Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

SHA State Highway Administration

John D. Porcari, *Secretary*
Neil J. Pedersen, *Administrator*

Maryland Department of Transportation

December 24, 2008

Re: Project No. FR571M11
US 15/Monocacy Boulevard Interchange Study
Frederick County, Maryland
Request for Location Approval

Mr. Nelson J. Castellanos
Division Administrator
Federal Highway Administration
City Crescent Building
10 South Howard Street, Suite 2450
Baltimore, MD 21201

Attn: Ms. Stephanie Pratt

Dear Mr. Castellanos:

In accordance with the CEQ Regulations and 23 CFR 771, the Maryland State Highway Administration (SHA) recommends that the subject project be classified as a Categorical Exclusion (CE) and requests Location Approval for the project.

The US 15/Monocacy Boulevard interchange project is located in Frederick, Maryland (**Attachment 1**) and is proposed to replace the existing at-grade intersection. The interchange concept was initially presented to the public in the June 2002 Draft Environmental Impact Statement (DEIS) and at a public hearing as part of the I-270/US 15 Multi-Modal Corridor Study. The interchange would provide improved access to existing and planned development on the northern side of Frederick, as well as provide improved east-west access from communities to the east (Broadview Acres and Wormans Mill) and to the west (Clover Hill, Clover Hill II, Clover Hill III, Amber Meadows, and North Crossing). It has been broken out separately from the I-270/US 15 study as an independent project to address immediate vehicular safety as well as the development needs occurring within the study area.

The US 15/Monocacy Boulevard interchange project encompasses approximately three square miles in central Frederick County, along the northern limits of the City of Frederick. The project limits along US 15 are from the US 15/MD 26 interchange to Willow Road. Presently, Monocacy Boulevard intersects US 15 at mile point 16.51. The study area is bounded to the east by the Monocacy River and to the west by Opossumtown Pike. Tuscarora Creek is a tributary of

the Monocacy River and traverses the northern part of the study area, crossing under US 15 at mile point 16.75. Tuscarora Creek, east of US 15, also serves as the northern boundary of the City of Frederick's incorporated limits; therefore, the majority of the study area is located within the City of Frederick.

Purpose and Need

The purpose of the US 15/Monocacy Boulevard interchange project is to address current safety deficiencies along US 15 within the vicinity of Monocacy Boulevard, and to provide connections that would adequately address the proposed and approved economic development needs within the surrounding areas. Future 2030 traffic projections indicate that improvements are needed to maintain safe and efficient travel along US 15. While this study is a break out project from the I-270/US 15 Multi-Modal Corridor Study (FHWA previously concurred with this break out), it is necessary in the short-term to improve vehicular safety, the level of operation, and overall integrity along the US 15 corridor while providing a much needed east-west connection across US 15 for vehicles, bicycles, and pedestrians. Neither Monocacy Boulevard nor MD 26 currently extend west across US 15.

The proposed interchange will provide the public with better access to US 15. Residential areas, local businesses, and future development in the area will benefit from the project, as connectivity and safety will be improved.

Planned and Approved Development

The *City of Frederick Comprehensive Plan* (2004), as well as the County's *Regional Plan* both recommend a new interchange at the intersection of US 15 and Monocacy Boulevard. Growth trends in Frederick County from 2000 to 2030 indicate that employment growth is expected to be about equal to population growth with both employment and population increasing by about 74 percent (see **Table 1-1** below). The area surrounding the US 15/Monocacy Boulevard intersection is one of the fastest growing areas in Frederick County. The proposed land use plans as shown in the *City of Frederick Comprehensive Plan* contain extensive mixed-use zoning in both the northeast and southeast quadrants of the US 15/Monocacy Boulevard intersection. The planned mixed-use designation is intended for employment, retail, office and residential development. The intention for this area is to incorporate compact mixed-use developments that provide the opportunity for pedestrian and bicycle mobility, increased transit opportunities, and a reduction in the number of vehicular trips. The current intersection is envisioned as a proposed interchange and a City Gateway location.

Table 1-1: Demographic Forecasts

Area	2000 Population	2030 Population	Percent Change	2000 Employment	2030 Employment	Percent Change
Frederick County	195,277	339,696	74.0%	96,304	167,257	73.7%

Proposed commercial and residential development is planned east of US 15 and along Monocacy Boulevard (**Attachment 2**). There are several major development projects planned within the project area including North Gate Plaza, North Crossing, the Homewood Property, the Clemson property, and Fort Detrick. The size and cost of the planned development, as well as the projected increase in employment associated with each development, is summarized in **Table 1-2**.

The proposed North Gate Plaza retail development is located immediately west of the US 15/Monocacy Boulevard intersection. The site will include 286,000 square feet of retail space on approximately 52 acres. The site is expected to generate 233 AM weekday peak hour trips and 828 PM weekday peak hour trips. Access for this site is proposed via Monocacy Boulevard and Thomas Johnson Drive with secondary access via Hayward Road.

Table 1-2: Planned Development

Development	Size/Cost	Approximate Number of New Jobs Expected
North Gate Plaza	286,000 square feet on ~52 acres	Unknown
North Crossing	Unknown	Unknown
Homewood Property	73 acres	Unknown
Clemson Property	360,000 square feet	800
Fort Detrick	200 acres/$1.2 billion	1,200

The North Crossing mixed-use development is located along Christopher's Crossing, which will contain medium and moderate density residential areas along with a conservation area. Christopher's Crossing roadway was constructed west of Thomas Johnson Drive where it will eventually connect to Monocacy Boulevard. Either the City of Frederick or the North Gate Plaza developers will complete this connection.

The Homewood Property is located in the northwest quadrant of the Willow Road/US 15 intersection. An annexation application has been filed with the City of Frederick to develop a retirement community at this property containing up to 100 apartments and 225 cottages with abundant amenities.

The Clemson property is located in the northeast quadrant of the US 15/MD 26 interchange (east of the railroad track) about one mile south of the proposed interchange. The landowners have requested permission to facilitate the development of a 360,000 square foot shopping center. The development is proposed to contain a supermarket and a home improvement center and employ approximately 800 people.

Additional expansion is occurring at Fort Detrick, which is located approximately three miles southwest of the US 15/Monocacy Boulevard intersection. A $1.2 billion National Interagency Biodefense Campus and a hotel/conference center are proposed on approximately 200 acres. The property is accessed via Opossumtown Pike. An estimated 1,200 new jobs could result from the expansion.

In addition to the US 15/Monocacy Boulevard interchange, there are several transportation projects within the vicinity, in various stages of development. These projects include the I-270/US 15 Multi-Modal Corridor Study, Motter Avenue/Opossumtown Pike Bridge reconstruction, and Christopher's Crossing (connecting US 40 to Monocacy Boulevard).

Safety

The 2002 I-270/US 15 Multi-Modal Corridor Study DEIS states that the primary need for improvements to US 15 from MD 26 to Biggs Ford Road is the provision of access controls for safe and efficient access to long-term development. The DEIS also notes that between 1996-1999 US 15 through the City of Frederick had the highest crash rate among all segments along the 32-mile I-270/US 15 corridor (from Shady Grove Road to Biggs Ford Road). For the purposes of establishing the need for the US 15/Monocacy Boulevard interchange study, crash data was reviewed along US 15 from one mile north and south of Monocacy Boulevard and along Monocacy Boulevard east of US 15, for the five-year period from 2001-2005.

