

## I. PURPOSE AND NEED

### A. Identification in the Master Plan

I-95 in Maryland extends 110 miles from the Woodrow Wilson Bridge at the Virginia State line to the Delaware State line. It provides continuity for regional traffic from Florida to Maine and operates as an important backbone for commuter traffic within Maryland. As the “East Coast’s Main Street,” I-95 serves high volumes of regional commercial/business and recreational traffic. The Maryland Transportation Authority (hereinafter referred to as the Authority) owns, operates, and maintains a 50-mile portion of I-95 in Maryland, beginning north of Baltimore City and extending to the Delaware State line, known as the John F. Kennedy Memorial Highway (JFK).

The Authority, in cooperation with the Federal Highway Administration (FHWA) and the Maryland Department of Transportation (MDOT), developed the *I-95 Master Plan, I-895 Split(N) to the Delaware State Line* (hereinafter referred to as the I-95 Master Plan) study approach to comprehensively identify long-range transportation needs that establish clear goals for system maintenance, preservation and enhancement, and ensure the development of environmentally sensitive and intermodal-friendly solutions for the JFK.

The Authority adopted the I-95 Master Plan in April 2003. It identified four independent projects including:

Section 100: I-95, I-895 (N) Split to North of MD 43

Section 200: North of MD 43 to North of MD 22

Section 300: North of MD 22 to North of MD 222

Section 400: North of MD 222 to the Delaware State Line

Throughout the I-95 Master Plan process, the Authority coordinated with local, State, and Federal regulatory and resource agencies. This coordination resulted in agency concurrence on the need for four independent projects and their termini and the concepts to be carried forward for each. This was outlined within the description for Logical

Termini dated July, 2001. Concurring agencies included the Federal Highway Administration (FHWA), Environmental Protection Agency (EPA), U.S Army Corps of Engineers (USACE), National Marine Fisheries Service (NMFS), Maryland Department of the Environment (MDE), and Maryland Department of Natural Resources (DNR). Section 100 is the first independent project identified in the I-95 Master Plan to be initiated.

