Table of Contents

Figure Listing

Table Listing

1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

The RBA Group (RBA) in Coordination with the Charles County Department of Planning and Growth Management (PGM) has performed this Transportation Study for the Town of La Plata (Town), Maryland, which includes more than 45 miles of roadway, 7 signalized intersections and 13 miles of pedestrian ways, as displayed in Figures 1-1 (Study Map) and 1-2 (Roadway Network). The purpose of this study was to collect and analyze data on the Town's street network. In addition, this study also evaluates the current bicycle and pedestrian facilities and makes recommendations for improving safety and access to users. The study also evaluates the need for future road improvement to remedy problem areas. In part these objectives were accomplished by developing a computer model of the Town's street network using existing roadway geometry, traffic volumes, and traffic control including traffic signal timing and phasing. The output from this model, network performance measures such as levels of service and average vehicle delays, is used to aid the Town in planning, prioritizing, and funding capital improvement projects as well as managing future growth, planned land uses, and associated traffic impact of proposed developments.

1.2 Background

1.2.1 Context for Transportation Planning

The town of La Plata is rapidly growing in population due to its unique suburban location in proximity to the nation's capital, Washington, DC. Due to urban sprawl, residents are relocating in suburban areas such La Plata for comfort and to get away from the 'big city' lifestyle. La Plata provides a very attractive living environment which has resulted in increased population causing an increase in traffic. This has resulted in an increase in traffic congestion on many of the roadways leading into and out of the town. As a result, the Town decided to conduct a traffic study in order to assess the current roadway capacity needs as well as to develop strategies to mitigate future roadway congestion. The study is intended to assess the existing infrastructure, develop prioritization and implementation strategies to manage the growth within the existing infrastructure, as well as develop a plan to make sound and smart economic investments for needed infrastructure improvements. This study focused on projections of traffic growth through 2030 for the entire La Plata transportation network, including vehicular, pedestrian, and bicycle circulation and facilities. The outcome of this study will assist the Town to make informed decisions for the overall roadway network and intersections, identify deficiencies, and strategize and prioritize improvements needed to reduce congestion on the Town's roadway network with the context of its existing Vision Plan and Comprehensive Plan. The study will also allow the Town to include the planned developments and their future impact to the Town's roadway network in a systematic manner.

The study was undertaken to evaluate the adequacy of the existing transportation facilities and traffic operations, as well as the effects of the planned land development projects on the future roadway network system. The study also looks at the current network of bicycle and pedestrian facilities and makes recommendation on ways to improve safety along those travel paths. Future scenario analyses included planned roadway and intersection improvements, as well as development phases for horizon years 2010, 2015 and 2030. One of the major objectives is to provide the Town with 'modeled' road improvement projects that were found to improve the problem areas identified in the study. The analyses involved the measurements of the adequacies of the existing roadway system from a quantitative and qualitative approach. Recommendations were developed in order to restore quantitative and qualitative adequacy levels.

A majority of the local vehicular traffic travels on Charles Street (MD 6), which runs in the east-west direction with an Average Daily Traffic (ADT) of 21,075 (2008). Most of the residents in La Plata and motorists in adjoining jurisdictions especially in St. Mary's County use Charles Street as a commuter road during the morning and evening peak periods thereby causing sustained traffic congestion on Charles Street during these periods. As a result, at several intersections on the section of MD 6 that runs through La Plata, some delays are experienced by motorists traveling onto or from the side streets, especially at those without exclusive left (protected left) turn lanes. The CSX railroad track bisects the town, and crosses only 3 roadways in the central portion of La Plata.

Another significant transportation concern is the future of U.S. 301 – Crain Highway. Currently, U.S. 301 serves multiple functions including functioning as a local road, a commuter road, and an interstate highway for both interstate and local traffic traveling in a north-south direction. This creates a huge demand on the current facility and whose capacity is fast approaching. Thus, alternative commuter routes are necessary to ease the congestion on U.S. 301. Several alternatives that have been proposed to help ease the congestion on U.S. 301. They include telecommuting, providing MTA busses from La Plata to employment north of Washington and the Ride Sharing matching offered by the Tri-County Council.

Major employment centers lies north of La Plata which include the Andrews Air force base and Federal offices in the nation's capital, Washington D.C. Therefore, commuters from the growing areas in eastern Charles County, such as Dentsville, and in other towns in St. Mary's county use Charles Street for their commute to work. It is hoped that with the proposed construction of a northern bypass – Heritage Green Parkway, some of the commuter traffic through La Plata, especially on Charles Street, will be rerouted around downtown La Plata, which would help ease the traffic congestion in the town.

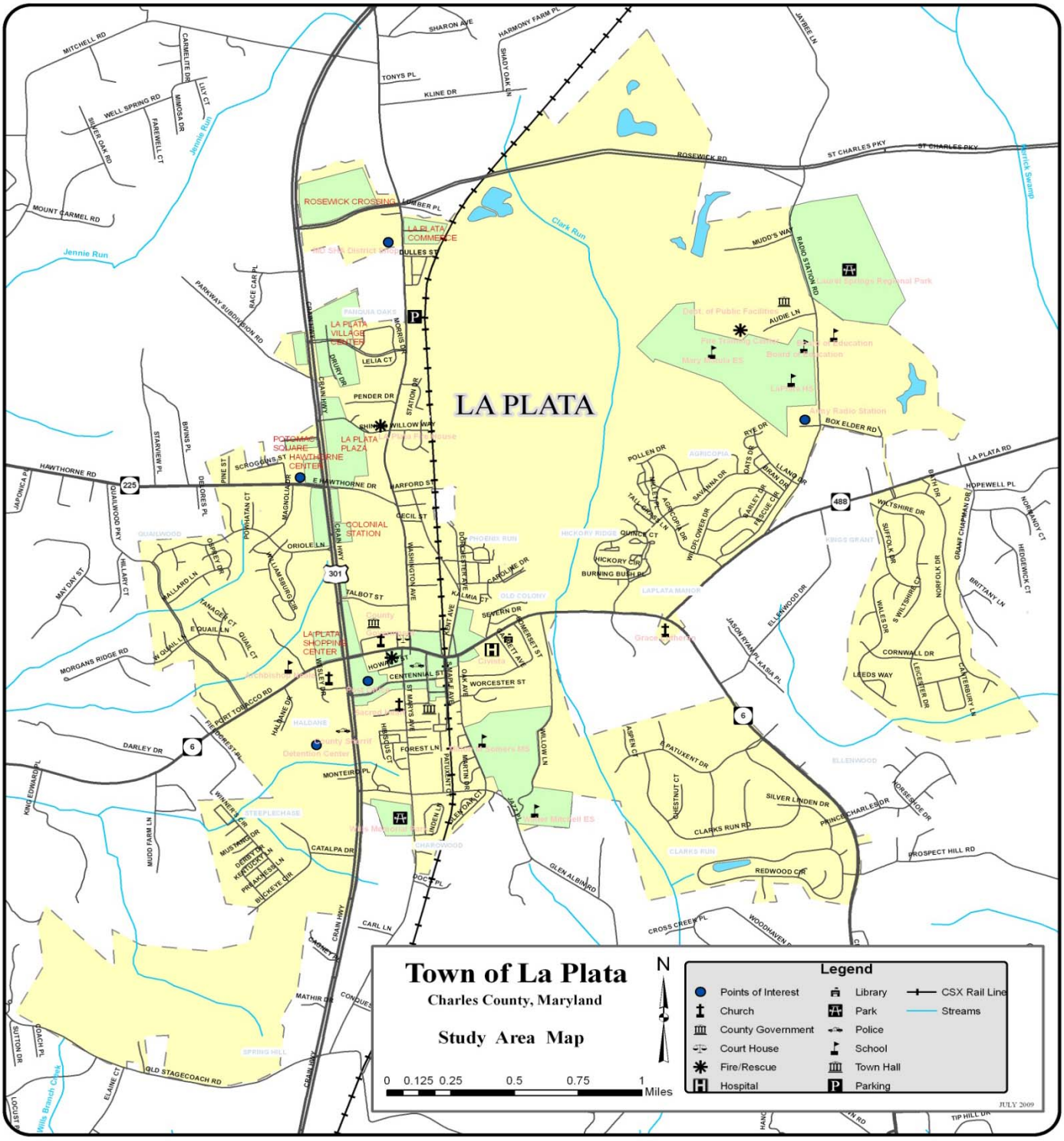

LA PLATA
Town of La Plata
Charles County, Maryland
Study Area Map
N
0 0.125 0.25 0.5 0.75 1 Miles
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
CSX Rail Line
Streams
JULY 2009

Figure 1-1

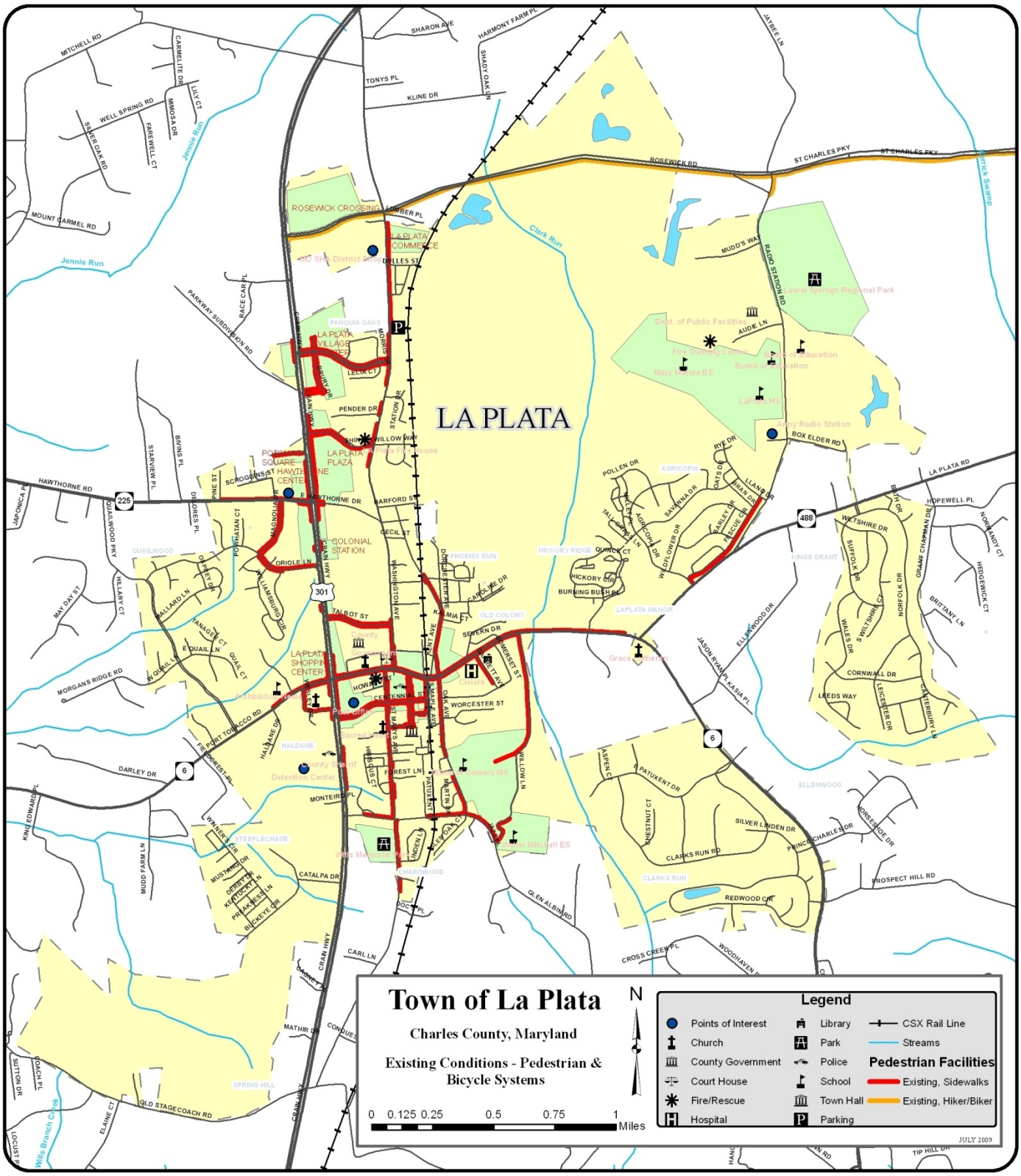

LA PLATA
Town of La Plata
Charles County, Maryland
Existing Conditions - Pedestrian & Bicycle Systems
N
0 0.125 0.25 0.5 0.75 1 Miles
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
CSX Rail Line
Streams
Pedestrian Facilities
Existing, Sidewalks
Existing, Hiker/Biker
JULY 2009

Figure 1-2

1.2.2 Relationship to the Town's Plans

In March of 2000, the Mayor and council adopted a Vision Plan for Greater La Plata (the "Vision Plan"). The visioning process began as a result of the emergence of several concerns among the citizens and officials of the Town. These included traffic congestion, utility capabilities, the future of Route 301 in relation to maintaining and revitalizing the historic downtown area and the character and quality of future residential growth. The Vision Plan developed a plan for the Town and its surrounding areas, which provided the framework for a series of immediate as well as long term actions by the Town, County, State and private sector, to achieve this vision. The vision plan was prepared during the fall and winter of 2000 – 2001 by the Citizen Task Force, working with the consulting team. The plan provides a conceptual layout for the improvement of downtown La Plata, which included proposed roadway improvements to ease traffic congestion. The Town followed the visioning process with "The Plan for the Future of Downtown La Plata" in 2001 and the Comprehensive Plan to provide guidance on land use and transportation improvements in 2002. The Town is currently updating this Comprehensive Plan and has been reviewed in the context of this study.

The recurring themes that are embodied in the goals, objectives, policies and project needs that were established and included in the Town's recent planning efforts related to roadway and transportation improvements include the following.

- Improve the access and movement of traffic with the Central Business District;
- Establish connection between Rosewick Road & Route 6 Connector (now known as La Plata Parkway);
- Expansion to the transportation grid system to promote east-west movements;
- Reroute the principal thoroughfares from the town's core, in accord with the long-term transportation network of the Vision Plan.
- Acquire and build the necessary infrastructure to provide mass transportation services to La Plata area residents and businesses, including the provision of train stations, bus stops, and park and ride lots, etc.

As stated above the Town of La Plata completed a 50 year Vision Plan in 2000, detailing the future land use patterns, economic growth and transportation facilities. In 2001 the Town adopted "The Plan for the Future of Downtown La Plata" as an initial step to implementing the Vision Plan. In 2002 the Comprehensive Plan was adopted to provide guidance on land use and transportation improvements throughout the Town. General policies and specific projects were identified in these plan documents to guide pedestrian and bicycle circulation in the Town. As

can be seen below, these Plans indicate a strong commitment on the part of the Town to provide a complete sidewalk and bicycle system throughout the Town particularly in the Downtown core.

The "Vision Plan" goals related to pedestrian and bicycle circulation include:

- Create a system of bicycle routes and sidewalks throughout the Town.
- Establish sidewalks and street lighting on all Town streets.
- Establish a strong system of sidewalks and trails.
- Sidewalks on all downtown streets.
- Create and implement detailed design plan for sidewalks, bikeways and trails linking downtown to the surrounding natural areas and to outlying residential areas.

The Downtown Plan has the following strategies for pedestrian and bicycle circulation:

- Sidewalks are planned to all major streets and all new streets throughout the downtown, with trails along the natural drainage swales that connect the downtown to surrounding areas. Sidewalks on the main streets in the town center area are planned to be 15 feet in width to comfortably accommodate significant pedestrian use. This concept is also carried forward on the Streetscape Concept prepared by the Maryland Department of Transportation and the Maryland State Highway Administration in March 2003. (Plans on file in the Town Hall)

The Comprehensive Plan states the following policies for pedestrian and bicycle circulation:

- Make downtown La Plata a "pedestrian-friendly" place with adequate parking and alternative transportation opportunities.
- Continue to establish a strong system of sidewalks and trails

The Comprehensive Plan identifies the following specific actions to meet the plan policies:

- Install sidewalks along Washington Avenue.
- Install pedestrian crossings at strategic locations, and install handicapped ramps at all needed areas on sidewalks to enhance the Town's compliance with the Americans with Disabilities Act.
- Provide a pedestrian walkway which connects Howard Street with Centennial Street.

This study is performed within the framework of the Town's established plans and policies as stated above. The Town's 2009 Comprehensive Plan identifies some of the achievements during the past 6 years; however, it further substantiates that many of the Town's long standing transportation challenges remain a priority today.

2.0 ROADWAYS

The Town of La Plata, like the majority of Southern Maryland, is primarily a roadway dependent area. The majority of Town residents use motor vehicle for all local and long distance trips related work, play, and shopping. While the demand for local and commuter bus trips is increasing on an annual basis, the personal vehicle remains the dominant mode of transportation.

2.1 Functional Classification

The Town roadway network consists of multi-lane highways, urban streets, rural state roads, neighborhood streets, and alleyways. Roads within the Town include functional classifications of Principle Arterials, Minor Arterials, Major and Minor Collectors, Local Roads and Private Roads (**See Figure 2-1 – Functional Classification Map**). Functional Classifications are used to determine not only the function of the roadway, but also determine the ultimate traffic carrying capacity, road width, design criteria, and right-of-way needs of the roadway. This is necessary to assist Town staff as well as private land developers to determine what when and how improvements to the roadway are needed to be completed.

The type of service varies according to the type of trip, including local versus through trips, and magnitude of trips accommodated on a facility. The following are definitions characterize highway functional classifications[1]:

- **Principal Arterial** - Carries a high volume of traffic for interstate and intrastate travel, as well as inter-county and town travel. Also serves the major centers of activity. Flow is usually uninterrupted from origin to destination.
- **Intermediate Arterial** - Carries a high volume of traffic for travel within the county and town, or for travel to and from adjacent municipalities. Usually provides a connection to the Principal Arterial. Traffic on this type of road normally has the right-of-way at intersections. Controls are used only in areas of high hazard.
- **Minor Arterial** - Carries moderate to high volume of traffic usually for travel within the County and Town. These roads normally serve the higher classification roads providing access to and from the arterials.
- **Major Collector** - Serves as a link between the arterial system and lower classified roadways. Collects and distributes traffic. Auxiliary lanes for turning traffic are usually provided along the Major Collector. Access is not directly from this road but from a sub-road connected to the collector. They may serve community shopping areas, schools, parks, and cluster developments.
- **Minor Collector** - Serves intra-community travel at a traffic volume lower than that of a Major Collector.
- **Local** - Provides direct access to abutting properties. Designed to handle relatively low traffic volumes.

[1] Functional Classifications based on definitions from the Charles County Comprehensive Plan Transportation Element 2006; and, FHWA

The traffic carrying capacity is used to determine when a roadway is needed to be reclassified, such as when a roadway capacity is being exceeded, and is required to be upgraded to a functional classification designated for a higher level of capacity. This improves safety, traffic congestion, and level of service on the roadway. The other application of the functional classification table is to determine the appropriate design criteria, such as right-of-way width, roadway typical section including bicycle and pedestrian facility design, as well design speed, minimum curve design, sight distance requirements, intersection spacing, access management, drainage facilities, intersection design standards, and parking requirements.

2.2 Level of Service

The flow of traffic is based on roadway capacity, which is a measure of how traffic is accommodated on the road and associated intersections. The design of a roadway facility will dictate how traffic will operate at different levels of congestion. This performance is measured by Level of Service (LOS). The LOS of an intersection is a qualitative measure of capacity and operating conditions and is directly related to vehicle delay. As a road nears its design capacity, the LOS will go down. The LOS rating system is graded from Level A being the best traffic flow, to LOS F being the poorest traffic flow and having the most congestion. LOS D is considered the limit of acceptable operation in an urban environment, while LOS C is considered acceptable in sub-urban and rural areas. In order to improve LOS, certain improvements to the roadway or intersections will need to be improved. In 2000, the Transportation Research Board developed the Highway Capacity Manual, HCM2000, with the followings Tables. **Table 2-1** indicates the acceptable conditions for LOS at signalized intersections, and **Table 2-2** indicates the acceptable conditions for LOS at un-signalized intersections.

