

**V. PROGRAMMATIC SECTION 4(f)**

**A. INTRODUCTION**

Section 4(f) as amended and codified in the U.S. Department of Transportation Act of 1966, 49 U.S.C 303 (c), states that the Federal Highway Administration (FHWA) “may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that: 1) there is no feasible and prudent alternative to the use of land from the property and 2) the action includes all possible planning to minimize harm to the property resulting from such use” [23 CFR 774.3(a)].

This Programmatic Section 4(f) Evaluation has been prepared in accordance with 23 CFR 774 and 49 USC 303 to assess the likely effects of the proposed action upon Section 4(f) resources and evaluate options that avoid or minimize impacts to those resources resulting from this project. This Programmatic Section 4(f) Evaluation will provide a final determination on whether feasible and prudent avoidance alternatives to the use exist, and whether all possible planning to minimize harm to the resources has been performed.

**B. PURPOSE AND NEED**

The Maryland State Highway Administration (SHA) and FHWA are proposing the replacement of the Harry W. Kelley Bridge (No. 2300700) in Worcester County, Maryland. The bridge is located along U.S. 50 in Ocean City, Maryland and crosses over the Sinepuxent Bay (**Section I, Figure I-2**).

The purpose of the project 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 U.S. 50 Crossing of the Sinepuxent Bay.

The U.S. 50 Bridge over the Sinepuxent Bay is 69 years old and is considered functionally obsolete due to its narrow curb-to-curb roadway width, which is substandard for the traffic volumes it carries, particularly the increased recreational traffic generated during the summer months. The U.S. 50 Bridge is in fair to poor structural condition with a sufficiency rating of 41. Periodic repairs have been made to the bridge since the 1980’s and substantial work has been completed in recent years. The operating life expectancy of the bridge is 20 to 25 years without major repairs, or 30 to 40 years with major repairs. The need to maintain a safe and efficient crossing of U.S. 50 is vital because it provides access to and from the commercial center of Ocean City and because it serves as one of only three evacuation routes from the barrier peninsula in case of emergency situations.



**Photo V-1: Harry W. Kelley Memorial Bridge No. 2300700**

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.

### **C. PROPOSED ACTION**

In addition to the No-Build Alternative (Alternative 1), the following four alternatives identified below and discussed in more detail in **Section II** of the FEIS, were retained for detailed study:

- Alternative 2 – Rehabilitation
- Alternative 4 Modified –Fixed Span Bridge
- Alternative 5 – South Parallel Bridge
- Alternative 5A – North Parallel Bridge

All of these alternatives proposed the construction of a higher level bridge on new location. A summary comparison of all options is provided in **Tables V-1** and **V-2** following this evaluation. The alternatives are show in **Section II, Figures II-1** through **II-6**.

The do nothing alternative was also studied. No major improvements are proposed under Alternative 1, the No-Build Alternative. Minor short term improvements would occur as part of routine maintenance and safety improvements. Alternative 1 would involve no permanent or temporary impacts to Waters of the U.S. (WUS), wetlands, the 100-year floodplain, critical area, forest stands or residential or commercial properties.

Alternative 1 would not correct the functional and structural deficiencies of the current bridge and would not address safety concerns for motorists, bicyclists and pedestrians. The SHA does not consider the No-Build Alternative to be a feasible or prudent solution.

Investigations have been conducted to construct a bridge on a new location or parallel to the old bridge. Several build alternatives were retained for detailed analysis that included retention of Bridge No. 2300700. These alternatives were not considered prudent due to the navigational hazard caused by two structures in such close proximity, limited boat access created by the need to raise two draw spans, and cost to maintain and operate the old facility along with the new.

The SHA Preferred Alternative, Alternative 5A, includes a new parallel bridge just north of U.S. 50, tying back into Division Street east of the bay. The bridge alignment would tie-in to U.S. 50 just west of the existing bridge on the west side of the bay. The bridge would have a higher draw span (30 feet of clearance instead of the existing 18 feet) and carry inbound and outbound traffic with four total lanes. The higher draw span is expected to reduce the number of bridge openings as a higher percentage of boats may pass underneath without an opening. St. Louis Avenue would need to be relocated underneath U.S. 50 to continue the north/south connection.

Under the SHA Preferred Alternative, the existing draw span would be removed from the bridge to facilitate boat traffic without limiting openings or height of vessels, which would result in an adverse effect to Bridge No. 2300700. Removal of the current bridge's bascule span is proposed with the Preferred Alternative, however, future studies would be needed to decide whether to retain or remove any portion of the existing bridge after construction of a new crossing. Minor short term improvements would continue to occur as part of routine maintenance and safety improvements until the new structure is complete.