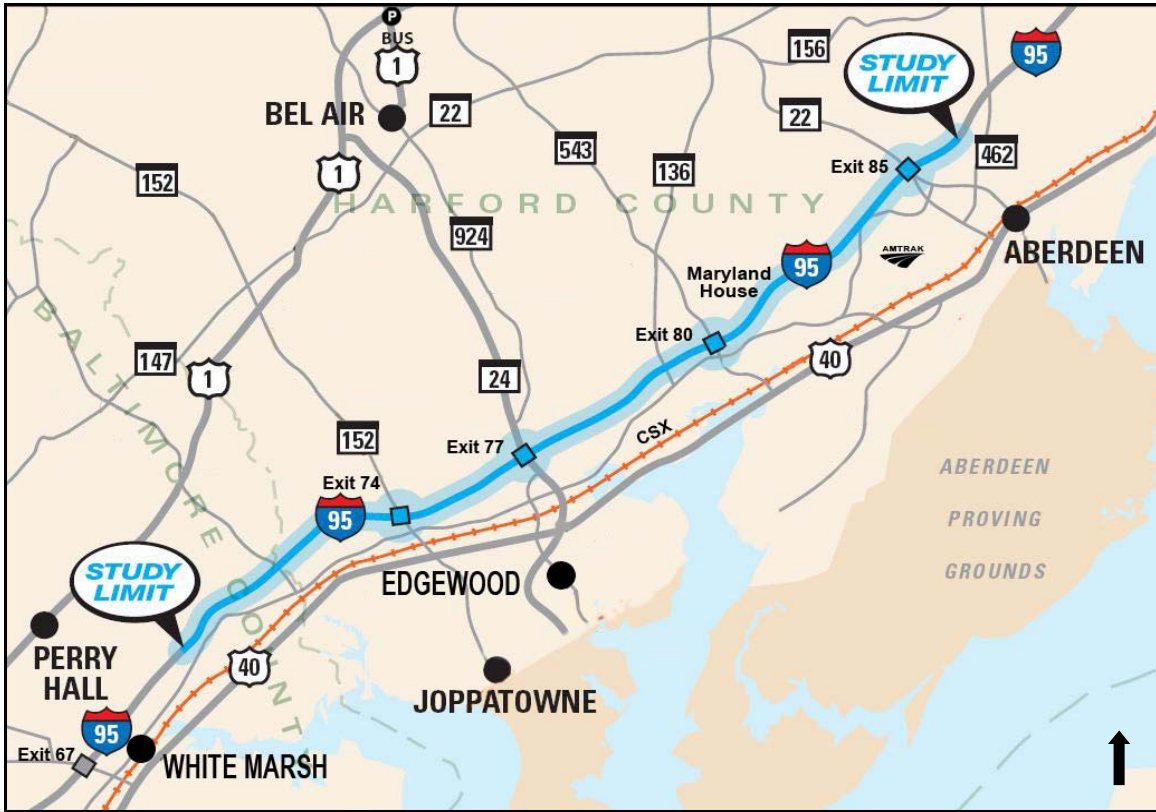
In July 2003, the Section 100 Project Planning Study was initiated. This was the first independent project identified in the I-95 Master Plan to be taken into the project planning phase. The study limits extend from the I-95/I-895(N) Split to just north of MD 43. During the planning phase, several alternatives were developed and analyzed in an effort to address capacity and safety concerns within the Section 100 study limits. On July 20, 2005, the planning phase concluded when FHWA concurred with the Finding of No Significant Impact (FONSI) for the Selected Alternate (the Express Toll Lanes (ETLs) Alternate) for Section 100. Design began in 2005 with construction expected to be completed in 2011. Section 100, referred to in the design and construction phases as the I-95 ETLs Project, involves the addition of two barrier-separated lanes in each direction along I-95 that will be managed as ETLs and interchange modifications at I-895, I-695 and MD 43. The southern limit of the Section 200 project will connect to the northern limit of the I-95 ETLs Project.

## **B. Project Location**

The proposed action involves the study of potential improvements to I-95, from north of MD 43 to north of MD 22, in Baltimore and Harford Counties, Maryland for a length of approximately 17 miles. Within the study limits, grade separated interchanges are located at the intersections of MD 152, MD 24, MD 543, and MD 22. Additionally, the Maryland House Travel Plaza is located in the median of I-95 between MD 543 and MD 22. For project planning purposes, this portion of I-95 will be referred to as “Section 200.”

**Figure I-1** illustrates the study area in the context of the surrounding geographic region and transportation network.

**Figure I-1: Study Area Map**



### **C. Background**

I-95 is the backbone of the East Coast’s highway infrastructure, serving Florida to Maine regional traffic, while at the same time serving as an arterial for local commuter traffic within each state. Within Maryland, I-95 provides access to two passenger rail systems (MARC commuter rail and Amtrak), three freight railroad systems (Amtrak, CSX, and Norfolk-Southern), two airports (Baltimore/Washington International Thurgood Marshall Airport and Martin State Airport), and the Port of Baltimore. The proximity to numerous intermodal terminals and urban centers ensures a growing travel demand generated by both local economic development and the transportation needs of the one-quarter of the United State’s population that resides on the East Coast.

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I-95 was opened to traffic in 1963. On November 15, 1963, President John F. Kennedy opened the roadway as the Northeastern Expressway. In President Kennedy's honor, Maryland renamed the Northeastern Expressway the John F. Kennedy Memorial Highway (JFK) in 1964.

Upon its opening in 1963, Section 200 of I-95 consisted of two lanes in each direction. In 1972, I-95 was widened to three lanes in each direction from MD 43 to MD 24. In addition to the widening of the highway, the I-95 bridge over the Gunpowder River was widened to four lanes in each direction; however only three lanes were opened to traffic. In 1973, a third lane was opened to traffic from north of Winter's Run to the Tydings Bridge over the Susquehanna River (north of the study area). In 1994, a fourth lane was opened to traffic from MD 43 to MD 24.

