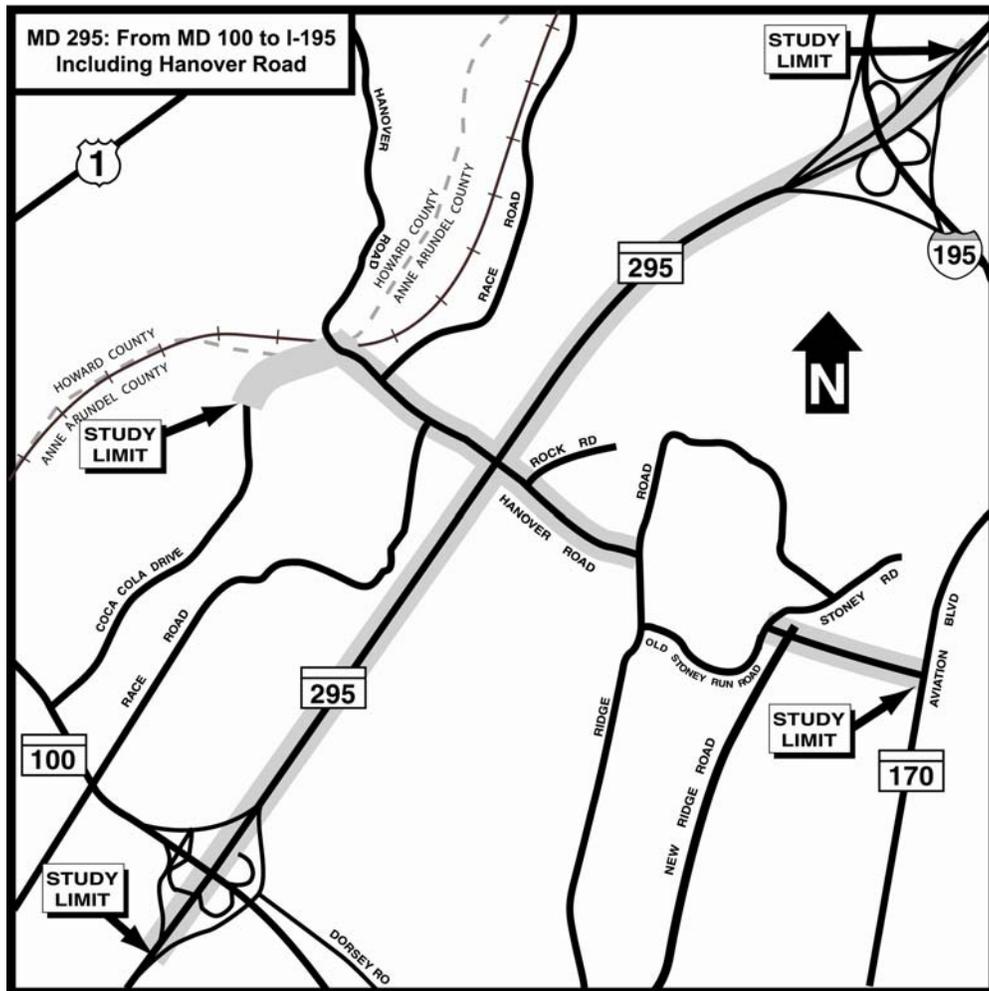


Purpose and Need Statement
MD 295 (Baltimore Washington Parkway)
From MD 100 to I-195 and Hanover Road from Coca Cola Drive in
Howard County to MD 170 (Aviation Boulevard) in Anne Arundel County.

Project # AA372A11



Maryland State Highway Administration
Office of Planning and Preliminary Engineering
October 2005

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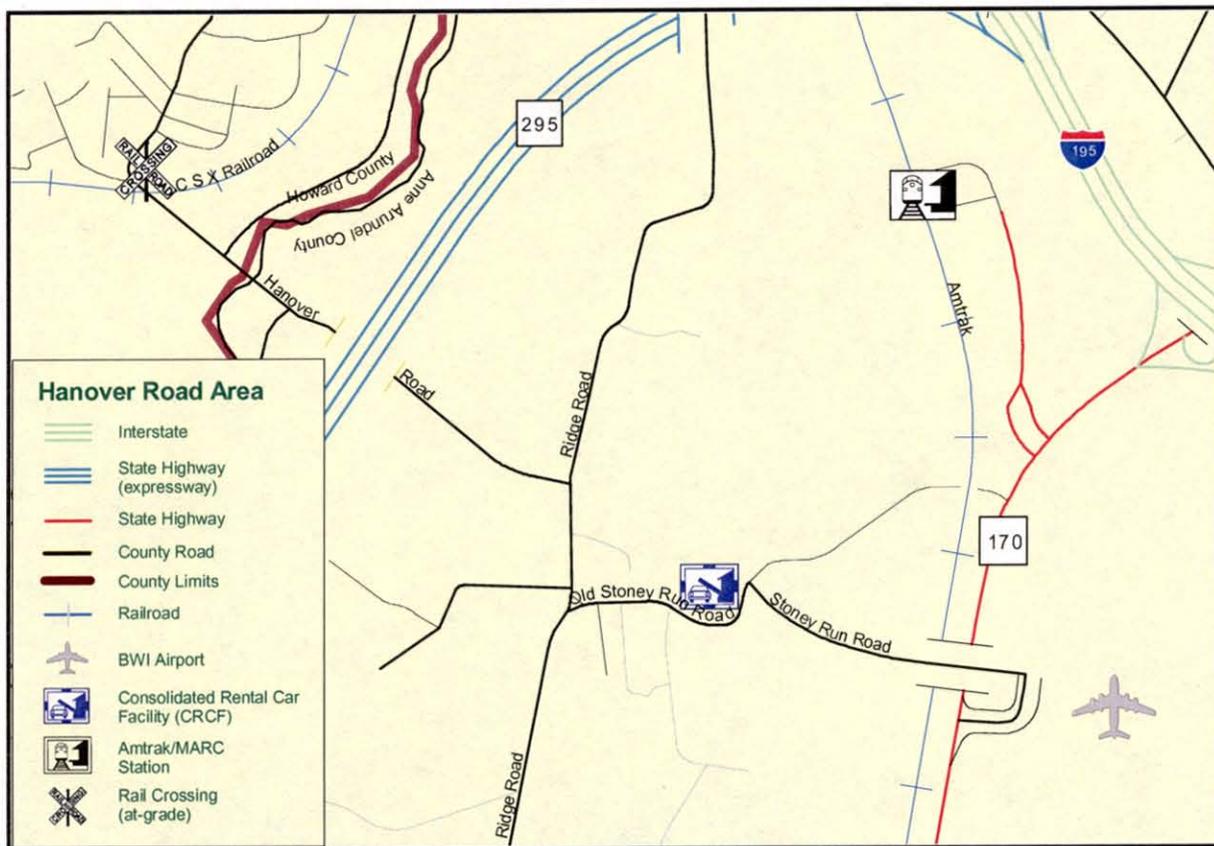
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Project Location

The MD 295 Project Planning study involves the study of MD 295, (the Baltimore Washington Parkway), from MD 100 to I-195, as well as improvements at MD 295 and Hanover Road from Coca Cola Drive in Howard County to MD 170 (Aviation Boulevard), in Anne Arundel County.

The project study area is located south of the City of Baltimore in northwestern Anne Arundel County and northeastern Howard County, and in the vicinity of the Baltimore Washington International Airport (BWI). The study area encompasses MD 295 from south of the MD 100 interchange to north of the I-195 interchange (mileposts 8.58 to 12.21). MD 295 crosses over Hanover Road at milepost 10.39. The study area also includes Hanover Road, a county roadway, from Coca Cola Drive at the west end of the study area in Howard County to Ridge Road in Anne Arundel County. Currently to travel from Hanover Road east to MD 170, the user must turn right onto Ridge Road, turn left onto Old Stoney Run Road and turn right onto Stoney Run Road which leads to MD 170 (see figure 1). Anne Arundel County recently completed a study which identified possible alignments and typical sections to connect the gap on Hanover Road between Ridge Road and Stoney Run Road. Anne Arundel County's General Plan has assumed that Stoney Run Road would become Hanover Road once this connection has been made.

