

# **Executive Summary**

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## EXECUTIVE SUMMARY

### ES.1 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to either rehabilitate or replace the Sakonnet River Bridge (RI Bridge No. 250) that carries Rhode Island State Route 24 (RI 24) over the Sakonnet River between Portsmouth and Tiverton in Newport County, Rhode Island (Figure ES-1). The extensive rehabilitation work required to address the existing deteriorated condition of the bridge structure would result in high costs and adverse traffic impacts during construction. Federal Highway Administration (FHWA) guidelines encourage that if it is determined that the cost to fully rehabilitate an existing bridge would exceed 50% of the cost of a new bridge, then bridge replacement alternatives should be investigated. Accordingly, the Rhode Island Department of Transportation (RIDOT), the project proponent, is considering alternatives to replace the bridge.

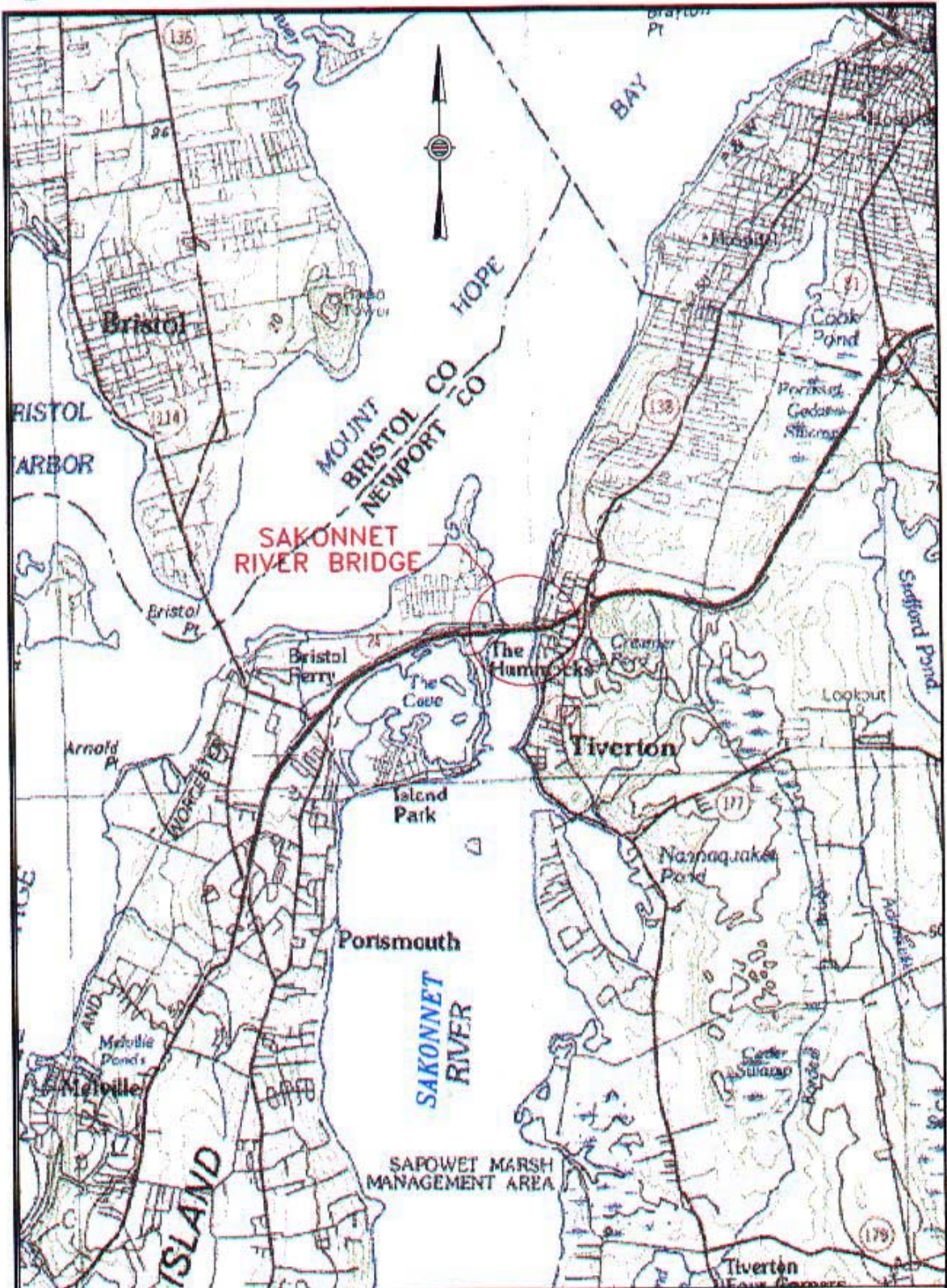
Based on the analyses presented in this document, a preferred Alternative has been identified: Alternative 5, a New Bridge constructed south of the existing bridge. See subsection ES.2 below.