The limited east-west access within the proposed study area was further reduced as a result of safety improvements completed along US 15 at Hayward Road and Biggs Ford Road in the late 1980's/early 1990's. Those improvements, completed to address an increasing number of crashes, led to the present movement restrictions, which include: the channelized median with U-turn bays on US 15, median crossing closings, and prohibited left-turns onto US 15 from intersecting roads within the study area.

Table 2 summarizes crash data on US 15 from Hayward Road to Willow Road by severity, year, and rate. A three-year weighted statewide average collision rate for this type of highway design is also listed for comparison purposes. During the study period from 2001 to 2005, there were four reported fatal crashes, some involving multiple fatalities, within this segment of US 15. These fatalities caused the study rates to be significantly higher than their respective statewide averages for roadways of similar design.

Of the 72 reported accidents between the US 15/MD 26 interchange and Willow Road, 79 percent were categorized as four collision types: rear-end, left-turn, angle, and fixed object. The only collision type that was significantly higher than the statewide average was angle collisions, at a crash rate of 31.9 per 100 million vehicle-miles traveled. Of the four fatal crashes in this area, three were caused by left-turn collisions. Truck-related crashes were significantly higher than the statewide average for both segments along US 15. Most of these crashes occurred on the southbound US 15 roadway and are attributed to the nature of the roadway transitioning from rural, open freeway to a more congested, urbanized setting at this location.

The at-grade intersection at Hayward Road/Wormans Mill Road has recently been reconfigured to eliminate turning movements to and from Wormans Mill Road and to allow right-turning movements only from/to US 15 southbound. Wormans Mill Road was closed at US 15 as part of the US 15/MD 26 interchange improvement project. Vehicles may still make left turns from US 15 northbound onto Hayward Road. Vehicles traveling on Hayward Road can only turn right onto US 15. Over 80 percent of the 34 crashes that occurred at the Hayward Road intersection were caused by a premature entrance onto US 15. Although field visits have determined that sight distance is an issue, police records indicate that the driver at fault failed to stop and/or yield. In spite of the right turn only onto US 15, some vehicles from Hayward Road continue to illegally cross US 15.

Table 2. Comparison of Collision Types

Collision Type	2001	2002	2003	2004	2005	Total	Crash Rate	Statewide Average Rate
US 15 from Haywood Road to Monocacy Blvd.								
Opposite Dir	1	0	0	0	0	1	3.5	2.4
Rear End	0	2	1	2	3	8	28.3	66.1
Sideswipe	2	0	2	0	1	5	17.7	10.2
Left Turn	2	0	1	0	2	5	17.7	12.4
Angle	5	2	1	1	0	9	31.9*	18.8
Fixed Object	1	2	2	1	1	7	24.8	20
Other	0	0	1	2	0	3	10.6	14.9
Truck Rel	5	1	0	2	3	11	39.0*	11.6
US 15 from Monocacy Blvd. to Willow Road								
Opposite Dir	1	0	0	0	0	1	2.4	1.9
Rear End	1	0	2	5	2	10	23.7	32.9
Sideswipe	2	0	0	0	0	2	4.7	5.7
Left Turn	1	0	1	0	3	5	11.9	6.6
Angle	4	1	1	0	0	6	14.2	15.6
Fixed Object	0	2	1	0	4	7	16.6	18.6
Other	1	1	0	0	1	3	7.1	7.7
Truck Rel	4	1	0	0	3	8	19.0*	9.5

** Significantly higher than statewide average*

Rates are per 100 million vehicle-miles traveled

Existing and Future Traffic Conditions

Existing through traffic and turning movement counts throughout the study area were developed in September 2005. Some additional traffic information was gathered in 2007. Future volumes were generated for a 2030 No-Build scenario based on the Washington Metropolitan Council of Governments (MWCOG) 6.4a land use projections for population, household and employment for the forecast year 2030. MWCOG's model run for 2030 no-build volumes within the study area did not incorporate any of the other proposed transportation improvements along US 15 as shown in the I-270/US 15 Multi-Modal Corridor Study's DEIS, so it is assumed that those improvements would not be implemented prior to an interchange being built at Monocacy Boulevard. A summary comparison of the traffic data, average daily traffic (ADT) and peak hour counts are shown in **Table 3** and **Table 4**. As shown in **Table 3**, traffic on Monocacy Boulevard east of US 15 is projected to increase between 163 percent and 548 percent, while traffic north of MD 26 is projected to increase about 300 percent.

Table 3: Traffic Volume/Forecast

Location	2007	2030 No-Build
Monocacy Boulevard 0.1 mile east of US 15	6,300	AM- 10,250 PM- 34,500
Monocacy Boulevard 0.1 mile north of MD 26	10,100	AM- 30,550 PM- 30,700

Table 4: Existing and No-Build Volumes for US 15 and Monocacy Boulevard Segments

Location	Existing ADT (2005)	Existing Peak Hour Volumes		2030 No-Build ADT	2030 No-Build Peak Hour Volumes	
		NB	SB		NB	SB
US 15 (MD 26 interchange to Hayward Rd)	39,400	1,040 (2,560)	1,980 (1,180)	54,300	1,500 (2,775)	1,975 (1,675)
US 15 (Hayward Rd to Monocacy Blvd)	34,600	830 (2,470)	2,350 (910)	56,300	1,375 (2,975)	2,800 (1,625)
US 15 (Monocacy Blvd to Biggs Ford Rd)	37,550	900 (2,570)	2,730 (1,080)	59,400	1,775 (3,325)	3,400 (2,200)
Monocacy Blvd (South of MD 26)	19,775	400 (1,025)	765 (600)	43,400	2,350 (1,650)	1,250 (2,925)
Monocacy Blvd (Waterside Dr to MD 26)*	4,925-10,700	140-290 (480-320)	380-575 (180-375)	12,100-24,600	550-700 (650-1625)	760-1,450 (405-1,125)
Location	**Existing ADT (2005)**	**Existing Peak Hour Volumes**		**2030 No-Build ADT**	**2030 No-Build Peak Hour Volumes**	
		EB	**WB**		**EB**	**WB**
Monocacy Blvd (US 15 to Waterside Dr)	5,250	390 (280)	175 (320)	12,100	760	550
MD 26 (Wormans Mill Rd to Monocacy Blvd)	41,375	730 (1,865)	2,255 (1,490)	46,400	1,000 (2,700)	2,675 (1,425)

AM (PM)

** Volume ranges are due to localized access points within the segment*

Table 5 provides a summary of the comparisons between existing and future 'No-build' (2030) LOS analysis at the seven major intersections within the project area. Existing (2005) and future (2030) peak hour critical lane volumes (CLV) were calculated based on existing and future turning movement counts and intersection lane configurations as provided by SHA's Travel Forecasting Section.

Existing levels of service along US 15 range from LOS C to a failing LOS F at Biggs Ford Road. Future 2030 volumes yielded failing levels of service at each intersection along US 15 during AM and PM peak hour periods. Monocacy Boulevard at Waterside Drive remained at LOS A, but Monocacy Boulevard at MD 26 decreased to a LOS F in both the AM and PM peak periods.

The City of Frederick Planning Department also provided data that was used for their 2004 Comprehensive Plan, which showed additional local intersections operating at a failing level of service (F) in the year 2030. Those intersections are Thomas Johnson Drive at Hayward Road and Thomas Johnson Drive at Opossumtown Pike.