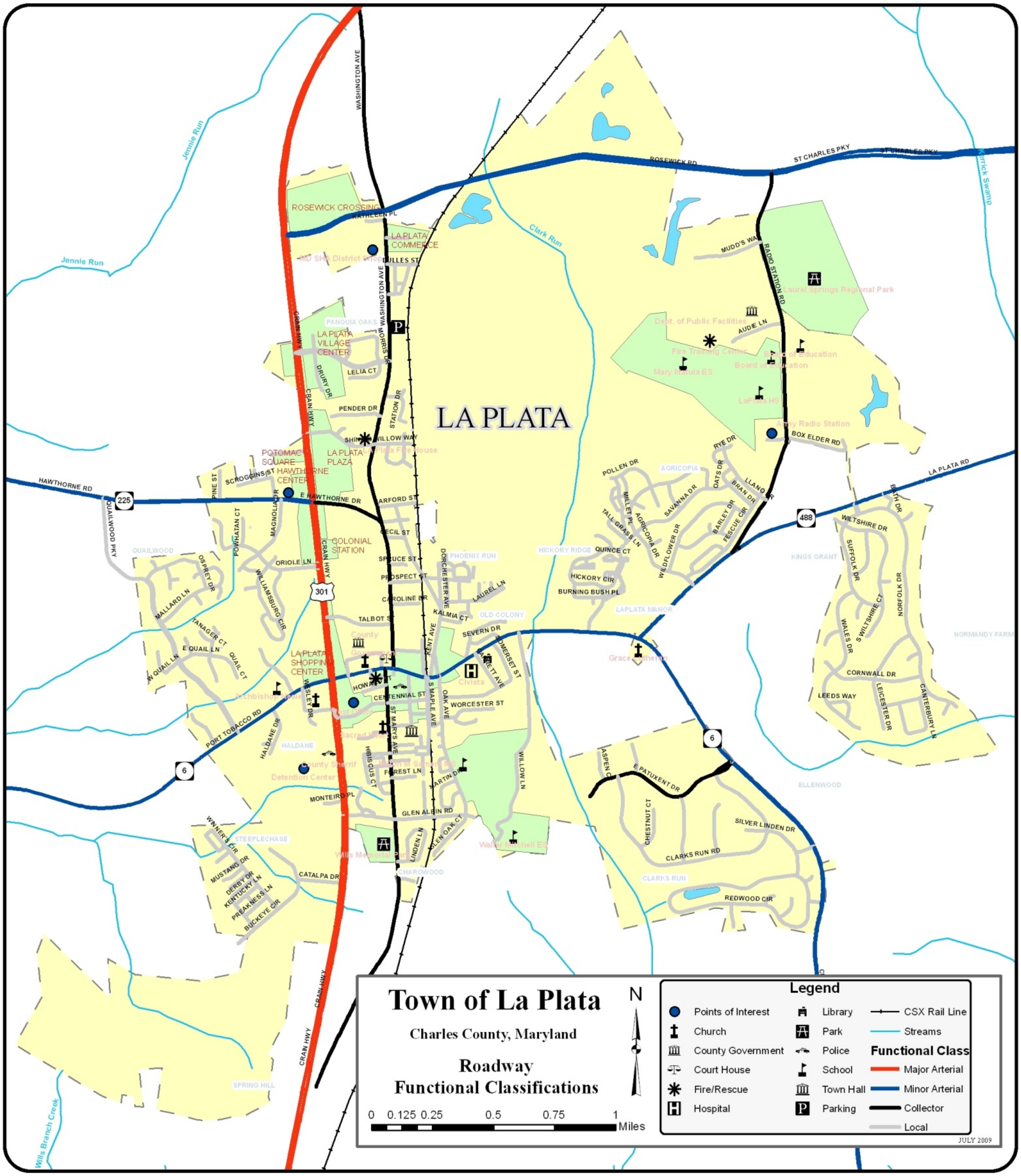

Town of La Plata
Charles County, Maryland
Roadway
Functional Classifications
LA PLATA
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
CSX Rail Line
Streams
Functional Class
Major Arterial
Minor Arterial
Collector
Local
0 0.125 0.25 0.5 0.75 1 Miles
JULY 2009

Figure 2-1

TABLE 2-1: Level of Service Criteria for Signalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds/vehicle)	Description
A	≤ 10.0	Very low vehicle delays, free flow, signal progression extremely favorable, most vehicles arrive during given signal phase.
B	10.1 to 20.0	Good signal progression, more vehicles stop and experience higher delays than for LOS A.
C	20.1 to 35.0	Stable flow, fair signal progression, significant number of vehicles stop at signals.
D	35.1 to 55.0	Congestion noticeable, longer delays and unfavorable signal progression, many vehicles stop at signals.
E	55.1 to 80.0	Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.
F	> 80.0	Unacceptable delays, extremely unstable flow and congestion, traffic exceeds roadway capacity, stop-and-go conditions.

SOURCE: Highway Capacity Manual, HCM2000, Transportation Research Board, 2000.

TABLE 2-2: Level of Service Criteria for Un-signalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds/vehicle)	Description
A	≤ 10.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
B	10.1 to 15.0	Same as LOS A
C	15.1 to 25.0	Moderate delays at intersections with satisfactory to good traffic flow. Light congestion; infrequent backups on critical approaches.
D	25.1 to 35.0	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No standing long lines formed.
E	35.1 to 50.0	Heavy traffic flow condition. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limit of stable flow.
F	> 50.0	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow condition. Average delays greater than one minute highly probable. Total breakdown.

SOURCE: Highway Capacity Manual, HCM2000, Transportation Research Board, 2000.

As a measure of system performance, LOS is often used in transportation planning for the determination of Capital Improvements, the development of public policy, and most frequently for traffic impact analysis to determine local traffic impacts of proposed developments. The goal is to maintain a particular LOS during *peak hour* travel times. Should that LOS be exceeded during the Peak hour of travel, improvements to the roadway or intersection will need to be evaluated to attain the designated level of service. In rural or suburban areas a LOS of C or greater should be maintained. For urban or "down-town" areas, a LOS of D or greater should be maintained. If any roadway or intersection is not meeting these designated LOS, improvements are necessary. In the case of a new development, residential or commercial, the developer is responsible for the needed improvements to attain the designated LOS.

2.3 Access Management

Control of access helps maintain traffic flow on the roadways. Generally, in areas of higher traffic volume, the more access points along a roadway, the greater the congestion. LOS generally improves on a highly travelled roadway with less points of conflict. To attain a higher LOS on roadways, access management standards are employed. These include intersection spacing standards, location of access points, turn lanes, driveway widths, and intersection controls. For roadways divided with a median, an access management plan, designates where each property can access the road. In some cases, access may be designated to an alternative roadway. For all other public roadways, design standards are used to maintain intersection spacing based on the designated roadway classification.

2.4 Existing Road Network

The existing Roadway Network consists of a hierarchy of road classifications to provide support to the surrounding land uses in the Town. This network serves three primary functions, local trips, commuter trips, and through/long distance trips. The major arterial within the Town is US 301 (Crain Highway), carrying north-south oriented traffic. US Route 301 serves as both a main street as well as an interstate highway, and functions as a thoroughfare for both through trips and local trips. The supporting Minor Arterial network consists of MD 6 (Charles Street), MD 225 (Hawthorne Road), MD 488 (La Plata Road), and Rosewick Road. The remainder of the road network consists of Collector roads and local roads to collect and distribute local traffic. The following table **(Table 2-3)** details a list of Collector and Arterial roads with their specific classification and responsible owner/operator.

Table 2-3: List of Arterials & Collectors

Road Name	Owner/Operator	Functional Classification
US 301	MD State Highway Admin.	Major/Principal Arterial
MD 225 (Hawthorne Road)	MD State Highway Admin.	Minor Arterial
MD 6 (Charles Street)	MD State Highway Admin.	Minor Arterial
MD 488 (La Plata Road)	MD State Highway Admin.	Minor Arterial
Rosewick Road	Charles County	Minor Arterial
Washington Avenue	Charles County	Major Collector
St. Mary's Avenue	Town of La Plata	Major Collector
Patuxent Drive	Town of La Plata	Major Collector
Willow Lane	Town of La Plata	Major Collector

Source: Town of La Plata Road Ordinance, Article II, Street Classifications, Section 170-6

The roadways listed in **Table 2-3** collect and distribute the majority of trips within the Town and traveling through the Town. For the local traffic, the local roads generally are the origin or destination of the trips. As part of this plan, the major roadways (collector and arterial roads) were analyzed through a traffic model to determine areas in need of improvement. This document will review improvements from improving or expanding existing roads or intersections, to building new roadway links.

The Cube Base 5.0/TP+ Model was used to analyze overall area circulation and the Synchro Model was used to analyze various intersections. The Cube Model was built and calibrated using population data from local Transportation Analysis Zones or "TAZ's" (a further break-down of Census Tracts) as well as regional traffic data from the Metropolitan Washington Council of Governments (MWCOG). The Cube Base/TP+ model is a "macro-model" which looks at regional or "big picture" traffic movements through the area. This mainly focuses on through traffic on the arterial roads, and provides projections on future traffic volumes based on forecasted population growth.

The Synchro Model uses actual traffic numbers/volumes taken from field counts. This data was collected by field staff through both physical counts as well as automated "tube" counters. Field data was gathered at the major intersections within the town during peak hours of travel (AM/PM). To ensure accuracy, the counts are performed Tuesdays through Thursdays to ensure accurate numbers of peak hour travels. Traffic can be reduced on Mondays or Fridays due to vacations or flexible work schedules with employers. Peak hours generally consist of 5:30 AM to 7:30 AM in the morning and 3:30 PM to 6:30 PM in the evening. Additional traffic data was gathered from the Maryland State Highway Administration where applicable.

2.5 Intersection Analysis & Recommendations

The following section reviews major intersections which were analyzed using the Synchro Model to seek out poor Level of Service (LOS) and determine potential improvements needed *(please note – some of the intersections are not located within the Town Limits but have a bearing on traffic within the Town itself).*

There were 18 intersections located both within and near the Town which were analyzed during both 2007 conditions and future 2030 conditions. Based upon the traffic volumes collected and the traffic model's projected traffic volumes for the year 2030, the findings follow: See Figures 2-2 and 2-3.

1. MD 225 at Mitchell Rd / Valley Rd:

2007: No major issues were found at this signalized intersection located west of the Town.

2030: Since this is a signalized intersection along the State system, the Town should request that the State Highway Administration to periodically analyze the intersection for potential signal timing and/or auxiliary lane improvements.

2. MD 6 at River Burch Dr/Prospect Hill Rd:

2007: No major issues were found at this unsignalized intersection located at one of the Clarks Run entrances.

2030: As Maryland Route 6 through traffic volumes increase, it will become more difficult for side street traffic to find adequate and safe gaps in traffic. Traffic signal warrants will likely not be met in the near future, but a signal may need to be considered by 2030. The Town should request that the Maryland State Highway Administration monitor the intersection in the future.

3. MD 6 at Hickory Lane

2007: No major issues were found at this unsignalized intersection located within the Town.

2030: As Maryland Route 6 through traffic volumes increase, it will become more difficult for Hickory Lane southbound traffic to find adequate and safe gaps in traffic. Traffic signal warrants will likely not be met in the near future, but the need for a traffic signal may need to be explored by 2030. The Town should request that the Maryland State Highway Administration monitor the intersection in the future.

4. MD 6 at Willow Lane

2007: No major issues were found at this unsignalized three-way intersection within the Town.

2030: Based on future traffic projections, which include major increases in Maryland Route 6 traffic, turn lanes may be necessary for both northbound left and right turns from Willow Lane. Separation of left and right turning traffic from Willow Lane onto MD Route 6 will alleviate future queuing, and allow right turns to proceed without waiting behind left turning vehicles. A standard minimum turn lane which the county uses is 250 feet in length plus a 150 foot taper. The length of 250 feet allows for right turning vehicles to have access to the *right turn* lane when up to 10 vehicles are queued in the *left* lane.

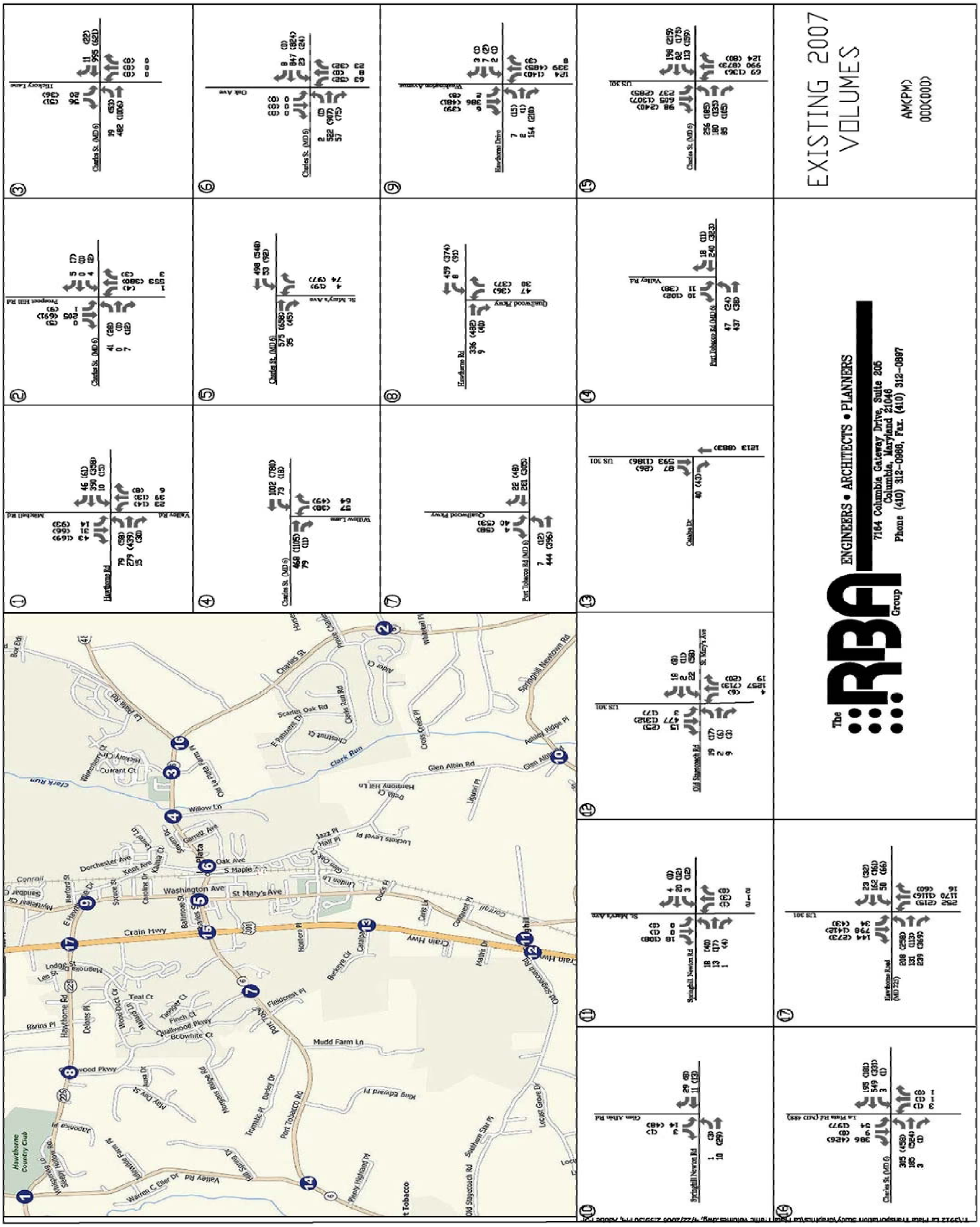

EXISTING 2007 VOLUMES
AM(PM)
000(000)
The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS
7164 Columbia Gateway Drive, Suite 205
Columbia, Maryland 21046
Phone (410) 312-0988, Fax (410) 312-0897

Figure 2-2

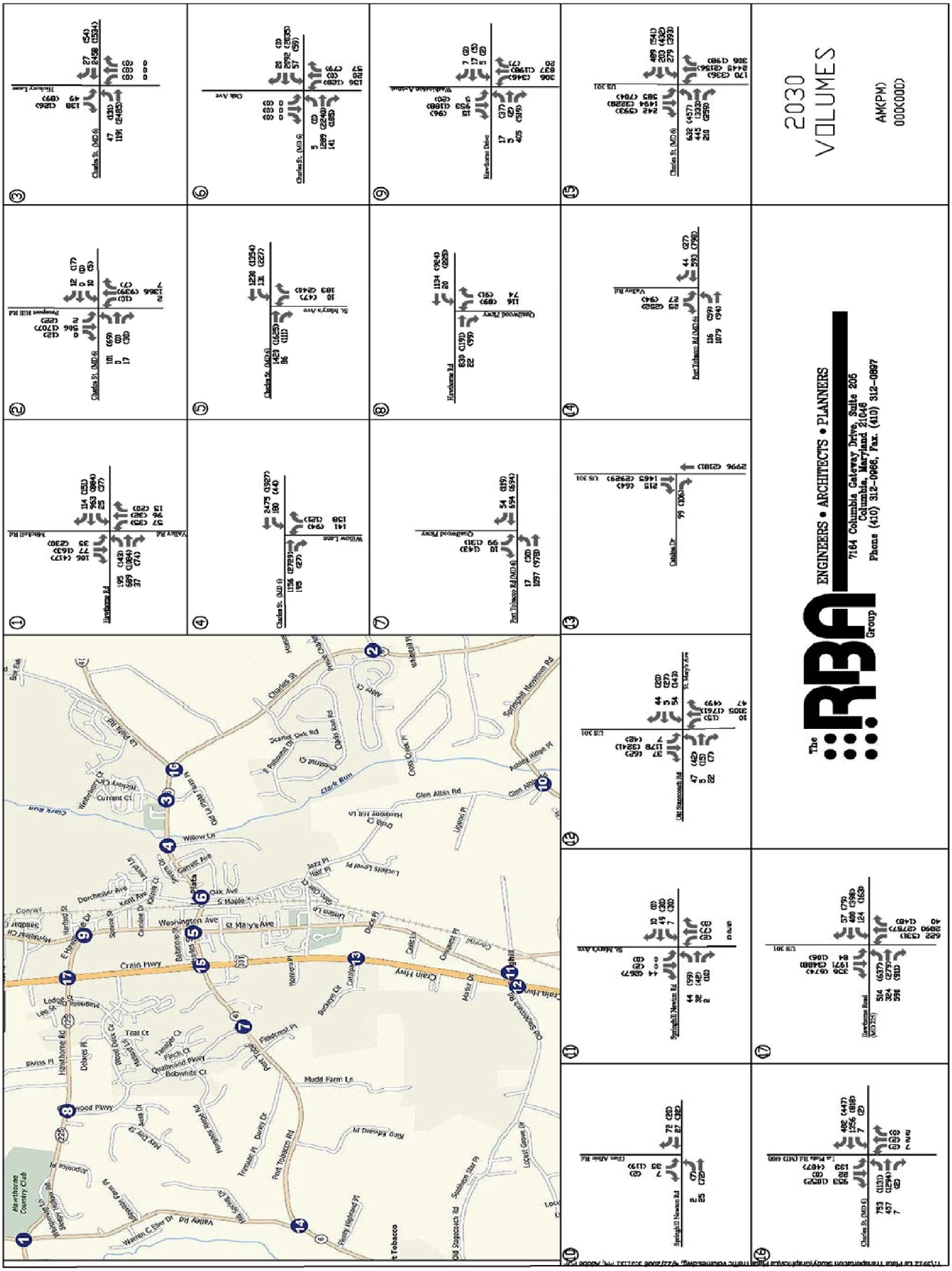

2030
VOLUMES
AM(PM)
The RBA Group
ENGINEERS • ARCHITECTS • PLANNERS
7164 Columbia Gateway Drive, Suite 205
Columbia, Maryland 21046
Phone (410) 312-0988, Fax (410) 312-0897

Figure 2-3

5. MD 6 at St. Mary's Ave

2007: Left turns from St. Mary's Ave are restricted at certain times of day by signage. This seems to be working in that it dissuades drivers from making this difficult maneuver (only 19 PM peak hour lefts) For the MD 6 Westbound Left (227 PM lefts) movement, it is sometimes difficult for drivers to find adequate gaps in MD 6 eastbound traffic, and queues at the MD 6 / Washington Avenue signal exacerbate the problem. The Town should request the Maryland SHA implement improvements such as better signage along MD 6 east so that MD 6 east drivers do not cross the St. Mary's Avenue intersection and block MD 6 Westbound left turning vehicles.

2030: The traffic model predicts that Maryland Route 6 traffic will increase significantly by the year 2030. This will exacerbate the 2007 issues above. As a measure of safety, the Town should consider further restricting the St. Mary's Avenue *left* turn movement to a "no *left turn*" condition. This could be justified based on further safety studies.

5b. MD 6 at Washington Avenue (Source 2007 SHA traffic data):

2007: Southbound Washington Avenue queues are often quite long, especially during the PM Peak hour. The Town should request that the Maryland SHA analyze the signal timing at this intersection. More green time per cycle during the PM hours for the Washington Avenue approach could alleviate some of the delay.

2030: As all traffic volumes approaching this intersection increase, the delays will be compounded. Given the heavy traffic flow from the southbound left turns, it appears that much of the traffic volume from this travel pattern can be accommodated through the southbound *left* turns at the intersection of US 301 at Maryland Route 6. It is recommended that this relation between these two intersections be explored by the Maryland SHA. In addition, please see recommendations for US 301 at MD Route 6 intersection later in this document (Page 2-12).

6. MD 6 at Oak Avenue

2007: Northbound (Oak Ave.) unprotected *left* turns are the main concern at this unsignalized intersection. Finding adequate gaps in the heavy MD 6 through traffic will continue to be an issue. One idea is to have better guide signage throughout the Town which leads drivers to the signalized left turn lanes such as the one at MD 6 at Garrett Avenue.

2030: As traffic on MD 6 increases, the Town should consider restricting *left* turning movements during certain times of the day (such as is currently done at St. Mary's Avenue at MD Route 6).

7. MD 6 at Quailwood Pkwy

2007: No major issues were found at this unsignalized intersection located in the Town.

2030: As traffic volumes along Maryland Route 6 increase, it will become increasingly difficult to execute a *left* turn from Quailwood Parkway onto MD Route 6 East. Traffic signal warrants

will likely not be met in the near future, however when conditions worsen the Town should ask the State Highway Administration to perform a study of the intersection.

8. MD 225 at Quailwood Pkwy

2007: No major issues were found at this unsignalized intersection located outside the Town.

2030: As traffic volumes along Maryland Route 225 increase, it will become increasingly difficult to execute a left turn from Quailwood Parkway onto MD Route 225 West. Traffic signal warrants will likely not be met in the near future, however should conditions worsen, the Town should request the State Highway Administration perform a study of the intersection.

9. Hawthorne Drive at Washington Avenue

2007: With only one lane per approach, the heavy southbound (Washington Ave) PM peak hour traffic makes it difficult for northbound lefts to make the left turn. Since northbound Washington Avenue traffic has only one (1) lane for Left turns and through movements, the left turners force the northbound through vehicles to queue behind them. The 2007 traffic volume (140 in the PM peak hour) currently shows the need for a separate northbound *left turn* lane at this location.

At this time, the predominant movement among Hawthorne Drive approaching traffic is Hawthorne Drive eastbound right turns. All other movements carry low traffic volumes. Therefore, at this time separate turn lanes on Hawthorne Drive (eastbound or westbound) are not warranted. However, if further residential or commercial development occurs within the environs of this intersection, the Town should require that developer to provide a traffic study and analysis of this intersection, and provide any necessary improvements.

2030: This intersection will experience substantial traffic growth in every direction of travel. Signalization may need to be considered if traffic signal warrants are met in the future.

By studying this intersection, it has also been projected that an increase in Washington Avenue through traffic will also be experienced at the two nearby intersections to the north, namely Washington Ave at Shining Willow Way (approx. ¼ mile to the north) and Washington Avenue at Heritage Green Parkway (approx. ½ mile to the north). Based upon these projections, both intersections will likely need a separate/auxiliary *left turn* lane from northbound Washington Avenue onto each of these roadways.

10. Springhill Newtown Rd at Glen Albin Road

2007: No major issues were found at this unsignalized intersection located to the south of the Town.

2030: Even under future conditions, this intersection should operate acceptably and with little delay to motorists.

11. Springhill Newtown Road at St. Mary's Avenue

2007: No major issues were found at this unsignalized intersection located to the south of the Town.

2030: Even under future conditions, this intersection should operate acceptably and with little delay to motorists.

