed as part of the streetscape project and include an approximately 6” setback from the travel lane, providing for increased pedestrian safety
- The pavement and signs are in good condition
- The adjacent land uses are primarily multi-family residential, retail, and commercial
- Bus stops are located on the east and west side of Kilmer Street
- The traffic signal at the intersection is currently being upgraded with new signal and pedestrian heads, poles, and controller

A. Existing Conditions

Existing peak hour turning movement counts collected in November, 2006 were obtained from the Maryland State Highway Administration, and used in the existing conditions analysis. The counts were collected at the study intersection from 6:00 AM to 7:00 PM. **Figure 18** summarizes the existing peak hour traffic volumes. The count data indicates that the existing peak hours occur from 7:00 AM to 8:00 AM and 5:00 PM to 6:00 PM.



Figure 18. Existing AM and PM Peak Hour Volumes at MD 202 and Kilmer Rd



The methodology of the Highway Capacity Manual (HCM) was used to evaluate capacity for the study intersection during the AM and PM peak hours. A Synchro traffic model was developed and coded for each peak hour with the existing conditions data including roadway geometry, traffic volumes, pedestrian volumes and signal timing and phasing data as inventoried and documented in the field or as provided by Maryland SHA. The existing SHA counts were factored to the year 2009 using an annual growth factor of 2%, which was based on historical count data trends near the intersection.

Performance measures of effectiveness for HCM analysis include level of service, delay, and volume-to-capacity (v/c) ratio. The level of service (LOS) is a letter designation that corresponds to a certain range of roadway operating conditions and F indicating the worst, or failing, operating condition. The v/c ratio is the ratio of the current flow rate to the capacity of the intersection. This ratio is often used to determine how sufficient capacity is on a given roadway. Generally speaking, a ratio of 1.0 indicates that the roadway is operating at capacity. A ratio of greater than 1.0 indicates that the facility is failing as the number of vehicles exceeds the roadway capacity.

The results of the existing conditions capacity analysis are summarized in the following table; detailed HCM worksheets are included in **Appendix B**.

Table 2. Summary of Existing Capacity Analysis; AM (PM)

Intersection	AM LOS	AM v/c	PM LOS	PM v/c
MD 202 at Kilmer Street	D	0.98	C	0.87



The results of the existing conditions capacity analysis indicate that the intersection is currently operating at a LOS D during the AM peak hour a LOS C during the PM peak hour with a volume to capacity ratio near 1 during the AM peak hour. This volume to capacity ratio is consistent with field observations which indicated queuing conditions beyond the US 50 ramp in the westbound direction of MD 202 during the AM peak hour.

B. Crash Analysis

In addition to the operational analysis, a crash analysis was conducted at the intersection to identify crash patterns and develop countermeasures to reduce the number of crashes at the study intersection. Particular attention was given to crashes involving pedestrians and/or bicyclists. The most recent four years of crash data (2005, 2006, 2007, and 2008) was provided by the Maryland State Highway Administration (MSHA).

Table 3. Summary MD 202 at Kilmer Street of Existing Crash Analysis

	Pedestrian	Angle	Left Turn	Rear End	Sideswipe	Fixed Object	Other
Number of Crashes	2	5	6	14	1	1	3

The results of the crash analysis indicate that there were a total of 31 crashes at the study intersection, including 14 rear end collisions, 6 left turn collisions, 5 angle collisions, and 2 crashes involving pedestrians. Thirteen of the crashes occurred at night, six occurred in wet conditions, thirteen crashes had injuries associated with them, and there was one fatality in 2008. Though rear-end collisions are typically associated with less property damage and injuries than angle collisions, the one fatality at the intersection was associated with a rear end collision. While the pedestrian crashes did not result in any fatalities, minimizing, if not eliminating pedestrian collisions at this intersection is one of the goals of the study.

A Professional Traffic Operation Engineer observed traffic conditions during both peak and off-peak hours, specifically focusing on driver behavior, traffic and pedestrian patterns, geometry, and overall traffic operations. The following summarizes the observations:

- Mid-block pedestrian crossings east of Kilmer Street are unsafe due to the high speeds on MD 202 and the off ramp from US 50
- Mid-block pedestrian crossings occur south of MD 202 on Kilmer Street despite the presence of crosswalks nearby
- There are no sidewalks on the west side of Kilmer Street west of MD 202
- The existing protected/permitted left turn phasing on MD 202 requires turning vehicles to travel across three lanes of traffic traveling at speeds over 40 mph





C. Recommendations

Based on the analysis presented in the report, the suggested changes or improvements are summarized below.

- Work with Town and business owners to install pedestrian barriers along MD 202 within the commercial parcel property as previously recommended in the SRTS Plan

- Advantages-eliminates mid-block pedestrian crossings
- Disadvantages-cost of installation

Tax-increment financing measures or Livable Community/ Neighborhood Conservation Grants could be used to help pay for improvements on private property such as the shopping center.

- Expand education strategies from the SRTS plan to the surrounding neighborhoods to discourage mid-block pedestrian crossings

- Advantages-could reduce mid-block crossings
- Disadvantages-limited effectiveness without enforcement

- Install sidewalks on the west side of Kilmer Street north of MD 202

- Advantages-improves pedestrian safety at intersection
- Disadvantages-cost of installation

- Install pedestrian facilities and re-orient pedestrian traffic in the retail area located at the northeast corner of the intersection

- Advantages-improves pedestrian safety in retail area and intersection
- Disadvantages-cost of installation; coordination with private landowners required

- Change protected/permissive left turn phasing on MD 202 to protected left turn phasing

- Advantages-reduces angle and left turn collisions
- Disadvantages-potential for added intersection delay

- Install rumble strips and speed advisory on westbound US 50 off ramp

- Advantages-reduces speeds on US 50 off ramp
- Disadvantages-cost of installation; noise impacts

In the long-term, it is suggested to reconfigure the on and off-ramps to US 50 to reduce turning radii which will slow merging and diverging vehicles along MD 202 west of US 50.