This Draft Environmental Impact Statement (DEIS) has been prepared by RIDOT to meet Federal Highway Administration (FHWA) environmental regulations implementing the National Environmental Policy Act (NEPA.) The objective of this environmental review process for the Sakonnet River Bridge Rehabilitation or Replacement Project (the Project) is to evaluate the environmental impacts of alternatives and to identify a preferred alternative that would maintain this essential river-crossing component of the regional transportation network. The preferred alternative identified in this DEIS satisfies the following project needs:

- Improve or replace the existing bridge that is structurally deficient, fracture critical, as well as substandard. The bridge does not meet current highway design standards for shoulder width and structural capacity.
- Maintain the critical north/south transportation system link between Massachusetts and Rhode Island that the existing bridge provides.
- Provide adequate seismic protection for the vital transportation link that the bridge provides for Aquidneck Island.
- Support existing and future traffic volumes, with the least disruption during construction.
- Improve public safety.

The project study area focuses on the Sakonnet River Bridge and the RI 24 approaches. The potential traffic impacts of the alternatives have been studied within a much larger traffic analysis area bounded roughly by the following key intersections in the region:

- North:* The intersection of RI 24 and Interstate Route 195 (I-195) in Fall River, Massachusetts
- Northwest:* RI 114 across the Mt. Hope Bridge to Bristol continuing through Warren, and along RI 136 to I-195
- South:* RI 114 and RI 138 through Portsmouth and Middletown to Newport to the Claiborne Pell Bridge.



Rhode Island  
Department of Transportation

Federal Highway Administration

**PROJECT REGION MAP**  
**SAKONNET RIVER BRIDGE PROJECT**

Source: USGS QUADRANGLE

Scale = 1:63,360

Figure No.  
ES-1

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In order to ensure the safety of the bridge during the EIS process, as well as during the design and construction period for the chosen alternative, RIDOT is currently performing Interim Repairs (which began in 2000, and will be completed in the fall of 2001) to address deterioration of structural elements.

Completion of the proposed project is not expected to have a significant effect on capacity, traffic flow, level of service, or vehicular mode share in the transportation corridor. This is because the proposed action is largely to improve bridge safety and not necessarily to increase traffic capacity. RI 24 approaching and crossing over the Sakonnet River Bridge will have sufficient traffic capacity during the EIS and design period; therefore, additional lanes to increase traffic capacity are not needed. Further, federal and state transportation agencies have previously agreed through a Memorandum of Understanding that a Major Investment Study is not required for the project (see Appendix B memorandum dated February 21, 2000).

Adjacent and north of the highway bridge is the existing Sakonnet River Railroad Bridge (RI Bridge No. 450). The railroad bridge is a center-pivot swing type built in 1899, and is not used because it was damaged several years ago by a vessel collision. RIDOT is conducting a separate study to evaluate alternatives and prepare conceptual designs for reactivation of the existing rail corridor on Aquidneck Island and Tiverton to provide commuter rail service. A new railroad bridge would be required to carry commuter trains across the river. Should such a commuter rail service be activated, a potential Tiverton train station near the Sakonnet River Bridge could be accessed via RI 24 and RI 138, making for a potential intermodal connection.

The Sakonnet River Bridge has a three-ft. (1 m)-wide walkway on both the northbound and southbound sides. However, this walkway, which is for emergency use only, is not adequately separated from the traffic lanes by a barrier system. Pedestrian and bicycle access is currently prohibited on the bridge. The New Bridge Alternatives discussed in this DEIS include provisions for pedestrian and bicycle access on the bridge, linking the Tiverton and Portsmouth bikeways, and would provide wider shoulders to improve overall vehicular and pedestrian safety.