12. US 301 at Old Stagecoach Road / St. Mary's Avenue

2007: There are currently no traffic volume issues at this intersection. However, when the subdivision "Stagecoach Crossing" develops, the traffic studies which have already been performed show that the Old Stagecoach Road eastbound traffic will increase to the point where a traffic signal will be required. It will be a requirement of the developer to construct the signal and at least three approach lanes to the intersection (one *left* lane, one *through* lane, and one *right* turn lane) in order to accommodate their development and make a safe intersection.

2030: After Stagecoach Crossing is built, the Town should request both the County and State Highway Administration to monitor the signalized intersection to see that it is operating efficiently and safely.

13. US 301 at Catalpa Drive

2007: No issues were found at this time because it is a restricted Right-In/Right-Out Only intersection. If that configuration were to change in the future, the Town and State Highway Administration would need to re-visit and re-analyze this intersection.

2030: If the right-in and right-out only restriction remains, this intersection will be able to operate acceptably under future conditions. Conversely, if the US 301 median were ever opened up, then this intersection would experience conflicting movements such as left turns to and from US 301. The intersection would then need to be analyzed, and the need for a future traffic signal would need to be determined.

14. MD 6 at Valley Road:

2007: No major issues were found at this unsignalized intersection located to the west of the Town. There is an existing westbound *right turn* lane and an existing eastbound *bypass* lane to get around MD Route 6 left turns into Valley Road.

2030: This intersection should operate acceptably well into the future.

15. US 301 at MD 6:

2007: Current observations of the US 301 southbound left turn PM Volume (2007) of 285, in addition to daily field observations, show that the queues in the southbound left lane are

frequently very long. A common practice is to consider a double left turn lane when turning volumes approach 300 vehicles per peak hour. The Town should request the SHA to analyze this intersection and consider the building of a double left turn lane in the near future. Two accepting lanes on MD 6 eastbound must be restriped and/or constructed by the Maryland SHA in order for this improvement to be viable.

2030: This intersection will experience very long delays and very long vehicle queuing unless improvements are made by 2030. In addition to the improvements recommended above, by 2030 the eastbound MD Route 6 traffic will be voluminous enough to justify two (2) lanes dedicated to left turns onto US 301 North (there is currently a *left only* lane, a *left-through* shared lane, and a *right turn* lane). Similarly on the east side of the intersection, by 2030, MD Route 6 westbound traffic will be large enough to justify two (2) lanes dedicated to *left* turns onto US 301 South (there is currently a *left only* lane, a *left-through* shared lane, and a *right turn* lane). The Town should ask the Maryland SHA to begin studies on this intersection in the near future.

16. MD 6 at MD 488:

2007: Currently, the eastbound through and left turn movements each have separate lanes. In addition, the MD 488 southbound right turn has a green arrow on the traffic signal. Therefore, these traffic movements have adequate accommodations. However, MD 6 eastbound *left* turns have a very high PM peak hour volume (2007 figure of 458 left turns), which usually signifies the need for a double left turn. However, MD 488 has only one (1) accepting lane, therefore a *double left* turn is not feasible. Observations show that the turn lane could be lengthened (through pavement markings) to accommodate the high volume of turns. The Town should also have the Maryland SHA look into ways to make the intersection more efficient, such as signal timing changes.

2030: Projections show that both MD Route 6 approaches as well as the MD Route 488 approach will experience significant traffic volume growth. Therefore, as conditions worsen, the Town should ask the State Highway Administration to analyze the intersection and provide any necessary improvements.

17. US 301 at MD 225 / Hawthorne Drive

2007: The MD 225 eastbound approach is regularly congested in the PM peak hour. The traffic volume PM peak hour of 258 lefts and 113 through movements indicates that serious consideration should be given to changing from a *left only* lane & *through only* lane to a *left only* lane and *left / through* shared lane. The Town should ask the SHA to consider this change. Changes would need to be made to the signal operation as well to accommodate the lane change.

2030: By the future year of 2030, according to traffic projections, it will be technically justified to make the MD 225 Eastbound approach (discussed above) into a *double left* turn lane (2 lanes

exclusively for turning left from MD 225 eastbound to US 301 northbound). A separate eastbound through lane must remain.

The Hawthorne Road westbound approach is lacking a *right turn* Lane. As intersection traffic volumes increase in the future, it will become even more important to create a separate *right turn* lane. Right turn lanes help to reduce traffic queuing on the approaching roadway.

2.6 Roadway Link Analysis & Recommendations

The following section reviews the roadway links between the major intersections as they currently operate and suggests future road improvements to further roadway circulation within the town. As the Town primarily depends on the State operated Arterials for major traffic flow, several new roadway links were analyzed to provide alternative travel routes and relieve the congested major arterials. The analysis began with a review of the previously proposed road links from La Plata's 2000 Vision Plan, The Plan for the Future of Downtown La Plata 2001, the 2002 Comprehensive Plan, and the 2009 Draft Comprehensive Plan. While these documents varied in proposed road improvements, the changes to various Town Plans over time, such as the 2002 tornado, were taken into consideration. The highest merit was given to road projects that best served the improvement of mobility within the Town.

2.6.1 Major Roads/Corridors

Improvements in mobility around the Town are most need where the highest volumes occur or are proposed. To that extent, the major corridors were identified based on the roads with the highest traffic volumes. These roads are: US 301, MD 6, MD 225, MD 488, Washington Avenue, and St. Mary's Avenue. Clearly, US 301 serves as both a main street for the Town as well as a highway for regional and interstate traffic, resulting in the highest overall volumes within the network. To a slightly lesser extent, the volume on MD 6 (Charles Street) and MD 225 (Hawthorn Road) is a result of both regional and local traffic.

In an effort to avoid the congestion on US 301, many local travelers utilize the parallel routes of Washington Avenue and St. Mary's Avenue. In turn, these routes have become burdened with congestion as well. This is mainly documented by the long queues at the intersection with MD 6. Several area roadway improvements have been completed since the 2002 La Plata Comprehensive Plan to create relief to portions of these corridors. In the St. Mary's Avenue corridor, these improvements include the reconstruction and extension of Centennial Street from La Grange Avenue to US 301 and the associated interconnections of several other local streets. In the Washington Avenue corridor, these improvements include the construction of Talbot Street (west) to US 301, relieving some of the southern area congestion; and, the reconstruction and extension of the Rosewick Road/St. Charles Parkway in the northern area. These improvements created more travel options and enabled greater circulation within the Town road network.

The extension and reconstruction of Rosewick Road from US 301 to St. Charles Parkway created an alternative north-east/south-west travel route for commuters as well as local trips though northern Charles County. Residents of the Town are now able to avoid US 301 to travel to points north, improving driving time and quality of life. As a result of the recent road extension and avoidance of US 301, some additional traffic is likely to utilize either Washington Avenue or Radio Station Road to get to MD 6. The heavy left turn movement onto eastbound MD 6 in the evening from southbound Washington Avenue indicated that points east of La Plata are a major destination. Also, the increasing traffic on Radio Station Road to get to MD 488 and ultimately MD 6 eastbound will also warrant improvements in the network. This concern increases on Radio Station Road with number of schools and public institutions located along the roadway and their associated ingress and egress.

The County has a planned capital improvement project in the Fiscal Year 2010 budget to design and construct an additional lane in each direction along Radio Station Road from Rosewick Road to MD 488. This project would include drainage improvements, shoulders, and a hiker-bike path along one side of the roadway. The intersection with MD 488 will also be improved to improve mobility and accommodate the increasing traffic volume. In addition, as traffic increases, the County plans to construct Jaybee Lane from Rosewick Road (opposite Radio Station Road) to US 301/MD 227. This additional link will create a new alternative north-south route, serving as an alternate to US 301 through northern La Plata and Southern White Plains. This project further connects the local road network, providing greater circulation and alternative routing.

North-central La Plata is currently void of a roadway network due to the undeveloped nature of the Heritage Green parcel. As this master-planned community develops, the developer will construct La Plata Parkway, from MD 6 at Willow Lane to Rosewick Road. This new route will create needed additional travel options as US 301, MD 488, and Washington Avenue continue to increase in congestion. As negotiations with the owners of the CSX rail line crossing are completed, the Heritage Green Parkway Extension will be a valuable east-west connection to relieve MD 6 and Rosewick Road, as well improve local travel times. To further the improvements to east-west local travel, the Caroline Drive extension to Heritage Green Parkway is recommended. Additional east-west connections will provide further relief to the existing congested roads as well as driver mobility.

On the western side of the Town there are also areas of limited mobility due to the lack of alternative travel routes to US 301, MD 225, and MD 6 (Port Tobacco Road). Currently, Quailwood Parkway serves as an alternative route to US 301, between MD 6 and MD 225. However, drivers then have to use either of these state routes to return to US 301 to get to destinations north and south. With the increasing traffic volume and associated traffic lights along US 301, travel time is greatly diminished. As noted in the Charles County Comprehensive Plan and the La Plata Vision Plan, a solution to the limited north-south options, is the construction of Quailwood Parkway Extended North. This project would extend from the existing Quailwood Parkway at MD 6 to interconnect with US 301 across from Rosewick Road.

This is recommended as a long term improvement since this land is not within the Town limits and does not current warrant construction. However, should this connection prove to be a necessary traffic relief route to north-south travel at an earlier date, plans should be moved forward for construction.

As the south-western section of La Plata begins to generate more traffic through the Steeplechase and Stagecoach Crossing developments, the Town is justified to mandate the construction of the southern extension of Quailwood Parkway to interconnect MD 6 with Old Stagecoach Road. Again, alternative north-south routes to US 301 will be needed to relieve severe congestion in this corridor. These improvements should include all necessary off-site improvements such as intersection improvements to US 301 at Old Stagecoach Road, US 301 at MD 6, and US 301 at MD 225 (see Section 2.5).

In order to support the increase in traffic on MD 6 generated by the proposed Quailwood Parkway extensions, the County/Town project to improve MD 6 to accommodate the additional traffic is recommended. This may include additional travel lanes, turn lanes/auxiliary, and intersection controls to improve mobility on this heavily traveled route.

2.6.2 Minor Roads/Corridors

To address the south-eastern portion of the Town, it is noted that MD 6 and Glen Albin Road are the only east-west connecting roads serving the area. Plans for an extension of East Patuxent Drive have been discussed in various Town documents over several years. Should traffic volumes traveling from southern La Plata to points east of La Plata in the MD 6 corridor reach heavy congestion levels, this extension/interconnection is recommended as a reliever route. This project is currently recommended as a long term improvement.

2.6.3 Summary of Recommended Roadway Link Improvements

The following table, **Table 2-4**, summarizes the list of recommended roadway improvements:

Table 2-4: Summary of Recommended Roadway Link Improvements

Road Name	Project Limits – From	Project Limit – To	Term
Radio Station Road	Rosewick Road	MD 488	Short
La Plata Parkway	Rosewick Road	MD 6 at Willow Lane	Short
Quailwood Parkway South Ext'd	MD 6	Old Stagecoach Road	Short
Heritage Green Pkwy Extended	La Plata Parkway	Washington Avenue	Short
Caroline Drive (east) Extended	La Plata Parkway	Caroline Drive (east)	Short
Jaybee Lane	Rosewick Road	MD 227	Mid
MD 6 Improvements	Chapel Point Road	US 301	Mid
Qailwood Parkway North Ext'd	US 301 at Rosewick Rd	MD 225	Long
East Patuxent Drive Extended	Willow Lane	East Patuxent Drive	Long

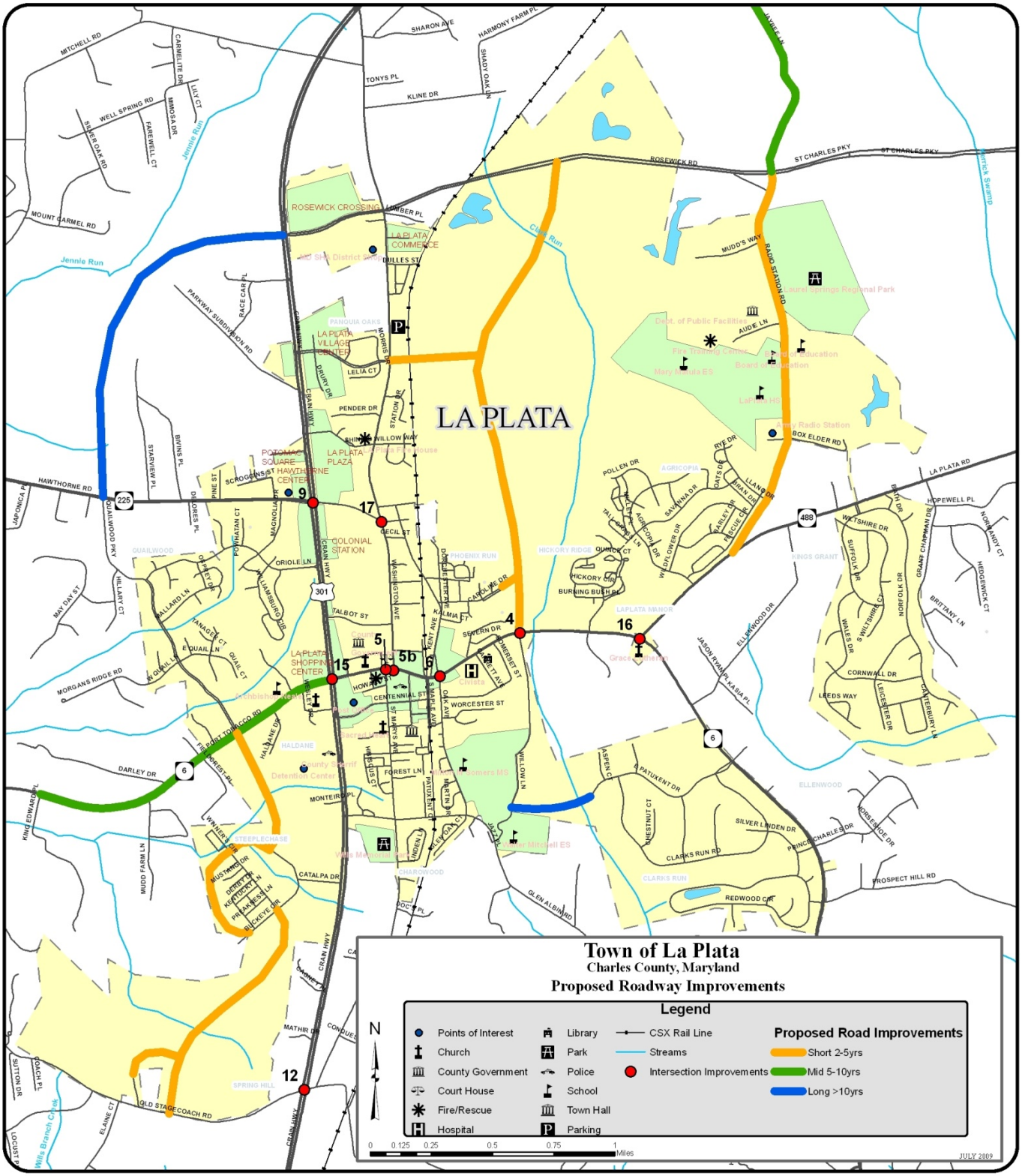

LA PLATA
Town of La Plata
Charles County, Maryland
Proposed Roadway Improvements
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
CSX Rail Line
Streams
Intersection Improvements
Proposed Road Improvements
Short 2-5yrs
Mid 5-10yrs
Long >10yrs
N
0 0.125 0.25 0.5 0.75 1 Miles
JULY 2009

Figure 2-4

3.0 PEDESTRIAN AND BICYCLE SYSTEM

3.1 Existing Conditions Analysis – Inventory and Needs

The existing conditions analysis for the pedestrian system is broken into two steps. First there is an analysis of the priority corridors at a higher level of evaluation including cross sections, a photo survey, crosswalk evaluation, general conditions analysis such as deterioration, generalized ADA impediments and drainage problems. Second there is an inventory of all major roadways corridors excluding interior circulation within neighborhoods. This analysis includes tabulated pedestrian facilities with estimated lengths and descriptions; tabulation of gaps in connectivity with estimated distances; and an existing pedestrian facilities map demonstrating gaps in connectivity.

Washington Avenue, St. Mary's Avenue, and Charles Street (MD 6) were identified as the corridors to focus upcoming design reviews and planning to incorporate more bike and pedestrian facilities along with promoting a more transit oriented mode of transportation within the core of the town.

There will be several challenges in implementing a bike and pedestrian facility along the aforementioned corridors due to several obstacles or design constraints. Due to unavailability of Right of Way, a very ambitious land acquisition process would have to be undertaken. This along with utility relocation can be very costly. Currently along the referenced corridors there are several pedestrian impedances due to utility poles planted in and along the walkways. To enhance safety along the said corridors a more careful study needs to look at making recommendation for improving the visibility of pedestrian crossing. Handicap ramps should conform to ADA specifications. There were several area identified where there obstacles such as fire hydrants that would prevent the safe traversing of wheel chair operators as well as the blind. Along Washington Avenue on approach to MD 6 the sidewalks are flush with the vehicular travel lanes. This is extremely dangerous for pedestrian especially children who tend to exercise less caution in road use. Not only is this a safety problem for pedestrian but it also poses a drainage issue. The referenced corridors also show a lack in signage for handicaps and pedestrian.

This study looks at the existing conditions of the current bike and pedestrian facilities along three major corridors in the Town of La Plata. Those corridors are Washington Avenue, Charles Street (MD Route 6), and St. Mary's Avenue. In addition this study looks at what improvements can be made to each corridor to improve the bike and pedestrian experience for the residents of La Plata. Data was collected by field investigations, creating condition diagrams of major and minor intersections, and evaluating existing data available from the Town and Maryland State Highway Administration (SHA) resources. Numerous plats and engineering plans were looked at to determine existing conditions and evaluate the corridors. An example is Figure 3-1 of a

signal plan of the intersection of Charles Street and Washington Avenue that was used as a basis for our study.

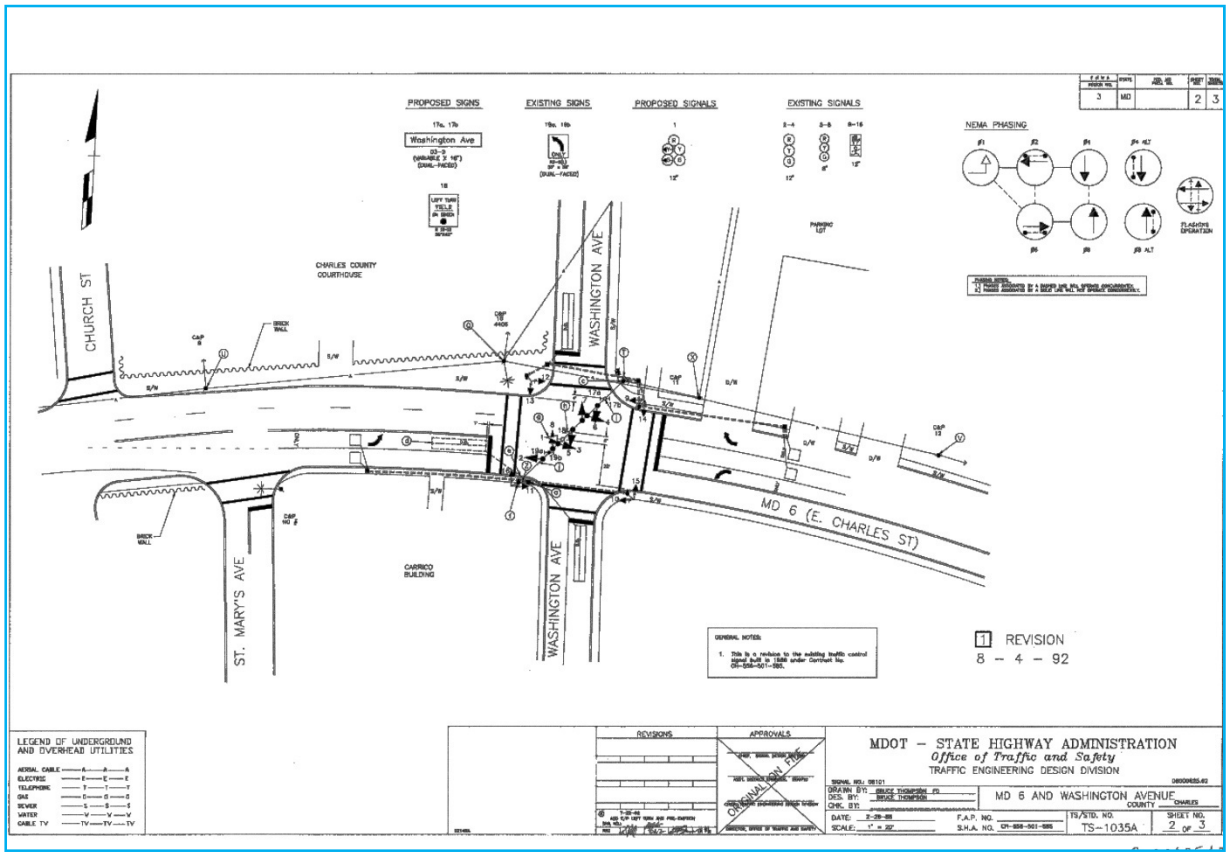


Figure 3-1: Intersection of MD 6 & Washington Avenue Signal Design Plan

3.1.1 Existing Washington Ave. Bicycle and Pedestrian System

Corridor Length is approximately 7,500 linear feet, from Charles Street to Dulles Street and continues north to an intersection with Crain Highway.

Speed Limit - 30 MPH, from Charles Street north to just south of Shinning Willow Way

40 MPH, from just south of Shinning Willow Way to Dulles Street

Roadway Description – Two-Lane asphalt – 24 feet travel lane from Charles Street to just north of the new Talbot Street extension. North of this location the travel way narrows to a smaller 22 foot width section. Several locations have been widened and new curb and gutter installed.

Right of way Width – 34 to 40 feet south of E. Hawthorne and 50 feet north of E. Hawthorne to the Town's northern corporate limit. Some portions of the corridor have incorporated an ultimate 60 foot width right of way.