The MD 24 and MD 22 interchanges were included in the original construction. The MD 152 interchange was added in 1973, and the MD 543 interchange was added in 1989 and modified in 1994 when I-95 was widened to four lanes in each direction from MD 43 to MD 24. The MD 22 interchange was modified in 2004 as part of access improvements for the Ripken Stadium Complex. The Authority is modifying the I-95/MD 24 interchange as a separate project, which is anticipated to begin construction in late 2007. The modifications include a grade separation at the MD 24/MD 924/Tollgate Road intersection, as well as widening along MD 24 north of I-95.

#### **D. Land Use/Economic Development**

I-95 is a major transportation facility that influences inter- and intra-regional road transportation within Baltimore and Harford Counties. I-95 also provides access to local and regional inter-modal terminals, including the Port of Baltimore.

State and County land-development policies and plans will strongly influence the pace and location of growth along I-95 in Maryland. Maryland's 1997 Smart Growth and Neighborhood Conservation Act (Smart Growth Act) directs state infrastructure funds to

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areas within or connecting county-designated and state-certified Priority Funding Areas (PFAs). The majority of the study area is located within county-designated and state-certified PFAs.

Baltimore County has a 30-year history of considering growth management in its general plan. A key component of its growth control efforts is the designation of urban and rural zones, denoted by the Urban-Rural Demarcation Line (URDL).

The URDL crosses the study area at the Gunpowder River. The portion of the study area south of the URDL is more urbanized. **(Figure I-2)** The remainder of the study area north of the URDL is primarily rural and is protected from development through land use designations of low-density residential, agricultural, and sensitive environmental areas.

The Harford County 2004 Master Plan and Land Use Element Plan confirmed the concept of the Development Envelope, which was initiated in the 1977 Harford County Master Plan. The Development Envelope is an area designated for economic development, new growth, and redevelopment. The Harford County 2004 Master Plan indicates that the entire portion of the study area east of I-95 and the area surrounding the MD 24 corridor are located within the Development Envelope. The area west of I-95 that is not located in the Development Envelope is primarily designated for agricultural, forest or residential use.

The Base Realignment and Closure (BRAC) is the process by which the U.S. Department of Defense (USDOD) reorganizes installation infrastructure to more efficiently/effectively stage forces, increase operational readiness, and facilitate new ways of doing business. Current projections indicate that between 17,220 to 19,200 jobs will be created in the area as a result of BRAC. As a result of this growth, the demand for commercial lands, office space, and housing needs are expected to increase throughout the region. It is anticipated, however, that existing redevelopment, revitalization, and expansion of under utilized areas will sufficiently accommodate any BRAC related

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growth. BRAC is not expected to require conversion of previously undeveloped sites, or sites that are not currently planned for growth.

### **E. Purpose of the Project**

The purpose of the proposed action is to address capacity and safety needs on Section 200 and thereby improve access, mobility, and safety for local, regional, and inter-regional traffic, including passenger, freight, and transit vehicles.