Approximately 0.02 acres of impact to wetlands, 0.84 acres of impact to Waters of the U.S., 2.2 acres of impact within the 100-year floodplain and 2.5 acres of critical area impact would occur as a result of the SHA Preferred Alternative. The SHA Preferred Alternative will not directly impact the following resources –prime farmland soils, stands of forest or large trees, or FIDS habitat. The SHA Preferred Alternative would displace six residential and two commercial buildings and would require a total of three acres of right-of-way from 16 different properties. The SHA Preferred Alternative would cost approximately \$310-325 million.

#### **D. DESCRIPTION OF SECTION 4(f) RESOURCE**

The Harry W. Kelley Memorial Bridge is a double leaf rolling lift bascule moveable bridge that was constructed in 1942. A rolling lift bascule is one in which the center of rotation moves away from the opening when the span swings upward. The bridge was designed by the J.E. Greiner Company, who appears to have designed most of the movable bridges on the Eastern Shore during the 1920's and 1930's in response to the trend towards vehicular traffic over steamboats as the primary means of transportation and carrier of agricultural and maritime produce to market.

SHA Bridge No. 2300700 has been included in SHA's Historic Highway Bridge Inventory and is eligible for the National Register of Historic Places (NRHP) as

determined by the SHA on February 27, 2001 under Criterion C, as a 1939 example of a double-leaf rolling lift bascule bridge. It is also significant under Criterion A for its role in the development of transportation on the Eastern Shore during the Modern Period. The Maryland Historical Trust (MHT) concurred with this determination on April 3, 2001.

#### **E. SECTION 4(f) USE**

The U.S. 50 Bridge No. 2300700 is unique not only because it is a structure eligible for the NRHP, but also because it is part of a Federal-Aid Highway System that has continued to evolve over the years. Although, it must function as an integral part of a modern transportation system, it is no longer adequate to address needs identified in the future transportation models. Therefore it must be replaced in order to assure public safety while maintaining system continuity and integrity. For the purpose of this programmatic Section 4(f) evaluation, the proposed action associated with implementation of the SHA Preferred Alternative will constitute a “use” of a bridge that is eligible for inclusion on the National Register of Historic Places because the action will impair the historic integrity of the bridge by removal of the draw span. Section 4(f) use and additional environmental impacts caused by the SHA Preferred Alternative and comparison of all the alternatives are summarized in **Tables V-1** and **V-2**.

#### **F. FINDINGS**

##### **Avoidance Alternatives**

The following alternatives avoid any use of the historic bridge:

##### **Alternative 1 - Do Nothing/ No-Build**

No major improvements are proposed under Alternative 1, the No-Build Alternative. Routine maintenance and safety improvements would continue to be performed as needed. Alternative 1 would involve no permanent or temporary impacts to WUS, wetlands, the 100-year floodplain, critical area, forest stands or residential or commercial properties.

Although Alternative 1 would have fewer impacts and cost less than the SHA Preferred Alternative, it would not meet the purpose and need of the project and is not considered feasible or prudent. The No-Build Alternative would not address the limited life span of the existing structure nor correct the functional and structural deficiencies of the current bridge and would not address safety concerns for motorists, bicyclists and pedestrians.

##### **Alternative 2 - Rehabilitation of the historic bridge with repairs**

This alternative involves the rehabilitation to the existing bridge, with the addition of a separate fishing pier for fishermen, wider sidewalks for pedestrians and cyclists, and adding aesthetics such as lighting and archways. The rehabilitation would include major repairs to the piers and the draw span as well as resurfacing. Alternative 2 would have no direct impacts to WUS, the 100-year floodplain, the Chesapeake Bay Critical Area, forest or forest interior dwelling species (FIDS) habitat. Alternative 2 would not require any

residential or business displacements and would not require any right-of-way. It would cost approximately \$107,000,000.

Between 2006 and 2009 improvements including resurfacing of the deck, and the repair and replacement of worn parts of the drawspan mechanism were completed at a cost of approximately 1.5 million for the Harry S. Kelley bridge. Similar work would continue as needed to maintain a rehabilitated bridge as long as feasible, which is currently estimated at 20 to 25 years. However, rehabilitation of the bridge would not address transportation operational inadequacies or safety concerns cited in the purpose and need. Geometric and structural deficiencies related to the narrow curb-to-curb roadway width of the bridge could not be addressed on the existing structure without affecting the draw span. The SHA Office of Structures has concluded that maintaining the bridge beyond the next twenty years may not be possible due to the structural integrity and would likely result in an adverse effect on the historic integrity of the bridge. For these reasons, Alternative 2 is not considered prudent.