These issues and recommendations are shown in **Figures 19** and **20**.





Figure 19. MD 202 and Kilmer Street Safety Issues

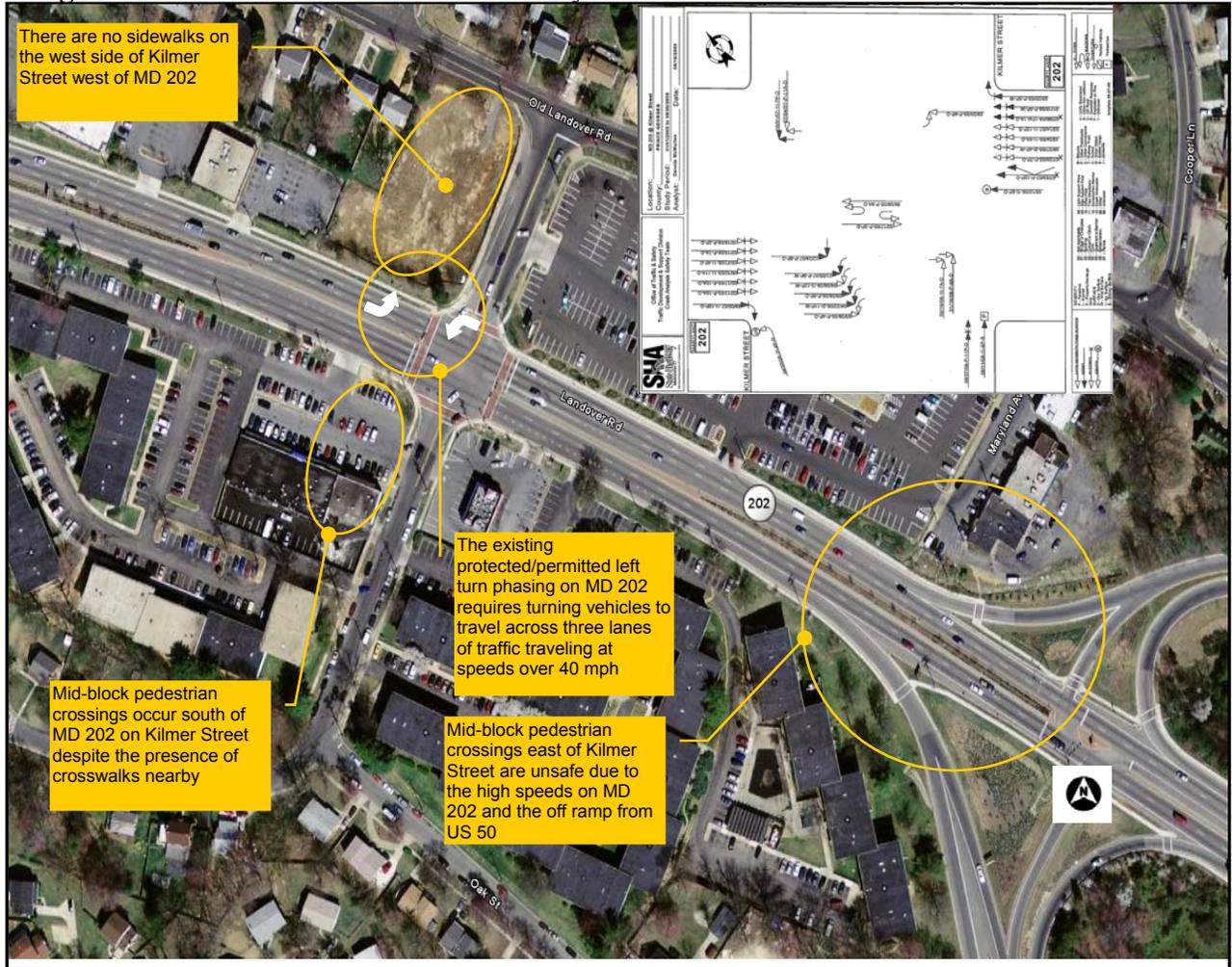
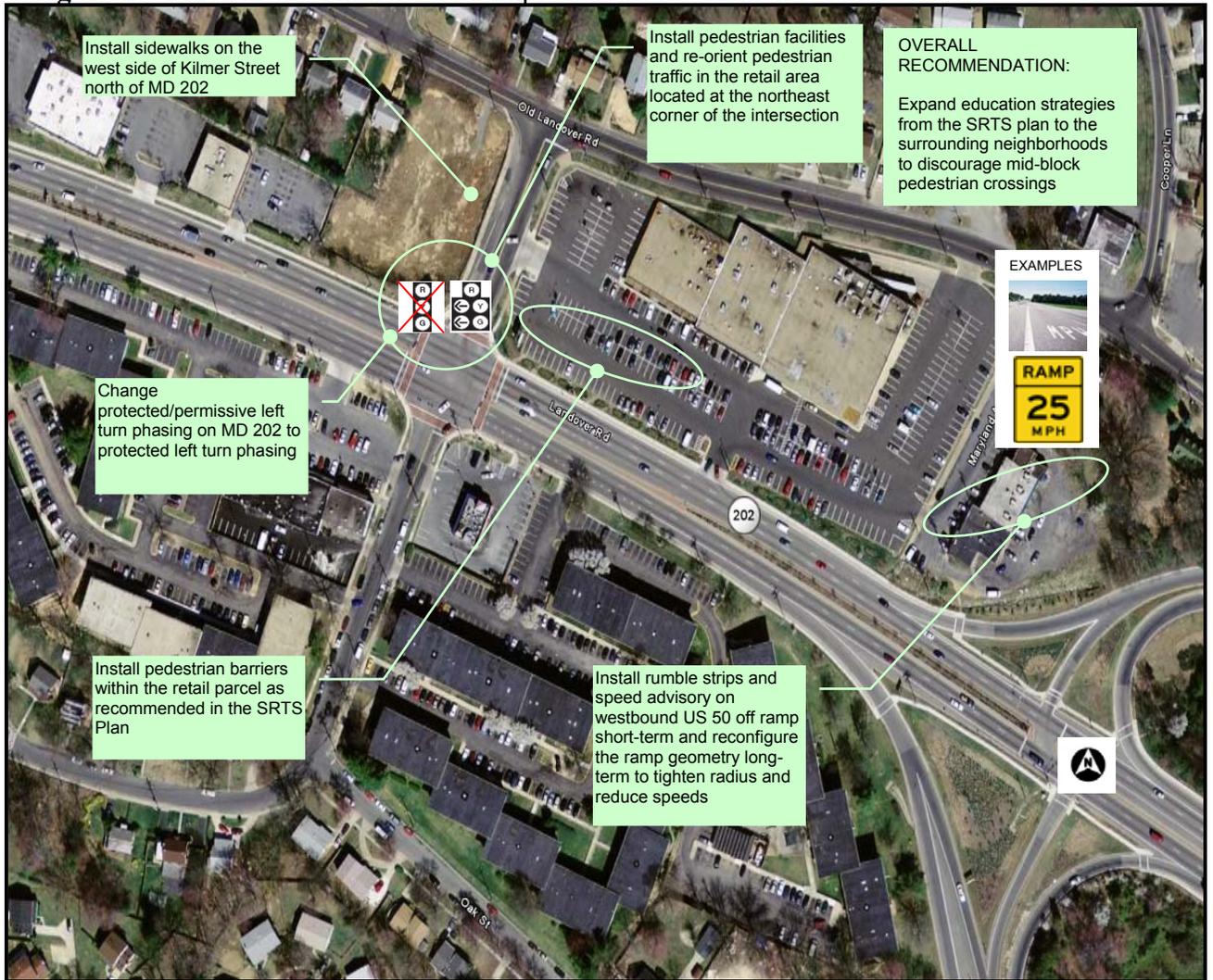