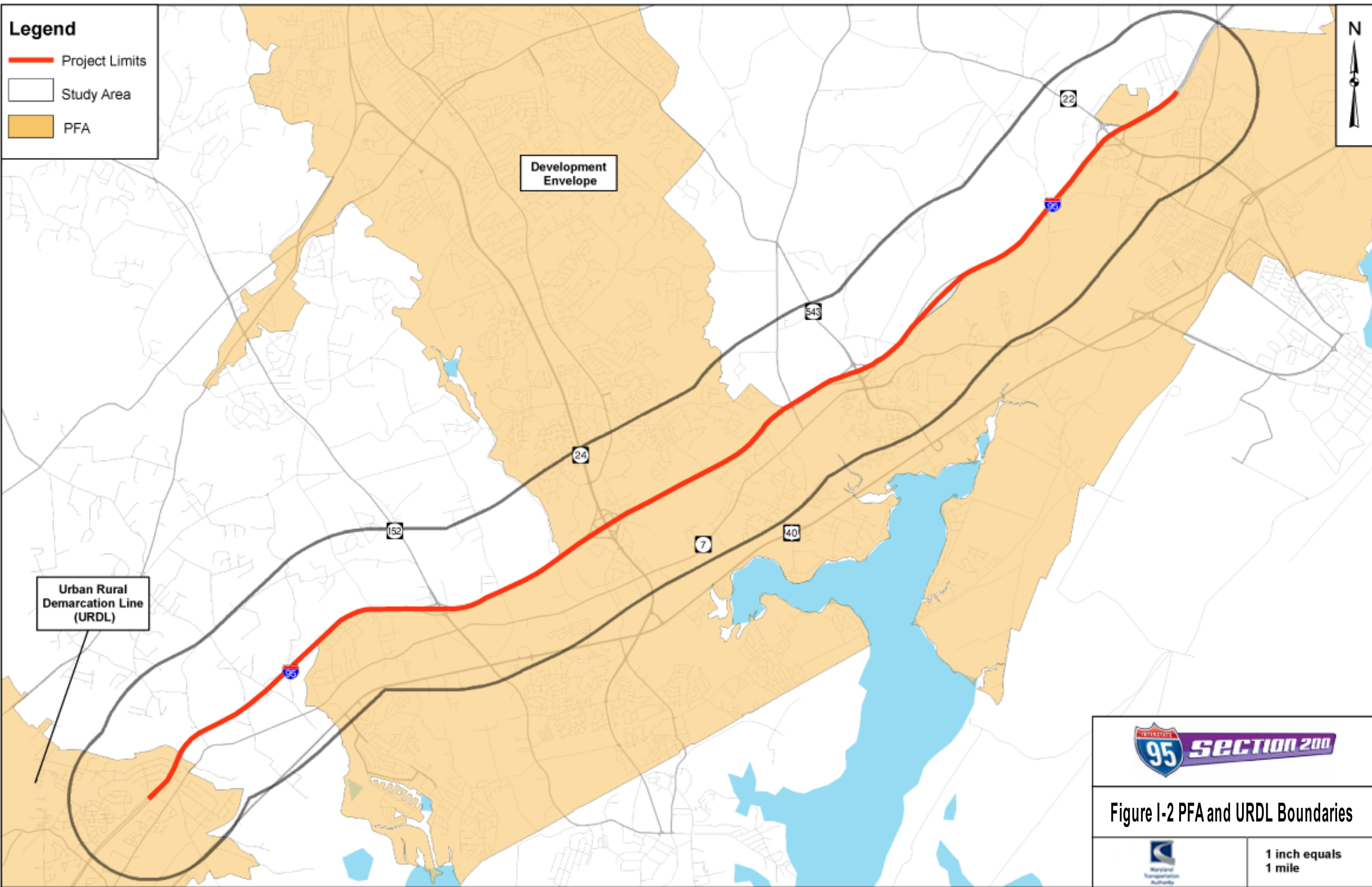
### **F. Need For the Project**

The proposed action is intended to address the following capacity and safety needs on Section 200:

#### ***a. Capacity***

The Section 100 improvements include four General Purpose Lanes (GPLs) and two Express Toll Lanes (ETLs) in each direction at MD 43. The roadway transitions back to four general purpose lanes in the vicinity of New Forge Road. The existing typical section along I-95 through the transition area between Sections 100 and 200 contains four-lanes in each direction up to the MD 24 interchange. The I-95 mainline loses one travel lane at the MD 24 interchange and continues as three general-purpose lanes from MD 24 through the remainder of the study area. Currently the southbound lanes between MD 43 and MD 24 operate at a Level of Service (LOS) D to E during the AM peak hours and the northbound lanes operate at a LOS E during PM peak hours. If the capacity needs are not addressed, congestion is expected to increase by the planning horizon year 2030. The increased congestion levels will extend the existing peak hour into a peak period of two to four hours on a mid-week day and approximately five hours on a Friday in the Spring and Summer months. Also, congestion will increase the level of diversion to alternative routes, such as the community-oriented arterials US 40, US 1, and MD 7. By 2030, weekend peak hours for the Section 200 study area will operate at a LOS F.