Table 5. Existing and Future Intersection LOS Comparison

Intersection	Condition	AM v/c Ratio	AM LOS	PM v/c Ratio	PM LOS
US 15 at Biggs Ford Road	Existing 2005	1.04	F	0.88	D
	Future 2030 No Build	2.01	F	1.73	F
US 15 at Willow Road	Existing 2005	0.98	E	0.84	D
	Future 2030 No Build	1.44	F	1.58	F
US 15 at Monocacy Blvd.	Existing 2005	0.81	C	0.94	E
	Future 2030 No Build	1.23	F	1.53	F
US 15 at Haywood Rd/ Wormans Mill Rd	Existing 2005	0.76	C	0.90	D
	Future 2030 No Build	1.22	F	1.17	F
MD 26 at Wormans Mill Road	Existing 2005	0.81	C	0.74	C
	Future 2030 No Build	0.90	D	1.00	E
MD 26 at Monocacy Blvd.	Existing 2005	0.86	D	0.85	D
	Future 2030 No Build	1.35	F	1.40	F
Monocacy Blvd. at Waterside Drive	Existing 2005	0.23	A	0.26	A
	Future 2030 No Build	0.47	A	0.50	A

Sources: *-Field Counts (A. Morton Thomas, Inc.-September 2005, and approved by SHA)*
-Future 2030 volumes derived by SHA using MWCOG Round 6.4a Land Use projections for population, household and employment in the TAZs of the study area
-CLV Analysis by SHA-September 2006

Alternatives Considered

Alternative 1- No-Build Alternative

The No-Build Alternative does not include any improvements beyond routine short-term maintenance and safety improvements along US 15. The No-Build Alternative provides for a baseline comparison with the retained build alternatives.

Alternative 2- Option 1 (DEIS Diamond)

Alternative 2- Option 1 (**Attachment 3**), the Preferred Alternative, proposes a grade-separated interchange as shown in the I-270/US 15 Multi-Modal Corridor Study DEIS. The alternative would provide a connection between Monocacy Boulevard and Thomas Johnson Drive west of US 15. The eastern boundary of the project would terminate at the Walkersville Southern Railroad (WSRR) tracks at-grade crossing. The WSSR crossing will remain open through agreements between WSRR and the Maryland Department of Transportation (MDOT). WSRR will be responsible for implementing the at-grade crossing.

The Preferred Alternative proposes that Monocacy Boulevard be reconstructed as a dualized roadway with three-lanes per direction and a 16-foot median on new alignment from US 15 to the east approximately 1,500 feet until the outer lanes drop and the roadway ties into the existing two-lane per direction segment east of the WSRR at-grade crossing. Monocacy Boulevard is also extended as three lanes per direction for approximately 1,500 feet west of US 15 to connect with Thomas Johnson Drive. The interchange includes the bridge structure, ramps with acceleration/deceleration lanes along US 15, and signalized intersections on Monocacy Boulevard at the access locations for the on/off ramps. The existing access to/from Hayward Road with US 15 would be closed and modified as a cul-de-sac. Thomas Johnson Drive would therefore provide the connection between Hayward Road and US 15 through the proposed Monocacy Boulevard interchange.

The proposed bridge structure would be a new steel girder bridge over US 15 (with dimensions of 214 feet by 86 feet including bike and sidewalk paths). The ramp terminal intersections are proposed at approximately 400 feet on each end of the bridge. The northeast quadrant on-ramp is proposed to be approximately 1,400 feet long with an acceleration lane length of approximately 1,100 feet. The southeast quadrant off-ramp is proposed to be approximately 1,000 feet long with a deceleration lane length of approximately 500 feet. The northwest quadrant off-ramp is proposed to be approximately 900 feet long with a deceleration lane length of approximately 600 feet. The southwest quadrant on-ramp is proposed to be approximately 1,400 feet long with an acceleration lane length of approximately 1,000 feet.

A park-and-ride lot with a capacity for up to 250 vehicles is proposed for the north side of Monocacy Boulevard adjacent to the WSRR tracks.

Alternative 2- Option 2 (Realigned Diamond)

Alternative 2- Option 2 is similar to Option 1, with the exception that the Monocacy Boulevard approach from the east side of the intersection would be built over the existing Monocacy Boulevard alignment, thereby modifying the skew of the interchange crossing (**Attachment 4**). Alternative 2-Option 1 was preferred over Alternative 2-Option 2 because Option 2 had higher construction costs and existing Monocacy Boulevard would have been closed and traffic diverted during construction.

Park-and-Ride Component

The I-270/US 15 Multi-Modal Corridor Study DEIS recommended that a park-and-ride facility be constructed in the northern suburbs of the City of Frederick specifically within the vicinity of the US 15/MD 26 interchange, the US 15/Monocacy Boulevard intersection, or the US 15/Biggs Ford Road intersection.

All build alternatives considered in this study include a park-and-ride lot along Monocacy Boulevard east of US 15 in close proximity to the interchange. This location would be a logical point for the northern terminus of the transit service through the I-270/US 15 corridor.

Public Involvement

A Public Informational Meeting was held on June 7, 2007 at the Governor Thomas Johnson Middle School with approximately 200 people in attendance. Over 90 comments and feedback rating cards were received. Each comment received an individual response from SHA and was shared with the City of Frederick.

At the meeting several area residents expressed concern about increased traffic and decreased safety due to speeding vehicles through residential areas. SHA indicated that the City of Frederick would undertake any future improvements or changes to traffic control. SHA further indicated that traffic on US 15, which previously used Hayward Road, would reach destinations east and west of US 15 via the proposed interchange at Monocacy Boulevard. Current traffic volumes on Hayward Road would decrease, but there would be increased volumes on Thomas Johnson Drive as a result of this project. Land use along Thomas Johnson Drive currently includes industrial and office with some scattered existing residential use. Access to the east would be provided via Monocacy Boulevard and access to the west would be provided via Thomas Johnson Drive and/or Christopher's Crossing. Local master plans recommend east-west connectivity across US 15 to coincide with planned growth. SHA will continue coordination with local/county agencies to address these concerns. East of the US 15 at Monocacy Boulevard interchange, the city will be leading public outreach efforts as they develop the scope for their "Triangle" transportation study. On the west side of the interchange, the city is leading an effort, called the Christopher's Crossing Task Force, to gather citizens' comments. No alternatives have been developed to date.

Many residents expressed concern about the general increase in development in the area and SHA responded by stating that the City of Frederick has jurisdiction over zoning and development through the master planning process. Anticipated development is within an area slated for growth and is within a Priority Funding Area (PFA).

Several residents supported a flyover ramp from southbound US 15 to east MD 26. SHA responded that the flyover ramp was eliminated due to cost, functionality, public acceptability, and increased environmental impacts. Other comments suggested an alternative location of the interchange such as Hayward or Willow Roads or suggested the closure of Willow Road entirely. SHA replied by stating that the alternative locations had been evaluated in the I-270/US 15 Multi-Modal Corridor Study and that the current location is preferred based on right-of-way constraints and related impacts in the other locations. If collisions above the statewide average continue at Willow Road, SHA stated that it would be closed. Numerous people provided comments in support for the project and specifically for the pedestrian and bike paths.