## **ES.2 ALTERNATIVES CONSIDERED**

Potential alternatives considered in this DEIS for replacement or rehabilitation of the Sakonnet River Bridge were evaluated using the following criteria in conjunction with the outlined project purpose and needs as a guideline:

- Maintain four lanes of traffic (two northbound, two southbound) on RI 24 to the greatest extent possible during construction.
- Minimize construction on RI 24 outside of the existing highway alignment and bridge structure abutments, to avoid right-of-way impacts.
- Maintain the existing clearance above the Sakonnet River navigation channel, and maximize the width of the channel.

RIDOT and FHWA considered the former Old Stone Bridge location as both a potential new bridge crossing for RI 24, as well as a temporary crossing. This alignment was the initial crossing of the Sakonnet River, now abandoned. The former Old Stone Bridge location is

approximately 0.8 miles (1.3 kilometers (km)) south of the existing Sakonnet River Bridge. Accordingly, this alignment, on either a permanent or a temporary basis, would involve extensive construction and right-of-way impacts, major community impacts, and environmental alterations for a new alignment of the RI 24 four-lane freeway through Tiverton and Portsmouth. In addition, the required minimum 65 ft. (19.8 m) vertical navigational clearance would not be attainable. Therefore, this alignment was eliminated from further consideration for both temporary detour and permanent realignment.

The Project Alternatives that were selected for detailed study are as follows:

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|-----------------------|--|
| <b>Alternative 1:</b> | No - Build   |
| <b>Alternative 2:</b> | Full rehabilitation of the Existing Bridge   |
| <b>Alternative 3:</b> | A New Bridge along the Existing alignment, with a temporary bridge along the railroad right-of-way |
| <b>Alternative 4:</b> | A New Bridge along the alignment of the Existing railroad, to the north of the Existing Bridge     |
| <b>Alternative 5:</b> | A New Bridge to the south of the Existing Bridge   |

Each Alternative could potentially be implemented independently to satisfy project objectives, and the Alternatives do not restrict consideration of future transportation alternatives in the project area, particularly regarding the potential reactivation of the Sakonnet River Railroad Bridge.

The **No - Build (Alternative 1)** includes routine maintenance of the Sakonnet River Bridge to provide continued operation of RI 24 over the Sakonnet River. Repairs would be completed only as needed to address failing structural or functional elements. Repairs would cause significant traffic delays, and would not address structural and functional deficiencies such as seismic requirements and the presence of fracture critical elements. Weight restrictions would be required, as would be inevitable replacement.

The No - Build Alternative is included to provide a benchmark against which the benefits and impacts of the other Alternatives can be compared.

**Full Rehabilitation of the Existing Bridge (Alternative 2)** includes a comprehensive rehabilitation of the bridge substructure, superstructure, deck, as well as a complete seismic retrofit. The rehabilitation work would be in addition to the ongoing Interim Repairs. During the anticipated minimum two-year construction period, two of the four lanes on RI 24 would be closed. This restriction would create an unavoidable impact to traffic on RI 24. This Alternative would address the immediate structural safety issues and seismic deficiencies of the existing bridge. However, this Alternative would not address the safety concerns associated with the functionally obsolete bridge and highway alignment, nor change the fracture critical nature of the existing structure.

**New Bridge on Existing Alignment (Alternative 3)** would consist of replacement of the existing Sakonnet River Bridge with a new bridge in approximately the same horizontal

alignment. The intent of using the existing alignment is to minimize the right-of-way impacts (e.g., property acquisition).

It is not practical to build a replacement structure immediately adjacent to the existing bridge while keeping half of the traffic lanes in use. Therefore, the existing bridge would have to be removed prior to construction of the new bridge, resulting in an increase in construction duration. Significant regional traffic impacts would occur during the construction period of a minimum of two years if RI 24 across the Sakonnet River were closed.

Subsequent to the October 1999 Scoping Meeting, the US Environmental Protection Agency (USEPA), Region I Office, commented that a temporary bridge structure at the location of the existing Sakonnet River Railroad Bridge should be included as part of Alternative 3 in order to try to mitigate these impacts.