Figure 1. The Hanover Road area.



MD 295 is functionally classified as an urban freeway/expressway with full access control (a limited access four-lane divided freeway) that serves as a major north-south state route between the Washington D.C. and Baltimore Metropolitan Regions. MD 295 also serves as a major access connector to BWI from both the Washington D.C. and Baltimore Metropolitan Regions. Hanover Road/Stoney Run Road are local, two-lane facilities that primarily serve both airport-related and local traffic and are classified as minor arterials. Recent BWI service expansion has begun to utilize Stoney Run Road for service support operations, including a consolidated rental car facility and an employee parking lot. MD 295 is included in the 2004 Highway Needs Inventory for expansion to six lanes and for a new interchange at Hanover Road, and has been identified as a priority by Anne Arundel County in the 2003 and 2005 priority letters.

Note: A priority letter with a full listing of county projects was not submitted in 2004

Project Background

A group of state and local transportation interests was formed in 2001 with the goal of sharing information and providing support for the respective projects in the BWI area. This group consists of the Maryland Department of Transportation (MDOT), the Maryland Aviation Administration (MAA), the State Highway Administration (SHA), the Maryland Transit Administration (MTA), Anne Arundel County, and Howard County. The group meets quarterly to provide an update on current and potential area project activities and issues. This group also played a key role in the development of three BWI area studies called the 2002 Coordinated Transportation Vision (CTV) for the BWI Region, the BWI 2001 Short Term Roadway Access Study, and the 2003 BWI Long Term Roadway Access Study.

In September 2002, MDOT released the Coordinated Transportation Vision for the BWI Region. This study examined the regional mobility of all modes of transportation. Regional mobility and access were viewed as the key challenges facing the Baltimore Region and the BWI area today and in the future: getting people to and from the airport, easily and efficiently. This cooperative effort established multi-modal goals for the BWI area and outlined objectives and recommendations to meet these goals. This project supports several of the goals and recommendations from that report.

MDOT requested that SHA perform two traffic studies to assess short-term and long-term growth on the roadway network around BWI, called the 2001 Short Term BWI Roadway Access Study and the 2003 BWI Airport Long Term Access Study. This project is one of the recommendations to come out of the 2003 BWI Airport Long Term Access Study.

The 2003 and 2005 Anne Arundel County Priority Letters identifies a need for an interchange at MD 295 and Hanover Road, including a connector road/Hanover Road extension to MD 170. In 2003, Anne Arundel County approached SHA for help to identify an alignment for Hanover Road for the County to protect during their development review process. SHA, MAA, MDOT, Anne Arundel County and Howard County discussed partnering a study that would identify this alignment. However, funding could not be agreed upon and the study was

dropped from consideration. Secretary Robert Flanagan formally announced this project in October 2004. This project is only funded for project planning, which began in January 2005.

The extension of Hanover Road is identified in the 1997 General Development Plan and in the BWI/Linthicum Small Area Plan (August 2003). The BWI/Linthicum Small Area Plan also recommends the construction of an interchange of Hanover Road with MD 295. There are also recommendations for pedestrian and bicycle facilities along Hanover Road in the Anne Arundel County Pedestrian and Bicycle Master Plan and in the Greenways Master Plan. The extension of Hanover Road has been in the County's General Plan for 30 years.

Anne Arundel County performed a feasibility study on the Hanover Road Extension which was completed in July 2003. The purpose of their study was to determine costs and impacts of the extension of Hanover Road, from Ridge Road to Stoney Run Road, and to address the reservation of right-of-way under an Anne Arundel County Department of Public Works agreement. The agreement concerned the development of the parking facility immediately west of the intersection of future Hanover Road extended and Stoney Run Road (called the Pre-Flight parking lot). This agreement stipulates that the property owner will reserve property for the future Hanover Road extension as long as Anne Arundel County has Right-of-Way funding identified in their Capital Improvement Program by 2009 and Construction funding in their program by 2014. At a public meeting held for this study, there was no opposition; however, citizens expressed an interest for completing the connection as soon as possible.

In the late 1990s, the Howard County Department of Public Works (HCDPW) did a study to upgrade Hanover Road in Howard County from Montgomery Road to the railroad tracks, immediately to the west of the project study area. The community convinced the HCDPW not to pursue the study further, and instead, the County was able to accomplish a few minor safety improvements.

After the study, the community proposed completely closing Hanover Road at the railroad tracks to limit cut-through traffic. Hanover Road experiences about 3 crashes per year, mostly single driver, and the ADT is about 1500 per day. The County worked with the citizens to do traffic counts and other analyses, including a license plate survey to monitor the cut-through traffic. At a November 2004 local community association meeting, HCDPW presented the option to test a closure of Hanover Road again, and the community decided they did not want the closure study to take place. However, the group decided to re-consider the issue under the current Project Planning study.

Purpose

The purpose of this project is to improve the existing capacity, traffic operations and safety of MD 295. Currently I-195 serves as the primary access to BWI and BWI area services. The purpose of this project is also to enhance Hanover Road as a secondary access to BWI and the surrounding area. By improving MD 295 and Hanover Road, the project will improve connectivity between the Baltimore and Washington Metropolitan Regions as it relates to BWI and will support existing and planned economic development in and around BWI.

Need

The area around BWI is one of the fastest growing areas of Anne Arundel County. Numerous developments, such as Arundel Mills Mall, which opened in 2000, and the BWI Business District, home to more than 60,000 employees, have contributed to increased traffic volumes in the area. The BWI Business District is expected to continue to grow dramatically. The BWI Airport plays a significant role in facilitating this economic growth, not only in the immediate area, but in the entire Baltimore-Washington Metropolitan area. BWI serves the fourth largest consumer population and travel market in the United States. Over the past 15 years, passenger volumes have more than doubled, and despite a reduction in passenger volumes immediately following the September 11, 2001 attacks, there is a forecast for a continuation of growth in the Coordinated Transportation Vision for the BWI Region (September 2002).

BWI is currently undergoing a \$1.8 billion expansion program to provide additional convenient parking, improve vehicle and pedestrian access, and expand the capacity of the airport terminal. Highlights of the program include recent completion of an 8,400-space parking garage, consolidating rental car operations at a separate facility, widening and extending the upper and lower level terminal roadways, constructing new terminal access roadways, installing pedestrian skywalks over the terminal roadway and building over 500,000 square feet of additional terminal space. The Concourse A/B expansion project will create 11 new aircraft gates and provide BWI with increased concession, ticketing and baggage claim space. The final component of the expansion program is a terminal enhancement program, which will widen the ticket lobby and baggage claim areas and brighten and modernize the overall look of the terminal building.

In 2000, BWI accommodated 19.6 million passengers, an increase of more than 12 percent over 1999, BWI served 20.3 million air passengers in 2004, or an average of 57,000 passengers per day, with approximately 85 percent of these passengers originating or terminating their trips at BWI. Passenger volumes at BWI are expected to continue growing to nearly 35 million passengers per year by the year 2020.

The number of origin and destination passengers is forecasted to grow to nearly 35 million annual passengers by 2020. Much of the airport's growth has been and is projected to be, in the "origin-destination" market rather by hub or transferring passengers. An increased number of origin-destination passengers will increase demand on transportation facilities. Currently, BWI generates over 60,000 vehicle trips per day in the terminal core area alone. It is estimated that overall, BWI and related development may generate in excess of two million vehicle miles of travel per day (TCRP Report 83: Strategies for Improving Public Transportation Access to Large Airports, TRB 2000 Pg 15).