Figure 20. MD 202 and Kilmer Street Improvement Recommendations



VIII. TUXEDO ROAD AND ARBOR STREET IMPROVEMENTS

The Tuxedo Road and Arbor Street corridor is currently a two-lane two-way roadway designated at Maryland State Route 459 that is owned and maintained by the State Highway Administration. The roadway primarily serves industrial land uses between MD 201 and Cheverly Avenue, but also serves the Cheverly Volunteer Fire Department, access ramps to and from US 50 and the Judith Hoyer Early Childhood Educational Center.

Currently, the roadway does not have any sidewalks, bicycle accommodations or shoulders or curbs. The pavement width is approximately 24', and the posted speed limit is 25 miles per hour. Over 40 access points (driveways) are located within the one





mile segment. The average daily traffic volume is 6,800 vehicles per day, which includes 8% truck traffic.

One traffic signal is located at the intersection of Arbor Street and Cheverly Avenue, which provides designated crosswalks, sidewalks, ADA ramps, countdown pedestrian signals and accessible pedestrian pushbuttons.



Tuxedo Road 57th Avenue to 59th Place looking west

Existing traffic volumes were obtained from SHA and are illustrated in Figure 21 below. In addition, a capacity analysis was performed for each intersection based on the methodologies in the Highway Capacity Manual. The level of service (LOS) is a letter designation that corresponds to a certain range of roadway operating conditions. The levels of service range from A to F, with A indicating the best operating conditions and F indicating the worst, or a failing, operating condition. Table 4 summarizes existing level of service at each intersection.