Accordingly, a detour roadway through the secondary streets of Tiverton and Portsmouth, a temporary roadway along the existing railroad causeway, and a temporary bridge structure at the location of the existing Sakonnet River Railroad Bridge would be included in this Alternative to route RI 24 traffic around the closed bridge. The temporary bridge structure would be a fixed structure and would therefore restrict navigation.

The construction of a temporary detour roadway along the railroad causeway would require the high voltage power lines crossing the Sakonnet River at this location to be relocated.

Some property relocations would be required due to the proposed widening of the structure, as well as for necessary roadway reconstruction to accommodate the detour route.

**New Bridge on North Alignment (Alternative 4)** would consist of replacement of the existing Sakonnet River Bridge with a new bridge in an alignment to the north of the existing bridge along the railroad right-of-way.

Property relocations would be required along the new RI 24 alignment, and the high voltage power lines crossing the Sakonnet River at this location would need to be relocated.

Since the existing structure could be utilized during construction of the new bridge, the traffic disruptions would be minimal.

The existing bridge would be removed subsequent to the completion of the new bridge.

**New Bridge on South Alignment (Alternative 5)** would consist of replacement of the existing Sakonnet River Bridge with a new bridge in an alignment to the south of the existing bridge.

Property relocations would be required along the new RI 24 alignment. The high voltage power lines crossing the Sakonnet River at this location would not need to be relocated.

Since the existing structure could be utilized during construction of the new bridge, the traffic disruptions would be minimal.

The existing bridge would be removed subsequent to the completion of the new bridge.

Each of the three New Bridge Alternatives would address the need for improvements to RI 24 to comply with current highway design criteria, and would provide bicycle and pedestrian access. The recommended highway cross section would be 93 ft. (28.3 meters) wide, including the following features:

- 12-ft. (3.7-m) wide travel lanes, two in each direction
- 10-ft. (3.0-m) wide outside shoulders
- 1.75-ft. (0.53-m) wide barriers on the outside shoulders
- 2-ft. (0.6-m) wide center median with 4-foot (1.2-m) shoulders on each side
- 10-ft. (3.0 m) wide shared use path on north side only
- 1.5-ft. (0.46 m) wide pedestrian railing on north side only

Two potential main span bridge structure types have been identified, particularly for evaluation of visual impacts of the New Bridge Alternatives. These include segmental concrete and cable-stayed suspension structures.

### **ES.3 FINANCIAL ANALYSIS / TOLL STUDY**

A potential toll collection plaza has been evaluated as part of a Financial Analysis/Toll Analysis performed for this DEIS. The analyses included consideration of tolling of the Sakonnet River Bridge project to generate revenues for construction and maintenance costs. Any of the build Alternatives, including Full Rehabilitation (Alternative 2), could require financing from toll collection.

Locations adjacent to the existing or new bridge were originally considered but were removed from consideration due to constrictions resulting from a combination of residential development, significant ledge outcrops, and proximity to other State routes that would also require tolling. The preferred configuration for a tolling facility is a one-way (northbound) toll plaza on RI 24 in Portsmouth (approximately 1 mile from the bridge), which could be implemented with any of the build Alternatives and would not affect the proposed alignments of RI 24.

The impacts resulting from the construction of a toll plaza have been included in this DEIS. Although air quality impacts are insignificant, there are right of way and wetland impacts.

The estimated construction cost of the toll plaza is \$18 million.

### **ES.4 CONCURRENT PROJECTS AND STUDIES IN THE STUDY AREA**

The projects described below will be implemented independent of the Sakonnet River Bridge Rehabilitation or Replacement Project, and are hence viewed as existing conditions in the study area in this DEIS.

The RI 24/RI 138 (Main Road) ramps at the eastern edge of the Sakonnet River Bridge project area in Tiverton are being reconfigured under a separate RIDOT project. As part of the RI 24/RI

138 (Main Road) ramps project, the RI 138 (Main Road) on-ramp to RI 24 southbound, as well as the Central Avenue on and off-ramp structures (on the existing bridge) would be closed due to their insufficient acceleration / deceleration lanes and inadequate sight distances. Removal of the ramp structures will be addressed after a rehabilitation or replacement Alternative is selected.