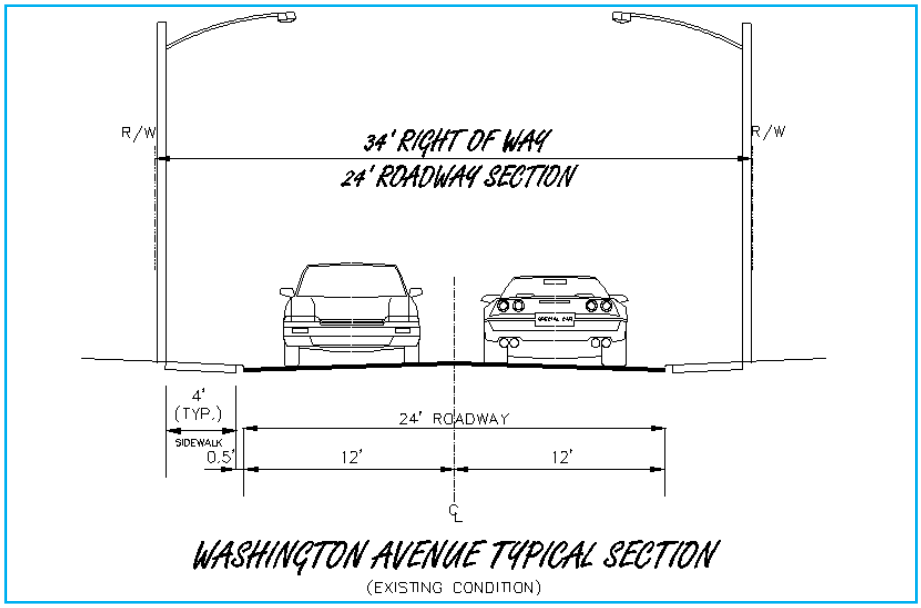


Figure 3- 2: WASHINGTON AVE. TYPICAL SECTION – 34' R/W – 24' PAVEMENT WIDTH

In Figure 3-2 the section does not accommodate a bike path within the right-of-way. A 4 foot width sidewalk exists on either side of the roadway. This section is constrained by the physical limitations; a building on the northbound side of the roadway just north Charles Street prohibits any future widening and a brick serpentine fence along the southbound side limits widening (see photo below). With limited right-of-way and physical limitations, this section of Washington Avenue will require acquiring additional right-of-way to achieve placement of a bike lane. The portion of the street depicted below indicates a condition where the road has been resurfaced a number of times leaving no curb line. This condition results in two problems. One there is no barrier between the narrow travel lanes and the sidewalk. The other is that water ponds on the sidewalk (particularly the east side) since there is no outlet for the stormwater runoff from the street.

WASHINGTON AVE. NORTH OF CHARLES STREET

North of Talbot Street we find an open section roadway that continues to just south of Shinning Willow Way. No sidewalks or bike ways exist along this section of roadway. Numerous physical constraints exist along the corridor restrict placing both a sidewalk and bike way. Those physical constraints are; wood fences, retaining walls, power poles, fire hydrants, trees, and drainage ditches. The following pictures represent some of those constraints.

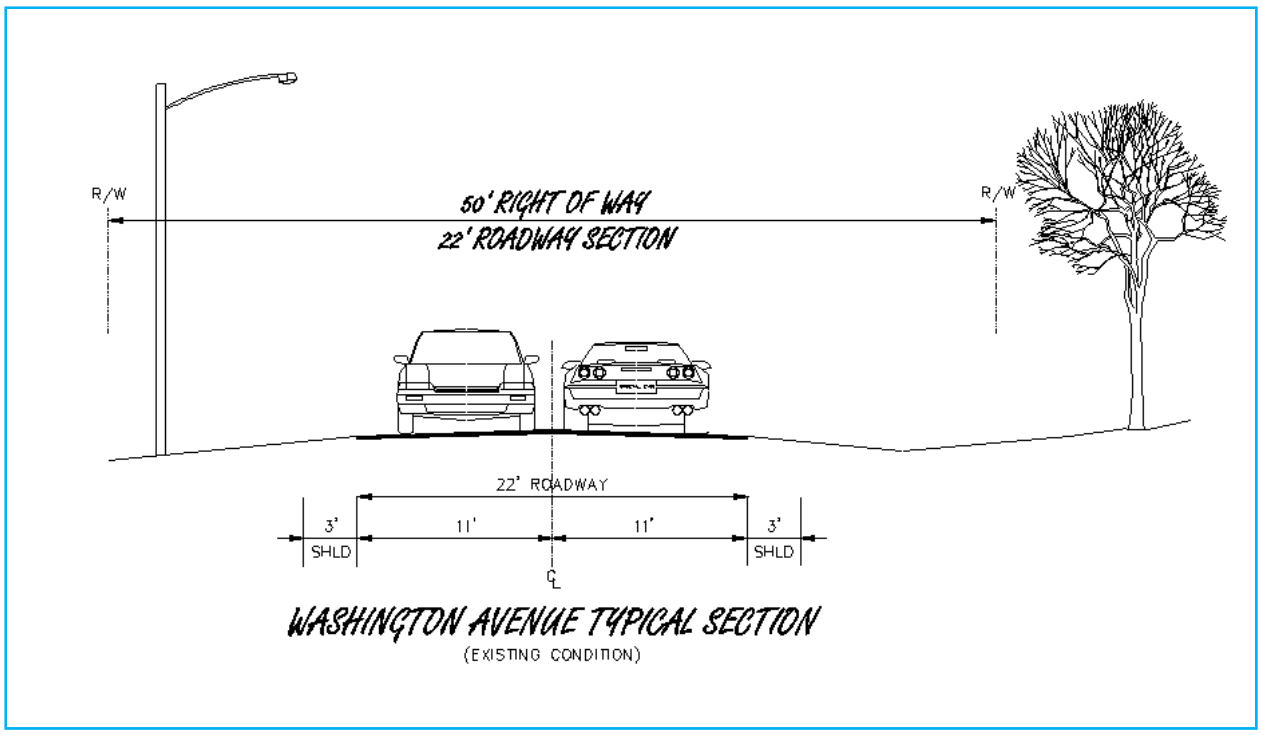


Figure 3- 3: WASHINGTON AVE. TYPICAL SECTION – 50' R/W – 22' PAVEMENT WIDTH

In Figure 3-3 the open section has no sidewalk or bike path along the corridor from Talbot Street to just south of Shining Willow Way. The right-of-way along this section has the width in the section to accommodate a sidewalk or bike path along either side of the road.

North of Shining Willow Way to Dulles Street we have a multitude of roadway sections; half closed half open sections with right turn lanes added. The following photos show the varying sections.

This section of roadway represents the typical growth pattern experienced by municipalities that have no formal master planning for pedestrian and bike facilities. The subdivisions that were built along this segment of roadway provided curb and gutter with some pavement widening. Others built right turn lanes. Once an open section of roadway it has become a hodgepodge of roadway sections that alternate back and forth from the east side to west side of the corridor. Thus, no connectivity between the sidewalks built.

Sidewalks – Located inside the existing right-of-way, 4 foot width.

Existing Major Intersections (North to South):

1. Heritage Green Parkway
2. Shinning Willow Way
3. E. Hawthorne Drive/Hawthorne Drive
4. Talbot Street
5. Charles Street (MD Route 6)

Existing Minor Intersections (North to South):

1. Cecil Street
2. Baltimore Street

Pedestrian Accommodation

The Washington Avenue Corridor is a moderate to lightly traveled pedestrian corridor. Pedestrians were observed more on the west side of the corridor traveling to/from residential areas to the downtown area or crossing Washington Avenue and walking toward the Route 301

corridor where business and commercial locations are found. Pedestrians are occasionally forced to cross Washington Avenue at unmarked locations due to the lack of pedestrian crossings. No bike path is located along this corridor. As projects slated for development move forward, it is likely that pedestrian activity will also increase.

There are four marked crosswalk locations along the corridor:

1. One crosswalk at Charles Street
2. Two crosswalks just north of Charles Street allowing access between the Government Buildings on both sides of the corridor
3. One crosswalk at Shinning Willow Way

Three of these crosswalks are provided at non-signalized intersections, two at mid-block crossing locations, with Charles Street being signalized and having pedestrian crossing phases (either exclusive or concurrent).

There are three marked crosswalk locations at the following intersecting street approaches:

4. One crosswalk at Talbot Street
5. One crosswalk at Shinning Willow Way
6. One at the Entrance to the Park and Ride Lot

Crosswalks also are nonexistent along the majority of minor street approaches at non-signalized intersections, leaving the pedestrian to cross each at risk without the protection of crossing lane markings.

The major sidewalk route is the west side of the corridor from Charles Street to just north of Talbot Street. On the north and south sides of Talbot Street are new sidewalks with ADA ramps built. No crosswalks are built to facilitate pedestrians crossing Washington Avenue from the east side of the street. On the east side of the corridor from Charles Street to just north of Baltimore Street a narrow sidewalk exists. In this same stretch of roadway is a parking lot that is east of the corridor that has two crosswalks to accommodate pedestrian usage to the Government Center.

North of Talbot Street with sidewalks along the corridor is limited and is associated with new development. Recent developments at Shining Willow Way and Heritage Green Parkway have widened the corridor and provided sidewalks. A crosswalk located on the south side of the intersection with Shining Willow Way is available pedestrians to cross Washington Avenue and access the residential subdivision to the east. At E. Hawthorne no crosswalks are present and pedestrians are crossing without any safety provisions such as a marked crosswalk. With the exceptions of the new sidewalks installed at recent construction locations, the width of the

sidewalks are four-feet in width. These narrow sidewalks do not meet the requirements established by the Americans with Disabilities Act (ADA). The majority of wheelchair ramps located at the intersections along Washington Avenue are also not ADA compliant.

Planned Pedestrian Crossings

There are no current plans to provide pedestrian crossing accommodations along the corridor. For any future pedestrian crossings the design should use as a general rule of thumb, 400 to 800 feet as a reasonable spacing between crossing locations.

ADA Compliance

As mentioned above, portions of the sidewalk and many wheelchair curb ramps do not comply with the Americans with Disabilities Act. The corridor should provide a minimum of five-foot sidewalks. This width allows two pedestrians (including wheelchair users) to walk side by side, or to pass each other comfortably. It also allows two pedestrians to pass a third pedestrian without leaving the sidewalk. The minimum clear width requirement is four-foot six-inch sidewalks, with a minimum of 3-feet of clearance around obstructions such as light/utility poles and traffic signal cabinets. Where the clearance width is less than five-feet, a five-foot square area of sidewalk must be provided at 200 feet intervals or less. In general, several utility poles along the corridor interfere with pedestrian passage.

Curb ramps at crosswalks should be a minimum of three-feet wide (exclusive of flares) and should be parallel with the direction of travel. At locations where there is a four-foot clearance between the bottom of the ramp and the far crosswalk line, one apex (corner) ramp is acceptable. Otherwise, two ramps must be provided at each corner.

Maryland's regulations state that if a sidewalk is placed less than two feet from the road pavement, curbing must be used on the edge of the road. However, if enough right-of-way exists to provide at least two feet minimum of separation between the road and sidewalk, curbing could be avoided. A 4 to 5-foot separation between the sidewalk and the roadway is desirable to the extent feasible. This separation enhances safety and is aesthetically more pleasing to the pedestrian, particularly if trees are retained between the road and sidewalk. None of the signalized intersections within the study area appear to completely meet ADA standards.

Bicycle Access

There are currently no formal bicycle accommodations along the Washington Avenue corridor. Bicyclists were observed traveling the corridor either on the sidewalk, in the roadway against the curb, or in the right-most travel lane. All three alternatives are dangerous for bicyclists, motorists, or pedestrians. With the numerous driveways along the corridor, riding along the curb or on the sidewalk can obstruct the bicycle from the view of motorists trying to exit the driveways. Additionally, riding in the traffic lane could pose a danger as through vehicles attempt to maneuver around turning vehicles and bicyclists.

In the future, more space designated for bicyclists within the roadway cross-section is generally the preferred treatment to better accommodate adults and more confident bicyclists. Please note one exception, children, elderly, and less experienced riders will still gravitate to the sidewalk.

Storm Drainage Accommodations

A hybrid section street moving north of Charles Street with no curb and gutter allows the storm drainage to flow along the sidewalks and edge of the travel way on each side of the roadway. This impedes on pedestrian and bicycle traffic along this section of the roadway. On the west side of the road opposite Baltimore Street a storm drainage facility exists in the form of curb and gutter, catch basins, grate inlets and underground storm sewer pipe to carry storm water. Along the east side of the street no provisions are made to carry storm drainage. North of Baltimore Street the storm drainage conveyance along the east side ceases to exist. Opposite this location and just north of Talbot St the street is a closed open section street with accommodations for drainage.

North of the new sidewalk and curb and gutter along the west side of Washington Street is an open section roadway with a multitude of drainage facilities that range from:

- Typical roadside ditches
- Concrete v-ditches
- Unimproved earthen ditches
- No ditch at all
- Some private driveways lack drainage culverts
- Some private driveways have culverts

These types of features coexist along the corridor from just North of Talbot St. to just north of Harford St., making it a disconnected storm drainage system at best. Continuing northbound we have alternating storm drainage system types. Open section on one side the road, closed section on the other.

Examples are:

- East side of the corridor @ Shinning Willow Way
- West side of the corridor @ Pender Drive
- East side of the corridor @ Station Drive
- West side of the corridor @ Heritage Green Parkway
- East side of the corridor @ Laplata Park and Ride Facility
- East side of the corridor @ Dulles Street

This is typical of land development practice, placing new curb and gutter along existing corridors when new development occurs, allowing for a disconnected series of drainage facilities that

provide some refuge from storm water for pedestrians and bicyclists. Further drainage improvements are required to better accommodate vehicular, bicycle and pedestrian traffic along this corridor.

3.1.2 Existing Charles Street (MD Route 6) Bicycle and Pedestrian System

Corridor Length is approximately 6,200 linear feet, from Crain Highway to La Plata Road.

Speed Limit - 30 MPH, from Crain Highway east to Garrett Avenue

40 MPH, from Garrett Avenue east to La Plata Road (MD Route 488)

Roadway Description – Four-Lane asphalt – 44 feet travel lane.

Right of way Width – 50 feet.

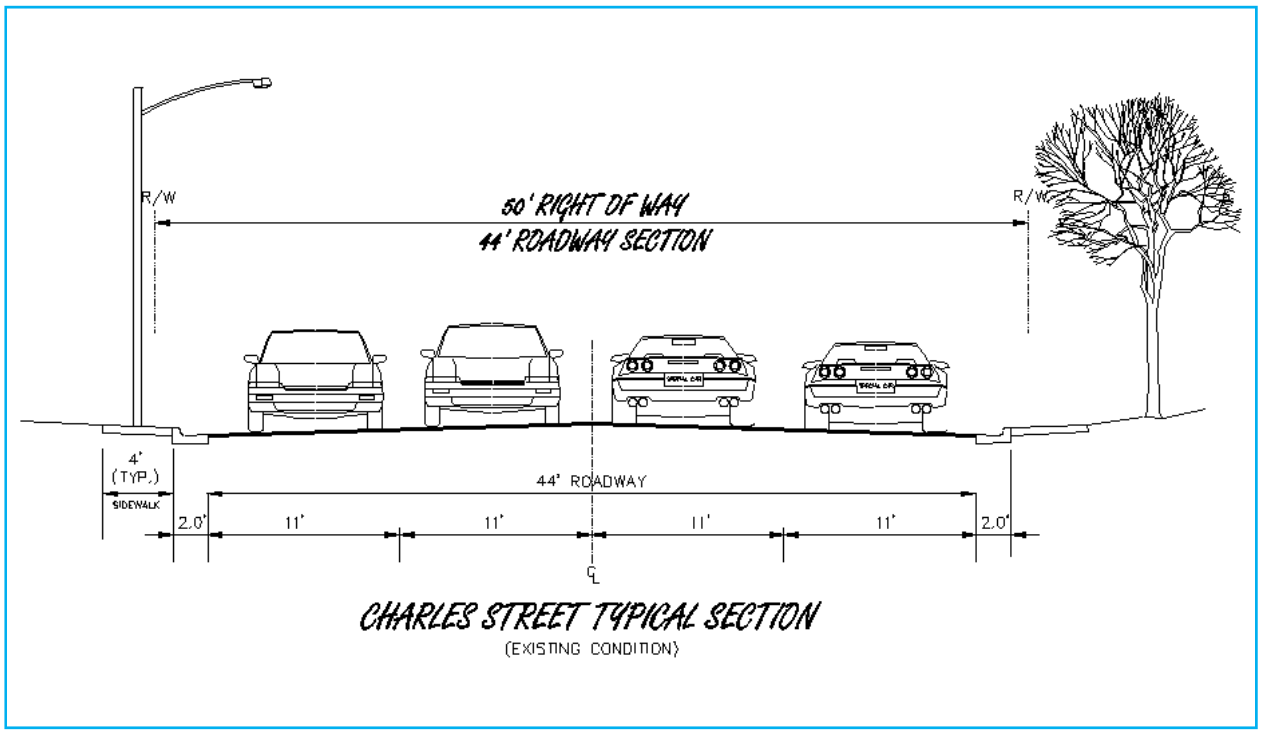


Figure 3-4: CHARLES STREET TYPICAL SECTION – 50' R/W – 44' PAVEMENT WIDTH – RT 301 TO WILLOW LANE

Sidewalks – Located half in/half outside the existing right-of-way.

Existing Major Intersections (West to East):

1. Crain Highway (MD Route 301)

2. Saint Mary's Avenue
3. Washington Avenue
4. La Plata Road (MD Route 488)

Existing Minor Intersections (West to East):

1. Baltimore Street
2. Lagrange Avenue
3. Maple Avenue
4. Oak Avenue
5. Willow Lane
6. Hickory Lane

As you head east from Crain Highway (RT 301) the road lanes go from one lane to two through lanes. The photo below shows the situation as you drive up the hill toward the downtown area. Please note the warning sign for pedestrians in crosswalks. This is one of the few signs that are in the Town limits warning drivers of pedestrians. Also note the power poles along the north side of the road in the sidewalk. The clear width for ADA is not present, requiring a minimum of 36" of clear width. The grade along this section of roadway is on the maximum percent threshold, thus landings 60" square and level in grade should be provided. This allows resting areas along the travel path.

In the downtown area, from Church St. to Somerset St., the section is restrained and several existing constraints that hinder both bicyclists and pedestrians, not to mention little ADA compatibility. The photo below reveals storefronts up to the sidewalk, driveways the do not meet ADA compliance, and crosswalks that are not protected (a mid-block crossing).

The next photo shows similar problems and introduces a street intersecting with Charles Street and at the same location of a railroad crossing. In addition, street signs that are not ADA compliant, since the blind would run into them, no refuge for the pedestrian waiting for the rail signal, and no audible pedestrian signals for the hearing impaired.

Continuing east bound the conditions remain the same, with very abrupt curb ramps that do not meet ADA compliance. This corridor remains a drivers section, providing some pedestrian access and no bicycle access. These two photos also show the typical section shown in Figure 3-5 below.

In Figure 3-5 below the four-lane roadway changes to typical section of two lanes each way and a center lane for left turns. This section has accommodations for both pedestrians and bicyclists. Along the west bound lane the shoulder can easily accommodate a 5 foot width bike lane and the existing sidewalk on the north side is 5 foot in width. Therefore, along this section of roadway for minimal cost the Town can allow for bicycle markings and signage to make the shoulder a permissible facility.

