US 301 at MD 228/MD 5 Business

Project Planning Study

Waldorf, Charles County, Maryland

PURPOSE AND NEED STATEMENT

Maryland State Highway Administration
Office of Planning and Preliminary Engineering

Final Version
June 2015

Table of Contents

Exhibits

1. Introduction

The Maryland State Highway Administration (SHA) is conducting a study of potential transportation improvements involving the intersection of US 301 (Crain Highway) with MD 228 (Berry Road)/MD 5 Business (Leonardtown Road) in the Waldorf area of Charles County, Maryland. The study is currently in the Project Planning phase. This document describes the existing conditions along the US 301 corridor in the Waldorf area and defines the purpose and need for the proposed project.

The project study area encompasses an approximately 1.2 mile segment of US 301 between Days Court (milepost 22.69) to the south and Holly Lane (milepost 23.88) to the north (Exhibit 1). Areas along MD 228 between Festival Drive (milepost 5.29) and US 301 to the west (approximately 0.22 miles in length) and along MD 5 Business between MD 925 (Old Washington Road) (milepost 1.63) and US 301 to the east (approximately 0.17 miles in length) are also included in the study area.

US 301 through the Waldorf area serves a variety of traffic types that can compete and conflict with one another. The highway is a major commuter route to the Washington D.C. and Baltimore metropolitan regions and is also the "main thoroughfare" for local and regional commercial shopping and business activities. US 301 serves as one of only a few major gateways to and from the southern Maryland peninsula and also facilitates both tourist and commercial through-traffic to points north and south of the Waldorf area.

MD 228 provides local access to two major shopping centers (The Shops at Waldorf Center and the Waldorf Marketplace) and large suburban residential developments to the west of US 301. Additionally, MD 228 provides a regional connection to MD 210 to the west, which offers an alternative route to the Washington D.C. metropolitan area.

MD 5 Business serves a mixture of local residential, commercial and industrial based traffic and serves as a regional connector (with MD 5) to the Waldorf area for residents of St. Mary's and Calvert Counties to the southeast.

2. Project History

The project study area is located within the larger US 301 corridor that extends through Charles and Prince George's Counties (Exhibit 2). Over the past twenty-five years, a variety of transportation studies and transportation alternative analyses have been completed to evaluate ways to improve safety and satisfy travel demand within the larger corridor area.

- In 1990, a study was conducted to look at bypass options around the Washington D.C. region. A preferred alternative was never selected and the Washington Bypass was never built.
- In 1993, MD 228 west of US 301 was widened from a two lane roadway to a four-lane divided roadway.

- In 1993, the US 301 Transportation Study Task Force was convened to identify a package of recommendations for addressing transportation, land use, economic development, and environmental issues within the US 301 Corridor in southern Maryland.
- In 1997, the US 301 Southern Corridor Transportation Study in Charles and Prince George's Counties was initiated based on recommendations of the 1993 US 301 Transportation Study Task Force. Project planning and preliminary engineering was completed for the northern portion (US 301 from US 50 to the US 301/MD 5 interchange) in 1999, resulting in a Tier I Record of Decision enabling protective right-of-way purchases and allowing work on breakout projects to commence.
- In 1998, project planning and preliminary engineering began for US 301 Southern Corridor Transportation Study southern portion, including segments from the US 301/MD 5 interchange to the Governor Nice Bridge over the Potomac River and along MD 5 from the US 301/MD 5 interchange to Interstate 495. The purpose and need for the project was updated and received concurrence from the project review agencies. Environmental and engineering studies were initiated at two levels of details — a broad level (Tier I) study of the entire southern portion of the study area and a detailed (Tier II) study of transportation improvements including bypass alignments in the Waldorf area. A preliminary Tier I/Tier II Draft Environmental Impact Statement was developed but was not reviewed by the project review agencies due to conflicts surrounding the alternatives retained for detailed study.
- In 2006, work began on the US 301 Waldorf Area Transportation Improvements Project to continue detailed evaluation of potential transportation improvements, including new alignments, in the Waldorf area. In 2009, a Preliminary Draft Environmental Impact Statement was submitted to federal, state and local review agencies. While agency review comments were received, significant funding shortfalls due to an economic recession led to discontinuation of the project before a decision could be made.
- In late 2014, a US 301 Feasibility Study was undertaken to identify short, medium, and long term solutions to safety and congestion problems along US 301 in the Waldorf area, specifically at the US 301 intersection with MD 228/MD 5 Business. Existing information was reviewed, including: mapping and past alternative analyses, current and future traffic data and analysis, and updated crash information. The results of a related study, the US 301 Corridor Pedestrian Safety Study, were also reviewed and incorporated into the feasibility analysis. Results of this study indicated that continuing analyses of transportation improvements along the US 301 corridor in Waldorf were most warranted at two major intersections — the US 301 intersection with MD 228/MD 5 Business and the US 301 intersection with MD 5 (Mattawoman Beantown Road). (*Note: The US 301 intersection with MD 5 (Mattawoman Beantown Road) is currently being studied as a reevaluation of the 1991 Environmental Assessment/Finding of No Significant Impact*.)