RIDOT is conducting a study of the Aquidneck Island Rail Corridor, which includes the Sakonnet River Railroad Bridge. That study will be evaluating the potential future use of this transportation corridor for commuter rail and other purposes. The need to retain a railroad bridge in service at the location of the existing Sakonnet River Railroad Bridge will be defined by that study. All Alternatives considered in this DEIS would not preclude future use of the railroad right of way.

The existing Sakonnet River Railroad Bridge is not functional, and has been identified by RIDOT for removal. The removal of the existing railroad bridge would be included with the selected Sakonnet River Bridge Project build Alternative, and could include a temporary highway bridge at this location (Alternative 3).

## **ES.5 SUMMARY OF IMPACTS**

Many of the potential environmental and socioeconomic impacts of the project would be short-term and temporary, during project construction. The long-term impacts for the New Bridge Alternatives are primarily associated with property relocations. The long-term impacts for the No - Build and the Full Rehabilitation Alternatives are the socioeconomic impacts due to periodic traffic delays, and the need for a new bridge in the relatively near future. The impacts are summarized by Alternative.

### **ES.5.1 No-Build (Alternative 1)**

This Alternative does not meet the project purpose nor satisfy project needs of improving public safety and providing a reliable transportation link.

Future repairs would cause significant traffic delays, would not address structural and functional deficiencies, and would not address the need to keep the structure in service. Weight restrictions would be required, as would inevitable replacement.

Social and economic impacts would be significant since a safe and reliable transportation link would not be provided. Periodic lane closures such as those required when accidents occur (due to the fact that a functional breakdown lane is not provided), would also have secondary impacts to businesses on Aquidneck Island as well as school and transit transportation on RI 24. As a result, long-term productivity in the study area would be adversely affected by the No - Build Alternative.

Pedestrian/cyclist facilities would not be provided, and therefore a functional link for these modes would not exist between Portsmouth and Tiverton.

The No - Build Alternative would not require any relocation and would have no impacts to wetlands, fishery, cultural resources, and hazardous materials. The noise impacts would remain at current levels, which are considered moderate to high based on complaints from local residents. The coastal impacts would not change since the number of bridge piers in the waterway would be unchanged.

### **ES.5.2 Full Rehabilitation of the Existing Bridge (Alternative 2)**

The project purpose and needs of public safety and a reliable transportation link would only partially be provided with this Alternative.

Lane closures on RI 24 required for disabled vehicles or when accidents occur (since a functional breakdown lane is not provided), would have moderate secondary impacts to the businesses on Aquidneck Island and school and transit transportation on RI 24. Similarly, long-term productivity in the study area may be adversely affected by this Alternative.

The short-term impacts would be significant during construction, which would be a minimum of two years.

Direct impacts due to traffic delays, as well as indirect impacts to businesses, tourism, short-term productivity, and public services including school and transit would occur. The duration of lane restrictions and subsequent inconvenience to the motoring public would not only be more extensive than during the interim repairs, but also continuous for the minimum 2 year duration. Air quality in the area of the bridge during periods of delayed traffic, particularly during the summer months, may be degraded.

Pedestrian/cyclist facilities would not be provided, so a functional link for these modes would not exist between Portsmouth and Tiverton.

Removal of hazardous materials/waste, such as abrasive removal of lead paint from the bridge, would follow appropriate procedures to mitigate any adverse impacts.

No property acquisition would be required, and impacts to wetlands, fishery, coastal, and cultural resources would be negligible. The long-term noise impacts of bridge traffic would be addressed since a new bridge deck riding surface and improved deck joint systems would be provided. The bridge's seismic susceptibility would be addressed.

Despite the work that would be performed under the Full Rehabilitation Alternative, the useful life of the bridge would be limited to 25 years, which is considered a short time period for a significant infrastructure investment, and is not the best return of investment in comparison to the other alternatives.

The estimated construction cost for the Full Rehabilitation of the Existing Bridge Alternative (Alternative 2) is \$72 million. This is more than half of the construction cost of two of the New Bridge Alternatives evaluated in this DEIS. FHWA guidance indicates that when rehabilitation

costs are approximately 50 percent of the cost of providing a new facility, then serious consideration is given to the latter. This construction cost estimate does not include the construction of a toll plaza.