The Neighborhood Advisory Council (NAC 3) requested SHA representation at their May 14, 2007 meeting. NAC 3 represents the entire Amber Meadows community as well as other communities within the study area. SHA representatives presented an overview of the project's alternatives, study status, schedule and responded to more than 70 residents who were in attendance at the NAC 3 meeting. Residents along Christopher's Crossing voiced concern about increased traffic along Christopher's Crossing as a result of its proposed connection with Monocacy Boulevard. One resident located adjacent to Christopher's Crossing, on the west side of US 15, indicated they would like a grassy buffer between the sidewalk and the properties. Because future potential impacts at this location would be the result of projects by others, SHA will coordinate with appropriate local/county jurisdictions to address this request. Members of NAC 3 were encouraged to attend the Public Informational Meeting on June 7, 2007.

A display showing the US 15/Monocacy Boulevard interchange was also available for public comment at the June 2002 I-270/US 15 Multi-Modal Corridor Study Public Hearings.

Environmental Effects (Preferred Alternative)

The primary land use in the vicinity of the project is agricultural, followed by medium-density residential and forested land uses (*Frederick County Comprehensive Plan*, 1998 and updates; *Frederick Region Plan*, July 18, 2002). Field reviews were conducted to supplement the land use data and assess current land use characteristics. According to the field reviews, lands adjacent to the study area include office, commercial, institutional, and residential uses. The commercial and office development within the project vicinity has occurred primarily within the last 10 years and is concentrated along Thomas Johnson Drive. Pockets of residential land use are located south of Hayward Road, west of Thomas Johnson Drive, and east of Monocacy Boulevard.

The study area is located largely within the limits of the City of Frederick with the remaining portion located in Frederick County (**Attachment 5**). The study area is located within a PFA with the following exceptions: the area north of Willow Road and generally west of Opossumtown Pike; and the area north of Tuscarora Creek and east of US 15. The Smart Growth Committee concurred that the US 15/Monocacy Boulevard project was consistent with smart growth as it meets the linear features exception, as less than five percent of the proposed lane mileage is located outside of a PFA.

No significant environmental impacts are expected to occur as a result of this project and no business or residential displacements are anticipated. **Table 6** summarizes the number of property impacts and the required right-of-way for the project. The project will impact three residential properties and three business/commercial/industrial properties requiring the acquisition of 36 acres of property. In addition, access from Hayward Road to US 15 would be closed and modified as a cul-de-sac. Previous access to US 15 from Hayward Road would be diverted to Thomas Johnson Drive. Residents along Hayward Road will no longer experience through traffic. People who previously used Hayward Road may experience a somewhat longer travel distance to access US 15. No property from any publicly owned public parks or associated recreational facilities would be required by the proposed improvements.

In compliance with Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," SHA will avoid disproportionately high and adverse effects on minority and low-income communities within the study area. Environmental Justice (minority and low-income) populations were identified using data from the US Census Bureau and a travel survey. The study area is represented by six census block groups which include census tract 7507 block groups 1 and 2, census tract 7508 block groups 1, 2, and 5, and census tract 7513 block group 4. **Table 7** summarizes study area demographics for the City of Frederick, Frederick County, and the six US census tract block groups in the study area. Census tract 7507 block group 2 is 26 percent minority which is above the minority percentages for Frederick County, the City of Frederick, and the study area (summarized in **Table 7** and shown on **Attachment 6**).

Based on the demographic data and a field survey (August and September 2006), the Amber Meadows Community was identified as a potential low-income and minority community. Several methods were used in an effort to outreach to this community. A newsletter was compiled and mailed to all residents and businesses located within the study area prior to the June 7, 2007 meeting. The newsletter notified the public of a separate meeting that was offered for interested communities and individuals. A copy of the newsletter was also posted in the Weis and Giant supermarkets located near the Amber Meadows community.

Two community associations (the Amber Meadows Community Services Association and the Neighborhood Advisory Council 3 (NAC 3)) were contacted that represent part or all of the Amber Meadows Community. A copy of the newsletter was posted on the Amber Meadows Community Service Association website and presented at their annual meeting. SHA presented the US 15/Monocacy Boulevard project to NAC 3 on May 14, 2007 (see **Public Involvement** section).

Table 6: Environmental Effects

Resources	Alternative 1 (No-Build)	Alternative 2- Option 1 (Preferred Alternative)	Alternative 2- Option 2
Properties Affected			
Residential	0	3	3
Business/Commercial/Industrial	0	3	3
Parkland/Church/School/Historic Property	0	0	0
Displacements	0	0	0
ROW Required (acres)	0	36	34
Natural Resources			
Wetlands	0	0	0
Waters of the US	0	170 linear feet	190 linear feet
Forested Area	0	<1 acre	<1 acre
100-Year Floodplain	0	<1 acre	1.1 acres
State and Federal Listed RTEs	0	0	0
Cultural Resources			
Architectural Historic Properties	0	0	0
Archeological Site 18FR148	0	0	0

No cultural resources listed on or eligible for listing on the National Register of Historic Places (NRHP) will be impacted by the US 15/Monocacy Boulevard interchange project. Phase I and II archeological surveys identified a NRHP eligible component (Locus A) of site 18FR148 within the Area of Potential Effects. A proposed stormwater management pond that would have impacted Locus A was dropped from the project; however, other portions of 18FR148 may be impacted by the US 15 at Monocacy Boulevard interchange. SHA will include special provisions to ensure Locus A of 18FR148 will continue to be avoided. The MHT concurred with these findings and a no adverse effect determination for the project (**Attachment 7**).

The northern limit of the project crosses Tuscarora Creek with its associated 100-year floodplains and is designated as Use III waters (Natural Trout Waters) by the Maryland Department of the Environment (MDE), with an in-stream construction restriction of October 1 through April 30, inclusive. Stream impacts will include 170 linear feet of Tuscarora Creek. Less than one-acre of 100-year floodplains associated with Tuscarora Creek will be impacted, which is less than Alternative 2, Option 2. There are two wetlands located within the vicinity of

the project (**Attachment 5**); however, no direct impacts to wetlands are anticipated from the interchange project. Coordination with the US Fish and Wildlife Service (USFWS) and the Maryland Department of Natural Resources (DNR) indicates that there are no known records of federally-listed rare, threatened or endangered (RTE) plant or animal species located within the project area (**Attachment 8**). However, the state-listed endangered brook floater mussel is known to occur within the vicinity of the project site. The DNR recommends strict enforcement of all appropriate Best Management Practices (BMPs) and avoidance of in-stream work during the appropriate time of year work restriction period to adequately protect the brook floater, as well as fish species. A Maryland State Programmatic General Permit (MDSPGP-3) and the MDE Stormwater Management and Erosion and Sediment Control Approval will be required for the project. Because Tuscarora Creek is Use III waters, mitigation may be required for stream impacts. Mitigation will be completed, if required, during final design through the permit application process in accordance with MDE requirements.

Several small woodland areas are located in the vicinity of the project between agricultural parcels or in larger tracks along Tuscarora Creek. Impacts to less than one acre of forested area are anticipated by the project. A Roadside Tree Permit and a Forest Conservation Act Permit will be required for the project.

Two noise sensitive receptors were identified near the Willow Road intersection as part of the I-270/US 15 study. There will be no impacts to these receptors as a result of the US 15/Monocacy Boulevard project; impacts to these receptors as part of the overall corridor project are being assessed under the I-270/US 15 study.