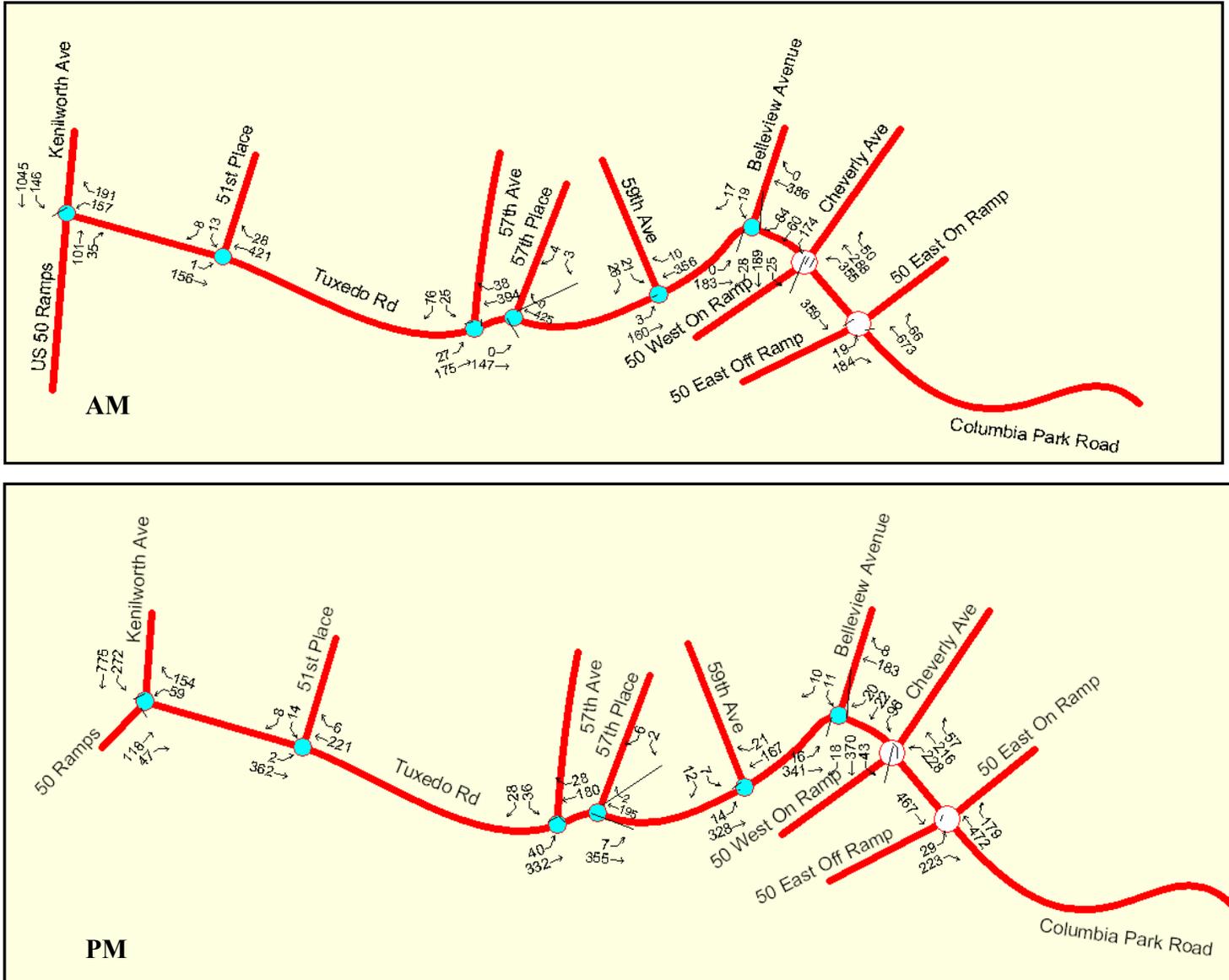
Table 4. Summary of Existing Tuxedo Road Intersection Capacity Analysis

Intersection	AM Level of Service	PM Level of Service
Tuxedo Road at Kenilworth Ave	C	C
Tuxedo Road at 51 st Place	B	B
Tuxedo Road at 57 th Ave	B	B
Tuxedo Road at 57 th Place	B	B
Arbor Street at 59 th Ave	B	B
Arbor Street at Belleview Ave	B	B
Arbor Street at Cheverly Ave	B	C
Columbia Park Road at US 50 EB Ramp	C	C

1- Level of Service at unsignalized intersection based on stop-controlled movement only



Figure 21. Existing AM and PM Peak Hour Volumes on Tuxedo Road/ Arbor Street



Conceptual plans from the SHA’s Neighborhood Conservation Study were obtained and refined to develop a roadway design that accommodates pedestrian and bicycle traffic and to develop ultimate roadway cross-section elements, including sidewalks, parking, bicycle lanes, medians, turn lanes and appropriate traffic control based on planned mixed-use redevelopment along this corridor.



The proposed redevelopment as presented in Figure 9 and the Tuxedo Road/ Arbor Street Map Amendment could add up to 404 new dwelling units, 227,000 SF new office space and 186,000 SF new retail space. Based on vehicular trips rates available in the Institute of Transportation Engineer's *Trip Generation Handbook, 8th Edition*, and applying adjustment factors for transit, pedestrian and bicycle trips, ***over 10,000 new vehicle trips per day and up to 1,750 new parking spaces could be anticipated.*** This would more than double the number of vehicles per day on Tuxedo Road. Further analysis is recommended to consider the traffic impacts such as intersection traffic controls and turn lane requirements.

The development of the new roadway cross-section focused on providing a pedestrian, bicycle, and transit-friendly streetscape. Proposed roadway design elements include:

- One 12' travel lane in each direction
- One 4' bicycle lane in each direction
- Curb and gutter along the full length
- Consolidation and elimination of access points
- 5' sidewalk on the north side of the roadway
- Landscaping buffers on the south and north side of the roadway
- Bus stop enhancements such as benches and shelters
- A roundabout with gateway signage/ public art at the intersection of Tuxedo Road and 57th Avenue.

Full plan sheets including cross-sections, are included in **Appendix A**.

IX. FINAL PLAN

This section ties together the full analysis and presents the final non-motorized plan. Based on the field inventory, review of previous plans, and stakeholder and public input, a draft network of trails, sidepaths, sidewalks and pedestrian accessibility improvements, and on-road bicycle lanes and routes was developed. In addition, modal priorities, performance measures to benchmark the Plan's success and prioritization, next steps and funding strategies are also presented.