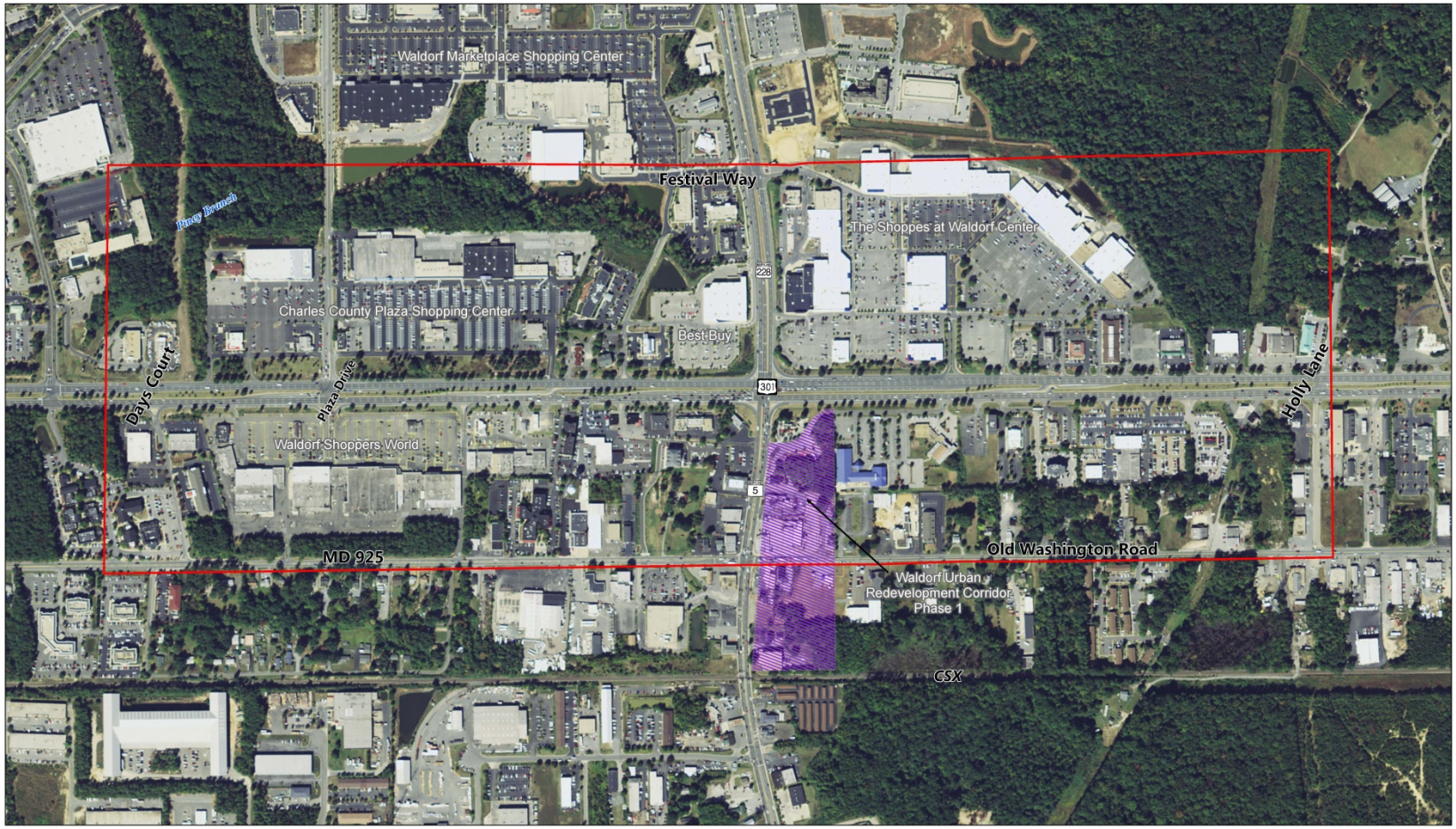


Exhibit 1: Study Area Map
Purpose and Need

0 360 720 1,440 2,160 Feet

1:3,500

Maryland Department of Transportation
State Highway Administration
Project Management Division
June 2015

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

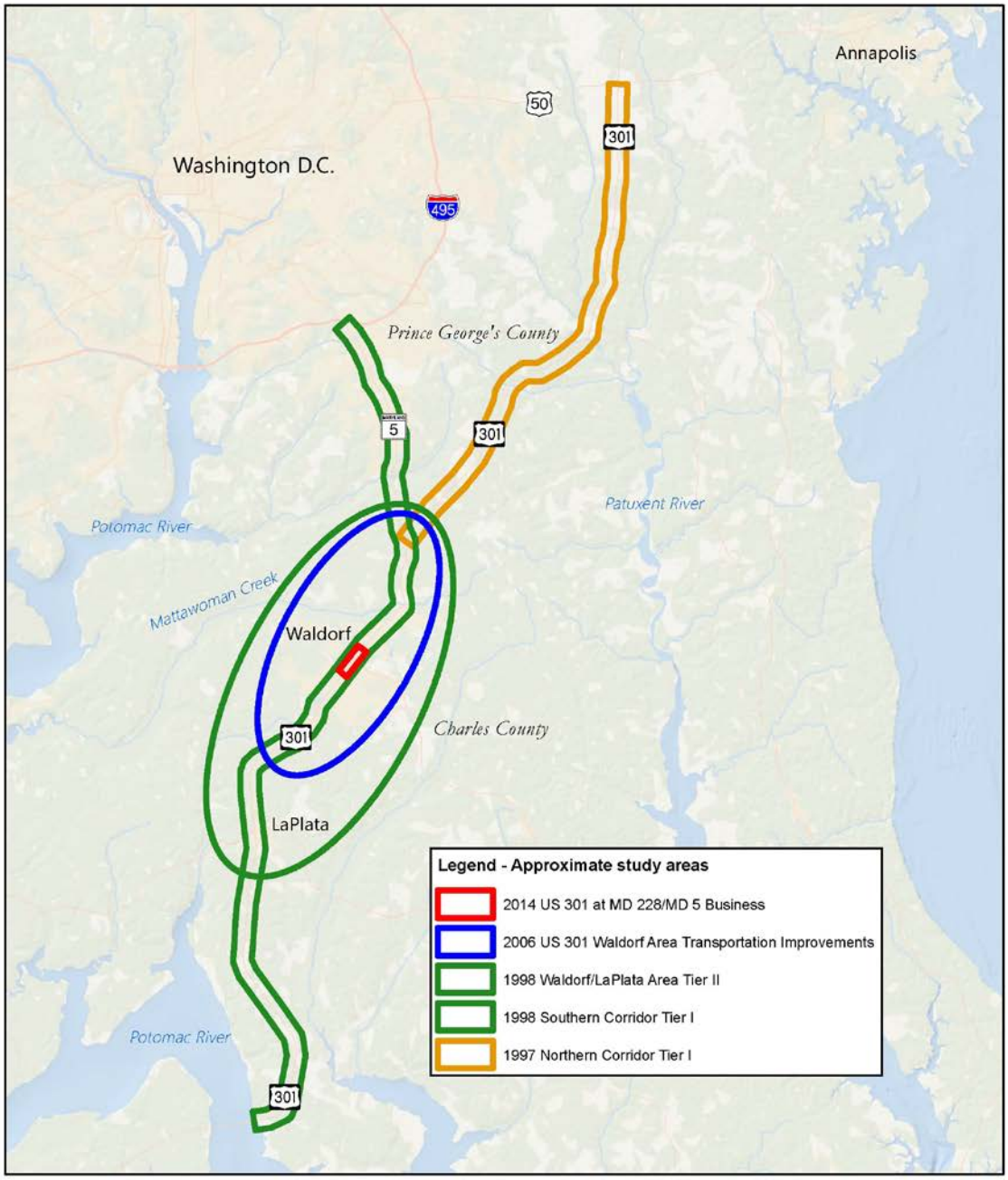


Exhibit 2: US 301 Project History
Purpose and Need

State Highway Administration
Project Management Division
June 2015

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

3. Purpose

The purpose of the US 301 at MD 228/MD 5 Business Project Planning Study is to develop a transportation solution that facilitates the safe and efficient flow of traffic through the intersection, accommodates the movement of pedestrians and bicyclists, and is consistent with the transportation infrastructure and travel demands of existing and future development objectives of Charles County.

4. Need for the Project

4.1. Vehicular Mobility and Traffic Demand

The expansion of commercial enterprises centered along US 301 coupled with local and regional population growth over the last 30 years has greatly contributed to increased travel demand and congestion through the Waldorf area.