The FHWA and Federal Transit Administration (FTA) completed a review of the 2007 Constrained Long Range Plan (CLRP) and FY 2008-2013 Metropolitan Transportation Improvement Program (TIP) for the Washington Metropolitan Area adopted by the Transportation Planning Board (TPB) on April 16, 2008. The 2007 CLRP and the FY 2008-2013 TIP conform to the region's State Implementation Plans (SIPs) and the conformity determination has been performed in accordance with the Transportation Conformity Rule (40 CFR Part 93), as amended (**Attachment 9**).

The microscale air quality analysis indicated that carbon monoxide (CO) impacts would result in no violations of the State and National Ambient Air Quality Standards (S/NAAQS) 8-hour concentration (9.0 parts per million (ppm)) or the S/NAAQS 1-hour concentration (35 ppm).

Frederick County is an attainment area for carbon monoxide (CO). However, because the project area was included in the analysis completed for the I-270/US 15 Multi-Modal Corridor Study, which extends through Montgomery County (a maintenance area for CO), a microscale CO analysis was completed for the project area. The microscale CO air quality analysis was completed in 2002 for the mainline I-270/US15 Multi-Modal Corridor Study. In the 2002 study, an air quality screening analysis was conducted at 69 locations within the study area to determine which locations may experience adverse air quality impacts due to the project. Of the 69 locations

Table 7: Census Tract Information for the US 15 at Monocacy Boulevard Study Area (2000)

		Frederick County	City of Frederick	Census Tract 7507 BG 1	Census Tract 7507 BG 2	Census Tract 7508 BG 1	Census Tract 7508 BG2	Census Tract 7508 BG 5	Census Tract 7513 BG 4	Study Area
Total Population		195,277	52,767	1,980	2,083	3,183	3,206	660	1,457	12,569
Racial Distribution	White	174,432 (89%)	40,651 (77%)	1,677 (85%)	1,548 (74%)	2,827 (89%)	2,763 (86%)	607 (92%)	1,382 (95%)	10,804 (86%)
	African-American	12,429 (6%)	7,777 (15%)	177 (9%)	351 (17%)	188 (6%)	283 (9%)	44 (1%)	23 (2%)	1,066 (8%)
	American Indian/Alaskan Native	404 (>1%)	154 (>1%)	2 (>1%)	8 (>1%)	6 (>1%)	3 (>1%)	0 (0%)	4 (>1%)	23 (>1%)
	Asian/ Pacific Islander	3,330 (2%)	1,696 (3%)	58 (3%)	77 (4%)	87 (3%)	72 (2%)	2 (>1%)	25 (2%)	321 (3%)
	Other	1,806 (1%)	1,191 (2%)	15 (>1%)	37 (2%)	25 (1%)	16 (>1%)	1 (>1%)	8 (>1%)	102 (1%)
	Two or More Races	2,876 (2%)	1,298 (3%)	51 (3%)	62 (3%)	50 (2%)	69 (2%)	6 (>1%)	15 (1%)	253 (2%)
Population of Hispanic Origin		4,664 (2%)	2,533 (5%)	53 (3%)	103 (5%)	59 (2%)	93 (3%)	19 (>1%)	17 (1%)	344 (3%)
Total Minorities		20,845 (11%)	12,116 (23%)	303 (15%)	535 (26%)	356 (11%)	443 (14%)	53 (1%)	75 (5%)	1,765 (14%)
Individuals with Disabilities[1]		26,007 (15%)	8,024 (17%)	270 (14%)	74 (4%)	307 (11%)	283 (10%)	104 (18%)	166 (12%)	1,204 (9%)
Population 65 Years and Older		18,836 (10%)	5,945 (11%)	86 (4%)	42 (2%)	363 (11%)	286 (9%)	155 (23%)	116 (8%)	1,048 (8%)
Median Household Income		$60,276	$47,700	$79,219	$56,393	$66,737	$67,182	$49,773	$78,209	$66,252
Individuals below Poverty Level		8,550 (5%)	3,755 (7%)	26 (1%)	52 (2%)	53 (2%)	40 (1%)	34 (1%)	11 (1%)	216 (2%)

Source: US Census, 2000

Shaded areas indicate the Block Group containing a minority population greater than the City of Frederick average.

[1]Percent with disability includes all persons over the age of 5

screened, 37 were chosen for detailed analysis. The maximum one-hour and eight-hour CO levels were predicted at these 37 analysis sites within the I-270/US 15 study area. A combined total of over 600 receptors were analyzed throughout the study area. In the US 15/Monocacy Boulevard project area, nine locations were screened and four locations underwent detailed microscale modeling.

Frederick County is part of the Washington DC-MD-VA nonattainment area for fine particulate matter ($PM_{2.5}$) as designated on January 5, 2005 by the US Environmental Protection Agency (EPA). This designation became effective on April 5, 2005, 90 days after EPA's published action in the Federal Register. Transportation conformity for the $PM_{2.5}$ standards applied on April 5, 2006, after the one-year grace period provided by the Clean Air Act. On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter; "$PM_{2.5}$ and PM_{10} Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New $PM_{2.5}$ and Existing PM_{10} National Ambient Air Quality Standards" (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM_{10} and $PM_{2.5}$ nonattainment and maintenance areas deemed to be a *project of air quality concern*[1]. Projects that require hotspot analysis for $PM_{2.5}$ are those projects that are *Projects of Air Quality Concern* as enumerated in 40 CFR93.123(b)(1), as amended:

> *(i) New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;*
> *(ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*
> *(iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;*
> *(iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and*
> *(v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.*

Based on the criteria set forth in 40 CFR 93.123(b)(1), SHA has determined the US 15/Monocacy Boulevard project is **not a project of air quality concern** based on the following analysis:

- The proposed project will address current safety deficiencies along US 15 within the vicinity of Monocacy Boulevard, and provide connections that would adequately serve the proposed and approved economic development within the surrounding areas. Traffic data is presented in **Table 8** for the opening year (2015) and the design year (2030) for US 15 and Monocacy

[1] Criteria for identifying *projects of air quality of concern* is described in 40CFR93.123(b)(1), as amended.

Boulevard. Based on traffic projections shown in **Table 8**, the AADTs on the affected roadways within the study area do not demonstrate a significant increase in truck percentages. Overall volumes on the combined roadways are predicted to increase by approximately 18 percent in 2015 and 24 percent. Truck percentages however, are predicted to decrease. In 2015 the truck percentage is predicted to decrease from 8.2 percent to 7.3 percent. In 2030 the truck percentage is predicted to decrease from 9.9 percent to 8.8 percent. Given the increase in volume, these percentage changes result in an overall AADT increase of 180 trucks in 2015 and 677 trucks in 2030. The reduction in overall truck percentages is due to a predicted increase in non-truck traffic due to the land use projections in the study area. Considering the project's overall traffic levels, the increase in overall diesel truck volume is not considered significant.

Table 8: Comparison of Truck Volumes

Scenario	Roadway	2015 AADT	2015 Truck Percentage	2015 # of Trucks	2030 AADT	2030 Truck Percentage	2030 # of Trucks
No Build	Monocacy Boulevard	5,601	4.1%	230	7,100	6.1%	433
	US 15	46,200	8.7%	4,020	60,250	10.3%	6,206
	Combined	**51,801**	**8.2%**	**4,250**	**67,350**	**9.9%**	**6,639**
Build	Monocacy Boulevard	9,700	4.5%	437	11,399	6.7%	764
	US 15	51,188	7.8%	3993	72,000	9.1%	6,552
	Combined	**60,888**	**7.3%**	**4,430**	**83,399**	**8.8%**	**7,316**

- The project also does not meet the criteria set forth in 40 CFR 93.123(b)(1)(ii), as amended, to be considered a *project of air quality concern* because it affects intersections that will not "change to Level of Service D, E, or F because of increased traffic volumes from a significant increase in number of diesel vehicles related to the project". The purpose of the project is to improve vehicular safety, the level of operations and integrity of the US 15 roadway. It will improve the operation and safety of affected intersections.