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*b. Safety*

The accident rate for Section 200 is approximately 12 percent higher than similar state maintained highways. Crashes normally identified as congestion-related (side-swipe and rear-end), account for 50 percent of the crashes reported between 2002 and 2004. Section 200 has been identified with 34 Candidate Safety Improvement Locations (CSILs) by the Maryland State Highway Administration (MDSHA). If the anticipated congestion levels in Section 200 are not addressed, an increase in the number and severity of congestion-related accidents would likely occur.

**G. Traffic Data and Level of Service**

The I-95 Master Plan utilized travel demand forecasts for the year 2020. The forecasts were developed using the Baltimore Regional Transportation Board (BRTB)/Baltimore Metropolitan Council's (BMC) and the Wilmington Area Planning Council's (WILMAPCO) latest travel demand models as of October, 2000. Following the approval of the I-95 Master Plan, updates to the regional models have been completed. The Section 200 planning study will use 2030 travel demand forecasts.

The roadway network in the model is in accordance with the approved constrained long-range plan (CLRP) for the Baltimore region. Some assumed improvements within the Section 200 study area include the widening of MD 7 from two to four lanes from MD 543 to MD 159 and MD 24 widening from four to six lanes from Singer Road to MD 7.

The study's travel demand model assumed a base transit network, which included express bus service from White Marsh to Harford County, and circulation bus service in the Aberdeen area.



The highest weekday peak period volumes for existing (2005) and future (2030) traffic occurs between north of MD 43 and MD 152 (Table I-1) North of MD 43 to MD 152 will also have the highest ADT during the weekends in 2030. By 2030, MD 24 to MD 543 will experience the greatest volume increase (48 percent) of ADT. Overall, by the year 2030 Section 200 ADT on weekends will increase 31% and 43% on weekdays.

**Table I-1. Traffic Volumes for 2005 and 2030**

Limits	2005 Volume	2030 Volume	Percent Growth	2005 Volume	2030 volume	Percent Growth
	Average Daily Traffic (Vehicles/Day)			Weekend <sup>1</sup> (Vehicles/Hour)		
<b>North of MD 43 to MD 152</b>	165,200	229,000	39%	6,400	8,400	31%
<b>MD 152 to MD 24</b>	150,500	213,900	42%	5,950	7,900	33%
<b>MD 24 to MD 543</b>	120,000	177,900	48%	5,125	6,800	33%
<b>MD 543 to MD 22</b>	101,200	146,000	44%	4,925	6,475	31%

<sup>1</sup>Average weekend peak hour volumes represents the 50<sup>th</sup> highest weekend hour annually. Peak hour times are on Saturday are from 10 AM to 12 PM and Sunday from 2 PM to 6 PM.

In the AM and PM peak hours, the highest ADT volumes occur between north of MD 43 and MD 152 (Table I-2). By 2030, the southbound lanes from north of MD 43 to MD 543 in the AM peak hours will fail (LOS F) (Table I-3). By 2030, PM peak hours for MD 24 to MD 543 will experience the largest percentage in growth of ADT and the southbound lanes will have a LOS F. Both northbound and southbound lanes will have a LOS F during weekend peak hours for the entire Section 200 corridor.

**Table I-2. AM and PM Average Daily Traffic for 2005 and 2030**

Limits	2005 Volume	2030 Volume	Percent Growth	2005 Volume	2030 volume	Percent Growth
	AM Peak (Vehicles/Hour) <sup>1</sup>			PM Peak (Vehicles/Hour) <sup>1</sup>		
<b>North of MD 43 to MD 152</b>	7,775	9,725	25%	7,750	9,850	27%
<b>MD 152 to MD 24</b>	6,450	8,425	31%	6,625	8,725	32%
<b>MD 24 to MD 543</b>	4,350	5,750	32%	4,625	6,325	37%
<b>MD 543 to MD 22</b>	3,050	4,100	34%	3,775	5,125	36%

<sup>1</sup>AM and PM peak hour volumes represent the highest volumes in the peak direction that occur on an average weekday (Monday through Friday). AM peak hour times are from 6 AM to 9 AM and PM peak hour times are from 4 PM to 7 PM.