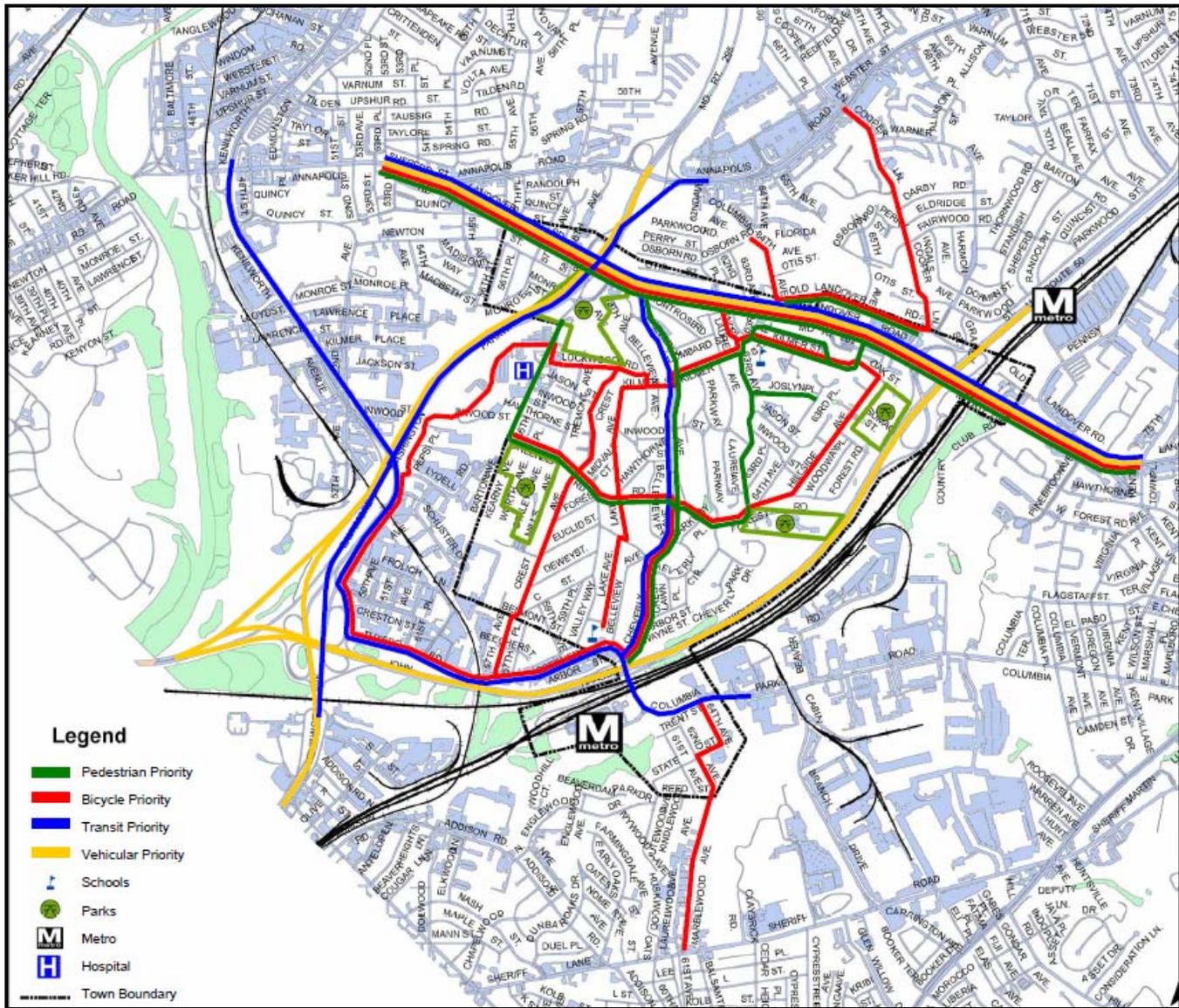




A. Modal Priorities

The key element in shaping the overall non-motorized plan is to establish priority corridors for each mode of travel, such as automobile, pedestrian, bicycle and transit that connect key land uses and destinations within and around the Town. Thus, the network can be focused to match non-motorized facility type with the appropriate roadway based on functional classification, geometry, traffic characteristics, etc. The suggested modal priorities for the Town are shown in Figure 22 below.

Figure 22. Cheverly Modal Priority Map





The priorities for each roadway are summarized as follows:

- MD 202 – vehicular, bicycle and transit
- MD 201 – transit, automobile
- US 50, Baltimore-Washington Parkway - automobile
- Cooper Lane/ 64th Avenue – bicycle
- Old Landover Road – pedestrian, bicycle
- Hospital Drive/ Pepsi Place – bicycle
- Tuxedo Road/ Columbia Park Road – bicycle, transit
- Cheverly Avenue – pedestrian, bicycle and transit
- Crest Avenue, Lake Avenue – bicycle
- Hillside Avenue/ Forest Road/ Greenwood Road – pedestrian and bicycle
- 64th Avenue/ Marblewood Avenue – bicycle
- Lockwood Road/ Kilmer Street – pedestrian and bicycle
- 63rd Avenue, Joslyn Place - pedestrian

To support these recommendations, *accommodations for the prioritized mode must precede consideration over improvements, operations or capacity for other modes in the corridor* (e.g. bicycle lane replacing a second travel lane, pedestrian signal disrupting traffic progression).

B. Proposed Facilities

Based on the field inventory, review of previous plans, stakeholder and public input, a recommended network of trails, sidepaths, sidewalks, pedestrian accessibility improvements, and on-road bicycle lanes and routes was developed. Development of facility type, surface and width is based on several bicycle and pedestrian design resources including the AASHTO *Guide for the Development of Bicycle Facilities*, SHA bicycle and pedestrian design guidelines, and FHWA Accessibility Guidelines.