Year	Annual Passengers (Millions)
2000	19.64
2001	20.36
2002	19.01
2003	19.70
2004	20.34

Table 1. Annual Passengers using BWI Airport

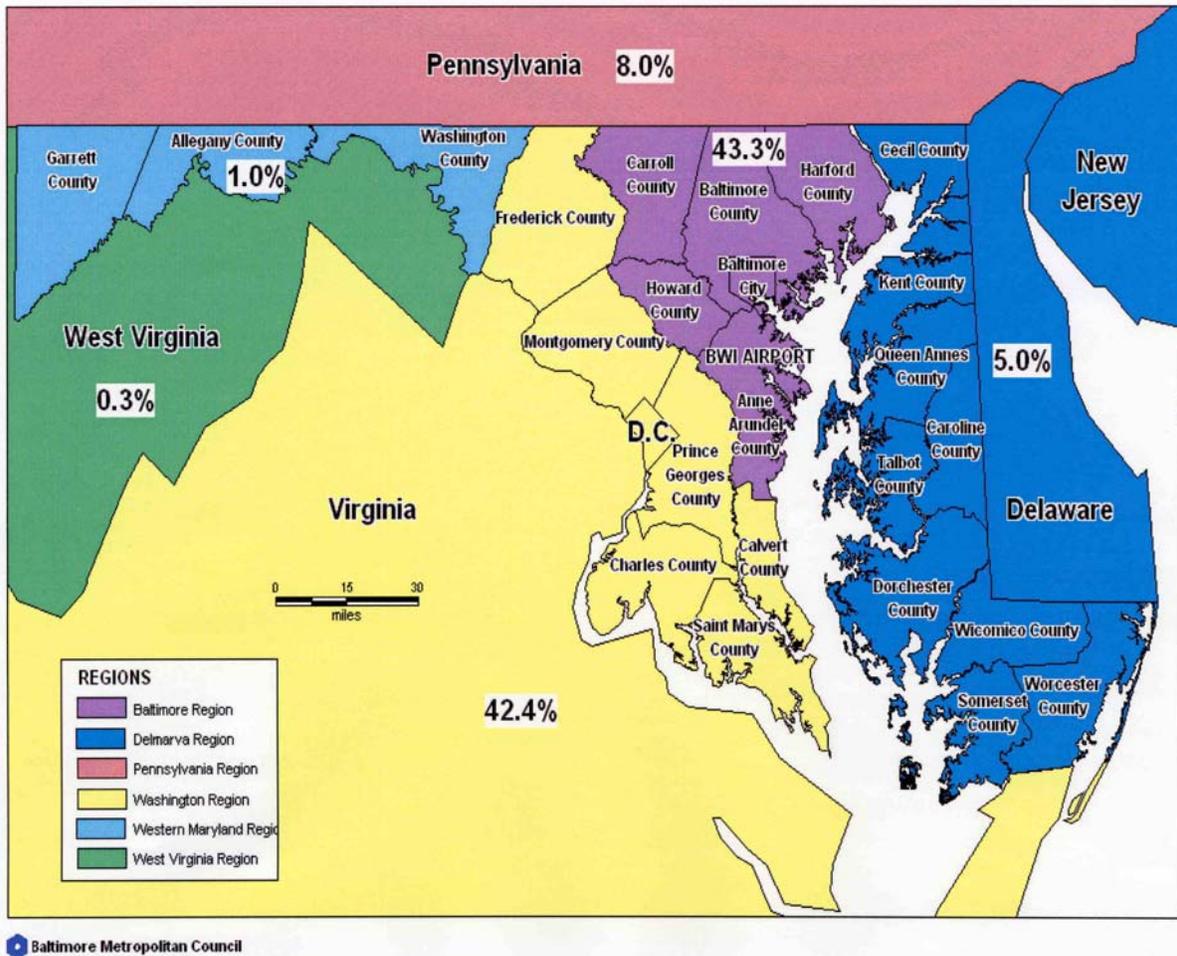
The Baltimore Metropolitan Council conducted license plate surveys at BWI in 2004. The 2004 survey of 21,282 vehicles in parking lots managed by the airport found that the Baltimore region represented 43.3 percent of the total surveyed vehicles (see Figure 2). Forty-two percent of BWI users live in and around the Washington, D.C. region, down from 47 percent in the 2002 survey. Of all of the Maryland jurisdictions, the largest percentages of travelers come from Montgomery County, 15 percent of all vehicles recorded. Vehicles from Baltimore County were second, with 12 percent. BWI is attracting travelers from near and far away, and the regional transportation system must be able to accommodate them all.

If current ground access patterns and mode share remain constant, this could double the traffic generated by the airport, placing an even heavier demand on the current auto-dominated ground access and parking systems. Without continued expansion, the future traffic demand may exceed the terminal area and access roadway capacities during peak travel times. Without improvements, by 2020 many of these regional facilities will operate at unacceptable levels of delay and congestion.

The demand for convenient access to air travel is increasing in the National Capital Region. That increase can be seen in more flights from all three airports serving the region. However, Ronald Regan Washington National Airport can only marginally address this increased demand due to the lack of parallel runways and the single runway's limited length, plus noise restrictions to further limit the hours of operation. Dulles International Airport is also experiencing increased travel demand but is limited in its ability to improve access directly to the airport due to congestion on I-495 (Capital Beltway).

As the regional and airport roadway network reach capacity they will also limit new economic development opportunities and increase travel times for local area residents, employees and shoppers. The increased travel times decrease convenience for BWI air passengers, which in turn reduces BWI's attractiveness in the competitive Baltimore-Washington region air travel market (In 2000, 58 percent of BWI's air passengers chose to fly from BWI for access related reasons – WASHCOG, 2000 Washington-Baltimore Regional Air Passenger Survey, June 2002).

Figure 2
Origin of BWI Parking Patrons by Region



Anne Arundel County has rezoned most of the area surrounding BWI from residential/agricultural into commercial or industrial uses due to MAA airport related noise impacts. The existing area road network is not equipped to handle these changes and is not compatible with the proposed and new zoning, and the need for improved access to major highway facilities such as MD 295 and MD 100. The 2003 BWI/Linthicum Small Area Plan indicates that in the vicinity of BWI, there are now nearly 2,000 acres of commercial and industrial development with a total employment of over 55,000.

Overall, in the greater BWI Business District, employment is expected to increase with recent and future development. According to the Anne Arundel Economic Development Corporation, since 2003 nearly 500,000 square feet of office space is under construction, with another 1.3 million square feet proposed to be built over the next two years. Between 2003 and 2005 1.6 million square feet of flexible/industrial space will be constructed. It is expected that this growth will continue into the future with a number of major new developments, such as the

784 homes and town homes in the Villages of Dorchester residential community and the 63 acre Arundel Overlook Business Park. Current projections call for a 20 percent increase in employment by the year 2015 in the immediate vicinity of BWI.

Traffic volumes in the MD 295 corridor are predicted to increase by over 30 percent by the design year 2030. The current lane configuration will not be able to support this growth. Traffic volumes at the eastern end of Hanover Road/Stoney Run Road are forecasted to increase by over 160 percent by 2030 due to airport and airport facility growth. This project is needed to provide a sufficient level of access and mobility in this heavily utilized area.

Although the crash rate in the MD 295 study corridor is lower than the statewide average for all similarly designed highways, the rate of fatal crashes in the study area is higher than the statewide average. There are three Candidate Safety Improvement Locations along MD 295. Two of which are located in the MD 100 interchange area, and the other is located in the vicinity of the I-195 interchange. The most predominant collision type is rear-end crashes, which are typically caused by congested conditions.

The BWI Coordinated Transportation Vision Report outlined both programmed and planned improvements that are critical to the State's economic vitality at the BWI Airport, as well as maintaining good transportation connectivity and mobility in the Baltimore-Washington Region. The pertinent goals and objectives have been identified in Appendix B.

In summary, this project will support BWI as a key economic engine of the State. It will seek to meet transportation demands from growing population, employment, tourism and air travel, at a local, regional, state, and interstate level. This project will also reduce congestion on MD 295 and upgrade Hanover Road to better meet the needs of a commercially zoned area.

Traffic Volumes

The forecasts developed for this project are based on the Baltimore Metropolitan Council's (BMC) Round 6A land use forecasts and the BMC travel demand-forecasting model. Year 2004 and 2030 traffic volumes were determined based on existing year 2004 intersection turning movement and roadway segment volume counts along MD 295 and Hanover Road in the study area. Future 2030 No-Build volumes assume no improvements to MD 295 or Hanover Road.