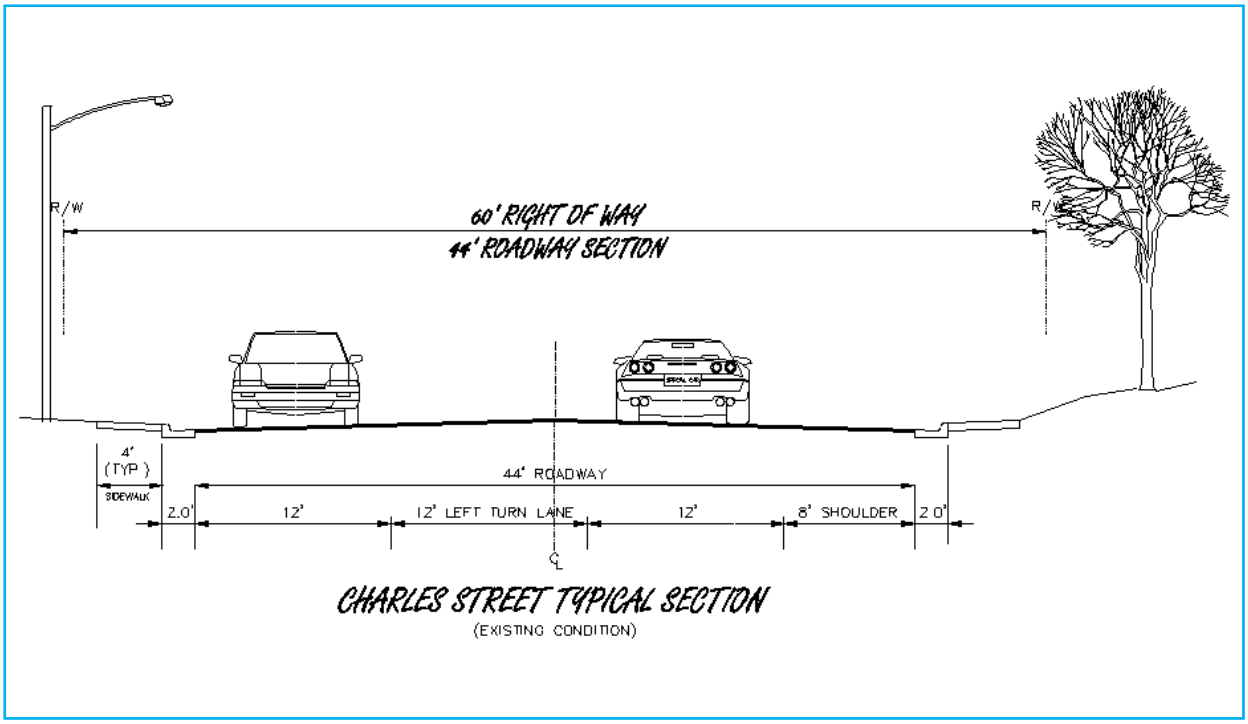


Figure 3- 5: CLOSED SECTION - TWO LANES W/LEFT TURN LANE

Along the last section of Charles Street the roadway has two lanes with wide shoulders on each side. The photo below shows this section and the clear shoulder and sidewalk along the north side of the roadway that provide reasonable areas for a bicycle lane and an ADA compliant travel paths

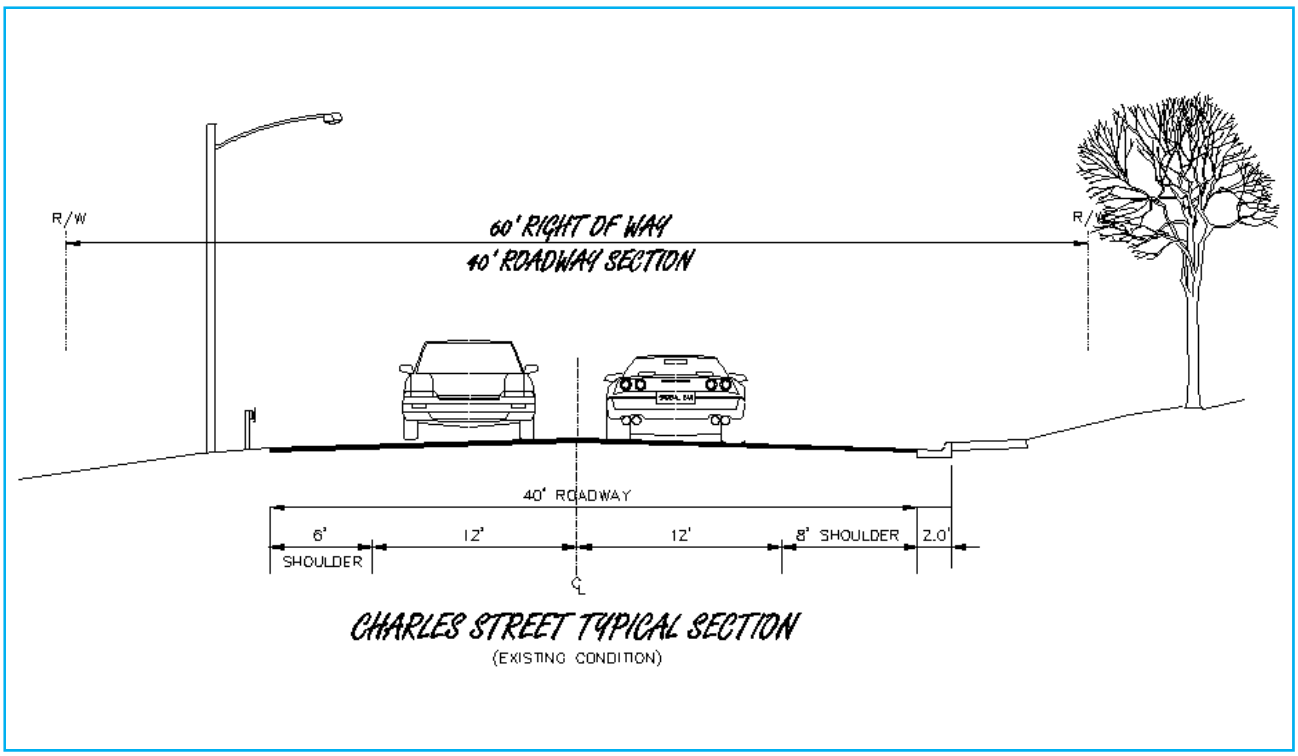


Figure 3- 6: CHARLES STREET – TWO LANE SECTION W/WIDE SHOULDERS PLUS SIDEWALK

Pedestrian Accommodation

The Charles Street Corridor is a moderate to heavily traveled pedestrian corridor. This is the major corridor through the downtown area and provides access to numerous business and government locations located on the corridor and within a one block distance adjacent to the corridor. This is a highly travelled corridor by motor vehicles creating many safety related issues with bike and pedestrian users. The corridor also serves as the downtown business district of the Town. Sidewalks line both sides of the roadway through the downtown area promoting a pedestrian environment does encourage walking. Pedestrians were observed more on the north side of the corridor traveling to/from parking areas to the government buildings. East of Washington Avenue pedestrians in the downtown area were walking along both sides of the roadway. Pedestrians can cross the corridor at several signalized intersections, but some pedestrians were crossing Charles Street at unmarked locations due to the lack of pedestrian crossings. No bike path is located along this corridor. As commercial projects slated for development or redevelopment move forward, it is likely that pedestrian activity will also increase.

A sidewalk is provided on both sides of the roadway for most of the entire length of the corridor, except past Willow Lane, which only has a sidewalk on the north side. The width of the sidewalk varies greatly, but most are more than five-feet in most locations. These sidewalks do

meet the requirements established by the Americans with Disabilities Act (ADA). The majority of wheelchair ramps located at the intersections along Charles Street are ADA compliant.

There are currently seven crosswalks across Charles Street within the study area – at Crain Highway, Church Street, Washington Avenue, LaGrange Avenue, Oak Avenue, Medical Center Entrance, and Garrett Avenue. Only two crosswalk locations at Crain Highway and Washington Avenue are provided at signalized intersections, pedestrian crossing phases (either exclusive or concurrent) are not provided at the traffic signals. Crosswalks do not exist along the corridor at the majority of minor street approaches at non-signalized intersections. None of these crosswalks are provided with protected pedestrian crosswalk markings.

Planned Pedestrian Crossings

There are no current plans to provide pedestrian crossing accommodations along the corridor. For any future pedestrian crossings the design should use as a general rule of thumb, 400 to 800 feet as a reasonable spacing between crossing locations.

ADA Compliance

As mentioned above, portions of the sidewalk and many wheelchair curb ramps do not comply with the Americans with Disabilities Act. The corridor should provide a minimum of five-foot sidewalks. This width allows two pedestrians (including wheelchair users) to walk side by side, or to pass each other comfortably. It also allows two pedestrians to pass a third pedestrian without leaving the sidewalk. The minimum clear width requirement is four-foot six-inch sidewalks, with a minimum of 3-feet of clearance around obstructions such as light/utility poles and traffic signal cabinets. Where the clearance width is less than five-feet, a five-foot square area of sidewalk must be provided at 200 feet intervals or less. In general, several utility poles along the corridor interfere with pedestrian passage.

Curb ramps at crosswalks should be a minimum of three-feet wide (exclusive of flares) and should be parallel with the direction of travel. At locations where there is a four-foot clearance between the bottom of the ramp and the far crosswalk line, one apex (corner) ramp is acceptable. Otherwise, two ramps must be provided at each corner.

Maryland's regulations state that if a sidewalk is placed less than two feet from the road pavement, curbing must be used on the edge of the road. However, if enough right-of-way exists to provide at least two feet minimum of separation between the road and sidewalk, curbing could be avoided. A 4 to 5-foot separation between the sidewalk and the roadway is desirable to the extent feasible. This separation enhances safety and is aesthetically more pleasing to the pedestrian, particularly if trees are retained between the road and sidewalk. None of the signalized intersections within the study area appear to completely meet ADA standards.

Bicycle Access

There are currently no formal bicycle accommodations along the Charles Street corridor. Bicyclists were observed traveling the corridor either on the sidewalk, in the roadway against the curb, or in the right-most travel lane. All three alternatives are dangerous for bicyclists, motorists, or pedestrians. With the numerous driveways along the corridor, riding along the curb or on the sidewalk can obstruct the bicycle from the view of motorists trying to exit the driveways. Additionally, riding in the traffic lane could pose a danger as through vehicles attempt to maneuver around turning vehicles and bicyclists.

In the future, more space designated for bicyclists within the roadway cross-section is generally the preferred treatment to better accommodate adults and more confident bicyclists. Please note one exception, children, elderly, and less experienced riders will still gravitate to the sidewalk.

The Maryland Department of Transportation undertook a comprehensive Bicycle and Pedestrian facility inventory in the Twenty Year Bicycle & Pedestrian Access Master Plan (2002). Current bicycling conditions were analyzed using the Bicycle Level of Comfort (BLOC) model. The BLOC model provides a measure of bicyclists' perceived safety and comfort within the existing roadway environment. The BLOC model is based on a number of factors such as roadway width, bike lane width, traffic volume, number of lanes on the road, pavement surface conditions, motor vehicle speed and type, and presence or absence of on-street parking. The BLOC model provides a grading system (A-F) for rating bicycle riding conditions on each roadway segment. Level A reflects the best conditions for bicyclists; level F represents the worst conditions. Only one road through La Plata, Charles Street (MD Route 6), was evaluated using the BLOC model. The results were from Crain Highway to Calvert St., BLOC of D, from Calvert St. to Willow Lane, BLOC of E, and from Willow lane to La Plata Road, LOC of B.

Planned Bicycle Accommodations

There are no future bicycle facilities planned for this corridor.

Storm Drainage Accommodations

A closed section street with storm drainage facilities: curb and gutter, catch basins, grate inlets and underground storm sewer pipe to carry storm water. This is true for most of this corridor from Crain Highway to Willow Lane. From this location to La Plata Road the north side of the road is a closed section with storm drainage facilities: curb and gutter, catch basins, grate inlets and underground storm sewer pipe to carry storm water. On the south side of the corridor to La Plata Road is an open section roadway with the storm drainage ditch beyond the existing guardrail. Existing storm drainage features are adequate.

3.1.3 Existing Saint Mary's Avenue Bicycle and Pedestrian System

Corridor Length is approximately 6,000 linear feet, from Charles Street to just north of Doc's Place and continues south to an intersection with Crain Highway.

Speed Limit - 25 MPH

Roadway Description – Two-Lane asphalt – 36 feet travel lane, closed section.

Right of Way Width – 40 feet.

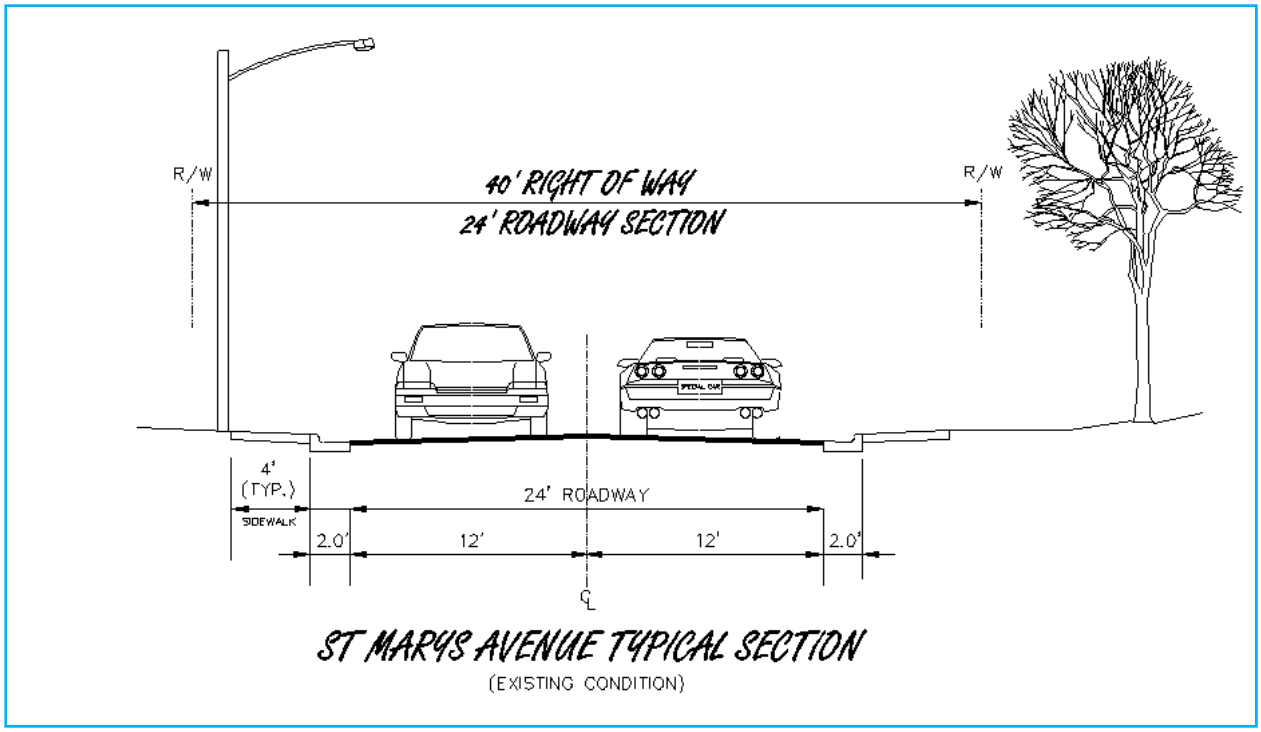


Figure 3-7: ST MARYS TYPICAL SECTION – 40' R/W – 24' PAVEMENT WIDTH

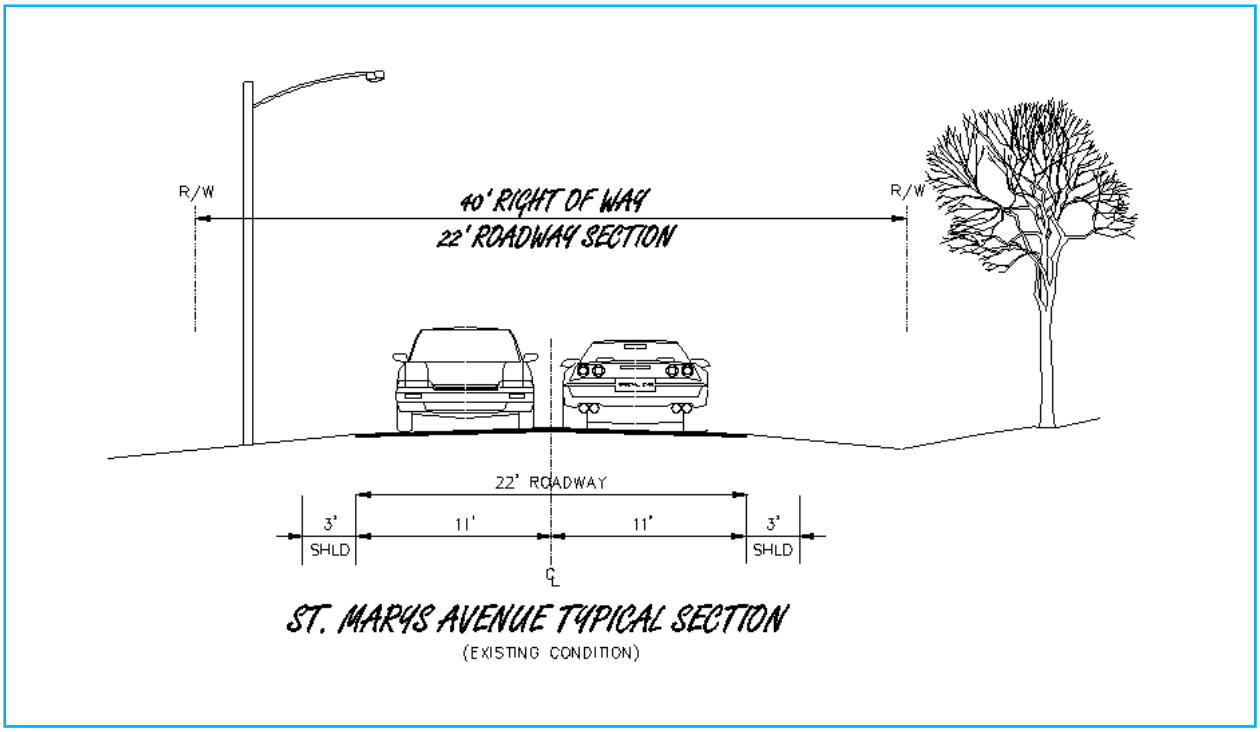


Figure 3- 8: ST MARYS AVE. TYPICAL SECTION – 40' R/W – 22' PAVEMENT WIDTH

Sidewalks – Located inside the existing right-of-way.

Existing Major Intersections (North to South):

1. Charles Street (MD Route 6)

Existing Minor Intersections (North to South):

1. Centennial Street
2. Glen Albin Road

The photo below shows the northern section of St. Mary's Avenue that is comprised of recent construction and provides pedestrian access, but does not provide any bicycle access. The sidewalks are four feet in width therefore don't meet current ADA guidelines. Buildings built along the west side are on zero setback lines, allowing no room for additional right-of-way if needed to construct new sidewalks and/or bike lanes.

The photo below, taken further south, shows new construction along the west side and the sidewalk ceases to exist along the east side. The power poles along each side of the corridor hinder any placement of new sidewalks and bike paths.

The corridor has many residential properties that have driveways. These present barriers to pedestrians with disabilities, which is a concern in designing an ADA accessible travel way. The next photo shows the northern approach to Glen Albin Road, with narrow sidewalks on the right side. Looking up the street the sidewalk moves to the opposite side of the roadway. Also, no crosswalks are present to allow some protection to the pedestrian. As you cross the Glen Albin Road on the right side is Wills Memorial Park. This park is a logical pedestrian and bicyclist destination. The park itself has no paths from the roadway to the facilities or bike racks, therefore leaving out accommodations for bicyclists or pedestrians.

South of the Glen Albin intersection the corridor turns to a rural corridor as you past the park. The photo below shows the rural character and does not provide any pedestrian or bicycle accommodations.

Pedestrian Accommodation

The Saint Mary's Avenue Corridor is a lightly traveled pedestrian corridor. It is worth noting that the current land use mix and pedestrian environment do not encourage walking. Pedestrians were observed more on the east side of the corridor traveling to/from residential areas to the

downtown area. Pedestrians are occasionally forced to cross Saint Mary's Avenue at unmarked locations due to the lack of pedestrian crossings. No bike path is located along this corridor. As the projects slated for development move forward, it is likely that pedestrian activity will also increase.

A sidewalk is provided on both sides of the roadway down to Centennial Street. From Centennial Street to Charleston Court the west side of the corridor has sidewalk while the east side is intermittent. The width of the sidewalk varies greatly and is less than four-feet in some locations. These narrow sidewalks do not meet the requirements established by the Americans with Disabilities Act (ADA). The majority of wheelchair ramps located at the intersections along Saint Mary's Avenue are also not ADA compliant.

There are currently two crosswalks across Saint Mary's Avenue within the study area. These areas are located near Queen Anne Street and at Centennial Street. Crosswalks are not present along the majority of minor street approaches at unsignalized intersections.

Planned Pedestrian Crossings

There are no current plans to provide pedestrian crossing accommodations along the corridor. For any future pedestrian crossings the design should use as a general rule of thumb, 400 to 800 feet as a reasonable spacing between crossing locations.

ADA Compliance

As mentioned above, portions of the sidewalk and many wheelchair curb ramps do not comply with the Americans with Disabilities Act. The corridor should provide a minimum of five-foot sidewalks. This width allows two pedestrians (including wheelchair users) to walk side by side, or to pass each other comfortably. It also allows two pedestrians to pass a third pedestrian without leaving the sidewalk. The minimum clear width requirement is four-foot six-inch sidewalks, with a minimum of 3-feet of clearance around obstructions such as light/utility poles and traffic signal cabinets. Where the clearance width is less than five-feet, a five-foot square area of sidewalk must be provided at 200 feet intervals or less. In general, several utility poles along the corridor interfere with pedestrian passage.

Curb ramps at crosswalks should be a minimum of three-feet wide (exclusive of flares) and should be parallel with the direction of travel. At locations where there is a four-foot clearance between the bottom of the ramp and the far crosswalk line, one apex (corner) ramp is acceptable. Otherwise, two ramps must be provided at each corner.

Maryland's regulations state that if a sidewalk is placed less than two feet from the road pavement, curbing must be used on the edge of the road. However, if enough right-of-way exists to provide at least two feet minimum of separation between the road and sidewalk, curbing could be avoided. A 4 to 5-foot separation between the sidewalk and the roadway is desirable to the extent feasible. This separation enhances safety and is aesthetically more pleasing to the

pedestrian, particularly if trees are retained between the road and sidewalk. None of the signalized intersections within the study area appear to completely meet ADA standards.

Bicycle Access

There are currently no formal bicycle accommodations along the Saint Mary's Avenue corridor. Bicyclists were observed traveling the corridor either on the sidewalk, in the roadway against the curb, or in the right-most travel lane. All three alternatives are dangerous for bicyclists, motorists, or pedestrians. With the numerous driveways along the corridor, riding along the curb or on the sidewalk can obstruct the bicycle from the view of motorists trying to exit the driveways. Additionally, riding in the traffic lane could pose a danger as through vehicles attempt to maneuver around turning vehicles and bicyclists.

In the future, more space designated for bicyclists within the roadway cross-section is generally the preferred treatment to better accommodate adults and more confident bicyclists. Please note one exception, children, elderly, and less experienced riders will still gravitate to the sidewalk.

Planned Bicycle Accommodations

There are no future bicycle facilities planned for this corridor.

Storm Drainage Accommodations

A closed section street moving south of Charles Street with storm drainage facilities: curb and gutter, catch basins, grate inlets and underground storm sewer pipe to carry storm water. Both sides of the corridor have curb and gutter to Centennial Street. From Centennial Street to Glen Albin Street on the west side of the corridor curb and gutter exists. On the opposite side of the street along this section is open section with roadside ditches, with one exception, s segment that has curb and gutter near Forest Lane.

South of Glen Albin Road it is an open section roadway along the west side to the town limits with roadside ditches. On the east from Glen Albin Road to just south of Frederick Drive is a closed section of roadway. From this point to the town limits is open section roadway with roadside ditches with little accommodations for drainage and potential hazards for bicyclists and pedestrians. Private driveways lack drainage culverts. Further drainage improvements are required to better accommodate vehicular, bicycle and pedestrian traffic along this corridor.

3.1.4 Sidewalk and Hiker-Biker Trail Inventory

Table 3-1 is an inventory of all major roadway corridors excluding interior circulation within neighborhoods. This analysis includes tabulated pedestrian facilities with estimated lengths and descriptions; tabulation of gaps in connectivity with estimated distances; and an existing pedestrian facilities map demonstrating gaps in connectivity. This inventory will serve as a basis for evaluation, analysis and recommendations for the Town's pedestrian and bicycle system.

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
US 301				
Hawthorne Dr to Shining Willow Way	East side	1400		
Hawthorne Dr. to Entrance	West side	850		
Hawthorne Drive				
Front of CVS / Front of Walgreens	Both sides	200		Concrete sidewalk.
CVS to Washington Ave.	Both sides		1100	
Hawthorne Drive (MD 225)				
US 301 West to Pine Street	North side	2000		Concrete sidewalk.
Church Street	Both sides	400		Concrete sidewalk.
		400		Concrete sidewalk.