The Cheverly to Anacostia River Connection will connect Cheverly with the Bladensburg Marina and Anacostia River Park through a combination of on- and off-road trails, sidewalks and bike paths. The route will also connect with other biking trails throughout the town. Much of the sidewalk, trail, and right of way for the route already exists; the different pieces just need to be connected, including Newton Street, MD 201 sidepath, Lloyd Street, Schroeder Street, Belmont Street, and 52nd Avenue. Improvements include:

- Sidewalks and share-the-road signs on Newton Street, Schuster Drive, , Lydell Road and 52nd Avenue
- Upgrades to the traffic signal at MD 201/ Lloyd Street to enhance pedestrian access
- Cycle track or shared use path along MD 201 between 52nd Avenue and Lydell Road





Beaver Dam Creek Trail will connect the Anacostia River Park Trail in the vicinity of the Aquatic Gardens with the Cheverly and Landover Metro Stations. The trail will follow US 50 and the Metro rail tracks just south of Cheverly. It is proposed for the trail to be an 8-foot wide paved trail suitable for biking and walking. There are a few points along the proposed trail route where rail tracks will need to be crossed. It is proposed that small bridges be installed over the tracks to avoid conflicts with the trail.

Parkwood Street Trail will connect Cheverly with the Landover and New Carrollton Metro Stations. An 8' to 10' sidepath is proposed for the east side of Parkwood Street. An 8' paved trail is proposed on the median of 73rd Avenue from Parkwood Street to Upshur Drive. The trail is suggested to follow 75th Avenue from Upshur, to Ardwick-Ardmore Road and cross East- West Highway at Ellin Road to the New Carrollton Metro Station. A pedestrian bridge is also recommended to connect from Parkwood Street to the Landover Metro.

MacGruder Spring Trail will connect Cheverly with the Landover Metro Station and provide a recreational route connecting Cheverly Community Park and Cheverly East Neighborhood Park. It is recommended the trail be an 8' paved surface trail, and utilize a portion of the existing walking track within the park. Based on the proposed alignment through some existing wooded areas with small streams, one or two structures such as retaining walls, bridges and/ or boardwalks would be necessary to complete the connection.

The Hospital Trail will connect between Lydell Road, Euclid Park along the existing trails, Hawthorne Street, Greenleaf Road and Prince Georges Hospital. The trail goes through an area that is currently overgrown with tall grass and shrubbery. A switchback or other grade reducing technique may be needed to make steep portions of the trail passable to both bike riders and walkers.

Columbia Park Trail connects Cheverly to the WB&A Trail. Columbia Park Road has sidewalks on both sides of the road for the entire route. The road carries approximately 17,000 vehicles per day with narrow 10.5' to 11' lanes. It is suggested to widen the sidewalks along the north side to create a shared-use path, and explore further the possibility of a roadway diet to provide on-road bicycle lanes

Quincy Street trail connects Cheverly with the Anacostia River Trail and Bladensburg Marina. Quincy Street can be narrowed to accommodate a sidepaths. Adding an 8' wide shared use path on the north side of Quincy Street is proposed. Construction of a pedestrian bridge over the CSX railroad tracks will be required to complete the connection.

Cabin Branch Trail will connect the town of Cheverly and Cheverly Metro to Seat Pleasant and the Addison Road Metro. Columbia Park Road has sidewalks which could be widened to accommodate bikers to Cheverly Park. An existing fitness trail loops through Cheverly Park. This trail can be expanded to a 10' paved trail that will continue





through the woods to the west of Cabin Branch Dr and lead south to Sheriff Rd, the limit of this study, and onto Seat Pleasant and the Addison Road Metro Station.

In-Town Trails:

- An 8’ natural surface loop trail is proposed through Cheverly Nature Park to open the park up for residents to enjoy
- As part of the Cheverly to Anacostia connection, a southward extension of the Hospital Trail is recommended, connecting to the paper portion of Euclid Street, and then turning south at the Cheverly Swim club and tying into the existing and paper portions of Belmont Street, ending at Arbor Street at the Early Childhood Education Center. An 8’ natural surface trail is recommended.
- A 10’ natural surface trail is recommended in the alley between Parkway Street and Cheverly Avenue
- A 10’ natural surface trail is recommended north of Joslyn Street to connect 63rd Avenue/ Gladys Noon Spellman Elementary School with Cheverly East Community Park.

On Road Bicycle Facilities

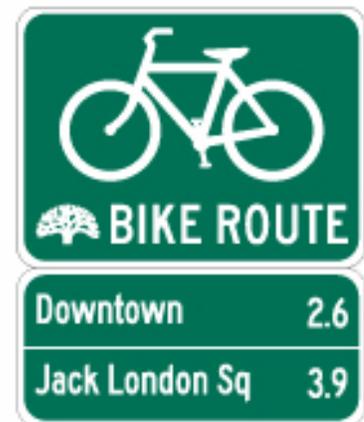
- Lockwood Rd is a wide and lightly traveled residential street. It is recommended that share the road signs be installed.
- Hospital Dr is a 26’ wide road that is recommended as a share-the-road portion of the designated Town Loop Trail.
- Pepsi Pl is a very wide road on a steep hill. Bike lanes are recommended.
- Crest Ave and 57th Avenue are low volume and relatively flat routes recommended as a share-the-road designated north-south connection.
- Greenleaf Rd is a 36’ wide residential street that should have share the road signs. It connects to the hospital trail.
- Kenilworth Ave north of Tuxedo Road is a divided highway that is unsuitable for bicycling. There is a wide shoulder and some room on the east side of the road that may be suitable for the construction of a separated sidepath or cycle track between Lydell Road and 52nd Avenue, in order to complete the western portion of the Town Loop Trail and connection to the Anacostia River Trail.
- Tuxedo Road and Arbor Street are designated as pedestrian and bicycle friendly ‘main streets’ in the future Cheverly Metro Transit Oriented Development. See roadway concept plans in report for more detailed proposed typical sections, which include designated bicycle lanes.
- 64th Avenue, State Street and 62nd Avenue are all residential streets which could accommodate a designated share-the-road north-south connection between the Cheverly Metro Station and Sheriff Road
- Marblewood Ave is a 36’ wide road with residential and light industrial uses. This road could be designated as a share-the-road facility or fitted with bike lanes if parking was only allowed on one side of the street. The proposed MD 202 and MD 450 route shown would require sidewalk improvements such as a shared use path to provide a safe cycling environment. Due to steep slopes on the north side