Within the study area, US 301 generally consists of six travel lanes — three northbound and three southbound — with a posted speed limit of 45 miles per hour. Service roads providing access to commercial businesses are located along portions of each side of US 301 in the study area. MD 228 and MD 5 Business generally have two travel lanes in each direction, with additional turning lanes at signalized intersections within the study area, and a posted speed limit of 35 miles per hour.

Vehicular mobility in the area is hindered by a series of factors, including traffic volumes, numerous commercial access points, turning restrictions and substantial cross-corridor traffic. The most significant contributing factor to deficient mobility along the corridor is the heavy volume of traffic traversing the roadway on a daily basis and substantial increases forecasted through the year 2040. Heavy traffic, coupled with limited merge areas, reduces mobility in the corridor and impedes both local and regional traffic. High traffic volumes, delays, and congestion on these roads also occur on these local roads during weekday peak-periods and weekends. Weekend traffic, especially during the summer months when tourist traffic combines with commercial activity traffic in the corridor, results in heavy mid-day traffic volumes and congestion. These high volumes impede access to commercial businesses and have economic and quality-of-life implications.

There are also substantial local cross corridor (east-west) at-grade movements within Waldorf controlled by traffic signals. Within the study area, traffic signals on US 301 at MD 228/MD 5 Business and at Plaza Drive facilitate local east-west traffic and reduce the overall mobility of US 301. There is a need to better manage access controls along US 301 to reduce travel conflicts and crash potential caused by the mixing of heavy mainline through-traffic volumes with turning and cross traffic accessing the many driveways and cross streets along the highway.

Traffic volumes within the study area are projected to increase approximately 30 percent along US 301 to the north and south of the intersection by the year 2040 (Exhibit 3). Along MD 228, traffic volumes are projected to increase 13 percent, while MD 5 Business is expected to experience an increase of 16 percent in traffic volume by the year 2040.

Exhibit 3: Existing and Forecast Annual Average Daily Traffic (AADT) Demand

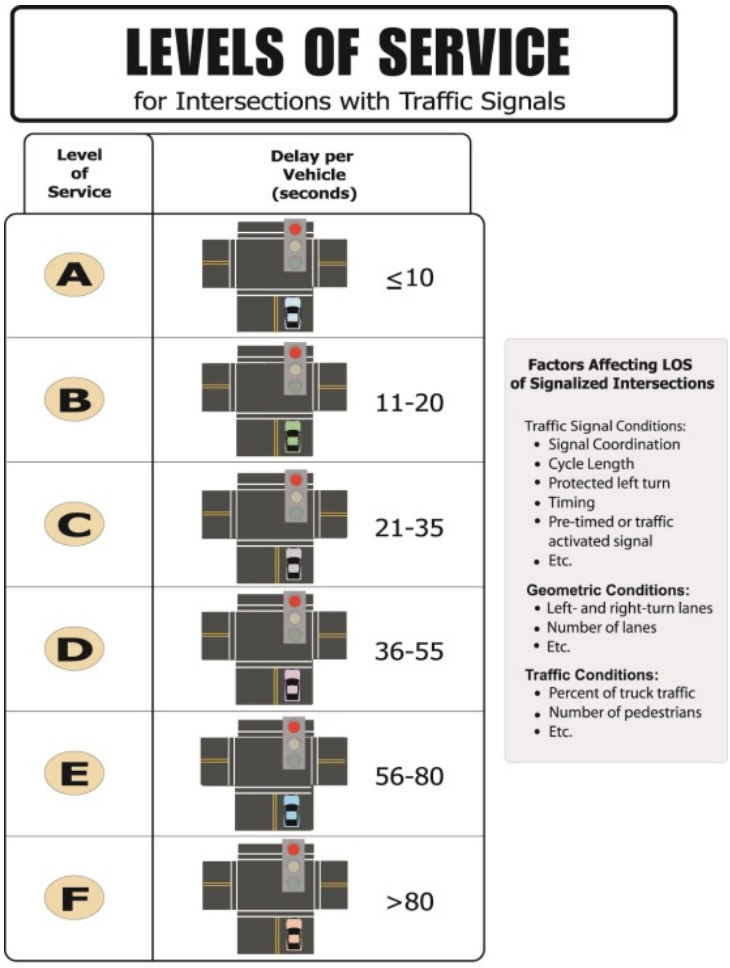
Roadway	Year			Percent Growth 2013-2040
	2013	2025	2040	
US 301 Southern Approach	53,075	60,530	69,850	30%
US 301 Northern Approach	61,550	69,650	79,775	30%
MD 228	35,250	37,355	40,000	13%
MD 5 Business	31,925	34,215	37,075	16%

Note: Future AADT forecast using the Metropolitan Washington Council of Governments regional travel demdand model. AADT corresponds to the total volume of vehicular traffic carried by a road or highway over a typical 24-hour (1 day) period.

To evaluate the effectiveness of highway intersections, roadway planners often use a simple grading system, referred to as level of service (LOS), to characterize the operations at intersections (Exhibit 4).

LOS is a qualitative measure of the performance of an intersection describing operational conditions. Generally, the LOS is defined in terms of speed, travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Six LOS "levels" are defined with LOS A representing a condition with no delay or congestion, and with LOS F representing an intersection where motorists experience long delays and high levels of congestion. Each LOS represents a range of operating conditions and relies heavily on the perceptions of drivers.

Exhibit 4: Summary of LOS



Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

The existing LOS at the US 301 at MD 228/MD 5 Business intersection (Exhibit 5) is "D" during the morning peak traffic volume hour and "E" during the evening peak traffic volume hour. Assuming no capacity or major operational improvements are completed by the year 2040 (i.e. the no-build condition), the LOS at the intersection will continue to degrade as forecast traffic volumes continue to increase.

Exhibit 5: Overall Intersection Level of Service (LOS), US 301 at MD 228/MD 5 Business

Existing				2025 No Build				2040 No Build			
AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
40.2	D	72.9	E	40.9	D	93.6	F	59.9	E	128.5	F

Note: Delay measured in seconds.

Along the approaches to the intersection, LOS also continues to degrade under a future no-build condition. Traffic flow along MD 228 at Festival Way continues to operate efficiently, but with a slight increase in PM peak hour delay (Exhibit 6).

Exhibit 6: Overall Intersection Level of Service (LOS), MD 228 at Festival Way

Existing				2025 No Build				2040 No Build			
AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3.0	A	15.9	B	3.9	A	15.3	B	3.9	A	16.7	B

Note: Delay measured in seconds.

Along MD 5 Business at MD 925, the LOS for PM peak hour traffic continues to degrade under the no-build condition, resulting in substantial delay for motorists (Exhibit 7).