- The project does not involve new bus and rail terminals and transfer points. The primary east-west truck route in the area is I-70 to the south. This route provides access from Baltimore and Washington (via I-270) to destinations to the west. The US15/Monocacy Boulevard project will not provide these interstate connections.

- The project does not involve expanded bus and rail terminals and transfer points. The primary east-west truck route in the area is I-70 to the south. This route provides access from Baltimore and Washington (via I-270) to destinations to the west. The US15/Monocacy Boulevard project will not provide these interstate connections.

- The project is not identified in the PM_{10} or $PM_{2.5}$ implementation plan as a site of violation or possible violation.

- Section 176(c) of the Clean Air Act and the federal conformity rule require that transportation plans and programs conform to the intent of the SIP through a regional emissions analysis in $PM_{2.5}$ nonattainment areas. The 2007 update to the CLRP and the 2008-2013 TIP have been determined to conform to the intent of the SIP. The CLRP is a comprehensive plan of transportation projects and strategies that the TPB realistically anticipates can be implemented over the next 30 years. The MTIP is a six-year program that describes the time-frame for federal funds to be obligated to state and local projects. Both the 2007 update to the CLRP and the 2008-2013 TIP were adopted by the TPB on April 16, 2008. The US Department of Transportation made a $PM_{2.5}$ conformity determination on the CLRP and the TIP on June 11, 2008, thus there are a currently conforming transportation plan and TIP in accordance with 40 CFR 93.114. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. The US 15/Monocacy Boulevard project was included in the regional emissions analysis as part of the I-270/US 15 Multi-Modal Corridor Study. There have been no significant changes in the project's design concept or scope from that used in the conformity analyses. Therefore the project comes from a conforming plan and program in accordance with 40 CFR 93.115.

Based on the preceding review and analysis, it is determined that the US 15/Monocacy Boulevard project meets the Clean Air Act and 40 CFR 93.109 requirements. These requirements are met for particulate matter with a project-level hot-spot analysis, since the project has not been found to be a project of air quality concern as defined under 40 CFR 93.123 (b) (1). Since the project meets the Clean Air Act and 40 CFR 93.109 requirements, the project will not cause or contribute to a new violation of the $PM_{2.5}$ NAAQS, or increase the frequency or severity of a violation. MDE and the EPA agreed with this finding on August 8, 2008. The project was posted on the SHA website for a 15-day public comment period on August 11, 2008. No comments were received within the time period.

FHWA *Guidance on Air Toxic Analysis in NEPA Documents*[2] requires analysis of Mobile Source Air Toxics (MSAT) under specific conditions. The Clean Air Act identified 188 air toxics, 21 have been identified with mobile sources. Of these 21, EPA had identified six as being priority Mobile Source Air Toxics (MSAT). These six prioritized MSATs are: benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acetaldehyde, acrolein, and 1,3-butadiene. Based on the traffic presented in **Table 8**, the US15/Monocacy Boulevard project would be considered in the category: "***Projects with Low Potential MSAT Effects***", as described in the referenced guidance. An example of this type of project is a minor widening project and new interchanges, where design year traffic (AADT) is not projected to exceed 150,000.

[2] Interim Guidance on Air Toxic Analysis in NEPA Documents, February 3, 2006.

Based on the data presented in **Table 8**, the US 15/Monocacy Boulevard project, will not result in any meaningful changes in traffic volumes, vehicle mix, or any other factor that would cause an increase in emission impacts. As such, FHWA has determined that this project will generate minimal air quality impacts for the Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns.

Included herein is a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the project. Due to these limitations, the following discussion is included in accordance with Council of Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

- Evaluating the environmental and health impacts from MSAT on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

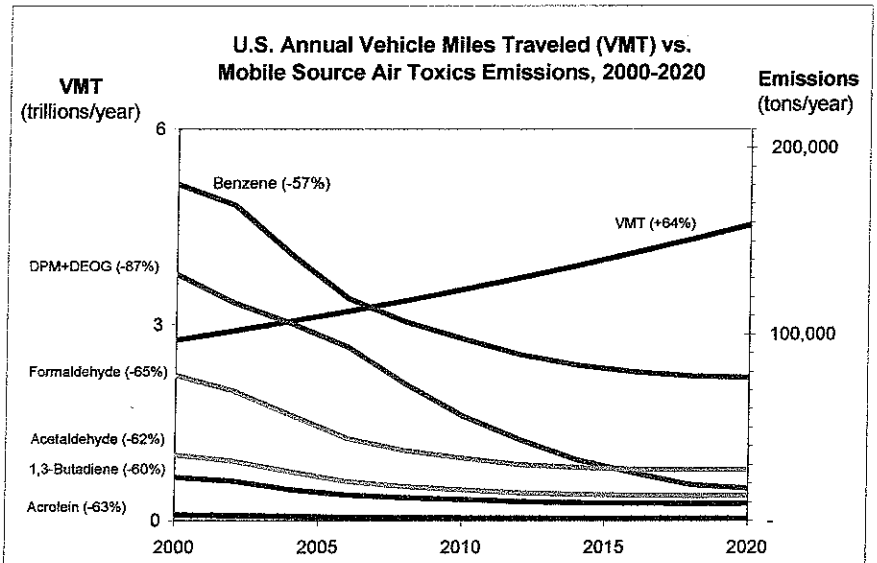
- The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSAT in the context of highway projects. The tools to predict how MSAT disperse are also limited. Even if emission levels and concentrations of MSAT could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude reaching meaningful conclusions about project-specific health impacts. Research into the health impacts of MSAT is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses. The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants.

- As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSAT at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSAT, it can give a basis for identifying and comparing the potential differences among MSAT emissions if any, from the project.

The amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same. The VMT along the highway corridor for the project may be slightly higher than the no build condition, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. The increased VMT would lead to higher MSAT emissions for the project along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The potential emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds. Based on EPA's MOBILE6 emissions model, emissions of all of the priority MSAT except for diesel particulate matter decrease as speed increases. In addition, construction of the interchange at Monocacy Boulevard to replace existing intersections, such as the existing Trading Lane (Monocacy Boulevard) and US 15, will reduce idling, thereby reducing emissions. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The additional travel lanes contemplated as part of the project may have the effect of moving some traffic closer to homes and business; therefore there may be localized areas where ambient concentrations of MSATs could be higher under the proposed improvements than the no build condition, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). However as previously discussed, the magnitude and the duration of these potential increases compared to the no-build condition cannot be accurately quantified due to the inherent deficiencies of current models.

In summary, there may be areas where the localized level of MSAT emissions for the project could be higher relative to the no build condition, but this could be offset due to increases in speed and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT emissions will be lower in other locations when traffic shifts away from them. Furthermore, at the project location and regionally MSAT emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020 (**see the following figure**). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.