### **Build on New Location Without Bridge Affecting Historic Integrity**

All of the alternatives retained for detailed study (ARDS) presented in the DEIS included retaining the existing bridge for used by pedestrians, fishermen, and bicyclists. However, after further consultation with the public and local elected officials, it was determined the most practical approach would be to remove the existing bascule span after the new bridge is constructed. Retaining the existing drawspan would present an unnecessary hazard to navigation and would require maintenance as well as a tender to open the span for boat traffic. Additional costs to cover inspection and maintenance activities as well as the tender would range between 20-25 million for a twenty year period. For this reason, retaining the drawspan on the existing bridge is not considered prudent. Therefore, all the new location bridge ARDS presented in the FEIS include removal of the historic drawspan from Bridge No. 2300700, and a commitment to further study which how much of the current bridge could be left in place for recreational use. These future studies would occur closer to the time of replacement based on considerations (navigational, structural, environmental, and financial) which exist at that time. Removal of the drawspan from Bridge No. 2300700 would be considered an adverse effect to the historic resource.

## **G. MEASURES TO MINIMIZE HARM**

Pursuant to 23 CFR 774.3(c)(1), if the avoidance analysis determines that there is no feasible and prudent avoidance alternative, then only the alternative that causes the least overall harm may be approved. Because there are multiple alternatives that remain following the preliminary avoidance analysis, this section reviews minimization options that would eliminate or reduce the use of the bridge in order to lay the groundwork for identifying the option with the least overall harm.

Minimization measures considered include the possible retention of portions of the existing bridge for recreational use (fishing, pedestrian, bicycle, etc..) During the design phase of the project, SHA will coordinate with the Town of Ocean City on retaining a

portion of the structure and will conduct further studies to determine the most appropriate course of action based on considerations (navigational, structural, environmental, financial) which exist at that time.

Mitigation measures have also been incorporated into the SHA Preferred Alternative to further minimize harm to Section 4(f) resources. The mitigation of any impacts resulting from the replacement of the bridge would be implemented in accordance with a Memorandum of Agreement (MOA) developed between the FHWA, SHA, and the MD SHPO, pursuant to the National Historic Preservation Act of 1966 as amended. By being a signatory, agencies will assure that the provisions of the MOA will be followed.

SHA met with representatives of the Ocean City Life-Saving Station Museum, and spoke with Mr. Glenn Irwin, Executive Director of the Ocean City Development Corporation, and Dr. G. Ray Thompson of the Edward H. Nabb Research Center for Delmarva History & Culture at Salisbury University about mitigation strategies for the moveable bridge. SHA suggested two strategies as reflected in the MOA. The MOA stipulates that SHA will provide interpretive panels that explain and depict the history of transportation and its role in the development of Ocean City, Maryland as a resort. SHA will work with the Ocean City Life Museum and the Ocean City Development Corporation to develop a plan for the interpretive panels. The panels will consist of text and photographs showing the bridges, trains, automobiles/buses and boats that have been used to provide access to Ocean City from the mainland. The panels will be standard size and will be attached to the railings or deck of the historic bridge on the approaches to the bascule span (which will be removed). In addition, a stipulation will be included stating that SHA would market the bascule span to local parks and organizations to solicit interest in accepting the span.

## **H. CONCLUDING STATEMENT**

Based on the above considerations, there is no feasible and prudent alternative to the use of Bridge No. 2300700 and the proposed action includes all possible planning to minimize harm to Bridge No. 2300700 resulting from such use. "All possible planning" includes all reasonable measures to minimize harm and mitigate for adverse impacts and effects.

## **I. COORDINATION**

The MD SHPO initially concurred with SHA's NRHP eligibility determination for Bridge No. 2300700 in April 3, 2001. In July 2010, SHA submitted a SHA Preferred Alternative description, summary of identified significant properties, and finding of effect for the SHPO's review and concurrence. The MD SHPO concurred with the NRHP eligibility of project area historic properties, as well as the adverse effect determination for the project, on September 20, 2010 (**Section VI, B-103:B-116**). As a result of the adverse impact to the historic bridge, SHA will enter into a MOA that will provide mitigation for the project's effect on historic properties. SHA has consulted with the Ocean City Life-Saving Station Museum and the Nabb Research Center for Delmarva

History and Culture at Salisbury University as well as MD SHPO about possible mitigation strategies. The MOA was signed by the SHPO on August 19, 2011. **(Section VI, B-128)**

Pursuant to the regulations set forth in either 36 CFR Part 800 or under Section 106, the Ocean City Department of Planning and Community Development, the Worcester County Department of Development, Review and Permitting, St. Paul's by-the-Sea Episcopal Church, and Ms. Lynnda J. Emery and Ms. Kristina J. Hartman were notified of the project's effect on historic properties, and invited to participate in the Section 106 process. Further coordination with these groups continued into development of the MOA.