Exhibit 7: Overall Intersection Level of Service (LOS), MD 5 Business at MD 925

Existing				2025 No Build				2040 No Build			
AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
12.0	B	31.4	C	13.5	B	39.5	D	14.4	B	46.6	D

Note: Delay measured in seconds.

It should be noted that the individual LOS for some turning movements at study area intersections may be worse than the overall intersection LOS. As noted below, based on the operational modeling conducted for this project, under existing conditions and a future no-build scenario the following traffic conditions are also anticipated to occur:

- In 2013, left turns from US 301 at the intersection are shown to operate at LOS E or F in the peak hours, and the westbound queue approaching the intersection along MD 5 Business extends back to the MD 925 intersection.
- By 2025, both the northbound and southbound approaches of US 301 are shown to operate at a LOS F in the PM peak, as do the side street through movements.
- By 2040, the eastbound queue along MD 228 approaching US 301 is over 1,200 feet long and extends back past the intersection at Festival Way.
- By 2040, the westbound queue along MD 5 Business approaching US 301 continues to extend to MD 925 in the PM peak.
- By 2040, the northbound US 301 double left turn queues to MD 228 exceed the available storage length.

Increases in traffic demand without companion increases in capacity or mobility will degrade the LOS of the intersection and approach roadways and possibly lead to spreading of the peak hour periods.

4.2. Safety

SHA crash data indicates that 314 reportable crashes occurred within the study area during the three-year period between 2011 and 2013 (Exhibit 8). Of those crashes, 125 (approximately 40 percent) resulted in injuries, including one fatality. The rate of injury and property damage collisions throughout the study area generally occur at a higher rate than expected when compared to similar corridors across the state. The remaining 189 crashes were classified as property damage-only incidents.

Exhibit 8: Crash Characteristics, Study Area, 2011 to 2013

Location/Segment	Total Crashes	Area Rate	Statewide Rate	Injury	Area Rate	Statewide Rate	Fatality	Area Rate	Statewide Rate	Property Damage	Area Rate	Statewide Rate
US 301 Southern Approach	139	510.1*	195.9	53	199.3*	80.1	0	0	1.2	86	310.7*	114.6
US 301 Northern Approach	82	214.4	195.9	31	80.9	80.1	0	0	1.2	51	133.2	114.6
MD 228 Approach	55	661.2*	195.9	24	288.5*	80.1	1	12.0	1.2	30	360.6*	114.6
MD 5 Business Approach	38	594.6*	228.7	16	250.4*	93.0	0	0.0	1.4	22	344.2*	134.3

Note: Asterisks (*) designate area crash rates significantly higher than statewide averages for comparable roadway sections. Area and statewide rates for each of the US 301 approach segments include crashes noted at US 301 with MD 228/MD 5 Business intersection.

Crashes within the study area that occurred within a 250-foot radius of the US 301 at MD 228/MD 5 Business intersection were also identified to characterize crash history associated with intersection operations (Exhibit 9). Between 2011 and 2013, 47 reportable crashes occurred at the intersection with approximately 36 percent resulting in injury.

Exhibit 9: Crash Characteristics, US 301 at MD 228/MD 5 Business Intersection, 2011 to 2013

Location/Segment	Total Crashes	Injury	Fatality	Property Damage
US 301 at MD 228/MD 5 Business	47	17	0	30

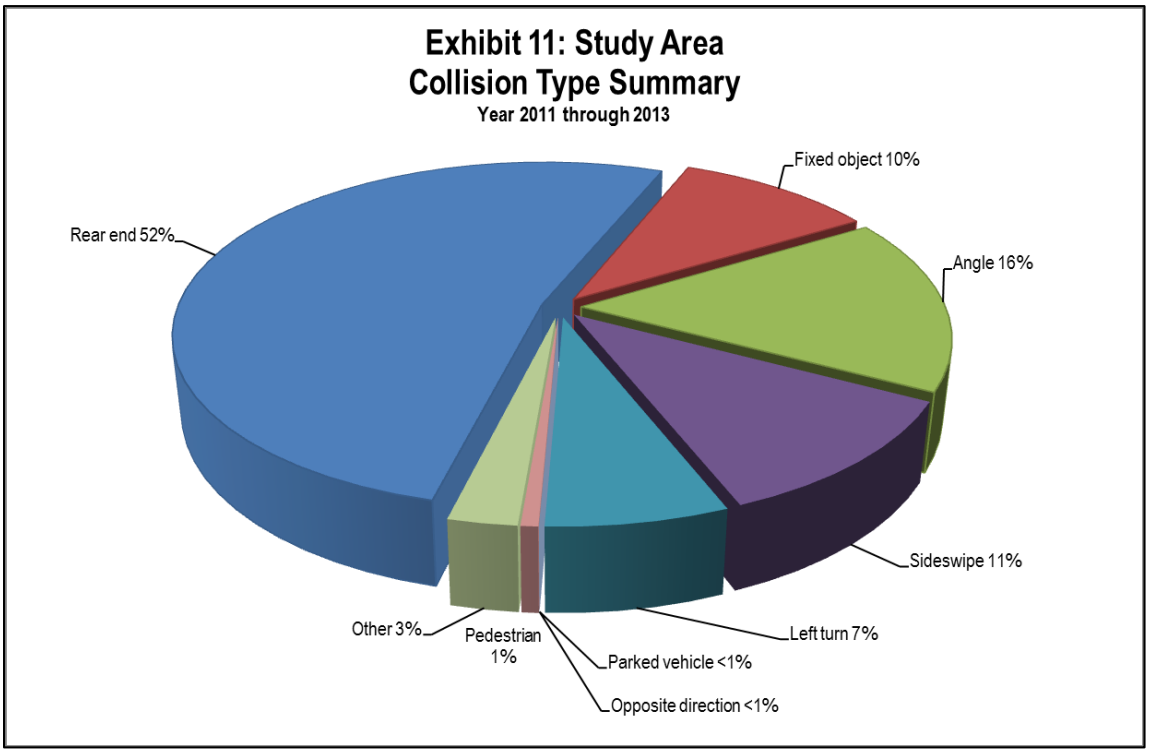
Note: Includes all accidents within a 250-foot radius of the intersection

Crash types within the study area are indicative of a congested suburban business corridor with numerous access points and multiple traffic signals (Exhibits 10 and 11). Most of the crashes along US 301 involve rear-end, angle, and sideswipe crashes which are common collision types where substantial turning movements, lane changes and congested conditions occur. Fixed object crashes also accounted for a substantial number of incidents. These types of collisions generally occur at significantly higher rates in the study area in comparison to statewide rates for similar roadways.