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Talbot Street	North side	1350		Concrete sidewalk.
	South side	1350		Concrete sidewalk.
Shining Willow Way				
US 301 to Washington Ave.	South side	1500		Concrete sidewalk.
US 301 to opp. back Safeway entrance	North side	900		Concrete sidewalk.
Heritage Green Pkwy	North side	2000		Concrete sidewalk.
	South side	2000		Concrete sidewalk.
Rosewick Road	South side	4700		Paved trail.
Route 301 to Lowes entrance	North side	1000	3700	Not planned.
La Grange Avenue	Both sides	1100		Concrete sidewalk.

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
		1100		Concrete sidewalk.
Centennial Street				
US 301 East to St. Mary's Ave.	Both sides	1100		Concrete sidewalk.
		1100		Concrete sidewalk.
St. Mary's to South Maple	Both sides	900		Concrete sidewalk.
St. Mary's Avenue				
MD 6 so. to ~200 ft So. of Centennial St.	Both sides	900		
		900		
MD 6 so. to Glen Albin Road	West side	3300		
MD 6 so to ~200 ft so of Centennial St.	East side	900		
~200 ft so. Of Centennial so to Glen Albin	East side		2200	
opp. Charleston Ct (so)	East side	200		

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Washington Avenue				
MD Route 6 North ~250 feet	Both sides	250 250		Drainage problems, street runoff collecting on sidewalk. Street needs to be reconstructed.
MD Route 6 to ~100 ft No. of Talbot St.	West side	1000		
~500 ft so of Shining Willow Way to Shining Willow Way	West side	500		Paved path.
Shining Willow Way to front of La Plata Fire Dept.	West side	480		

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Heritage Green Pkwy to opp. Park-N-Ride lot	West side	460		
~150 So. Of Rswk Rd So. To Park & Ride	East side	**2400**		
	West side		**2400**	
North of Pender Dr.	West side	275		Four (4) foot asphalt path.
South of Heritage Green Pkwy	**West side**	**440**		
MD Route 6 (aka Charles Street)				
US 301 West to Wesley Dr.	south side	600		
US 301 West to Haldane Drive	North side	1400		

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
US 301 East to Washington Ave.	Both sides	1400		
		1400		
Washington Ave. to Willow Lane	Both sides	3000		
		3000		
Willow Lane to MD Route 488	North side	2700		
	South side		2700	
Oak Avenue				
MD 6 South to Milton Somers entr.	West side	1900		
MD 6 South to Glen Albin Road	East side		3200	

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Martin Drive South Glen Albin Road	West side	800		
Somers Ent. To Martin Dr.	West side		472	
Glen Albin Road				
US 301 to Nanjemoy Dr.	South side	300		
	North side	0		
Nanjemoy Dr to St. Mary's Ave.	North side	700		
	South side	700		
St. Mary's Ave to ~500 ft East	South side	500		
Patuxent to Oak Ave.	North side	1000		
	South side	0		

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Oak Ave So. To Willow Lane S.	Northeast side	700		
	Southwest side	0		
Willow Lane				
Rt 6 to Somers Middle School	West side	3168		Concrete sidewalk with asphalt path on BOE property.
Kent Ave.				
Rt 6 to Y with N. Oak	Both sides		500	
Y to RR Tracks	East side	1548		Concrete sidewalk.
RR tracks to Wash. Ave.	Both sides		1600	
Rt 488/Radio Station Rd.				
End of Agricopia Trail to School Entrance	Both sides		1650	Future County project.

Table 3-1 **ROAD**	**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
School Entrance to Rosewick Rd. Hiker-Biker	Both sides		4752	Future County project.
Fescue Circle (Agricopia)	East Side	2350		Parallels Rt. 488.
Queen Anne				
La Grange to St. Mary's	South side	446		
Magnolia Dr.				
Hawthorne to Oriole Lane	Both sides	**1300**		
North Oak				
Rt. 6 to Y with Kent	East Side	390		
Gap at Y	East Side		100	
Oriole				
To Magnolia	North side	1200		
Chesapeake St.				
To Terminus	South side	700		Four (4) foot sidewalk.

Table 3-1 **ROAD**		**ORIENTATION**	**EXISTING** **(Linear Feet)**	**MISSING** **(Linear Feet)**	**NOTES**
Drury Dr.					
South of Heritage		Both sides	700		
North of Heritage		Both sides	300		
		FEET	69507	24374	
	TOTAL	MILES	13.16	4.62	

3.2 Improvement Identification, Analysis and Recommendations

3.2.1 Washington Avenue Improvements

To facilitate a continuous pedestrian and bike corridor along Washington Avenue in a cost effective manner, the selection of which side of the corridor needs to be made. Since the existing conditions vary throughout the corridor, the most logical location will need to shift from the east to the west. The following is a description of potential projects throughout the corridor. In planning future improvements the Streetscape Concepts prepared by MDOT and MSHA in March of 2003 should be consulted.

Baltimore Ave. to Hawthorne Drive – The east side of the corridor can be improved to include a 4 foot sidewalk with curb and gutter. This improvement was planned in detail in 1999 by Ben Dyer and Associates with Davis, Bowen, Friedel, Inc. Construction drawings are on file in the Town Hall. The west side of the corridor should be completed with sidewalks once the east side is completed to establish the link.

Hawthorne Drive to the Park and Ride -- The west side can be improved for the areas between the segments of existing sidewalks to create a continuous link. Once the continuous link is established on the west side, the east side should be completed with sidewalks.

The most logical solution is providing a closed section roadway along those segments that are currently open section. This would only apply to the west side of the corridor. The existing pavement could be widened by 5 feet to accommodate a new bike lane. Curb and gutter would be added with a 2 foot utility strip. A new five foot sidewalk would be constructed. For those existing closed sections, the existing curb and gutter and sidewalk would be removed and reconstructed to accommodate a new bike lane along the southbound lane of Washington Avenue.

These new improvements can be done within an existing 50 foot right-of-way since this portion of Washington Avenue has fewer topographic and physical constraints than the segment south of Hawthorne Dr. In Figure 3-9 below, an open section is shown with an 8 foot shared use path on the right side. It also shows the closed section on the left side that shows the improvements required to make a continuous pedestrian and bike corridor along Washington Avenue.

Charles Street to Baltimore Ave. -- Rebuild both sides of street to provide grade separation between the sidewalk and the roadway and controlling drainage. This project will require the lowering of the road bed through milling and rebuilding the existing sidewalks.

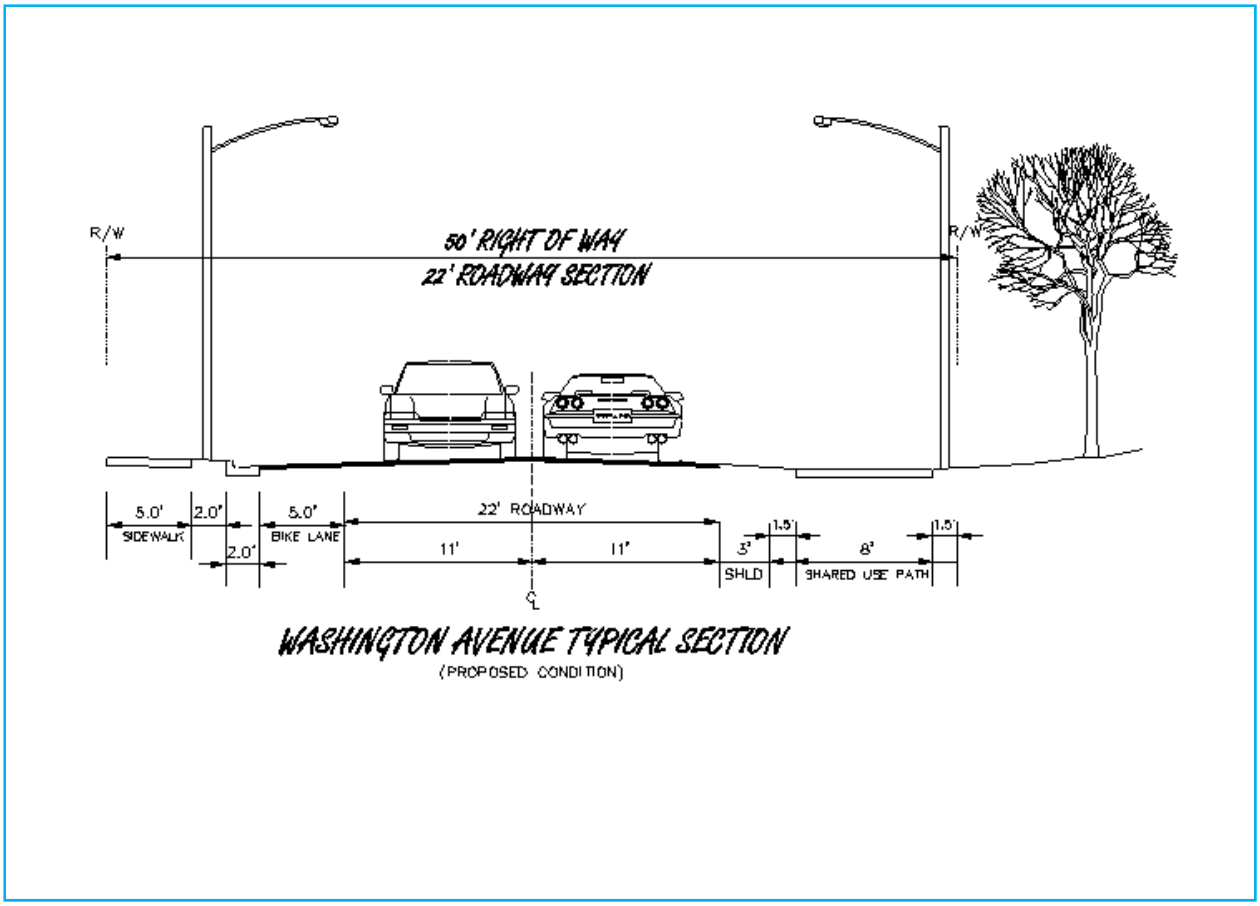


Figure 3-9 WASHINGTON AVE. TYPICAL SECTION – 50' R/W – 22' PAVEMENT WIDTH – 8' SHARED USE PATH AND 5' BIKE LANE AND 5' SIDE WALK SCENARIO

The following improvements will enhance the safety of pedestrians and bicyclists.

1. Though it is not currently warranted, when a new traffic signal is added at the intersection of Heritage Green Parkway and Washington Avenue and crosswalks are striped on all three corners of the intersection pedestrian safety will be enhanced.

2. Though it is not currently warranted, when a new traffic signal is added at the intersection of Shinning Willow Way and Washington Avenue and crosswalks are striped on all four corners of the intersection pedestrian safety will be enhanced.

3.2.2 Charles Street Improvements

To facilitate a continuous pedestrian and bike corridor a along Charles Street the selection of which side of the corridor needs to be made. Based on the existing conditions, the north side of the corridor represents the most logical location to create a continuous pedestrian and bike corridor. The north side can be improved for the entire corridor and contains the most segments

of existing sidewalks that can be connected. In planning future improvements the Streetscape Concepts prepared by MDOT and MSHA in March of 2003 should be consulted.

From **Willow Lane east to La Plata Road** the existing roadway section can remain the same and place bicycle lane markings and signage along the north side of the roadway corridor. The existing sidewalk is adequate to meet ADA guidelines. **West of Willow Lane** becomes more problematic and offers little room to comply with ADA guidelines and meet federal and state bicycle standards and policies. The most logical solution is providing a closed section roadway along the remaining corridor length that has three lanes each 11' in width. This roadway section would have a center lane for left turns and two through lanes in each direction. A wide multi-use sidewalk/path along the storefronts and businesses would encourage pedestrian use and allow for more space for bike racks and sitting areas for the users of the downtown area. This solution would provide a streetscape improvement approach to the corridor and allow for more beautification to be incorporated into the improvements for bike and pedestrian facilities.

These new improvements can be done within an existing 50 foot right-of-way. In Figure 3-10 below, a closed section is shown with an 8 foot multiuse area on both sides of the roadway.

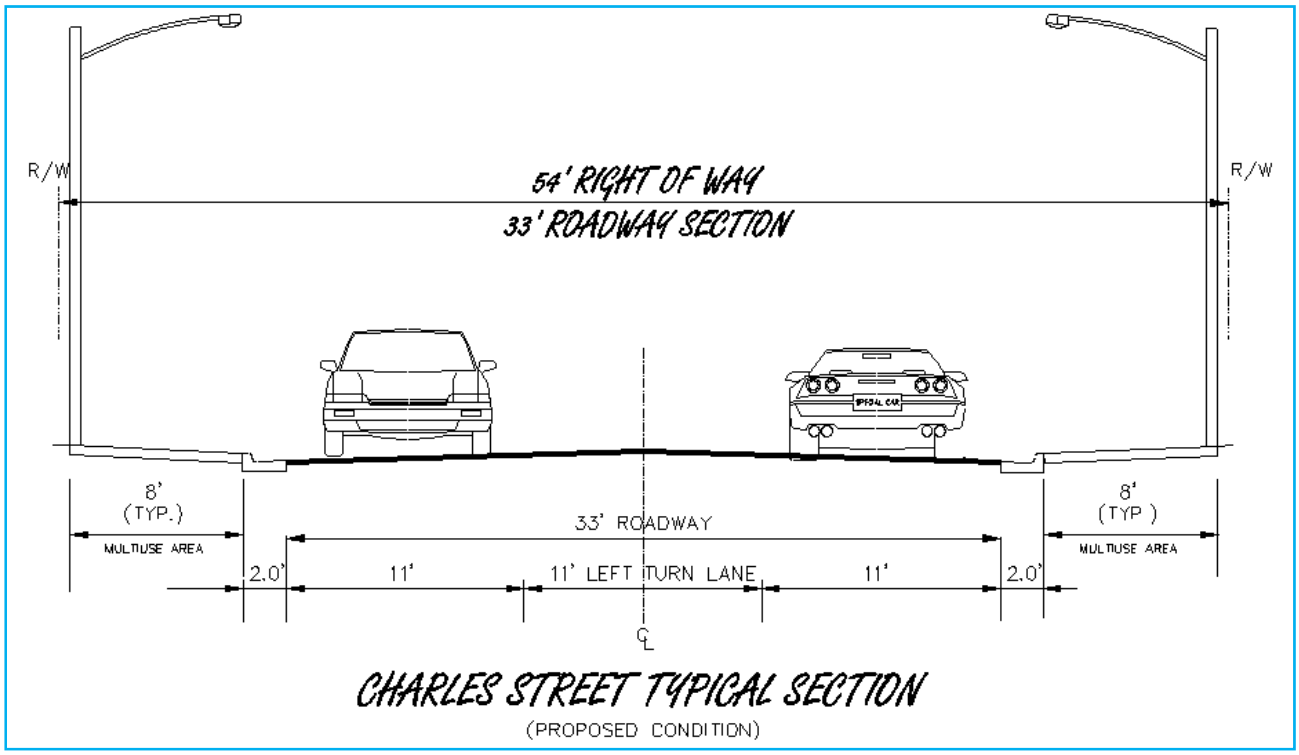


Figure 3-10 - PROPOSED CHARLES STREET - DOWNTOWN SECTION

3.2.3 St. Mary's Avenue Improvements

To facilitate a continuous pedestrian and bike corridor a along St. Mary's Avenue the selection of which side of the corridor needs to be made. Based on the existing conditions, the west side

of the corridor represents the most logical location to create a continuous pedestrian and bike travel way. The east side of the corridor north of Glen Albin Road is located in a higher density portion of the Town and therefore warrants the completion of the existing sidewalks by infilling the missing segments. Along this corridor we propose using a shared use path 8 foot in width. Given the transition from an urban setting to rural setting, the shared use path fits this scenario in developing this corridor into a more bicycle and pedestrian friendly corridor. In planning future improvements the Streetscape Concepts prepared by MDOT and MSHA in March of 2003 should be consulted.

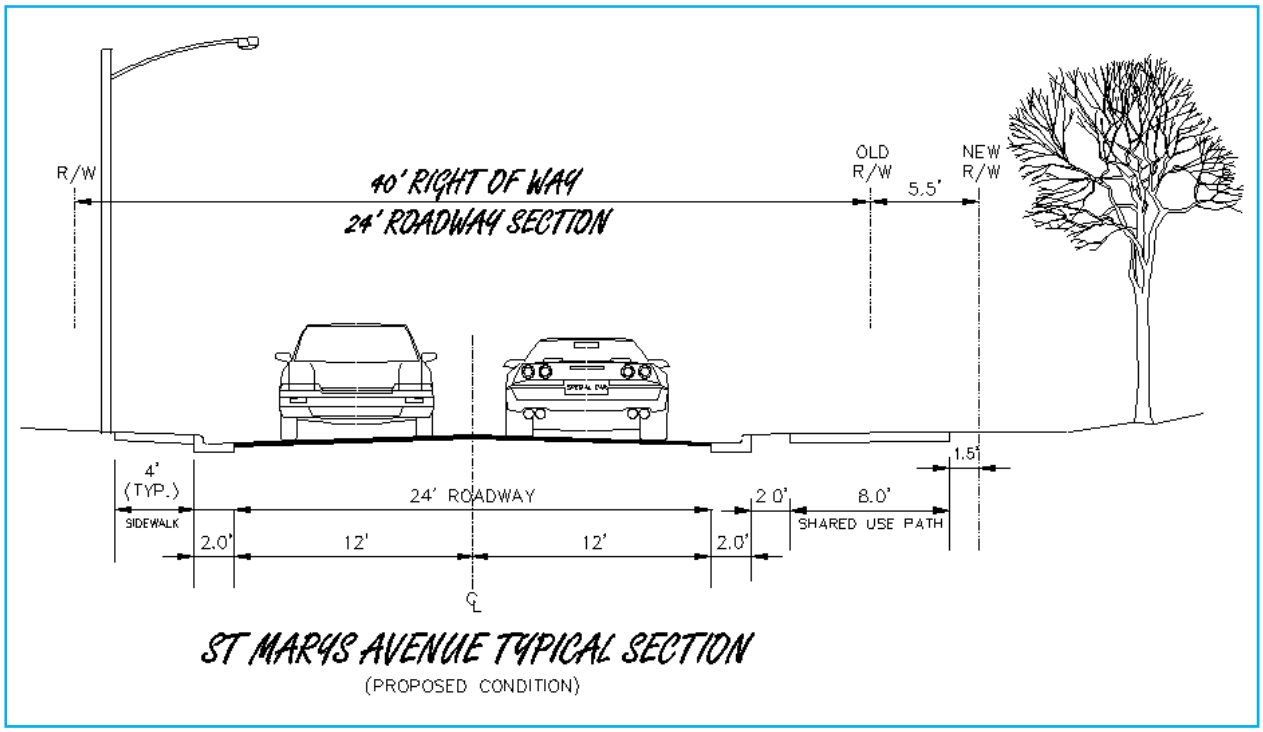


Figure 3-11 – ST MARYS AVE. TYPICAL SECTION – 40' R/W – 24' PAVEMENT WIDTH – 8' SHARED USE PATH

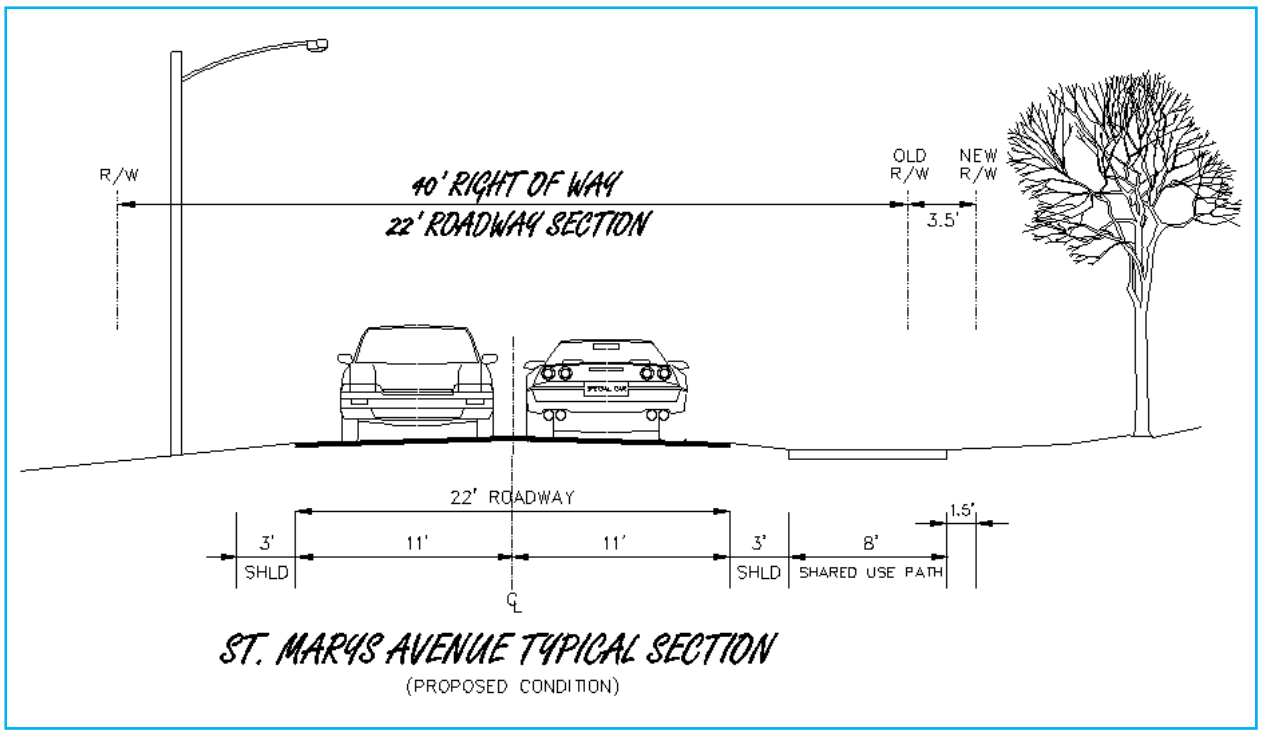


Figure 3-12 - ST MARYS AVE. TYPICAL SECTION – 40' R/W – 22' PAVEMENT WIDTH – 8' SHARED USE PATH

3.2.4 Improvement Project Needs outside the Priority Corridors

The following improvement projects have been identified as important to the Town in linking neighborhoods to the business and community activity centers or as opportunities to complete key links in the Town's pedestrian or hiker-biker systems.