MD 295 currently has a 2004 Average Daily Traffic (ADT) that ranges from 96,000 south of the MD 100 interchange, to 84,850 between MD 100 and I-195, and to 90,250 north of the I-195 interchange. Under 2030 "No-Build" conditions, these volumes are expected to increase in a range of 122,800, to 115,400, to 118,700, respectively.

Currently, to travel from Hanover Road east to MD 170, the user must turn right onto Ridge Road, turn left onto Old Stoney Run Road, and turn right onto Stoney Run Road. This route has an ADT that ranges from 1,650 on Hanover Road, to 2,100 on Ridge Road, to 3,300 on Old Stoney Run Road, to 12,250 on Stoney Run Road. Under 2030 “No Build” conditions, these volumes are expected to increase in a range of 6,150, 8,350, 8,150, and 32,600, respectively. There are heavier traffic volumes on Stoney Run Road because it serves as the main entrance to the consolidated Rental Car Facility, the new MDOT headquarters, and the BWI employee parking lot.

Traffic Operations

The adequacy of roadway capacity is determined using a measure called the volume-to-capacity, or v/c ratio. The v/c ratio is the ratio of the peak hour volume carried by a roadway or intersection, and its hourly capacity expressed in vehicles per hour. Roadways may have traffic volumes that exceed or are forecast to exceed capacity. This would result in a v/c ratio that exceeds 1.00, and indicates the need for capacity improvements. Otherwise, if existing or committed levels of capacity are sufficient, the v/c ratio will be less than 1.00.

Level of service (LOS) is a scale measuring the freedom of mobility or severity of congestion experienced by drivers. The LOS scale ranges from A to F. LOS A represents free flow movement of traffic with little or no congestion. LOS F represents failure with stop-and-go conditions and long queues of traffic. LOS D occurs near a critical boundary where traffic flows become unstable. This level is generally considered acceptable during peak hours of traffic flow on streets and highways in urban and suburban areas. At LOS E, the roadway is operating near capacity, and day-to-day delays are very unpredictable. LOS is normally determined for the peak hours of the typical weekday. These levels have been determined through traffic research, and are related to measurable traffic characteristics such as delays, speeds, traffic density or v/c ratios.

Tables 2, 3, 4 and 5 summarize the results of an analysis of roadway capacity and level of service conducted for the interchanges and intersections in the study area. The current 2004 LOS on this project ranges from “A” to “F”. Under 2030 “No-Build” Conditions, the LOS ranges from “A” to “F”.

Most sections of MD 295 currently operate at LOS C or D. The southbound weave at MD 100 operates at LOS F in the AM peak and the mainline segment immediately to the south operates at LOS E. The northbound weave at MD 100 operates at LOS E in the PM peak. The northbound MD 295 mainline operates at LOS E between MD 100 and I-195 in the AM peak. Under 2030 “No Build” conditions, most segments of MD 295 will operate at LOS F.

Under 2004 existing conditions all intersections of Hanover Road/Ridge Road/Old Stoney Run Road /Stoney Run Road operate at LOS A. Under 2030 “No Build” conditions, all intersections will continue to operate acceptably with the exception of the Stoney Run Road at New Ridge Road intersection.

Table 2 - LOS Summary: MD 295 Northbound

Segment Type	MD 295 Description	# of Lanes	2004 Existing LOS		2030 No-Build LOS	
			AM	PM	AM	PM
Mainline	South of MD 100	3	C	D	D	E
Mainline	Ramp 4 to MD 100EB and Ramp 3 from MD 100 EB	2	D	D	F	E
Weave	Ramp 3 from MD 100 EB to Ramp 1 to MD 100 WB	3	D	E	F	F
Mainline	Ramp 1 to MD 100 WB to Ramp 2 from MD 100 WB	2	D	D	F	D
Merge	Ramp 2 from MD 100 WB	2	D	D	F	F
Mainline	North of MD 100	2	E	D	F	F
Diverge	Ramp 4 to I-195 SB	2	D	D	F	F
Mainline	Ramp 4 to I-195 SB to Ramp 3 from I-195 SB	2	D	C	E	D
Weave	Ramp 3 from I-195 SB to Ramp 1 to I-195 NB	3	C	C	E	E
Mainline	Ramp 1 to I-195 NB to Ramp 2 from I-195 NB	2	D	C	E	C
Merge	Ramp 2 from I-195 NB	2	D	D	F	F
Mainline	North of I-195	2	D	D	F	F

Maps showing the interchange ramp numbers can be found in Figures 3 and 4



Figure 3: MD 295 Interchange at I-195

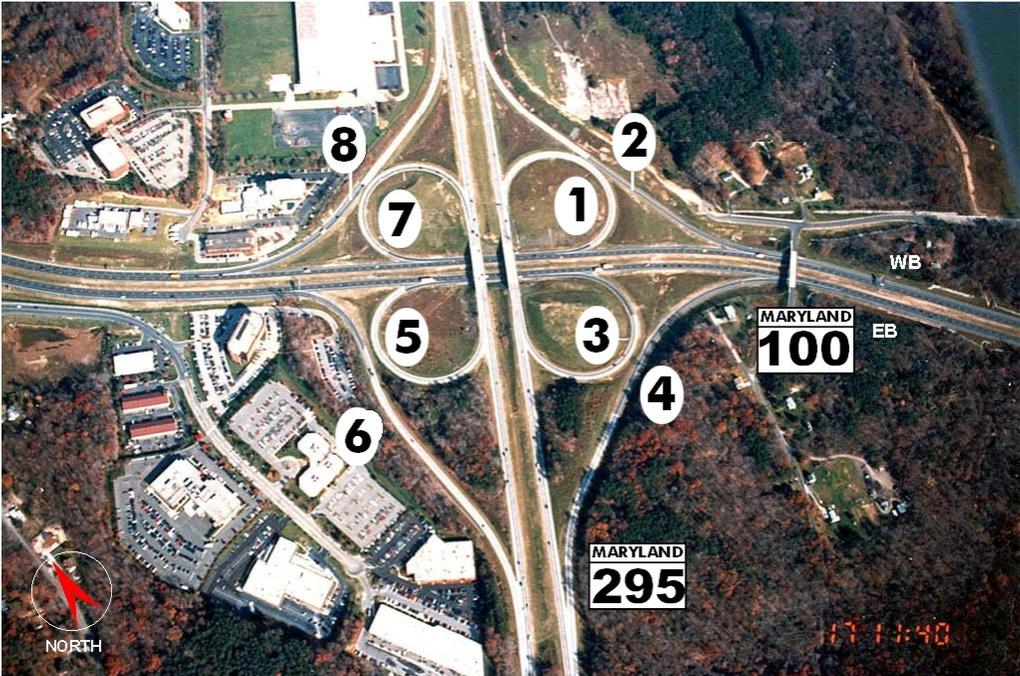


Figure 4: MD 295 Interchange at MD 100

Table 3 - LOS Summary: MD 295 Southbound

Segment Type	MD 295 Description	# of Lanes	2004 Existing LOS		2030 No-Build LOS	
			AM	PM	AM	PM
Mainline	North of I-195	2	D	D	F	F
Diverge	Ramp 5 to I-195 SB	2	D	D	F	F
Diverge	Ramp 8 to I-195 NB	2	D	D	F	F
Mainline	Ramp 8 to I-195 NB to Ramp 7 from I-195 NB	2	C	C	D	D
Merge	Ramp 7 from I-195 NB	2	C	D	D	F
Mainline	Ramp 7 from I-195 NB to Ramp 6 from I-195 SB	2	C	D	E	F
Merge	Ramp 6 from I-195 SB	2	D	D	F	F
Mainline	South of I-195	2	D	D	F	F
Diverge	Ramp 8 to MD 100 WB	2	D	D	F	F
Mainline	Ramp 8 to MD 100 WB to Ramp 7 from MD 100 WB	2	C	C	D	E
Weave	Ramp 7 from MD 100 WB to Ramp 5 to MD 100 EB	3	F	D	F	F
Mainline	Ramp 5 to MD 100 EB to Ramp 6 from MD 100 EB	2	E	C	F	E
Mainline	South of MD 100	3	D	C	D	D

Maps showing the interchange ramp numbers can be found in Figures 3 and 4

Table 4 – Intersection Analysis, Hanover Road Area

Location	2004 Existing LOS		2030 No-Build LOS	
	AM	PM	AM	PM
Hanover Road at Race Road (West)	A	A	B	C
Hanover Road at Race Road (East)	A	A	B	C
Hanover Road at Ridge Road	A	A	B	C
Ridge Road at Old Stoney Run Road	A	A	C	C
Stoney Run Road at Old Stoney Run Road	A	A	D	C
Stoney Run Road at New Ridge Road*	A	A	F (1.08)	F (1.28)

* With a Signalized Intersection a volume to capacity ratio can be calculated.