Exhibit 10: Major Collision Type Characteristics, Study Area, 2011 to 2013

Location/Segment	Rear End	Area Rate	Statewide Rate	Angle	Area Rate	Statewide Rate	Side Swipe	Area Rate	Statewide Rate	Fixed Object	Area Rate	Statewide Rate
US 301 Southern Approach	88	304.9*	77.8	18	70.4*	34.4	8	38.1*	25.1	12	52.8*	21.1
US 301 Northern Approach	32	83.6	77.8	17	44.4	34.4	14	36.6	25.1	13	33.9*	21.1
MD 228 Approach	27	324.6*	77.8	7	84.1*	34.4	7	84.1*	25.1	3	36.1	21.1
MD 5 Business Approach	16	250.4*	85.2	9	140.8*	45.0	6	93.9*	25.6	4	62.6*	23.3

Note: Asterisks (*) designate area collision type rates significantly higher than statewide averages for comparable roadway sections. Area and statewide rates for each of the US 301 approach segments include crashes noted at US 301 with MD 228/MD 5 Business intersection. The MD 228 approach segment also had a higher area rate than statewide rates for the following additional collision types: left turn and pedestrian.

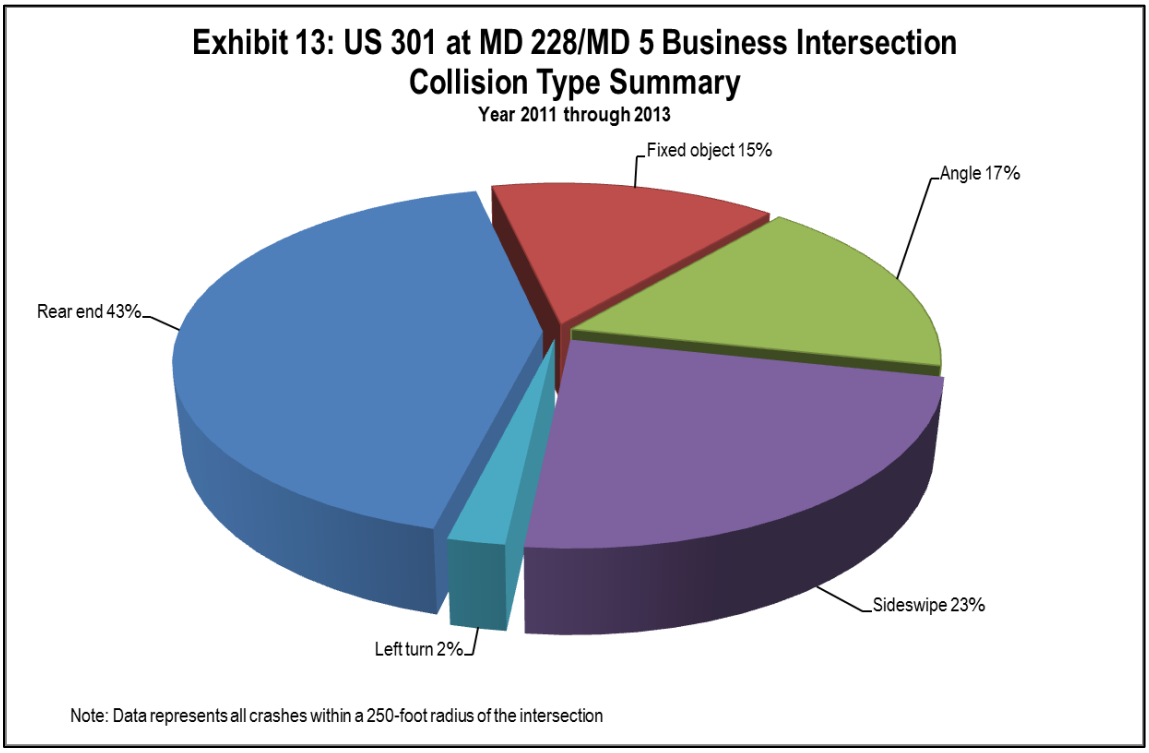


At the US 301 at MD 228/MD 5 Business intersection, crash type characteristics largely mirror the characteristics of the study area with one notable difference (Exhibits 12 and 13). Crashes at the intersection were more frequently attributed to sideswipe incidents (23 percent) in comparison with the overall study area (11 percent). This characteristic highlights the large volume of opposing turning movements at the intersection and the tendency of some drivers to attempt to avoid substantial delay at the traffic signals by making cross-traffic turns during caution or red signal phases.

Exhibit 12: Collision Type Characteristics, US 301 at MD 228/MD 5 Business, 2011 to 2013

Location/Segment	Rear End	Angle	Side Swipe	Fixed Object	Left Turn
US 301 at MD 228/MD 5 Business	20	8	11	7	1

Note: Includes all crashes within a 250-foot radius of the intersection



The safety of travelers in the study area is adversely affected by the large number of commercial access points, turning movements, and limited access consolidation throughout the corridor. Approximately two-thirds of crashes were attributed to rear end and angle collisions, which are commonly related to turning-movement conflicts and highly congested roadways. Additionally, a substantial number of sideswipe collisions were noted, especially at the US 301 at MD 228/MD 5 Business intersection; indicative of a location with a high volume of turning vehicles.

4.3. Pedestrian and Bicycle Access

A 2014 study of pedestrian activity along the US 301 corridor noted that the US 301 at MD 228/MD 5 Business intersection had the highest volume of pedestrian activity in the Waldorf area with an average of six pedestrian movements per hour. Due to the suburban nature of the study area development, which predominantly serves motorized traffic and access, facilities for safe and efficient pedestrian and bicycle movements are largely absent. The absence

of sidewalks and crosswalks within each of the intersection quadrants makes pedestrian and bicycle crossings challenging and hazardous for residents, workers, and visitors who need or desire to walk or bike to commercial uses within the study area. Of note are the two pedestrian crashes during the 2011-2013 period, both of which occurred along MD 228 just west of the intersection with US 301. One of these crashes resulted in a fatality, further highlighting the access and mobility dangers pedestrians and bicyclists face in the study area.

4.4. Existing and Future Development Objectives

Currently, Charles County is updating their County Comprehensive Plan to develop a local framework for land use, growth management, rural and agricultural policies, economic development, water resources, natural environment resources, community facilities, and energy efficiency decisions through the year 2040. While the draft plan continues to identify the US 301 corridor as a major commercial development area, redevelopment and adaptive reuse of functionally obsolete structures is encouraged along with improved access control and pedestrian and bicycle connections.

Charles County has also recently initiated work on the Waldorf Urban Redevelopment Corridor (WURC) which seeks to transform the central portion of the Waldorf area into a mixed-use, higher-density, pedestrian-friendly "downtown" urban center which supports future regional public transit modes. This "Smart Growth" approach to the redevelopment and revitalization of the Waldorf area supports local and state objectives for sustainable development within priority funding areas (PFAs). Phase 1 of the plan focuses on redevelopment on approximately 26 acres to the north of MD 5 Business between US 301 and the CSX railway right-of-way, the anticipated location for future transit service (Exhibit 1).