1. On the west side of Rt. 301 there is an opportunity to connect the existing sidewalk at Haldane Dr. on the north side of Rt. 6 to Quailwood Pkwy. Even though Quailwood Parkway has no pedestrian or bicycle facilities it is a wide dualized parkway that can accommodate pedestrians and bicycles relatively safely.

2. Along Rt 488 there is an opportunity to complete a north-south oriented hiker-biker trail from the Rosewick Road Hiker-Biker trail to the sidewalk system on Charles Street. This would not only provide a hiker biker link to the Rosewick Road/St. Charles Parkway Trail from Charles Street, it would provide a pedestrian connection for the Agricopia Neighborhood into the central business district. This opportunity is the result of a capital improvement project being designed for Radio Station Road which includes a 10 foot paved hiker-biker trail from Rosewick Road to the paved trail planned for Agricopia parallel to Radio Station Road.

3. The is an identified need to link La Plata Plaza to the Washington Ave pedestrian system via the north side of Hawthorne Rd. This would be a 5 foot sidewalk tying in to the sidewalk at CVS Pharmacy. The south side of Hawthorne should be completed once the link is established.

4. The Route 301 corridor generally has fragmented areas of sidewalks in front of businesses which represent varying policies for the provision of sidewalks over time. The more recent projects such as La Plata Plaza and La Plata Village have a well developed sidewalks network. There is an opportunity to connect these two areas between the area of side walk north of Shining Willow Way and the first entrance to the La Plata Village Center at Drury Drive. The balance of the gaps identified on the east side of Route 301 needs to be completed with sidewalk. The western side of Route 301 has less potential for pedestrian activity, and therefore, is not as high a priority.

5. Kent Ave has extensive sidewalk on the east side to the RR tracks; however, there is no connection to the proposed Washington Avenue corridor system. A sidewalk link on the east side from the RR tracks via Kent Ave. and Hawthorne would provide that connection. Once the eastern portion is completed, the western side should be completed with sidewalks.

6. The Oak Ave sidewalk from Charles Street to Glen Albin Rd. is near completion; however, there is a missing portion from the Somers Middle School entrance to Martin Drive. This missing connection is an impediment to children walking to school along Oak Avenue.

7. The Willow Lane sidewalk connects the Charles Street to Somers Middle School and Mitchell Elementary is connected to Glen Albin Road; however, there is no pedestrian connection between the two schools. There is an opportunity to provide a pedestrian way on the east side of Willow Lane extended.

8. The existing conditions map reveals that several remote neighborhoods such as Clarks Run, Kings Grant and Steeplechase are not tied to the downtown through pedestrian or bicycle ways. A hiker-biker path along Rt. 301 from Catalpa to Glen Albin is a possible way to link Steeplechase. Clarks Run could be linked via a Patuxent Drive extension for automobiles or just bicycles. Kings Grant could be served by a hiker-biker path along Rt 488 to the Radio Station hiker-biker trail. Another option could be the connection to Box Elder Rd. via the existing undeveloped right of way.

3.2.5 Recommendations for Pedestrian and Bicycle System Improvement

3.2.5.1 Improvement Project Recommendations

Based on the improvement project identification and analysis the projects have been evaluated in terms of priority phasing and relative magnitude on a cost basis. Table 3-2 lists projects for consideration in final decision making by the agencies having jurisdiction over the facilities. The Map titled "Existing and Planned Pedestrian and Bicycle Systems" Figure 3-13 identifies the location of planned projects and the priority phasing.

The table rates projects based on recommended priority phasing. The rankings include short, mid and long range projects depending on public need. Those need factors relate to public safety, the pedestrian and bicycle volumes and close proximity to high traffic generators.

> **Short Range** – Are projects that should be completed in the 2-4 year time frame. These projects are priority due to safety concerns or their importance in the phasing future projects to complete system links. These projects are located in areas of higher residential density and commercial activity.
>
> **Mid Range** – Are projects that should be completed in the 4 to 8 year time frame. Generally, these projects are somewhat dependent on short range projects to be fully effective and have no immediate safety concerns. These projects are generally identified where the primary linkages have been established.
>
> **Long Range** – Are projects that should be completed in the 8 to 12 year time frame. These projects are more remote from the primary pedestrian and bicycle systems and are therefore less critical to the completion of the areas closest to the business districts and community buildings where higher pedestrian and bicycle traffic is generated.

The recommended project list includes a relative magnitude of cost for project comparison purposes. These are not engineering estimates and do not include all the cost factors associated with project planning. The cost of constructing the primary facilities has been estimated based on the scope of the project.

There is a broad range of options to implement the construction of the identified projects. The Town should select among the following methods as is most appropriate:

1. Employ cost sharing by beneficiaries and responsible authorities. For example, improvements to Washington Ave from Baltimore St. to Charles Street could be accomplished by a cost sharing by the County, Town and adjoining property owners.

2. The Town currently requires new commercial and residential projects to provide sidewalks; however, in some cases the sidewalks have lacked connectivity. A regulatory

requirement to provide the needed connectivity for large scale projects would give the Planning Commission the authority to request the connections.

3. Redevelopment projects need to provide sidewalk construction or reconstruction according to the Town plans. Some jurisdictions, such as Salisbury in Maryland, have mandated a 50/50 cost sharing for smaller projects such as infill residential.

Table 3-2

Project Name	Description	Phasing Priority	Length in feet	Magnitude of Cost*	Comments
Washington Ave. –Baltimore Ave to Hawthorne Dr.	Curb and Gutter and 5 foot sidewalk with drainage improvements on East Side.	Short Range	2800	$480,000	Engineering Plans prepared and on file in the Town Hall (1999). Charles County PGM prepared full engineering estimates for the project (2009)
Washington Ave. –Baltimore Ave to Hawthorne Dr. (Continued)	Curb and Gutter and 5 foot sidewalk with drainage improvements on west side.	Mid Range	2800	$480,000	
Washington Ave. – Hawthorne Dr. to Park and Ride	Curb and gutter and 5 foot sidewalk On West Side.	Short Range	1850	$105,000	Will provide access to Park and Ride
Washington Ave. – Hawthorne Dr. to Park and Ride	Curb and gutter and 5 foot On East Side.	Mid Range	3800	$210,000	Can be done as with the development of Heritage Green
Washington Ave – La Plata Commerce Center to Rosewick Rd. Hiker-Biker Trail	5 foot asphalt path to tie into hiker-biker trail on the east side	Short Range	150	$5,000	
Washington Ave from Charles St. to Balt. Ave	Reconstruct sidewalk on both sides. Lower roadway by milling the asphalt to sufficient levels.	Short Range	250	$45,000	Similar to the work performed on La Grange.
Kent Ave. – from RR tracks to Washington Ave. via Hawthorne Dr.	Curb and gutter and 5 foot sidewalk on the east side	Short Range	1600	$88,000	
Oak Ave. from Martin Dr. to the Somers entrance	Curb and gutter and 5 foot sidewalk On West Side.	Short Range	470	$26,000	

Project Name	Description	Phasing Priority	Length in feet	Magnitude of Cost*	Comments
Hawthorne Dr. from Washington to CVS	Curb and gutter and 5 foot sidewalk on the north side	Short Range	1100	$65,000	
Hawthorne Dr. from Washington to Walgreens	Curb and gutter and 5 foot sidewalk on the south side	Mid Range	1100	$65,000	
Rt. 301 from north of Shining Willow Way to Drury Lane	5 foot Sidewalk on east side	Short Range	460	$17,000	
Rt. 301 from Glen Albin to Hawthorne Dr.	Infill sidewalk and curb and gutter as needed on the east side	Mid Range	4200	$250,000	Potential SHA project
Rt. 301 from Glen Albin to Heritage Green Blvd.	Infill sidewalk and curb and gutter as needed on the west side	Long Range	6500	$350,000	
Rt. 301 from Caltalpa to Glen Albin	Construct hiker-biker trail on west side.	Long Range	1300	$35,000	Will connect Steeplechase and Stagecoach Crossing to the Downtown.
St. Marys from Glen Albin to Charles Street	Infill sidewalk and curb and gutter as needed on the east side	Mid Range	2300	$130,000	As a priority corridor, completion of sidewalk on the east side would allow easy access to downtown without crossing the collector road.
Glen Albin – Patuxent Ct to St. Marys	5 foot sidewalk on the north side.	Long Range	700	$25,000	
Glen Albin – Patuxent Ct. to Oak Ave.	5 foot sidewalk on the south side.	Long Range	700	$25,000	
Radio Station Road from Agricopia Trail to the beginning of the Rosewick Rd Hiker-Biker Trail.	10 foot Hiker-Biker Trail	Short Range	6550	$150,000	T o be Constructed by Charles County
Rt 488 from Agricopia to Charles Street	Complete 10 foot Hiker-Biker Trail on North Side	Short Range	1900	$50,000	Would complete line from Rosewick Rd to Charles St.

Project Name	Description	Phasing Priority	Length in feet	Magnitude of Cost*	Comments
Willow Lane Extended connecting Somers Middle to Mitchell Elem. School	5 foot asphalt trail on the east side.	Long Range	1500	$25,000	
Patuxent Drive connection to Willow Lane extended	5 foot hiker-biker trail	Long Range	1700	$26,000	Connects Clarks Run Neighborhood to the Downtown
Entrance to Kings Grant to Agricopia path	10 foot hiker-biker trail	Long Range	2600	$65,000	Connects Kings Grant Neighborhood to Downtown
Rt 6 (Port Tobacco Rd) from Haldane Dr. to Quailwood Pkwy.	10 foot hiker-biker trail on the north side	Long Range	1000	$25,000	

* This represents relative magnitude of cost for project comparison purposes only. These figures are not engineering estimates and do not include all the cost factors associated with project planning. The cost of constructing the primary facilities has been estimated based on scope of the project (2009 year est.)

3.2.5.2 Design Considerations for Creating Pedestrian Safety and Comfort

The following guidelines should be incorporated into the Town's regulation to insure that future land development activities and pedestrian system improvements will create a "pedestrian friendly" environment as an established goal of the Town.

1. 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. For example, automobile stop lines should be added at all signalized intersections along Washington Ave. 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.

2. Accessible pedestrian crossing signals should be added (wherever they are not already planned) at all traffic lights. 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.

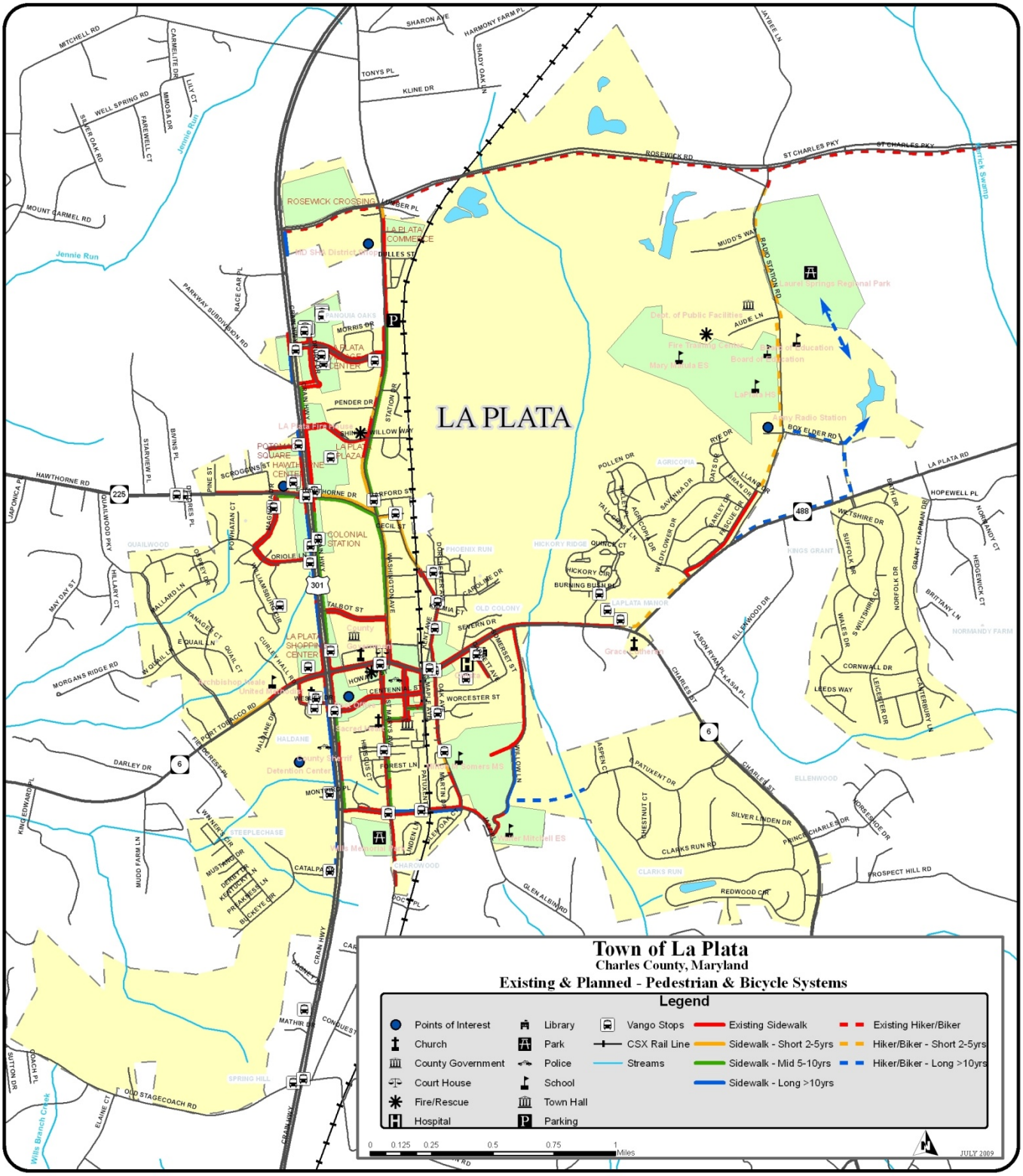

LA PLATA
Town of La Plata
Charles County, Maryland
Existing & Planned - Pedestrian & Bicycle Systems
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
Vango Stops
CSX Rail Line
Streams
Existing Sidewalk
Sidewalk - Short 2-5yrs
Sidewalk - Mid 5-10yrs
Sidewalk - Long >10yrs
Existing Hiker/Biker
Hiker/Biker - Short 2-5yrs
Hiker/Biker - Long >10yrs
0 0.125 0.25 0.5 0.75 1 Miles
JULY 2009

Figure 3-13

3. Crosswalks should be striped on all four legs of intersections and at 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.

4. Any locations along Town Streets 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 radius, seek to apply this approach more broadly. Large diagonal ramps tend to mislead pedestrians who are blind." Two ramps per corner should be provided throughout the corridor, including in surrounding neighborhoods.

   Traffic signals along Washington Ave. 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. It is equally 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 (i.e. at minor streets).

5. 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.

6. Signage at uncontrolled intersections along each pedestrian corridor 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.

7. 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.

8. 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.

9. Where possible, physical buffers such as trees or decorative lights, should be provided between roads and sidewalks.

10. Intersection and driveway corner radii should be reexamined 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.

11. A rigorous maintenance and re-striping plan should be developed to ensure that crosswalks, stop lines and other road markings are visible.

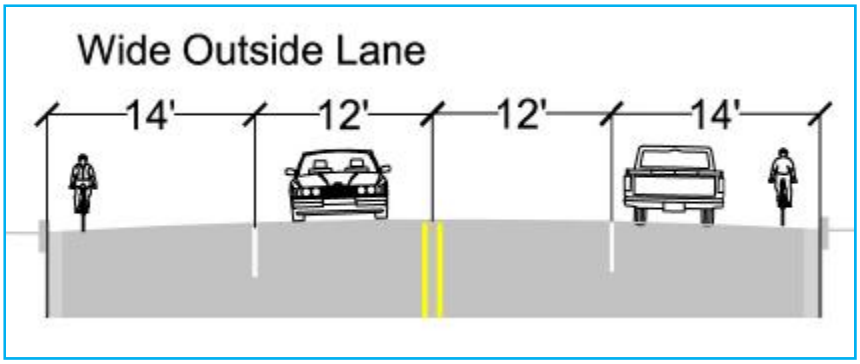
12. Opportunities to slow traffic through a range of traffic calming initiatives on neighborhood streets should be implemented.

13. All crosswalks at important intersections off of main arterial roads should be striped.

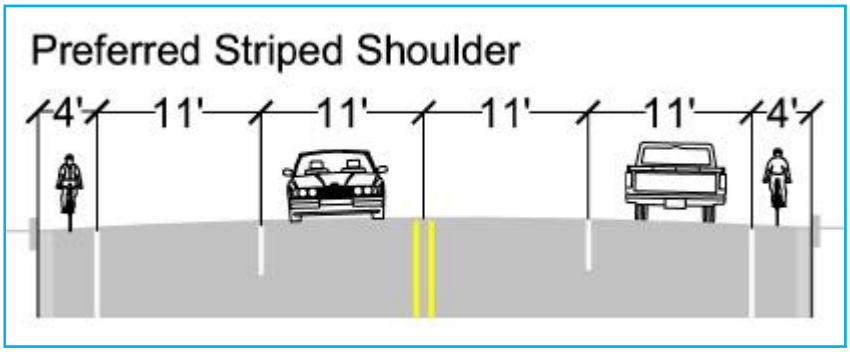
3.2.5.3 Design Considerations for Creating Bicycle Comfort and Safety.

The implementation of appropriate policies and strategies can increase bicycle and pedestrian activity in the Town. Increased bicycling and walking results in significant transportation and public health benefits and, in the case of bicycle tourism, provides direct economic benefits as well. Appendix B contains recommended *Bicycle/Pedestrian Facility Guidelines* derived from MDOT's 20-Year Bicycle and Pedestrian Access Master Plan and Tri-County Council for Southern Maryland's Southern Maryland Regional Trail and Bikeway System Study. Policies and strategies to promote bicycle and pedestrian activity relate to improved facilities, improved connectivity, improved safety, and land use should be included in the Town's appropriate plans, ordinances and regulations.

The following design consideration should be applied to Charles Street and other corridors within the Town particularly as part of roadway improvement projects. SHA has maintained that any lane wider than 12 feet benefits bicycle access by reducing the conflict between motorists and cyclist. A curb lane that is 14 feet or greater (measured to the face of the curb) is typically striped as an 11 foot wide travel lane for motor vehicles and the remaining space as a shoulder available to cyclists. While a striped or not striped wide curb lane may be the same width, providing the stripe helps keep both motorists and cyclists in their space and thereby reducing conflicts between users. Unless it is designated as a bicycle lane, the space to the right of the travel lane edge stripe will simply be referred to as a shoulder and provide the same benefits such as accommodating stopped vehicles, emergency use and pedestrians.



A minimum four (4) foot wide outside shoulder is preferred on all roadways with open sections. A minimum fifteen (15) foot wide outside lane (measured to the face of the curb) is preferred on all roadways with outside closed sections. The roadway should be striped as an eleven (11) foot travel lane and a four (4) foot shoulder available to bicycles.



SHA's philosophy has been to utilize the wider outside lane of 14 feet on existing roadways where possible, just by changing the striping on the roadways. In many cases in La Plata, this can be accomplished by minor widening of the travel ways, but in some of the narrow width streets with limited right-of-way hinder restriping as the quick solution to providing a bicycle lane.

4.0 TRANSIT SERVICE

Transit services within both the Town and the County are limited to commuter bus and local bus services. Southern Maryland has the fastest growing commuter bus ridership in the State, including services to the Town of La Plata. Nearly 80% of the local residents use a passenger vehicle to commute to jobs outside of the Town, adding further congestion to the over-burdened highway system serving the area. Given this high level of peak hour delays, the demand for transit has increased dramatically over the last 10 years. To improve commuting services, the Town and the County are continuing to work with the Maryland Transit Administration (MTA) to expand commuter bus services within both jurisdictions. The local bus services are coordinated with several of the commuter bus stations/park and rides to provide an inter-modal transfer for local patrons, reducing motor vehicle use. The following sections discuss each component of the current and planned local transit network.

4.1 Existing Commuter Bus Service

Commuter bus services in La Plata are provided by the MTA through an express service from the La Plata Park and Ride to Washington D.C. The commuter bus routes are served by 45 to 55 seat passenger motor coach busses that have limited stops within Charles County and deliver patrons to the District via MD Route 5. The limited number of stops enables the busses to have greater efficiency and reduce travel time to and from the origin and destinations.

The La Plata Park and Ride Lot is located on Washington Avenue, slightly north of the intersection with Heritage Green Parkway. The lot was opened in the Summer of 2007 with a capacity of 277 spaces, and currently has an average occupancy of 85%. The Park and Ride is primarily accessed by motor vehicles. However, the facility also has partial sidewalk access and an associated crosswalk on Washington Avenue, north of Heritage Green Parkway to accommodate the adjacent neighborhoods to the west. The active adult community of Washington Square to the north of the facility also has sidewalk access along Washington Avenue. Access by bicycle is difficult given the inconsistent shoulder widths on Washington Avenue. Patrons can ride within the travel lane of the road, but is generally is not practiced due to comfort and safety of the bicyclist. In addition, there are not bicycle accommodations at the park and ride, such as bike racks or lockers. These combined disadvantages appear to discourage bicycle travel to the park and ride.

4.2 Existing Local Bus Service

The Town of La Plata is served locally by Charles County's local bus service, known as VanGO. This service integrates both deviated fixed and fixed-route services with specialized services, including demand response, medical assistance, and ADA transportation. The VanGO system has two routes that operate on the corridors of the study, La Plata Red A Route and La Plata Red B Route. Each has stops along the US 301, MD 6 (Charles Street), MD 225

(Hawthorne Road), Washington Avenue, St. Mary's Avenue, and several other support streets. See **Figure 4-1** for routes and bus stop locations.

4.3 Existing Rail Services

There is a single track railroad line the traverses the center of the Town, transporting coal to the Morgantown Power Generating Facility twice daily. The freight rail line is currently owned by CSX, bisects the Town in a north-south direction, creating difficulty for the east-west connectivity for roadway travelers. CSX has a common practice of preventing additional road crossing of this rail-line, which has created issues with planned road projects such as the Heritage Green Parkway extension. While the existing rail line would be ideal to accommodate future commuter rail, it is unlikely that this private line will be shared by the freight services for both safety and logistics issues with a single track in service.