**Table V-1: Comparison of SHA Preferred Alternative and Options**

SHA Preferred Alternative or Option	Section 4(f) Resource Avoidance?	Meets Purpose and Need?	Wetland Impacts?	W U.S. Impacts?	Floodplain Impacts?	Forest Impacts?	Property Impacts <sup>1</sup>	Likely Effect Determination to Bridge #2300700	Approximate Cost
<b>SHA Preferred Alternative Alternative 5A</b> (North Parallel – 30’ Drawbridge, Remove Draw Span from Existing Bridge)	No	Yes	0.02 acre	0.84 acre	2.2 acres	No	16 Properties 3 acres	Adverse Effect Concurred by SHPO	\$310-325 million
<b>Alternative 1</b> (No-Build)	Yes	No	No	No	No	No	No	No Adverse Effect	\$20-25 million*
<b>Alternative 2 Rehabilitation of Historic Bridge with repairs</b>	No	No	No	No	No	No	No	No Adverse Effect	\$130-140 million
<b>All Build Alternatives</b> (Remove Draw Span from Existing Bridge)	No	Yes	0.02-0.03 acres	0.72 acre	1.1 acres	No	24 Properties 3 Acres	Adverse Effect	\$310-535 million

\* The No-Build Alternative cost estimate represents the expense for routine maintenance (structural, mechanical, and electrical) and operation of the existing bridge over the next 20 years

**Table V-2: Least Overall Harm Analysis**

23 CFR 774.3(c)(1) Factor				Alternatives*	(Preferred)			
i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)	NE	NAE		Impacts to bridge mitigated by proposed interpretive panels and marketing of the bascule span.	Impacts to bridge mitigated by proposed interpretive panels and marketing of the bascule span.			Alternatives 1 and 2 require no mitigation for bridge. Alternatives 5A and 5 mitigate the impact through proposed interpretive panels and marketing of the bascule span.
ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes or features that qualify each Section 4(f) property for protection	No harm to bridge	Minimal harm to bridge		Substantial Harm Impacts to bridge mitigated by proposed interpretive panels and marketing of the bascule span.	Substantial Harm Impacts to bridge mitigated by proposed interpretive panels and marketing of the bascule span.			Alternatives 1 and 2 result in least severe harm to the bridge;
iii. The relative significance of each Section 4(f) property			National Register Eligible Bridge No. <b>2300700</b> is the only Section 4(f) resource for the purpose of this analysis.					National Register Eligible Bridge No. <b>2300700</b> is the only Section 4(f) resource for the purpose of this analysis.
iv. The views of the officials with jurisdiction over each Section 4(f) property	NE	NAE	The SHPO is the official with jurisdiction over Bridge No. <b>2300700</b> . The SHPO has stated that the SHA Preferred Alternative’s impacts to the bridge would constitute an adverse effect.					SHPO has not provided views that identify a preference among options or resources. Therefore the options are substantially equal for this analysis factor.
v. The degree to which each alternative meets the purpose and need for the project	Does not meet purpose and need: due to operational and safety conditions	Does not meet purpose and need		Meets purpose and need	Meets purpose and need			Only Build Alternatives to include the SHA Preferred Alternative meet the project purpose and need
vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)	No impacts to resources	No impacts to resources		Minor impacts to wetlands, moderate impacts to WUS and floodplains	Minor impacts to wetlands, moderate impacts to WUS and floodplains			Alternatives 1 and 2 would have no impacts to other environmental resources. Alternatives 5 and 5A would have minor to moderate impact impacts to other resources with Alternative 5 having the most impacts.
vii. Substantial differences in cost among the alternatives	\$20-25 million**	\$130-140 million		\$310-535 million	\$310-325 million			Alternatives 1 and 2 would be the least expensive and Alternative 5A would be the least expensive build alternative.
Conclusions of least overall harm evaluation	Results in no impacts to bridge, but doesn’t meet purpose and need	Results in minor permanent impacts to bridge, but doesn’t meet purpose and need		Addresses future need for operational and safety improvements. Results in adverse effect to bridge	Addresses future need for operational and safety improvements. Results in adverse effect to bridge			Alternative 5A causes the same substantial harm as any of the build alternatives which are the only alternatives that meet the project’s purpose and need.

NE – No Effect

NAE – No Adverse Effect

\*All bridge replacement alternatives have similar impacts to historical bridge.

\*\* The No-Build Alternative cost estimate represents the expense for routine maintenance (structural, mechanical, and electrical) and operation of the existing bridge over the next 20 years