Phase 1 of the County development plan proposes a total of 659,000 square feet of infill and redevelopment actions, which would include the following uses:

- 60,000 square feet for a retail anchor (specialty grocery);
- 15,000 square feet for full-service restaurants;
- 7,000 square feet for bars/pubs;
- 4,000 square feet for limited service restaurants;
- 23,000 square feet for personal service/retail establishments;
- 20,000 square feet for fitness/recreation center;
- 50,000 square feet for general office;
- 440,000 square feet for residential (400 apartment units); and
- 40,000 square feet for a hotel (100 occupied rooms).

It is anticipated that Phase 1 of the County development plan would have upwards of a 20-year completion horizon, so that the planning and design of any transportation improvements within the study area must be consistent with the proposed Waldorf area redevelopment objectives. As these improvements are not yet captured within the 2040 land use assumptions of the Metropolitan Washington Council of Governments regional travel demand model and therefore not reflected in the current 2025 and 2040 traffic volume forecast for the project, a general assessment of potential traffic generation (Exhibit 14) from the proposed Phase 1 County development plan was completed. The analysis used trip generation rates from the Institute of Transportation Engineers (ITE) to identify how many additional trips could be added within the study area by 2040 that are not currently captured in the regional travel demand model. (Note: It is anticipated that the proposed Waldorf Urban Redevelopment Corridor Plan growth projections may be added to the MWCOG regional traffic model in late 2015 or early 2016).

Exhibit 14: Waldorf Urban Redevelopment Corridor, Phase 1 – Conceptual Traffic Generation

Land Use	Proposed size/units	Trip generation rates*			Calculated Trips	
		Unit measure	Total daily trip rate	PM peak trip rate	Total Daily Trips	Total PM Peak Trips
Retail anchor (specialty grocery)	60,000 sq. ft.	1,000 sq. ft.	102.24	9.48	6,134	569
Full service restaurant	15,000 sq. ft.	1,000 sq. ft.	89.95	7.49	1,349	112
Bar/Pub	7,000 sq. ft.	1,000 sq. ft.	127.15	9.85	890	69
Limited service restaurant	4,000 sq. ft.	1,000 sq. ft.	127.15	9.85	509	39
Personal service/retail	23,000 sq. ft.	1,000 sq. ft.	66.40	3.83	1,527	88
Fitness/recreation center	20,000 sq. ft.	1,000 sq. ft.	32.93	3.53	659	71
General office	50,000 sq. ft.	1,000 sq. ft.	11.03	1.49	552	75
Residential (apartments)	444,000 sq. ft. (400 units)	Dwelling unit	6.65	0.62	2,660	248
Hotel	40,000 sq. ft. (100 rooms)	Rooms	8.92	0.70	892	70
TOTAL					15,172	1,341

** Note: Trip generation rates based on best fit land use designations in ITE Trip Generation Manual, 9th Edition, 2012.*

Additional development, including park and ride facilities, park areas, and civic uses, are also contemplated for subsequent phases; however depending upon market conditions, funding availability, demand, and the progression of future transit services, the development horizon for these components may shorten and will also require consideration in the analysis of transportation improvements at the US 301 intersection with MD 228/MD 5 Business.

SHA is committed to on-going coordination with Charles County during this planning study to ensure the development objectives and context of the updated County Comprehensive Plan and the Waldorf Urban Redevelopment Corridor are given careful and knowledgeable consideration. Traffic analysis will be further refined during Stage II of the SHA Project Development Process (detailed study of the retained project alternates) to ensure potential transportation improvements will adequately accommodate proposed local and regional travel demand.

5. Public Outreach

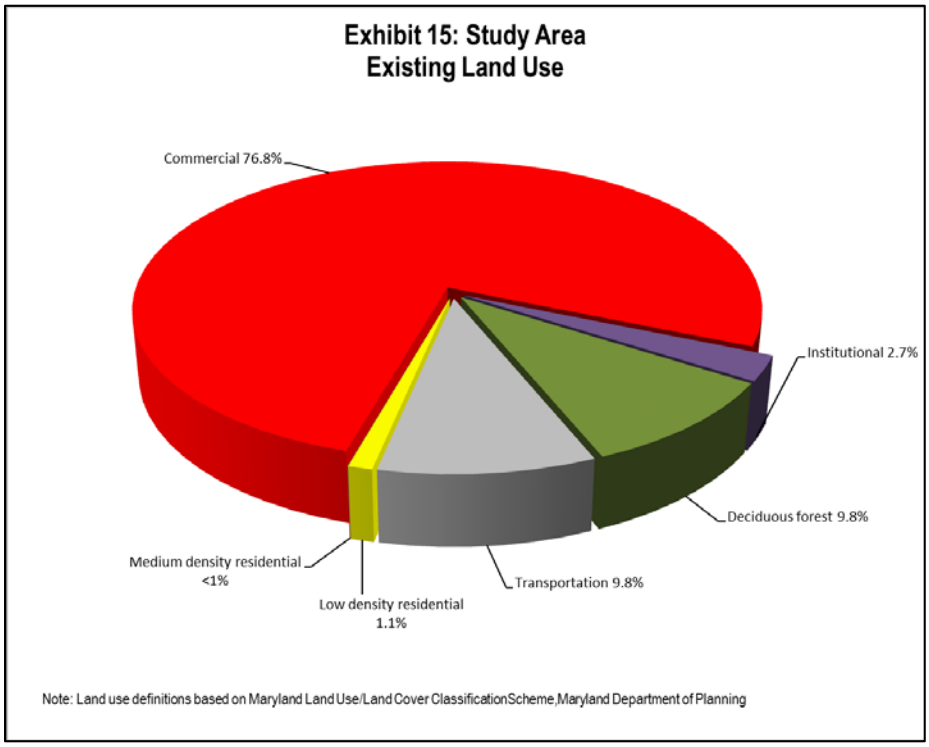
A project newsletter announcing initiation of the project, highlighting project needs, and inviting the public to attend an Informational Public Workshop was mailed to local residents during the week of February 16, 2015. An Informational Public Workshop was held on March 12, 2015 at John Hanson Middle School to solicit comments from the public on the purpose and need for the project.