Indirect and Cumulative Effects (ICE) Analysis

An ICE Analysis has been performed in accordance with the National Environmental Policy Act (NEPA), CEQ regulations (40 CFR 1508.7 and 1508.8) and guidelines developed by SHA. Indirect impacts are caused by the action and are later in time or farther removed but are still reasonably foreseeable. Cumulative impacts are defined as impacts on the environment that result from the incremental impact of the proposed action when added to past, present, and reasonably foreseeable future actions.

Potential geographical sub-boundaries including the area of traffic influence and traffic analysis zones, US census block groups, and sub-watersheds were overlaid to identify the overall boundary for the ICE Analysis. This area was large and given the size and scope for the proposed project, the US census block group sub-boundary was deemed the most appropriate boundary for forming the overall ICE boundary and for assessing indirect and cumulative effects. The ICE boundary is shown on **Attachment 10**. The time frame for the analysis of past, present, and future indirect and cumulative effects is 1970 – 2030.

The primary land use within the ICE boundary is agricultural, followed by forest and low-density residential land uses. According to field reviews, lands adjacent to the study area include office, commercial, institutional, and residential uses. Pockets of residential land use are located south of Hayward Road, west of Thomas Johnson Drive, and east of Monocacy

Boulevard. There are currently numerous development projects planned within or near the ICE boundary that are under review for residential or commercial development. The City of Frederick 2004 Comprehensive Plan has identified this land as planned mixed use (**Attachment 11**).

The resources directly or indirectly impacted by the US 15/Monocacy Boulevard project may also be cumulatively affected. These resources are the focus of the ICE analysis and are described herein. Resources that are not directly or indirectly affected by the project are not included in the ICE Analysis.

The primary purpose of the US 15/Monocacy Boulevard interchange is to address current safety deficiencies along US 15 and to provide capacity improvements to adequately serve the proposed economic development which will generate additional traffic growth within the area. The project is intended to respond to the growth that is occurring in the study area, rather than to induce growth. However, there are two projects that are dependent upon the construction of the US 15/Monocacy Boulevard interchange project which have been reviewed as part of this analysis. Direct impacts from these two projects would be considered indirect impacts of the US 15/Monocacy Boulevard interchange project. The projects include the North Gate Plaza, a retail development project located on a property immediately west of the interchange, and the extension of Christopher's Crossing (**Attachment 2**; project description page 20), a four-lane roadway that would be completed in conjunction with the North Gate Development. **Table 9** shows the known, quantifiable environmental impacts from both projects that are described in the following paragraphs.

When the US 15/Monocacy interchange is constructed, the planned North Gate Plaza development (**Attachment 2**) will likely be built in full and include several large stores, attracting more traffic from US 15 and adjacent roads. This development would benefit the adjacent communities by providing a boost to the local economy and workforce, while providing additional retail conveniences. The proposed North Gate Plaza development comprises approximately 52 acres and is currently in agricultural use with a small wooded area on the southern portion of the property.

Although a formal wetland and waters survey has not been completed, aerial photos, National Wetlands Inventory (NWI) maps, US Geological Survey (USGS) stream maps, and Federal Emergency Management Agency (FEMA) maps show no wetlands, streams, or 100-year floodplains on the North Gate Plaza property. Therefore, it is unlikely that wetland and Waters of the U.S. resources would be impacted. The North Gate Plaza preliminary plans show an impact to approximately 3.5 acres of forestland, which would also constitute an indirect effect of the interchange project. This area is fragmented and isolated from adjacent forest parcels; therefore, effects to terrestrial habitat are expected to be minor. In addition, historic survey mapping shows no historic structures on the North Gate Plaza Property. Therefore, impacts to historic resources are not anticipated. The proposed development would result in increased traffic (828 additional peak hour PM trips to and from the development) and could indirectly

affect the communities of Wormans Mill, Amber Meadows, North Crossing, Clover Ridge, Clover Hill, Clover Hill II, and Clover Hill III. The expected traffic increase has been accounted for in the project design.

Christopher's Crossing is being planned and constructed by private developers. Currently two segments of the roadway exist: Rocky Springs Road north to Walter Martz Road, and Oppossumtown Pike east to Thomas Johnson Drive. Upon completion of the US 15/Monocacy Boulevard interchange, it can be reasonably foreseen that the Christopher's Crossing roadway would be extended east approximately 1,000 feet, from Thomas Johnson Drive to US 15. Because the extension of the roadway is dependent on the proposed interchange, construction of this portion east of Thomas Johnson Drive is considered an indirect impact of the interchange project. According to aerial photos, NWI, USGS, and FEMA maps, there are no forests, wetlands, streams, or floodplain resources within the proposed extended alignment. Historic survey mapping shows no historic structures within the dependent portion of the Christopher's Crossing extension. Therefore, there would be no indirect effects to these resources. There would be approximately 3 acres of impact to existing active agricultural land. These impacts are shown on **Table 9** and on **Attachment 2** with the circle marked dependent.

Table 9. Indirect Effects of North Gate Plaza and Christopher's Crossing

Resource	North Gate Plaza	Christopher's Crossing (east of Thomas Johnson Dr.)
Total Land	52 acres	3 acres
Residential / Business Displacements	0	0
Agricultural Impacts*	48.5 acres	3 acres
Forest Land	3.5 acres	0 acres
Wetlands	None	None
Streams	None	None
Floodplains	None	None
RTE Species	None	None
Historic Sites	0	0

*Although active agricultural land, property is proposed for development and not considered prime farmland.

The US 15/Monocacy Boulevard interchange may create indirect community impacts resulting from changes in travel patterns through the new east-west connection of Monocacy Boulevard to Christopher's Crossing and the creation of a new access point on US 15. The closure of Hayward Road, proposed as part of the US 15/Monocacy Boulevard interchange, would cause vehicles that currently use Hayward Road to access US 15 from the interchanges at US 15/Monocacy Boulevard or Motter Avenue/Oppossumtown Pike. The new interchange and closing of Hayward Road would therefore have indirect effects such as increased travel time and increased traffic to adjacent communities, particularly the communities of Amber Meadows, Bartlett Heights, Clover Hill, Clover Hill II, and Clover Hill III. Residents near and along Hayward Road would no longer experience through traffic, but may experience a longer travel

time when accessing US 15. Residents may also experience more traffic while using Thomas Johnson Drive to access US 15.

The US 15/Monocacy Boulevard interchange project may make vacant land more attractive to future development due to the new access point, thereby affecting the rate of development within designated growth areas. However, the majority of the project area is part of the City of Frederick and already included within a PFA. The City of Frederick 2004 Comprehensive Plan has identified land in the study area as planned mixed use. Therefore, although the improved east-west connection across US 15 and easier access to US 15 may make development sites more attractive, the current pace and extent of development is expected to be dictated by current land use plans and zoning regulations. Moreover, development timing will be more closely correlated to market conditions than completion of the interchange.

The interchange project may result in indirect effects to surface waters, floodplains, and water quality. These effects may be caused by impervious surface runoff and associated erosion, sedimentation, or chemical changes to water quality in locations downstream from the study area. These effects are expected to be largely eliminated through the implementation of BMPs and construction of stormwater management facilities, which would be designed to slow runoff and trap sediments and pollution before they move downstream.

Because of the known occurrences of the brook floater mussel, and natural brown trout populations in the vicinity, there is the potential for indirect effects to these species as a result of this project. However, DNR indicates that these species, and any other species that may occur within the study area, should be adequately protected by the in-stream work prohibition period, erosion and sediment control measures, and other BMPs typically used for protection of stream resources. As a result, only minimal indirect impacts are anticipated as a result of this project.