- of the roadway, and the attempt to lessen the amount of impacts to residential and commercial frontage while minimizing crossings of driveways and side streets, the path should follow the south sidewalk alignment from east of US 50 to MD 450, and then along the south side of MD 450 to the Bladensburg Marina entrance. Minor geometric improvements may be needed at the BW Parkway ramps, Kenilworth Ave ramps and CSX tracks, as well as possible divided trail sections around existing utility poles.
- 62nd Place is a one-way 16’ wide residential street which is appropriate for share-the-road signs. It also has side walk on the west side of the road. This will provide an important connection for bikers and pedestrians to MD 202.
 - North of Landing Way, Cooper Lane is a four lane road. It is recommended to install share-the-road signs along the road and to consider bike lanes south of Landing Way where the road narrows to two lanes and has wide shoulders. Cooper Lane is a hilly road which may make it unpopular for bikers.
 - 64th Avenue is a 30’ wide residential street that would be ideal for share the road signs. The street is closed to vehicle traffic north of Otis Street and picks up again south of Annapolis Road. The streets are connected by a narrow footpath. This footpath should be expanded to an 8’ paved trail.
 - Old Landover Road is a two-lane low volume road with low traffic speeds and no shoulders. Share-the-road signs are recommended.
 - Kilmer St and Oak St are between 20’ and 30’ and have low volumes. Portions of these streets should be designated as a share-the-road links of the Town Loop Trail.
 - Share-the-road signs should be installed along Lake Ave as a designated north-south bicycle route. It is proposed that an 8’ paved sidepath be constructed from Arbor Street to Lake Avenue through the Children’s Center.
 - Forest Rd is recommended as a share-the-road portion of the designated Town Loop Trail.
 - Hillside Ave is a wide residential street that is ideal for share-the-road signs. There is enough room for bike lanes if parking is restricted to one side of the street. The road is closed to vehicular traffic between Maureen Court and Oak Forest Court, and is connected by a narrow foot path. This path should be enlarged to an 8’ paved surface trail and a small bridge should be constructed to cross a small stream. ***Any trail connection along 64th Street or off Hillside Drive should be identified as long term recommendations requiring additional community input and analysis.***

Lastly, wayfinding signage for bicyclists is also recommended in conjunction with on-road bicycle route designation signs to further aid cyclists in finding Metro, shopping areas, and other destinations. An example of wayfinding signing designed for similar bicycle networks is shown to the right.





Detailed conceptual plans with photographs and alignments for all proposed facilities are included in **Appendix B**.

C. Performance Measures

To ensure the success of the plan, performance measures were identified to benchmark the Plan's success in supporting the Town's goals.

- Recreational enhancement:
 - Track the annual total number of linear feet of sidewalk, bicycle lanes and trails within the Town and available for use by residents

- Public Feedback:
 - Develop *Citizen and User Surveys* designed to seek a) quantitative input for use of existing facilities (before), and improved facilities (after), and b) qualitative input for deficiencies or further improvements

- Mobility:
 - Collect and analyze data along major roadways to develop a Town-wide *Bicycle/Pedestrian Level of Service (BLOS/PLOS) Model*
 - Develop a *Traffic Count Program* to measure change in vehicular traffic volumes before and after the improvements
 - Develop a *Pedestrian/Bicycle Count Program* to measure change in pedestrian/bicycle usage for before/after improvement periods

- Safety:
 - Use the *BLOS/PLOS* model to develop a *Safety Index* for major roadways
 - Monitor vehicular and bike/ped related crashes for the before and after periods to measure changes



D. Recommended Prioritization, Funding and Next Steps

To assist the Town in moving these projects forward, particularly in identifying potential funding mechanisms, addressing critical agency coordination issues, as well as prioritization of construction, a detailed assessment of current grant sources, cost estimates and key design issues was undertaken. **Table 5** below summarizes the prioritization, next steps, funding sources, cost estimates and agency responsibilities.

Improvement	Priority	Next Steps	Funding	Cost Range ¹	Owner/ Responsible Agencies
Anacostia River Trail Extension	Short-Term (0-3 years)	<ul style="list-style-type: none"> • construction 	Already funded		M-NCPPC
Cabin Branch Stream Valley Trail	Mid-Term (3-5 years)	<ul style="list-style-type: none"> • Detailed alignment and feasibility study • 15% concept plans 	http://www.epa.gov/smartgrowth/topics/transportation_funding.htm <ul style="list-style-type: none"> • Transportation and Community and System Preservation Pilot (FHWA), • Climate Change and Transportation/Air Quality (EPA/OTAQ): • Transportation Enhancements Program (FHWA): • Congestion Mitigation and Air Quality Improvement Program (FHWA): • Clean Air Transportation Communities (OTAQ): • Joint Development Policy and Funding Opportunities (FTA): Community Improvement Grants 	\$5.5 Million	M-NCPPC/ SHA, PG DPWT, PG Rec and Parks
Cheverly Metro Pedestrian Bridge	Mid-Term (3-5 years)	<ul style="list-style-type: none"> • alignment and profile • size and location • options for bridge superstructure prefabrication, substructure locations, • plan and elevation details, height and length of retaining walls • Preliminary cost estimate. 	Developer WMATA Joint Development	\$2.5 Million	SHA/ Cheverly, M-NCPPC, WMATA, Developer
Town-Wide On-Road Bicycle Facilities	Short-Term (0-3 years)	<ul style="list-style-type: none"> • Community coordination (Hillside) • Signing and striping plan • Wayfinding sign design • Sign and subplate schedule matrix 	Town with SHA or County sign fabrication	\$0.25 Million	Cheverly/ SHA, PG DPWT