While most of the discussion at the meeting focused on potential solutions, comments regarding the purpose and need for the project included:

- The project needs to consider anticipated growth in traffic volumes from future development and expansion of the Nice Bridge.
- Regarding pedestrian and bicycle circulation, it was noted that development in the corridor was required to install guard rail which creates a barrier to pedestrian access. Safety concerns for both motorists and pedestrians must be addressed.
- Stormwater management along the western side of US 301 poses a barrier for pedestrian movement.
- Any improvements will need to include revised signal timing at intersections north and south of the project.
- Implementation of pedestrian crossing signals at US 301 and MD 228/MD 5 Business may substantially impact vehicle travel time savings.
- Accidents occur along US 301 in the southbound left turn lane at the median break, south of the intersection.
- Substantial traffic congestion typically occurs along eastbound MD 5 Business at MD 925, with queues backing up to Post Office Road.
- During heavy travel periods, egress from Community Bank along MD 5 Business is difficult because of the free right turn for eastbound-turning traffic from US 301.
- Poor turning radius from eastbound MD 5 Business to MD 925 south.
- Poor traffic signal synchronization at MD 5 Business/MD 925 with the US 301 at MD 228/MD 5 Business intersection.
- Traffic exiting from Waldorf Marketplace Shopping Center on the south side of MD 228 can only turn right. This encourages illegal U-turns to westbound MD 228 at the US 301 at MD 228/MD 5 Business intersection.
- No pedestrian crossing facilities at Festival Way although sidewalks are located along the south side of MD 228.
- Coordination with Charles County is needed to address, and not interfere with, their planned TOD development along MD 925.

6. Environmental Summary

Land use throughout the study area is characterized by suburban-scale commercial uses (Exhibits 15 and 16), with a wide range of small, medium and large retail, food service, and other establishments present. Major retail centers include the Shops at Waldorf Center, the Waldorf Marketplace, and the Charles County Plaza Shopping Center. Future land use within the study area, with the exception of the noted redevelopment objectives of the Waldorf Urban Redevelopment Corridor, is projected to continue to support medium to large commercial uses that are predominantly highway oriented. The entire study area is included within the Waldorf Area Priority Funding Area (PFA) of Charles County.



Residential uses in the study area are generally limited to the MD 925/Old Washington Road corridor near the southern and northern limits of the study area. Residential uses mainly consist of single family detached homes and one residential townhouse development (Oak Manor). A preliminary review of Census data indicates that there is the potential for minority and low-income populations within the study area. Further research and analysis will be completed as the study progresses to determine if environmental justice populations are present, how they may be affected, and if specific outreach strategies are appropriate to fully evaluate environmental justice concerns.

Community facilities in the study area include the Waldorf Jaycees Community Center, the Waldorf Center for Higher Education, the Waldorf Volunteer Fire Company #3, and the Pembrooke Square Medical Center (Exhibits 17 and 18).

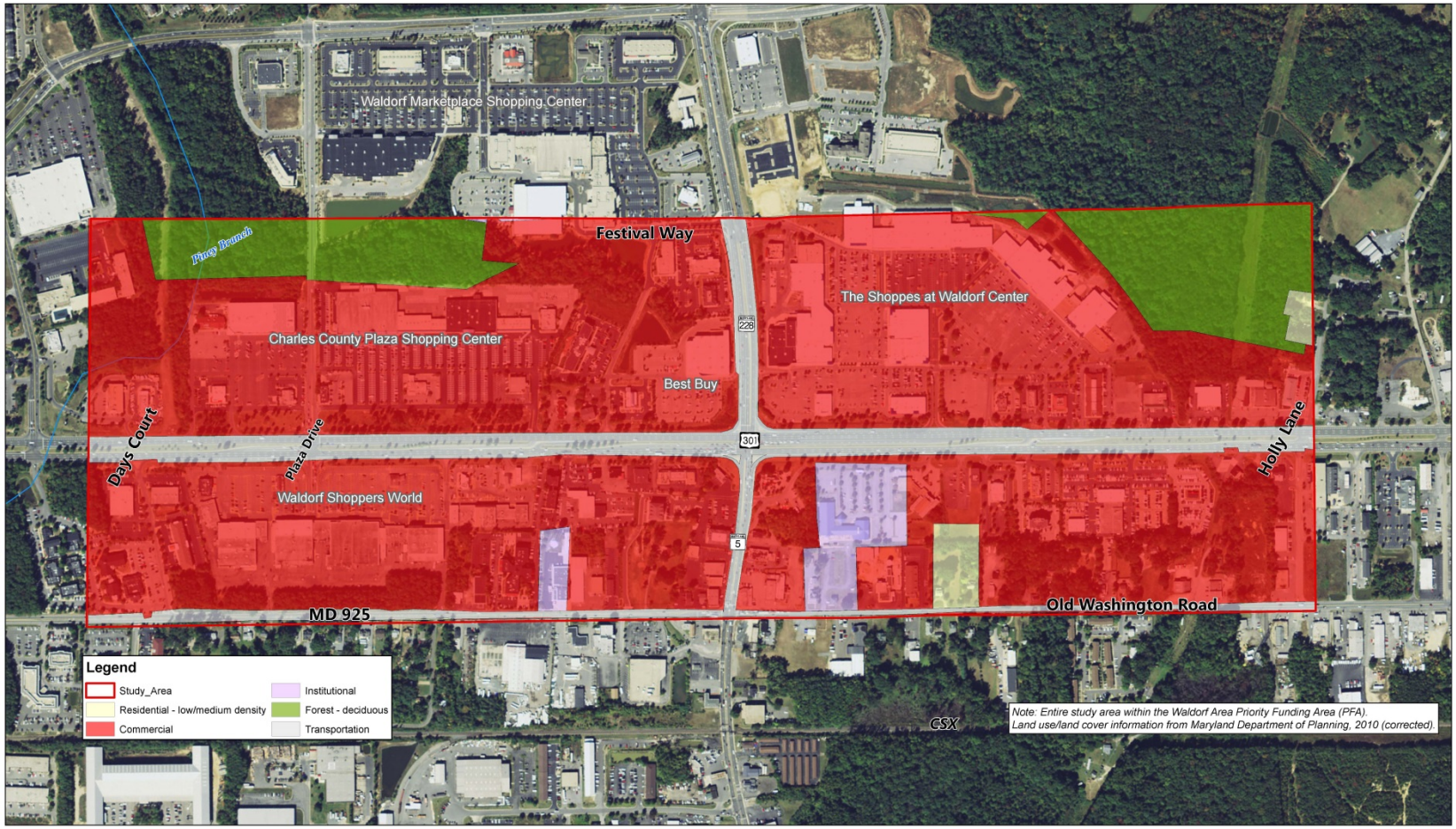


Exhibit 16: Existing Land Use Map
Purpose and Need

0 360 720 1,440 2,160 Feet

Maryland Department of Transportation
State Highway Administration
Project Management Division
June 2015