Traffic Safety

MD 295 has posted speed limits averaging 55 mph. This study section experienced a total of 226 police-reported crashes during the period of 2001 through 2003. These crashes resulted in a total rate of 48.9 accidents per every 100 million-vehicle miles of travel (acc/100mvm). This accident rate is lower than the statewide average crash rate of 54.7 acc/100mvm for all similarly designed state maintained highways (see Table 5). There were three fatal crashes reported within this section of MD 295. This represents a fatal crash rate of 0.7 acc/100mvm, which is higher than the statewide rate of 0.4 acc/100mvm. Rear-end crashes were the most prevalent collision type (see Table 6).

Table 5 – Crash Statistics

Severity	2001	2002	2003	Total Crashes	Study Rate	State-wide Rate
Fatal Crashes	1	1	1	3	0.7	0.4
Number Killed	1	1	1	3		
Injury Crashes	22	26	25	73	15.8	21.5
Number Injured	31	47	49	127		
Property Damage Only	37	51	62	150	32.5	32.8
Total Crashes	60	78	88	226	48.9	54.7

Tables 6 and 8 contain the crashes by collision type, year, accident rate and comparable statewide average accident rate. The most predominant collision type was rear-end, 35 percent (78 of 226) of the total crashes. Fixed object crashes were slightly higher than the state-wide rate. Eighty two percent (55 of 67) of fixed object crashes involved the guardrail/barrier, the embankment and light poles.

Notably, crashes occurring during nighttime were significantly high, 38 percent (88 or 226) of the total crashes. The most probable cause listed was “Failure to give full attention” with 59 percent (133 of 226) of the total crashes. Of the 398 total vehicles involved, less than one percent (5 of 226) involved trucks. There are three Candidate Safety Improvement Locations (CSILs) in the study area:

- ❖ MD 295 from milepost 8.74 to 9.24, at the MD 100 interchange (32 crashes, 2002);
- ❖ MD 295 from milepost 8.69 to 9.19, at the MD 100 interchange (33 crashes, 2003); and
- ❖ MD 295 from milepost 11.53 to 12.03, at the I-195 interchange (34 crashes, 2003).

Table 6

Collision Type	2001	2002	2003	Total Crashes	Study Rate	State-wide Rate
Opposite Direction	1	0	1	2	0.4	0.3
Rear-end	24	25	29	78	16.9	21.5
Sideswipe	3	11	10	24	5.2	7.2
Left-turn	0	0	0	0	0.0	0.1
Angle	1	0	0	1	0.2	0.3
Pedestrian	0	0	0	0	0.0	0.2
Parked Vehicle	0	3	1	4	0.9	1.3
Fixed Object	18	20	29	67	14.5	14.2
Other	13	19	18	50	*10.8	4.9

* Higher than the statewide average

Hanover Road and Stoney Run Road are County facilities with posted speed limits of 30 mph. This study section experienced a total of 10 police-reported crashes during the period of 2001 through 2003. Two crashes occurred on Hanover Road and 8 crashes occurred on Stoney Run Road (See Table 7 and 8).

Table 7

Severity	Hanover Road				Stoney Run Road			
	2001	2002	2003	Total Crashes	2001	2002	2003	Total Crashes
Fatal Crashes	0	0	0	0	0	0	0	0
Number Killed	0	0	0	0	0	0	0	0
Injury Crashes	1	0	0	1	0	0	2	2
Number Injured	2	0	0	2	0	0	2	2
Property Damage Only	0	1	0	1	1	2	3	6
Total Crashes	1	1	0	2	1	2	5	8

Table 8

Collision Type	Hanover Road				Stoney Run Road			
	2001	2002	2003	Total Crashes	2001	2002	2003	Total Crashes
Opposite Direction	0	0	0	0	0	0	1	1
Rear End	0	0	0	0	0	1	0	1
Angle	0	0	0	0	0	1	2	3
Fixed Object	1	0	0	1	0	0	1	1
Other	0	1	0	1	1	0	1	2

Land Use

The study area is mostly located within a designated Priority Funding Area (PFA) under the State's Smart Growth legislation (see Appendix C).

The Baltimore-Washington Parkway is a designated state scenic byway. It is considered the ceremonial entrance route into the nation's capital from the north. In the 1920s the federal government's parkway system for Washington, D.C., based on Pierre Charles L'Enfant's layout of the Capital, included plans for this byway. Although the construction did not begin until 1942, at the end of the American parkway movement, this byway exemplifies one of the last such roads constructed and the only fully developed parkway of its kind in Maryland.

The SHA Scenic Byways Program has developed a set of guidelines to heighten awareness regarding the importance of these byways and how the scenic qualities and the visual environment surrounding these roads are especially important to maintain. These guidelines are intended to be consulted as projects move forward or implement broad programs and activities, recognizing the scenic values, historic significance and overall character of the state's scenic byway. They also serve as a means to gain concurrence from the relevant regulatory agencies, while at the same time considering safety, operational, maintenance, constructability, stakeholder input, impact on the route's users and neighbors, and cost. Coordination with the SHA Scenic Byways Program is encouraged to obtain guidance to preserve, maintain or enhance the character defining features related to the byway travel experience.

The BWI/Linthicum Planning Area consists of approximately 12,500 acres of which slightly less than half of the land area (approximately 49%) is zoned for residential use, with almost thirty percent being zoned for Low Residential densities and 18% zoned for Low-Medium Residential densities (see Appendix D). Land zoned for industrial uses accounts for about 36% of the Planning Area. Commercially zoned land comprises only 1.3% of the total area. Flood plains, wetlands, streams, woodlands and parkland are zoned Open Space and make up 15% of the land area. Anne Arundel County is expected to adopt the BWI/Linthicum Planning Area zoning by the end of 2005 (See Appendix E).

Development in the area is controlled not only by the County's Zoning Ordinance but by the BWI Airport Noise Zone which is established by the MAA to control incompatible development in areas where aircraft noise exposure levels are higher than the established limits. In general the presence of the BWI Airport and its associated noise impacts land use planning in this area. The majority of the vacant land in the study area falls within the Airport Noise Zone, which limits the range of potential uses. In addition most of the residential areas are developed at or near their allowable densities (See Appendix F).

It should also be noted that, at Fort George G. Meade which is located approximately four miles south of the study area, there is planned employment expansion including increases and consolidation of employment associated with the National Security Agency and its contractors. BWI serves as an important access portal to Fort Meade. Fort Meade expects to increase its total employment based in part through relocations of both intelligence-oriented and other Federal agencies from 50,000 to 60,000 employees in the next 15 years. The Base

Realignment and Closure report, predicts an increase in employment of 5,400 jobs for Fort Meade.

Intermodal Connectivity

There are many modes available to corridor users in this location (see Appendix G). There is a major international airport; passenger rail service (AMTRAK), commuter rail service (MARC), light rail service, the BWI Trail, and an extensive roadway network.