### **ES.5.3 New Bridge on Existing Alignment with Temporary Bridge (Alternative 3)**

The New Bridge on the Existing alignment Alternative would require five property relocations to accommodate the wider highway and construction of a temporary detour roadway.

This Alternative has the most significant impacts of any of the Alternatives due to the need for a temporary bridge and roadway on the railroad causeway. The temporary roadway and bridge structure would require fill to be placed in the Sakonnet River, thus affecting the Tautog fishery. The detour would also require the total volume of RI 24 traffic to be restricted to two lanes and be detoured through secondary roads in Tiverton and Portsmouth to the temporary roadway and bridge structure. The railroad causeway for recreational fishing would no longer be available. The temporary bridge structure would also restrict navigation.

The impacts to wetlands would be moderate as summarized in Table 4-14 in this DEIS. Appropriate disposal procedures would need to be followed to minimize hazardous materials impacts due to the existence of lead-based paint on the bridge structure. The fewer number of piers in the waterway than existing would reduce long-term coastal impacts. The short-term coastal impacts would be moderate to high due to the placement of fill in the Sakonnet River at the railroad causeway for the temporary roadway and bridge, as well as the removal of the existing Sakonnet River Bridge piers.

The long-term noise impacts would be low with a new structure, deck, and joints. Cultural resources impacts would be relatively minor due to the limited to property takings in the Riverside Drive Historic District that would not significantly alter the character of the District.

The purpose and needs of the project would be addressed. The long-term social and economic impacts would be positive since a safe and reliable transportation link would be provided. However, this Alternative would have significant short-term secondary social and economic impacts during construction since the temporary bridge would only have two lanes and traffic would be routed over local streets to and from RI 24, and would restrict navigation. Businesses on Aquidneck Island, schools, transit on RI 24, local marine-related businesses, and short-term productivity in the study area would be adversely affected.

Property relocations would be required for the temporary traffic detour, the increase in the overall width of the structure, and for the relocation of the high voltage power lines currently on the railroad causeway.

Construction period impacts would be the most significant of all Alternatives due to traffic detours and delays, and noise in the work areas and along the Tiverton detour route. Air quality in the area of the bridge and detour route during periods of delayed traffic, particularly during the summer months, may be degraded.

Pedestrian/cyclist facilities would be provided with the new structure, so a functional link for these modes would exist between Portsmouth and Tiverton.

The useful life of the new bridge structure would extend for 75-years.

The combination of 'Construction-Delay' User Costs, construction of a temporary roadway and bridge structure, property acquisitions, power line relocation, and actual new bridge construction results in a total construction cost of \$162 Million. This construction cost does not include the cost of a toll plaza.

#### **ES.5.4 New Bridge on North Alignment (Alternative 4)**

The New Bridge on a North Alignment Alternative would require 16 property relocations. This would significantly disrupt neighborhoods in Tiverton. Furthermore, the need to relocate the high voltage power lines along the proposed alignment would also involve property relocations as well as coastal and environmental impacts.

The purpose and needs of the project would be provided and the long-term social and economic impacts would be low since a safe and reliable transportation link would be provided. The short-term secondary impacts would also be low during construction since all four lanes of the existing bridge could remain in service for most of the construction period. Pedestrian/cyclist facilities would be provided, so a functional link for these modes would exist between Portsmouth and Tiverton.

The impacts to wetlands would be moderate as summarized in Table 4-14 in this DEIS. Hazardous materials impacts would be moderate since the existing lead-based painted bridge structure would need to be properly disposed of. The number of piers in the waterway would be reduced; so long term coastal impacts would be low. The short-term coastal impacts would be moderate due to the removal of the existing Sakonnet River Bridge piers.

The long-term noise impacts would be low with a new structure, deck, and joints.

The cultural resources impacts would be low, limited to property takings in the Riverside Drive Historic District that would not materially alter the character of the District. However, this Alternative does require the most property acquisitions and relocations.

The useful life of the new bridge structure would extend for 75-years.

The total estimated construction cost for Alternative 4 is \$122 Million, which does not include the construction of a toll plaza.