1:3,500

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

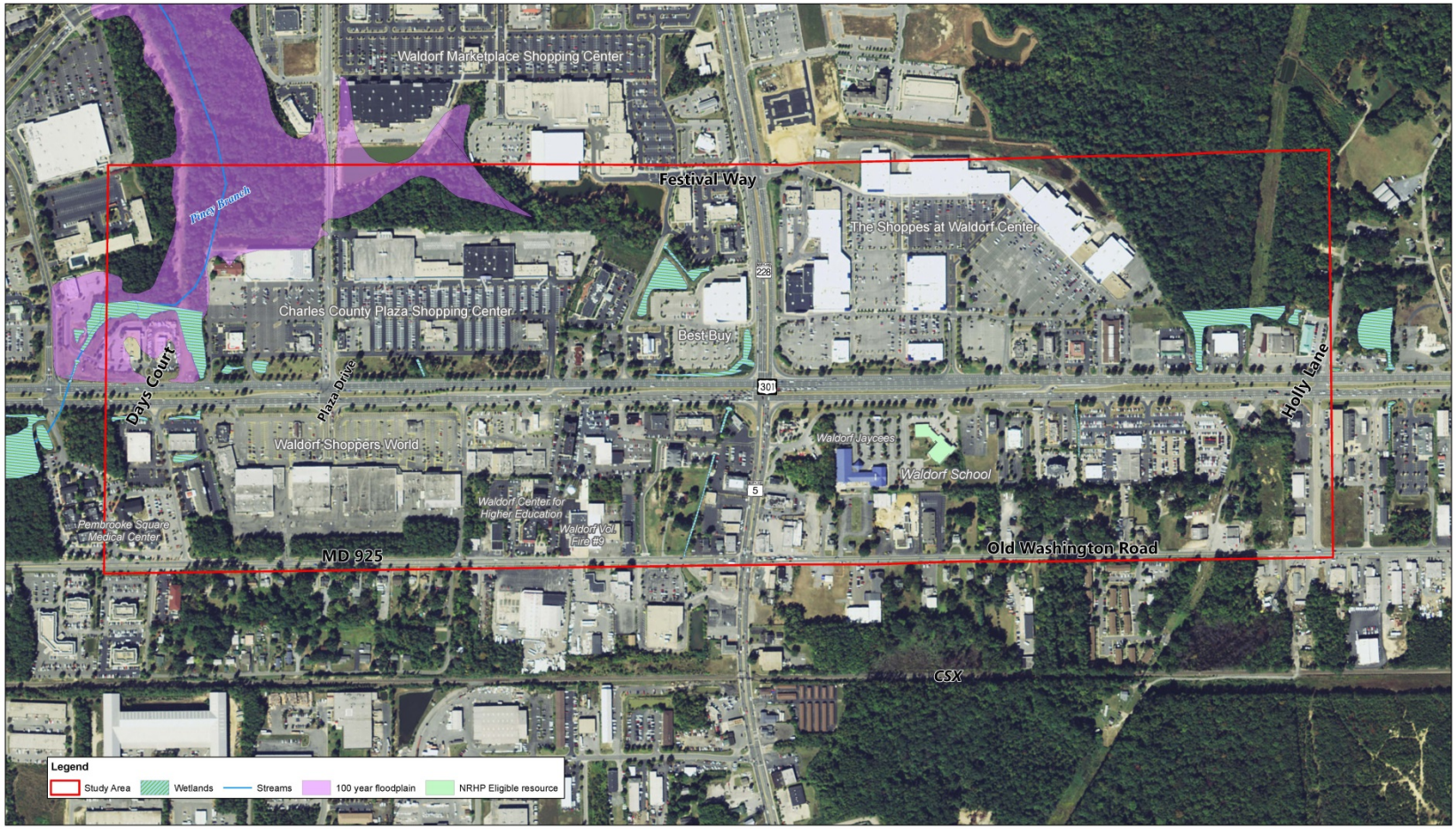


Exhibit 17: Environmental Resources Map
Purpose and Need

0 360 720 1,440 2,160 Feet

Maryland Department of Transportation
State Highway Administration
Project Management Division
June 2015

1:3,500

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

Exhibit 18: Environmental Resources Inset Map
Purpose and Need

0 80 160 320 480 Feet

1:800

Maryland Department of Transportation
State Highway Administration
Project Management Division
June 2015

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

A preliminary review of the study area to determine resources listed, eligible or potentially eligible for inclusion in the National Register of Historic Places (NRHP) identified seven resources within the study area (Exhibits 19 and 20). Each of these resources involves standing structures. No known or potential archaeological sites were identified and the study area is considered to have a very low potential for archaeological resources, as it has been heavily disturbed by prior road construction, road widening and intersection improvements, drainage features, utility installation, massive adjoining commercial development, and landscaping.

Exhibit 19: Eligible & Potentially Eligible Historic Resources within Study Area

Resource	NRHP Status
Waldorf School – 3070 Crain Highway	Eligible (CH-391)
3040 Leonardtown Road	Potentially eligible – further study required
3059 Leonardtown Road	Potentially eligible – further study required
3065 Leonardtown Road	Potentially eligible – further study required
3070 Leonardtown Road	Potentially eligible – further study required
3090 Leonardtown Road	Potentially eligible – further study required
3050 Crain Highway	Potentially eligible – further study required

Coordination with the U.S. Fish and Wildlife Service and the Maryland Department of the Natural Resources (DNR) Wildlife and Heritage Service indicates that there are no federal or state rare, threatened, or endangered species known to exist within the project area. No DNR green infrastructure hubs or corridors are located in the study area.

A tributary to Piney Branch is located on the west side of US 301 behind the Charles County Plaza Shopping Center which drains into Piney Branch near the southern terminus of the study area (Exhibit 16). The tributary connects several stormwater facilities located between the Waldorf Marketplace and the Charles County Plaza Shopping Center which are identified by DNR as wetland resources. These wetlands and streams are identified as being within the 100-year floodplain associated with Piney Branch. Another potential wetland resource is a stormwater facility located in the southwest quadrant of the intersection in front of the Best Buy retail store at the Waldorf Marketplace shopping center. This potential wetland is associated with a perennial stream (roadside ditch) which runs parallel to US 301.

Exhibit 20: Eligible & Potentially Eligible NRHP Resources Map
Purpose and Need

0 80 160 320 480 Feet

Maryland Department of Transportation
State Highway Administration
Project Management Division
June 2015

1:800

US 301 at MD 228/MD 5 Business
Waldorf, Charles County, MD

Due to anticipated growth in traffic volumes within the study area, increases in traffic noise and discharge of carbon monoxide (CO) may occur. The need for traffic noise and air quality analyses will be evaluated during detailed study of transportation alternatives.

A field review of the study area and database search (U.S. Environmental Protection Agency and Maryland Department of Environment inventories) identified several sites in the study area where potential hazardous materials may be present, including gas stations, auto repair shops, printing facilities, and dry cleaners. These facilities will be further studied to determine potential hazards in the study area related to the generation, handling and/or storage of hazardous materials. Additional study of facilities and potential hazards that may be impacted by transportation improvements will be completed during Stage II detailed study of transportation alternates.