The MAA, the MTA, Amtrak, and locally operated transit systems all provide service into and around the study area. MAA operates BWI, and along with area businesses, many shuttle buses are operated to and from BWI from several parking lots, hotels, and the Consolidated Rental Car Facility on a daily basis in the study area. MTA operates the Light Rail system, which has a stop at BWI. MTA also operates the MARC train, a commuter rail service. MTA contracts with the Washington Metropolitan Area Transit Agency (WMATA) for the B30 bus service which connects BWI to WMATA's Green Line Metro in Greenbelt. Amtrak has a station in the area and bus service is provided to BWI.

The Baltimore Regional Rail Plan identifies an extension of the "Yellow Line" from BWI to the Dorsey MARC station. At this time, no alignment has been formally identified, only a Corridor Preservation study has been performed. The yellow line would be extended from BWI to the Dorsey Station with a potential crossing at Hanover Road between MD 170 and MD 295.

Anne Arundel County has an agreement with the Corridor Transportation Corporation (CTC), and the Connect-A-Ride (CAR) to operate some bus service to and from BWI, Amtrak, and Arundel Mills Mall, via the "J" Route. Howard County provides bus service via the Red Express Route. MTA provides bus service in the area using the MTA 17 Route. Improvements in service within this area are identified in the Transit Development Plans of both Howard County and Anne Arundel County. These improvements hinge upon continued and increased Federal and State funds which leverage local matching funds to support both the operating and capital expenses.

Other Transportation Projects

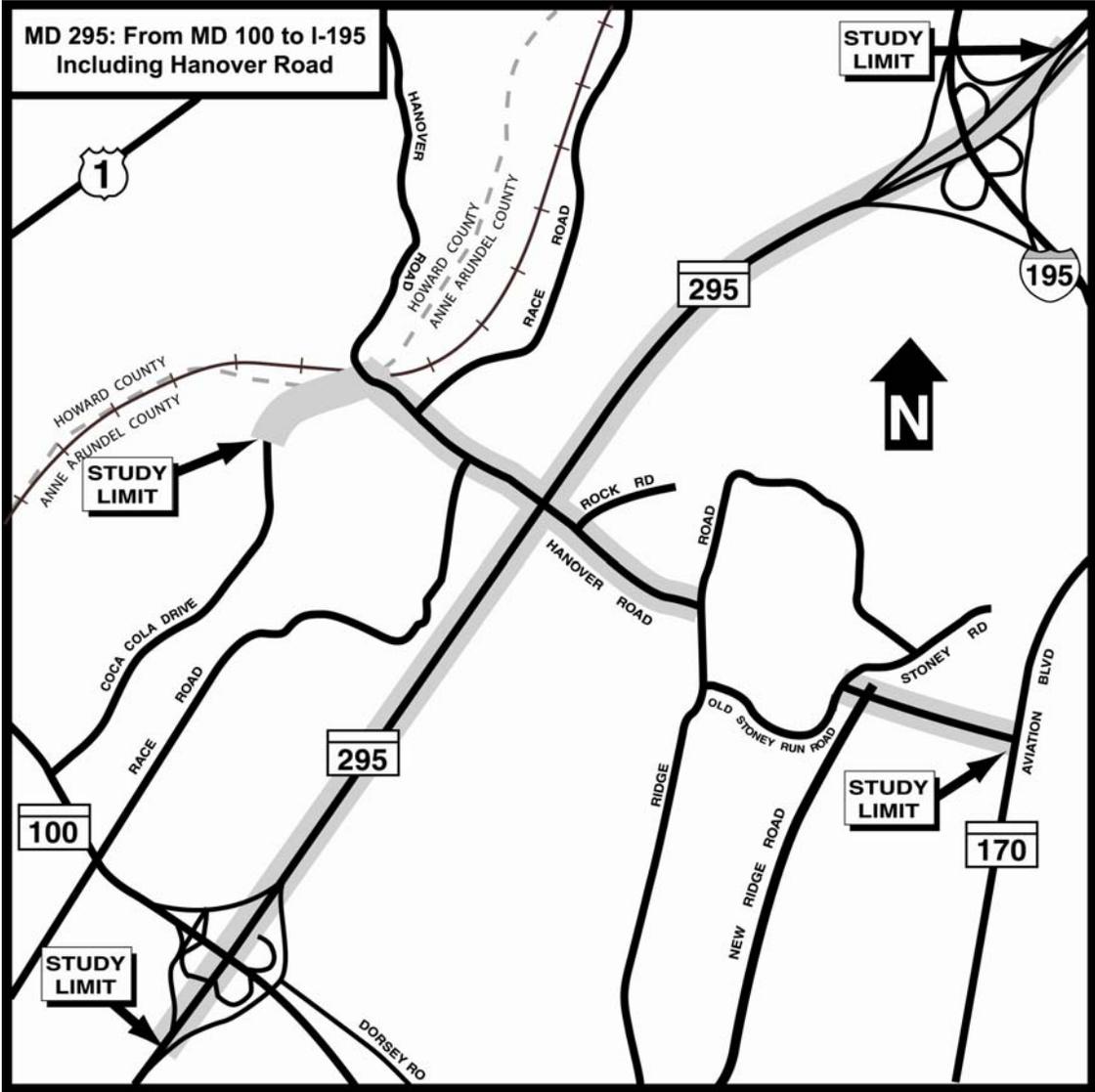
There is one other transportation project located in the study area listed in the Construction Program of the 2005-2010 Consolidated Transportation Program. The MD 295, Baltimore Washington Parkway project is funded for design, right-of-way and construction. The plan for this project is to widen MD 295 from just north of I-195 to I-695 from four to six lanes (1.5 miles). The southern portion of this project will be located adjacent to the project planning study area and both projects are being coordinated.

Conclusion

With the expansion of the BWI facility, the proposed improvements at Hanover Road, and the MD 295 from I-195 to I-695 project; the BWI Region is the fastest growing area in Anne Arundel County and in terms of employment growth, one of the fastest growing areas within the State of Maryland. This study area has local, regional, state, and interstate significance. In addition, the development of the retail and office space in the Arundel Mills Mall area, along with the 1.6 million square feet of flexible/industrial space currently under construction and the new 784 homes and town homes in the Villages of Dorchester residential community improvements are needed to MD 295 and to Hanover/Stoney Run Roads to address capacity and safety, to improve secondary access to BWI, and to enhance economic development in this high growth area.

Appendix A

Study Area Map



Appendix B

Coordinated Transportation Vision for the BWI Region September 2002

RE: Hanover Road at MD 295

Goal 1: Maximize the quality of customer service at BWI Airport. Identify strategies and projects that strengthen customer service throughout the transportation system. Airport customers include passengers, employees and tenants.

Objective 2: Provide efficient access to airport facilities by reducing roadway congestion, minimizing the time required for modal transfers, and limiting the amount of time required to find a parking space and travel between parking and the terminal.

Objective 3: Support BWI business and development plans, including the MAA Landside Development Plan.

Objective 4: Minimize conflicts between airport traffic and traffic related to other activities, businesses, and facilities in the area.

Goal 2: Improve access and mobility to, through, and within the BWI Region. Numerous people travel to, through and within the BWI region – and they are not all going to the airport. It is important that access and mobility for all users be improved and that the demands for access by BWI Airport, businesses, homes, and through traffic accommodated.

Objective 1: Make it easier to access activity centers within the region by optimizing the use of the existing multimodal surface transportation network.

Objective 2: Develop strategies for addressing existing and projected congested areas, including providing multiple modal choices and increasing road capacity.