4.4 Future Transit Services

Currently the nearest high-capacity commuter rail service is the Branch Avenue Metro Station (Green Line) operated by the Washington Metropolitan Area Transit Authority (WMATA) in Suitland, Maryland. This Metro station is approximately 30 miles north of the Town. The Maryland Transit Administration (MTA) initiated the Southern Maryland Transit Corridor Preservation Study in January of 2008 to identify an alignment corridor to preserve for a future high-capacity passenger transit line. The corridor study has identified several alternatives along the MD Route 5 and US 301 corridors from the Branch Avenue Metro Station in Prince George's County to Waldorf/White Plains in Charles County. The Charles County preferred alignment corridor lies adjacent to the west side of the CSX rail line, serving the planned redevelopment areas of Waldorf and White Plains. The MTA, Charles County and the Town of La Plata have been working together to locate park and ride locations adjacent to the CSX rail line as logical future rail stops when the service becomes available. This includes the new La Plata Park and Ride for potential future service. While the current study does not incorporate La Plata, a line could feasibly be extended to serve the Town in the future. Therefore, this future rail corridor should be considered when reviewing future development proposal adjacent to the west side of the rail line. Development set-backs of 60 feet will ensure adequate room for an additional double-track rail line to serve the Town citizens.

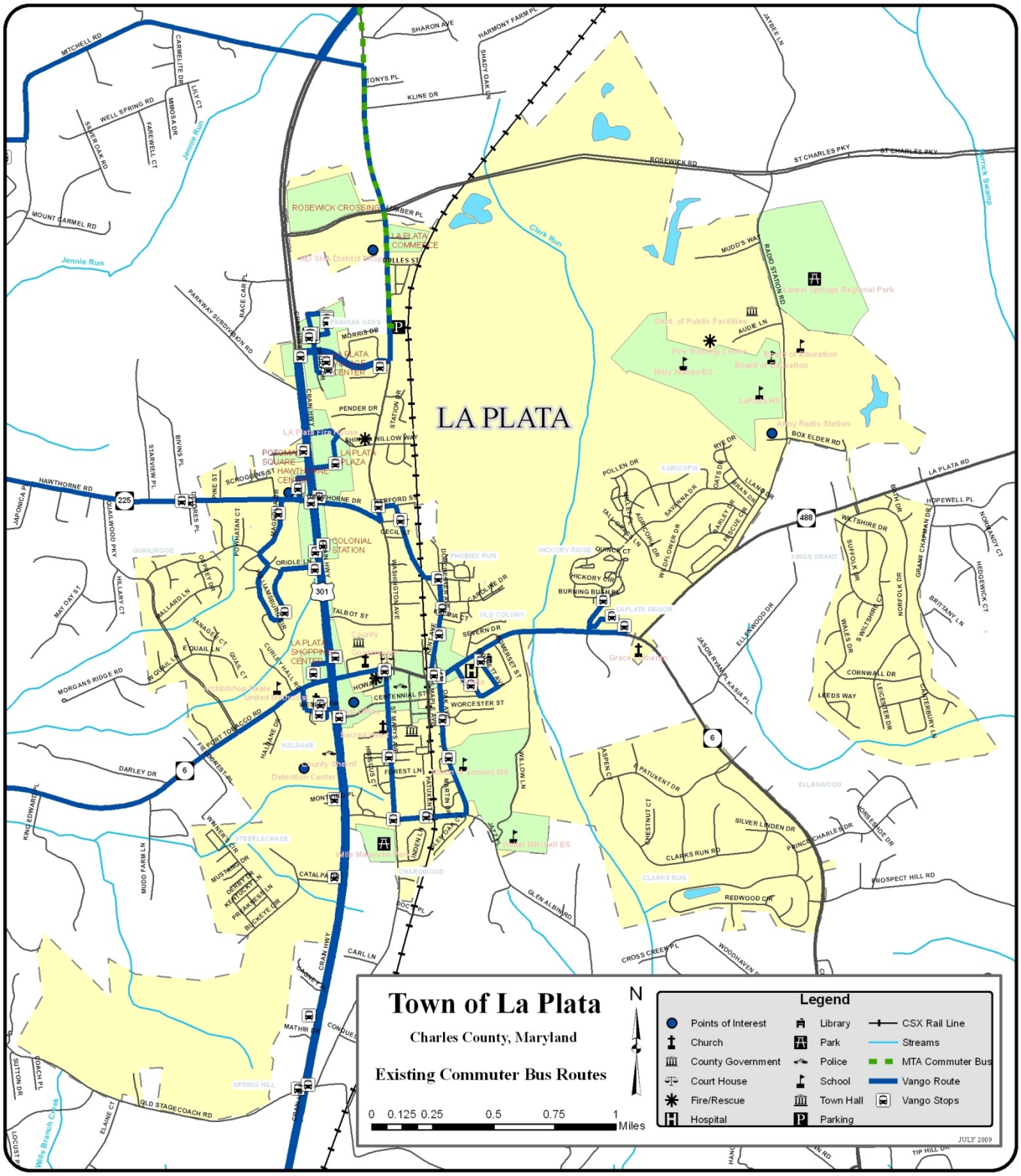

LA PLATA
Town of La Plata
Charles County, Maryland
Existing Commuter Bus Routes
N
0 0.125 0.25 0.5 0.75 1 Miles
Legend
Points of Interest
Church
County Government
Court House
Fire/Rescue
Hospital
Library
Park
Police
School
Town Hall
Parking
CSX Rail Line
Streams
MTA Commuter Bus
Vango Route
Vango Stops
JULY 2009

Figure 4-1

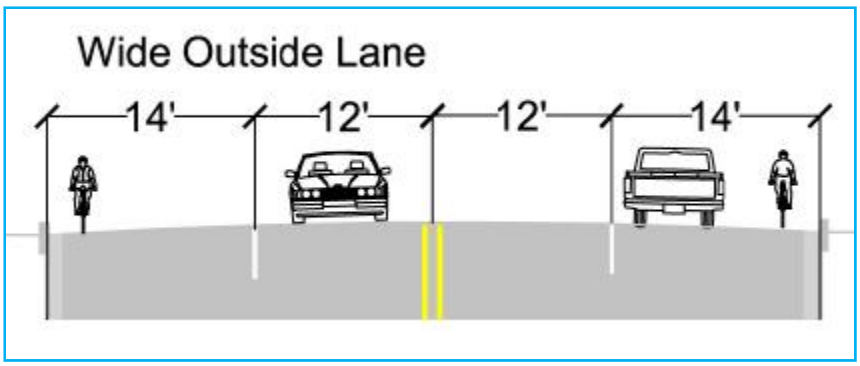
Appendix A

MDOT – Twenty Year Bicycle & Pedestrian Access Master Plan (2002)

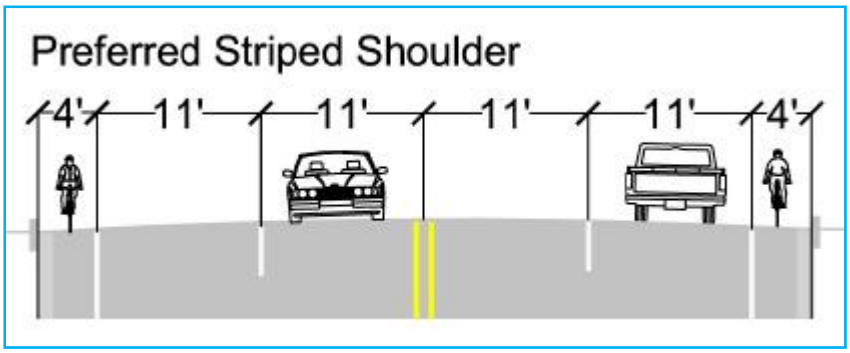
The Maryland Department of Transportation undertook a comprehensive Bicycle and Pedestrian facility inventory in the Twenty Year Bicycle & Pedestrian Access Master Plan (2002). Current bicycling conditions were analyzed using the Bicycle Level of Comfort (BLOC) model. The BLOC model provides a measure of bicyclists' perceived safety and comfort within the existing roadway environment. The BLOC model is based on a number of factors such as roadway width, bike lane width, traffic volume, number of lanes on the road, pavement surface conditions, motor vehicle speed and type, and presence or absence of on-street parking. The BLOC model provides a grading system (A-F) for rating bicycle riding conditions on each roadway segment. Level A reflects the best conditions for bicyclists; level F represents the worst conditions.

Only one road through La Plata, Charles Street (MD Route 6), was evaluated using the BLOC model. The results were from Crain Highway to Calvert St., BLOC of D, from Calvert St. to Willow Lane, BLOC of E, and from Willow lane to La Plata Road, LOC of B. Using the same BLOC model criteria for the remainder of roadways within La Plata will fall into similar BLOC grades or lower.

SHA has maintained that any lane wider than 12 feet benefits bicycle access by reducing the conflict between motorists and cyclist. A curb lane that is 14 feet or greater (measured to the face of the curb) is typically striped as an 11 foot wide travel lane for motor vehicles and the remaining space as a shoulder available to cyclists. While a striped or not striped wide curb lane may be the same width, providing the stripe helps keep both motorists and cyclists in their space and thereby reducing conflicts between users. Unless it is designated as a bicycle lane, the space to the right of the travel lane edge stripe will simply be referred to as a shoulder and provide the same benefits such as accommodating stopped vehicles, emergency use and pedestrians.



A minimum four (4) foot wide outside shoulder is preferred on all roadways with open sections. A minimum fifteen (15) foot wide outside lane (measured to the face of the curb) is preferred on all roadways with outside closed sections. The roadway should be striped as an eleven (11) foot travel lane and a four (4) foot shoulder available to bicycles.



SHA's philosophy has been to utilize the wider outside lane of 14 feet on existing roadways where possible, just by changing the striping on the roadways. In many cases this can be accomplished, but in local settings like La Plata, the narrow width streets and limited right-of-way hinder restriping as the quick solution to providing a bicycle lane.

The BLOC study evaluated the number of state roadways that have a 4 foot shoulder available for use as a bicycle lane. In SHA's District 5[2] the following results were found.

[2] SHA BLOC Study 2007

District 5		
Bicycle Lane Width	**Roadway Miles**	**Percent**
<4	729.4	45%
=4	60.5	4%
>4	823.6	51%
Total	1613.5	100%
>=4	**884.1**	**54.8%**

The results show that over 54% of the state maintained roadways do not have an additional 4 foot of roadway width to accommodate striping a bicycle lane. This percentage most likely holds true for Charles County and the Town of La Plata, if not greater.

The BLOC study also showed the possible bicycle routes or other trails in District 5. Within the Town of La Plata the BLOC master plan shows Charles Street and Oak Avenue south to Glen Albin Road then east past the Town's corporate limit. No other routes were selected within the Town as possible routes that could accommodate a bicycle lane or trail.

It should be noted that federal and SHA design guidelines require a minimum width of 5 feet for a new bicycle lane. This study focuses on solutions using the full 5 foot width bicycle lane and using current ADA design guidelines and code in looking at pedestrian facilities.

Appendix B
New BICYCLE/PEDESTRIAN Facility Guidelines

Policies and Strategies

The implementation of appropriate policies and strategies can increase bicycle and pedestrian activity in Southern Maryland. Increased bicycling and walking results in significant transportation and public health benefits and, in the case of bicycle tourism, provides direct economic benefits as well. The recommendations in this report are consistent with MDOT's 20-Year Bicycle and Pedestrian Access Master Plan, Tri-County Council for Southern Maryland's Southern Maryland Regional Trail and Bikeway System Study, and the various County comprehensive plans. Policies and strategies to promote bicycle and pedestrian activity relate to improved facilities, improved connectivity, improved safety, and land use.

General Guidelines to Improve Connectivity

To allow for increased bicycling and walking, both as a mode of transportation and as a recreational activity, connections among transit facilities, residential areas, activity centers, parks, and tourist attractions need to be maintained where already existing and established where missing. The following strategies support increased connectivity.

• Focus on improving Bicycle Level of Comfort (BLOC) along key roadway segments identified in the Maryland Bicycle and Pedestrian Access Master Plan and on appropriate County and local roadways.

• Expand the off-road trail system and create linkages among existing trails by implementing the recommendations of the Southern Maryland Regional Trail and Bikeway System Study. Construct bike paths, sidewalks and trails to fill in any gaps.

• Enhance and expand bicycle and pedestrian access to transit:
– Provide safe bicycle and pedestrian access to park-and-ride lots (bike lanes, sidewalks, etc.);
– Provide bicycle parking facilities at park-and-ride lots;
– Provide adequate sidewalk access and shelters at county bus stops; and
– Provide bike racks on buses.

• Retrofit existing roadways with sidewalks as appropriate. Connect neighborhoods near town centers or other activity centers with an internal system of sidewalks, roads, and/or paths.

Improve Facilities

To ensure that bicycle and pedestrian facilities are improved and appropriately maintained, the following strategies are recommended:

• Integrate bicycle and pedestrian facilities into roadway development projects at both the State and local level. These facilities can include wider lanes, bike lanes, paved shoulders and safe storm drains; and

• Integrate bikeway and sidewalk maintenance and cleaning into established roadway maintenance routines.

Improve Safety

To improve safety for bicyclists and pedestrians, the following strategies are recommended:

• Plan, design, and construct bicycle and pedestrian facilities using appropriate design standards;

• Provide pedestrian and bicycle traffic control devices where appropriate;

• Reduction of automobile impacts through traffic calming and other speed reduction techniques; and

• Provide bicycle and pedestrian route signage as appropriate.

Land Use

Bicycle and pedestrian trips for transportation purposes are characterized by shorter trip distances and direct routes or linkages between origins and destinations. Land use patterns have a critical impact on bicycle and pedestrian circulation. Existing development patterns in Southern Maryland are fairly decentralized which result in inconvenient linkages between residential areas and activity centers and are a disincentive for bicycling and walking. Opportunities to provide accessible, safe, convenient, and inviting environments for walking and bicycling should include the following actions;

• Adopt policies and ordinances that promote mixed-use development at densities that allow and encourage bicycling and walking to activity centers or to transit facilities;

• Improve bicycle and pedestrian access in existing communities by retrofitting sidewalks and adding bike paths as appropriate. Connect neighborhoods to nearby activity centers by a network of sidewalks, bike paths, and roads;

• Require that bicycle and pedestrian access be provided in all new development proposed within specified geographic areas (such as PFA); and

• Require infill redevelopment to provide pedestrian and bicycle connections to adjacent properties.

Initiate a Bicycle and Pedestrian Partnership Program (BPPP)

The Retrofit Bicycle, Retrofit Sidewalk, Smart Growth Transit Program, Neighborhood Conservation, Transportation Enhancements and National Recreational Trails programs are highly popular programs for developing and funding bicycle and pedestrian improvements in Maryland's older communities. The State faces the critical task of determining how to both increase the total amount of resources available for these activities and concentrate them in the areas of greatest need. Implementation of a Bicycle and Pedestrian Partnership (BPPP) program is a logical way to do both by bringing the appropriate stakeholders to the table to discuss ways to address bicycle and pedestrian travel in Maryland.

The BPPP will provide a much-needed framework for State/local partnerships focused on bicycling and walking. Bicycle and pedestrian travel is inherently a local activity, so it is essential that improvements on State facilities complement local networks. The BPPP can ensure that in Maryland's most populated communities, land use and transportation actions, on-road and off-road networks, transportation and recreation agencies, safety education, enforcement and promotion programs, planning and funding initiatives are all being effectively coordinated.

Drainage Facilities

Drainage facilities should be designed and maintained with consideration for bicycle and pedestrian traffic. In Maryland and in LaPlata the storm inlets along the roadways have grates. Over time, drainage grates may shift or separate, longitudinal slots may develop, and grates may not have been brought to grade as part of periodic overlay projects. Also, curbs to divert surface drainage into catch basins may have been constructed in the bike lane or roadway shoulder area, thereby presenting hazards to bicycle traffic. These same issues provide trip hazards for pedestrians and provide more barriers for handicap individuals. Therefore, certain goals should be established to maintain these facilities.

Goals

1. Raise drainage grates flush with pavement.
2. Respond to service requests within 48 hours to modify or replace deficient drainage grates with bicycle-safe grates.
3. Address drainage problems where water puddles at roadside edge and remains for extended periods of time, affecting the ability of bicyclists to ride along the roadway or in the bike lane.
4. Remove existing drainage curbs that encroach into the roadway or bike lane.

Drainage

Most streets are crowned to facilitate water runoff. One is a closed system with storm grates, catch basins and storm sewers. The other is an open section with side slopes to an open channel or ditch along the roadway. Both present drainage problems for bicyclists and pedestrians.

On a closed section street, storm water traveling in the gutter can hinder the bicycle path due to ponding water. If the gutter is blocked with debris or snow, the storm water ponds and enters the bicycle path that is along the edge of the roadway. On an open section street, storm water traveling in the ditch can hinder the bicycle path due to ponding water. If the ditch is blocked with debris or snow, the storm water ponds and enters the bicycle path that is along the edge of the roadway. In the case where no ditch is available the edge of the street becomes the flow path for storm water and becomes a real hazard for bicycles. This condition applies to several streets in LaPlata. If no sidewalk exists this also is a problem for the pedestrian.

Even if a sidepath is sloped to facilitate drainage toward the street, puddling will occur increasingly over the years as the soil settles and as roots heave up the path. When plowed snow blocks drainage to the street, drainage will be completely blocked over long segments of the sidepath.

Snow and Ice

Snow and ice is not considered to have an impact on bicycle or pedestrian facilities in LaPlata, but should be mentioned as a precaution on those rare events that it does occur.

In most cases, motor vehicle tires wear away snow, and quickly open up patches of pavement, which facilitate heating by sunlight to complete the melting. In addition, a more aggressive use of snow-melting chemicals is practical on streets, where they are carried away in the storm drain system and do not pose a substantial risk of damage to roadside vegetation. Only the snow melting presents a ponding issue for bicycle and pedestrian facilities. Therefore, snow does not present much risk to the bicyclist or pedestrian.

When colder temperatures prohibit the quick melting, drainage is blocked by plowed snow and puddles on the street or sidewalk refreeze into ice, making the path unsafe for bicycle and pedestrian travel. Ice puddles are a far less serious problem in a street, because it is crowned and because of its drainage provisions. Plowed snow from driveways blocks a sidewalk of sidepath until cleared from the path. No such problem occurs with streets. The sidepath placed along a street corridor is usually never cleared of snow and forces the bicyclists and the occasional pedestrian to use the street for passage.

Other Maintenance Protocol

STREET SWEEPING

Keep the road surface free from debris and hazards. For example, sand is slippery and leaves and snow can be difficult to bicycle or walk through. Piles of debris force pedestrians and bicyclists into other parts of the roadway, where they may be less visible. Of course, debris should not be swept onto sidewalks and conversely, debris from sidewalks should not be swept into the street. If it is not cost-effective to frequently remove sanding materials during icy weather, sweep high use areas after major storms and following the winter season. This will

keep storm sewers clean, reduce siltation of streams and improve water quality at points of discharge.

ASPHALT SURFACE REPAIRS

The quality of pavement is very important to bicyclists and pedestrians. Maintain a smooth surface, free of cracks (especially longitudinal wheel-grabbing cracks and parallel-to-traffic pavement joints), potholes, bumps by fixing physical problems regularly.

ASPHALT PAVEMENT OVERLAYS

Do not leave a ridge in the area where bicyclists ride (this can occur where an overlay extends partially, but not fully, to the edge of the shoulder).The drop can cause bicyclists to fall into traffic and is particularly hazardous for elderly pedestrians.

ROADSIDE VEGETATION

Overgrown shrubs and low-hanging branches can obscure signs and people, so routinely cut vegetation back, and keep it out of walkways or bikeways. Maintain adequate clearance and sight-distances at driveways and intersections so bicyclists and pedestrians are visible to motorists. Control roots by installing root barriers during sidewalk construction to prevent the break-up of sidewalks and roadway surfaces. Require maintenance of vegetation originating from private property through local ordinances.

PAVEMENT MARKINGS, SIGNS AND LEGENDS

Over time, bikeway and walkway signs may fall into disrepair and legends may become hard to read. Keep signs and legends, including those directed at motorists, legible.

STREET DRAINAGE IMPROVEMENTS

Drains should not catch bicycle tires. A bicycle-safe drainage grate at the proper height improves bicyclist safety. Adjust or replace catch basins to improve drainage. Puddles that form due to poor drainage are perilous to pedestrians and bicyclists alike. When pedestrians or bicyclists have to avoid puddles, they often stray into the roadway, where motorists are not expecting them. Puddles freeze in winter, becoming even more hazardous. Drainage grates, manhole and utility covers should be flush with the pavement.

STREET CHIP SEALING

Chip sealing is the application of a special protective wearing surface to existing pavement. Desirable as a low-cost way to fill and seal cracked and raveled surfaces of old pavement (which costs 80%-85% less than pavement overlays), it often leaves a rough and bumpy surface undesirable for bicyclists. Further, debris from chip seals can ricochet off car tires and potentially hurt bicyclists and pedestrians.

ASPHALT PATCHING ACTIVITIES

Patching activities can result in loose asphalt being left on the roadway. When left on the shoulder, loose asphalt adheres to the surface and creates rough conditions for bicyclists. Avoid this by sweeping loose material off the road and shoulder immediately following patching activities.

NON-PAVED STREET BLADE PATCHING ACTIVITIES

The last pass of the grader sometimes leaves a rough tire track in the middle of the shoulder. Prevent this by covering the entire shoulder width, equipping road graders with smooth tires, rolling the shoulder area after the last pass of the grader, and sweeping fresh loose materials off the road before they adhere to the surface.

UTILITY CUTS

Utility cuts are the cuts in pavement made in order to make repairs or modifications to underground utilities (like power or water lines). They can leave a rough surface for bicyclists if not back-filled carefully. After cutting, finish the pavement as smooth as new. Wherever possible, make the cut in an area that will not interfere with bicycling travel. Back-filled cuts in bikeways should be flush with the surface (humps will not get packed down by bicyclist traffic). When cutting parallel to bicycling traffic, do not leave a ridge or groove in the bicycle wheel track.

ABANDONED DRIVEWAY APPROACHES

When accesses are abandoned in urban areas, there is no point in leaving a pavement dip or warp at these locations. Fill them level with the pavement.

SNOW REMOVAL

Complete snow removal in such a way it does not interfere with bicyclist and pedestrian access. For example, do not clear snow to make room for cars by pushing it onto bicycle lanes, pavement, or crosswalks. When these facilities are not cleared, pedestrians and bicyclists must re-route around them, forcing travel in places where drivers do not anticipate them.