

A. PROJECT LOCATION

The US 50 Crossing Study is located in Ocean City, Maryland in the northeastern portion of Worcester County along US 50. US 50 connects Ocean City to points west, including the remainder of the Delmarva Peninsula, the Bay Bridge and the western shore of the Chesapeake Bay, and is the primary east-west route for Maryland's Eastern Shore. The study area encompasses the US 50 crossing of the Sinepuxent Bay and extends from MD 611 to MD 378 (Baltimore Avenue) in the east-west direction, and from 3rd Street to Somerset Street in the north-south direction. A project vicinity map is shown on **Figure I-1**. The study area map is provided as **Figure I-2**.

B. PROJECT BACKGROUND

The US 50 Bridge over the Sinepuxent Bay was built in 1942. It is officially named the Harry W. Kelley Memorial Bridge, after a former mayor of Ocean City. The bridge is a four lane, 46-foot wide roadway with 5-foot sidewalks on each side. The existing bridge is approximately 1/2 mile in length with a 140-foot draw span.

The US 50 bridge is in fair to poor structural condition. Periodic repairs have been made to the bridge since the 1980's and significant work has been completed in recent years. The operating life expectancy of the bridge is 15 to 20 years without any major repairs, or 30 to 40 years with major repairs. The US 50 bridge has been placed on the MD SHA's Historic Bridge Inventory and is eligible for inclusion on the National Register of Historic Places (NRHP).

Local elected officials support a study to develop options for the ultimate replacement of the Harry W. Kelley Memorial Bridge. This is needed not only to prepare for replacing/upgrading the existing structure in the future, but also to allow land use and other local facility planning to proceed. Interim development is expected near each end of the bridge and by establishing a preferred option now we may be able to alter private and public plans to minimize future impact of a replacement or rehabilitation of the US 50 bridge.

The Town of Ocean City would also like to see a beautification effort on the existing US 50 bridge that would include a separate fishing pier, so that pedestrians can use the sidewalks without conflicting with people fishing off the bridge.

C. PROJECT PURPOSE AND NEED

The purpose of this study is to develop a transportation solution that addresses transportation operational inadequacies and structural deficiencies as well as to improve safety for all users on the US 50 crossing of the Sinepuxent Bay in Worcester County, Maryland.

Figure I-1: Vicinity Map

Figure I-2: Study Area Map

The US 50 Bridge over the Sinepuxent Bay is 64 years old and is considered functionally obsolete due to its narrow curb-to-curb roadway width, which is substandard for the traffic volumes that it carries, particularly during summer months due to recreational traffic. The need to maintain a safe and efficient crossing of US 50 is very important, not only because it provides access to and from the commercial center of Ocean City, but also because it serves as 1 of only 3 evacuation routes from the barrier peninsula in case of emergency situations

This study will also address the need to safely accommodate the navigational needs of boaters, pedestrian and bicycle traffic, and the recreational needs of fishermen. Pedestrians, fishermen, and cyclists all currently share the same narrow 5-foot sidewalks along the existing bridge, which creates potential conflicts among the various users. Finally, the study will also investigate aesthetic enhancements to any crossing representative of a coastal gateway resort.

1. Traffic Analysis

The Average Daily Traffic (ADT) volumes in 2004 for US 50 between MD 611 and MD 378 averaged 48,600 vehicles per day during the summer and 27,200 vehicles per day during the rest of the year. Traffic forecasts indicate that in 2030 the volumes will increase to 55,300 vehicles per day during the summer and 35,200 vehicles per day during the off-season. These projected 2030 “No-Build” volumes assume no capacity or operational improvements along US 50 or to the bridge itself.

Existing 2004 and 2030 No-Build AM/PM peak period Level of Service (LOS) projections were developed for US 50 between MD 611 and MD 378 for average and summer traffic volumes. Generally, at this location, the first peak hour of the day occurs in the late morning/ early afternoon, while the second peak hour occurs during the traditional evening time frame. A summary of the LOS analysis, with volume-to-capacity (v/c) ratios, for 2004 and 2030 is included below in **Table I-1** and **Table I-2**.