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In-Town Trails	Mid-Term (3-5 years)	<ul style="list-style-type: none"> Community coordination (Hillside) Final alignment and right-of-way assessment Construction plans 	Town, Community Improvement Grants, Transportation Enhancement Funds	\$0.5 Million	Cheverly/ M-NCPPC/ PG Rec and Parks
Hospital Trail	Short-Term (0-3 years)	<ul style="list-style-type: none"> Final alignment and right-of-way assessment Construction plans 	Town, Hospital, Community Improvement Grants, Transportation Enhancement Funds	\$0.25 Million	Cheverly/ Hospital, PG DPWT
Columbia Park Road Trail	Short-Term (0-3 years)	<ul style="list-style-type: none"> Final alignment and right-of-way assessment Construction plans 	http://www.epa.gov/smartgrowth/topics/transportation_funding.htm	\$1.2 Million	PG DPW&T
Beaverdam Creek Trail	Long-Term (5-10 years)	<ul style="list-style-type: none"> Detailed alignment and feasibility study (structures, environmental permits, RR crossing) 15% concept plans 	<ul style="list-style-type: none"> Transportation and Community and System Preservation Pilot (FHWA), Climate Change and Transportation/Air Quality (EPA/OTAQ): 	\$4.5 Million	M-NCPPC/ SHA, WMATA, DDOT, NPS, CSX
Parkwood Street Trail	Short-Term (0-3 years)	<ul style="list-style-type: none"> Final alignment and right-of-way assessment Construction plans 	<ul style="list-style-type: none"> Transportation Enhancements Program (FHWA): Congestion Mitigation and Air Quality Improvement Program (FHWA): 	\$0.25 Million	M-NCPPC/ SHA, PG DPW&T
Magruder Springs Trail	Mid-Term (3-5 years)	<ul style="list-style-type: none"> Detailed alignment and feasibility study (structures, environmental permits) 15% concept plans 	<ul style="list-style-type: none"> Clean Air Transportation Communities (OTAQ): Joint Development Policy and Funding Opportunities (FTA): 	\$0.5 Million	M-NCPPC/ SHA, PG DPW&T
Quincy Street Trail	Long-Term (5-10 years)	<ul style="list-style-type: none"> Detailed alignment and feasibility study (structures, environmental permits) 15% concept plans 	Community Improvement Grants	\$3.0 Million	M-NCPPC/ SHA, CSX, PG DPWT
Cheverly to Anacostia Connection	Short-Term (0-3 years)	<ul style="list-style-type: none"> SHA signal improvements at MD 201/ Lloyd Street SHA 201 shoulder improvements Lydell to 52nd (cycle track) Sidewalk construction on Lloyd Street 	ARRA/ TIGER grants		M-NCPPC/ WSSC, CSX, SHA, PG DPWT
Tuxedo/ Arbor Road Reconstruct	Mid-Term (3-5 years)	<ul style="list-style-type: none"> Modify pedestrian signal timing and phasing at Arbor/ Cheverly Final alignment and right-of-way assessment Construction plans Transfer of Ownership from SHA to Town including parcel annexation 	Town, SHA, Developer	\$0.5 Million	
Safe Routes to School Spellman Elementary –	Short-Term (0-3 years)	<ul style="list-style-type: none"> Construction drawings for new sidewalks, stairs, signing, marking to improve ped access and circulation Install bike racks Brochures and programs 	State and Federal SRTS Grants, Town funds	\$0.25 Million	Cheverly, School, PG DPW&T, SHA
Speed Cameras MD 202 and Kilmer	Short-Term (0-3)	<ul style="list-style-type: none"> Speed data collection SHA application 	Town and Vendor	Funded by vendor	





	years)			with share of revenue stream	
MD 202 @ Kilmer Improvements	Short-Term (03-years)	<ul style="list-style-type: none"> • Install bike racks and pedestrian barriers within shopping center • Install rumble strips on WB US 50 off-ramp • Revise signal phasing • Reconfigure on and off-ramps to US 50 to reduce turning radii which will slow merging and diverging vehicles along MD 202 west of US 50 	Shopping Center Owner SHA	\$0.5	Shopping Center Owner SHA

1 – Cost Estimates include raw construction costs (paving, earthwork, signing, lighting, drainage, structures, landscaping). All other costs (e.g. right-of-way, utilities) are not included but may be covered under contingencies.

IX. CONCLUSION

The Town of Cheverly is served by an extensive system of highways and bus and rail transit. However, it lacks a cohesive, interconnected system of non-motorized facilities to support recreation, lifestyle, and transportation needs for its residents.

With the assessment and vision laid out in this report, the Town is on the way to achieving these goals. Through an establishment of modal priorities, identifying and securing funding sources, partnership and coordination with stakeholder agencies, detailed final design efforts and continued public support, all of the pieces of this vision can move forward and become a reality.