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### **ES.5.5 New Bridge on South Alignment (Alternative 5) (Preferred Alternative)**

The New Bridge on South Alignment Alternative would require 8 property relocations. In addition, required reconstruction of Evans Avenue would alter the Evans Avenue neighborhood in Tiverton.

The impacts to wetlands would be moderate as summarized in Table 4-14 in this DEIS. Hazardous materials impacts would be moderate since the existing lead-based painted bridge structure would need to be properly disposed of. The number of piers in the waterway would be reduced; so long term coastal impacts would be low.

The long-term noise impacts would be low with a new structure, deck, and joints. The cultural resources impacts would include the taking of a potentially historic resource on Evans Avenue. Required property relocations in the Riverside Drive Historic District would not materially alter the character of the District.

The purpose and need of the project would be provided and the long-term social and economic impacts would be low since a safe and reliable transportation link would be provided. The short-term secondary impacts would also be low due to the fact that the existing bridge could remain in service for most of the construction period. Pedestrian/cyclist facilities would be provided, so a functional link for these modes would exist between Portsmouth and Tiverton.

The useful life of the new bridge structure would extend for 75-years. The estimated construction cost is \$108 million not including the construction of a toll plaza.

### **ES.6 REASONS FOR RECOMMENDING THE PREFERRED ALTERNATIVE**

The No - Build Alternative (Alternative 1) does not meet the project purpose nor satisfy the project need of improving public safety and providing a reliable transportation link. Therefore, Alternative 1 was eliminated.

The Full Rehabilitation of the Existing Bridge (Alternative 2) would require the expenditure of \$72 Million in exchange for only another 25 years of useful life. This time period is considered short in terms of significant infrastructure investment. In addition, FHWA guidelines encourage the investigation of bridge replacement when rehabilitation costs exceed 50% of the cost of replacement.

Traffic delays and significant inconvenience to the motoring public would occur throughout the minimum two-year duration of the proposed work. Safety would not be improved because inadequate shoulder widths would remain, as would the current geometric alignment. Pedestrian and bicycle access would not be provided and the safety of stranded motorists would not be improved. The bridge would remain fracture critical.

Based on the inability to fulfill the outlined project purpose and needs, as well as the significant construction costs and traffic delays, the Full Rehabilitation of the Existing Bridge Alternative, Alternative 2, was not selected as the preferred alternative.

The New Bridge on Existing Alignment Alternative (Alternative 3) would address the purpose and needs of the project. However, it would also have the highest construction cost.

Alternative 3 would have the least required property relocations of the New Bridge Alternatives, but would have the most significant impacts of any of the Alternatives due to the need for a temporary bridge and roadway on the railroad causeway.

The temporary roadway and bridge structure would require fill to be placed in the Sakonnet River, thus affecting the Tautog fishery. The detour would also require the total volume of RI 24 traffic to be restricted to two lanes and be detoured through secondary roads in Tiverton and Portsmouth to the temporary roadway and bridge structure. In addition, the temporary bridge structure would be a fixed structure and would restrict navigation.

The vehicular and marine traffic restrictions would have significant short-term secondary social and economic impacts during construction. Businesses on Aquidneck Island, schools, transit on RI 24, local marine-related businesses, and short-term productivity in the study area would be adversely affected.

The high voltage power lines on the railroad causeway would need to be relocated. Alternative 3 would have the greatest impacts to wetlands as summarized in Table 4-14 in this DEIS.

Alternative 3 would also have the longest construction duration due to the fact that the existing bridge would need to be completely removed prior to the construction of the new bridge.

Based on the fact that Alternative 3 (New Bridge on Existing Alignment) would have the highest construction costs and the most significant impacts of the New Bridge Alternatives, it was not selected as the preferred alternative.

The two remaining Alternatives (New Bridge on North Alignment – Alternative 4, and on South Alignment – Alternative 5) both address the purpose and needs of the project.