The proposed improvements associated with the US 15/Monocacy Boulevard interchange project would have a beneficial indirect effect by improving traffic operations and safety along US 15, Christopher's Crossing, and at the existing Monocacy Boulevard intersection, while providing new east-west connectivity in the area. While new development has the potential to increase traffic within the area, the improvements to the local economy, creation of new jobs, and added convenience of improved mobility and safety operations are expected to offset any potential detrimental indirect effects of new development.

The combined indirect effect of the US 15/Monocacy Boulevard interchange project, North Gate Plaza, and the extension of Christopher's Crossing is likely to result in increased traffic through the adjacent communities along Christopher's Crossing as more drivers access the new grade-separated interchange, and utilize the improved east-west connectivity through this area. In particular, the North Crossing Community would transition from a single entrance community (via Christopher's Crossing) to a community with improved access from US 15 and areas east.

Communities and natural environmental resources may incur cumulative effects as a result of the US 15/Monocacy Boulevard interchange project and other planned development projects. There are several transportation projects within the vicinity in various stages of development, which may contribute to the cumulative effects of this project. These projects are described below (**Attachment 2**).

- The I-270/US 15 Multi-Modal Corridor Study evaluates alternatives between the Shady Grove Metrorail Station in Montgomery County and Biggs Ford Road in Frederick County. The build alternatives would result in 64 to 385 residential displacements, four to twelve business displacements, 21 to 23 acres of floodplain impacts, 13,400 to 16, 300 linear feet of stream impacts, ten to twelve acres of wetland impacts, 180 to 200 acres of forest impact and ten historic standing structures with adverse effects or no adverse effects.

- The US 15/MD 26 interchange improvements, also a breakout study from the I-270/ US 15 project, are currently open to traffic. In 2003, FHWA approved a Categorical Exclusion to construct a new ramp connecting westbound MD 26 to northbound US 15 in addition to maintaining the existing interchange. The ramp alleviates traffic on Monocacy Boulevard and allows for the closure of the Wormans Mill Road intersection with US 15. The median opening on US 15 north of MD 26 was closed and the acceleration lane onto southbound US 15 at Hayward Road was extended. This project resulted in no impacts to properties, floodplains, streams, wetlands, forests, RTEs, or historic resources.

- The reconstruction of the Motter Avenue/Opossumtown Pike bridge over US 15 proposes to add a new sidewalk and pedestrian crossing to replace the existing walkway. The new bridge will feature a wider six lane section which includes two left-turn lanes and an acceleration/ deceleration lane, as well as a wider pedestrian walkway. The bridge is located in an urban area. Based on readily available aerial photos, NWI maps, USGS maps, and FEMA maps, there are no forests, agricultural lands, wetlands, streams, or floodplains near this reconstruction project. Based on historic survey mapping there are no impacts to historic standing structures. There also would be no residential or business displacements from the project.

- Christopher's Crossing will be extended to connect Monocacy Boulevard to US 40 providing a by-pass around the downtown portion of the city. This portion of Christopher's Crossing is a city project with no state or federal funding. Any extension of Christopher's Crossing east of Thomas Johnson Drive would be considered an indirect effect and is described in **Table 9**. Much of the remaining roadway is already constructed, with the exception of segments described below.

> Cumulative effects from Christopher's Crossing would result from completion of approximately 1.5 miles of roadway segments which are currently under construction (near Thomas Johnson Drive) or planned for 2010 (between US 40 and Rocky Springs Road, and from Walter Martz Road to Oppossumtown Pike). Aerial photos, NWI, USGS, and FEMA maps indicate that there could be approximately 0.3-0.7 acres of wetland, forest and floodplain impacts and approximately 300-600 linear feet of perennial stream impacts from the remaining unbuilt roadway segments. There could also be as much as 15-25 acres of agricultural impacts, depending on the final alignment. Aerial photographs show that there are no residential or business structures located within the Christopher's Crossing alignment, therefore, the roadway would create no cumulative effects from residential or business displacements. Historic survey mapping shows no impacts to historic standing structures. Because there are no detailed plans for most of this roadway, this estimate of cumulative impacts has been prepared based on the preliminary roadway alignment shown in the 2004 City of Frederick Comprehensive Plan.

As noted above, cumulative effects may be influenced by recent and future development and transportation projects. Nevertheless, because the direct and indirect effects from the interchange project are minor, the contribution to cumulative effects within the ICE boundary will also be proportionally minor.

For example, additional cumulative effects to community resources could occur from the US 15/Monocacy Boulevard interchange project in combination with other projects. The I-270/US 15 Multi-Modal Corridor Study may result in up to 385 residential and twelve business displacements; but only three of those displacements are located within the ICE boundary for this interchange project. Additional residential and commercial developments, as well as the expected increase in population, would likely create a cumulative increase in traffic flow through local communities. Because there were no direct or indirect impacts to historic resources, cumulative effects were not evaluated for this resource.

Although future land use plans show that further development may occur within floodplain areas, federal and state floodplain regulations and a wider appreciation for the valuable functions of floodplains and the dangers inherent to building within them make it unlikely that any major cumulative floodplain encroachment would occur. Existing regulations discourage development in floodplains, and any floodplain encroachment would require authorization by the MDE (COMAR 26.17.04). Other development projects may also affect streams and wetlands, however, these effects will be regulated by the Clean Water Act as well as applicable state and local laws.

Furthermore, the project's contribution to cumulative effects on agriculture reflects the local trend of decreasing agricultural land area. This trend is consistent with the planned growth recommended in 2004 City of Frederick Comprehensive Plan.

Conclusion

The proposed project will not involve any significant impacts to socio-economic, natural, or cultural resources. It will not induce unplanned significant foreseeable alterations in land use or affect planned growth. As such, we request your concurrence in classifying this project as a CE. If you agree with this determination, please indicate your approval below. Additionally, your signature below will constitute Location Approval for the proposed project.

Sincerely,

Neil J. Pedersen
Administrator

by: for Donald Gaub
Gregory I. Slater, Director
Office of Planning and
Preliminary Engineering

We concur with your determination that the US 15/Monocacy Boulevard interchange project meets the criteria for a Categorical Exclusion and hereby grant Location Approval.

for Stephanie Pratt
Federal Highway Administration
Division Administrator

1/2/2009
Date

Attachments

cc: Mr. Andrew Cadmus, Project Manager, Office of Highway Development-Highway Design Division, SHA
Mr. David Coyne, District Engineer, District 7, SHA
Ms. Anne Elrays, Team Leader, Environmental Planning Division, SHA (w/ Attachments)
Mr. Steven Foster, Chief, Engineering Access Permits Division, SHA, (w/ Attachments)
Mr. Bruce M. Grey, Deputy Director, Office of Planning and Preliminary Engineering, SHA
Ms. Juliet Healy, Environmental Manager, Environmental Planning Division, SHA (w/ Attachments)
Mr. Joseph Kresslein, Assistant Division Chief, Environmental Planning Division, SHA (w/ Attachments)
Mr. Todd Nichols, Division Chief, Environmental Programs Division, SHA (w/ Attachments)
Mr. Michael Perrotta, Project Manager, DMJM Harris (w/ Attachments)
Ms. Reena Mathews, Regional Planner, Regional and Intermodal Planning Division, SHA
Mr. Dennis Yoder, Assistant Division Chief, Regional and Intermodal Planning Division, SHA