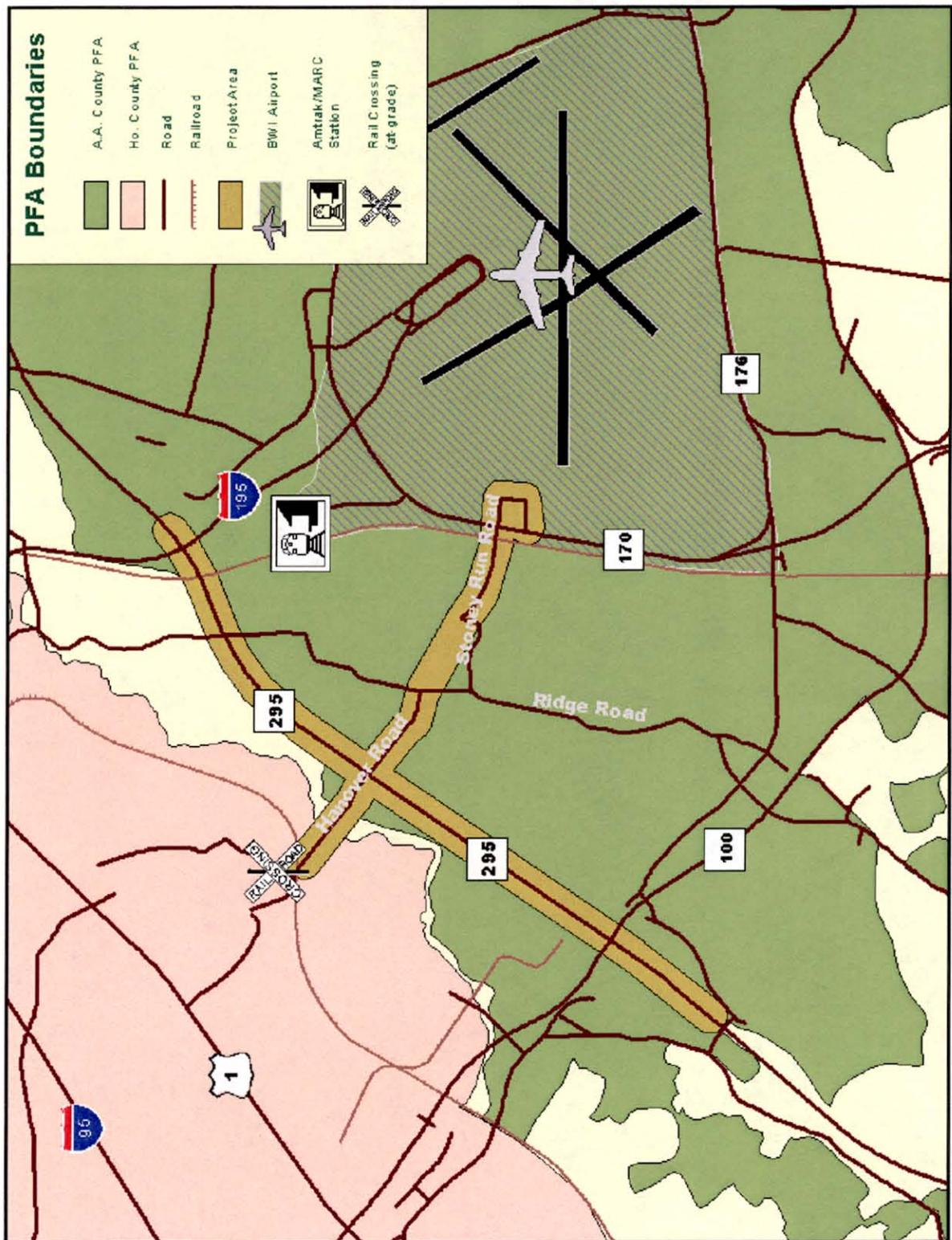
Objective 3: Improve economic development of the BWI Business District by supporting major road and transit projects that will provide better freight and passenger access and mobility.

Traffic: 2000 Levels of Service AM(PM) for MD 295 are C north of Hanover Road and D(D) south of Hanover road. 2025 Levels of Service AM(PM) with BRTB LRP improvements (on MD 100 and MD 295) for MD 295 are C(D) north of Hanover Road and D(C) south of Hanover Road. An alternative for 2025 with an interchange at MD 295 with Hanover Road does not change LOS on MD 295 (it stays at D(D)), however, these improvements relieve much of the failing locations especially along MD 170 and New Ridge Road. Note that some additional improvements would be required at the intersection of Stoney Run Road and New Ridge Road.

Recommendation #2: MAA...should work with the other MDOT modes to advocate transportation improvements that will make it easier for people to get to the BWI Region from across the State and beyond. To improve access and mobility to the BWI Region, coordinate with the modes to evaluate the feasibility of:

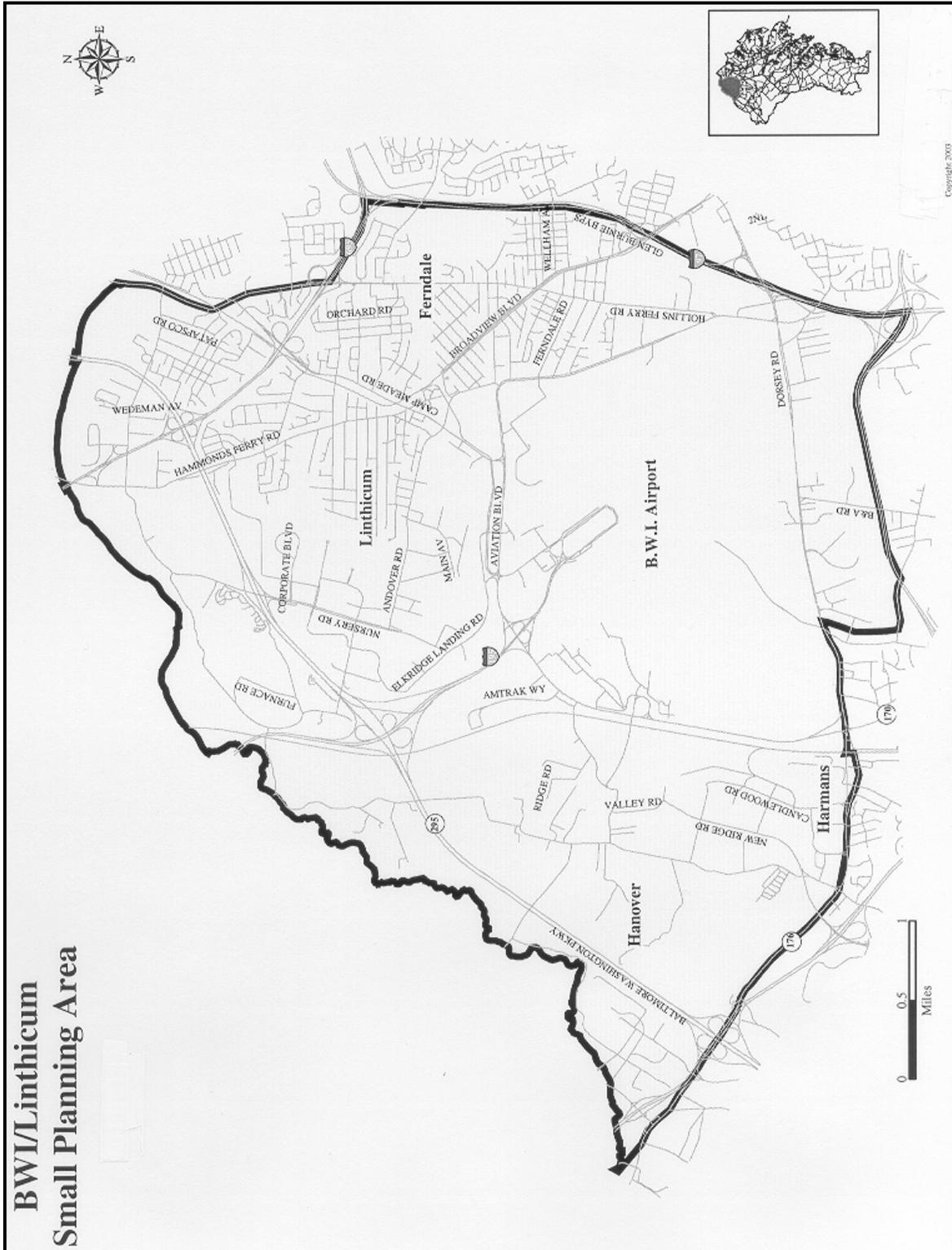
Appendix C

Map of the Priority Funding Areas (PFA)