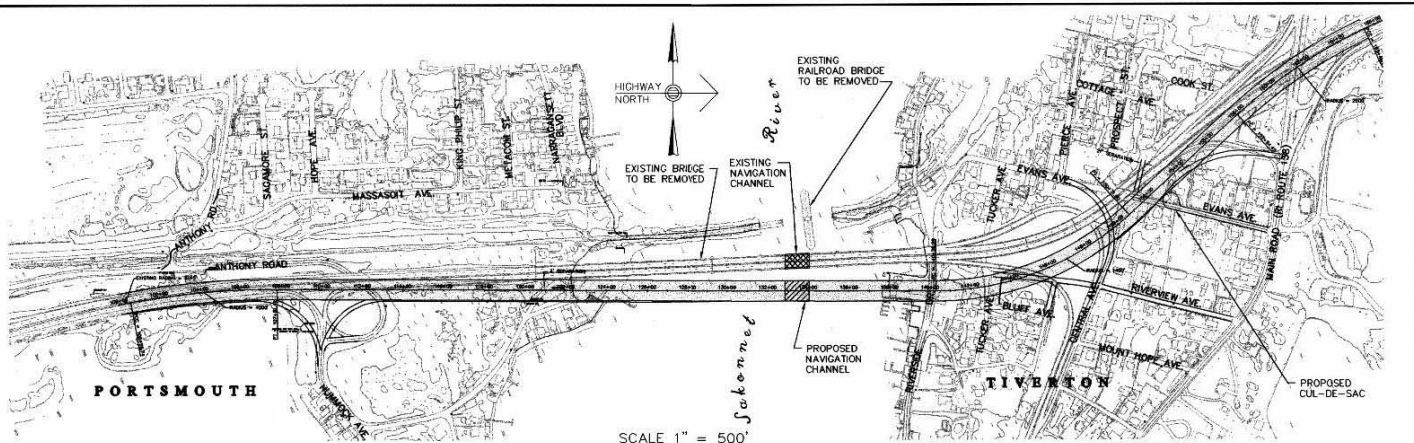
However, Alternative 5 (New Bridge on South Alignment) has the lowest construction cost, requires less property relocations than does Alternative 4 (New Bridge on North Alignment), and does not require the relocation of the high voltage power lines as does Alternative 4.

Based on the previous discussion, as well as the strongest ability to address the project purpose and needs, the preferred Alternative identified in this DEIS is Alternative 5 – New Bridge on South Alignment, as shown in Figure ES-2.

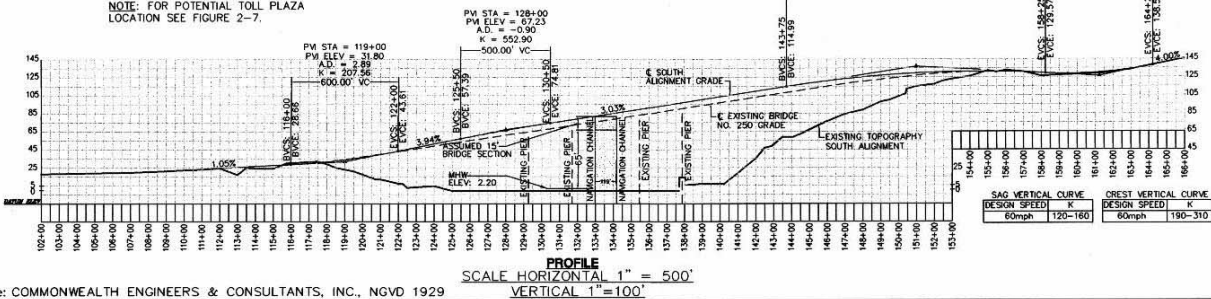
## **ES.7 OTHER FEDERAL ACTIONS REQUIRED**

The following permits are required:

- Water Quality Certification, Section 401
- Army Corps of Engineers (ACOE), Section 404
- ACOE, Section 10
- US Coast Guard, Section 9



NOTE: FOR POTENTIAL TOLL PLAZA LOCATION SEE FIGURE 2-7.



Source: COMMONWEALTH ENGINEERS & CONSULTANTS, INC., NGVD 1929

Rhode Island  
Department of Transportation  
Federal Highway Administration

# NEW BRIDGE ON SOUTH ALIGNMENT (ALTERNATIVE 5) (PREFERRED ALTERNATIVE)

## SAKONNET RIVER BRIDGE PROJECT

Figure No.  
ES-2

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