**Table I-3. Level of Service for AM and PM Peak Hours**

Limits	2005 LOS	2030 LOS	2005 LOS	2030 LOS	2005 LOS	2030 LOS
	AM Peak LOS		PM Peak LOS		Weekend LOS	
	Northbound/Southbound		Northbound/Southbound		Northbound/Southbound	
<b>North of MD 43 to MD 152</b>	B/E	D/F	E/C	F/D	D/D	F/F
<b>MD 152 to MD 24</b>	B/D	C/F	D/C	F/D	D/D	F/F
<b>MD 24 to MD 543</b>	C/D	D/F	D/C	F/E	E/D	F/F
<b>MD 543 to MD 22</b>	B/C	C/C	C/C	D/C	E/D	F/F

The adopted traffic model when Section 200 was initiated looked at the year 2030. At the time the traffic volumes were calculated, BRAC had not been approved and anticipated in the traffic model. Therefore, a sensitivity test was performed with the traffic model to analyze the effect BRAC would have on the ADT in the year 2035. After modeling for 2035 with the inclusion of BRAC, it was determined that BRAC's growth created a 4 to 10 percent increase over the ADT for 2030. While BRAC has a significant influence on

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the Baltimore/Harford/Cecil Region, the impact will be far greater on local highways and roadways and less on I-95. Because the alternatives and associated interchange options have been developed using the traffic volumes from the adopted 2030 traffic model, 2030 traffic will be used during the entire project planning process for Section 200.

*a. Crash Data/Safety Conditions*

The MDSHA, Office of Traffic and Safety provided crash data for the 17-mile study area from 2002 to 2004. During that three-year period, there were a total of 1,090 reported crashes, with 407 injury crashes, 674 property damage crashes, and 9 fatal crashes. From 2002 to 2004, there was a 22 percent increase in total crashes in the study area.

Table I-4 summarizes reported crashes within the Section 200 study area by crash type for the years 2002, 2003 and 2004. Approximately 50 percent of the crashes are identified as congestion related, such as side swipe and rear end. The overall crash rate for the corridor, 50.4 crashes per 100 million vehicle miles traveled (MVMT) was higher than the average rate of 44.8 MVMT for similar state maintained highways.

From 2002 to 2004, the MDSHA identified 34 Candidate Safety Improvement Locations (CSILs) in the study area. CSILs are one-half mile long segments of roadway that have 10 or more crashes. Four of the 34 CSILs identified between 2002 and 2004 had over 30 crashes.

**Table I-4. Crash Data for Years 2002 to 2004**

Collision Type	Year			Totals	Study Area Rate (%)	Statewide Rate (%)
	2002	2003	2004			
Angle	0	1	0	<b>1</b>	0.0	0.2
Rear End	138	139	137	<b>414</b>	19.1*	13.4
Fixed Object	83	124	122	<b>329</b>	15.2	14.9
Opposite Direction	0	3	1	<b>4</b>	0.2	0.3
Sideswipe	35	42	53	<b>130</b>	6.0*	5.0
Pedestrian	2	1	0	<b>3</b>	0.1	0.2
Parked	3	9	7	<b>19</b>	0.9	1.0
Other	51	77	62	<b>190</b>	8.8*	3.0
<b>Totals</b>	<b>312</b>	<b>396</b>	<b>382</b>	<b>1,090</b>		

\*Significantly higher than the statewide average rate for similar State maintained highways or composite section.

## H. Conclusion

The purpose of the Section 200 project planning study is to develop and analyze improvements that will address safety and capacity issues along the I-95 corridor from just north of MD 43 to just north of MD 22. Improvements examined include improved access at the interchanges, an increase in mobility, safety improvements along the mainline and at the interchanges, and increasing capacity to handle future growth in Baltimore and Harford Counties.