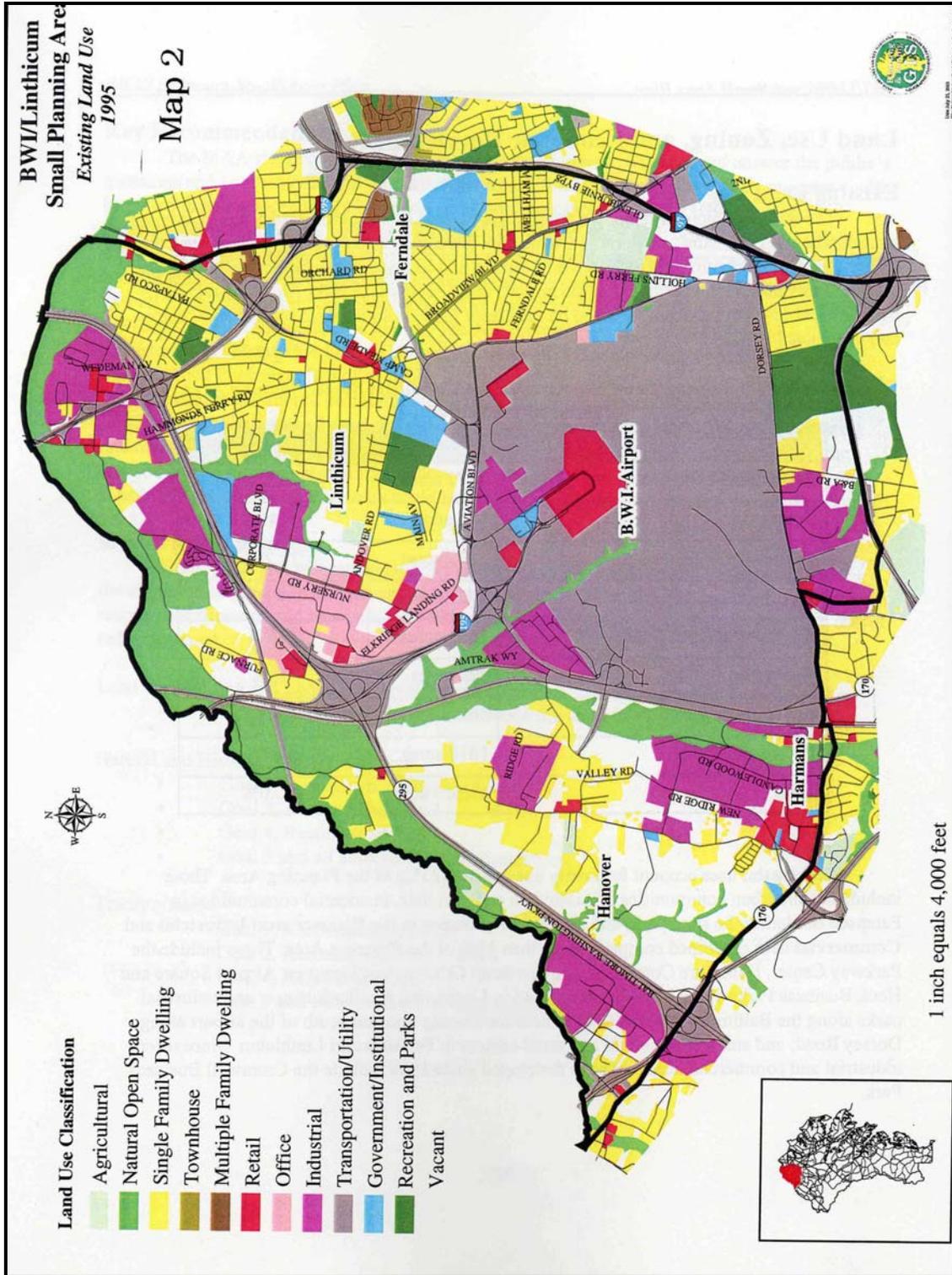
Appendix D

BWI/Linthicum Small Planning Area



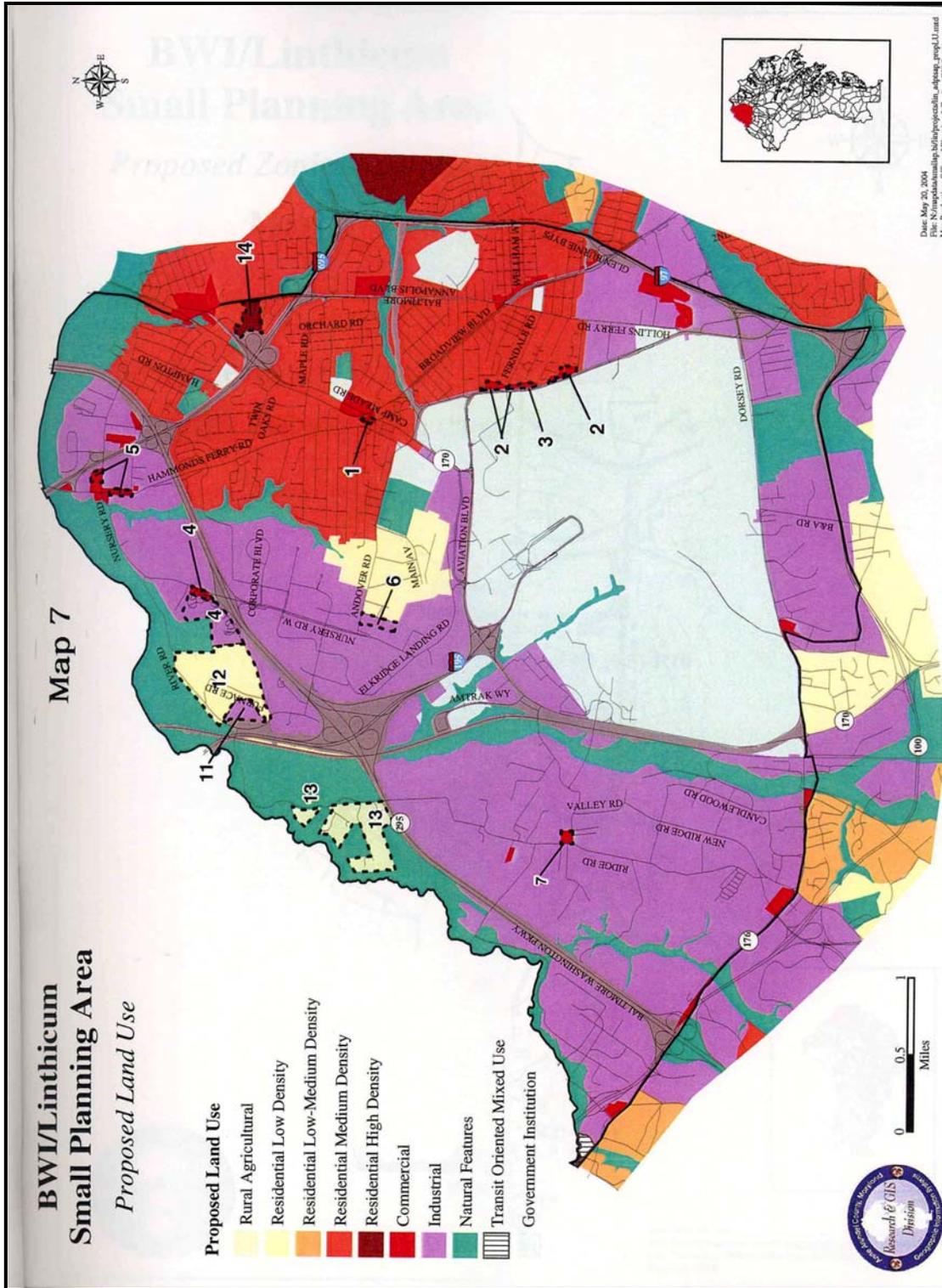
Appendix E

BWI / Linthicum Small Planning Area Existing Land Use



Appendix F

BWI / Linthicum Small Planning Area Proposed Land Use



Appendix G

MTA and Local Transit Services in the BWI/Arundel Mills/Fort Meade Area