Table I-1: Intersection LOS Analysis – Average Traffic				
Location	2004 Existing		2030 No-Build	
	Midday Peak	Evening Peak	Midday Peak	Evening Peak
US 50 @ MD 611 (Stephen Decatur Hwy)	A (0.48)	A (0.53)	B (0.63)	B (0.69)
US 50 @ Golf Course Road	A (0.46)	A (0.49)	A (0.59)	B (0.64)
US 50 @ MD 528 (Philadelphia Avenue)	A (0.61)	B (0.67)	C (0.79)	D (0.86)
US 50 @ MD 378 (Baltimore Avenue)	A (0.44)	A (0.45)	A (0.56)	A (0.58)

Table I-2: Intersection LOS Analysis – Summer Traffic				
Location	2004 Existing		2030 No-Build	
	Midday Peak	Evening Peak	Midday Peak	Evening Peak
US 50 @ MD 611 (Stephen Decatur Hwy)	D (0.86)	E (0.96)	E (0.98)	F (1.09)
US 50 @ Golf Course Road	D (0.82)	D (0.88)	E (0.93)	E (1.00)
US 50 @ MD 528 (Philadelphia Avenue)	F (1.09)	F (1.19)	F (1.24)	F (1.35)
US 50 @ MD 378 (Baltimore Avenue)	C (0.78)	C (0.80)	D (0.89)	D (0.91)

LOS is a measure of the congestion experienced by drivers, and ranges from A (free flow with little or no congestion) to F (failure with stop-and-go conditions). LOS is normally computed for the peak periods of the typical day, with LOS D (approaching unstable flow) or better generally considered acceptable. At LOS E, volumes are near or at the capacity of the highway. LOS F represents conditions in which there are operational breakdowns with stop-and-go traffic and extremely long delays at signalized intersections.

The US 50/MD 528 intersection is the controlling factor for traffic on the Harry W. Kelley Memorial Bridge. Under summer traffic conditions, the US 50/MD 528 intersection operates at LOS F in both 2004 and 2030. This is primarily due to southbound right turns onto US 50 from MD 528. The AM/PM LOS at the US 50/MD 611 intersection is expected to worsen from D/E in 2004 to E/F in 2030. This is primarily due to heavy westbound through volumes on US 50.

All other intersections operate under capacity in 2004 and 2030 summer traffic conditions, although the US 50/Golf Course Road intersection will be approaching capacity by 2030. One important aspect to note is the close proximity of the US 50 intersections at MD 378, MD 528, and Golf Course Road to the drawbridge. The drawbridge opened up every hour on the hour (and sometimes during the hour), and caused heavy backups and delays through these intersections. The effects of the drawbridge openings are not calculated within the LOS analysis.

2. Accident Data

US 50 from MD 378 to MD 611 experienced a total of 102 police reported crashes between January, 2001 and December, 2003 (see **Table I-3**). This translates to a crash rate of approximately 265 crashes per 100 million vehicle miles of travel, which is lower than the statewide rate of 340 crashes per 100 million vehicle miles of travel for all similarly designed highways under state maintenance. Of the total of 102 crashes in the study area, fully half (52) occurred on the bridge. There were no Candidate Safety Improvement Locations identified within the study area during the three year study period.

Table I-3: Accident Experience by Year, Severity, Accident Rate, and Comparable Statewide Average Accident Rates.						
Severity	2001	2002	2003	Total	Study Rate (acc/100 mvm)	Statewide Rate (acc/100 mvm)
Fatal Accidents	1	1	0	2	5.2*	1.7
Number Killed	1	1	0	2	-	-
Injury Accidents	13	19	8	40	104.0	153.8
Number Injured	24	27	17	68	-	-
Property Damage	18	28	14	60	156	285.2
Total Accidents	32	48	22	102	265.1	340.8

* Significantly High

There were 2 fatal crashes during this period which results in a fatal crash rate significantly higher than the statewide average fatal crash rate for this type of highway. A 2001 fatal crash involved a head on collision which occurred during the daylight hours on a wet road surface directly on the bridge. A 2002 fatal crash occurred in the vicinity of Elm Street and involved a bicyclist being struck while crossing US 50 during hours of darkness on dry pavement.

Although rates of rear end, fixed object, and pedestrian crashes were higher than their respective statewide rates, none were considered to be significantly high. The percentages of nighttime and wet surface crashes were within normal expectations when compared to the statewide percentage for these categories. Crashes involving alcohol use were significantly high.

Of the total of 102 police reported crashes between January, 2001 and December, 2003, 72 occurred during the summer months, between May 1 and September 30. This represents 70 percent of the 3 year crash total. None of the summertime crash severity categories were significantly high compared to the statewide average crash rates. The single summertime fatal crash was the 2001 incident described above. In no crash type category did the crash rate significantly exceed its respective statewide rate. Like the rest of the year, crashes involving nighttime and wet surface conditions were within normal expectations. Crashes involving alcohol use were again significantly high compared to the statewide average.

3. Bicycle and Pedestrian Accommodation

Improvements are needed throughout the US 50 study area to accommodate bicycle and pedestrian traffic. Summer pedestrian activity at the US 50/ MD 528 intersection showed the heaviest number of pedestrians crossing the south and east legs of the intersection. During a 12-hour period (9:00am to 9:00pm), there were 318 pedestrians observed crossing MD 528 on the south side of US 50, and 641 pedestrians crossing US 50 on the east side of MD 528. Bicyclists are included in the pedestrian counts.